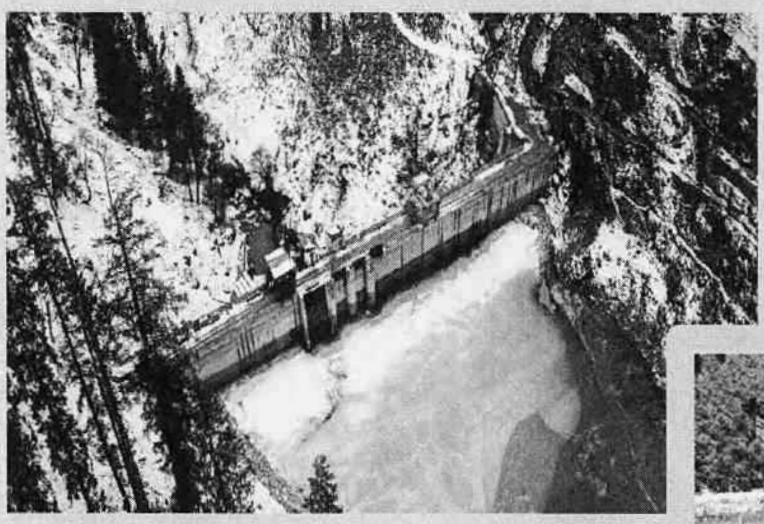
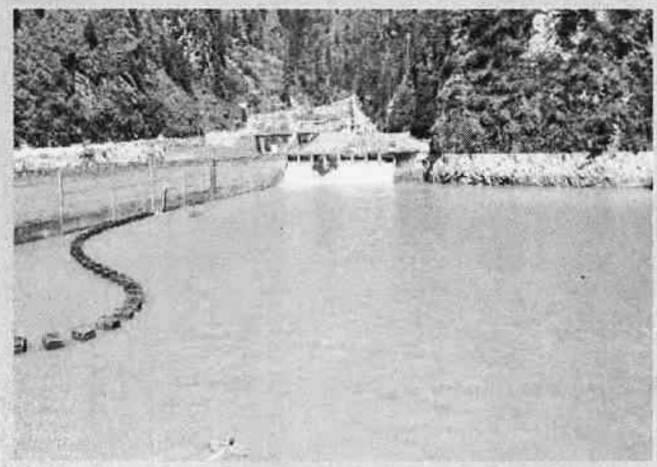
Annexure - I.1

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SDSO HIMACHAL

Site visit report of Malana-I, Malana-II, Parbati-III, Sumez and Beas Kund HEP.







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Shimla, September, 2024

Background

In the month of July & August, 2024 the subsequent cloud burst incidents took place in various parts of Himachal Pradesh. Which resulted in heavy damages to some of commissioned HEPs in the state. During this period 5 no. HEPs (Beas Kund, Malana-II, Malana-I, Sumez & Upper Nanti) suffered heavy damages and also the damages reported D/s of these HEPs.

On 1st August 2024, early in the morning there was a cloudburst occurred on the upstream side of Malana-II Dam. There are two Hydro Electric Projects on Malana River naming Malana-II on the upstream side and Malana-I on the downstream side. A huge quantity of water containing big boulders, wooden logs was noticed by the Dam Safety Unit of Malana-II Dam. The Gates were opened in order to pass this water. This huge quantity of water completely washed away the Switch Yard, Bridge to MAT of underground Power House complete on the Left Bank of Malana River and the Project Office on the Right Bank of Malana River of Malana-II Project. On the Downstream side this water under scoured balancing reservoir of Malana-I and suddenly due to failure of walls of Balancing Reservoir further enhanced the discharge in Malana River which further damaged/washed away the bridge near the reservoir and approach road at two places.

In compliance to the GoHP Letter No. Rev.(DMC) (F) 11-45/2019-Dam Dated 05-08-2024 To carry an enquiry into the matter, a committee was constituted vide DoE office Letter No.HPDoE/CE(Energy)/Malana-II HEP/2024/3346-58 Dated 12/08.2024 to inquire the various aspects of aforesaid incidences, a committee with members having officers from DoE, District Administration and aspects in the field of design, hydrology and hydropower were made part of this committee for conducting an enquiry. On basis of Preliminary Reports submitted by these HEPs and in view of on spot damages occurred to Malana-I, Malana-II, Parbati-III and Beas Kund HEPs. The composition of the committee is given below:

Table 1 Composition of the Committee

S. No.	Name	Designation
A.	**Directorate of Energy (DoE Team)**	
1.	Er. D.P. Gupta	Chief Engineer
2.	Er. Deepak Jasrotia	Deputy Chief Engineer
3.	Er. Dheeraj Verma	Sr. Executive Engineer
4.	Er. Raj Kumar	Assistant Executive Engineer
5.	Er. Harshveer Singh	Junior Engineer
B.	**HPPCL**	
6.	Er. Arun Kumar	AGM (Dam Expert)
C.	**DGRE**	
7.	Dr. Sunil Bhardwaj	Scientist-F (Hydrology Expert)
D.	**District Administration**	
8.	Sh. Vikas Shukla	SDM, Kullu, Distt. Kullu
9.	Sh. Pankaj Sharma	SDM, Banjar, Distt. Kullu

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Site Visit of the Committee

The committee was mandated to carry out the onsite inspection of Malana-I, Malana-II, Parbati-III and Beas Kund Dams.

Accordingly, the committee visited the of Malana-I, Malana-II, Parbati-III and Beas Kund Dams. w.e.f 15.08.2024 to 18.08.2024 as per the programme, vide DoE, Govt. of HP Letter No. HPDoE/ CE (Energy)/ Malana-II HEP/2024-3346-58 dated 12.08.2024 (**Annexure-I**).

As per program:

On 16.08.2024 the Parbati-III HEP was inspected, On 17.08.2024 Malana-I, Malana-II on 18.08.2024 Beas Kund HEPs was visited. The another committee visited the Sumej HEP Project site on 22.08.2024 and the Project wise observations /finding are as per following:-

Parbati-III HEP

Parbati III dam is a diversion structure of run-of-the-river type hydroelectric scheme located on river Sainj (a tributary of river Beas) near village Suind just about 1 km downstream of the confluence of Sainj River with Jiwa Nallah and also D/s of the tail race of Parbati-II HE Project. It is earthen rockfill dam of maximum height 43 m. The project was commissioned in 2014. The project is owned & managed by NHPC. The dam body has been provided with the spillway of the left hand side with two radial gates to pass design flood of 3300 Cumecs. The reservoir area also has provisions of two tunnel spillways which were used to be diversion tunnel during construction period to pass flood discharge of 1314 Cumecs each at FRL. The salient features of the project are enclosed as **Annexure-II**

The committee conducted a preliminary meeting at NHPC Site office of Parbati-III Dam Project on 16.08.2024. Discussions were held regarding sudden release of water from Parbati-III dam and affected areas in the downstream. SDM, Banjar was also present in the Meeting. After the meeting the committee along with SDM Banjar visited affected areas downstream of the Parbati-III Dam specially the Sainj bazar & Sainj Village.

Damages occurred last year in 2023

Incident Detail:

1. As per Project Authority, heavy rains commenced at 1:15 A.M .on August 1, 2024. Two machines were operational, the average inflow was of 82.91 Cumecs and an average discharge of 50.68 Cumecs was utilized from the machines and environmental flow. Sensing the upcoming flood, radial gates were opened at 2:48 A.M. - 2:50 A.M. and Hooters/sirens were blown thrice as a warning.
2. At approximately 3:00 AM, the inflow increased to 107.5 Cumecs. Sirens were activated again by Parbati-III and the outflow from the Radial gates was increased from 48.68 Cumecs to 131.39 Cumecs.
3. Heavy rainfall led to a significant inflow from Jiwa Nallah, bringing slush and debris, as well as contributions from the Sainj River and its tributaries. This caused the following machines to trip

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due to excessive silt content: Unit 3 at 4:00 AM, Unit 2 at 4:15 AM, and Unit 4 at 4:45 A.M. As a result, the reservoir level rose from EL.1325 Meters to EL. 1330 Meters between 4:00 AM and 5:00 A.M. To manage this, a total outflow of 216.50 Cumecs was released to lower the reservoir level back from the Full Reservoir Level (FRL) of EL. 1330 Meters. Further in Sainj HEP of HPPCL, machines tripped at 4 P.M. as reported by Parbati-III.

4. As apprised, all the information's were simultaneously shared on WhatsApp group to DDMA, Kullu & Group with Local administration.

Observation by the committee

1. As reported by the Parbati-III project authority, two Discharge Measurement Systems (DMS) have been installed to monitor water flow. The first DMS is located at the G&D site in Jiwa Nallah, 1.2 km upstream of the Parbati-III Dam, which was commissioned on July 12, 2024. The second DMS was installed upstream of the HPPCL Barrage at Niharni, which became operational on July 31, 2024.However, NHPC has indicated that calibration of the DMS at Jiwa Nallah is necessary to ensure accurate discharge measurements. Despite the reported instruction NHPC has delayed establishment of inflow measuring & forecasting system.
2. It was found that NHPC has not conducted Stakeholder meeting in past years with the local community upstream and downstream to address their concerns.
3. As per detail provided by NHPC, three-phase sirens with a range of 5 km and a power rating of 3 H.P. have been installed at eight locations. These sirens feature live voicing and a pre-recorded messaging system. The locations equipped with sirens are at Dam Top, Sainj Market, Sainj NHPC Colony, Shalwar Village, Terada Village, Talada Village, Sapangani NHPC Colony, Behali Admin Building and at Tail Race Tunnel (TRT) outlet. They were reported operated in this year flooding.
4. It was apprised by Parbati-III authority that NHPC is also having a VSAT and ISAT phone for emergency situation at Dam.
5. An Automatic Weather Station (AWS) has been installed at NHPC Colony at Sainj, which comprises multiple equipment's i.e. rain gauge sensor, temperature sensor, humidity sensor, wind speed sensor, wind direction sensor, evaporation etc. AWS having solar supply power backup are equipped with GSM based data transmission system and data is recorded at an interval of 30 minutes.
6. Committee observed that NHPC has not carried out dam break analysis, hydraulic routing studies downstream and inundation mapping and flood marking etc in order to ensure safety of public and to avoid any loss to the property in downstream area. However NHPC Awarded work to NIH Roorkee for carrying out these studies without this vital information NHPC has failed to mark the danger level.
7. Temporary Danger level were marked which are not sufficient.
8. As per visual inspection the river bed level seems to be raised by approximately 3-4 meters due to accumulation of silt/debris and boulders.
9. Committee members and the Parbati-III project team, along with the SDM, Banjar, met with local residents of Sainj village to assess the extent of flood damage downstream of the Parbati-III Dam. The villagers expressed their grief concerns regarding sudden water releases from the dam, which washed away the road and damaged the property. They highlighted that last year's

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floods brought significant boulders, resulting in property loss and raising the river bed by 3 to 4 meters.

10. It has been observed by the committee that the Parbati-III Dam released only 216.54 Cumecs of water, which resulted in the flooding of Sainj Market and caused damage to multiple roads downstream. This situation raises significant concerns, especially considering that the project authority has previously released between 400 and 500 Cumecs for silt flushing from the dam without any reports of major flooding or damage. As such the relevance of this year which cause damages invite concern.
11. As per record submitted by Parbati-III-committee observed that all reservoir safety precautions/SoP for reservoir operation were followed and opening of gates were gradual keeping in view safety of the Dam and D/s inhabitation. It was pointed out by committee that there is mismatch of inflow & out flow data as is with SDSO-HP & as was supplied by NHPC. Main flooding event have taken placed between 3 to 4 A.M. of 1st August, 2024.

    As per data received with SDSO received the out flow at 3:00 A.M. was 48.8 cumecs which raised to 215.24 cumecs at 4:00 A.M. despite that there was not so heavy increase in inflow. The NHPC record produced shows the outflow at 4:00 A.M. to 93.34 which is a mismatch. This sudden increase has created harsh situation downstream and this flooding happened & water entered into market and one Bus flooded into the river. NHPC authorities needs to explain this data mismatch which has been supplemental through the facts & statements of locals.

Damages to Public Property:-

1. Temporary Road approach on LHS Bank of Sainj river provided by PWD got washed away alongwith one Bus in the early morning hours of 01.08.2024 when water was released by Parbati-III Dam authorities.
2. Additionally, a house located downstream of Sainj town along with the wire crates sustained damage, and a road approach on the right-hand side (RHS) bank at Bakshal village was also washed away which have raised concerns among local residents regarding safety and stability in the area.
3. During the flooding incident, Sainj market was flooded with water and some of houses were put under severe threat.

Recommendations:-

1. Discharge Measurement Systems (DMS) & forecasting installed at Jiwa Nallah needs to be calibrated and regularly maintained to provide accurate discharge measurements. Calibration needs to be carried out every year for accuracy in flood forecasting for making informed decisions/warning regarding water releases and for preventing/alerting about flooding downstream.
2. It is recommended to organize stakeholder meetings with local communities to address their concern and ensure that local grievances are heard, particularly regarding safety and flood risks.
3. It is recommended to expedite the completion of dam break analysis (should also include the GLOF studies) and flood marking and develop effective response strategies for understanding the potential impacts of gate operations on downstream areas and for developing comprehensive flood management plans. Inundation mapping based on results of Dam break

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analysis and channel routing results for release of different discharges from spillway shall be carried out. These inundation maps should be part of the Emergency Action Plan (EAP). Danger levels with respect to different discharges as per /inundation mapping results needs to be marked in downstream areas of dam and local administration needs to be made educated regarding these levels.

4. River training works needs to be carried out in vulnerable zones in order to avoid further loss to property and landslides in Sainj Bazar. This is strongly recommended. Though NHPC has allotted some fund for such works but a comprehensive plan is required to be prepared for safeguarding the complete Sainj town portion down to NHPC's own colony. NHPC as a developer must take a lead for developing such comprehensive plan in association with Administration & local authorities & inhabitants so that to problem be tackled for all the time to come with proper protective measures.
5. As an immediate measure, survey be conducted for regular extraction of riverbed material, particularly in areas in the vicinity of Sainj market where silt/debris and Boulders accumulation has been observed. Dredging activities and removal of some boulders at Sainj Market need to be carried out immediately to lower the river bed level to original state to prevent flooding. With rise in river bed level a revised flood control management practices in place at the Parbati-III Dam.
6. NHPC needs to take immediate necessary actions in providing maintaining/repair/restoring the approaches to local public in order to facilitate their movement.
7. Conduct comprehensive emergency response drills that specifically address flood scenarios, involving both NHPC staff, local communities and administration to enhance the readiness of both dam authority and local residents to respond effectively to flood emergencies.
8. Local administration should also take necessary steps to demarcate areas for some reduction of encroachments in the flood prone area downstream of dam based on inundation mapping carried out by Dam authorities for different discharges from spillway & Dam Break Modelling.
9. The damage report as shall be submitted by Revenue authorities shall be part of report.
10. The local villages & inhabitant have submitted representation which are part of this report as per **Annexure-III**

Conclusion:-

Year 2023 incidents followed by flooding this year has raised huge suspicion and mistrust and fear factor among people of Sainj town which was evident in the meeting held with the villagers and residents of Sainj Bazar.

Location wise this town is situated just at margin of 5 to 10 metres flow time from Parvati-III dam which makes this town so vulnerable to floods.

Under chapter VI clause no. 20(2), chapter VII clause no. 29, 31(2) to chapter VIII clause number 35 and 36 it is the responsibility of the Dam authority to safeguard and take utmost safety meaures toward the safety of lives and stock downstream and also to abide with directions by SDSO as are laid from time to time.

As such, NHPC authorities must take responsibility to address the safety issues of Sainj town and its own colony downstream. This is the high time and concrete action needs to be ensured by NHPC Parbati III authorities as per recommendations given above.

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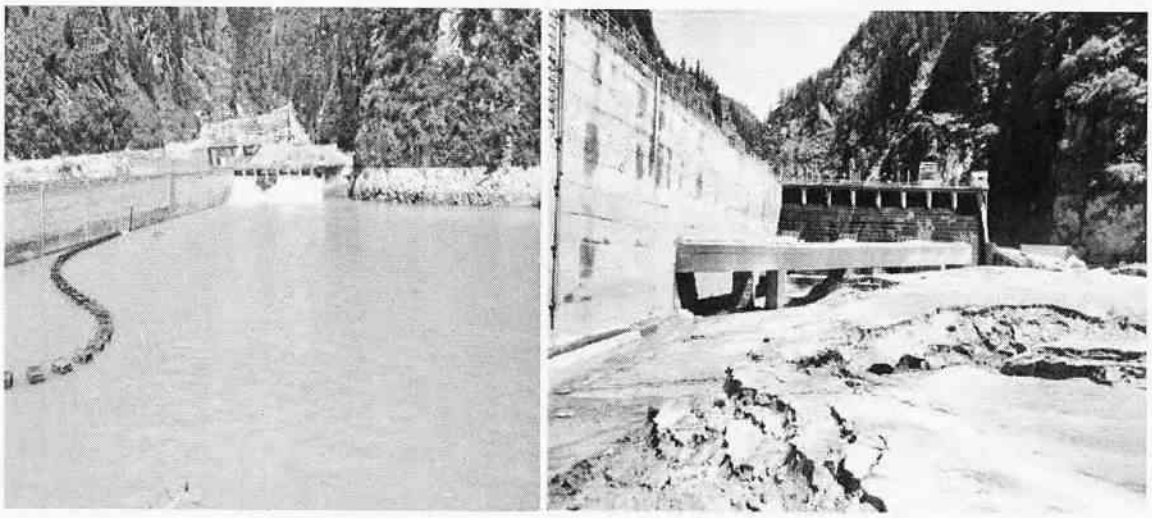
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Malana –I

Background

Malana HEP Stage-I has been built on river Malana (a tributary of river Parbati) to utilize a gross head about 505m available between the Barrage site D/s of Malana village and Power House site near village Chowki (P.O. Jari) , in Distt. Kullu of HP. Water is diverted through intake which consists of a barrage head regulator, desilting chambers, and a balancing reservoir having capacity of 24.9 ha-m. Water is transferred further through underground head race tunnel and surface pen stock into the power house located at Chowki village. Power so generated is transmitted to the HPSEBL substation at Bajaura through 24.0 km long 132 kV, D/C transmission line. The Plant helps to meet the power shortages in the Northern region. Project was commenced on 01.01.1999 and commissioned on 05.07.2001.



Balancing Reservoir

The committee conducted a preliminary meeting with the Project Authorities of Malana-I and Malana-II, Dam on August 16-17, 2024, in the conference hall of the Malana-I office at Jari. The purpose of the meeting was to gather information and assess the situation at both dam sites following the recent flood disaster. Thereafter team visited the Malana –I barrage on 17.08.2024 along with the officials of Malana –I and Malana –II.



Before After

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Before **After**

Upstream Malana-I intake

Observations of the Committee

1. The primary access road leading to Diversion Barrage of Malana I has been damaged at two critical locations. Malana-I authorities have commenced restoration efforts to repair these critical routes. A manual ropeway/Jhula spanning 80 m has been installed to ensure easy access to Project workers and Malana villagers till restoration work of road is completed. Another section of the road located on left bank at diversion weir of approximately 500 m length, has also been damaged. Efforts are underway by Project Authority to restore access to the Malana-I intake, with a target completion date set as September 15, 2024.
2. Diversion Barrage of the Malana - I HEP project has an ungated spillway portion and 2 nos. Under Sluices Gates with vertical life to pass Design flood discharge of 614 m^3 / sec. During the cloudburst on August 1, 2024, both sluice gates were in the closed position. However, Gate No-II has since been cleared of debris and lifted to open position, while the other Gate No-I still needs to be opened by the authorities. All the Four Intake Gates including trash racks were partially buried in the debris and are being cleared by the Project Authority. A visual inspection revealed that no damages to the gate hoisting system and its structure occurred, however a large



Before **After**

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accumulation of boulders and debris was observed upstream and on the left bank in front of ungated spillway.

3. The Dam Authority apprised the committee that two waves of flooding occurred. The first wave was around 3:17-3:20 AM, while the second peak discharge came around 5:00 AM. This second wave washed away Switch Yard & Office building structures of the Malana-II HEP, which accumulated in front of the Head Regulator intake, resulting in pondage at the Barrage Gates of Malana-I. Due to this pondage, water started flowing all over the structure.

4. The control room of the Malana-I Barrage has sustained significant damage, diesel generator (DG) room and security post at the barrage site being washed away. Power supply to the intake has been restored by the project authority. However, the desilting structure, consisting of four independent desilting chambers, has been choked with debris, the balancing reservoir also got filled with huge quantity of silt.

5. Heavy water flow/slush has also washed out the crossover steel bridge just D/s of the balancing reservoir of Malana-I and its approach roads downstream of Malana-I reservoir. It is pertinent to point out that during 20 Years Mandatory Inspection of Malana –I HEP, it was advised that as the cross section of the water way beneath this bridge is insufficient to pass the design flood to the tune of about 614 Cumecs, a study be carried out by the project developer to work out the cross sectional area beneath this bridge. If the said cross sectional area is insufficient to pass the said quantum of flood discharge, then the bridge be redesigned and reconstructed accordingly. However compliance of the same was not carried out by the Project Authority.

6. The Balancing Reservoir of Malana I HEP has a capacity of 24.90 hectare-meters (Ha.m) and is designed for a four-hour peaking operation. The reservoir wall is a concrete gravity structure with a maximum height of 15 meters and includes a stepped spill section with following Levels:-

   i. Full Reservoir Level (FRL): EL 1893.0 m
   ii. Maximum Water Level: EL 1893.6 m
   iii. Minimum Water Level: EL 1878.75 m

   Visual inspection indicated that approximately 30%-40% of the live storage capacity has been compromised due to silt deposition having approx. 1.0 Lakh Cum of silt deposited in reservoir. During the incident of failure of the Balancing reservoir, approximately 1,60,000 cubic meter of water was available which have abruptly spilled into the Malana River adding approximate 1,60,000 Cubic meter water to the already flooded river which contributed to instant flooding downstream. Depleting time for the reservoir would have been approximately 30 minutes. Heavy water flow in the Malana River has caused significant damage to the stepped spillway section of the Balancing Reservoir, eroded, exposed & foundation damaging 9 blocks of approx. 90 m length of storage reservoir. Notably, it was observed that no cutoff was provided in the Balancing Reservoir, which may have also contributed to the extent of the damage. The project authority is conducting assessments to address the damage to these blocks.

7. As per visual inspection, heavy flooding and the breach of the reservoir have caused significant scouring/erosion and damage to the area just below the balancing reservoir at the washed out D/s bridge. This has resulted in a depression of approximately 5 to 10 meters below the balancing reservoir, which may further pose threat to structural stability of the reservoir.

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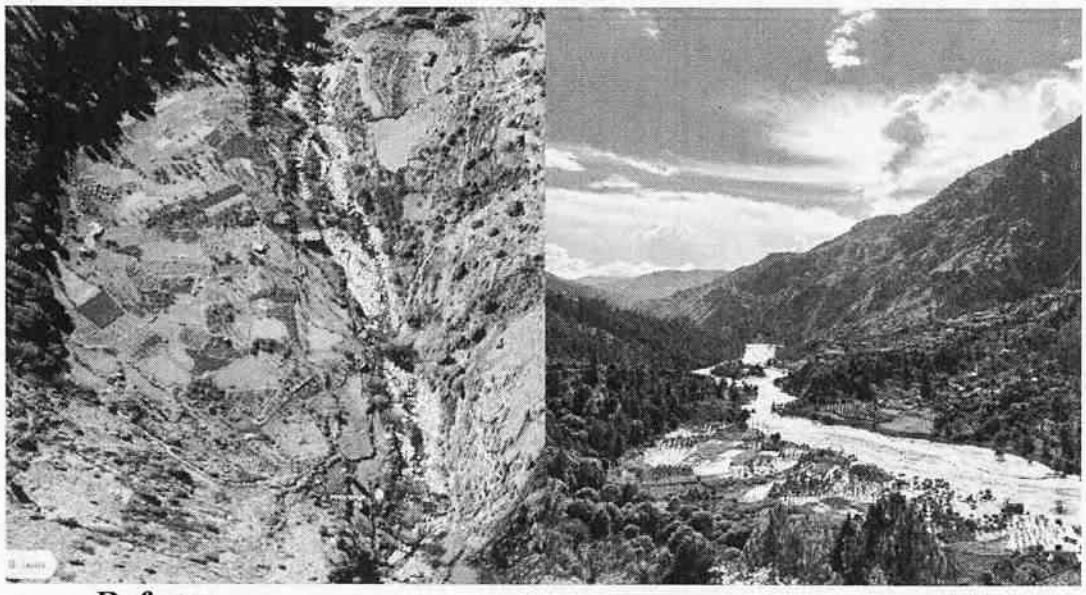
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8. However the restoration of road and c/o bridge (temporary) has been taken up by providing Hume pipes by Malana-I Dam authorities expected to be completed by end of September, 2024.
9. It was found that Project Authority has not conducted any stake holder consultation meeting with the local communities in past year. Local villagers have also raised the same c.oncern that Malana –I and Malana II have not reached out to them in past and not even after the disastrous flood on 1st August, 2024.
10. There is one village Chowki which is situated on the Left Bank of Malana River and two villages naming Bladhi and Pahal on the Right Bank of Malana River before the confluence point of this river with Parbati River. These villages fall in the jurisdiction of Kasol Panchayat in District Kullu. The committee physically visited these villages on 17-08-2024 and 18-08-2024. A meeting was convened with the Mahadev Yuva Mandal and representatives of the Chowki, Bladhi villages alongwith Pardhan of Gram Panchayat, Kasol. Representatives of Malana-I & Malana-II were also present in the meeting in the conference Hall of Malana-I, office at Jari on 17-08-2024 at 6:30 P.M.

    The people expressed their concerns very politely and requested to restore the facilities to run their daily life without any delay. They also warned about the agitation in case of not fulfilling their demands. The representatives apprised the inspection team and project authorities about the losses occurred due to sudden releases of water from Malana-I and Malana-II which are as under:-

    - Three temples and some residential buildings have been completely washed away.
    - These villages have lost Hectares of land on both the banks of Malana River alonwith apple orchard before the confluence point of this river with Parbati River. The balance land is not suitable for agriculture at present. This land and the orchard has been filled with sand and boulders.



Before **After**

Downstream reach near confluence of Malana-Khad & Parbati-III

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- The Malana River has changed its river course by splitting the land in two parts, creating an island. There are some houses on this formed island. There was one foot bridge on Parbati River connecting this village from Jari which was constructed by Forest Department of Himachal Pradesh. This bridge has also been washed away. Presently there is no access to this village either from Jari side or from Chowki Baladhi Village. Baladhi village primary school has also got lost its existence due to flood water and students now are unable to go to another school due to non-availability of easy access and transport facility. The bridge on Malana River connecting Bladhi village to Chowki village has also been washed away. The villagers have made a temporary arrangement by making a wooden bridge with big wooden logs and planks and wire rope Jhula. This arrangement seems to be very unsafe. The proper connectivity to Baladhi village is required to be established at the earliest.



Before **After**

For addressing the concerns of villagers it was decided that both dam authorities will have a joint meeting with the representatives of affected villages and if needed the representative of Distt. Administration will also be part of this meeting. The meeting was proposed to be hold on 21.08.2024 by the committee.

As far as protection works on the both the banks are concerned, the DoE Team advised both the project authorities to conduct a detailed study through an authorised appropriate institute before execution of protection works to have a permanent solution of the problem of erosion of land on both the banks of the Malana River. Further mechanism for going for executing protection work can be decided mutually by both dam authorities along with district administration.

The statements of Staff are enclosed as **Annexure-IV.**

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Recommendations:

1. Project Authority were directed to expedite the ongoing road restoration works to ensure access to the diversion barrage and balancing reservoir by the target date of September 15, 2024. Prioritize the reconstruction of the washed-out crossover bridge and approach roads.
2. Project Authority to complete the clearing of debris/boulder in front of sluice gate and intake gate and ensure the proper functioning of all gates. Assess the condition of the intake gates, trash racks, and hoisting mechanisms, and carry out necessary repairs or replacements. Also clearing debris/boulder from Upstream and below spillway area.
3. Prioritize the repair and restoration of the damaged control room to ensure uninterrupted monitoring and control of the project. Assess the feasibility of relocating or reinforcing the DG room and security post to prevent future damage from flooding. Implement a robust power supply system with backup options to ensure reliable electricity for project operations.
4. Conduct a detailed assessment of the damage to the balancing reservoir blocks and develop a repair action plan in consultation with design experts.
5. Implement a comprehensive silt management plan to address the issue of silt deposition and to maintain the reservoir's storage capacity.
6. Stakeholder meeting with the local community upstream and downstream need to be carried out to address their concern specially regarding safety.
7. To conduct the drone survey of Malana River from Parbati confluence to 5 km above Malana –II dam by 25th August, 2024 and to submit the same to DoE.
8. Both Dam authorities to make a plan of execution of river training and guiding works at Baladhi village and downstream of Chowki village.
9. It was mutually decided that one of the Dam authority will provide Bus facility to school children of Baladhi village till time to bridge is restored/constructed.
10. Stakeholder meeting among the Dam authorities and representatives of Chowki & Baladhi village was advised to be conducted on dated 21.08.2024 for listening to concerns of Dam authorities for reaching out to their solutions.
11. The statements of the Dam safety Unit officials present at Dam site on the Day of incident have been recorded and this is the part of report.

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MALANA-II

Back Ground:-

The Govt. of HP had allotted Malana-II HEP (100 MW) to M/s Everest Power Private Limited which entered into a Memorandum of Understanding (MoU), with Govt. of Himachal Pradesh on 27th May 2002. Subsequently, Implementation Agreement (IA) was signed between GoHP and M/s Everest Power Private Limited on 14th January 2003 for implementation of Malana-II HEP (100 MW). The Project Proponent has achieved the Commercial Operation Date (CoD) of the Project on 12th July 2012.

Malana-II is a conventional gravity type concrete dam of ±53 meter high above the deepest foundation level. As reported by dam authorities, it is founded on sound rock. As per record, the foundation of the dam has been kept at EL ± 2492 meter. Length of dam at the top is ± 150 m (Dam block)+ 63 m (Key wall into the LHS Hill Mass). Two number 4.00 m x 5.50 m size Spillway Radial Gates have been provided in the dam. One set of 4.00 m (W) x 7.10m (H) size stop log gate has been provided to facilitate maintenance of the radial gate. For the operation of radial gates the control room is provided at the top of Dam body just above the gates. The reservoir capacity is (Gross Storage is 0.386 MCM and Live Storage is 0.2875 MCM). For the operation of stop log gates gantry crane has been provided at the top of dam body. The salient features of the project are enclosed as **Annexure-V**.
The committee conducted a preliminary meeting with Project Authorities of Malana-I and Malana-II Dam Authorities on 16.08.2024 and 17-08-2024 in the conference hall of Malana-I office at Jari. However due non-availability approach road to Malana-II, physical inspection could not be carried out.

Incident as reported by Plant In-charge, Malana-II

1. As per the statement submitted by Plant In-Charge, Malana-II, on August 01, 2024 at 2:56 A.M. there was a sudden change of water level from 2.90 Metres to 3.55 Metres. This change was shown by the sensor of Automatic Water Level Recorder (AWLR) installed at the upstream of Malana-II Dam resulting in raising the water level in the reservoir from EL 2538.70 to EL 2539.60. Muddy water along with logs and other trash was noticed by dam incharge flowing into the reservoir. This was assumed as an indication of flash flood in the catchment area on the upstream side of the Dam. Further he stated that Dam Safety Unit Malana-II immediately informed the Malana-I, Local Police Station and Fire brigade through telephonic communication and through SMS in WhatsApp Groups of DDMA. Safety alerts were generated via hooters and public addressing systems about the sudden release of water from the Dam.
2. As per the record provided by Dam authorities the gates were opened to release the discharge and maintaining the reservoir level from EL 2538.00 to EL 2525.00 between 3:00 A.M to 6:00 A.M.
3. Dam and its appurtenant components were reported safe. Water is in free flow condition from both the gates. Intake gates are fully in closed condition. Presently Dam is not approachable due to damaged Approach Road at number of locations.
4. Approx. 4 kms of Road from Power House site to dam site has completely washed out due to flood. Also Two Nos. Bailey Bridges connecting Main Access Tunnel (MAT) and Cable cum

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Tail Race Tunnel (TRT) have been washed away in these floods.

5. 1 No. 30 Tonne Ropeway to Adit-1 & 1 No. Cement Ropeway, 1 No. 6 Tonne Ropeway to Adit-3, 1 No. 6 Tonne Ropeway to Adit-4, 500 Kg. Ropeway to Adit-4 has been completely washed away. Restoration works will be started after repairing the Damaged Approach Road. Since electricity is not available for carrying out the construction activities, efforts are being made to take electricity from Malana-I. The statements of Staff and Plant-In-Charge are enclosed as **Annexure-VI.**

Committee Observation:-

1. This Dam has overtopped two times (first on 24th August, 2013 and secondly on 24th July 2023) despite that the work of construction of additional spillway work has been delayed by IPP.
2. The inspection team was not able to reach to the Dam site due to non-availability of approach road to the dam site. A stretch of 4 kms of road has been badly damaged in the floods. However the team reached up to the Power House which is connected by a temporary foot path and foot bridge on the M.S. Poles on Malana River. It was found that the manpower has been engaged in various restoration works at this site.
3. Committee inspected the Data/Record of Reservoir/Gate operation and Power House and found that information provided was not satisfactory. Gaps have been observed in the record submitted by Dam authority. This lead to suspicion of fast opening of the gates.
4. The committee noted that the inflow calculations provided after 7:00 AM lacked a proper basis and were misinterpreted. Upon inquiry with the dam in-charge, it was revealed that the data was provided based on visually checking the water level rather than accurate calculations, as the gates had been opened fully.
5. It has also come to notice that HRT & Penstock has also been drained completely by project authorities. Hence whole project needs to be investigated by an expert committee for any damages in the water conductor system if any before its operation.
6. It was noted that despite the repeated instruction given for last one year CCTV has not been functional since last year overtopping and SCADA system for gate is not operation at the Dam site.
7. As per previous year records, a flood discharge of 110 Cumecs has occurred in the downstream of the Malana-II Dam. However, this flood event did not resulted in any major damages in the downstream areas. The data provided by the Malana-II HEP authorities indicates that the flood discharge this year was approximately 150 Cumecs, which is only 40 Cumecs more than the previous year's flood. However, this relatively small increase in discharge led to heavy devastation downstream, which is in variance to the magnitude of the flood.
8. The 132 kV switchyard and Administration Office Building has been completely washed away in the floods. A small amount of water has also entered into the underground Power House through the main access tunnel. However, all inspections of the equipment in the power house are still to be carried out by the dam authority. 3 Nos. Towers i.e. Tower No.-1 Tower No.-2 & Tower No.-3 of Transmission Line have been damaged due to flood.
9. The Early Warning Systems as available are not compatible to the desired standards. No Flood forecasting/AWD system is provided by Malana –II, however level are being measured at upstream site.
10. The dam break analysis has been recently conducted. However, marking of danger levels was

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still pending and area bench should have been marked.

11. The results of the dam break analysis have not yet been shared with the local administration. This needs to be prioritized to ensure proper preparedness and response planning.
12. In the Early Warning System (EWS), Voice broadcasting equipment is still to be installed.
13. The procurement of satellite phones is still pending.
14. It is pertinent to mention here that every DSU has to be equipped with experienced professional fully capable of handling any situation. However it was observed that staff/profession deployed by Malana-II authorities at Dam site lacked basic minimum required experience & mandatory qualification.
15. The local villages & inhabitant have submitted representations along with Patwari report which are part of this report as per **Annexure-VII.**

Recommendations:

1. Expedite the repair and restoration of the approach road to the dam site to ensure accessibility for inspection and maintenance and restoration of electricity by Malana-II Dam authorities.
2. It is very much essential that dam authorities have an advance inflow forecasting system of appropriate standards and of latest technology so that the prior actions can be taken up for gate and reservoir operations.
3. Implement SCADA system for gate operations, ensuring that all records are accurate, complete, and readily accessible. Repair and restore the CCTV to ensure continuous monitoring of dam operations and conditions.
4. Complete survey of Malana river upto 5km. upstream of Malana-II Dam by Drone.
5. Immediate provision of Jhula to Baladi village in order to provide safe transit of people and children across the river by Malana-II Dam authorities.
6. Taking up the work of River training and diversion of River at Baladhi village by the both the dam authorities.
7. Provision of Bus facility to school children of Baladi village by Dam authorities.
8. Stakeholder meeting among the Dam authorities and representatives of Chowki & Baladi village on dated 21.08.2024.



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Conclusion

Malana-I & Malana-II

One of the major impact of recent cloud burst has occurred to Malana-I & Malana-II both the HEPs have suffered severe losses and they will take a considerable time to come back to the original normal operating conditions. No doubt the cloud burst incidents are unpredictable, unstoppable but we can manage to minimize the damages/losses and to safe guard valuable lives and infrastructures. Both the HEPs need to improve monitoring and EWS for such extreme events. Both HEPs must strive hard for having a comprehensive network of weather RADAR, automated rain gauges & most importantly the river discharge sensors, which are essential to enhance real time data acquisition and forecasting accuracy.

Both IPP must go for comprehensive hydrological study to have better understanding of the peak flow & returned period under various climate conditions.

The Dam's operations are critical and important as aspect which plays vital role. Though Malana-II is just a diversion dam having small storage for peaking but looking to the Malana river terrain/ regime, even the small storage is critical. The data provided by the malana-II authorities are contradictory which needs further investigations for establishing the facts about regulated gate operations. Though the facts was that the Malana-II dam head very limited scope/time as far as restricting/holding the flow is concerned.

Further the bursting of balancing of reservoir of Malana-I also escalated the flood in the Malana River and it lead to excessive damages downstream in Kothi & Baladhi village.

In spite of repeated directions of developing & maintaining an online river flow/discharge monitoring site upstream in Malana khad, both the dam authorities failed to do so, and the major event of Malana-II dam overtopping. Just a gauge site was installed upstream of Malana-II, which only informed about the increase of water level in the river, though this vital information received in time has helped in present event. The information was gathered and disseminated immediately by dam authorities which could provide sufficient evacuation time for people downstream and fortunately we had no loss of life. But heaving a flow/discharge measuring site, would had provided some time to have effective gate operations.

Verification of Events: -

- With respect to cloud burst incident upstream in Malana Khad a GIS based specific report has also been got prepared by the expert agency GCRS. As per the finding of the report two satellite imagery one prior to cloud burst and one after the cloud burst were analyzed. It was found that the cloud burst incident has occurred about 14 km upstream of the Malana-II Dam which has led to immediate flooding in the Malana River.

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The post event imagery upstream of 14 km Malana-II Dam where cloud burst happen reveals significant disruptions to the landscape caused by cloud burst. The imagery in between Malana-II and Malana-I Dam are indicative of severe weather condition and their consequences on the natural environment and infrastructure in the region. Same way imagery between Malana-I intake to confluence of Malana Khad and Parbati river reveals major changes in the river course which shows significant disruption to the landscape.

The report has not covered the detail of runoff and discharge estimate for which the agency has requested for long term data which is being taken up for obtaining from concerned agencies if available. Once this is obtained through "Surface Run off Model" the agency will be able to estimate/ access/ evaluate the total run of and velocity of the water in Malana Khad on particular day of event which lead to change the river regime and profile.

The report is annexed as **Annexure – VIII.**

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SUMEZ HEP

Background:-

Sumez HEP (2x7.00 MW) is a run off the river project on Sechi and Muhali khads, the tributaries of Satluj River in district Shimla/Kullu of HP. The project consists of diversion weir -I (Drop type trench weir) on Sechi khad with Conveyance tunnel, Desilting tank, Power tunnel and Diversion Weir -II (Drop type trench weir) on Muhali Khad with conveyance channel, Desilting Tank and Power Tunnel with a common forebay. The water from the forebay is being taken through pensock of size 900 mm which bifurcates into two branches of dia. 550 mm each with net head of 614.20 m to generate 2x7.00 MW of power in an underground power house near Sumez village.

DoE committee was constituted vide this office letter no. HPDoE/CE (Energy)/ Sumez HEP/2024/ 3570-74 Dated: - 19/08/2024 consisting of following officer/official:-

1. Sohan Lal, AEE.
2. Abhinav Thakur, JE.

The aforesaid DoE committee conducted the site inspection of Sumez HEP (14 MW) along with following officers/officials of M/s Greenko Sumez Hydro Project Pvt. Ltd on 20.08.2024:-

1. Suresh Kalsi – GM-cum - Cluster Head.
2. Vikrant Sharma – AGM (Civil).
3. Rajender Rakta – Sr. Manager (HR).
4. Bhupender Singh – Dy. Manager (EHS).
5. Dheeraj Verma – Asstt. Manager (E).
6. Tikkam Thakur – Transmission Line Incharge.

The DoE team along with aforesaid officials of M/s Greenko Sumez Hydro Project Pvt. Ltd reached the Sumez village at 12:15 P.M. The Status of Sumez HEP as per inspection conducted on 20.08.2024 by DoE committee along with M/s Greenko Sumez Hydro Project Pvt. Ltd. Is as under:-

Observations: -

1. The approach road to the Sumez Power house has been completely washed out and is accessible only on foot which is also not safe as some portion of track is rocky and slippery. A small temporary wooden foot bridge has been constructed on Muhali Khad to have access upto the Power House of Sumez.
2. TRT outfall pipe (M S Pipe) has been damaged upto 8 m length.
3. 1 No. Lightening arrester, 1set of potential transformer and one structure of 33 kv transmission line have been damaged in 33 kv outdoor yard (Switch Yard). All other equipmens such as Generation Transformer and Station Service Transformer (SST) was in good condition.
4. During the site visit, with the help of DG set the Powerhouse was illuminate and found satisfactory.
5. All electrical parts such as Protection & Control Panels, Breaker Panels and Auxiliary Panels were powered up in our presence and seems to be Ok for operation.
6. Both units (Turbine) and allied component seems to be OK with no physical damage noticed.

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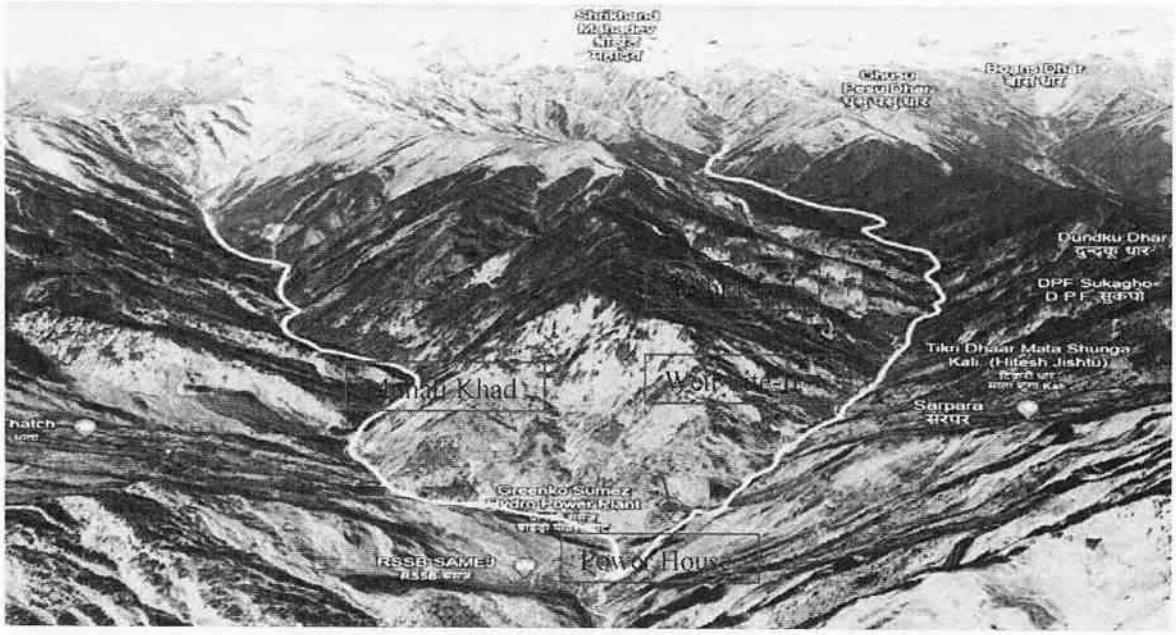
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7. Battery bank and chargers could not be powered up but seem to be OK.
8. Main store structure has been undermined by flood water and is in hanging condition which can be restored by protection works.
9. 20 No. Street lighting poles and fixtures have damaged due to flood as per Sumez project officials.
10. Due to damaged road, bad weather and no access to the weir site, it could not be inspected. Fresh photographs of weir site were arranged by M/s Greenko and from the photographs it looks that weir site – II (on Sechi Khad) and other structural components are damaged completely. Weir – I which is on Muhali Khad has been damage partially.
11. Site office, accommodation of staff, all office records, drawing and documents have washed away and nothing is recoverable as reported by Sumez project authorities.
12. The details of damages to various project components as provided by M/s Greenko Sumez Hydro Project Pvt. Ltd is as per **annexure-IX**

Conclusion:-

1. As per opinion of DoE Team and discussion held with Greenko Team, plant can be restored for partial load in next couple of months i.e. by the end of October, 2024 and for full load generation, it can only be ascertained after reaching the weir site which is not accessible at present.
2. The power plant is run of river project without any storage as there is no Dam/ Barrage/reservoir for storage of water. Hence, no question arises in respect of controlling & releasing the water by Greenko Sumez Hydro Project Pvt. Ltd.

Site Snaps

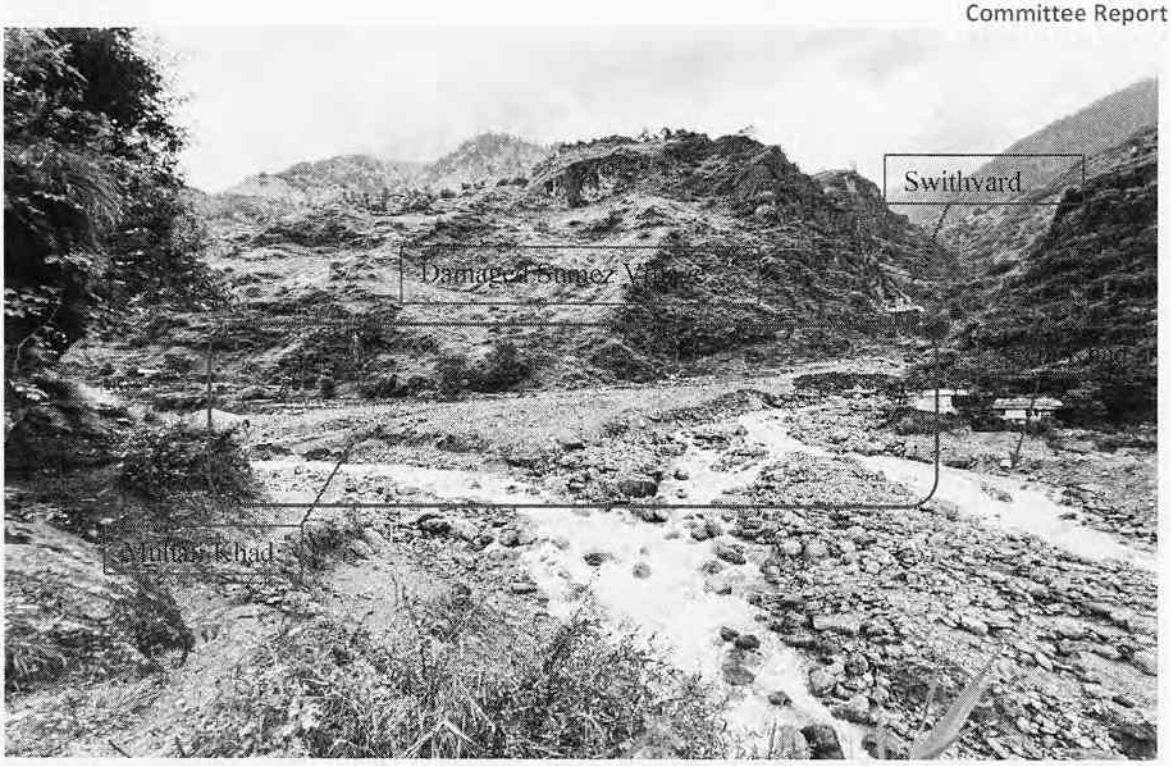


Satellite view

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Confluence of Sechi and Muhali



Temporary Wooden Foot Bridge leading to power house



Sumez Village before Cloud Burst

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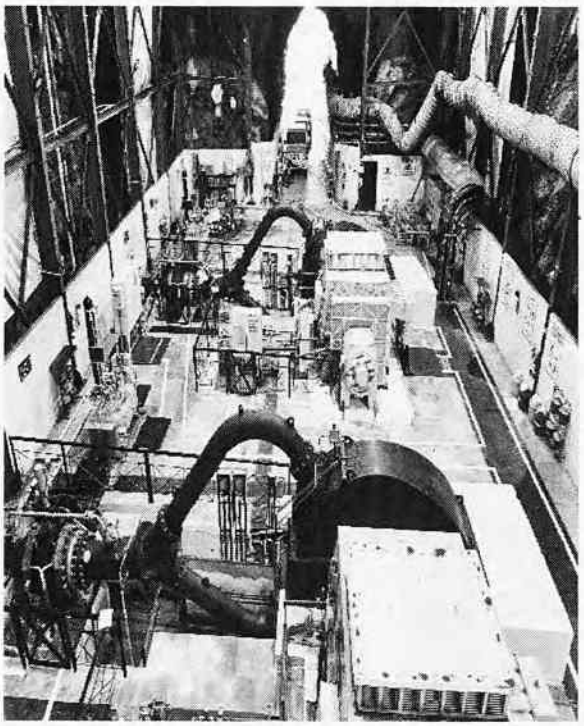
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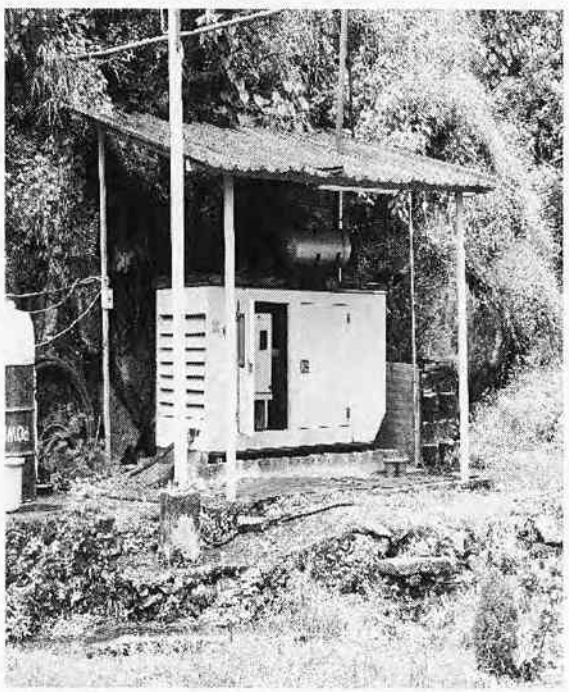
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Underground Power



Machine



DG Set



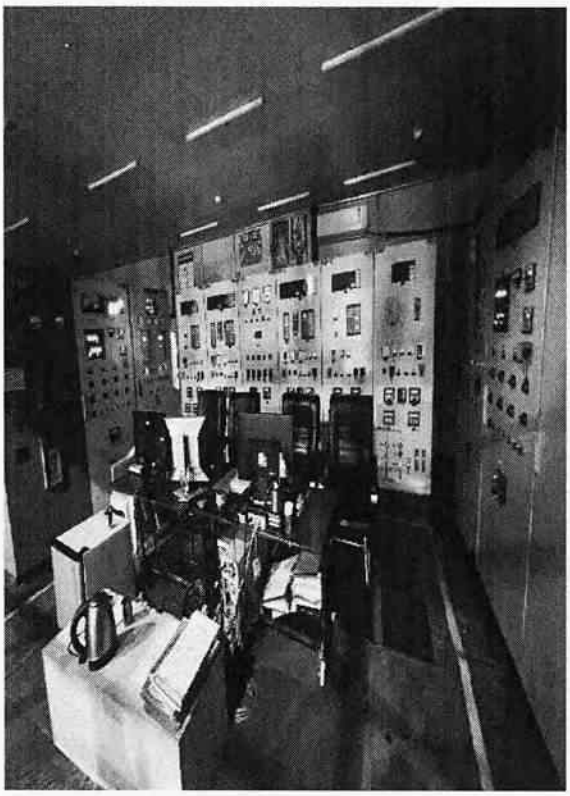
Switch Yard

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Control Unit



Damaged TRT



Trench weir is completely washed



Damage to intake gate structure

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BEAS KUND

The Beas Kund HEP (9 MW) was inspected by the Chief Engineer (Energy) , DoE, GoHP & Dy. Chief Engineer, DoE on dated 18.08.2024. Following are the observations:

Observation: -

As reported by the IPP after the cloudburst incident due to Flash flood on dated 25th July 2024 in early morning hours massive devastation happened in and around the Beas Kund SHEP . The reason for the flash flood was a cloudburst in Anjni Mahadev Nalaha. At that time the plant was running on 9.300 MW capacity. The shift incharge Er. Shyam Singh and Shift Electrician Mr .Varun Thakur was on their duty when they received a message (telephonically) at around 00:00 hrs from weir site gate operator Mr . Megh Singh, who was on night duty on that day, informed them regarding river water becoming very muddy and water discharge of river increasing rapidly. After that shift incharge shut down the plant at 00:30 hrs informed the same to our plant manager Er. Parmider Singh Boparaii. After shutting down the plant, instructions were given to the Gate operator at Weir site for closing the gate no 3 and to keep a close watch on river discharge. He was also instructed to report the same every 10 minutes. At around 0050 hrs gate no 3 was fully closed. After watching carefully they found that at around 0200hrs water discharge of the river increased instantly. After that they fully closed the PPV (penstock protection valve) at 0215 hrs. They also shut down our 33kv breaker at 0215hrs. At 0230 hrs river flash flood water entered our premises over the RCC protection wall and entered the power house, transformer yard, back yard, machine hall and control room at the same time. Because of the cloudburst heavy boulders in large quantities spread in the river. Due to this the whole river was flowing above this protection wall and remained in this condition for 5-6 hrs continuously. The muddy flood damaged turbine hall, control room and switchyard area. Which resulted in accumulation of sand /silt by 6-7 feet in our turbine hall, and 3-4 feet in the control room area.

When the river was flowing through the switchyard area our power export transformer (33/6.6 KV) fell down from its foundation and was submerged in sand /silted, store room and cable drums.

On dated 01.08.2024 flood occur second time in Beaskund river and damaged our Diversion structure and approach road to weir site

On the day of inspection the power House components cleaning and drying work was in progress. The project authorities stated that they will further taken 2-3 months to restart the generation. The intake restoration work will be taken up simultaneously but side wise generation can be start up. The project damage detail submitted by IPP is as per **annexure-X:**

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(Er. Sohan Lal)
Asstt. Executive Engineer (C),
GoHP, Shimla-05

(Er. Raj Kumar)
Asstt. Executive Engineer (C),
GoHP, Shimla-05

(Er. Dheeraj Verma)
Sr. Executive Engineer (C/M),
GoHP, Shimla-05

(Er. Deepak Jasrotia)
Head SDSO-cum-Dy.Chief Engineer
(Dam Safety), GoHP, Shimla-05

(Er. D.P. Gupta)
Technical Head- SDSO-cum
Chief Engineer (Energy),
DoE, GoHP, Shimla-05

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Annexure-I

DIRECTORATE OF ENERGY
GOVERNMENT OF HIMACHAL PRADESH
MC Parking Building, 2nd Floor, Near Tuttikandi Crossing Shimla HP 171005
Phone/ Fax No: 0177-2673553, Email: dir.doehp@nic.in, ceenergy09@gmail.com

HPDoE/CE (Energy)/ Malana-II HEP/2024/ - 3346-58 **Dated:** -12/8/**2024**

To

1. M/s Malana Power Company Ltd.,
   Village Chowki, PO Jari, Distt Kullu-175105
2. M/s Everest Power Pvt Ltd,
   Malana-II, HEP, First House, Bhumian Estate,
   Nav Bahar Bhumian Road, Chotta Shimla-171002
3. The General Manager,
   Parbati Stage-III, HEP, NHPC Ltd.,
   Bihali, P.O. Larji, Distt. Kullu (HP)-175122

Subject: - **Conducting an enquiry on Preliminary Report on the damages occurred to Malana-I, Malana-II, Sumez and Parbati-III HEPs in recent cloud burst incident.**

Reference: - GoHP letter No. Rev. (DMC) (F) 11-45/2019-Dam, Dated: - 05.08.2024.

Sir,

On the subject cited matter, the following committee has been constituted to have onsite inspection of Malana-I, Malana-II and Parbati-III H.EPs w.e.f. 19.08.2024 to 20.08.2024:-

DoE members:-

1. Er. D. P. Gupta (Chief Engineer, Energy, DoE).
2. Er. Deepak Jasrotia (Dy. Chief Engineer - DoE).
3. Er. Dheeraj Verma- Sr. Xen, DoE
4. Er. Raj Kumar - AEE - DoE.
5. Er. Harshveer Singh - JE – DoE.

External Experts:-

1. Dr. Sunil Bhardwaj, Scientist- F, Officer Incharge, RDC DGRE, Manali (Hydrology Expert).
2. Er. Arun Kumar (AGM) HPPCL Sundernagar (Dam Design Expert).

Representative from District Administration:-

1. S.D.M. Kullu Shri. Vikas Shukla (HPAS) for Malana I & Malana-II.
2. S.D.M. Banjar (HPAS) for Parbati-III.

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In view of the above, Malana-I, Malana-II and Parbati-III HEP authorities are requested to make all necessary arrangements for the said visit and the relevant record /drawings etc. be made available to the visiting team please.

Er. Dheeraj Verma, Sr. Executive Engineer, DoE is the nodal officer for this visit and he can be contacted on his Mobile No. 98050 89496 and email id doe.dheeraj@gmail.com.

This carries approval of State Government, please treat it as most urgent

By order
Director (Energy)
GoHP, Shimla-05.

Copy to:-

1. The Sr. Private Secretary to the Chief Secretary to GoHP for kind information of worthy Chief Secretary to GoHP Shimla-02 please.
2. The Additional Chief Secretary (Rev.) to the Govt. of Himachal Pradesh Shimla-02 for kind information please.
3. Dr Pramod Kumar Satyawali, Director, Defence Geo informatics Research Establishment, (DGRE) Him Parisar, Plot No. 1, Sector 37-A, Chandigarh – 160036 for kind information please,
4. The Director cum Spl. Secretary (Revenue-DM) to GoHP, Shimla-02 for kind information please.
5. The Deputy Commissioner Kullu, Distt. Kullu H.P. for information Please.
6. Dr. Sunil Bhardwaj, Scientist- F, Officer Incharge, RDC DGRE, Manali for kind information and favour of necessary action please.
7. Er. Arun Kumar, AGM (Dam Design Expert) C/o GM Design - HPPCL Sundernagar - 175019 for information favour of necessary action please please.
8. The S.D.M. Kullu, Distt. Kullu H.P. Shri. Vikas Shukla (HPAS) for information please and with request to accompany the visiting team on the day of inspection.
9. The S.D.M. Banjar, Distt. Kullu H.P. for information please and with request to accompany the visiting team on the day of inspection.
10. All the members of the committee for information and compliance please.

Chief Engineer (Energy),
Directorate of Energy, Shimla-05.

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Annexure - II

PARBATI-III POWER STATION - SALIENT FEATURES

LOCATION	
State	Himachal Pradesh
District	Kullu
River	Sainj
Nearest Rail head	Kiratpur (190 km)
Nearest Airport	Bhuntar (26 km)
HYDROLOGY (SAINJ RIVER)	
Catchment area at diversion site	650 square km
Snow catchment	152 square km
DIVERSION TUNNEL	
Number, size, shape & length	2 nos., 6.75m dia, Horse shoe shape 401 m & 460 m
Diversion discharge	800 m^3/sec
DAM	
Type	Rockfill dam
Maximum Dam height	43 m
Length at top including spillway	218 m
SPILLWAY	
Width of spillway	26.40 m
No. of bays	2
Width of each bay	7.2 m
Thickness of piers	6 m
Regulation gates	Hydraulically operated radial gates 2 nos. (7.2 m x 14 m)
R.C.C. Breast wall	21 m high
Tunnel Spillway	2
Shape and Size of tunnel spillway	Horse shoe shape 6.75m dia, 401 m and 460m
Design flood	3300 m3/sec (PMF)
RESERVOIR	
Full Reservoir Level (FRL)	EL 1330 m
Minimum draw down level (MDDL)	EL. 1314 m
PRE-SEDIMENTATION	
Gross storage at FRL	166.79 ha-m
Gross storage at MDDL	38.54 ha-m
Live storage	128.25 ha-m
Reservoir area at FRL	12.51 ha
Length of reservoir (fetch)	1.05 km
POST-SEDIMENTATION	
Gross storage at FRL	98.92 ha-m
Gross storage at MDDL	12.44 ha-m
Live storage	86.48 ha-m
Reservoir area at FRL	8.78 ha
Length of reservoir (fetch)	0.68 km
INTAKE	
Number & size of openings	2 nos., 8.7 m(B) x 7.2 m(H)
Bulk head gate (opening)	4.5 m x 5.0 m
Service gate (opening)	4.5 m(B) x 5.0 m (H)
Trash rack	Inclined, at 10°
INTAKE TUNNELS	
Number, size and shape	2 Nos., 5.0 m, D- shaped
Design discharge from intake	110.63 m3/sec in each tunnel
Length of intake tunnels	546 m & 493 m
DESILTING ARRANGEMENT	
Type	Dufour type
Number & size of desilting chamber	2 nos., 250.00 m x 12.20m x 22.50 m
Particle size to be removed	0.30 mm and above
Size & length of GOC of DC	70.0m x 5.4 m x 7.8 m
Size of gates	4.4 m x 5.0 m
Nos. & lengths of branch SFTs	2 nos., 184 m & 160 m
Main SFT size, shape & length	3 mx3m, D-shaped, 186 m(L), 136 m underground + 50 m in cut & cover
Size, shape & length of branch access adit to GOC to SFT	6.0 mx6.0 m, D-shaped, 210 m(L)
HEAD RACE TUNNEL	
Size, shape & length	7.25 m, Horse-shoe, 7876.99 m
Design discharge	177 m³/sec
SURGE SHAFT	
Type Restricted	Orifice type
Diameter & height	13 m Dia., 146.75 m Height
Top elevation	EL. 1410 m
Bottom elevation	EL. 1263.25 m
PRESSURE SHAFT	
Main (2 Nos. starting from Surge Shaft)	
Type	2 Nos., Circular, steel lined
Dia & length	4.50 m, 487 m & 540 m long each bifurcating into two Nos. 3.0 m dia penstocks near powerhouse
POWER HOUSE COMPLEX	
Type	Underground
Installed capacity	520 MW
Size of powerhouse cavern	122 m x 22 m x 45.8 m
Size of transformer cavern	90 m x 15.5 m x 25 m
No. & type of D/s surge chambers	4 Nos., Restricted Orifice Type
Size of D/s surge chamber	67 m x 14 m x 50 m
Nos. & size of draft tube gate	4 nos., 3.75 m x 4.5 m each
Type of turbine	Francis, vertical axis
Generating units	4 nos. of 130 MW each
Rated head	326 m
Type of switchgear	GIS type
Size of pothead yard	107 m x 27 m
Elevation of pothead yard Two tier	EL 1087 m/1082m
MAIN ACCESS TUNNEL TO POWER HOUSE	
Size of adit	8 m x 7 m, D-shaped
Length	1010 m
CABLE CUM VENTILATION TUNNEL	
Size, shape & length of tunnel	6m, D-shaped, 348 m(L) (191m underground & 157m in cut & cover)
TAIL RACE TUNNEL	
Size, shape & length	8.1 m dia, Horse-shoe, 2713 m
Outlet gate size	6.7 m x 8.4 m
POWER GENERATION	
Installed capacity	520 MW
Annual energy generation in 90% Dependable year at 95% machine Availability	1963.29 MU
COST	
Estimated Cost of Project	Rs 2304.56 Crore (at May 2005 Price Level)
Revised Approved Project Cost	Rs 2539.75 Crore

Directorate of Energy,
H.P., Shimla-171005

Information Supplied to Sh. Sumit Mahan
Under RTI Act, 2005.

Annexure-III
Urgent
Through e-Mail

File No. MPP-F(10)36/2022
Government of Himachal Pradesh
Department of MPP & Power

Directorate of Energy Shimla-171005
Diary No. 3669
Date 29/8/2024

From

The Chief Secretary (Power) to the
Government of Himachal Pradesh

To

The Director of Energy,
2nd Floor, Multi Storey Parking,
Tutikandi, Shimla-05.

Date: Shimla-2, the 19 /08/2024

Subject:- **Request to take Suo Moto Cognizance of the Sudden Release of Water by NHPC Stage-3 around 3;15 am on august 1st, 2024 and omission on the part of Dam Authorities to Absorb and Maintain this Dam at Minimum Draw Down Level (Mddl).**

Sir,

I am directed to enclose herewith a copy of e-Mail dated 1st August, 2024 received from Sh. Khem Raj Sainj, Kullu, Himachal Pradesh on the subject cited above and to request to you examine the matter and send your comment/ATR to this department at the earliest so that further action in the matter could be taken accordingly.

Yours faithfully,

(Arindam Chaudhary, I.A.S)
Special Secretary (Power) to the
Government of Himachal Pradesh

Dy CE (Cell-1)

Director (Energy)
C.E. (Energy)
Dy. CE (Cell No. -1)
Dy. CE (Cell No. -2)
S.E. (Cell No. -3)
Admn. Finance, Accounts

Dy CE (Cell-1)
19/8/24

S.E. (Cell-I)

examine & put up plz

AEE (Cell)

29.08.2024

31/1/25

Public Information Officer
-cum- Sr. Executive Engineer,
Directorate of Energy,
H.P., Shimla-171005

JE (Safety)

Information Supplied to Sh. Sumit Mahar
Under RTI Act, 2005.

Email **Prabodh Saxena**

Request to take Suo Moto Cognizance of the Sudden Release of Water by NHPC Stage-3 around 3:15 am on august 1st, 2024 and omission on the part of Dam Authorities to Absorb and Maintain this Dam at Minimum Draw Down Level (mddl)

From : ktkhemraj1@gmail.com

Thu, Aug 01, 2024 03:58 PM

9 attachments

Subject : Request to take Suo Moto Cognizance of the Sudden Release of Water by NHPC Stage-3 around 3:15 am on august 1st, 2024 and omission on the part of Dam Authorities to Absorb and Maintain this Dam at Minimum Draw Down Level (mddl)

To : US Petition RB <Us.petitions@rb.nic.in>

Cc : Sukhvinder Singh <Cm-hp@nic.in>, Prabodh Saxena <cs-hp@nic.in>, Ajay Kumar <Admn-ndsa@gov.in>, Director FCA <Dirfca-cwc@nic.in>, Harikesh Meena, IAS <dir.doehp@nic.in>, Deputy Commissioner Kullu <dc-kul-hp@nic.in>, SDM Banjar <sdmban-kul-hp@nic.in>

Date : 01-08-2024

To,
The Honourable Authorities,

This Mailer/sender is writing this complaint to bring to your esteemed attention, the horrifying incident that occurred today in Sainj Valley region. Despite the last year inquiry conducted by the Directorate of Energy (hp) with the aid and assistance of the experts from the Central Water Commission still no remedial measures were taken or effectively implemented or followed by the dam authorities.
Furthermore, this shows the sheer lack of supervision and control by the recipients of this mail, as the mandatory provisions of the Dam Safety Act 2021, such as conducting comprehensive safety evaluations and regular pre and post-monsoon inspections, as well as scheduled inspections to equip robust early warning systems, have been seriously flouted away.
Consequently, the sudden release of water by NHPC Stage-3 early this morning has endangered the lives, safety, and property of citizens living downstream. Despite several show cause notices issued by the Directorate of Energy (hp) , to the large/specified dam authorities, no effective changes have been made in the operation of these hydro power projects. All the actions are just kept in black letters, and the actions required to ensure safety and compliance have not been implemented at the ground level.

Lastly, the mailer would like to end this mail/complaint with the hope that serious action will be taken by the authorities to curb these menaces in the future.Attached herewith are the photos and videos of these incidents, recorded by myself and collected from social media platforms, as evidence of the occurrences.

Public Information Officer
-cum- Sr. Executive Engineer
Directorate of Energy,
H.P., Shimla-171005

Information Supplied to Sh Sunil Mankar
Under RTI Act, 2005.

Yours faithfully,

Khem Raj
Sainj , Kullu , Himachal Pradesh
175134
ktkhemraj1@gmail.com
7986484850

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31/1/25

Public Information Officer
-cum- Sr. Executive Engineer,
Directorate of Energy,
H.P., Shimla-171005

Information Supplied to Sh. Sunil Kumar
Under RTI Act, 2005.

30

Director Energy GoHP <ceenergy09@gmail.com>

Appeal to save life and properties of residents living downstream of NHPC Parbati Project Phase 3 Behali Sainj Kullu-Reg.

Sh. R.P.S. Verma <dir-ronr-ndsa@gov.in>
To Anil Jain <chmn-ndsa@gov.in> Tue, Aug 20, 2024 at 2:44 PM
Cc "Sh. Vivek Tripathi" <memdr-ndsa@gov.in>, Rahul Kumar Singh <dirdr-ndsa@gov.in>, djjayin <djjayin@gmail.com>, ceenergy09 <ceenergy09@gmail.com>, cmd <cmd@nhpc.nic.in>

Directorate of Energy, Shimla-171005
Diary No. 3627
Date 21/8/2024

Sir,

Please find the attachment on the aforesaid subject matter, wherein an appeal to save life and properties of residents living downstream of NHPC Parbati Project Phase-3 Behali Sainj Kullu made by Residents of Behali Sainj Kullu to Hon'ble President of India.

It has been stated that the severe flooding occurred in the early morning of 01.08.2024, in Sainj Bazar and downstream areas, resulting from the sudden release of water from the NHPC Parbati Project Phase 3 in Behali, Sainj, Kullu (HP). This recent disaster has caused massive damage to both public and private property.

The similar incident was also happened in July, 2023, which also stemmed from sudden water release from the same dam. The residents have requested that the Central team which will visit the Sainj Project will also examine the concerns outlined in the Annexure which is the Checklist of compliance.

Therefore, it is, requested to provide a copy of the attached letter to Panel of dam experts which will be visiting the dam for their examination of the concern expressed in the Annexure attached with the letter.

This is for your kind information and further needful action pl.

With Regards

R.P.S. Verma
Regional Director,
National Dam Safety Authority
Northern Region, Chandigarh

DY. CE (Cell-1)

Director (Energy)
C.E. (Energy)
S.E. (Elect.Engg., LT, Wh. SDA, Sunday)
S.E. 2 (TEC)
S.E. 3 (Power Cell & SDA, Commercial Billing)
S.E. 4 (Appl. Policy, LADF, Legal, V.S., Monitoring)
Admin. & Computer & Finance)

S.E. Yer-1

AEE (Cell-1)

31/1/25

20-8-2024

JE (Dam Safety)

29.08.2024

Public Information Officer
-cum- Sr. Executive Engineer,
Directorate of Energy,
H.P., Shimla-171005

Information Supplied to Sh. Sumit Mahar
Under RTI Act, 2005.

31

प्राप्ती सं 576
दिनांक 19.08.2024
कार्यालय मुख्य अभियन्ता (वि.प.)
ऊर्जा विभाग, शिमला-2

President of India,
President Secretariat,
Rashtrapati Bhavan,
New Delhi 110004

August 12, 2024

Appeal to save Life and Properties of residents living downstream of NHPC Parbati Project Phase 3 Behali Sainj Kullu.

Hon'ble Madam,

Jai Hind.

We are writing to urgently bring to your kind attention the severe flooding that occurred in the wee hours of August 1, 2024, in Sainj Bazar and downstream areas, resulting from the sudden release of water from the NHPC Parbati Project Phase 3 in Behali, Sainj, Distt Kullu (H.P.). This recent disaster has caused extensive damage to both public and private properties.

This situation is particularly more distressing as it follows the devastating incident in July 2023, which also stemmed from sudden water releases from the same dam. More perturbing is that this incident happened when there was no unprecedented increase in water levels which affirms our earlier stand that incidents can be attributed to problems in management of water and violations of other dam safety guidelines. The earlier incident left many families homeless and severely disrupted their livelihoods. **The matter was also taken up with your honour vide our letter dated 03/11/2023.**

Despite our previous plea for intervention, the recent flooding indicates that the **underlying issues with the dam's operation have not been adequately addressed.**

Director
13/8/24
Sri Umesh Ji

31/1/25
Public Information Officer
-cum- Sr. Executive Engineer,
Directorate of Energy,
H.P., Shimla-171005

Information Supplied to Sh Sumit Mahar
Under RTI Act, 2005.

32

We understand that a team of central government dam experts will be visiting three dams in Kullu District, including the Sainj Project. We request that this team also examines the concerns outlined in the attached **annexure**.

Given the critical nature of this issue, pending taking a view on various other issues, we respectfully request your intervention to:

1. **Direct NHPC to acquire properties in Sainj Bazar (left side of downstream) which are under immediate threat of inundation and other affected areas, compensating the owners suitably.**
2. **Ensure that the upstream dams of NHPC and HPPCL do not impound water beyond safe levels during the remaining monsoon period to prevent further flooding.**

We will appreciate your prompt attention to this urgent matter and thank you in advance for your support.

Sincerely with highest regards,

Affected Residents of Sainj

As per list attached

Any Communication to be made to:

Rajesh Kumar S/O Shri Budh Ram

Vill Sainj Distt Kullu. 175134

Sainj Distt Kullu (H.P)

Mobile 7876405879

E Mail: MLSHARMA18@GMAIL.COM

31/1/25

Public Information Officer
-cum- Sr. Executive Engineer,
Directorate of Energy,
H.P., Shimla-171005

Information Supplied to Sh Sumit mahar
Under RTI Act, 2005.

Copy to: **Minister of Power & Renewable Energy Govt of India** Sharam Shakti Bhavan, Rafi Marg New Delhi 110001 for necessary action. We also draw your attention to our Memo dated 03/11/2023 addressed to President of India and a copy endorsed to you.

Copy to: **Chief Secretary to Govt of Himachal Pradesh Secretariat Shimla** 171002 with reference to the correspondence resting vide our letter dated 06.08.2024 addressed to honourable Chief Minister of HP and a copy endorsed to you.

Copy to: **Secretary Power to Govt of Himachal Pradesh Secretariat Shimla** 171002 for necessary action.

Copy to: The Secretary, Central Electricity Authority, Room No. 206 (North), 2nd floor, Sewa Bhawan, Rama Krishna Puram, Sector-1, New Delhi-110066. Phone Number: 011-26732500.

Copy to: The Chairman, Central Water Commission, Sewa Bhawan, Rama Krishna Puram, Sector-1, New Delhi for necessary action.

Copy to: District Magistrate Kullu with reference to the correspondence resting vide our letter dated 06.08.2024 addressed to honourable Chief Minister of HP and a copy endorsed to you and issues raised in this memo for your necessary action.

Copy to: National Dam Safety Authority, Dam Safety Design II Directorate, Room No 411, 4th floor, Sewa Bhavan RK Puram, New Delhi 110066 for necessary action and also request you to provide a copy of the letter to panel of dam experts which will be visiting the dam for their examination of the concerns expressed in the Annexure attached to the letter.

Copy to: **The Director, Central Dam Safety Organisation Central Water Commission** 3rd Floor, New Library Building R. K. Puram, New Delhi – 110066.

31/1/25

Public Information Officer
-cum- Sr. Executive Engineer,
Directorate of Energy,
H.P., Shimla-171005

Information Supplied to Sh Sumit Mehra
Under RTI Act, 2005.

Copy to: **SE (C) IBO National Dam Safety Authority, Regional Office Northern Region**, Block 4, 6th Floor Kendriya Sadan, Sector 9 A Chandigarh 160009

Copy to: **The Director (Environment, Science Technology & Climate Change Govt of Himachal Pradesh** Press Villa, Paryavaran Bhavan US Club Shimla -1

31/1/25

Public Information Officer
-cum- Sr. Executive Engineer
Directorate of Energy
H.P., Shimla-171005

Information Supplied to Sh Sumit Kumar
Under RTI Act, 2005.

SIGNATORIES TO THE MEMORANDUM:

S No	Name of Resident	Address	Signature	Mobile No
1	[illegible]	Saini	[signature]	98822-28000
2	RAJESH KUMAR	SAINJ	[signature]	98171 80990
3	[illegible]	SAINJ	[signature]	98160 33768
4	[illegible]	SAINJ	[signature]	9882152111
5	[illegible]	SAINJ	[signature]	9805412986
6	ANIL SHARMA	SAINJ	[signature]	9805338098
7.	Chandan sharma	saini	[signature]	9816408002
8.	Yogender Pal sharma	saini	[signature]	9816615001
9.	[illegible]	SAINJ	[signature]	98172-61224
10	[illegible]	SAINJ	[signature]	
11	[illegible]	SAINJ	[signature]	
12	Akshit Sharma	Saini	[signature]	7833024009
13.	Kuldeep Kumar	Saini	[signature]	9857005829
	Gian Chand Sharma	Saini	[signature]	8894898009
	Jageshlath Kanday	Rai	[signature]	98165 55316

2/11/25

Public Information Officer
-cum- Sr. Executive Engineer,
Directorate of Energy,
H.P., Shimla-171005

Information Supplied to Sh [illegible] manager
Under RTI Act, 2005.

16 - Sanjeev Sharma 98160 49094

17 Gavesh Sharma - VPO Sainj 75597 00094

18. Budhi Singh VPO Sainj - Budhi Singh 98163 62007

19. [illegible] 98162 17661

20. [illegible] 98162 47331

21 [illegible] 80916 70207

22 [illegible] 78762 01546

23. [illegible] 98825 28500

31/1/25

Public Information Officer
-cum- Sr. Executive Engineer,
Directorate of Energy,
H.P., Shimla-171005

Information Supplied to Sh [illegible]
Under RTI Act, 2005.

ANNEXURE

CHECKLIST OF COMPLIANCES

1. Investigating officials to ensure that relevant provisions under DSA like setting up of Early warning system including scientific systems to anticipate and forecast inflow / outflow of water and forecasting of floods, setting up of control rooms, reservoir maintenance and better communication between dam sites, power houses and upstream dam was in place before and on the day of devastation.

2. Does the dam management have an emergency action plan and operational manual for the dam, outlining procedures for protecting life and property both upstream and downstream in the event of dam failure or to mitigate the effects of any disaster? Has this plan been updated as per CWC guidelines and followed strictly, considering the public interest as specified in section 2 of the Dam Safety Act, 2021?

3. What is the hazard potential level of the dam based on parameters like impact of failure of the dam on downstream human life, property damage, lifeline disruption, and environmental concerns.

4. Whether the dam authorities have revised inundation mapping post large-scale devastation during last year which has exposed the remaining market directly to threat of floods. Has the change in risk perception been considered while reviewing SOP of the dam.

5. Have proper instrumentation and structures, such as concrete embankments and diversion tunnels, been constructed to protect the life and properties of citizens near the dam and vulnerable areas? Has structural safety inspection been conducted by the authority both pre and post the Dam Safety Act, 2021.

31/1/25

Public Information Officer
-cum- Sr. Executive Engineer,
Directorate of Energy,
H.P., Shimla-171005

Information Supplied to Sh Sumit Mahar
Under RTI Act, 2005.

6.. What are the probabilities of compulsory acquisition of affected areas owned by individuals following a comprehensive dam safety evaluation as per section 38 of the Dam Safety Act, 2021? Authorities are requested to conduct this evaluation and provide a report on the probabilities and expected compulsory acquisition of vulnerable and dangerous areas based on past flood incidents occurring at different intervals of time, ensuring the security of the inhabitants' lives and properties.

7. Investigating officials must verify that NHPC has provided a "Dam Safety Unit" for the said dam? If so, the number of members with their qualifications, detailing their daily visits including those overseeing the operations on the days of disasters during July 2023 and also during current year may be verified by the investigating officials

8. Were annual pre and post-monsoon inspections conducted by the dam management through their dam safety unit and by the NDSA and SDSO for the year 2021 to June 2024.

9. Whether the dam authorities have ensured compatibility in receiving and releasing water with the upstream dam of HPPC Ltd. Was the dam located downstream (NHPC) able to absorb the entire water released by the dam upstream (HPPCL) during flooding.

10. Has the cascading effect of release of water by upstream dam been taken in to account while reviewing the Standard Operating Procedure (SOP) of dam.

11. Have the dam authorities taken in to account change in risk perception after the Phase II of the dam becomes operational.

12. Please ensure that a copy of the Annual Safety Evaluation Report prepared by the State Dam Safety Organisation/ NDSA of the dam for the

31.1.25

Public Information Officer
-cum- Sr. Executive Engineer,
Directorate of Energy,
H.P., Shimla-171005

Information Supplied to Sh Sumit Thakur
Under RTI Act, 2005.

39

financial year ended March 2023, detailing the dam's activities and safety status has been submitted to the state Government and the State Disaster Management Authority and NDSA.

13. Ascertaining compliance with the guidelines for disposal of silt/muck dumping: Has the Dam management complied with these guidelines? Were muck dumping activities carried out in accordance with the guidelines set by the Hon'ble Supreme Court and the National Green Tribunal at designated sites?

14. Did the NHPC dam authority continued with generating electricity during the periods of floods despite the alerts declared by the state meteorological department. Please also ensure that the dam reservoir was not filled beyond the permitted/sanctioned capacity during the onset of monsoon?If not, kindly investigate and inspect the technical documentation and instrumentation pertaining to electricity generation and outflow readings during this period.

31/1/25

Public Information Officer
-cum- Sr. Executive Engineer,
Directorate of Energy,
H.P., Shimla-171005

Information Supplied to Sh Sumit Mahar
Under RTI Act, 2005.

Director Energy GoHP <ceenergy09@gmail.com>

Request to take Suo Motu Cognizance of the recent Dam Burst / Failure at the Malana Stage-1 Hydro Power Project and the Sudden Release of Water by NHPC Stage-3 at 3:15 am on august 1st, 2024 and omission on the part of both Dam Authorities to Absorb and Maintain these Dams at Minimum Draw Down Level (mddl)

Tara Devi <taradevi13121972@gmail.com> Thu, Aug 1, 2024 at 1:07 PM
To: Us.petitions@rb.nic.in
Cc: Cm-hp@nic.in, Admn-ndsa@gov.in, Dirfca-cwc@nic.in, Pnddte-cwc@nic.in, fmdte@nic.in, sdmban-kul-hp@nic.in, dc-kul-hp@nic.in, cs-hp@nic.in, "ceenergy09@gmail.com" <ceenergy09@gmail.com>

Tara Devi (president)
Badh Prabhavit Sangathan Sainj
Sainj , Kullu , Himachal Pradesh
175134
taradevi13121972@gmail.com
8091211957

Directorate of Energy Shimla - 171005
Diary No. 2965
Date 6/8/2024

JE (Dam Safety)
07/08/24
AE (Safety)
07/08/24
Director (Energy)
C.E. (Energy)
S.E.-1 (Dam,Env., I.T., Wb, SDA, &Hqrs)
S.E.-2 (TEC)
S.E.-3 (Power Sale,SDA, Commercial Billing)
S.E.-4 (Allot, Policy, LADF,Legal, V.S., Monitoring, Admn., Accounts & Finance)
01-8-2024
S.Xen-II (Ceeno.-1)

Date : 01-08-2024

To,
The Honourable Authorities,

This Mailer/sender is writing this complaint to bring to your esteemed attention, the horrifying incident that occurred today in the Malana and Sainj Valley regions. Despite the last year inquiry conducted by the Directorate of Energy (hp) with the aid and assistance of the experts from the Central Water Commission still no remedial measures were taken or effectively implemented or followed by the dam authorities.

Furthermore, this shows the sheer lack of supervision and control by the recipients of this mail, as the mandatory provisions of the Dam Safety Act 2021, such as conducting comprehensive safety evaluations and regular pre and post-monsoon inspections, as well as scheduled inspections to equip robust early warning systems, have been seriously flouted away.

Consequently, the dam burst at Malana Stage-1 and the sudden release of water by NHPC Stage-3 early this morning have endangered the lives, safety, and property of citizens living downstream. Despite several show cause notices issued by the Directorate of Energy, Himachal Pradesh, to the large/specified dam authorities, no

31/1/25
Public Information Officer
-cum- Sr. Executive Engineer,
Directorate of Energy,
Shimla-171005

Information Supplied to Sh Sunil Thakur
Under RTI Act, 2005.

41

effective changes have been made in the operation of these hydro power projects. All the actions are just kept in black and white, and the actions required to ensure safety and compliance have not been implemented at the ground level.

Lastly, the mailer would like to end this mail/complaint with the hope that serious action will be taken by the authorities to curb these menaces in the future.Attached herewith are the photos and videos of these incidents, recorded by myself and collected from social media platforms, as evidence of the occurrences.

Yours faithfully,

Tara Devi (president)
Badh Prabhavit Sangathan Sainj
Sainj , Kullu , Himachal Pradesh
175134
taradevi13121972@gmail.com
8091211957

11 attachments



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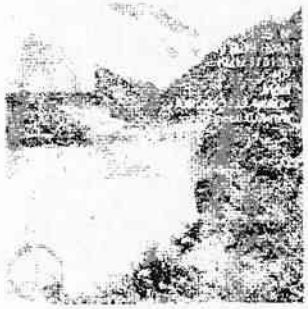
Public Information Officer
-cum- Sr. Executive Engineer,
Directorate of Energy,
H.P., Shimla-171005

Information Supplied to Sh Sunil Thakur
Under RTI Act, 2005.

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31/1/25

Public Information Officer
-cum- Sr. Executive Engineer,
Directorate of Energy,
H.P., Shimla-171005

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video-output-FDA1AF61-A91C-4BBF-A9F9-48823D3D1ACC.MOV
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Information Supplied to Sh Sumit mahar
Under RTI Act, 2005.



File No. MPP-F(10)-13/2023
Government of Himachal Pradesh
Department of MPP & Power

From

The Chief Secretary (Power) to the
Government of Himachal Pradesh

To

The Director Energy,
Multi Storey Parking, 2nd Floor
Tutikandi Shimla-5

Dated Shimla-2, the 22-8-2024

Subject: - Reg. Heavy flooding of Sainj Bazar and other downstream areas causing large scale damages to properties on early morning of August 01, 2024 due to sudden release of water by NHPC from Parbati Power Project Phase 3 Bihali Sainj Distt. Kullu.

Sir,

I am directed to invite your attention to memorandum dated 6th August, 2024 received from Gaurav Sharma S/o Shri Sham Sunder Sharma, Sainj, Distt. Kullu addressed to this department and copy thereof endorsed to you amongst other on the subject cited above and to request you to look into the matter and take further necessary action under intimation to this department.

Yours faithfully,

(Arindam Chaudhary)
Special Secretary (Power) to the
Government of Himachal Pradesh

SE(Cell-1)

Director (Energy)
C.E. (Energy)
Dy. CE (Cell No. -1)
Dy. CE (Cell No. -2)
S.E. (Cell No. -3)
Admn. Finance, Accounts

23/8/24

31/1/25

Public Information Officer
-cum- Sr. Executive Engineer,
Directorate of Energy,
H.P., Shimla-171005

AEE(Cell-1)

S.E.(Cell-I)

JE(Perm Safety)

02/09/2024

Information Supplied to Sh Sanjit Mahar
Under RTI Act, 2005.

44

O/o the Chief [illegible]
Ltr. No. 5612-20
Dated 13-8-24
16-08-24

MEMORANDUM

The Chief Minister,

Himachal Pradesh, Shimla

August 06, 2024

12/8/24
SS(MPP)

Through: Tehsildar Sainj, Distt. Kullu

Heavy flooding of Sainj Bazar and other downstream areas causing large scale damages to properties on early morning of August 01,2024 due to sudden Release of water by NHPC from Parbati Power Project Phase 3 Bihali Sainj Distt Kullu

Honourable Sir,

Jai Hind

We residents of Sainj wish to draw your kind attention to the grave situation that has unfolded in Sainj, Distt. Kullu, and other downstream areas due to the sudden release of water from the captioned dam.

This incident is both grim and shocking, especially in the wake of large-scale devastation of July 2023 also caused due to sudden release of water which resulted in the inundation of numerous houses and acres of commercial and agricultural land.

The disaster had rendered large number of families homeless resulting in loss of their homes, livelihoods, and belongings which was also witnessed by you during your visit to Sainj on 12/07/23.

This recent incident is particularly alarming and frightening because the sudden release of water is not due to heavy inflows into the dam's feeding rivers from heavy rains, as was falsely claimed by the dam owners last year. Instead, it is purely a case of gross negligence, lack of robust risk management practices, and flagrant violations by the dam owners of dam safety and water management norms, including

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Under RTI Act, 2005.

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सैंज-वक्शाहल सड़क की मुरम्मत को एनएचपीसी ने बढ़ाए हाथ, 15 दिनों में सड़क को दुरुस्त करेंगी एनएचपीसी की मशीनें



सैंज, (आपका फैसला)। प्राकृतिक आपदा से 9 माह पूर्व क्षतिग्रस्त हुई सैंज-वक्शाहल सड़क की मरम्मत के लिए एनएचपीसी पार्वती पावर स्टेशन चरण 3 ने सैंज बैली विकास समिति के आग्रह पर सड़क को ठीक करने के लिए मशीन व टीपर भेजने का भरोसा सैंज बैली विकास समिति के पदाधिकारीयों को दिया है । बुधवार को सैंज बैली विकास समिति के प्रधान बुधराम की अध्यक्षता में ग्रामीणों ने पार्वती पावर स्टेशन चरण 3 के महाप्रबंधक प्रभारी प्रकाश चंद से शिष्टाचार भेंट के दौरान गांव की समस्याओं को उनके समक्ष रखा। विकास समिति के अध्यक्ष बुध राम तथा अन्य ग्रामीणों ने अपना दुखड़ा सुनते हुए पार्वती तीन के महाप्रबंधक प्रभारी को बताया कि प्राकृतिक आपदा से वक्शाहल गांव को जोड़ने वाली सैंज - वक्शाहल सड़क पूरी तरह से क्षतिग्रस्त हुई है और बीते 9 माह से उक्त मार्ग अपनी बदहाली पर आंसू भा रहा है । सड़क की मरम्मत के लिए ग्रामीण तथा विकास समिति के पदाधिकारीयों ने एनएचपीसी से मदद की गुहार लगाते हुए कहा कि सड़क को ठीक करने के लिए उन्हें मशीन व टीपर की आवश्यकता है ताकि स्कूली बच्चों तथा आम जनता को आने-जाने में मुसीबतों का सामना न करना पड़े। बता दे की पार्वती पावर स्टेशन चरण 3 के महाप्रबंधक प्रभारी प्रकाश चंद ने ग्रामीणों की मांग को स्वीकार करते हुए भरोसा दिया है कि 22 अप्रैल से एनएचपीसी की मशीन व टीपर सड़क की मरम्मत कार्य के लिए वक्शाहल भेज दिए जाएंगे। पार्वती तीन के महाप्रबंधक प्रभारी प्रकाश चंद ने कहा कि एनएचपीसी द्वारा प्राकृतिक आपदा से हुए नुकसान की भरपाई के लिए प्रशासन को करीब 4 करोड़ देने की घोषणा की है और प्रथम किस्म के तौर पर एनएचपीसी ने 94 लाख रुपए का चैक जिला प्रशासन को सौंप दिया हैं। उन्होंने कहा कि प्रथम किस्त को खर्च करने के बाद एनएचपीसी दूसरी किस्त प्रशासन को जारी करेगें । उन्होंने कहा कि एनएचपीसी ने पार्वती तीन को डैम साइट से बिहाली तक गांव, घरों तथा सार्वजनिक संपत्ति को बचाने के लिए करीब 4 करोड़ रुपए जिला प्रशासन को देने की घोषणा की है?। महाप्रबंधक ने कहाँ कि जिसमें वक्शाहल गांव भी शामिल है। उल्लेखनीय है पार्वती तीन के महाप्रबंधक प्रभारी प्रकाश चंद ने लोगों की मांग पर सैंज वक्शाहल सड़क की मरम्मत कार्य के लिए 15 दिनों तक मशीन व टीपर भेजने का भरोसा समिति के प्रधान तथा ग्रामीणों को दिया है उन्होंने कहा कि एनएचपीसी हमेशा समय-समय पर लोगों की समस्या के निदान के लिए सहयोग देती रहती है। बता दें कि सैंज बैली विकास समिति के बैनर तले बुधवार को प्रतिनिधि मंडल ने एनएचपीसी के महाप्रबंधक प्रभारी से शिष्टाचार भेंट कर अपनी समस्याओं को उनके समक्ष रखा है। प्रतिनिधि मंडल में शामिल सैंज बैली विकास समिति के अध्यक्ष बुधराम, देवता लक्ष्मी नारायण के कारदार जगरनाथ, बुद्धि सिंह ठाकुर, भगत राम, कुंज लाल, गुप राम तथा तुले राम आदि ने एनएचपीसी के महाप्रबंधक प्रभारी प्रकाश चंद का आभार व्यक्त करते हुए कहा कि एनएचपीसी का सहयोग उन्हें हमेशा मिलता रहा है। उन्होंने कहा कि इससे पूर्व भी एनएचपीसी ने एक सप्ताह से अधिक समय के लिए मशीन व टीपर भेजकर सड़क को बहाल करने में अपना सहयोग दिया था लेकिन अब सड़क को पूर्ण रूप से दुरुस्त करने के लिए एनएचपीसी ने फिर मशीन व टीपर भेजने की मांग को स्वीकार किया है।

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NEWS TOPICAL LIVE
सैंज, बंजार, आनी, कुल्लू

05/08/2024 सोमवार NEWS TOPICAL सैंज

बाढ़ वाले एरिया को डेंजर जोन घोषित करें सरकार और भूमि को करें अधिकृत: बुध राम



सैंज वैली विकास समिति ने सरकार से की मांग

खेमचंद सोनी

दो दिन पहले सैंज घाटी में हुई भारी बारिश के कारण एक बार पार्वती जल विद्युत परियोजना और सैंज परियोजना के डैम से छोड़े पानी ने सैंज घाटी के लोगों को डरा दिया। बांध से पानी छोड़ने से सैंज नदी में फिर से बाढ़ आ गई और लोगों की सैकड़ों बीघा भूमि को तबाह कर गई और साथ में सड़कों को भी नुकसान पहुचाया। इस तरह का मंजर देखने के पश्चात सैंज घाटी के बाढ़ प्रभावित लोग सहमे हुए हैं। उधर सैंज वैली विकास समिति भी परियोजना के खिलाफ स्वर मुखर होने लगी है। पिछले वर्ष भारी बरसात के कारण सैंज पिन पार्वती नदी में आई बाढ़ के कारण घाटी के लोगों के कई पुश्तैनी मकान, जमीन, दुकाने, कारोबार तहस नहस कर दिया था और अभी उनके यह जख्म भरे भी नहीं थे तो इस बार फिर से परियोजना बांध से छोड़े गए पानी ने उनको डरा दिया है। सैंज विकास समिति के प्रधान बुधराम ने बताया कि पिछली वर्ष सैंज नदी में प्रलयकारी बाढ़ ने न्यूली से लेकर लारजी तक लोगों के घर, मकान ,दुकान और उपजाऊ भूमि तबाह कर दी थी और अभी सरकार और प्रशासन बाढ़ प्रभावितों को मुआवजा तक नहीं दे पाई और ना ही सुरक्षा के कोई पुख्ता इंतजाम हुए। इस बार सैंज नदी में बाढ़ तो नहीं आई लेकिन सैंज परियोजना और पार्वती जल विद्युत परियोजना के बांध से भारी मात्रा में पानी छोड़ने से फिर से भारी नुकसान हुआ। जहा सरकार ने ट्रेजिंग कार्य और क्षतिग्रस्त सड़कों को बनाने के लिए करोड़ों रुपए खर्च किए थे वह डैम से छोड़े पानी ने चंद मिनट में बहाया और सरकार व प्रशासन को करोड़ों का नुकसान तो हुआ ही हुआ और साथ में ग्रामीणों को भी लाखों का नुकसान उठाना पड़ा। जिस कारण सैंज घाटी की जनता में परियोजना की कार्यप्रणाली के प्रति खासा रोष देखने को मिल रहा है। सैंज वैली विकास समिति के प्रधान बुध राम ने बताया कि उन्होंने समिति के माध्यम से सरकार और जिला प्रशासन को कई प्रस्ताव भेजे और कुल्लू और बजार के कई चक्कर काटे तो प्रशासन और सरकार के कानों जू तक नहीं रेंगी मुआवजा राशि तो दूर सुरक्षा के लिए एक क्रेटवाल भी साल भर में नहीं लगा पाए। उन्होंने कहा कि आश्वासन की जाल में प्रशासन ने प्रभावितों को फंसा कर पूरा एक वर्ष बिताया और समस्या जस की तस है। सैंज वैली विकास समिति के प्रधान बुध राम ने जिला प्रशासन से मांग की है कि परियोजना में भारी बारिश के कारण पानी हर साल डैम में जमा होना है और ऐसे में परियोजना वाले बार-बार डैम से पानी को छोड़ेंगे और जिस कारण हमारा बार-बार नुकसान होता रहेगा तो उन्होंने कहा कि प्रशासन संयुक्त तौर पर इसका सर्वेक्षण करें और जहा डैम के पानी का बहाव पहुंचता है वहा निहारनी से बिहाली तक डेंजर जोन घोषित करें और उसे भूमि को अधिकृत करें और तब समस्या का हल होगा। बकशाहल निवासी बुध राम,तुले राम,सचिव देवी राम,वार्ड पंच विद्या देवी,रोशन लाल, दौतराम, अमृत राम, दया,नैना,देहरी देवी,निर्मला, मनो राम,सतु गीता आदि ने कहा कि 31जुलाई को डैम का पानी छोड़ने से आई बाढ़ के कारण उनके खेतों में टमाटर ,मक्की की फसल तबाह हो गई और सड़क बह गई। जिस कारण उनको सब्जी मंडी तक अपना उत्पाद पीठ में उठा कर ले जाना पड़ रहा है और बच्चों को चलने में दिक्कतों का सामना करना पड़ रहा है। उन्होंने मांग की है कि शीघ्र प्रशासन और एनएचपीसी उनकी सड़क को बनाए और क्षतिग्रस्त फसल का मुआवजा दे और बकशाहल गांव को डेंजर जोन घोषित करें। सैंज वैली विकास समिति के प्रधान बुध राम ने जिला प्रशासन से मांग की है कि परियोजना में भारी बारिश के कारण पानी हर साल डैम में जमा होना है और ऐसे में परियोजना वाले बार-बार डैम से पानी को छोड़ेंगे और जिस कारण हमारा बार-बार नुकसान होता रहेगा तो उन्होंने कहा कि प्रशासन संयुक्त तौर पर इसका सर्वेक्षण करें और जहा डैम के पानी का बहाव पहुंचता है। वहा निहारनी से बिहाली तक डेंजर जोन घोषित करें और उसे भूमि को अधिकृत करें और तब समस्या का हल होगा।

31/1/24
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Information Supplied to Sh. Sumit Mahor
Under RTI Act, 2005.

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सैंज वैली विकास समिति

ज्ञापन

सेवा में,
जिलाधीश महोदय,
जिला कुल्लू, हि प्र।

विषय : **सैंज घाटी के बाढ़ प्रभावित परिवारों की समस्याओं के बारे।**

श्रीमान,

पिछले दिनों सैंज घाटी में आयी बाढ़ से सम्बंधित निम्न बिंदुओं पर हम आपका ध्यान आकर्षण करना चाहते हैं।

1. सैंज बाढ़ प्रभावित परिवारों को आपदा के आठ माह गुजर जाने के उपरांत अभी मुख्यमंत्री महोदय द्वारा घोषित तक पूर्ण आपदा अथवा आंशिक आपदा राहत राशि नहीं दी गयी है।
2. कुछ परिवारों की सम्पूर्ण भूमि या तो बाढ़ में क्षतिग्रस्त हो गयी है या फिर भूस्खलन के खतरे में आ चुकी है, हम उन परिवारों को गृह निर्माण हेतु सुरक्षित स्थानों पर भूमि दिए जाने की मांग करते हैं।
3. हम सैंज नदी के किनारे बसे न्यूली, रोपा, करताह, सोती, शालाह, सैंज बाजार, बकशाहल, खरातला, तरेड़ा, तलाड़ा, सपंगनी, बिहाली, लारजी तक के गाँवो के नदी किनारे के इलाकों को बाढ़ सुरक्षा के इंतजाम जल्द से जल्द करने की मांग करते हैं। ताकि आने वाले वर्षों में बाढ़ से बचाव किया जा सके।
4. तरेड़ा व् सपंगनी पुल को जल्द से जल्द निर्माण करने की मांग करते हैं।
5. जहां संभव हो सैंज नदी के ड्रेजिंग कार्य को जल्द शुरू किया जाये।

धन्यवाद।

दिनांक 29-2-2025

प्रधान
सैंज वैली विकास
सैंज, जिला कुल

निवेदक
सैंज वैली विकास समिति

31/1/25
Public Information Officer
-cum- Sr. Executive Engineer.
Directorate of Energy.
H.P., Shimla-171005

प्रतिलिपि : 1. SDM बंजार

उप- प्रधान
सैंज वैली विकास समिति
सैंज, जिला कुल्लू (हि0 प्र0)

सचिव
सैंज वैली विकास स
सैंज

Information Supplied to Sh Sumit Mahar
Under RTI Act, 2005.

Scanned with CamScanner

सैंज वैली विकास समिति

ज्ञापन

सेवा में,
जिलाधीश महोदय ,
जिला कुल्लू , हि प्र।

विषय : **सैंज घाटी के बाढ़ प्रभावित परिवारों की समस्याओं के बारे।**

श्रीमान,

पिछले दिनों सैंज घाटी में आयी बाढ़ से सम्बंधित निम्न बिंदुओं पर हम आपका ध्यान आकर्षण करना चाहते हैं।

1. सैंज बाढ़ प्रभावित परिवारों को आपदा के आठ माह गुजर जाने के उपरांत अभी मुख्यमंत्री महोदय द्वारा घोषित तक पूर्ण आपदा अथवा आंशिक आपदा राहत राशि नहीं दी गयी है।
2. कुछ परिवारों की सम्पूर्ण भूमि या तो बाढ़ में क्षतिग्रस्त हो गयी है या फिर भूस्खलन के खतरे में आ चुकी है, हम उन परिवारों को गृह निर्माण हेतु सुरक्षित स्थानों पर भूमि दिए जाने की मांग करते हैं।
3. हम सैंज नदी के किनारे बसे न्यूली [illegible] करताह , सोती, शालाह, सैंज बाजार , बकशाहल , खरातला, तरेड़ा, तलाड़ा, सपंगनी, बिहाली , लारजी तक के गाँवो के नदी किनारे के इलाकों को बाढ़ सुरक्षा के इंतजाम जल्द से जल्द करने की मांग करते हैं ताकि आने वाले वर्षों में बाढ़ से बचाव किया जा सके।
4. तरेड़ा व सपंगनी पुल को जल्द से जल्द निर्माण करने की मांग करते हैं।
5. जहां संभव हो सैंज नदी के ड्रेजिंग कार्य को जल्द शुरू किया जाये।

der

[illegible]

धन्यवाद।

7/02/24

31/1/25
Public Information Officer
-cum- Sr. Executive Engineer,
Directorate of Energy,
H.P., Shimla-171005

प्रधान Bhim Rang
सैन्ज वैली विकास समिति
सैन्ज, जिला कुल्लू (हि० प्र०

दिनांक 29-2-2024

निवेदक
सैंज वैली विकास समिति

[illegible]

प्रतिलिपि : 1. SDM बंजार

सुरेन्द्र

उप-प्रधान कुलजा देवी
सैन्ज वैली विकास समिति
सैन्ज, जिला कुल्लू (हि० प्र०)

सचिव Dhiraj
सैन्ज वैली विकास समि

Information Supplied to Sh Sumit Mahar
Under RTI Act, 2005.

Scanned with CamScanner

सैन्ज वैली विकास समिति

सैन्ज, जिला कुल्लू (हि० प्र०) पिन : 175134

प्रधान :
बुध राम
मो० : 98057-59904, 98160-13591

सचिव :
देवी राम
मो० : 86298-94541

दिनांक 17-4-2024

क्रमांक सैन्ज/ No.1

सेवा में

महाप्रबंधक महोदय ,
एनएचपीसी चरण- III विहाली
जिला कुल्लू (हि० प्र०) ।

विषय :- 9 माह पूर्व डैम से विहाली तक हुए नुकसान बारे ।

महोदय जी ,

निवेदन यह है कि 9 माह पूर्व पिन पार्वती नदी में बाढ आने से भारी नुकसान हुआ है । पार्वती पावर स्टेशन चरण - 3 के डैम से विहाली बाजार तक जहा से रिहाइशी मकान पूरी तरह से क्षतिग्रस्त हो गए है । वही लोगो की सैकड़ो बीघा जमीन के अलावा भी कई मकानो पर खतरे के बादल मडरा रहे है । महोदय बीते नौ माह में ग्रामीणो की सुरक्षा के लिए डैम साइड से विहाली तक एक भी सुरक्षा दीवार का निर्माण नही किया गया है । महोदय सैन्ज वैली विकास समिति आप से एक बार पुन मांग कर रही है कि आने वाली बरसात से पहले सोती , सैन्ज बाजार , बकशाहल टापू , खराटला , तरेडा तलाड़ा , स्पांगणि , विहाली गांव के लोगो की सुरक्षा के लिए ठोस कदम उठाए ताकि 9,10 जुलाई 2023 के तरह नुकसान उन्हे भविष्य में न झेलना पडे । सैन्ज वैली विकास समिति निम्नलिखित मांगो को आपके समक्ष पेश कर रही है ताकि इन समस्याओ का समय रहते समाधान किया जाए ।

1. बाढ की भेट चढी सैन्ज बाजार की क्षतिग्रस्त सड़क व बाजार की सुरक्षा हेतु कंक्रीट वॉल का निर्माण किया जाए ताकि भविष्य मे सैन्ज को आने वाली बरसात से कोई नुकसान न हो ।
2. बकशाहल गॉव मे जो टापू बना है उसके बीच मे जमीन और घरो को चारो ओर से बचाने के लिए सुरक्षा व रूट लायर लगाने का कार्य जल्द किया जाए ।
3. खराटला , तरेडा , तलाड़ा , स्पांगणि , विहाली बाजार मे आने वाली बरसात मे कोई नुकसान न हो इसीलिए जल्द से जल्द सुरक्षा दीवार का निर्माण कार्य शुरू किया जाए ।

अत: महोदय सैन्ज वैली विकास समिति आपकी सदैव अभारी रहेगी । हमारी मांगो को लेकर सभी गॉव निवासियो का मौके पर आकर उनकी समस्याओ का हल निकाले नहीं तो आने वाली बरसात में बहुत खतरा व जान माल का भी नुकसान हो सकता है । आपकी महान कृपा होगी ।

धन्यवाद महोदय ।

प्रधान
सैन्ज वैली विकास समिति
सैन्ज, जिला कुल्लू (हि० प्र०)

दिनांक - 17-4-2024

सैन्ज वैली विकास समिति समस्त गॉव निवासी गॉव सोती
सैन्ज बाजार , बकशाहल टापू , खराटला तरेडा , तलाड़ा ,
स्पांगणि , विहाली डाकघर तलाड़ा स्पांगणि विहाली
डाकघर सैन्ज तहसील सैन्ज जिला कुल्लू (हि० प्र०) ॥
मो० न० :- 98160-13591

Received by Jai Lal 17/04/2024

31/1/25

Public Information Officer
-cum- Sr. Executive Engineer,
Directorate of Energy,
H.P., Shimla-171005

Information Supplied to Sh Sumit Nahar
Under RTI Act, 2005.

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सैन्ज वैली विकास समिति

सैन्ज, जिला कुल्लू (हि० प्र०) पिन : 175134

धान :
बुध राम
मो० : 98057-59904, 98160-13591

सचिव :
देवी राम
मो० : 86298-94541

क्रमांक संख्या 2

दिनांक 18-4-2024

सेवा में

उपमंडल अधिकारी महोदय ,
S.D.M बंजार जिला कुल्लू ,
(हि 0 प्र 0) ।

बिषय :-पिन पार्वती नदी सैंज में डैज़िंग कार्य से नदी को एक तरफ मोड़ने से एनएचपीसी कालोनी के सामने बकशाहल टापू में बीच फसे 4 मकान लैंटर व बची हुए 2 दर्जन परिवारों कि मलकीति जमीन को आने वाली बरसात में भारी खतरा के बारे ।

मांग पत्र ॥

महोदय जी ,

सविनय निवेदन यह है कि दिनांक 9, 10 जुलाई 2023 को पिन पार्वती नदी में आई भयंकर बाढ से भारी नुकसान हुआ है । बकशाहल टापू में बीच में फसे चार परिवार के मकान 1 बुध राम s/o गुप्त राम 2 तुले राम s/o गुप्त राम 3. जयदासी पत्नी श्री जगरनाथ कारदार 4. रवि नेगी s/o बुद्धि सिंह डा० घर सैंज तहसील सैंज जिला कुल्लू (हि०प्र) गॉव बकशाहल टापू वार्ड न० 4 के स्थाई निवासी हूँ । 2 दर्जन परिवारों की मलकिती भूमि बीच टापू में फंस चुकी है । आने वाली बरसात में जो पिन पार्वती में हो रही ईजिंग कार्य से जो भी साइड मे मलवा रखा है वो बरसात में सीधा एक तरफ हमारी बची हुई जमीनों व 4 मकानों को हवा में बाढ में बह जाने का खतरा है । हम सभी गॉव निवासी व सैंज वैली विकास समिति जनाव से विनती करते है कि सुरक्षा दीवारों , कंक्रीट व क्रेट वायर तथा नदी को ईजिंग करके दूसरी तरफ मोडने की विनती करते है कि आने वाली बरसात में कोई स्कूली बच्चोंप बूढे आने जाने के सैंज बाजार अस्पताल जाने की कोई दिक्कत न हो न ही कोई जानमाल का खतरा हो । बकशाहल टापू में आना जाना बरसात में खतरे से खाई नही है । न घरों में रह सकते है न ही जमीन कमा सकते है । अतः महोदय से प्रार्थना है कि तुरंत स्वय निरीक्षण करने तथा बकशाहल टापू में आने की कृपा करें । इसके लिए हम सभी आपके आभारी रहेंगे । आपकी महान कृपा होगी ।

Received
18/4/24

धन्यवाद Budh Ram
सैन्ज वैली विकास समिति
सैन्ज, जिला कुल्लू (हि० प्र०)
निवेदक

सैंज वैली विकास समिति
बुध राम S/O गुप्त राम तुले राम S/O गुप्त राम
जयदासी w/o जगर नाथ रवि नेगी S/O बुद्धि सिंह
गॉव बकशाहल डा० घर सैंज तहसील सैंज जिला कुल्लू
हिमाचल प्रदेश मो 0 न० -: 98160-13591

31/1/25

Public Information Officer
-cum- Sr. Executive Engineer,
Directorate of Energy,
H.P., Shimla-171005

Information Supplied to Sh Sunil Mahar
Under RTI Act, 2005.

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सैन्ज वैली विकास समिति

सैन्ज, जिला कुल्लू (हि० प्र०) पिन : 175134

प्रधान :
बुध राम
मो० : 98057-59904, 98160-13591

सचिव :
देवी राम
मो० : 86298-94541

क्रमांक सैवप्रा - 3

दिनांक 18-4-2024

सेवा में

उपमंडल अधिकारी महोदय,
S.D.M बंजार जिला कुल्लू,
(हि प्र 0)।

बिषय :- डिगी कॉलेज सैंज से बकशाहल गॉव तक बाढ़ से क्षतिग्रस्त जीप रोड़ की सुरक्षा दीवार व क्रेट वायर का प्रावधान करवाने बारे।

मांग पत्र ॥

महोदय जी,

विनम्र निवेदन यह है कि दिनांक 9,10 जुलाई 2023 को भारी बारिश के कारण भारी बाढ़ आने से डिगी कॉलेज सैंज से बकशाहल गॉव तक सुरक्षा दीवार व क्रेट वायर लगानी बहुत जरूरी है। आने वाली बरसात में स्कूली बच्चों व आम जनता को परेशानी का सामना करना पड़ेगा या जान माल का खतरा भी हो सकता है। क्योंकि ये पंचायत देवगढ़ गोही वार्ड न० 4 बकशाहल गॉव की सड़क बिल्कुल पिन पार्वती नदी के साथ लगती है। जो की कभी भी बरसात से क्षतिग्रस्त हो सकती है। इसीलिए सभी गॉव निवासी व सैंज वैली विकास समिति महोदय से प्रार्थना करती है कि इस बकशाहल रोड नदी के किनारे कंक्रीट डगे व क्रेट वायर लगाना बहुत जरूरी है। तभी ये बकशाहल रोड बरसात से बच सकता है। अतः महोदय से विनती करते है कि सुरक्षा के इंतजाम तुरंत करें। ताकि आने वाली बरसात में किसी प्रकार का जान माल का नुकसान न हो।

धन्यबाद महोदय।

प्रधान Budh Ram
सैन्ज वैली विकास समिति
सैन्ज, जिला कुल्लू (हि० प्र०)
निवेदक

सैंज वैली विकास समिति
समस्त गॉव निवासी बकशाहल
डाक घर सैंज
जिला कुल्लू हिमाचल प्रदेश ॥
मो 0 न० -: 98160-13591

दिनांक - 18-4-2024

Received
18/4/24

31/1/25

Public Information Officer
-cum- Sr. Executive Engineer,
Directorate of Energy,
H.P., Shimla-171005

Information Supplied to Sh Sumit Thakur
Under RTI Act, 2005.

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सैन्ज वैली विकास समिति

सैन्ज, जिला कुल्लू (हि०प्र०) पिन : 175134

: 98057-59904, 98160-13591

सचिव :
देवी राम
मो० : 86298-94541

क्रमांक 9 दिनांक 27-4-2024

सेवा में

प्रधान ग्राम पंचायत देवगढ़ गोही ,
श्री केशव राम महोदय जी ,
विकास खंड भुंतर जिला कुल्लू ,
(हि ० प्र ०) ।

विषय -: बकशाहल टापू बीच में फसे मकानों व मलकिती जमीनों को कमाने से खतरा व घरों में रहने से कभी भी जानमाल खतरे के बारे ।

मांग पत्र ॥

महोदय जी ,

सविनय निवेदन यह है कि दिनांक - 8,9,10 जुलाई 2023 को भारी मात्रा में बाढ़ आने से सिउन्ड डैम के चारों गेट एकदम खोलने पर गांवों बकशाहल में मलतिकी भूमि व घराट , मछली फार्म ,फलों के बागीचे व जमीन लगभग सभी गॉव निवासियों की जमीन 50 से 60 विघा पिन पार्वती नदी में समा गई । परंतु बकशाहल बीच टापू में फसे तीन मकान लैन्टर व एक लकड़ी का मकान तथा अब चारों मकानों के परिवारों का उन मकानों में रहना खतरे से खाली नहीं है । न ही वे जमीनों में फसल बीज सकते है । उनकी सारी भूमि खंडर बन चुकी है । अतः जनाब से विनती करते है कि बकशाहल टापू की डैन्जर जोन रिपोर्ट तैयार करके सैंज वैली विकास समिति सैंज प्रधान श्री बुध राम S/O श्री गुप्त राम को जल्दी से जल्दी सौंप दी जाए । आपकी महान कृपा होगी ।

धन्यवाद महोदय ।

दिनांक - 27-4-2024

प्रधान Budh Ram
सैन्ज वैली विकास समिति
सैन्ज, जिला कुल्लू (हि० प्र०)

निवेदक

प्रधान सैंज वैली विकास समिति
डाकघर सैंज जिला कुल्लू (हि0प्र0)
मो 0 न 0 - 98160-13591

31/1/25

Public Information Officer
-cum- Sr. Executive Engineer,
Directorate of Energy,
H.P., Shimla-171005

Information Supplied to Sh Sumit Mahar
Under RTI Act, 2005.

Scanned with CamScanner

OFFICE OF
THE SUPERINTENDENT OF
POLICE,KULLU,DISTRICT KULLU
(HIMACHAL PRADESH)TEL./FAX No.
01902-224700, Mail-ID:sp-kul-hp@nic.in

Azadi Ka Amrit Mahotsav

No.PC /2024-

To

The Sub Divisional Magistrate,
Banjar Distt. Kullu (HP).

Subject:- Regarding "ड्रेजिंग के नाम पर अवैध पत्थर व रेत बीज निज पार्वती नदी से बाहर बेचने बारे तुरंत पुलिस प्रशासन को निर्देश देकर ठेकेदारों को रोकने बारे".

Sir,

Find herewith enclosed copy of complaint received from Budh Ram President of Sainj Valley Vikas Samiti in the matter of dredging work being carried out at Sainj village and its surroundings in the Sub Division of Banjar on the subject cited above.

In this regard, it is to inform that District Magistrate Cum Chairman DDMA Kullu vide office order dated 579-587/SR(DM) dated 03/11/2023 constituted a committee of the officers under the chairmanship of the SDM of concerned Sub Divisions for carrying the dredging of excess debris and boulders from the river bed in scientific and environmentally suitable manner.

Therefore, the above complaint is being sent to your office for necessary action in the matter and action taken in this regard be sent to the complainant accordingly.

Encls:- 07 pages

Yours sincerely,

Signed by
Karthikeyan Gokulachandran
Date: 08-06-2024 20:40:10

Superintendent of Police,
Kullu District, Kullu (H.P)

Copy to-

1. Budh Ram President of Sainj Valley Vikas Samiti Sainj Distt. Kullu for information w.r.t his letter No. 8 dated 23/04/2024.

31/1/25

Public Information Officer
-cum-Sr. Executive Engineer,
Directorate of Energy,
H.P., Shimla-171005

Information Supplied to Sh [illegible]
Under RTI Act, 2005.

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54

DDMA-DC OFFICE KULLU

The Office of Deputy Commissioner-cum-
District Disaster Management Authority, Kullu
Phone No.:-01902-225033, 1077, Email Id:-ddma-kul-hp[illegible]

From

The Deputy Commissioner,
District - Kullu, H.P.

To

1. The Superintending Engineer, 6th Circle HP PWD, District Kullu, H.P.
2. The Superintending Engineer, Jal Shakti Vibhag, District Kullu, H.P.
3. The Sub-Divisional Officer (C), Banjar, District Kullu, H.P.
4. The District Revenue Officer, District Kullu, H.P.

No. 288-91 **/SK (DM) Dated Kullu, the** 15/05/2024

विषय: - मैज घाटी के बाद प्रभावित परिवारों की समस्याओं के बारे।

Sir,

This is with reference to representation received from the residents of Sainj Valley, highlighting several critical issues faced by the affected families. These issues include the non-provision of announced relief amounts, flood protection measures along the river, the construction of bridges, etc.

Considering the urgency and gravity of the situation, you are requested to take immediate and necessary steps to address these issues under intimation to the office of the undersigned.

This is for your information and further necessary action.

Yours faithfully,

(Ashwani Kumar) H.A.S
Additional District Magistrate
-cum-CEO, DDMA Kullu.

Ends. No. 292 **/SK (DM) Dated:** 15/05/2024

A Copy is forwarded to-

1. The Pardhan, Sainj Valley Vikas Samiti, Sainj, District Kullu, H.P. for information.

(Ashwani Kumar) H.A.S
Additional District Magistrate
-cum-CEO, DDMA Kullu.

31/1/25
Public Information Officer
-cum- Sr. Executive Engineer,
Directorate of Energy,
H.P., Shimla-171005

information. [illegible]

Information Supplied to Sh [illegible]
Under RTI Act, 2005.
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कार्यालय उपायुक्त कुल्लू, जिला कुल्लू,हिमाचल प्रदेश

क्रमांक 1088 हि0प्र0उ0/ग0का0/के एस -2 दिनांक 17-5-2024

पेषित

उपमण्डलाधिकारी(ग0)
बजार , जिला कुल्लू।

विषय- सैंज घाटी के बाढ प्रभावित परिवारों की समस्याओं के बारे।

महोदय,

उपरोक्त विषय के सन्दर्भ में आपका का कार्यालय पत्र क्रमांक उ0म0का0/बजार/का0का0/2024-336 दिनाक 20-04-2024 इस कार्यालय में प्राप्त हुआ है। जिसमे प्रधान सैंज वैली विकास समिति सैंज, जिला कुल्लू (हि0प्र0) द्वारा निम्न बिन्दुओं ज्ञापन दिया गया है जो कि आपको मूल रुप में भेजकर निवेदन है कि उक्त मामले में विस्तृत छानबीन कर रिपोर्ट इस कार्यालय में पेषित करें।

भवदीय

जिला राजस्व अधिकारी
कुल्लू, जिला कुल्लू।

प्रतिलिपि 1088 /हि0प्र0उ0/ग0का0/के एस -2 दिनांक 17-5-2024

1. प्रधान सैंज वैली विकास समिति सैंज जिला कुल्लू (हि0प्र0) को सूचनार्थ पेषित है।

जिला राजस्व अधिकारी
कुल्लू, जिला कुल्लू।

Public Information Officer
-cum- Sr. Executive Engineer,
Directorate of Energy,
H.P., Shimla-171005

Information Supplied to Sh Sumit Mahajan
Under RTI Act, 2005
Scanned with CamScanner

कार्यालय उपायुक्त कुल्लू, जिला कुल्लू (हिमाचल प्रदेश)

क्रमांक----------डी0आर0ओ0/स0क0/के.एम.-2 दिनांक----------

प्रेषित

उपमण्डलाधिकारी(ग्रा0)
बंजार , जिला कुल्लू।

विषय- **सैंज घाटी के बाढ़ प्रभावित परिवारों की समस्याओं के बारे।**

महोदय,

उपरोक्त विषय के सन्दर्भ में अतिरिक्त जिला दण्डाधिकारी कुल्लू एवं सी0ई0ओ0, डी0डी0एम0ए0 कुल्लू का कार्यालय पत्र क्रमांक 288-91 /एस0के0(डी0एम0) दिनांक 15-05-2024 इस कार्यालय में प्राप्त हुआ है। जिसमें प्रधान सैंज वैली विकास समिति सैंज, जिला कुल्लू (हि0प्र0) द्वारा निम्न बिन्दुओं जापन दिया गया है जो कि आपको मूल रुप में भेजकर निवेदन है कि उक्त मामले मे विस्तृत छानबीन कर रिपोर्ट इस कार्यालय में प्रेषित करें।

भवदीय

जिला राजस्व अधिकारी
कुल्लू, जिला कुल्लू।

दिनांक 21-5-2024

प्रतिलिपि 1034/ डी0 आर0 ओ0 /स0 क0/ के0 एम -2

1. अतिरिक्त जिला दण्डाधिकारी कुल्लू एवं सी0ई0ओ0, डी0डी0एम0ए0 कुल्लू को। सूचनार्थ प्रेषित है।
2. प्रधान सैंज वैली विकास समिति सैंज जिला कुल्लू (हि0प्र0) को सूचनार्थ प्रेषित है।

जिला राजस्व अधिकारी
कुल्लू, जिला कुल्लू।

21/1/25

Public Information Officer
-cum- Sr. Executive Engineer,
Directorate of Energy,
H.P., Shimla-171005

Information Supplied to Sh Sumit Mahar
Under RTI Act, 2005.

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सैन्ज वैली विकास समिति

प्रधान
मुख राम
मो० : 98057-59904,98160-13591

रजि. नं. HPCD-18171
सैन्ज, जिला कुल्लू (हि. प्र.)-175134

सचिव
देवी राम
मो० : 85298-94547

क्रमांक 1

दिनांक 16/8/2021

सेवा में

लोक निर्माण विभाग एवं शहरी
विकास मंत्री विक्रम आदित्य सिंह जी ,
हिमाचल प्रदेश सरकार शिमला ।

विषय :- न्यूली, स्तेश, नुनुबहली, दरमेड, करटाह के गांवों में फुट ब्रिज तुरंत लगाने के बारे H.P.P.C.L निहारनी डैम (सांझा) के महाप्रबंधक प्रभारी शिमला को फुट ब्रिज बनाने के लिए धनराशि का प्रावधान करने बारे । तुरंत निर्देश देने बारे ।

मांग पत्र ॥

महोदय जी ,

1. न्यूली में एक फुट ब्रिज बनाने की मांग रखते है ।
2. स्तेश गॉव में तुरंत फुट ब्रिज लगाने व धनराशि का प्रावधान करने बारे ।
3. नुनुरीबहली में भी फुट ब्रिज लगाने की मांग रखते है ।
4. दरमेड में फुट ब्रिज लगाने की मांग करते है ।
5. करटाह में भी फुट ब्रिज लगाने की मांग करते है ।

अतः महाप्रबंधक प्रभारी शिमला H.P.P.C.L - 100 मेगा वाट बिजली परियोजना डैम निहारनी (सांभा)से सैंज वैली विकास समिति महोदय से विनती करती है कि ये पॉच गांवों के फुट ब्रिज लगाने व धन राशि का प्रावधान लोक निर्माण मंत्री एवं शहरी विकास

3/1/25
Public Information Officer
-cum- Sr. Executive Engineer,
Directorate of Energy,
H.P., Shimla-171005

Information Supplied to Sh Amit Kumar
Under RTI Act, 2005.

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मंत्री महोदय हिमाचल प्रदेश सरकार शिमला से आग्रह है कि तुरंत निर्देश देने की कृपा करें ताकि आने वाले भविष्य में कोई जान माल का नुकसान न हो। आपकी महान कृपा होगी।

धन्यवाद।

दिनांक - 15/8/2024

प्रधान Sudhir Sharma
सैन्ज वैली विकास समिति
सैन्ज, जिला कुल्लू (हि.प्र.)
रजि० नं० HPCD - 18171

निवेदक

सैंज वैली विकास समिति

सैंज जिला कुल्लू (हि0प्र0)

मो0 न0 - 98160-13591

31/1/25
Public Information Officer
-cum- Sr. Executive Engineer,
Directorate of Energy,
H.P., Shimla-171005

Information Supplied to Sh Sumit Mahajan
Under RTI Act, 2005.

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सैन्ज वैली विकास समिति

प्रधान
बुध राम
मो० : 98057-59904,98160-13591

रजि. नं. HPCD-18171
सैन्ज, जिला कुल्लु (हि. प.)-175134

सचिव
देवी राम
मो० : 86298-94541

क्रमांक ....

दिनांक 16/12/2024

सेवा में

लोक निर्माण विभाग एवं शहरी

विकास मंत्री विक्रम आदित्य सिंह जी ,

हिमाचल प्रदेश सरकार शिमला ।

विषय :- पार्वती जल विद्युत परियोजना चरण - 3 एनएचपीसी डैम साइट से भारी मात्रा में जल छोड़ने से हनुमान मंदिर से बकशाहल गाँव तक जोड़ने वाली सड़क लगभग 800 मी0 सड़क पूर्ण रूप से क्षतिग्रस्त होने बारे । एनएचपीसी चरण - 3 को निर्देश देने बारे ।

महोदय ,

जय हिन्द ।

सैंज वैली विकास समिति सैंज इस वर्ष 31/07/2024 को एनएचपीसी चरण - 3 से अचानक चारों गेटों से पानी छोड़ने से संबंधित निम्नलिखित बिंदुओं पर हम आपका ध्यान आकर्षित करना चाहते है ।

1. सैंज हनुमान मंदिर से गाँव बकशाहल में लगभग 800 मी0 सड़क पूर्ण रूप से क्षतिग्रस्त हो चुकी है।
2. गाँव बकशाहल में 7-8 निजी वाहन भी गांवों में फस चुके है और किसानों की फसल सब्जी मंडी से कई लाखों का नुकसान झेलना पड़ रहा है । स्कूली बच्चों को भी परेशानी का सामना करना पड़ रहा है ।
3. एनएचपीसी चरण - 3 को तुरंत बकशाहल सड़क की वहाली व क्रेट वायर लगाने के लिए सख्त से सख्त निर्देश दें ।

31/1/25

Public Information Officer
-cum- Sr. Executive Engineer,
Directorate of Energy,
H.P., Shimla-171005

Information Supplied to Sh [illegible] Thakur
Under RTI Act, 2005.

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4. गाँव बकशाहल टापू में फंसे चार मकान व आधा दर्जन परिवारों की निजी भूमि के चारों ओर सुरक्षा के इंतजाम करने के निर्देश एनएचपीसी - 3 को आदेश दें ताकि समय रहते घरों व भूमि को बचाया जा सके।

अतः महोदय जी से निवेदन है कि एनएचपीसी चरण - 3 को इस विषय बारे सख्त से सख्त निर्देश दें। सैंज वैली विकास समिति सदा आपकी आभारी रहेगी। आपकी महान कृपा होगी।

5. H.P.P.C.L निहारनी से लेकर बिहाली लारजी तक की भूमि अधिग्रहण करने बारे।
6. तरेडा व स्पांगणि में पुल लगाने बारे।

धन्यवाद।

दिनांक :- 15/8/2024

प्रधान Budh Ram
सैन्ज वैली विकास समिति
सैन्ज, जिला कुल्लू (हि.प्र.)
रजि० नं० HPCD - 18171

निवेदक

सैंज वैली विकास समिति सैंज
जिला कुल्लू हि0प्र0।

31/1/25

Public Information Officer
-cum- Sr. Executive Engineer
Directorate of Energy
H.P., Shimla-171005

Information Supplied to Sh Sumit Thakur
Under RTI Act, 2005.

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सैन्ज वैली विकास समिति

प्रधान
बुध राम
मो० 98057-59904,98160-13591

रजि. नं. HPCD-18171
सैन्ज, जिला कुल्लू (हि. प्र.)-175134

[illegible]
[illegible]
मो० [illegible]

क्रमांक 19

दिनांक 16/2/2025

सेवा में

माननीय जिलाधीश महोदय
कुल्लू, जिला कुल्लू।

विषय :- सैंज घाटी के बाढ़ प्रभावितों की समस्याओं के संबंध में।

महोदय

सैंज वैली विकास समिति एक बार पुन आपका ध्यान गंभीर समस्याओं की ओर आकर्षित करना चाहती है कि सैंज खड्ड मे पिछले साल आई भारी बाढ ने गाँव मराँड, शाकटी, सभा, निहारणी, न्यूरी, वतियाढ, स्लेश नुनुरूबहली, रोपा, दरमेट, विहाली, सिउन्ड, सोती, सैंज, मशीनानाल, बकशाहल खराटला, तरेडा, तलाडा, विहाली, स्पांगणि, लारजी आदि गावों के लोगों के घर, जमीन, बगीचे, फसले, रास्ते, सडके, पुलों, पानी के स्त्रोतों आदि का भारी मात्रा मे नुकसान किया था जिससे सैकडो परिवार प्रभावित हुए थे और अभी भी गंभीर समस्याओं का सामना करते आ रहे है। ये समस्याएं हमने समिति के माग पत्र तथा मीडिया के माध्यम से और स्वयं आपके कार्यालय में व्यक्तिगत रूप से हाजिर होकर आपके ध्यान मे पहले भी लाई थी और आपने इस संबध मे अपने अधीनस्थ अधिकारियों को आदेश भी दिए थे लेकिन कुछ छुट-मुट कार्यों को छोड़कर बाकी मुद्दों पर कोई भी अमल नहीं हुआ है। इसलिए सैंज विकास समिति एक बार पुन आपसे मांग करती है कि हमारी निम्न समस्याओं के समाधान हेतु सहानुभूतिपूर्वक विचार करके जल्द से जल्द समाधान किया जाए।

1. सैंज वैली के अंतर्गत उपरोक्त गांवों में जितने भी बाढ प्रभावित परिवार है उनको हिमाचल सरकार के नए आदेशों के अनुसार आपदा राहत राशि एवं बरसात से तबाह हुई फसलों का भी मुआवजा राशि तुरत जारी की जाए।
2. एनएचपीसी और HPPCL प्रोजेक्ट्स के अंतर्गत घोषित प्रभावित पचायतों को प्रदूषण का मुआवजा तुरत जारी किया जाए।
3. जिन परिवारों की पूरी जमीन बाढ मे वह गई या क्षतिग्रस्त हुई है उन्हें सरकार के संशोधित नियमों के अनुसार तीन बिस्वा जमीन तुरंत दी जाए।
4. जिन परिवारों के रियायशी मकान या गौशाला पूर्णरूप से या आंशिक रूप से क्षतिग्रस्त हुए है उन्हे आपदा राहत राशि मैनुअल के तहत तुरंत राशि दी जाए।

31/1/25

Public Information Officer
-cum- Sr. Executive Engineer,
Directorate of Energy,
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5. गाँव पतियाढ में गत वर्ष बरसात में पहाड़ी से अचानक भूस्खलन होने से खड्ड में पत्थरों व मलबे का ढेर लगा होने है और दरिया का रुख गाँव की तरफ मुड़ गया है । उस जगह पर ठेकेदार ने नाम मात्र की ईजिंग की है जबकि मलबा उसी का त्यों पड़ा है जो कि किसी बड़ी बासदी का कारण बन सकती है. उस मलबे को दरिया से ईजिंग करके तुरत किनारे लगाया जाए ।
6. जहां जहां ईजिंग कार्य शुरू हुआ है वह अधूरा पड़ा है और ठेकेदार द्वारा नियमों को ताक पर रखकर अवैज्ञानिक तरीके व अपनी मनमर्जी से कार्य किया गया है और नदी के बीच में बेतरतीब तरीके से मलबे के ढेर लगा रखे है और कहीं पर टापू बनाकर रखा गया है उन्हें जल्द ठीक व तय नियमों के अनुसार करवाया जाए ।
7. लारजी से न्यूली तक जो ईजिंग कार्य हुआ है उसमे बहुत बड़ी धांधली हुई है जिसकी किसी निष्पक्ष एजेंसी से जांच करवाई जाए क्योंकि यह कार्य ठेकेदार ने अपनी मनमर्जी से नियमों को ताक पर रखकर किया है जिसमे बहुत बड़ा भ्रष्टाचार हुआ है । जरुरत पड़ने पर समिति इसके सबूत भी पेश करेगी ।
8. गॉव स्तेश , नुनुरुबहली , स्पांगणि और तरेडा में फुट ब्रिज/ झूला पुल लगाया जाए तथा इं गार्वो के क्षतिग्रस्त रास्तों के मुरम्मत के लिए संबंधित पंचायतों को आदेश किये जाए ।
9. गॉव पतियाढ , स्तेश , नुनुरुबहली , रोपा , दरमेड , बहली , करटाह , सोती , सिउन्ड सैंज बाजार , बकशाहल , खराटला , तरेडा , तलाड़ा , विहाली , स्पांगणि , लारजी आदि गावां का बजूद बचाने के लिए इन गांवों के आगे दरिया के किनारे सुरक्षा दीवार लगाई जाए । न्यूली से लेकर लारजी तक नदी का तटीकरण करवाने और उसका प्रारूप तैयार करने के लिए जल शक्ति विभाग को आदेश दिया जाए ।
10. S.D.M महोदय बंजार की अध्यक्षता में B.D.O बंजार , B.D.O शुंतर , वन विभाग , वन्य जीव प्राणी विभाग , HPPWD , जल शक्ति विभाग , राजस्व विभाग , माइनिंग विभाग , एनएचपीसी चरण -2 , 3 HPPCL के अधिकारियों की एक मीटिंग सैंज विकास समिति के साथ जल्द करवाई जाए और इन अधिकारियों को बाढ प्रभावित परिवारों की समस्याओं को बाढ प्रभावित परिवारों की समस्याओं का मौके पर निपटारा करने के आदेश किये जाए ।

अतः महोदय से एक बार पुनः निवेदन है कि समिति की उपरोक्त 10 विंदुओं की मांगों पर गंभीरतापूर्वक विचार करके इन समस्याओं का समाधान 10 दिनों के भीतर - भीतर किया जाए । समिति आपके इस करुणामूलक कार्य के लिए हमेशा के लिए अभारी रहेगी । यदि हमारी मांगों पर गंभीरता से विचार नहीं किया जाता है तो समिति भविष्य में प्रभावित परिवारों के साथ सड़कों पर उतरने में भी गुरेज नहीं करेगी ।

धन्यवाद सहित ।

प्रधान
सैन्ज वैली विकास समिति
सैन्ज, जिला कुल्लू (हि प्र.)
रजि० नं० HPCD - 18171

सैन्ज वैली विकास समिति
सैन्ज, जिला कुल्लू (हि प्र.)

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Annexure-IV

नाम : लाल चन्द S/o श्री मोती राम

पद : Sr Technician

कार्यरत : जांव चौहकी ग्रिड जरी तहसील करी जिला कुल्लू

पे. ग्रु. - 17505

Date of Joining - 5/2/2002

जन्म तिथि : 16/10/1964

दिनांक 1/8/2024 को रात की शिफ्ट में मैं तैनाती साईट पर उपस्थित था। समय लगभग 3:15 बजे पावर हाउस से यह जानकारी मिली कि मलाना नाले में बाढ़ आ रही है तथा हमें भी लग रहा था कि क्योंकि नदी से तेज बहाव की आवाज आ रही थी। अपनी जान बचाने के लिए तुरन्त रेजरवाईर के ऊपर से दूसरी तरफ निकल गए तथा जंगल में पेड़ पर सुबह 9.00 बजे बचाव कार्य शुरू हुआ व हमें बचा लिया गया।

लाल चन्द

17/8/2024

31/1/25

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नाम → अन्नत राम S/o Sh. Shokka Ram.

पद → Sr Technician. (Malana Power Company Ltd.)

स्थाई पता → Village. Chamoli, P.O. Jari Teh. Jari
Distt. Kullu. (175105) (H.P.)

Date of Joining → 09.09.1999

Date of Birth → 15.09.1968

Date → 01 Aug. 2024. को रात की शिफ्ट मे लेशजा साईट पर उपस्थित था। लगभग सुबह 3:15 बजे पावर हाउस से यह जानकारी दी गई कि अत्यना नाले मे बाढ़ आ रही है तथा हमे भी यह लगा रहा था। क्योंकि नाले से पानी की बहुत आवाज आ रही थी। अतः अपनी Safety के लिए तुरन्त हम सिलेंडर से नाले के इसी तरफ आ गए। इस जंगल मे बैठ गए। सुबह 9 बजे वातावरण सामान्य हुआ और हमे लेजा लिया गया.

Alok
अन्नत राम
17/08/2024.

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नाम - नीलमणी S/O श्री नारायण सिंह

पद - Sr. operator (Malana Power Co. Ltd.)

स्थाई पता - गांव - नांडी, S/o - नांडी, तहसील - पांवा (गाहर) जिला - मण्डी, पिं० कोड - 175124

Date of joining - 1 october 2003

जन्म तिथी - 29-06-1976

दिनांक 01-08-2024 को मैं मलाना साईट पर उपस्थित था। समय लगभग 3:15 बजे पावर हाऊस से यह जानकारी मिली कि मलाणा नाले बाढ़ आ रही है तथा हमें भी यह कहा गया था क्योंकि नदी से तेज बहाव की आवाज आ रही थी। अपना जीव बचाने के लिए तुरन्त सुपरवाईजर के ऊपर से सुरक्षित स्थान निकल कर भाग गए तथा जंगल में बैठ गए। लगभग 9:00 बजे बचाव कार्य शुरू हुआ व हमें बचा लिया गया।

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नीलमणी

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नाम - टेक सिंह S/O श्री Ram Sagan
पद - Join-Date - 14/04/2009
S/Gd Limit. CH No 168453 (G4S Security Ltd.)
पता - गांव बशलाला डा० खुनाची तो० पुवाग उप तो०
घतरी जिला मण्डी हिमाचल प्रदेश 175123

दिनांक :- 01/08/2024 को रात के समय
मलाणा नाले में ताज़ी से पानी बढ़ा गया।
जैसे पानी बढ़ा हम जंगल की ओर गाड़े
सुरक्षित जगह पर पहुंचे।
सुबह के समय 0900 बजे 22 केवीयु
टीम पहुंच चुकी थी। उसके बाद
हम सुरक्षित रोड में पहुंच गए

धन्यवाद

Tek Singh

17/08/24

31/1/24

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श्री देवी राम
नाम देवी राम जन्म तिथि - 16-07-2013 (Malana Power Ltd.)

पद जन श्रमिक CH no 582872

पता गांव धनोरवली डा० जैण तहसील गुलर जिला कुल्लू हिमाचल प्रदेश 175125

दिनांक - 01-03-2024 के रात के समय गल्लाडी नाले से पानी की आवाज आई तो जब देखी तो 3-20 पानी बहुत तेजी से आ गया और हम वहां से भाग गए और जंगल की तरफ सुरक्षित जगह में पहुंच गए थे उसके बाद 4-00 बजे बाद हम वापिस चले आए उसके बाद नाले से सम्पूर्ण टीम आई और हमें मिले पुहुंच गए और मेरी गन भी भागते-2 पानी में चली गई

धन्यवाद
देवी राम
17-08-2024

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Annexure-V

Salient Features of Malana II Dam

1.1	**Location**		
	State	Himachal Pradesh	
	District	Kullu	
	River	MalanaNallah, a tributary of Parbati River in the Beas Basin	
	Vicinity of Dam	Dam Site located 3km upstream of Malana village at El. 2500m.	
	Vicinity for Power House	Power House on left bank of MalanaKhad immediately upstream of Malana-I HEP diversion Weir	
	Latitude	Between 32°0215"N and 32°05'06"N	
	Longitude	Between 77°15'26"E and 77°16'51"E	
	Access to project by road	Via Chandigarh (325 Km),-Kiraatpur, Bhunter.	
	Nearest rail head	Kiraatpur (225 Km)	
	Nearest airport	Bhunter (25 Km)	
1.2	**Hydrology**		
		Project Features	As Proposed
	Catchment Area	158 Sq Km	158 Sq Km
	90% Dependability discharge	328 cumecs	
	50% Dependability discharge	7.65 cumecs	
	Design discharge	20 cumecs	20 cumecs
	Design flood	650 cumecs	650 cumecs
	Snow fall Catchment	76.20 km2	76.20 km2
	Type of stream	Perennial	Perennial
	Average annual rainfall	218mm	218mm
	Probable maximum precipitation (24 Hr. PMP)	90mm	90mm
	Dependable discharge (Av. Lean period flow)	.05 cumecs	.05 cumecs
1.3	**Project Structure**		
1.3.1	**Diversion Structure**		
i)	**Reservoir**		
	F.R.L	2543.00m	2543.00m
	M.D.D.L	2528.00m	2528.00m
	Gross Storage	0.386 M m^3	0.386 M m^3
	Live Storage	0.2875 M m^3	0.2875 M m^3
	Submergence area at FRL	3.5Ha	3.5Ha
	Village affected	Nil	Nil
	Population affected	Nil	Nil
ii)	**Dam**		
	Type	Concrete Gravity	Concrete Gravity
	Height above river bed	45.00m	45.00m

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	Top of dam	El. 2545.0m	El. 2545.0m
	Crest Length	150.0 (Dam block) + 63m (Key wall)	150.0 (Dam block) + 63m (Key wall)
	FRL	El. 2543m	El. 2543m
	MDDL	El. 2528m	El. 2528m
	Live storage	0.2875 M.cum	0.2875 M.cum
iii)	**Spillway Bays**		
	Type	Breast wall type	Breast wall type + Surface type
	a) Breast wall	2 Nos.	2 Nos.
	b) Surface	-	7 Nos.
	Spillway		
	a) Breast wall	Chute Spillway	Chute Spillway
	b) Surface Type	-	Chute Spillway with spill channel
	Gates		
	a) Breast wall Type	Radial operated by Hydraulic Hoist	Gates Radial Gates operated by Hydraulic Hoist
	b) Surface Type	-	Un-gated
	Gate Size		
	a) Breast wall Type	4m x 5.5m	4m x 5.5m
	b) Surface Type	-	6.25 x 2.0m & 4.5m x 2.0m
	Crest Level		
	c) Breast wall Type	El. 2514.50m	El. 2514.50m
	d) Surface Type	-	El. 2543.00m
	Discharging Capacity		
	a) Breast wall Type	650cumecs	650cumecs
	b) Surface Type	-	260.97cumecs
iv)	**Power Intake**		
	Intake Structure	In non-overflow block no. 4 on left bank	In non-overflow block no. 4 on left bank
	No. & Size of opening	One number of 3m x 3m Bell mouth opening	One number of 3m x 3m Bell mouth opening
	Trash rack structure	In non-overflow block no. 4 on left bank	In non-overflow block no. 4 on left bank
v)	**Intake Pipe**		
	Size	One no. of 2.2m dia pipe	One no. of 2.2m dia pipe
	Length	144m long	144m long
	Centre line of pipe	El. 2523.1	El. 2523.1
1.3.2	**Head Race Tunnel**		
	Type	D-Shaped, Concrete and Shotcrete lined	D-Shaped, Concrete and Shotcrete lined
	Size and Length	2.9m x 2.9m D-Shaped	2.9m x 2.9m D-Shaped
	Bed Slope	1 in 151.00	1 in 151.00
	Invert level at portal	El. 2512.812m	El. 2512.812m
	Design Discharge	20cumecs	20cumecs
	Velocity	2.67m/sec	2.67m/sec
	Adit-1	3.5m D-shaped, 273m long	3.5m D-shaped, 273m

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			long
	Adit-2	3.5m D-shaped, 171m long	3.5m D-shaped, 171m long
	Adit-3	4m x 4m, 105m long	4m x 4m, 105m long
	Adit-3A	4.5m x 4.5m, 46.6m long	4.5m x 4.5m, 46.6m long
	Adit-4	4.5m x 4.5m, 248.5m long	4.5m x 4.5m, 248.5m long
	Adit-5	6m x 6m, 158m long	6m x 6m, 158m long
	Adit-6	4.5m x 4.5m, 180m long	4.5m x 4.5m, 180m long
	Adit-7	5m x 5m, 43m long	5m x 5m, 43m long
1.3.3	**Surge Shaft**		
	Type	Underground-simple surge shaft	Underground-simple surge shaft
	Size	6m dia., 80m height	6m dia., 80m height
1.3.4	**Bonnet Gate Chamber**		
	Size	2.2m x 2.2m	2.2m x 2.2m
	Invert Level	El. 2483.978m	El. 2483.978m
1.3.5	**Pressure Shaft**		
	Type	Underground	Underground
	Size/length	1 no. of 2.5 m dia.,	1 no. of 2.5 m dia.,
	Main Pressure Shaft	747m long	747m long
	Unit Pressure Shaft	2 nos. of 1.8m dia., 40.24m and 30.73long	2 nos. of 1.8m dia., 40.24m and 30.73long
	Design Discharge	20.0cumecs	20.0cumecs
	Type of Steel for steel liner	IS 2002- Grade 3 SAILMA 550 HI, ASTM A 517 Grade F	IS 2002- Grade 3 SAILMA 550 HI, ASTM A 517 Grade F
	Thickness	10mm-28mm	10mm-28mm
1.3.6	**Power House**		
	Type	Underground	Underground
	Size	67.5m (L) x 17.5m (W) x 35.85m (H)	67.5m (L) x 17.5m (W) x 35.85m (H)
	Transformer bay	26.5m x 12m x 13m, Size El. 1912.0m Bottom elevation of Power House	26.5m x 12m x 13m, Size El. 1912.0m Bottom elevation of Power House
	Power House Levels	El. 1947.85m, Tope elevation of Power House El. 1929.57m, Service Bay level	El. 1947.85m, Tope elevation of Power House El. 1929.57m, Service Bay level
	Control Block	Size, 12m (L) x 17.5m (W)	Size, 12m (L) x 17.5m (W)
	Bus Duct	Bust duct, 3m (W) x 4m (H), D-shaped	Bust duct, 3m (W) x 4m (H), D-shaped
	No. of units	2	2
	Type of Turbines	Vertical axis Pelton wheel	Vertical axis Pelton wheel
	C/L of Turbines	El. 1919.40m	El. 1919.40m
	Type of Generator	Vertical Shaft	Vertical Shaft
	Terminal Voltage	11kV	11kV
	Transformer Capacity	63.9 MVA	63.9 MVA
	Installed Capacity	100 MW (2 x 50 MW)	100 MW (2 x 50 MW)

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	Gross Head	623.60m	623.60m
	Rated net Head	608m	608m
1.3.7	**Main Access Tunnel**		
	Main Access Tunnel	Size, 6m x 6m, D-shaped Length: 982m long Starting Level: El. 1951.50m Slope of MAT: 1 in 17	Size, 6m x 6m, D-shaped Length: 982m long Starting Level: El. 1951.50m Slope of MAT: 1 in 17
1.3.8	**TRT**		
	Main Tail Race Tunnel		
		Unit-I TRT	Unit-I TRT
		Length of Unit-I TRT, 31.7m	Length of Unit-I TRT, 31.7m
		Size of Unit TRT, 2.5m (W) x 4.5m (H), D-shaped	Size of Unit TRT, 2.5m (W) x 4.5m (H), D-shaped
		Unit-II TRT	Unit-II TRT
		Length of Unit-II TRT, 22.11m	Length of Unit-II TRT, 22.11m
		Size of Unit-II TRT, 5m (W) x 6m (H), D-shaped	Size of Unit-II TRT, 5m (W) x 6m (H), D-shaped
		TRT cum Cable Tunnel	TRT cum Cable Tunnel
		Length of TRT cum cable Tunnel: 255m	Length of TRT cum cable Tunnel: 255m
		Size of TRT cum Cable Tunnel: 5m (W) x 6.75m (H), D-shaped	Size of TRT cum Cable Tunnel: 5m (W) x 6.75m (H), D-shaped
		Slope of TRT- 1 in 1000, Starting Level: El. 1912.4m	Slope of TRT- 1 in 1000, Starting Level: El. 1912.4m
	Control Cable Tunnel	Control Cable Tunnel, 3m (W) x 3.25m (H), D-shaped	Control Cable Tunnel, 3m (W) x 3.25m (H), D-shaped
1.4	**Energy Generation**		
	Energy Generation in 90% dependable year	409.77 M Kwh	409.77 M Kwh

31/1/20

Public Information Officer
-cum- Sr. Executive Engineer,
Directorate of Energy,
H.P., Shimla-171005

Information Supplied to Sh Sumit Mahor
Under RTI Act, 2005.

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Annexure-VI

Statement

Incident:

I, Ananda Varma working as a Plant In charge of Malana-II HEP and looking all the Project activities. In Malana-II HEP, at dam we are managing the A, B&C shifts and in each shift One engineer and One Operator has been deployed for monitoring the Dam regular operations. In powerhouse, we had a three shifts A, B & C shifts and in each shift two engineers and two operators has been deployed for Powerhouse operations and In addition to that, in each shift one operator has been deployed for Switchyard Operations.

On August 01,2024, received a call from Dam control room and informed that at 02.56 hours EWS installed up stream of Malana-II Dam showed change of water level sensed by AWLR from 2.9 Mtr to 3.55 Mtr. After the sudden change shown by AWLR, reservoir level also starts increasing from EL 2538.7 to El 2539.6. It was observed that the muddy water along with logs and other trash was flowing into the reservoir and indicating a flash flood in catchment area.

This incident was immediately informed to the downstream hydro projects, local PS & Fire Brigade, through telephonic communication and then sms in WhatsApp group of DDMA. Safety alerts were generated via hooters and public addressing systems about the release of water from DAM, and then the DAM gates were gradually operated to release of discharge through Dam gates.

Parallelly, we shut down the generation normally and Closed the Intake gate and gradually increased the opening of DAM radial gates to release water taking due care of downstream flooding as well as Dam safety.

At Malana II HEP, we have a small pondage, and the live storage capacity is 0.2875 MCM only. As it was flash flood in river due to cloud burst and water inflow increased suddenly, the gates were opened in a controlled manner maintaining reservoir level between 2538 to 2525 between 3.00 am to 6.00 am. It may kindly be appreciated that, although the PH was shut down and our Switchyard and Transmission towers got damaged, still we did not lower the water to the bottom so as to minimize the intensity of flood on the d/s to some extent and also sufficient buffer was kept for any further incremental inflow during flood time/excessive inflow. If we had not opened the DAM Gates in such conditions, there were chances of DAM over topping in 10 to 11 minutes (considering the river discharge of 150 cumecs as at 5.00 am) that would be unsafe/risky to the DAM safety and downstream Projects and areas. After 6.00 am since the flood intensity was continuing above 125 cumecs, the gates were gradually opened fully. Then, it was also visually observed that the flood intensity was around 100 cumecs in the day of 1st Aug. and slowly decreasing by the evening - night.

Status of the Project Components:

Dam: Now the both the gate is fully opened and in locked condition. Now water is free flow from the both the radial gates and Intake gate is in fully closed condition. DAM and its apparent components are observed as safe; However, approach road between powerhouse and dam got damaged in the flood.

31/1/25

Public Information Officer
-cum- Sr. Executive Engineer,
Directorate of Energy,
H.P., Shimla-171005

Information Supplied to Sh Sumit Mahor
Under RTI Act, 2005.

Water Conducting System: After receding the flood water, on 4th Aug 2024 we started to deplete the HRT & Pressure shaft as per the SOP and Depletion completed on 16th Aug 2024. Now both HRT & Pressure shaft are depleted and Empty.

132 kV Switchyard: 132 kV Switchyard totally washed out.

Powerhouse: A small quantum Water has been entered into powerhouse through Main Access Tunnel and Now inspection has been completed. All the equipment's are safe and in good condition, however we need to do the cleaning of the floors.

Tail Race Tunnel: Tail Race Tunnel portal got completely chocked with boulders and muck. However, we engaged manpower to remove the muck.

132 kV Transmission Line: 3 Nos (Tower No-1, Tower No-2 & Tower No-3) of Transmission Line towers got damaged due to flood.

Roads: Approximately 4 kM road completely washed out due to flood from our project site to towards dam site. In addition, 2 Nos of Baily bridges got washed out for Main Access Tunnel and Cable cum Tail Race Tunnel.

Office Building: Administration office building got completely washed out.

Ropeways: 1 No 30 Ton Ropeway to Adit-1 & 1 No Cement Ropeway, 1 No 6 Ton Ropeway toAdit-3, 1No 6-Ton Ropeway to Adit-4, 500 kG Ropeway to Adit-4 got completely washed out.

Now Malana-1 is constructing the approach roads to their Barrage site. After that, we will also start our restoration activities of Malana-II HEP.

Now we don't have any electricity power for start the constriction activities and we are tied up with HPSEB & Malana-1 for electricity.

The statement is submitted for your kind information please.

Thanking you Sir,

Ananda Varma A
Plant Incharge,
100 MW Malana-II HEP,
Everest Power Pvt Ltd.

31/1/25

Public Information Officer
-cum- Sr. Executive Engineer,
Directorate of Energy,
H.P., Shimla-171005

Information Supplied to Sh Sumit Mahar
Under RTI Act, 2005.

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Statement

I Ashwani Kumar Dy. Manager (dam in - charge Malana-II) Power Sation working since 2013 at dam site, looking after O&M activities. Four shift A, B, C & D are deployed for Dam operation and maintenance. On dated 01.08.2024 shift-C was on duty. There was increasing trend of inflow of Malana River that was noticed by shift staff. Shift Engineer and operator took necessary action as per SOP to maintain the reservoir level, but suddenly they observed that heavy logs and big boulders with sound are travelling from upstream towards Dam. Mr. Vishal Yadav (Engineer) and Mr. Daulat Ram (Operator) was on night duty (10:00Hrs to 06:00Hrs) at Dam Control Room. At 02:56Hrs Mr. Vishal Yadav informed telephonically to Shift Engineer at Power House Control Room that the dam reservoir level is 2539.60 and Inflow is started increasing, Wooden Logs and muddy water continuously coming with the water flow. Inflow was increasing continuously and seems be cloud burst condition in catchment area. Control Room Shift Engineer noticed EWS (AWLR installed in the upstream of Dam) reading of EWS display in control room change from 2.9 to 3.6Mtr. Mr. Yadav telephonically informed me that Inflow is increasing desperately and a plenty of wooden logs along with muddy water and boulders are coming in the reservoir and asked me to inform the Plant Head to shut down the generating units and further direction to downstream Power Plants and Public. I reached Dam Control room to support shift staff, informed telephonically the Site In-charge of M/s Himalayan Hydro Energies Private Limited (SHEP) about the flood condition and requested them to stay attentive and safe. Further I instructed the operator to operate the Radial Gates gradually to release the inflow and maintain the reservoir. Later the reservoir level depleted slowly from 3.00 hours to 6.00 hours till free flow. Radial Gates were fully opened and locked at 08.00 hours. From 08.00 hours dated 01.08.2024 radial gates of Malana-II Dam are in full open condition and inflow is free flow through spill.

Ashwani Kumar
S/o Sh. Safar Dayal
Village- Dhiyal PO Totarani
Tehsil Dharamshala Distt Kangra
Himachal Pradesh

18/08/24

31/1/25

Public Information Officer
-cum- Sr. Executive Engineer,
Directorate of Energy,
H.P., Shimla-171005

Information Supplied to Sh Sunil Kumar
Under RTI Act, 2005.

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मै विशाल यादव मैकेनिकल इंजीनियर के पद पर मलाणा-2 के डैम पर कार्यरत हूँ। दिनांक 01/08/2024 को रात्रि मे ड्यूटी पर था। 2 बजे तक सब सामान्य अवस्था मे चल रहा था उसके बाद अचानक हल्की बारिश होना शुरू हो गया और रिजरवायर लेवल बढना शुरू हो गया था। हमने लेवल को मेंटेन कैम करने के लिए बढ़ते हुए रिजरवायर और इनफलो के अनुसार और गेट खोलना शुरू कर दिया। उसके बाद विद्युत ग्रह और डैमइनचार्ज को सूचित कर दिया। डैम लेवल बढ़ता ही जा रहा था साथ ही लकड़ी के बड़े-बड़े ठेले और पत्थर, मिट्टी युक्त पानी आना शुरू हो गया था। तुरन्त मैने डैम इनचार्ज को सूचित किया कि आप विद्युत ग्रह मे बात करके मशिन बन्द करने के लिए बात करे। 8 इसके उपरान्त डैमइनचार्ज तुरन्त कन्ट्रोल रूम मे आ गये उनके देख-रेख मे स्थिति को संभालने मे लगे रहे। मैने 6:00 बजे शिफ्ट अपनी शिफ्ट इंजीनियर को Handover कर दिया।

नाम- विशाल यादव
पिता- श्री रामकरन यादव
पता- सोनबरसा, पकड़ी वीर मद्र
जिला- देवरिया (274206)
उत्तर प्रदेश

Vishal yadav

31.1.25

Public Information Officer
-cum- Sr. Executive Engineer,
Directorate of Energy,
H.P., Shimla-171005

Information Supplied to Sh Sumit mahar
Under RTI Act, 2005.

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Date:- 18-08-2024.

I, Digvijay Singh Rao, working as J.E., at Dam Site; Malan-II H.E.P. want to state that; On 1-August-2024 at morning 6:00 Hrs, I take charge of the shift from Vishal Yadav. Their was the situation of Heavy Flood from Night. The gate opening was 2500mm-2500mm both. The Level goes down and flood and water was free flow from gates.

But There was too much muddy water, Logs and Boulders coming with flood. Then after discussing we take decision to fully open the gates. Because Muddy water, Logs, Boulders was very risky for the gates or Dam.

Name:- Digvijay Singh Rao.
Father Name:- Sh. Parma Nand.
Vill.- Thara, P.O.- M.D. Galoo.
Teh.-Shil- Sunder Nagar.
Distt. Mandi. (H.P.)-175031

31/1/25
Public Information Officer
-cum- Sr. Executive Engineer,
Directorate of Energy,
H.P., Shimla-171005

Information Supplied to Sh. Sumit Thakur
Under RTI Act, 2005.

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Viresh Singh

Name - VIRENDER SINGH
S/o Sh. Dalo Ram
Village Leis P.O Thella
Teh. Bhunter Distt. Kullu
175141

31/1/25

Public Information Officer
-cum- Sr. Executive Engineer,
Directorate of Energy,
H.P., Shimla-171005

Information Supplied to Sh Sumit Thakur
Under RTI Act, 2005.

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Annexure-VII

महादेव युवक मण्डल

गांव चौहकी डा० व तह० जरी जिला कुल्लू (हि.प्र.) 175105

क्रमांक 105 दिनांक 2-8-2024

सेवा में

CIS महोदय जी
हि० प्र०

विषय → डैम फटने के कारण हुए नुकसान हेतु पत्र।

श्री मान जी,

निवेदन यह है कि दिनांक 01-08-2024 को मा० पा० कं० लि० परवा-I का डैम फटने से नदी का जल स्तर बढ़ा और इससे हुए नुकसान में चौहकी गांव के ~~पीने~~ मन्दीर और बगीचे व खेती की भारी नुकसान हुआ है। अतः आप से विनम्र निवेदन है हमारे खेती व मन्दिरों को फिर से बनाने के लिए पुरा योगदान दे। कृपया करके यह कार्य जल्द से जल्द शुरु किया जाय। हम आपके आभारी रहेंगे।

धन्यवाद।

श्रीमान Kishan
युवा नाग युवक मण्डल
वार्ड नं 2, गांव चौहकी डा० जरी
तह० सैंज जिला कुल्लू (हि०प्र०)

प्रधान महादेव युवक मण्डल

2-8-2024

प्रधान महिला मण्डल

ग्राम पंचायत
वार्ड पंच

Forwarded to DC Kullu to look into the matter and contribute in restoration works by providing funds if there is any P.S

31/1/25

Public Information Officer
-cum- Sr. Executive Engineer,
Directorate of Energy,
H.P., Shimla-171005

Information Supplied to Sh Sumit Mahar
Under RTI Act, 2005.

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1		17		32	
2		18		33	
3		19		34	
4		20	Ramesh	35	
5		21	SHYAM	36	
6	Bhawan	22		37	
7		23	Meera	38	
8		24		39	LAL CHAN.
9	Puneet.	25		40	
10		26		41	Anshu
11		27		42	
12		28		43	
13		29	Bale Ram	44	
14		30		45	
15		31		46	
16		32		47	

31/1/25

Public Information Officer
-cum-Sr. Executive Engineer,
Directorate of Energy,
H.P., Shimla-171005

Information Supplied to Sh
Under RTI Act, 2005.

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महादेव युवक मण्डल

गांव चौहकी डा० व तह० जरी जिला कुल्लू (हि.प्र.) 175105

रजि० नं० : 339

क्रमांक 106

दिनांक 02/08/2024

सेवा में,

C.P.S. महोदय जी,
हिमाचल प्रदेश,

विषय :- पांहकी गांव में फरण II के डंभ से पानी घुसने से हुए नुकसान के विषय पत्र।

श्रीमान जी,

निवेदन यह है कि पांहकी गांव में भालाना फरण II के पानी घुस जाने से जो पांहकी गांव में खेत, व बड़े पौधे, मन्दिर, मकान पूल, पुश्ताट व पूरे खेत में रेत भर जाने से सारे अनाज का नुकसान हो गया है अब वो भूमि कृषि योग्य नहीं बची है। हमारा आपसे निवेदन है कि जो डंभ के गेट खोलने से जो नुकसान हुआ है उसमें हम यह चाहते हैं कि इस नुकसान की भरपाई फरण II वाले करें।

धन्यवाद

सचिव
महादेव युवक मण्डल
गांव चौहकी डा० जरी

प्रधान
महिला मण्डल

Kishan

Forwarded to D.C Kullu to enquire into the matter & report to the government.

Public Information Officer
-cum- Sr. Executive Engineer,
Directorate of Energy,
H.P., Shimla-171005

Information Supplied to Sh Sumit Mahar
Under RTI Act, 2005.

81

1. RS Negi
2. Lal Chand
3 Yogesh
4. Yogesh Negi
5.
6.
7. Bhumesh
8.
9. Sushil
10.
11.
12.
13. Bala Ram
14.
15.
16.
17.
18.
19.
20.
21.
22.
23.
24.

25. KAMLA
26 Ritu Devi
27 सुमा देवी
28. Shanta
29. Parmila
30. मीना
31 Tilak
32
33 SHYAM
34

31/1/25

Public Information Officer
-cum- Sr. Executive Engineer,
Directorate of Energy,
H.P., Shimla-171005

Information Supplied to Sh Sunil Kumar
Under RTI Act, 2005.

महादेव युवक मण्डल

रजि० नं० : 330

गांव चौहकी डा० व तह० जरी जिला कुल्लू (हि.प्र.) 175105

क्रमांक 107

दिनांक 05-08-24

सेवा में

जिला परिषद महोदय जी,
श्रीमती रेखा गुलेरिया जी,
वार्ड नं० 3 बरशैणी
जिला कुल्लू हि०प्र०

विषय:- मलाणा-II कम्पनी व मलाणा-I कम्पनी के डैमफटने के कारण हुए नुकसान बारे।

महोदय जी,

निवेदन यह है कि मलाणा-II कम्पनी के द्वारा अपने डैम के दोनों गेट एक साथ छोड़ने के कारण नदी ने एक भयंकर रूप धारण किया और जिसने आगे चलकर भारी तबाही हुई, जिस कारण मलाणा-I कम्पनी का जो डैम था उसके सात ब्लॉक टूट गए और डैम का जो पानी था उसने आगे आकर तबाही मचा दी और गांव में भारी तबाही मचाई, जिसने नदी की चपेट में गांव के मंदिर व गाँव वालों की जो ज़मीन थी वह बाढ़ में बह कर गई है और जो बची हैं वह भूमि कृषि योग्य नहीं बची है में रेत व पत्थर भर चुके हैं।

अतः हम सभी गांव वासी आप गुजारिश करते हैं कि मलाणा-II कम्पनी व मलाणा-I कम्पनी हमा जमीन को कृषि योग्य बना कर दे व इसका मुआवजा भी गांव वालों दें। इसके साथ ही नदी के दोनों किनारों पर कंक्रीट दिवार ल कर दें ताकि आने वाले भविष्य में इस तरह की कोई अनहोनी ह देखने को न मिलें।

हम गांव वासी आपसे आशा करते हैं कि आप ह पुनीत कार्य को करने में हमारा सहयोग करें व हमें आपपर पूरा विश्वास है।

धन्यवाद।

Public Information Officer
-cum- Sr. Executive Engineer,
Directorate of Energy,

Information Supplied to Sh Sumit Mahar
Under RTI Act, 2005.

83

1 Ran Lal

2 Tulsi Ram.

3 Naresh kumar -

4 Leeladhar -

5 Hari Om Thakur - Hari Thakur

6 Kanchand -

7 Manchand -

8. Daleep Singh -

9. Devender kumar -

10 -

11 THAKAR DASS Thakur

12. सुलक्षणा ठाकुर Thakur

13 तारा देवी तारादेवी

14 गुप्त राम दौलत राम

15 यतेन्द्र सिंह Devinder Singh

16 प्रेम चन्द प्रेम चंद

17 Bhupender Singh B Singh.

18 KHEMRAJ

19 Yogi Raj

20 Kiran Kumar

21 शांता राम रामलाल

22 नारायण नारायण चन्द

23 मीत राम

24 चमन लाल Chamanlal

25 मनोहर लाल

26 दया राम

27 अमीत कुमार दयाराम

21/1/25

Public Information Officer
-cum- Sr. Executive Engineer
Directorate of Energy,
H.P., Shimla-171005

Information Supplied to Sh Sumit Mahar
Under RTI Act, 2005.

महादेव युवक मण्डल

रजि० नं० : 339

गांव चौहकी डा० व तह० जरी जिला कुल्लू (हि.प्र.) 175105

क्रमांक 110

दिनांक 6-8-2024

सेवा में

महाप्रबन्धक महोदय जी
म० पा० क० लि०
चरण -I

विषय :- मलाणा चरण -I कम्पनी के डैम फटने के कारण नुकसान हेतु पत्र।

श्रीमान जी,

निवेदन यह है कि दिनांक 01-08-2024 को मलाणा चरण -I के डैम फटने से गांव वालों के खेत, घर, व मंदिर पानी में बह गए। जिससे समस्त गांव वासी चौहकी वालों का बहुत ही अधिकतर नुकसान हुआ है। समस्त गांव वासी चौहकी वाले यह चाहते हैं कि बोहा सैरी में नदी के दोनों तरफ तटीकरण किया जाए ताकि आने वाले समय में ऐसी अनहोनी न हो। अतः आप हमारे इस कार्य को जल्द-से-जल्द करने की कृपा करें। आपकी महान कृपा होगी।

धन्यवाद।

महादेव युवक मण्डल
चौहकी

31/1/24

Public Information Officer
-cum- Sr. Executive Engineer,
Directorate of Energy,
H.P., Shimla-171005

Information Supplied to Sh Sumit Mahar
Under RTI Act, 2005.

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महादेव युवक मण्डल

रजि० नं० : 338

गांव चौहकी डा० व तह० जरी जिला कुल्लू (हि.प्र.) 175105

क्रमांक 111

दिनांक 6-8-2024

सेवा में

महाप्रबन्धक महोदय जी
हवरेस्ट पावर प्राईवेट लिमिटेड कम्पनी
चरण - II

विषय :- मलाणा - II के डैम के गेट एक साथ खोलने से हुए नुकसान हेतु पत्र ।

श्रीमान जी,

निवेदन यह है कि दिनांक 01-8-2024 को मलाना-II के सारे गेट खोलने से पानी का बहाव अधिक होने से चौहकी वालों की जमीन, घर व मंदिर पानी में बह गए और बची हुई जमीन कृषि योग्य नहीं रही । लगभग गांव वासी चौहकी यह चाहते हैं कि शोघा खेरी में नदी के किनारे दोनों तरफ तटीकरण किया जाए ताकि आने वाले समय में यह समस्या ना हो । अतः आप इस कार्य को जल्द से जल्द करने की कृपा करें । आपकी महान कृपा होगी ।

धन्यवाद

महादेव युवक मण्डल
चौहकी

31/1/24

Public Information Officer
-cum- Sr. Executive Engineer,
Directorate of Energy,
H.P., Shimla-171005

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महादेव युवक मण्डल

रजि० नं० : 339

गांव चौहकी डा० व तह० जरी जिला कुल्लू (हि.प्र.) 175105

क्रमांक 114

दिनांक 17/08/2024

सेवा में

Chief Engineer
DOE (H.P)
Shimla.

विषय :- मत्याना -II कम्पनी व मत्याणा -I कम्पनी के डैम फटने के कारण हुए नुकसान बारे।

महोदय जी,

निवेदन यह है कि मत्याणा -II कम्पनी के द्वारा अपने डैम के दोनों गेट एक साथ खोलने के कारण नदी ने एक भयंकर रूप धारण किया और जिसके आगे चलकर भारी तबाही हुई, जिस कारण मत्याणा -I कम्पनी का जो डैम था उसके सात (7) गेटों को बहा ले गए और डैम का जो पानी था उसने आगे जाकर तबाही मचा दी और चौहकी गांव में भारी तबाही मचाई, जिसमें नदी की दायीं ओर से गांव के तीन मंदिर व गांव वालों के द्वार व गांव वालों की जो जमीन थी वह बाढ़ में बह कर गई और जो बची है वह भूमि कृषि योग्य नहीं बची है। उसमें रेत व पत्थर भर चुके हैं।

अतः हम गांव वासी आपसे गुजारिश करते हैं कि मत्याणा -II कम्पनी व मत्याणा -I कम्पनी हमारी जमीन को कृषि योग्य बना कर दे व इसका मुआवजा भी गांव वालों को दें। इसके साथ ही नदी के दोनों किनारों पर संकरोह दीवार लगा कर दें ताकि आने वाले भविष्य में इस तरह की कोई अनहोनी देखने को न मिले।

हम गांव वासी आपसे आशा करते हैं कि आप इस कार्य को करने में हमारा सहयोग करें व हमें आप पर पूरा विश्वास है।

धन्यवाद

31/11/25

Public Information Officer
-cum- Sr. Executive Engineer,
Directorate of Energy,
H.P., Shimla-171005

प्रधान Rajesh Silhar
महादेव युवक मण्डल
गांव चौहकी डा० व तह०
तह भुन्तर जिला कुल्लू हि० प्र०

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ग्राम पंचायत कसोल विकास खण्ड मून्तर हि०प्र०

ग्रामीण विकास एवं पंचायती राज विभाग

ग्रा० कसोल,विकास खण्ड मून्तर जिला कुल्लू (हि०प्र०)

प्रस्ताव संख्या :-10 उपस्थिति :- 69/343

दिनांक :-03-08-2024 अध्यक्षता प्रधान :-श्रीमति बेसरू देवी ।

विषय :- मलाणा पॉवर हाइड्रो प्रोजेक्ट चरण-1 फटने के कारण हुए भारी नुकसान बारे :-

सर्व सम्मति से ग्रांम सभा द्वारा प्रस्ताव पारित किया गया कि दिनांक 01-08-2024 को मलाणा डैम फट गया था | जिससे कि पानी का बहाव अत्यधिक होने के कारण उसने भारी बाढ़ का रूप ले लिया | बाढ़ में ग्रांम पंचायत कसोल के गाँव चौहकी के अन्तर्गत नदी के किनारे स्थानीय गांववासियों के घर ,जमीन व मन्दिर पूर्ण रूप से बाढ़ में बह गए है न| इस बाढ़ से दो पंचायत को नुकसान हुआ है | नदी के एक किनारे में ग्रांम पंचायत कसोल व दूसरे किनारे में ग्रांम पंचायत तलपीनी का क्षेत्र है | जिसमे की ग्रांम पंचायत कसोल के गाँव चौहकी के स्थानीय गांववासियों का अत्यधिक मात्रा में नुकसान हुआ है | अत: ग्रांम सभा बैठक में उपस्थित सदस्यों द्वारा प्रस्ताव पारित किया की गाँव चौहकी नदी के दोनों किनारों में कंकरीट वाल का निर्माण किया जाए | ताकि भविष्य में इस तरह की आपदा से बचाव हो सके |

अत: प्रस्ताव के माध्यम से ग्रांम सभा बैठक में उपस्थित सदस्य महोदय से अनुरोध करते हैं कि जनहित में शीघ्र अति शीघ्र गाँव चौहकी में नदी किनारे तटीकरण किया जाए |

प्रतिलिपि :- 1 माननीय महाप्रबन्धक महोदय मलाणा पॉवर हाइड्रो प्रोजेक्ट चरण-1 की सेवा में आगामी कार्यवाही हेतू प्रेषित है |

2 माननीय महाप्रबन्धक महोदय मलाणा पॉवर हाइड्रो प्रोजेक्ट चरण-2 की सेवा में आगामी कार्यवाही हेतू प्रेषित है |

प्रमाणित किया जाता है कि नकल प्रस्ताव कार्यवाही मुताबिक असल है |

प्रधान
ग्राम पंचायत कसोल
विकास खण्ड मुन्तर
जिला कुल्लू (हि०प्र)
दिनांक.....

Secretary
Gram Panchayet Kasol
Dev. Block Kullu (H.P.)

31/1/25

Public Information Officer
-cum- Sr. Executive Engineer,
Directorate of Energy,
H.P., Shimla-171005

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सर्व सम्मति से ग्राम सभा द्वारा प्रस्ताव पारित किया गया कि दिनांक 01-08-2024 को भारी बरसात के चलते मलाणा पॉवर हाइड्रो प्रोजेक्ट चरण-II डैम के पानी के गेट खोले गए | जिससे कि पानी का बहाव अत्यधिक होने के कारण उसने भारी बाढ़ का रूप ले लिया | जिससे उसने बाढ़ में ग्राम पंचायत कसोल के गाँव चौहकी के अन्तर्गत नदी के किनारे स्थानीय गांववासियों के घर ,जमीन व मन्दिर पूर्ण रूप से बाढ़ में बह गए है ना| इस बाढ़ से दो पंचायत को नुकसान हुआ है | नदी के एक किनारे में ग्राम पंचायत कसोल व दूसरे किनारे में ग्राम पंचायत तलपीनी का क्षेत्र है | जिसमे की ग्राम पंचायत कसोल के गाँव चौहकी के स्थानीय गांववासियों का अत्यधिक मात्रा में नुकसान हुआ है | अत: ग्राम सभा बैठक में उपस्थित सदस्यों द्वारा प्रस्ताव पारित किया की गाँव चौहकी नदी के दोनों किनारों में कंकरीट वाल का निर्माण किया जाए | ताकि भविष्य में इस तरह की आपदा से बचाव हो सके |

अत: प्रस्ताव के माध्यम से ग्राम सभा बैठक में उपस्थित सदस्य महोदय से अनुरोध करते है कि जनहित में शीघ्र अति शीघ्र गाँव चौहकी में नदी किनारे तटीकरण किया जाए |

प्रतिलिपि :- 1 माननीय महाप्रबन्धक महोदय मलाणा पॉवर हाइड्रो प्रोजेक्ट चरण-2 की सेवा में आगामी कार्यवाही हेतु प्रेषित है |

प्रधान
ग्राम पंचायत कसोल
विकास खण्ड भुन्तर
जिला कुल्लू (हि.प्र.)
दिनांक.....

Secretary
Gram Panchayat Kasol
Dev. Block Kullu (H.P.)

31/1/25

Public Information Officer
-cum- Sr. Executive Engineer,
Directorate of Energy,
H.P., Shimla-171005

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सेवा में

मुख्य अभियन्ता
डी. ओ. ई
शिमला हि०प्र०

विषय :- मलाणा डैम I फटने व मलाणा II के कारण वलाधी मे हुए नुकसान हेतू।

श्रीमान जी,

जय हिन्द। महोदय निवेदन यह है कि 31.7.24 व 1.8.24 के मध्य रात्री को मलाणा II व मलाणा I में डैम के ऊपर एक साथ बादल फटने और मलाणा I के फटने से वलाधी गांव मे भयंकर तबाही हुई। जिसके कारण वलाधी गांव में आठ मकान, दो करियाना की बड़ी दुकानें, एक स्पैन, एक पैदल चलने योग्य पुल, लगभग 70-80 बिघा जमीन नदी मे पूर्णतया बह गई जिसमे लगभग 100 करोड़ का नुकसान हुआ जिसकी भरपाई दोनो कम्पनी की प्राथमिकता बनती है। महोदय जी हमारी सारी भूमि कृषि योग्य थी। जो अब बंजर बन गई और बह गई है। जहां कृषि नहीं की जा सकता है। महोदय यह जमीन लगभग 70 से 80 बीघा थी जो निम्न लोगों की थी। नीटू कुमार, अमरचन्द, चित्र देव, नरेन्द्र, चमनलाल, राकेश, प्रेमचन्द, हेमराज, दिनेश, जसदेवी, लोतमा देवी, सुमना, द्रौपती देवी, धर्मादेवी, चमन लाल, चन्द्रवती, चन्द्रकान्ता, दीक्षा महेश्वरी, रामनाथ, चंदराम, गुड्डू राम, मुकुन्दलाल, फागलू राम, इन्द्रदेव, केहर सिंह, गौरी देवी, जवना देवी, विद्यासागर, अमर दास, प्यारेलाल, नवीन, बालम, कुन्द नाथ राम, भाग चन्द, कुन्ती देवी, प्रियंका, दीना, चादनी, जगरनाथ, कंजलाल, शान्ती लाल, तीर्थराम, राजकुमारी, खेलू देवी, गुड्डी देवी, सीता देवी, चम्पा देवी, कमला देवी, शान चन्द, जितेन्द्र कुमार, राम देई, विद्या देवी, हीरा सिंह, बालाराम, सुरतराम, जीतराम, नरायण दास, लाल चन्द, धुनी लाल, चैतराम, सेसी देवी, रोडू राम, धुनी लाल, धोगराज, दौलत राम इत्यादि, इसके उपरान्त जिनका मकान का नुकसान हुआ। नीटू कुमार, चित्र देव, रामनाथ, सूर्यकान्त, इन्द्र देव, केहर सिंह, जवना देवी, विद्यासागर, द्रौपती देवी, शान चन्द, जितेन्द्र कुमार, गोपी चन्द, एक सरकारी स्कूल, इत्यादि। इसके साथ रेवा देवी और इन्द्र देव की करियाना की दुकान और मशीन, 5 डैम, रामनाथ जी के पशु, इत्यादि वहे। जिसका नुकसान उपरोक्त लिखित है। जो दोनों कम्पनियों की प्राथमिकता बनती है। डेंजू जोनमें शानचन्द, जितेन्द्र कुमार, हेमराज, दिनेश, जसदेवी, तीरथराम, जगरनाथ, खुनीलाल, प्यारेलाल का मकान है। महोदय इस बदंबे मे सारे गांव वासी की मुख्य मांग है कि सभी नुकसान वालों को नुकसान की भरपाई और मुख्यतः एक गाड़ी योग्य पुल, नदी की वर्तमान स्थिती बदल कर पुरानी जगह पर बदलना, एक प्राथमिक स्कूल की निर्माण, जरीस्कूल में पढ़ने वाले बच्चों के लिए चौहटी से पाथला तक एक बस रोड़ जो बच्चों को लाने और छोड़ने का काम करेगी। नदी के रोकथम के लिए एक भजबूत कंकरीट की दिवार दी जाये जिसके लिए समस्त गांव वासी

Public Information Officer
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H.P., Shimla-171005

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आपका आभारी रहेगा।

निवेदक
समस्त ग्रामवासी
बासी बलाहरी

3/11/25

Public Information Officer
-cum- Sr. Executive Engineer,
Directorate of Energy,
H.P., Shimla-171005

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Date - 18-08-2024,

मैं दौलत राम शीफ्ट ऑपरेटर ने पद पर मलाणा-2 के ईम पर कार्यरत हूं दिनाँक 01/08/2024 को सुबह 8:00 AM तक ड्यूटी पर था। रात्री 2:00 AM तक सब सामान्य अवस्था में था 2:30 AM तक हल्की बारिश तथा रिजरवायर लेवल बढ़ना शुरू हुआ। मैंने शीफ्ट इंजीनियर को बताया की लेवल बहुत तेजी से बढ़ रहा है। फिर शीफ्ट इंजीनियर जी के आदेश अनुसार तथा रिस्क गार्ड लेवल बढ़ रहा था उसे ध्यान में रखकर गेट खोले गये। जब हमने ली ली पैड, बड़े-बड़े पत्थर तथा काली मिट्टी वाला पानी देखा तो हमें अचंभा हुई कि फ्लैश फ्लड आ गया है। तो मैंने शीफ्ट इंजीनियर द्वारा हमारे Power House control Room में तथा मलाणा-1 ईम को फ्लड के बारे में बताया तथा हमारे ईम इन्चार्ज जी को भी बताया गया तत्पश्चात हमारे ईम इन्चार्ज ईम में आ गये फिर उनके आदेशानुसार फ्लड को कन्ट्रोल करने हेतु तथा बढ़ते जलस्तर को ध्यान में रखकर गेट खोलते रहे। अतः इसी तरह हमारे ईम इन्चार्ज जी के आदेश अनुसार 3:00 AM से 6:00 AM तक तथा बढ़ते जलस्तर को ध्यान में रखकर गेट खोलते रहे। 6:00 AM पर फिर सुबह की शीफ्ट में ऑपरेटर और शीफ्ट इंजीनियर जी को रात्री में हुई पुरी घटना के बारे में जानकारी दी गई। तथा साथ में उन्हें ये भी बताया की कितने गेट खुले हैं फिर पानी घटना शुरू हुआ परन्तु हमारी शिफ्ट समाप्त होने पर हम शीफ्ट अगले शीफ्ट के कार्यकर्ताओं को चार्ज चले गये।

नाम - दौलत राम
पिता - स्वर्गीय श्री दौत राम
पता :- गाँव अंगरा डा० कसूलाधी
त०जरी जिला कुल्लू (हि०प्र०)
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Annexure-VIII

Report

Identification of excessive rainfall/cloud burst events occurred on 1st August 2024, which led to flooding and water spread along with damage in downstream area of Malana River catchment using satellite imagery

Submitted to
Directorate of Energy, GoHP Shimla

Submitted by
Geo Climate Risk Solutions Pvt. Ltd.

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DOCUMENT CONTROL

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Submitted to

Directorate of Energy, GoHP Shimla

Submitted by

Geo Climate Risk Solutions Pvt Ltd, www.gcrs.co.in

Document Control

Ref/Version	Prepared by
Final	Geo Climate Risk Solutions Pvt Ltd

The title mentioned above report has been prepared by an undersigned accredited agency by CGWA vide Sr. No. 5 in the list displayed on the CGWA website (Ref:http://cgwa-noc.gov.in/LandingPage/UserAssistance/Results_Accreditation_with_Contact_Details%2017-03-2021.pdf#ZOOM=100).

G. Prasad Babu,
Founder and CEO
Geo Climate Risk Solutions Pvt. Ltd.
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Identification of excessive rainfall/cloud burst events occurred on 1st August 2024, which led to flooding and water spread along with damage in the downstream area of the Malana River catchment using satellite imagery

1. Introduction

Cloudbursts are intense meteorological events characterized by extremely heavy rainfall concentrated over a short period, typically lasting from a few minutes to several hours. These localized convective storms can lead to devastating flash floods, landslides, and significant damage to natural and anthropogenic environments, especially in mountainous areas with steep terrain and unstable slopes. On August 1, 2024, a severe cloudburst occurred in the upper catchment of the Malana River, a tributary of the Beas River system in the Kullu district of Himachal Pradesh, India. The present report analyzes remote sensing data to identify the cloudburst's location and delineate the maximum extent of the area affected by the water spread following the event. A comparison between pre- and post-event conditions is also discussed in this report.

2. Geographical Context

Malana River originates in the high-altitude terrains of the Kullu district, flowing southward before merging with the Beas River (Figure 1). The river basin is defined by steep, rugged topography and sparse vegetation, contributing to its susceptibility to hydrological extremes. The region's geomorphology and extensive hydropower infrastructure amplify its vulnerability to severe hydrometeorological events such as cloudbursts and intense monsoonal rainfall. The catchment area frequently experiences heavy precipitation during the monsoon season, which can trigger abrupt and significant variations in river discharge, posing substantial risks to natural and anthropogenic environments.

On August 1, 2024, a sudden cloudburst event occurred upstream of the Malana River basin, depositing an unusually high volume of rainfall within a short period. Preliminary meteorological data indicate that the rainfall intensity exceeded normal rainfall.

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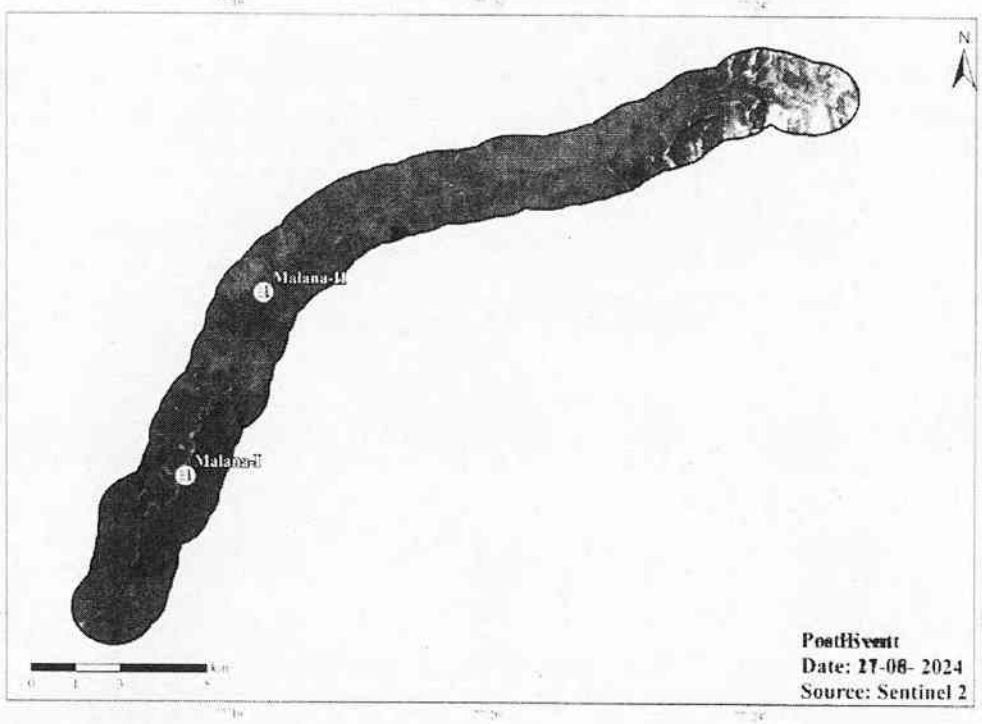


Figure 1 False Colour Composite (FCC) imagery of the Malana River system, including a 1 km buffer zone.

3. Approach and Methodology

This study utilizes remote sensing data within a 1 km buffer zone of the Malana River, a tributary of the Beas River Basin, where two hydropower facilities are located. The analysis involves examining satellite imagery captured before and after the significant flood event on August 1, 2024. The pre-event data corresponds to June 17, 2024, and the post-event data to August 21, 2024.

Spatial maps depicting conditions before and after the event were generated using the ArcGIS platform, allowing for the assessment of river channel widening following the flood. Additionally, the Normalized Difference Vegetation Index (NDVI) and Normalized Difference Bareness Index (NDBaI) were calculated using the Google Earth Engine (GEE) platform to further analyse vegetation and bareness changes.

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4. Results and Interpretation

4.1. Pre- and Post-event Satellite imagery of Malana River

The cloudburst caused a sharp rise in river discharge, triggering flash flooding within the Malana River system. Satellite imagery taken before and after the event (on June 17, 2024, and August 21, 2024, respectively) shows significant alterations in the river's morphology, including widened channels, sediment deposition, and bank erosion. The floodwaters carried large amounts of debris, such as boulders and uprooted vegetation, which intensified the river's erosive power.

Figure 2 and Figure 3 illustrate the area surrounding the Malana-I and Malana-II hydroelectric projects along the Malana River. The area is depicted using a false-color infrared composite, where vegetation health and changes in land cover is available.

For a more detailed analysis, the study area has been segmented into four sections, labeled as Window 1, Window 2, Window 3, and Window 4:

- **Window 1** is located in the upstream region of the Malana River, where the most significant impact from the cloudburst event is observed. The distance from Malana II to the cloud burst location is approximately 14 km.
- **Window 2** extends from the upstream area of the Malana River down to the Malana-II hydroelectric project.
- **Window 3** covers the region between the Malana-II and Malana-I hydroelectric project sites. The distance from Malana I to Malan II is approximately 5.5 km;
- **Window 4** encompasses the area downstream of the Malana-I hydroelectric project. The distance from Malana I to the confluence point of the Parvati River is approximately 5 km.

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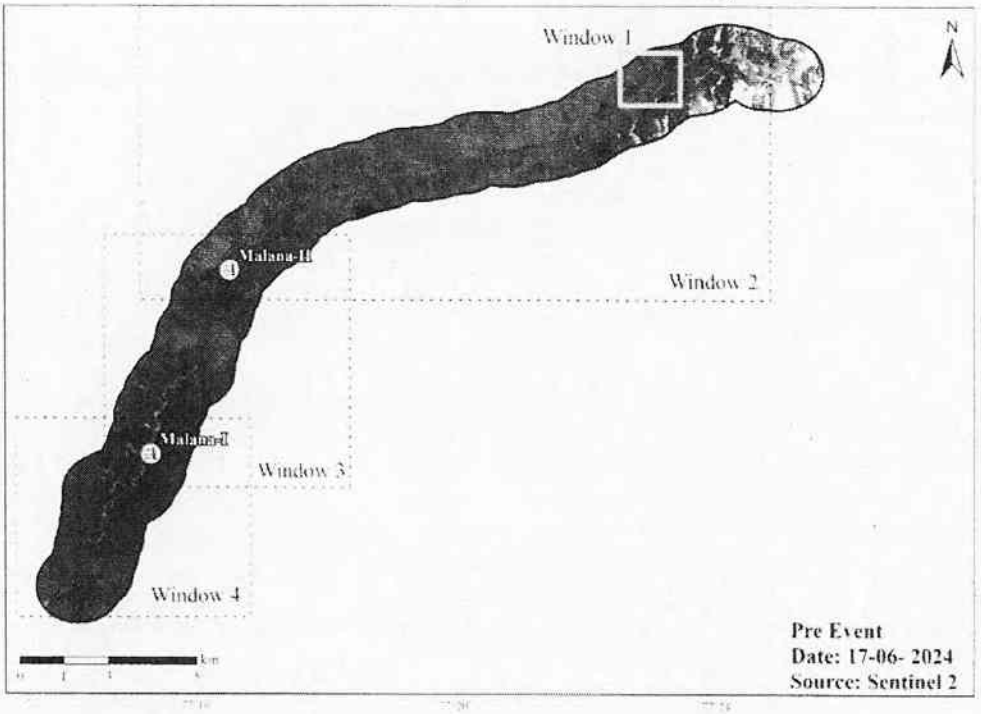


Figure 2 Pre-event False Colour Composite (FCC) image of the Malana River, including a 1 km buffer zone. The yellow box (labelled as window 1) highlights the area upstream where the most significant damage occurred due to the cloudburst (an enlarged view of windows 1 to 3 is shown below).

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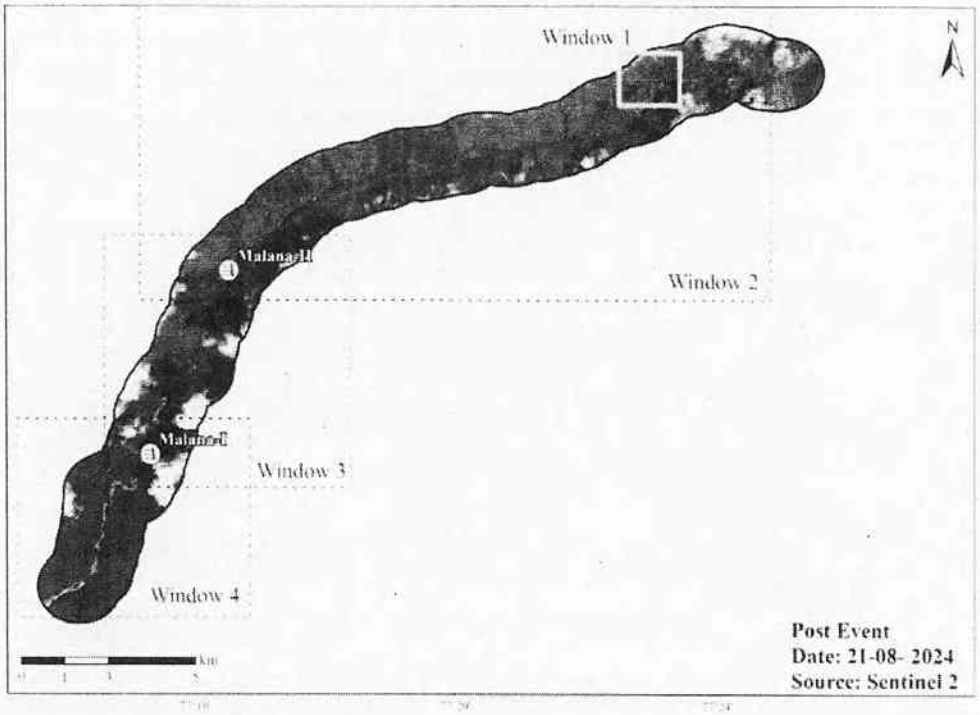


Figure 3 Post-event False Colour Composite (FCC) image of the Malana River, including a 1 km buffer zone. The yellow box (labelled as window 1) highlights the area upstream where the most significant damage occurred due to the cloudburst (an enlarged view of windows 1 to 3 is shown below).

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Window 2: The comparison between the pre-event and post-event images shows significant changes in the Malana River widespread area, indicating the impact of a natural event, such as a cloudburst, on the landscape. The post-event imagery highlights the disruption to vegetation and potential damage to the terrain, which could have implications for the Malana-II hydroelectric project and surrounding areas. This analysis underscores the importance of using satellite imagery to monitor environmental changes and assess the impact of natural disasters.

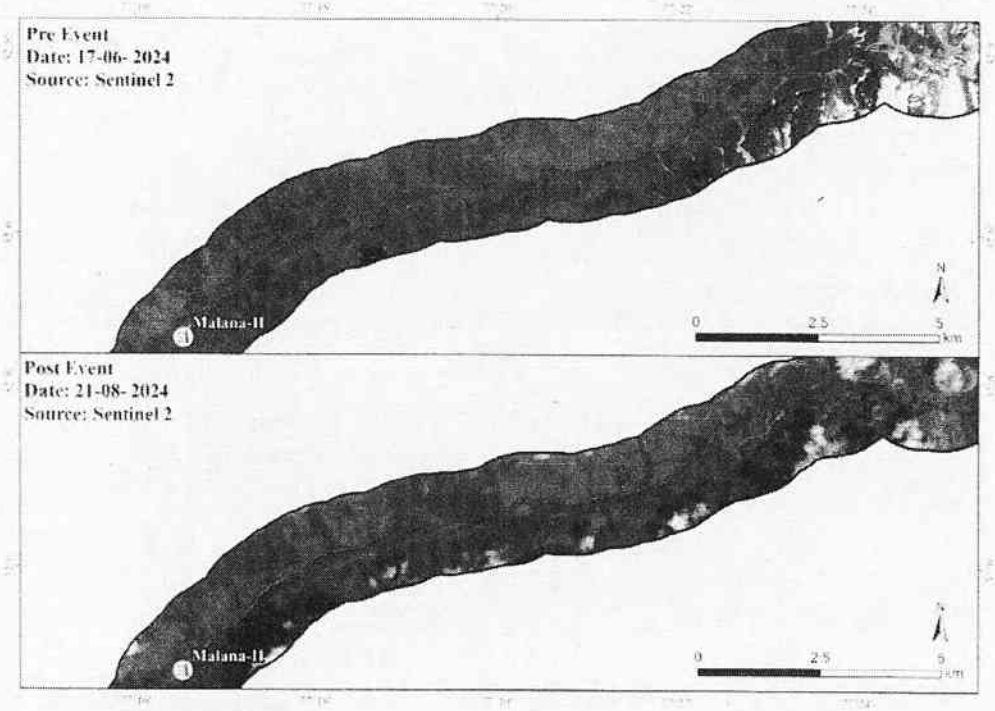


Figure 4 Zoomed-in view of window 2 (refer to Figure 2 and Figure 3 for spatial locations).

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Window 3: The imagery demonstrates a clear contrast between the pre-event and post-event conditions, highlighting the environmental impact of the event on the Malana-I and Malana-II hydroelectric project areas. The post-event imagery reveals significant disruptions to the landscape, likely indicative of severe weather conditions and their consequences on the natural environment and infrastructure in the region. This comparison underscores the utility of satellite imagery in monitoring and assessing the impact of natural disasters on vulnerable areas.

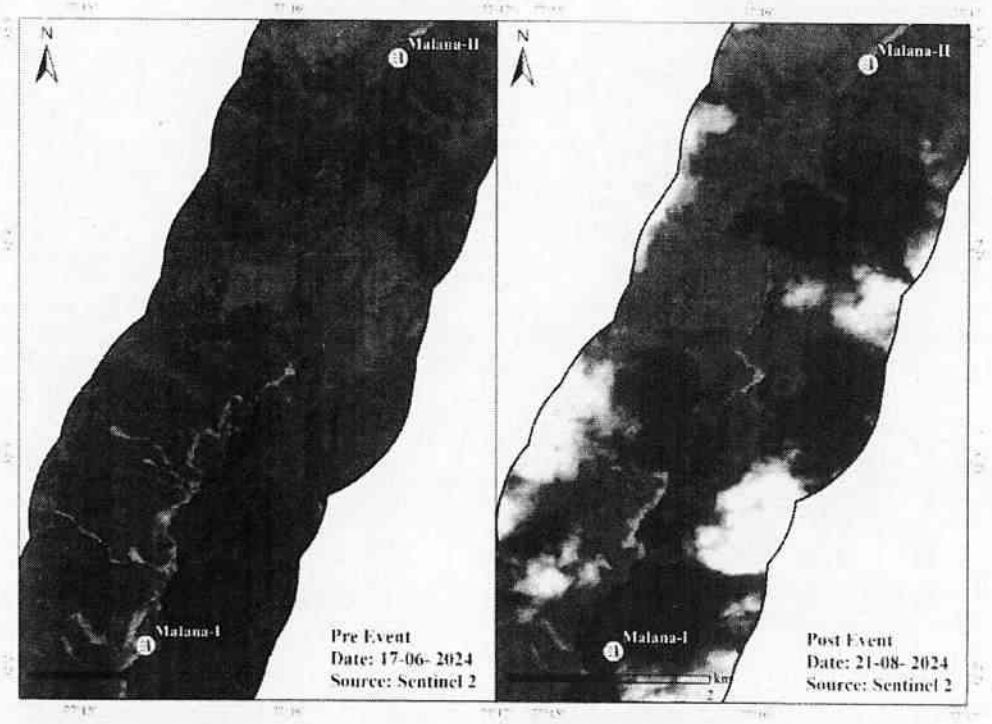


Figure 5 Zoomed-in view of window 3 (refer to Figure 2 and Figure 3 for spatial locations).

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Window 2: The comparison between the pre-event and post-event images shows significant changes in the Malana River widespread area, indicating the impact of a natural event, such as a cloudburst, on the landscape. The post-event imagery highlights the disruption to vegetation and potential damage to the terrain, which could have implications for the Malana-II hydroelectric project and surrounding areas. This analysis underscores the importance of using satellite imagery to monitor environmental changes and assess the impact of natural disasters.

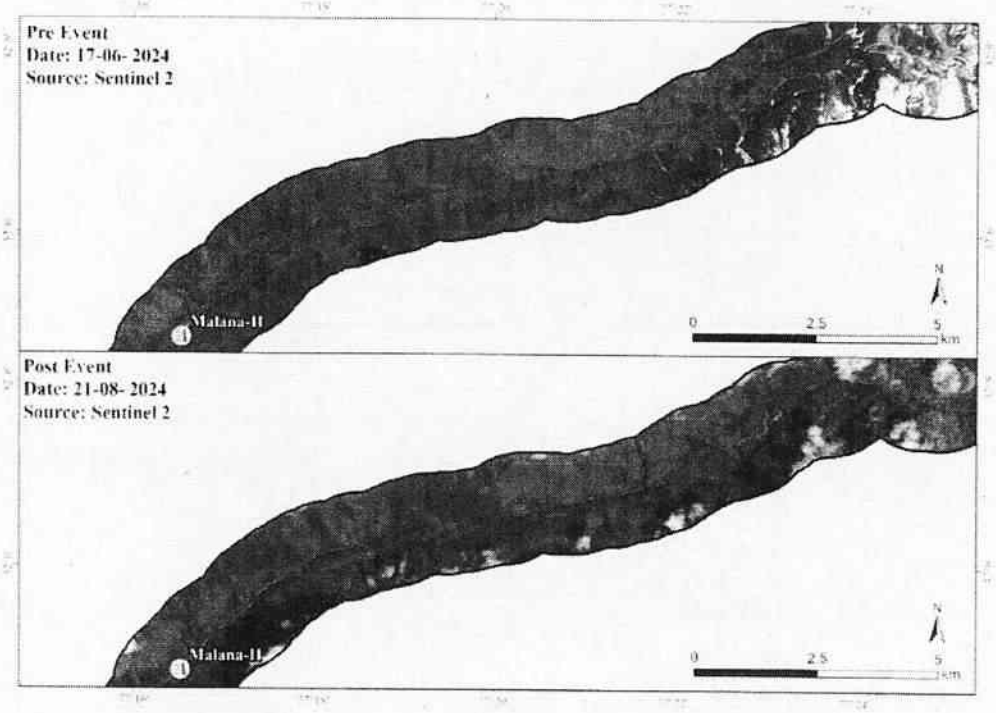


Figure 4 Zoomed-in view of window 2 (refer to Figure 2 and Figure 3 for spatial locations).

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Window 3: The imagery demonstrates a clear contrast between the pre-event and post-event conditions, highlighting the environmental impact of the event on the Malana-I and Malana-II hydroelectric project areas. The post-event imagery reveals significant disruptions to the landscape, likely indicative of severe weather conditions and their consequences on the natural environment and infrastructure in the region. This comparison underscores the utility of satellite imagery in monitoring and assessing the impact of natural disasters on vulnerable areas.

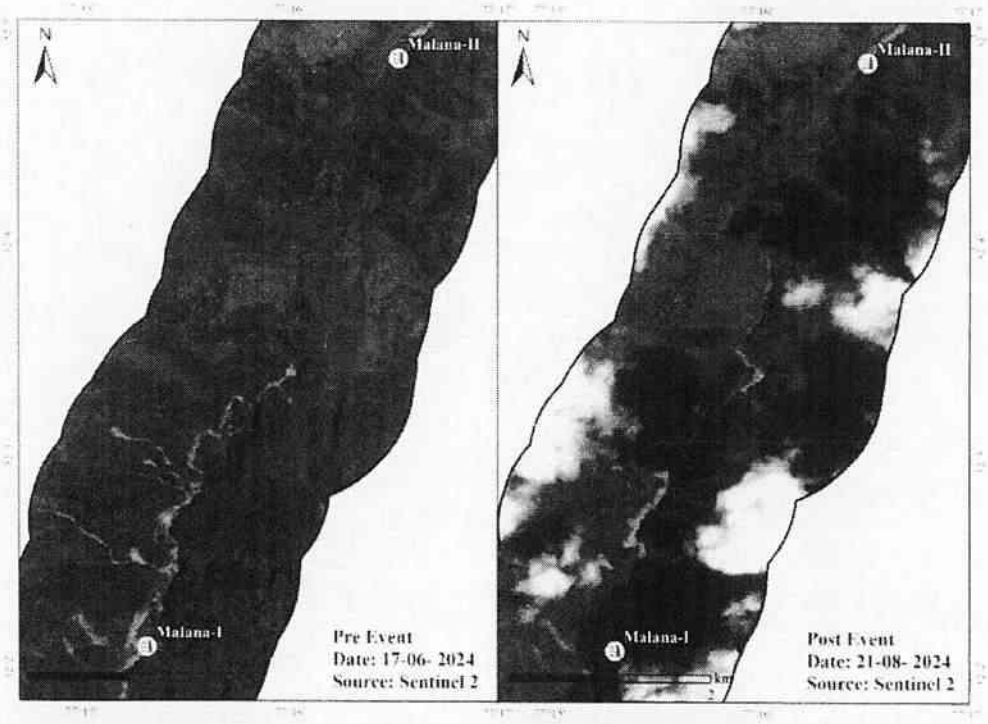


Figure 5 Zoomed-in view of window 3 (refer to Figure 2 and Figure 3 for spatial locations).

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Window 4: The imagery demonstrates a clear contrast between the pre-event and post-event conditions, highlighting the environmental impact of the event on the downstream of Malana-I hydroelectric project areas. The post-event imagery reveals significant disruptions to the landscape, likely indicative of severe weather conditions and their consequences on the natural environment and infrastructure in the region. This comparison underscores the utility of satellite imagery in monitoring and assessing the impact of natural disasters on vulnerable areas. The water spread area is maximum during the post-event.

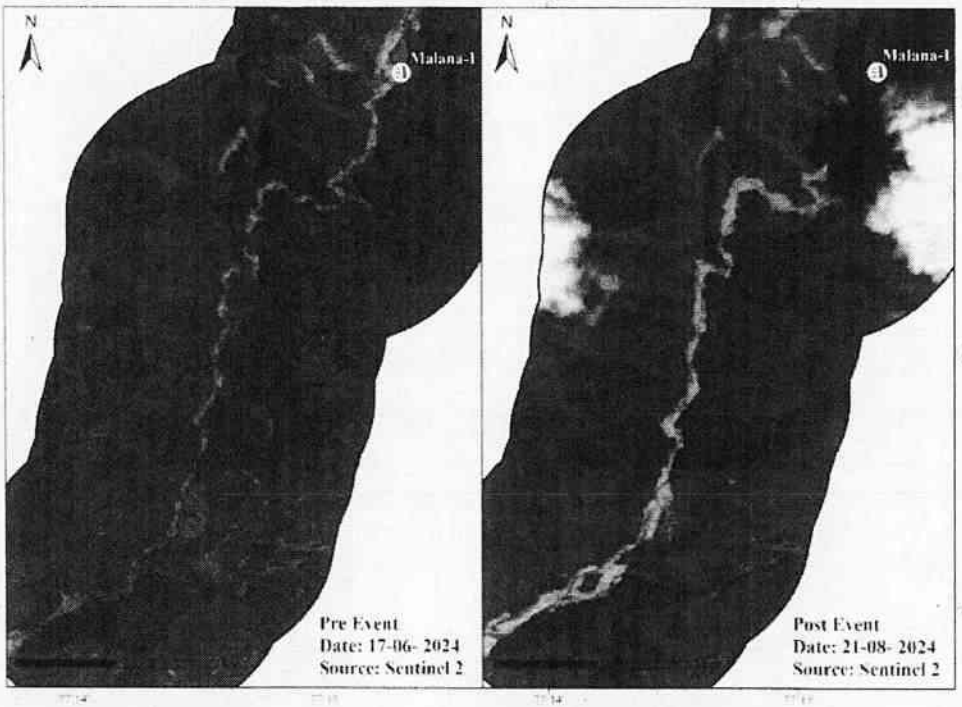


Figure 6 Zoomed-in view of window 4 (refer to Figure 2 and Figure 3 for spatial locations).

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Window 1: The imagery highlights a stark contrast between the pre-event and post-event conditions in the upstream area of the Malana River. The post-event imagery reveals significant disruptions to the landscape caused by the cloudburst. Additionally, the post-event imagery identifies areas marked in yellow (see Figure 7), indicating the regions with the most substantial changes.

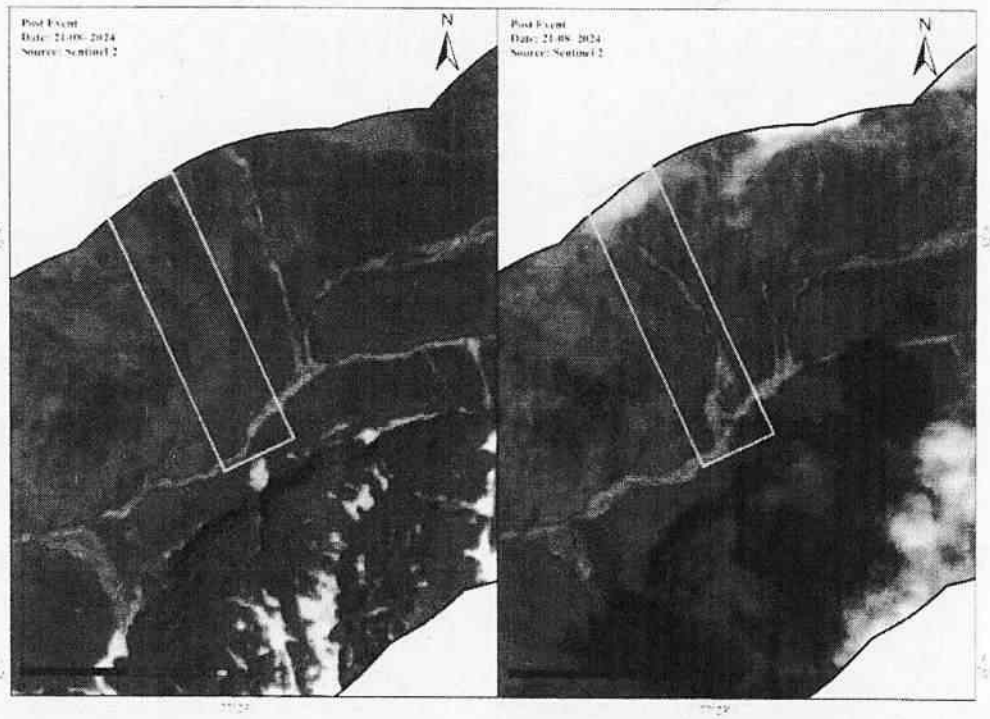


Figure 7 Zoomed-in view of window 1 (refer to Figure 2 and Figure 3 for spatial locations).

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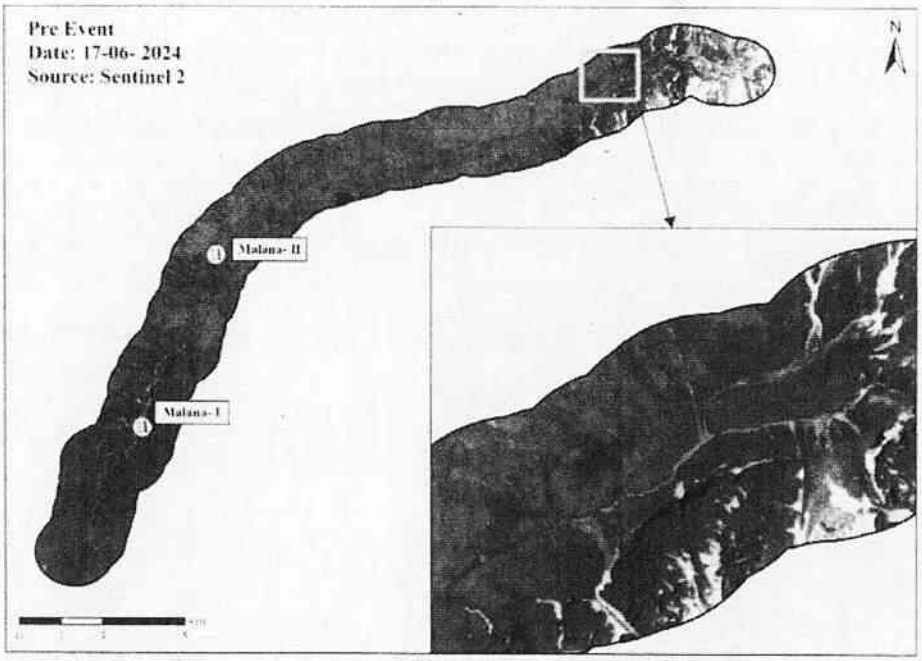


Figure 8 Malana River system with a 1 km buffer area, including a zoomed-in view of window 1 (pre-event).

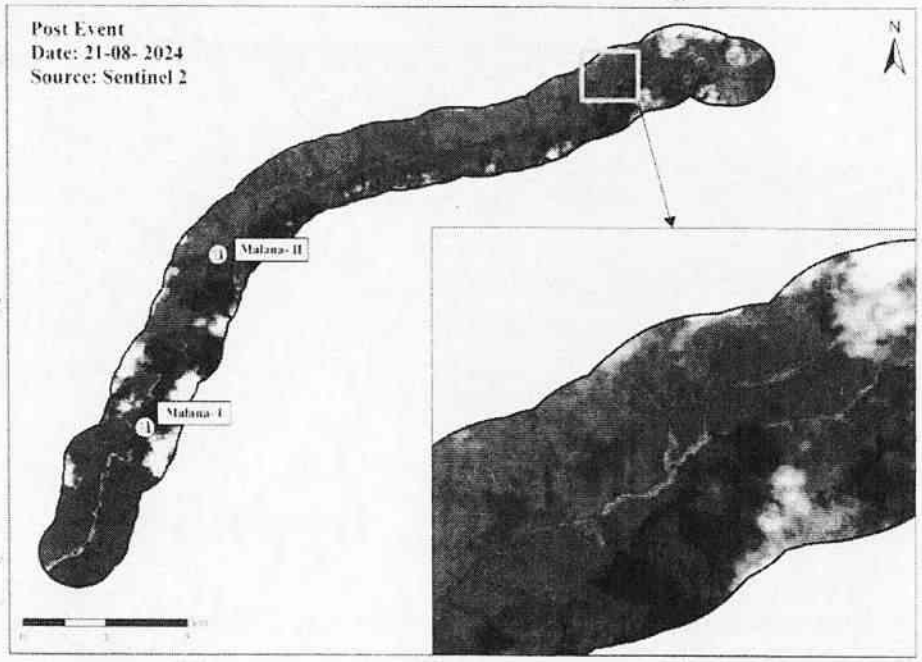


Figure 9 Malana River system with a 1 km buffer area, including a zoomed-in view of window 1 (post-event).

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4.2. Vegetation and Bareness Indices Analysis

To assess changes in vegetation patterns in the upstream region of the Malana River, the Normalized Difference Vegetation Index (NDVI) was computed using the Google Earth Engine platform using Sentinel-2 satellite imagery. NDVI is a commonly used vegetation index that provides information on the presence and health of live green vegetation. It is derived from the reflectance measurements of the Near-Infrared (NIR) and Red bands of remotely sensed imagery, which are sensitive to vegetation density.

The NDVI calculation is represented by the formula:

$$NDVI = \frac{NIR - Red}{NIR + Red}$$

Higher NDVI values indicate denser green vegetation, while lower values suggest sparse or stressed vegetation.

To enhance the landscape analysis, the Normalized Difference Bareness Index (NDBaI) was utilized. NDBaI is a spectral index designed to detect bare soil and differentiate it from built-up areas, making it an effective tool for mapping bare surfaces. This index is calculated using the Shortwave Infrared (SWIR) band (B11) and the Near-Infrared (NIR) band (B8) of Sentinel-2 imagery, as defined by the formula:

$$NDVI = \frac{\mathrm{SWIR} - NIR}{\mathrm{SWIR} + NIR}$$

High NDBaI values are indicative of bare land surfaces.

The NDVI and NDBaI analyses revealed distinct signatures corresponding to the newly ***formed channels and the maximum extent of water coverage following the flood event*** (see black box in Figure 10). These indices provide critical insights into the changes in land cover and highlight the primary sources of runoff within the Malana River basin, emphasizing the hydrological impact of the extreme event.

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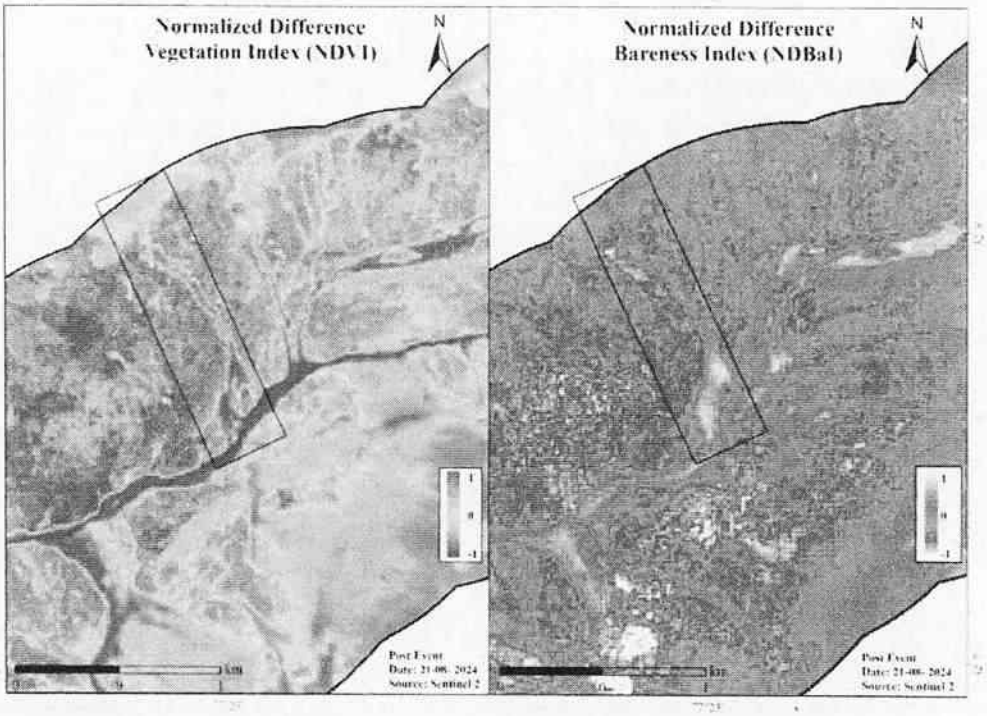


Figure 10 NDVI and NDBI for window 1 (refer to Figure 2 and Figure 3 for spatial locations).

4.3. Impact on Hydropower Infrastructure

The Malana River basin hosts two hydropower plants that contribute significantly to the region's electricity supply. The sudden influx of water and debris posed a severe threat to these facilities, causing temporary shutdowns and necessitating emergency measures to protect the dams and associated infrastructure. The force of the floodwaters damaged intake structures, blocked diversion channels, and increased sediment load in the reservoirs, highlighting the need for improved flood management and sediment control strategies.

4.4. Environmental and Socioeconomic Consequences

The flood event triggered by the cloudburst had far-reaching environmental impacts, including the destruction of riparian habitats and the destabilization of slopes, which are prone to landslides. Additionally, the local communities, primarily dependent on agriculture and tourism, suffered significant losses due to damage to cropland, infrastructure, and

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road connectivity. Emergency response teams faced challenges in accessing affected areas, delaying relief and rehabilitation efforts.

5. Limitations and Way Forward

- Detailed runoff and discharge estimates can be obtained using the surface runoff model; however, recent long-term data is currently unavailable. Should this data become accessible, flood modeling could be conducted as part of an additional scope of work to evaluate total runoff and velocity in the Malana River. This assessment could also be performed at the micro-catchment level.
- Dataset required for modeling study:
    - Rainfall data till today (minimum 10 years, if available)
    - Dam break analysis (if available for Malana II and Malana I hydropower stations)
    - Discharge from Malana I and Malana II hydropower stations.
    - Malana River cross-section, if available
    - River discharge of Parvati River before the confluence of Malana River.
    - Hydrological information, if any

6. Recommendations

- The cloudburst event in the Malana River basin highlights the critical need for improved monitoring and early warning systems (EWS) in mountainous regions prone to extreme weather events.
- Implementing a comprehensive network of weather radars, automated rain gauges, and river discharge sensors is essential to enhance real-time data acquisition and forecasting accuracy.
- Adopting sustainable river management strategies, such as reforestation and bank stabilization, can significantly reduce the adverse impacts of such events, promoting long-term resilience against future hydrometeorological hazards.
- A detailed hydrological study needs to be carried out to better understand the peak flow and return period under various climate scenarios.

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Annexure-IX

The details of damages to various project components as provided by M/s Greenko Sumez Hydro Project Pvt. Ltd is as under:-

Damages to Plant Components:		
Sr. No.	**Components Details**	**Estimated cost**
1	Trench weir, including weir raft, completely washed out.	Rs 1,50,00,00.00
2	Intake site Foot Bridge completely washed out.	Rs. 5,00,000.00
3	Weir site wing walls completely washed out.	Rs. 5,60,000.00
4	Severe damage to intake gate civil structure.	Rs. 1,50,000.00
5	Damage to the intake gate.	Rs. 2,00,000.00
6	Damage to the channel and D-tank.	Rs. 20,00,000.00
7	TRT outfall damaged.	Rs. 25,00,000.00
8	Powerhouse connecting Bridge on Muhali khad washed out.	Rs. 20,00,000.00
9	Powerhouse approach road damaged-800 Meter	Rs. 15,00,000.00
10	Protection wall of the site store.	Rs. 20,00,000.00
11	33kV Transmission Line – 01 No. Pole (DP-1) washed out.	Rs. 1,00,000.00
12	33kV Terminal equipment of ODY	Rs. 30,00,000.00
13	Malova site water conductor damaged – 8 meter	Rs. 10,00,000.00
14	Office records (drawings/documents), furniture's , legal records, drawings, electronic items	Rs. 50,00,000.00
	Total (Approx.)	**Rs. 3,55,10,000.00**

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Annexure - X

EXPENDITURE FOR RESTORATION OF BEASKUND HEP AFTER FLOODING

Sr. No.	Descerption	Amount (Lac.)
1	**WEIR SITE CIVIL WORK:-**	
	a) Gravel Flushing Cleaning	1
	b) Weir Repair	40
	c) Wing WallMuck Filling	1.5
	d) River Diversion	5
	e) Protection work at the outlet of spillover tunel.	6
	f) Aproach road	15
2	**Mechanical Works:**	
	a) Trash rack (New) Requried 25 no	40
	b) Gates Repair Work	0.7
3	**PPV Work:-**	
	a) Repair work of PPV Valve	0.5
	b) Approach Road to PPV	5
4	**Power Transformer Work:**	
	a) Ramp Making and removal.	2
	b) Shifting of TFM by cranes on Foundation	5
	c) Transformer oil Filling and Filtration	14.61
	d) Testing and commissioning by VOLTAMP	20
	e) Cable termination kits and jointing	1.1
5	**Machine Hall And Service Way:**	
	a) Muck removal	6
	b) Generators Cleaning, Dismantling, Testing and recommissioning.	20
	c) Turbine Cleaning, Dismantling, Repair, Testing and recommissioning.	30
	d) OPU Motor repair, High Response proportional vales, pressure switches pressure transmitter etc.	15
	e) NGT, Temp Panel, Invertor Cleaning, Dismantling, Testing and recommissioning.	10
6	**Control Room:**	
	a) Muck removal	4
	b) Control Panel Cleaning, Dismantling, Testing, replacement and recommissioning including all relays.	120
	c) Power cables for 33kv Transformer and Transmission line.	39.34
	d) MULTI FUNCTION RELAYS RELAYS REPLACEMENT IF REQUIRED	60
	e) ENERGY METERS REPLACEMENT OF 33KV PANEL & ALL MACHINE CONTROL PANELS	1.5
	f) PUSH BOTTON, INDICATORS,SELECTOR SWITCH,MCB'S,MCCB'S MPCB'S ETC	8
	g) BATTERY CHARGER 400AH WITH BATTERY (2V HBL BATTERY CELL Total:57 Nos)	20

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	h) STATOR EARTHFAULT RELAY SET RAGEK TYPE ABB	10
	i)MASTER TRIP RELAY, DC FAILURE RELAURE, TRIP CIRCUIT SUPERVISION RELAY TIMMER RAGEK TYPE ETC	8
7	**Civil Works in Power Plant Area:**	
	a) River Diversion for the safety of power house.	25
	b) Protection wall repair work	10
	c) Tail race area protection work and refilling	46
	d) Frame work, glass fitting and painting works.	3
	e) Shutter fitting at main enterance.	3
	f) Fencing works.	2.5
8	**Sotre and Office cabin:**	
	a) Cost of store repair and lost material.	40
	b) Cost of office cabin and loss of assestes.	5
9	**Earth Pits:**	
	a) Earth Pits for Power Transformer	0.6
	b) Earth Pits for Generator	2.1
	c) Control Room	2
	d) 4 Excavator teams, Punjab team, fooding of BesKund Employee, Transformer Team, Generator Team & Relay Team if required to change, oil filteration team, Insurance Team HQ Offical Team & Transporation of	20
	Total	668.45
10	Generation Loss Till Date	124
11	Tentative Loss for next 50 days.	310
	Total	1102.45

NOTE: TENTATIVE LOSS TO BEASKUND HEP.

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Annexure-A

The requisite information is a following:

Sr.No.	Information Sought	Information Provided
1	Copies of all investigation reports prepared by the Directorate of Energy or any other relevant department regarding the performance, operation and impact of dam/ hydropower project infrastructures during the 2023 and 2024 Beas floods.	Attached as in **Annexure-I**
2.	Details of any technical or operational shortcomings identified in the functioning of dam/ hydropower project infrastructures during the said floods. This includes reports or assessments regarding (a) Sudden release of water from dams/ hydropower projects(b) Compliance with safety protocols during the disaster.	Attached as in **Annexure-I**
3.	Copies of any communication, notices or advisories issued to dam/ hydropower project authorities before, during or after the floods.	Attached as in **Annexure-II**
4.	Details of any action taken by the Government of Himachal Pradesh or its departments to address the issues identified in the above mentioned reports, including: (a) Remedial measures undertaken(b) Steps to improve dam safety and flood management protocols (c) Penal actions (if any) against responsible authorities	Attached as in **Annexure-III**
5.	Names and designations of the officers or committees responsible for the investigations and for monitoring the action taken regarding the dams/ hydropower projects during and after the above mentioned floods.	Attached as in **Annexure-I** 31/1/2025 Public Information Officer -cum- Sr. Executive Engineer, Directorate of Energy, H.P., Shimla-171005
6.	Details of public consultations, if any, conducted on the impact of dam/ hydropower projects infrastructures during the 2023 and 2024 floods.	As per the available information received from concerned of Directorate of Energy, it is stated that desired information is not available in DoE.
7.	Any other relevant documents, reports or meeting minutes related to the 2023 and 2024 Beas floods and dam/ hydropower projects infrastructures	Attached as in **Annexure-III** Information Supplied to Sh Sumit Mahar Under RTI Act, 2005.

Annexure-I

64 Pages



Pong Dam



Pandoh Dam



Parbati-III Dam



Malana-II Dam

Report of the committee constituted by Directorate of Energy, Govt. of HP to examine various aspects of sudden releases from Pong, Pandoh & Parbati-III dams and overtopping incident of Malana-II dam.

November, 2023 **Shimla (H.P.)**

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Preface and Acknowledgements

During the months of July and August 2023, there was widespread rainfall with isolated heavy rainfall in catchments of Beas River and its tributaries. Flooding & associated damages in downstream areas of Pong, Pandoh & Parbati-III dams occurred due to water released from spillways of these dams. Further, incident of overtopping of Malana-II dam also happened during July 2023. In view of the above incidences, Directorate of Energy (DoE), Govt. of Himachal Pradesh vide Order No. HPDoE/CE (Energy)/SDSO-HP/ 2023/7108-25 dated 28-9-23 constituted a committee with members having expertise in the field of dam safety management, gates, hydrology, hydropower to look into its various aspects.

The committee examined various documents and data as submitted by project authorities related to operation and maintenance of these dams, visited the project sites, held discussions with project authorities, district administration and local people and studied & looked into the various reasons for the flooding and overtopping incidences. This report presents the various reasons for occurrence of flooding in the downstream areas of Pong, Pandoh & Parbati III dams and overtopping incident in Malana II dam. Various recommendations have also been made related to operation, maintenance, monitoring and surveillance of these dams, which are necessary for the safety of the dam and for the safety of people residing in the downstream areas. The recommendations made are in line with the provisions of the Dam Safety Act-2021.

I am thankful to the officials of Department of Energy, Government of HP for organization of the visit of the committee to the project sites and for excellent logistic arrangements. Special thanks to Er. D.P Gupta, Chief Engineer (Energy) and Er. Deepak Jasrotia, Dy. Chief Engineer (Dam Safety), GoHP for their meticulous planning, proper co-ordination with all the concerned agencies and for looking into the minutest details of the visit and various meetings of the committee with project authorities, district administration etc. I am also thankful to all the dam authorities, their officials and staff for extending their full co-operation.

In the end, I am thankful to all the members of the committee for their sincere efforts in studying and analyzing the various causes of flooding and overtopping incidents and also for recommending various measures for the safety of dam and people.

R K Gupta

(Dr. R.K. Guta)
Ex-Chairman, CWC
and Chairman of the Committee

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Report of the committee constituted by Directorate of Energy, Govt. of HP to examine various aspects of sudden releases from Pong, Pandoh & Parbati-III dams and overtopping incident of Malana-II dam.

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1.0 Background

During the months of July and August 2023, there was widespread rainfall with isolated heavy rainfall in catchments of Beas River and its tributaries. Accordingly, water was released from Pong, Pandoh & Parbati-III dams thereby causing localized flooding & associated damages in downstream areas of these dams. Further, incident of overtopping of Malana-II dam was also happened during July 2023.

To look into various aspects of aforesaid incidences, Directorate of Energy (DoE), Govt. of Himachal Pradesh constituted a committee headed by Dr. R K Gupta, Ex Chairman, CWC with members having expertise in the field of gates, hydrology, hydropower. Officers of DoE are also the members of the committee. The composition of the committee is given below:

Table 1 Composition of the Committee

External Members		
1.	Dr. R. K .Gupta (Ex. Chairman, CWC)	Head
2.	Shri Harkesh Kumar (Ex. Director, CWC)	Member
3.	Shri Goverdhan Prasad, Director, Hydrology (N) Dte, HSO Unit, CWC	Member
4.	Shri R.P.S. Verma, Director, NDSA Northern India, CWC, Chandigarh	Member
5.	Shri Balwan Kumar, Director, HPP&I, CEA, New Delhi	Member
Govt. of Himachal Pradesh		
1.	Shri D. P. Gupta, Chief Engineer (Energy), GoHP-cum-Head SCDS-HP	Member
2.	Shri Deepak Jasrotia, Dy. Chief Engineer, DoE, GoHP-cum-Head SDSO-HP	Member Secretary
3.	Shri Raj Kumar, AEE, DoE, GoHP	Member
Members from Distt. Administration		
ADC/ADM of concerned Distt. (Kangra, Mandi and Kullu for their respective Distt.)		

Govt. of Himachal Pradesh order No. HPDoE/ CE (Energy)/ SDSO-HP/2023-7108-25 dated 28.09.2023 constituting the committee is placed as **Annexure-I**.

1.1 Terms of Reference of the Committee

Terms of reference of the committee are given below:

I. The committee will investigate comprehensively the cause of sudden release happened from these dams which resulted in heavy damages downstream.

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II. The committee will investigate efficiency of EWS implemented, how effective these were, EWS not implemented, Dam Break Analysis, Hydraulic Routing Study, Inundation Mapping carried out, if carried out how effectively it was executed

III. Investigation of overtopping of Malana-II dam due to sudden closure of gates and the action taken by dam authority in this regard and ineffectiveness if any on the part of dam authority which lead to this incident 2nd time.

IV. The committee will also review the reservoir and gate operation as executed by the Dam authorities during this heavy discharge release.

V. The committee on its findings, if found will define and indicate deficiencies observed on the part of Dam authorities and will clearly suggest the action to be taken in this regard.

VI. On broader aspects committee will also suggest measures which should have been executed by all dam authorities as lesson learnt from such incidents.

1.2 Detail of Information sought and received from Project Authorities

Before visit to the project sites, project authorities were requested to provide certain information as per details given below:

- Index map showing catchment area of all the dams, discharge sites, rain gauge stations existing projects, etc.
- Salient features, brief of the important & critical design parameters of Civil Structure & H.M. equipment.
- Copies of the Reports of the Pre & Post Monsoon Inspections undertaken in the last five years. Also, copy of the report of Special inspection if any undertaken in the last five years
- Copies of the log books i.e. Record (i.e. date/time, Reservoir water level, bay number & quantum of gate opening, etc.) of Spillway Gate operations of the last five years period.
- Copies of record of the servicing/maintenance, routine & special repair/servicing carried out/undertaken during the last five year concerning operational reliability of equipment & safety of the gated installation.
- Reservoir & Gate operation schedule concerning flood /outflow regulation.
- Copies of the Operation and Maintenance Manual concerning Civil and Hydro-mechanical equipment (i.e. Hydraulic Gates & their operating equipment).
- Information in respect of incidents of failure, malfunctioning or abnormal observations if any concerning functioning of Hydro-mechanical equipment
- Brief note on Early Warning System installed, its usage & copies of the Study reports
- Copies of the Record of Daily Water levels u/s & d/s of Dam/barrage for the last five years.
- Dam Break Modelling Report including inundation mapping
- Emergency Action Plan
- Communication/warning system to different authorities and downstream communities about the water release from spillway
- Hourly & daily rainfall of June, July & August 2023 of rain gauge stations in and around the catchment of these 4 dams

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- Annual Maximum Peak 1 day / 2 day / 3 day rainfall as long as possible (40-50 years say) at locations of each dam
- Hourly & daily discharges of June, July & August 2023 at locations of each dam
- Annual Maximum Peak Discharges as long as possible (40-50 years say) at locations of each dam
- Latest Bathymetry survey Reports/Elevation Area Capacity of the Reservoirs
- Spillway Capacity and Design Flood of Pong Dam

After receipt of details submitted by project authorities, the committee examined the data, carried out site visits to all the four projects and held discussions with project authorities. The report has been prepared based on the information received from project authorities, observations made during the site visits and discussions held with project authorities during the site visit.

1.3 Site Visit of the Committee

The committee was mandated to carry out the detailed inspection of Pong, Pandoh and Parbati-III dams w.r.t. sudden releases and also Malana-II dam w.r.t. overtopping incident.

Accordingly, the committee visited the Pong, Pandoh, Parbati-III and Malana-II dams w.e.f 16.10.2023 to 21.10.2023 as per the programme given DoE, Govt. of HP letter No. HPDoE/ CE (Energy)/ SDSO-HP/2023-7485-7503 dated 07.10.2023 (**Annexure-II**).

31.10.23
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2.0 Visit to Pong Dam

Pong Dam is a Earth Core Gravel Shell type dam on river Beas located just upstream of Talwara . The live storage of the reservoir is 7290 MCM. It has a concrete ogee type gated spillway for releasing flood water. Spillways with crest elevation at 1365 ft. has six bays fitted with radial gates. Project has a dam toe Power House having installed capacity of 396 MW. Six penstocks each of 5.025 m diameter feed six turbines of 66 MW each. The project is owned and managed by Bhakra Beas Management Board (BBMB). The salient features as provided by the Pong Dam Authority are given in **Annexure-III**.



Pong Dam on River Beas

A preliminary meeting with Project authorities (BBMB) was held on 16.10.2023 to have an understanding of the project features, mechanism being adopted for release of flood water and early warning system. Discussions were also held regarding sudden release of water from Pong dam and affected areas in the downstream.

On 17.10.2023, the committee visited the Pong dam site and also had a reservoir rim inspection to some extent. The gates and spillway structures were inspected by the committee and the non-overflow portion of the dam was also inspected. Thereafter discussions were held at dam site with dam authorities in presence of the Distt. Administration team headed by ADC Kangra. The mechanism of information sharing within the BBMB related to the dam specially inflow in the reservoir and outflow from spillways and its further dissemination to important stakeholders like Distt. Administration, other local departments, PRIs and people downstream was deliberated at length.

Thereafter, the team visited the areas downstream of the Pong Dam. The affected village, Riyali and a bridge site where the river diversion has taken place was also visited. The interactions were also held with the local people in the presence of Distt. Administration at these places.
After the dam and downstream area inspections, committee returned back to the project office at Talwara and a concluding meeting was conducted at BBMB Guest House at Talwara. List of participants in the meeting is given in **Annexure-IV**.

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2.1 Observations of Committee

Project authorities informed the committee that the maximum overflow which can pass through spillway is to the tune of 4,37,000 cusecs and in addition about 7600 cusecs can pass through each of the three penstocks. Further, the maximum reservoir level is 1421 feet and the normal reservoir level is 1400 feet. It was told by the project authority that only in exceptional cases the reservoir filling is taken up to 1400 feet level and generally the HFL is maintained at 1390 feet only. This is so because the HFL is yet to be defined and fix for Pong dam as stated by the dam authorities.

- During the visit it was found that there is no proper existing inflow forecasting system for Pong reservoir. Only few discharge measurement sites are available where old conventional float type method is being used for discharge measurement. Nowhere in upstream there exist automated or latest digital/electronic inflow forecasting /measurement devices. On the scrutiny of the record particularly for the highest discharge observed, a huge mismatch between the discharge data observed at discharge sites and recorded at dam site was found. It was found that basically inflow is used to be calculated by doing reverse calculation at dam site. Inflow is generally being calculated by adding all outflows from the dam and the increase/decrease in water level in the reservoir. Accordingly, the inflow observations and the early warning on flood releases executed are not based on the realistic and authentic data/information. In the absence of a proper inflow forecasting system, early warning regarding exact release of water from dam is difficult.
- BBMB authorities do not have the Rule Curve for Pong Reservoir which need to be prepared for deciding the water to be released optimally based on current reservoir level and inflow and is, thus, an effective tool to utilize the reservoir storage for flood moderation. Rule curve or rule level is important to specify the water level to be maintained in a reservoir during different times of the year.
- The EAP has been prepared without incorporating the Dam Break analysis & inundation mapping. As this is very important factor in safeguarding the loss of property and life of the general public residing in the vicinity of the downstream of the dam. So EAP prepared without dam break analysis, inundation mapping and hydraulic routing study does not serve the required purpose.
- It was observed by the committee that dam authorities have hardly taken up a proper well-coordinated consultation meeting with the relevant stakeholder's viz. people downstream, PRIs, Distt. Administration and other relevant departments.
- The data collection and information sharing system within BBMB authorities is quite complex. The data collection is done by teams at various sites. The data interpretation and compilation is done by a team at Nangal and the approving authority is at Chandigarh, Finally, the same is shared with dam operating personnel at dam site which then further shares it with other stakeholder. The information sharing is mainly through telephone calls, WhatsApp or e-mails. The dam operating personnel shares data/information with all important stakeholder, mainly Distt. Administration, through email or WhatsApp it has been observed that this whole process is quite time consuming and not sound.
- Considerable vegetation growth has been observed on the NOF portion of dam crest and on the slopping embankment downstream which has also been mentioned in the DSRP Report.

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- Automatic Weather Station (AWS) has been established at Harsar (Automatic), Nangal Chowk (Manually operated). But data interpretation of these instruments are not done yet.

- 2 Nos. Emergency Warning Hooters (02 minutes sound blast with 30 seconds break 04 times) have been installed at Dam body and downstream of Dam which are not capable of broadcasting the voice messages/tailor made messages It was observed by the committee that there are many sites downstream of dam to a considerable length along the river where technologically latest broadcasting hooters are required to be installed.

- Seismological Station has not been established which is mandatory in the vicinity of the dam for recording micro and strong motion earthquake and such other data as may be specified by the regulations as per the Clause 34 (1) of Chapter VII of Dam Safety Act, 2021. However, as intimated by the project authority, 2 number accelerographs have been installed at the top and toe of the Dam which are not sufficient to measure the micro motion earthquake.

- Operation of spillway gates is executed manually and it was intimated by the project authority that the proposal for automation of Gates is under consideration in DRIP-II project.

- The committee visited the affected village Ryali which is about 10-12 kms distance from the dam. It was observed that river is wide spread at that location and in this monsoon season has changed its course. Distt. Administration reported that flooding had badly affected the crops and fields in the Ryali village.

- With respect to flooding of downstream area following has been observed by the committee:

  - The Spillway crest is at 1365 feet and MDDL is at 1260 feet. Below level 1260 feet there is dead storage. Hence in no case the spilling is possible till the reservoir level touches 1365 feet level. Only releases possible are through penstocks which have cumulative capacity of 22800 cusec. Out of the releases from penstocks, about 11500 cusecs is diverted to Mukeriyan Hydel Channel (MHC) and balance goes back to river.

  - As per the record it was observed that during the period of heavy rainfall in the State from 9th to 12th July, 2023 the reservoir level of Pong Dam was below crest level and so no outflow was released from spillway except releases through machines/power house till 16th July, 2023.

  - On 17th July, 2023 at 11:00 A.M. when the reservoir level was at about 1372.11 feet and the inflow reported was 65097 cusecs, the outflow/release of water from spillway was started. The outflow from spillway was of the order of 32242 cusecs which was increased to about 40000 cusecs and were continued till 26th July, 2023. During this period the evacuation of the people in the downstream areas was carried out with the help of NDMA and Indian Air Force. The Distt. Administration authorities pointed out that these sudden releases were executed without pre warning or without prior information. The Distt. Administration authorities apprised that these initial releases on 16th and 17th July submerged the downstream area due to which 30 people got stranded though rescued by District Administration with the help of NDRF.

  - Taking the cognizance of the situation, SDSO conducted a meeting on 20th July 2023 with project authorities along with Distt. Administration and directions were imparted to dam authorities to mark the anticipated flood water levels/danger levels in the area likely to be inundated in the downstream of Pong Dam within the State jurisdiction of Himachal Pradesh in

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a week time to facilitate district administration to take necessary preparedness measures accordingly.

- Again on 26.07.2023 a meeting was conducted by the BBMB authorities in which the Deputy Commissioner Kangra, Head SDSO–HP and ADM Kangra also participated. In the meeting it was decided that the discharge from spillway will be released gradually and the efficient and effective reservoir operations shall be carried out considering weekly weather forecast and the discharge releases shall be kept to the tune of around 45000-50000 cusecs in normal conditions and not more than 75000-80000 cusecs in the worst scenario. In the meeting it was also agreed upon that the proper inundation mapping of the downstream area in view of the worst possible scenario/dam break situation will be taken up immediately within a week time and based on the studies the danger level marks shall be marked taking along the Distt. Administration and the habitation downstream shall be made fully aware and sensitized about the probable worst situation.

- On 15-17th August, 2023, again heavy outflows were released (maximum to the tune of approx. 142967 cusecs) from the Pong Dam resulting in heavy flooding in downstream areas. As per district administration, the crops got submerged and evacuation of about 2155 people was taken up with the help of Indian Air Force and NDRF. Due to this sudden releases considerable loss to the properties reported to have occurred in the downstream.

- As per the record provided by dam authority, surprisingly, from 10th August onwards when the reservoir level was 1373.40 feet and inflow was 37833 cusecs, the spillway gates were kept closed and the reservoir filling was allowed till 14th August, 2023. Spillway gates were opened on 14th August, 2023 when the reservoir level was 1389.40 feet and the inflow was 513552 cusecs. The initial outflow on 14th morning was 17312 cusecs which reached maximum to the tune of 142583 cusecs at 1:00 A.M. early morning of 15.08.2023. The trend of outflow to the tune of 1,00,000 cusecs approximately continued till 18.08.2023.

2.2 Recommendations of the committee

- Dam authorities should install telemetry system for inflow forecasting. Latest automatic instruments for flow and weather data recording and dissemination shall be installed as per the requirement. The model developed for this purpose shall include the likely releases from other upstream projects in the catchment area.
- The dam authorities shall prepare reservoir rule curve for optimal reservoir operation so that spillway discharges and reservoir water levels are calculated in a scientific basis and floods get moderated to the maximum.
- Dam authorities shall carry out dam break analysis immediately by considering the PMF. The analysis must incorporate GLOF (Glacial Lake Outburst Flood) studies and Cloud Bursts like incidents in upstream area which could potentially contribute to future flooding. Inundation mapping shall be carried out and downstream areas likely to be affected during dam break scenario shall be properly marked in maps.
- For No - Dam Break scenario also, the hydraulic routing studies shall be taken up for different amount of discharge releases from the reservoir and accordingly the inundation mapping shall be

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carried out and the water levels and the area likely to be inundated shall be marked in the maps specially in property maps in the State boundary of Himachal Pradesh.

- Emergency Action Plan (EAP) shall be revised considering the latest guidelines issued by CWC. EAP must include inundation mapping considering Dam Break Modeling and hydraulic routing studies for different releases from spillways in no-dam break scenario, proper Communication System, co-ordination system among different organizations etc. Public Awareness shall be created and consultation meetings shall be held with all stakeholders periodically.
- The Dam authority shall ensure that there should be a proper mechanism of communication system so that there should be sufficient time available with District administration for information sharing and evacuation of people at the time of flood. Full dependency on Verbal Communication only should not be encouraged. Other effective and modern ways of EWS system be installed and practiced. As intimated by the project authority proposal for up gradation of the hooters is under consideration of DRIP-II project and ensured that the work for these hooters up gradation will be completed before the lean season. These hooters may not be sufficient to alert the downstream habitants. More number of upgraded Emergency Warning Hooters shall be installed at vulnerable locations at the earliest
- The dam authorities shall take necessary steps to implement the observations/recommendations of DSRP.
- Project authority should adhere to the instructions issued by CWC, CEA, GoHP and other concerned organizations in respect of operation, maintenance, disaster management, emergency planning etc. and shall adhere to all provisions of Dam Safety Act-2021 for safety of dam and downstream people.

2.3 Concluding Remarks

Based on the data/information provided by dam authorities, site visit and discussions held with project authorities & Distt. Administration, the committee is of the view that considerable improvements have to be carried out by dam authorities in the area of inflow forecasting, optimal reservoir operation, early warning system, and emergency action plan and communication system.

Dam Safety Act-2021 has laid down various provisions to be implemented by owners of the dams for the safety of the dam and people. For this purpose, directions were imparted by state agencies to dam authorities from time to time. Establishment of an adequate inflow forecasting system complimented by a robust Emergency Action Plan containing the inundation mapping and efficient Early Warning Systems might have mitigated the damages caused in the monsoon floods.

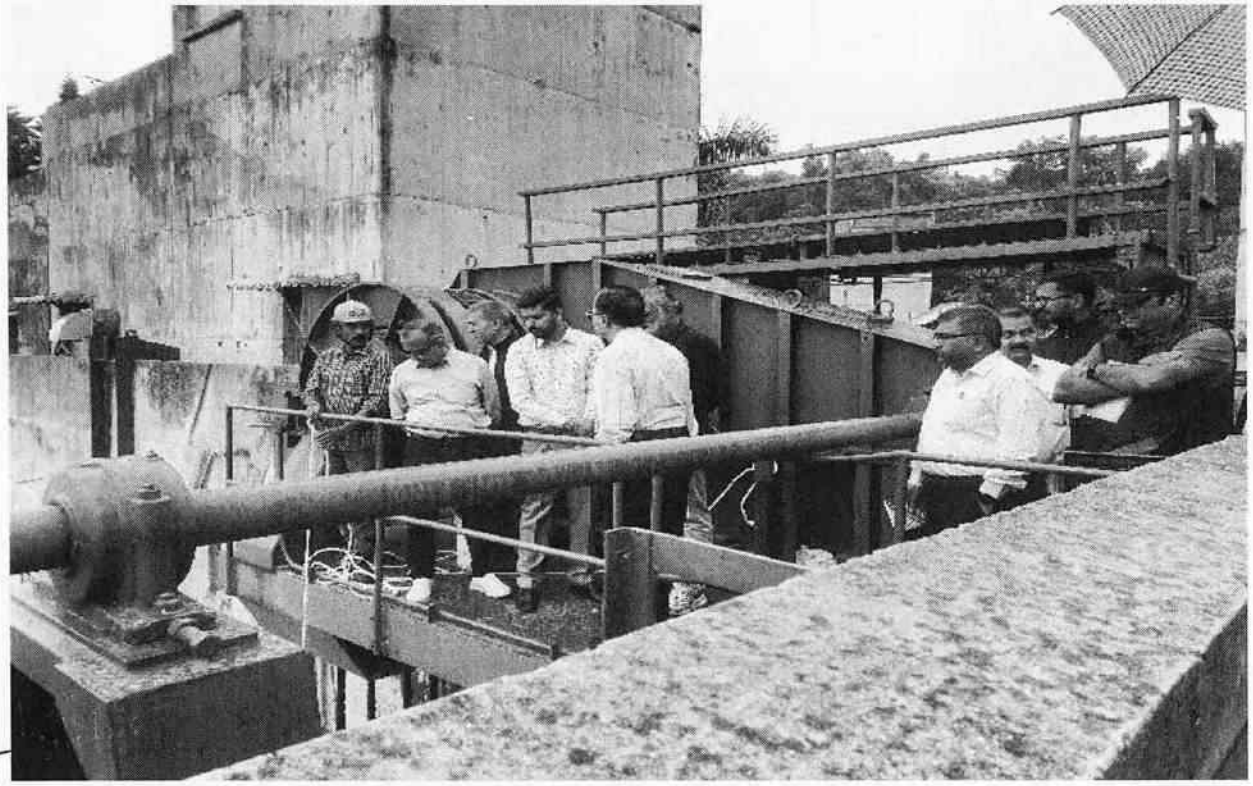
State Government should also take necessary steps to reduce encroachments in the flood prone area downstream of dam based on inundation mapping carried out by Dam authorities for different discharges from spillway & Dam Break Modeling.

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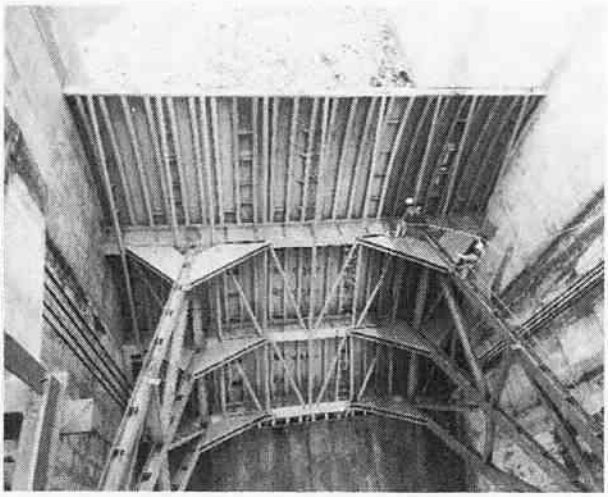


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Dam & Gate Snaps







Downstream Flooded Area Visit

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Downstream River Area



Reservoir & Gate Inspection

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3.0 Visit to Pandoh Dam

Pandoh dam is an embankment dam on river Beas in Mandi district, HP. Maximum height of the dam is 76.2 m . It's live storage is 18.56 MCM. It has a concrete spillway fitted with five radial gates of size 12m x 13m. Benefits from project include annual irrigation of 8 lakh acres and generation of 3000 million units of electrical energy through Deher power house having an installed capacity of 990 MW. The project is owned by BBMB. The salient features of the project are enclosed as **Annexure-V**.

The committee conducted a preliminary meeting with Project authorities (BBMB) on 18.10.2023 at Sundernagar. Discussions were held regarding sudden release of heavy discharge from Pandoh dam and affected areas in the downstream due to sudden release.

The committee also had a meeting with Deputy Commissioner, Mandi. Detailed discussions were held regarding damages caused by the sudden releases from Pandoh Dam. The officers of relevant departments were also present in the meeting. After the meeting, the team visited the flood affected area in and around Mandi town along with the Distt. Administration and local officers. After that, the committee visited the Pandoh town and visited the area of the Bazar and the bridge which got washed away during the floods. The committee also interacted with the affected families and the local shopkeepers. The representatives of district administration were present during these spot visits.

Later in the afternoon, committee carried out inspection of the dam site. Spillway, intake arrangement, gates and the dam embankments (downstream) were inspected. Thereafter, a meeting was held at Dam Site with project authorities along with officials of district administration. List of participants in the meeting is enclosed at **Annexure-VI.**

3.1 Observations of the committee

- During visit, it was found that there is no adequate arrangement for automatic inflow measurement & forecasting system for Pandoh dam. Pandoh dam is dependent on the Larji project regarding inflow forecasting information. The water release from Larji Dam takes about 30 minutes to reach Pandoh Dams reservoir. The only communication mode is through mobile and WhatApp with Larji Dam.
- At the time of visit, it was also observed that data of inflow was calculated by reverse calculation. Details are enclosed as **Annexure-VII.**
- Three Emergency Warning Hooters are installed (one at control room, 2nd at workshop gate near Pandoh bazaar and 3rd at fire station Pandoh), which cover the area upto 6 km downstream only. As intimated by the project authority proposal for upgradation of these hooters is under consideration of DRIP-II project and ensured that the work for these hooters' upgradation will be completed soon.
- BBMB authorities do not have the Rule Curve for Pandoh Reservoir which is essential for proper reservoir operation.
- The EAP has been prepared without incorporating the latest dam break analysis, inundation mapping and hydraulic routing studies. These are very important factors in safeguarding the loss of property and life of the general public residing in the vicinity of the downstream of the dam.

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- As per the available records of the dam break analysis, it has been noted that the analysis did not incorporate GLOF (Glacial Lake Outburst Flood) studies and potential cloud bursts phenomenon which could potentially contribute to future flooding.
- Periodic stakeholder meetings involving the project affected Gram Panchayats and District Administration are not being conducted for creating awareness in the general public.
- The bathymetric survey has been conducted, but it is not up to standard and does not reveal the actual reservoir's storage capacity. It is essential to update it in accordance with standard guidelines.
- Seismological Station has not been established which is mandatory in the vicinity of the dam for recording micro and strong motion earthquake and such other data as may be specified by the regulations as per the Clause 34 (1) of Chapter VII of Dam Safety Act, 2021.
- With regard to the damages occurred during the floods, the committee inspected the Sewage Treatment Plant (STP) site, landslide sites and the damaged road. The officers of concerned departments elaborated to the committee about the damages and the protection work being taken and required to be taken up.
- The committee visited the Pandoh Bazaar, where the damages have occurred to properties of local residents and a bridge had been washed away during the flood. The local residents expressed significant concerns about the losses. As per the local people, this bridge was the sole means of access to neighboring villages on the other side and its absence now requires them to travel a considerable distance (10-15 kilometers) to reach those villages. Sub-Divisional Magistrate (SDM), Mandi apprised to the committee that a proposal for the construction of a new bridge has been submitted to the government and its being taken up. Further the funds have already been disbursed to affected families as an immediate relief measure.
- It was observed that sharing of information regarding outflow/water release from spillway sharing through EWS is only upto a very small river length downstream. It is actually required up to a considerable length even beyond Mandi town downstream.
- Considerable vegetation growth has been observed on the NOF portion of dam crest and the slopping embankment downstream.
- One of the Radial gate is continuously kept open by very small amount ***say few millimeters*** to meet out the requirement of environmental flow. Such a very small opening of the gate is not advisable because it may have serious implications on the structural safety of gated installation.

3.2 Recommendations of the committee

- It is recommended by committee that proper EWS mechanism be installed and practiced by the dam authorities.
- The proper inflow recording mechanism in the catchment of Pandoh dam covering catchment upstream of Larji dam and the intermediate catchment between Larji dam & Pandoh dam is essentially required to be established.
- The total absence of inflow forecasting system is major hurdle in implementation of EWS properly. The dam authorities must strive hard for developing and having a proper inflow forecasting system in the upstream either on its own or in coordination with other dam authorities upstream.

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- Emergency Action Plan (EAP) should be updated by including inundation mapping based on results of Dam Break Modelling and for different amount of releases from spillway after carrying out hydraulic channel routing studies etc., Proper Communication System, Public Awareness details, demarcation of duties of different organizations shall be included. Consultation meetings should be carried out with all stakeholders.
- GLOF and the Potential Cloud Burst Phenomenon studies in the dam break analysis shall be taken up by the project authority.
- Trained and well conversant Engineers/Technicians shall be deputed at Dam site for operation and maintenance of the dam and reservoir. Their skill upgradation and capacity building must be taken up on regular basis.
- The dam authorities should immediately go for vegetation clearance from the dam top and embankment slopes downstream as per DSRP recommendations.
- The risk assessment and hazard potential in respect of Pandoh dam may be taken up by the dam authorities as required by Dam Safety Act.
- The dam authorities shall plan for retrieving back the lost live storage due to heavy siltation in the reservoir.
- It is suggested that the project authority may devise /provide suitable dedicated arrangement for releasing the environmental flow as an alternative to meeting out this requirement by opening the radial gate by a very small amount.

3.3 Concluding Remarks

Based on the data/information provided by project authorities, site visit and discussions held with dam authorities, Distt. Administrations & affected people, committee is of the opinion that Pandoh Dam authorities (BBMB) are required to develop a proper inflow forecasting system and an effective EAP. Inundation maps are required to be developed based on the results of Dam Break Modeling and hydraulic channel routing studies for different amount of spillway discharges up to the considerable length of river beyond Mandi town.

Pandoh dam is not a storage dam and has limited live storage. Hence, not much flood moderation is expected from the dam. However, a proper inflow forecasting system may provide early warning in the downstream about the releases from the spillway.

Dam Safety Act-2021 has laid down various provisions to be implemented by owners of the dams for the safety of the dam and people. For this purpose, directions were imparted by state agencies to dam authorities from time to time. Establishment of an adequate inflow forecasting system complimented by a robust Emergency Action Plan containing the inundation mapping and efficient Early Warning Systems might have mitigated the damages caused in the monsoon floods.

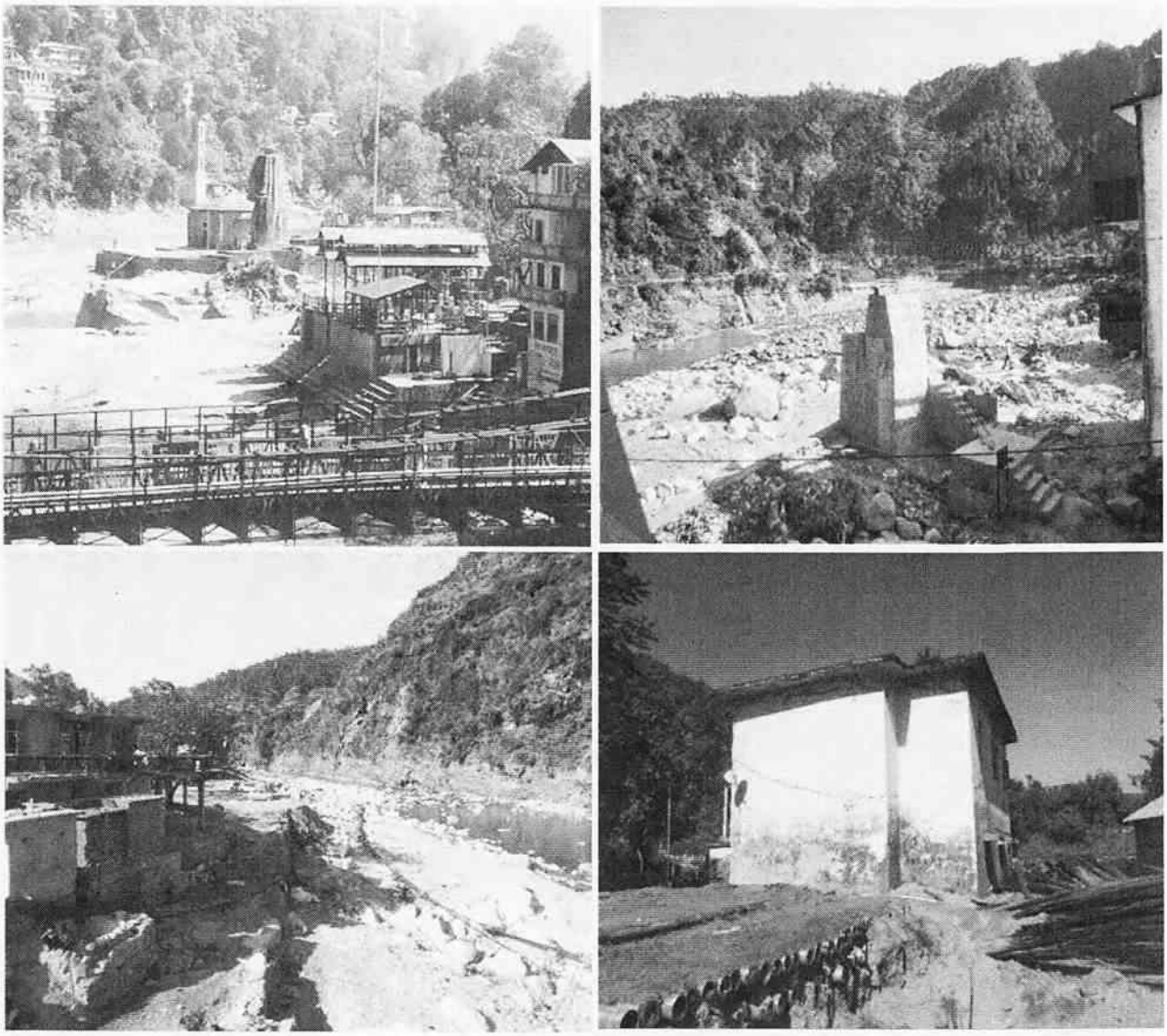
State Government should also take necessary steps to reduce encroachments in the flood prone area downstream of dam based on inundation mapping carried out by Dam authorities for different discharges from spillway & Dam Break Modeling.

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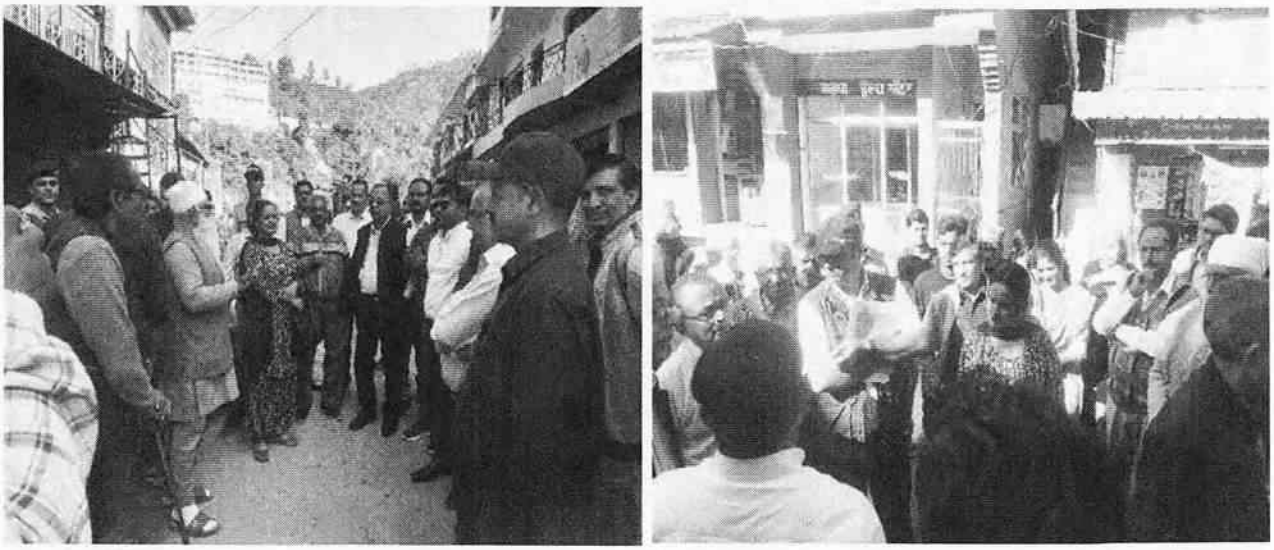
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Downstream Flooded Area & Submerged Store



Interaction with Local Resident at Pandoh

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4.0 Visit to Parbati-III Dam

Parbati III dam is a diversion structure of run-of-the-river type hydroelectric scheme located on river Sainj (a tributary of river Beas) near village Suind just about 1 km downstream of the confluence of Sainj River with Jiva Nallah and also d/s of the tail race of Parbati-II HE Project. It is a rockfill dam of maximum height 43m. The project was commissioned in 2014. The project is owned & managed by NHPC.

The dam body has been provided with the spillway of the left hand side with two radial gates to pass design flood of 3300 Cumecs. The reservoir area also has provisions of two tunnel spillways which were used to be diversion tunnel during construction period to pass flood discharge of 1314 cumecs each at FRL. The salient features of the project are enclosed as **Annexure-VIII**

The committee conducted a preliminary meeting with NHPC officials of Parbati-III Project on 18.10.2023. Discussions were held regarding sudden release of water from Parbati-III dam and affected areas in the downstream. The NHPC officials of Parbati-III Dam made a presentation regarding dam features and studies carried out on dated 19.10.2023. ADM Kullu was also present during the presentation. After the presentation the committee visited the dam site of Parbati-III dam along with SDM Banjar and affected areas downstream of the Parbati-III Dam specially the Sainj Village. A concluding meeting was conducted at NHPC Site office at Parbati-III Dam. The list of participants in the meeting is enclosed as **Annexure-IX.**

4.1 Observations of Committee

The observation of the committee are as under:

- As intimated by the Parbati-III project authority, two Digital Water Level Recorder (DWLR) have been installed. One is installed at G&D site in Jiwa Nallah (1.2 km upstream of Parbati-III Dam) and other is at the Surge Shaft, observing the data round the clock. The DWLRs having solar supply power backup are equipped with GSM based data transmission system and data is recorded at an interval of 10 minutes. The real time water level data of above two sites can be accessed online at EWS control room established at Dam Top.
- Two G& D sites have been established at Jiwa and Neuli which are about 1.20 KM and 1.40 Km respectively from dam site and manpower has been deployed 24X7 in monsoon season with cellular phones connectivity with control room. As intimated by the project authority, Control room regularly takes information from weather reports/forecasts available on different websites (mosdac.gov.in, ffc-india.gov.in, cwc.gov.in, city.imf.gov.in etc.)
- The inflow forecasting system to assess the inflow discharges during the flood situations was not present in upstream locations of dam body and also the discharge and gauge site on Jiva Nallah was not functional. For Inflow discharges, the personnel deployed at dam of Parbati-III were totally dependent on the Sainj HEP Authorities (located about 12 km upstream). For estimating the inflow discharges from Jiva nallah project authorities are using certain assumptions and thumb rule (certain percentage of sainj river). The Parvati-III Dam authorities were also not having the Early Warning System as per the CWC guidelines.

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- As per the data supplied by the dam authorities the maximum peak floods observed since year 1973 to till date are as 724 cumecs in year 1993, 984 cumecs in 2019 and more than 1000 cumecs in year 2023. The dam break analysis has been carried out by them and also the flood danger level marks at six number locations were also observed. After enquiring it was came to notice that these marks were with respect to 800 cumecs of flood discharge. The data supplied by the Parbati-III HEP shows that the maximum discharge of 1044 cumec which was released through the spillway on dated 9th and 10th July 2023 during heavy rains in the Beas basin, however it has been observed during the visit from the flood marks that the discharges released from the spillway might be much more than 1044 cumec, which lead to the heavy property loss in Sainj town which is located about 3 km downstream of Parbati-III dam.
- Parbati-III dam is not a storage dam as its live capacity is of the order of only 0.97 MCM. It was observed that proper inflow forecasting system has not been installed in order to provide timely accurate information to the district administration for carrying out the evacuation during the release of flood water through spillway.
- From the data supplied by NHPC officials it has also been observed that, no reservoir levels were recorded on dated 10th July 2023 and tentative discharges were reported.
- An Automatic Weather Station (AWS) has been installed at NHPC Colony at Sainj, which comprises multiple equipment's i.e. rain gauge sensor, temperature sensor, humidity sensor, wind speed sensor, wind direction sensor, evaporation etc. AWS having solar supply power backup are equipped with GSM based data transmission system and data is recorded at an interval of 30 minutes.
- It was apprised by Parbati-III authority that purchase order for three I-SAT phones has been placed vide their office letter no. NH/PPS-III/IT &C/131 dated 13.09.2023 and project authority ensured that these will be procured by the end of Dec, 2023.
- The EAP has been prepared without incorporating the inundation mapping. It is very important factor in safeguarding the loss of property and life of the general public residing in the vicinity of the downstream of the dam.
- It has been intimated by the project authorities that early warning system/Hooters were damaged completely during current floods. There were six upgraded sirens in downstream from Parbati III Dam to Larji (At dam Top (3.25 km Range, at Sainj NHPC Colony (5 km Range), at Talada (3.25 Km Range), at Sapangani (5 Km Range), at Behali(5 Km Range) and at Larji (5 km range)).
- During the duration of flood occurred between 8th to 11th July, 2023, the sequence of action taken by the project authorities are as under :
- EWS of Parbati-III has coordination with Sainj Barrage (10 km upstream).
- Project authorities received information at around 6 PM on 08.07.2023 from Sainj Barrage about the rising trend of inflow.
    - Sensing the upcoming flood, the hooters, installed at 6 vulnerable locations, were blown.
    - Excess flow managed by gradually opening the spillway gates.
    - Power Plant was shut down from 10:32 PM on 08.07.2023 due to heavy sediment and water inflow
    - At 5 PM of 09.07.2023, a flood of about 1000 Cumec was observed at Parbati III dam. The Power Station came into active mode timely and managed to pass the heavy flood gradually and successfully through the gates of dam.

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- All reservoir safety precautions/ SOP for reservoir operation were followed and opening of gates were gradual.
- This unprecedented flood damaged not only downstream location but also damaged dam structure i.e. spillway glacis, part of gates etc. extensively leading to stoppage of power generation.

- The committee members and team of Parbati-III project had a discussion on 19.10.2023 with local people of Sainj village to have an idea about extent of damage caused by the floods downstream of the Parbati-III dam. The local people were agitated and were concerned about the washing out of dumping site downstream of dam. They apprehended that this was the major reason for the damage caused by flood which brought big boulders along with water resulting in loss of their property. As per Parbati-III project authorities a landslide occurred in the vicinity due to heavy rain and flood water carried landslide material. They also apprised that they have already released the required funds to the District Administrations for the construction of bridge which has been damaged/washed out during the floods.

4.2 Recommendations of the committee

- Proper inflow forecasting system should be installed so that information about the spillway releases & gate operation can be sent timely to downstream.
- Inundation mapping based on results of Dam break analysis and channel routing results for release of different discharges from spillway shall be carried out. These inundation maps should be part of EAP. Danger levels with respect to different discharges as per /inundation mapping results needs to be marked in downstream areas of dam and local administration needs to be made educated regarding these levels.
- An effective Emergency Action Plan (EAP) must include Inundation mapping, proper Communication System, Public Awareness and other details as per CWC guidelines. The Dam Beak analysis should also include the GLOF studies.
- Regarding EAP, periodic meetings of all stakeholders involving the project affected Gram Panchayats and District Administration are required to be conducted for creating awareness in the general public.
- The damaged Pre-warning system/Hooters need to be replaced immediately with latest ones as per the CWC guidelines.
- I-SAT phones should be made operational as early as possible.

4.3 Concluding Remarks

Based on the data/information provided by project authorities, site visit and discussions held with dam authorities, Distt. Administrations & affected people, committee is of the opinion that Parbati III Dam authorities (NHPC) are required to develop a proper inflow forecasting system and an effective EAP. Inundation maps are required to be developed based on the results of Dam Break Modeling and hydraulic channel routing studies for different amount of spillway discharges up to the considerable length of river.

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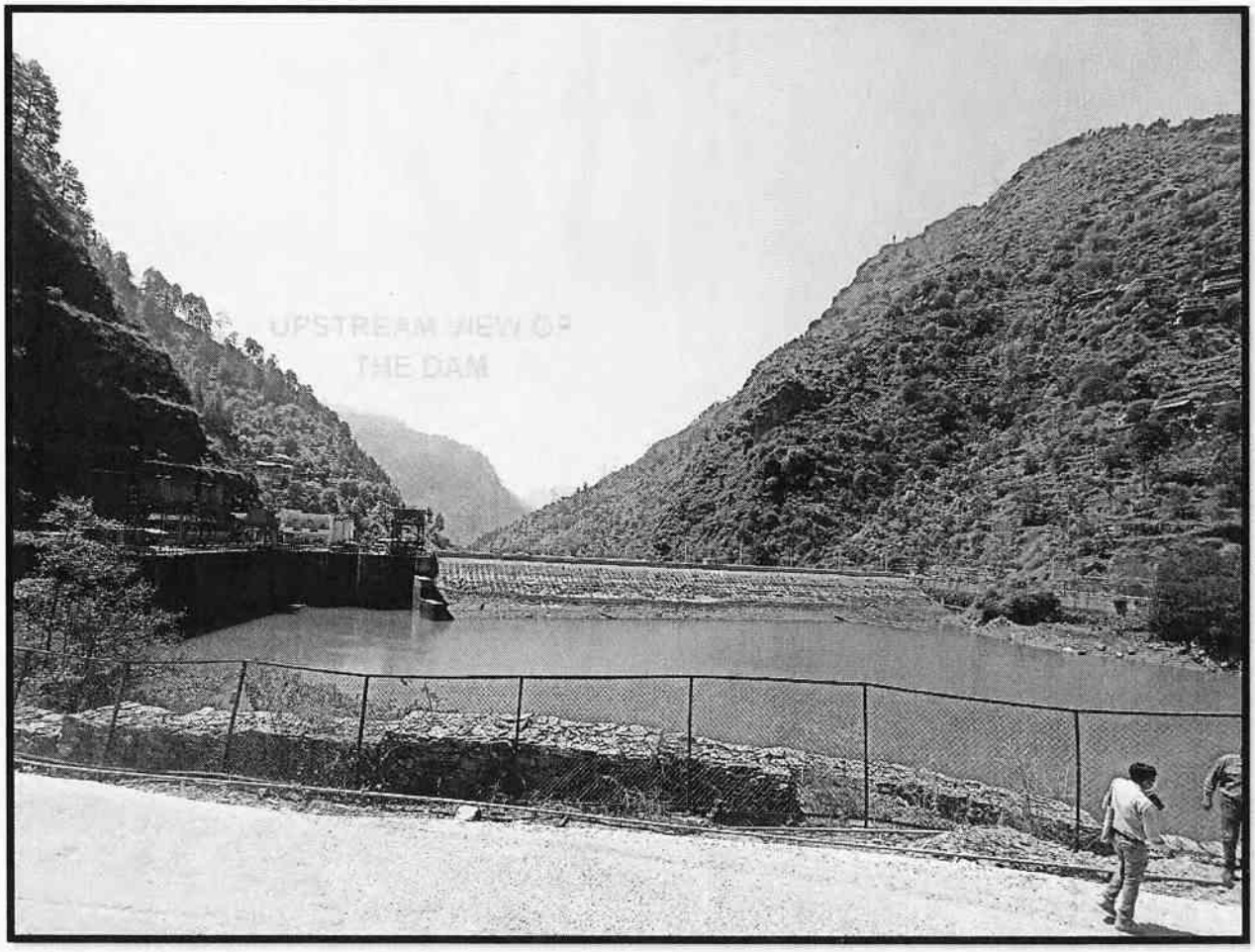
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Parbati III dam is not a storage dam and has limited live storage. Hence, almost negligible flood moderation is expected from the dam. However, a proper inflow forecasting system may provide early warning in the downstream about the releases from the spillway.

Dam Safety Act-2021 has laid down various provisions to be implemented by owners of the dams for the safety of the dam and people. For this purpose, directions were imparted by state agencies to dam authorities from time to time. Establishment of an adequate inflow forecasting system complimented by a robust Emergency Action Plan containing the inundation mapping and efficient Early Warning Systems might have mitigated the damages caused in the monsoon floods.

State Government should also take necessary steps to reduce encroachments in the flood prone area downstream of dam based on inundation mapping carried out by Dam authorities for different discharges from spillway & Dam Break Modeling.

Pictures of PARBATI-III HEP VISIT:-



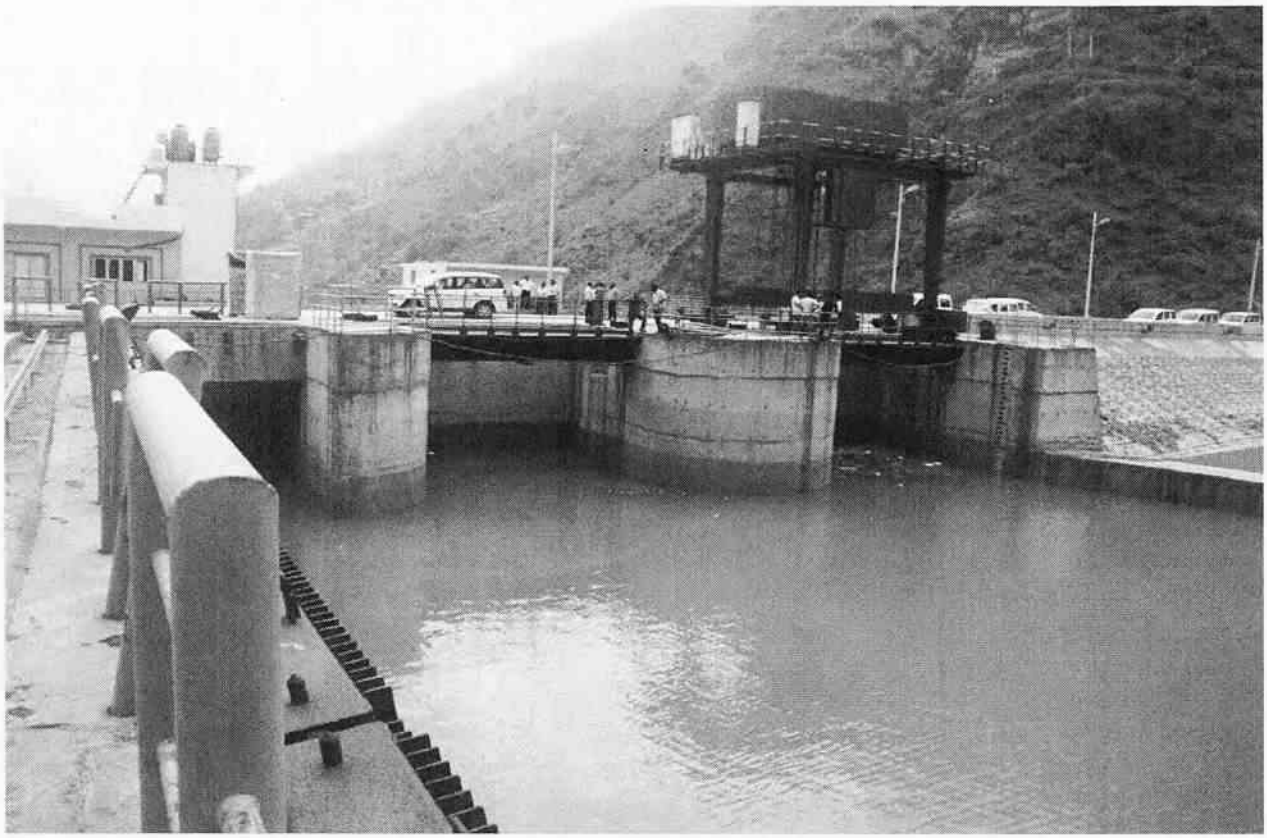
Upstream Face view of Parvati-III Dam

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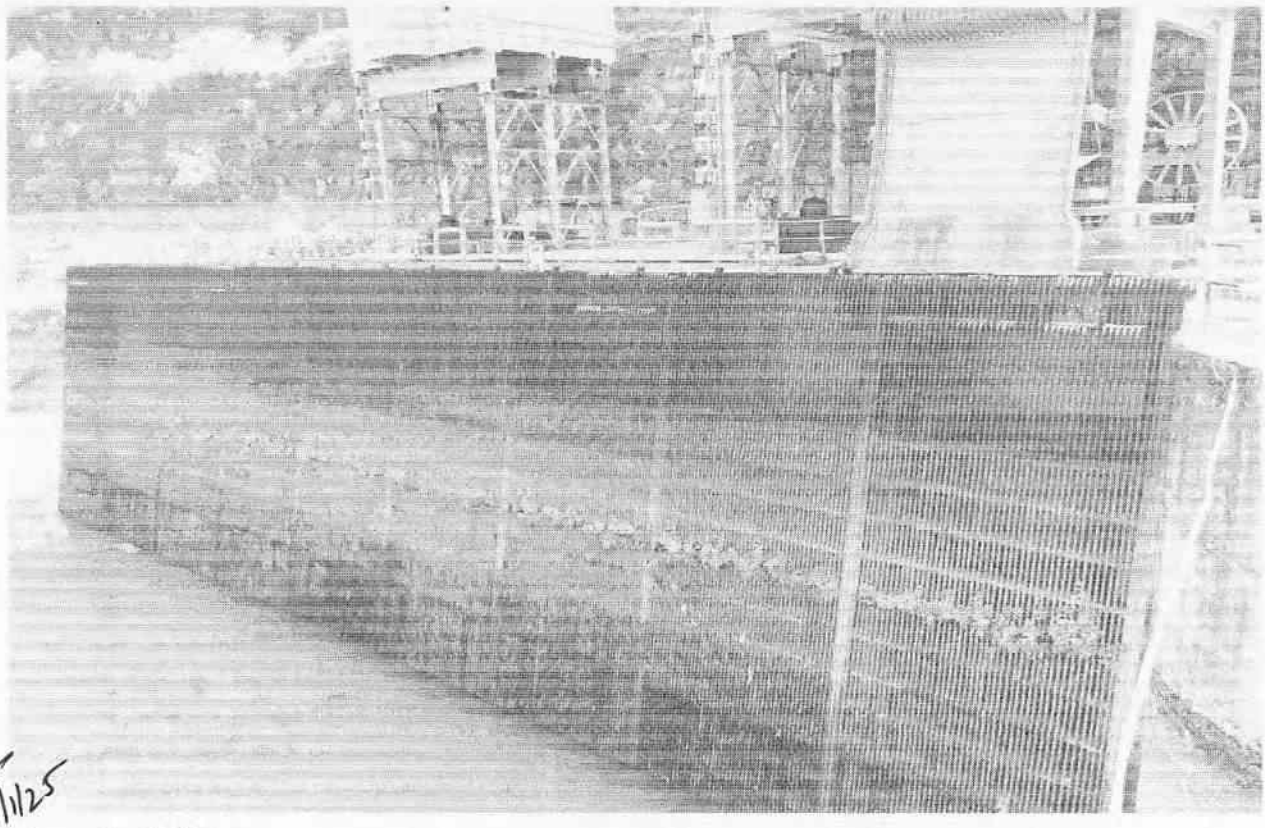
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Gated Spillway view of Parvati-III Dam



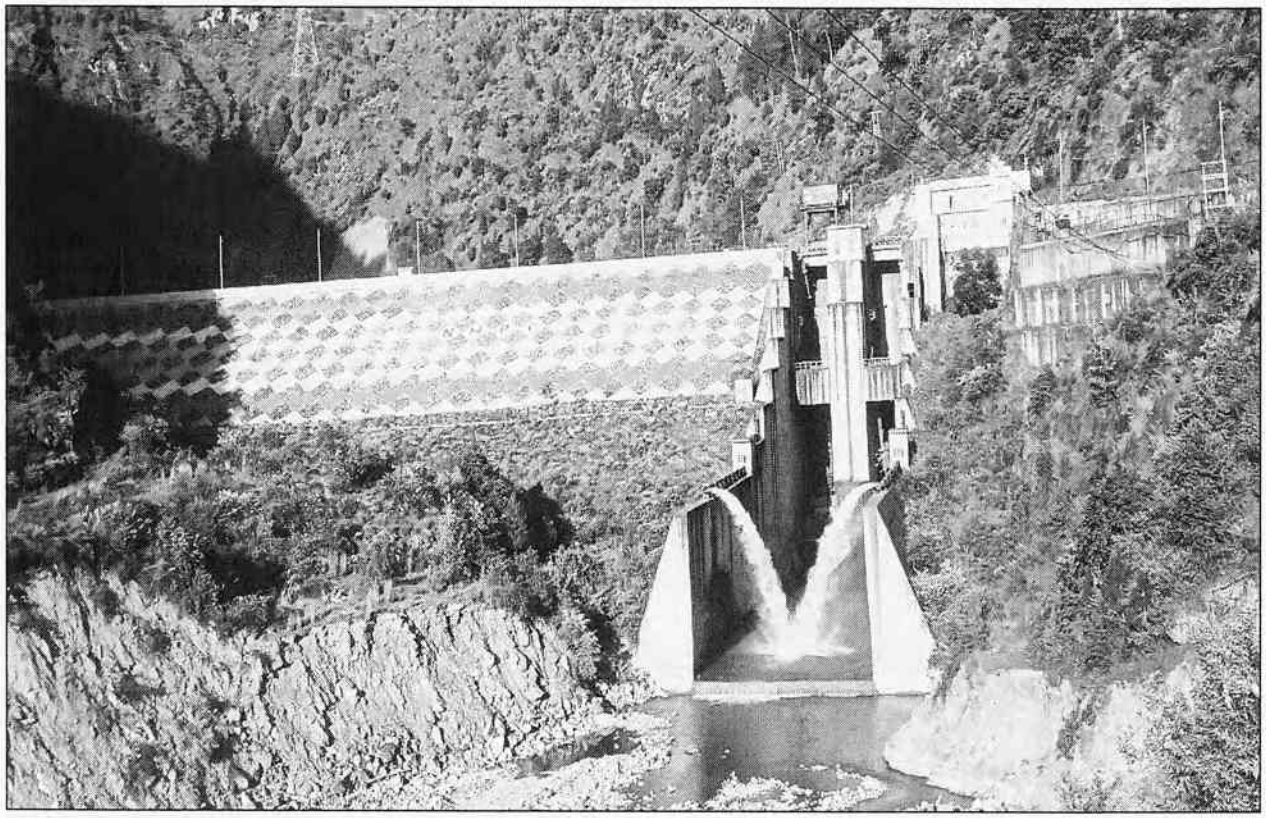
Power Intake view of Parvati-III Dam

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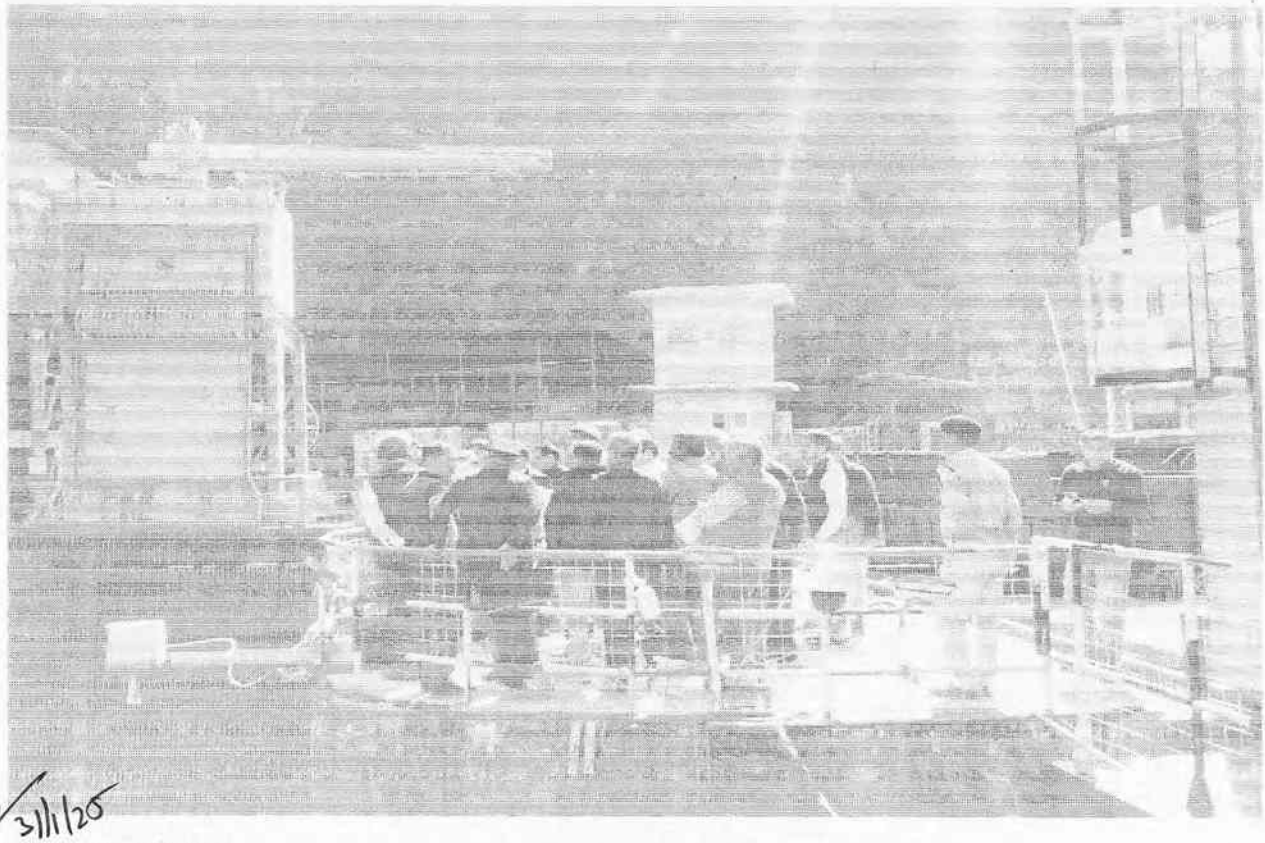
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Downstream Face view of Parvati-III Dam

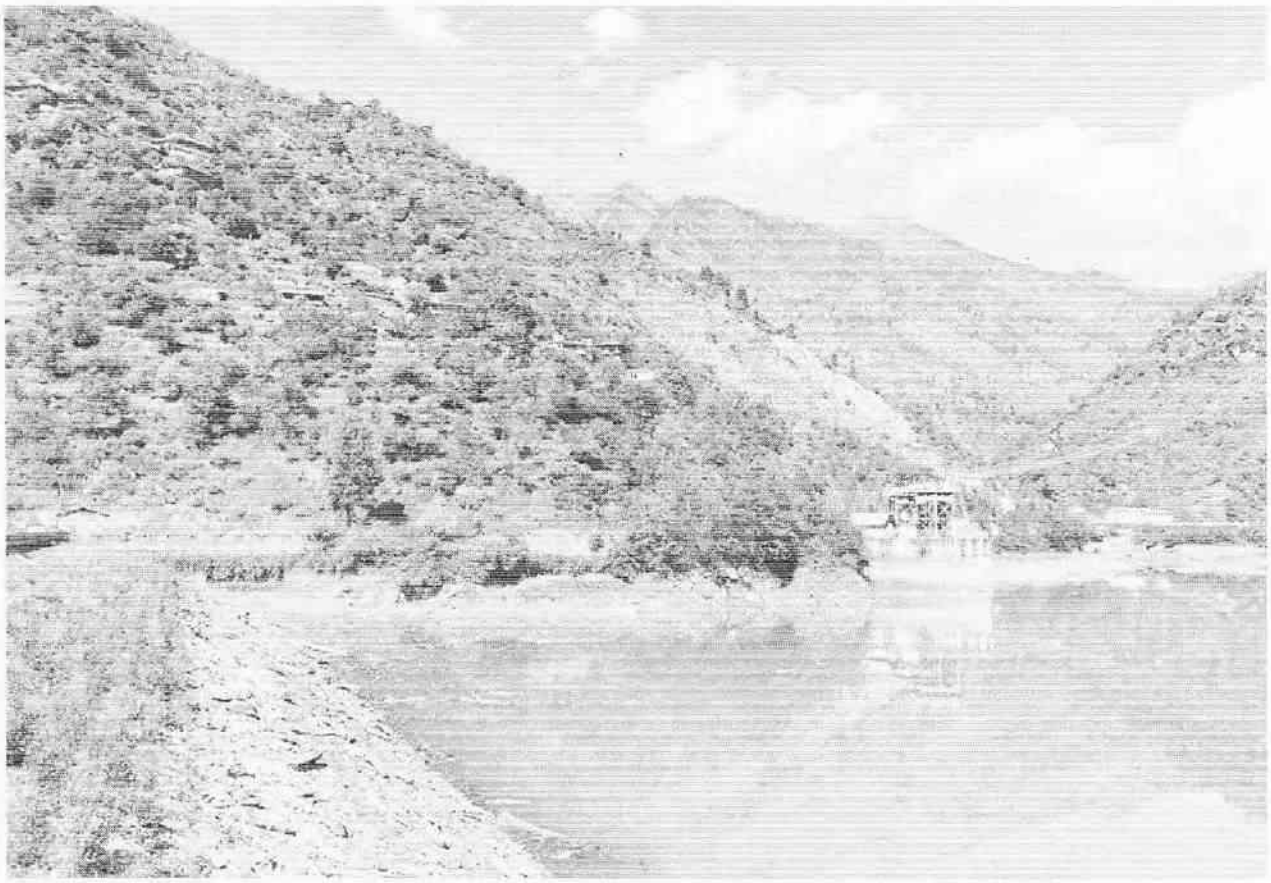


Discussions at Dam crest of Parbati-III HEP

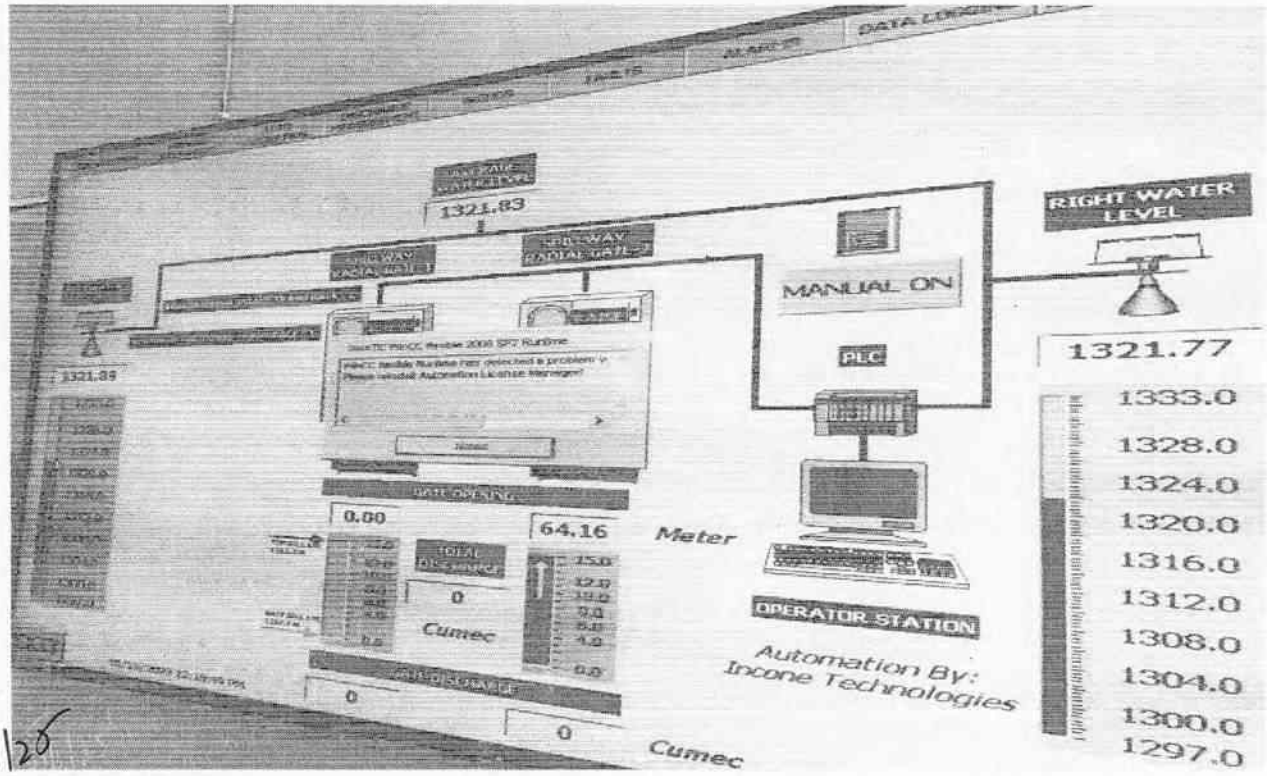
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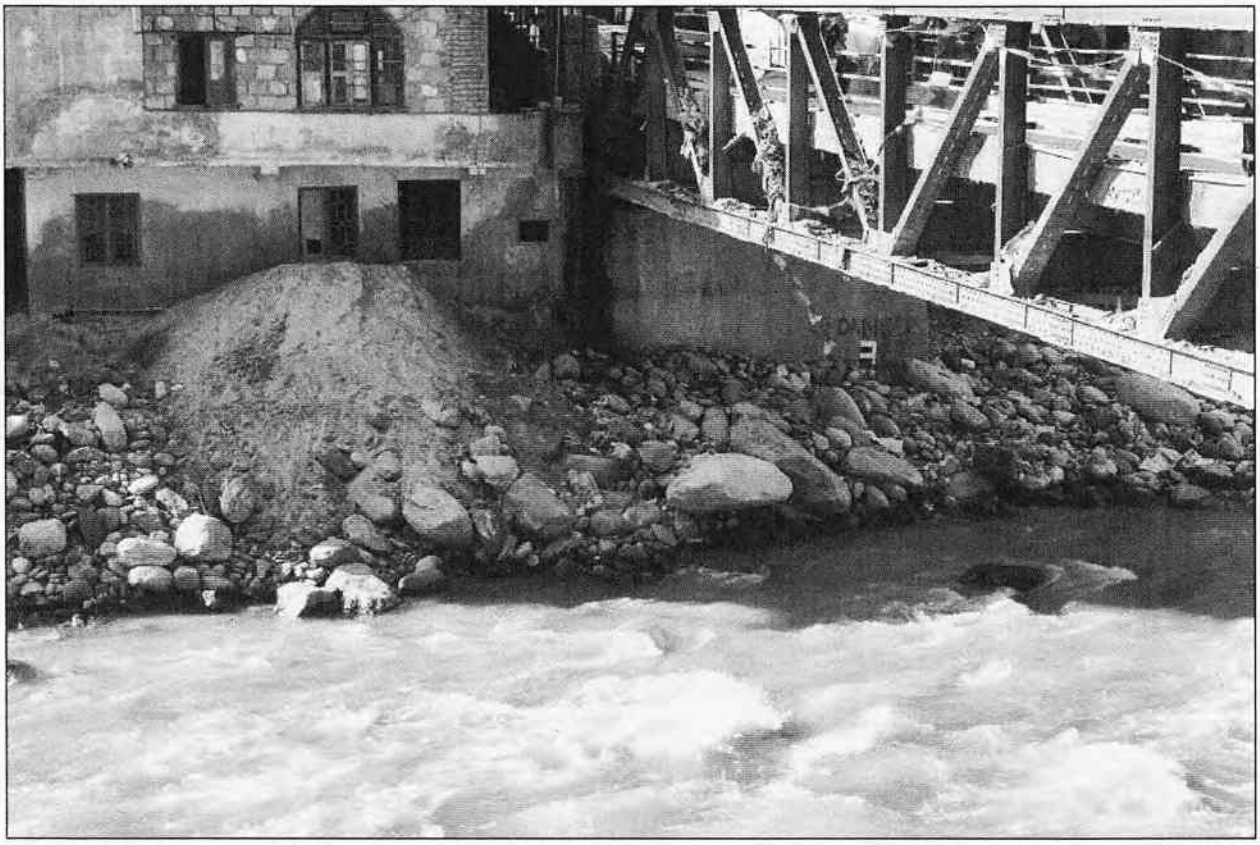
Reservoir area and DT Inlet of Parvati-III Dam



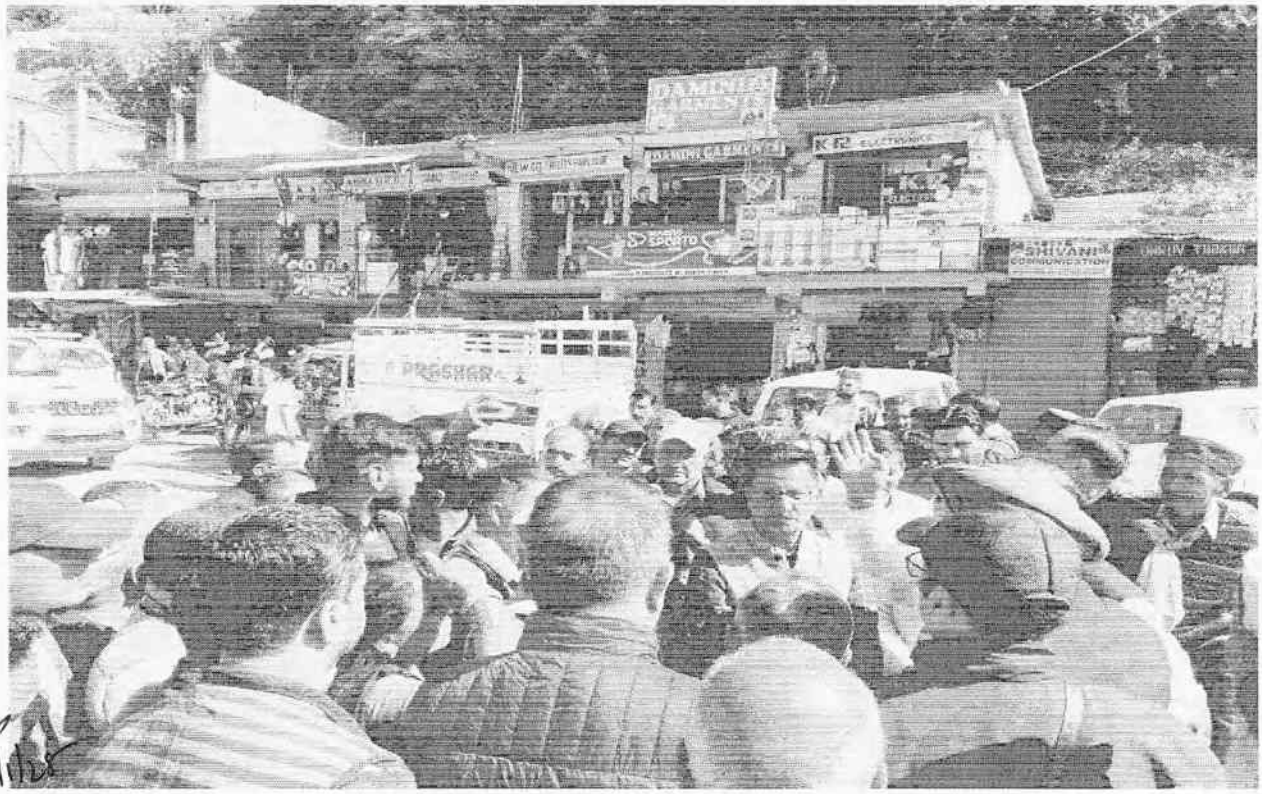
Digital gate opening and discharge in control room of Parvati-III Dam

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Flood danger level wrt 800 cumecs below the bridge in Sainj Town



Meeting/Discussions with local people in Sainj Town

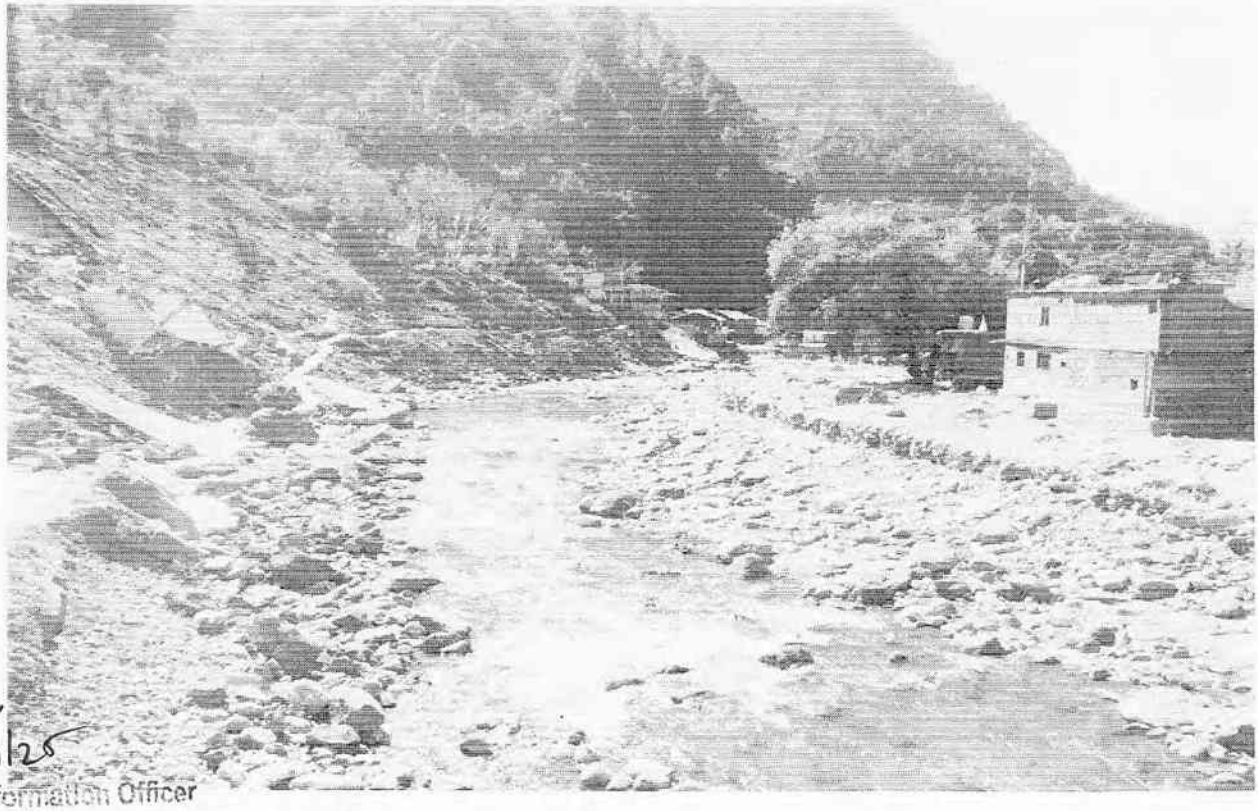
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Sainj Town Before Flood and after Flooding



Sainj Town Downstream of Bridge

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5.0 Malana-II Dam

The Govt. of HP had allotted Malana-II HEP (100 MW) to M/s Everest Power Private Limited which entered into a Memorandum of Understanding (MoU), with Govt. of Himachal Pradesh on 27th May 2002. Subsequently, Implementation Agreement (IA) was signed between GoHP and M/s Everest Power Private Limited on 14th January 2003 for implementation of Malana-II HEP (100 MW).The Project Proponent has achieved the Commercial Operation Date of the Project on 12th July 2012.

Malana-II is a conventional gravity type concrete dam of ±53 meter high above the deepest foundation level. As reported by dam authorities, it is founded on sound rock. As per record, the foundation of the dam has been kept at EL ± 2492 meter. Length of dam at the top is ± 150 m (Dam block)+ 63 m (Key wall into the LHS Hill Mass). Two number 4.00 m x 5.50 m size Spillway Radial Gates have been provided in the dam. One set of 4.00m (W) x 7.10m (H) size stop log gate has been provided to facilitate maintenance of the radial gate. For the operation of radial gates the control room is provided at the top of Dam body just above the gates. The reservoir capacity is (Gross Storage is 0.386 MCM and Live Storage is 0.2875 MCM). For the operation of stop log gates gantry crane has been provided at the top of dam body. The salient features of the project are enclosed as **Annexure-X**.

The committee conducted a preliminary meeting with Project authorities of Malana-II Dam Authorities on 19.10.2023 regarding overtopping incident occurred in Malana-II Dam. Further, the committee visited the dam site on 20.10.2023 of Malana-II Dam and a concluding meeting was conducted at Dam Site of Malana-II Dam. The list of participants of the meeting at Malana-II HEP is enclosed at **Annexure-XI.**

It was informed to the committee that first overtopping of Malana-II dam happened on 24th August, 2013. As per previous DoE Inspection Reports submitted by the panel of expert committee vide letter No. HPDOE/PF/Inspection Malana-II-1-4 dated 30.09.2014, it was stated that on 24th August, 2013, both units which were under operation with 16 cumec discharge in the river, tripped suddenly and due to non-operation of the radial gates the water level in the reservoir started rising due to this sudden tripping of both the generating units. Gates could not operate due to sloughing/collapse of the silt deposited in front of the radial gates. Water which was initially at MDDL, suddenly started rising & resulted in overtopping of the concrete/gravity dam and same incident happened again on 24.07.2023.
As per finding of above said report an additional spillway was recommended by the expert committee and proposal was asked from IPP vide DoE office letter no. HPDoE/CE/Authority/Safety/Malana-II HEP/2014-6392-93 dated 10.10.2014. Accordingly proposal for construction of additional spillway by converting Non Overflow Blocks into spillway on right bank of Malana-II dam was submitted by the project developer vide letter dated 13th May, 2016 and same was allowed to be implemented vide DoE letter no. HPDoE/CE/Authority/Safety/Malana-II HEP/2014-1912-13 dated 01.06.2016 subject to fulfillment of the following conditions:

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- The various important features of the proposed spillway needs to be vetted/ optimized through Model studies for hydraulic efficiencies w.r.t. discharge capability, efficient energy dissipation without any erosion at toe & right bank having PWD road for safety of the dam in particular before its implementation.

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- Due precaution in construction as per specification & detailed design engineering needs to be carried out.
- All the codal formalities, if required, w.r.t. implementation from concerned agencies i.e. disposal of generated muck, provision of alternate road/ passage to village located on bank right, safety of downstream HEPS & habitats besides no interference with the levels of any upstream HEPs needs to be followed/ ensured.

Subsequently, the proposal (DPR) was submitted by the dam authority vide letter dated 10.11.2017 and final go ahead to this proposal was given by DoE vide letter no. HPDOE/CE/Authority/Malana-II/2018-8760 dated 02.02.2018. It was observed that despite the final approval given by DoE in February, 2018, the dam authorities could not take up the work for almost next five and half years. The reasons stated by the dam authorities are as under:

- Dam authorities approached for the Forest Department approval in October, 2018 and accordingly attained the approval on 31st October, 2018.
- Dam authorities obtain the MoEF&CC approval on 5th August, 2019.
- Though the dam authority had approached /engaged M/s Aqua Green Company for detail designing of the proposals but it took almost three and half years for finalization of the design report which was /completed on 12th October, 2019.
- In March, 2022 M/s Greenko took over the project ownerships however no approval has been taken in this regard from GoHP.
- The work was awarded to be BOMS Pvt. Ltd. by dam authorities on 20.09.2020.
- The work could not started and project developer has given the reason stating the restrictions of COVID-19 outbreak and the poor road network issues etc.

In the present overtopping case, the gate opening rectification measures were taken up only after the intervention of SDSO and the site visit was conducted after overtopping. The overtopping of Malana-II dam continued for about 45 days and as per the Dam Safety Act it is considered as dam failure.

5.1 Observations of the Committee

Based on the site visit and discussions with project authorities, the committee observed as under.

- Two no radial gates of size 4 x 5.5 m each got stuck at 3:00AM on 24.07.2023 as reported by the dam authorities . As quoted by project authorities, ***"At approximately 03:00 am flash flood arrived due to cloud burst in the catchment area. Both the radial gates were already opened with 350 mm and 250 mm openings respectively. Suddenly it was observed that the discharge from the spillway radial gates started to reduce. The gates were operated with the power pack to increase the gate opening but were observed to have been stuck due to overload. This overload and choking of the passage was due to accumulation of large debris and boulders behind and below the gates. Repeated trials were made to open the gates, but the efforts were in vain. Further keeping in view of the safety, the power supply was shut down and the dam premises was evacuated. As of now the water is flowing from above the dam top and all the team has been moved to safe location (All the team members are safe)".***
- As per Dam authorities overtopping started after one and half hour of flood arrival and the left bank started eroding. Accordingly the approach road from the left bank side got washed away and

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the movement to the Dam top got disconnected. On 25.07.2023 with the help of NDRF team the dam operation & maintenance team managed to reach to the control room for taking up gates opening operation.

- They tried to move the gates by building hydraulic pressure manually and pulling the gates upwards with slings. Later due to increased discharge in the river the team had to come back. The same process was also tried from 26.07.2023 to 29.07.2023. However no fruitful results were achieved. In between the BBMB divers were also called on the site to provide their support through under water action and to access the deposition of silt but due to high turbidity and turbulence, they showed their inability to help in the cause. The gate erection expert was also called on site on dated 28.07.2023. Though he tried his best after reaching in the control room but his efforts also gone in vain.

- On 30th July, 2023 SDSO, GoHP, DoE team visited the dam site and after analyzing the situation the necessary directions were imparted to dam authorities regarding restricting the flow on left bank side, taking up works for the road access to dam top and for taking up cutting of the dam top at right bank in line with the approved proposals on priority basis. Regarding taking up the necessary actions for safeguarding the lives and stocks downstream, the downstream area survey was conducted with DDMA team and accordingly in line with the dam break analysis report the area was got vacated downstream. Necessary guidance was taken up from CWC and other experts and continuously the information sharing was maintained. SDSO kept a continuous vigil on the situation and finally on 10th September, 2023 when the road access were through, the heavy excavator machinery were brought to the dam top and with the help of slings and other arrangements and by utilizing the power of excavator the gates were opened.

- During the visit committee observed that there are lots of boulders, debris, stacked upstream of reservoir in the river course and these are likely to slip into the reservoir.

- The Early Warning Systems as available are not compatible to the desired standards. The inflow forecast system along with inflow measurements in upstream reaches have not been established.

- As per project authorities, the dam break analysis does not cover the GLOF and cloud burst like incidents. Accordingly, the same needs review.

5.2 Recommendations of the Committee

- Since the overtopping remained continued for about 45 days it is strongly recommended that the comprehensive structural safety review of dam be conducted.
- In view of the overtopping and the condition prevailed for 45 days the additional spillway design may be reviewed again for dam stability and other safety aspects.
- It is very much essential that dam authorities have an advance inflow forecasting system of appropriate standards and of latest technology so that the prior actions be taken up for dam and reservoir operations.

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- The river reach beyond reservoir in the upstream has lot of boulders, to trap these boulders, Boulder Traps of rock fill/boulder material having small heights may be constructed. These traps shall be cleaned whenever they are filled with boulders.
- The frequency of gate opening/closing be increased and every minute detail in this regard be recorded. Repair & maintenance of the gates and its associated arrangements be taken up on priority. If needed the old associated parts or accessories be replaced by adopting the internationally accepted standards. Following measures are suggested in respect of hydro-mechanical components:

  - It is suggested to review the grade of Hydraulic Oil being used in the system of hydraulic hoist of Radial Gate concerning compatibility of grade of oil with ambient temperature at dam site. Considering the low temperature prevailing at site, also ensure provision of heater in the oil tank of Power Pack of Hydraulic hoisting arrangement.

  - Considering prevailing site conditions/location and venerability, the likelihood of blocking/jamming of low level gate is more, it is therefore suggested to strictly follow/adhere to the protocols mentioned in Operation & Maintenance Manuals especially regarding the provisions of frequent operation /exercising (frequent gate movement i.e. lifting/lowering) of low level radial gates. This will help to certain extent in removal of debris accumulated/likely to be accumulated in vicinity of gate leaf and thereby reducing the possibility of jamming of gate.

  - The project may also thought of providing a removable type coarse debris screen/trash rack in front of Radial gates on trial basis. Suitably designed trash rack of about 1.0 m height can be handled by existing spillway gantry crane & the same can placed/kept in stoplog grooves. The debris screen/trash rack shall remain placed in the stoplog groove for smaller outflow condition (i.e. small partial opening of gate) and the same may be completely removed from stoplog groove for larger opening of radial gate / while disposing of the flood.

  - The project may also review the end details of gate leaf *side seal arrangement (Figure 5.1). There is likely hood of deposition*/wedging of debris in between the gate leaf ends and pier face/side wall plates.

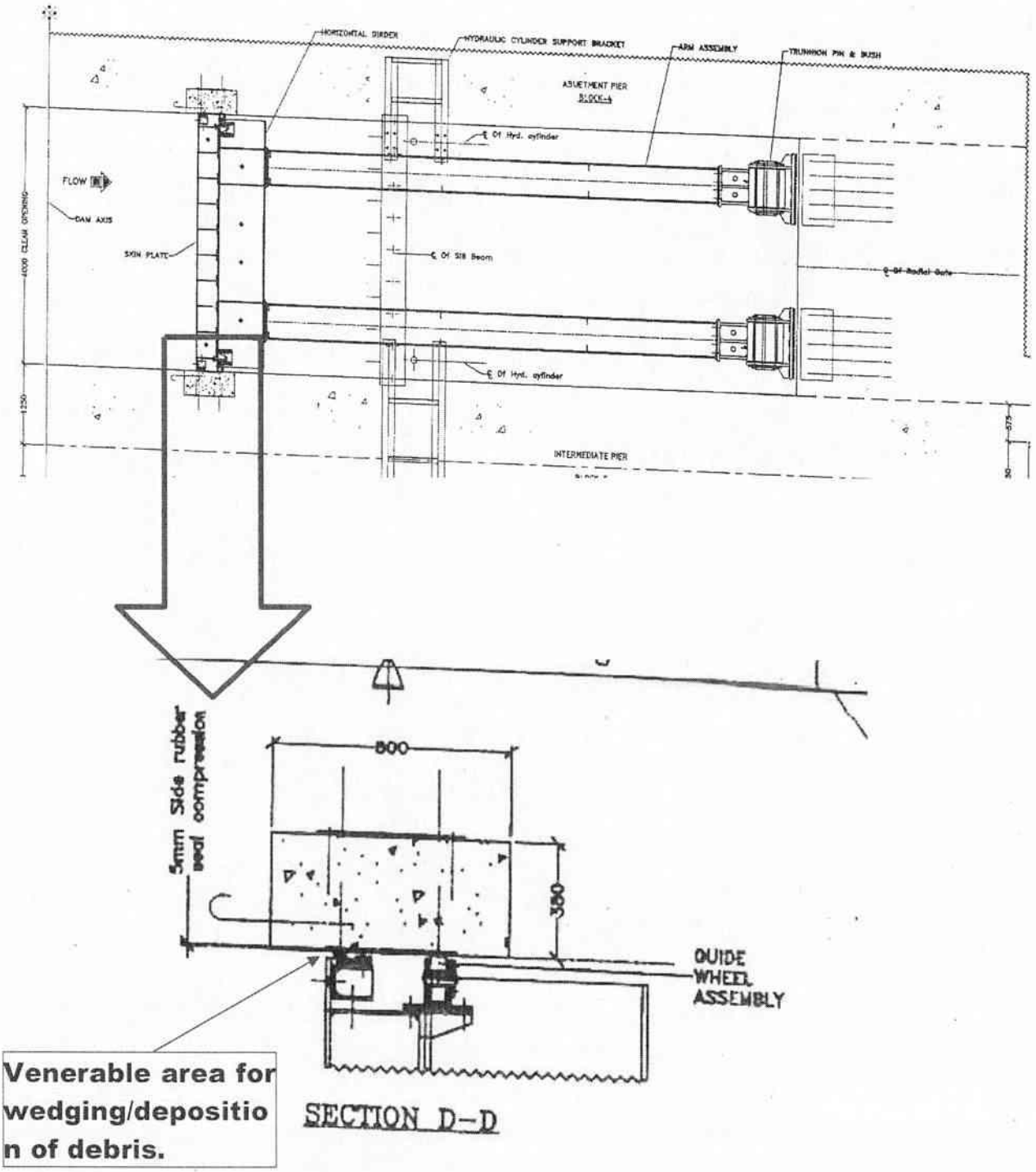
- The dam authority must ensure all safety protocols for the works related to additional spillway including safety of the existing dam in all conditions.
- An alternate access for the trespassers be immediately taken up from the downstream of the dam so that the unauthorized entry be restricted at the dam top so that rectification/restoration measures etc. be taken up smoothly.

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Figure 5.1

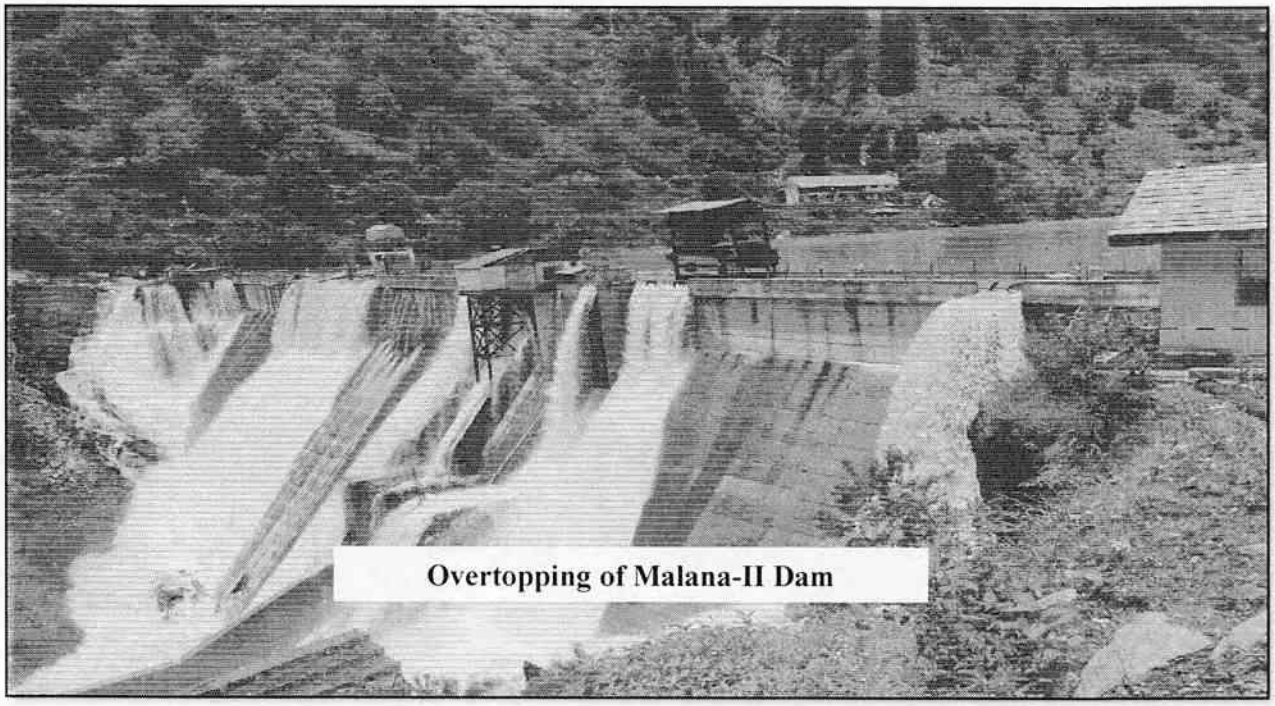
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5.3 Concluding Remarks

Dams are not designed for overtopping. Overtopping may cause distress in the dam and sometimes failure also. As per the Dam Safety Act, 2021 the overtopping incidents are considered as dam failure situation wherein uncontrolled release of water takes place putting lives and stocks downstream under threat. The first overtopping of Malana II dam occurred in 2013. The dam overtopped for the second time in 2023. Measures to avoid repeat of such incidents should have been taken by dam owners.

The long delays have been observed in execution of additional spillway as directed by State Government agencies though necessary approvals were obtained by dam authorities in time. If the works of additional spillway would have been completed, overtopping of dam could have been avoided this year. It could not be established that stucking of gates due to slush and boulder deposit took place after cloud burst like incident as during the duration /time period of stucking of gates, no cloud burst type incident occurred in Malana stream.

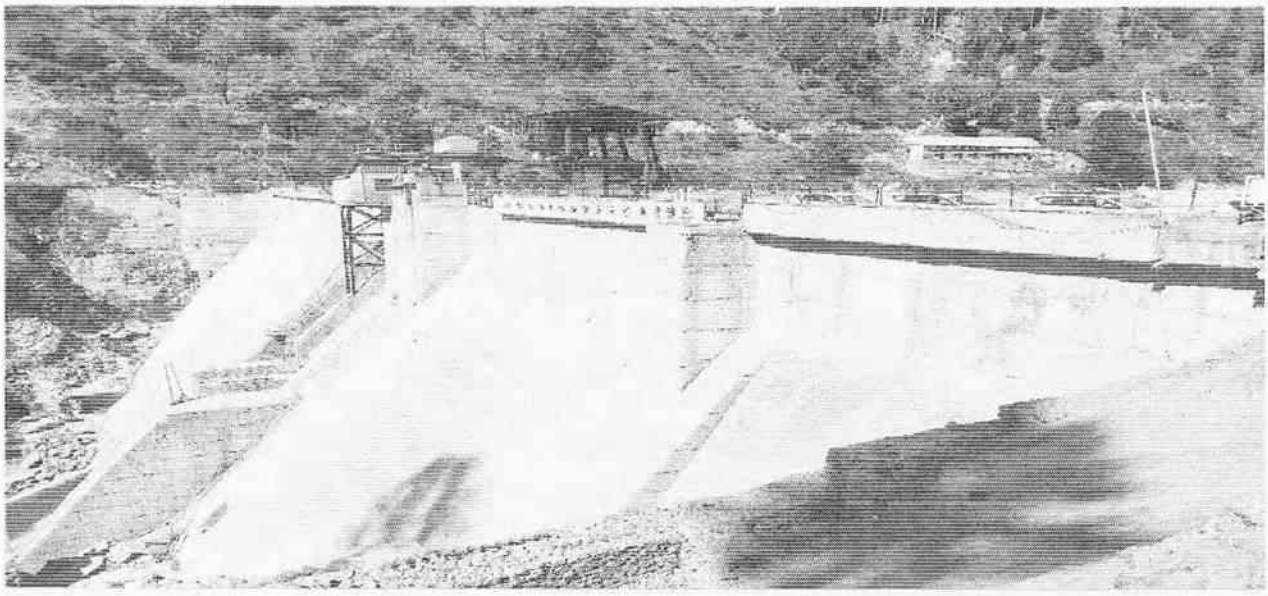


Overtopping of Malana-II Dam

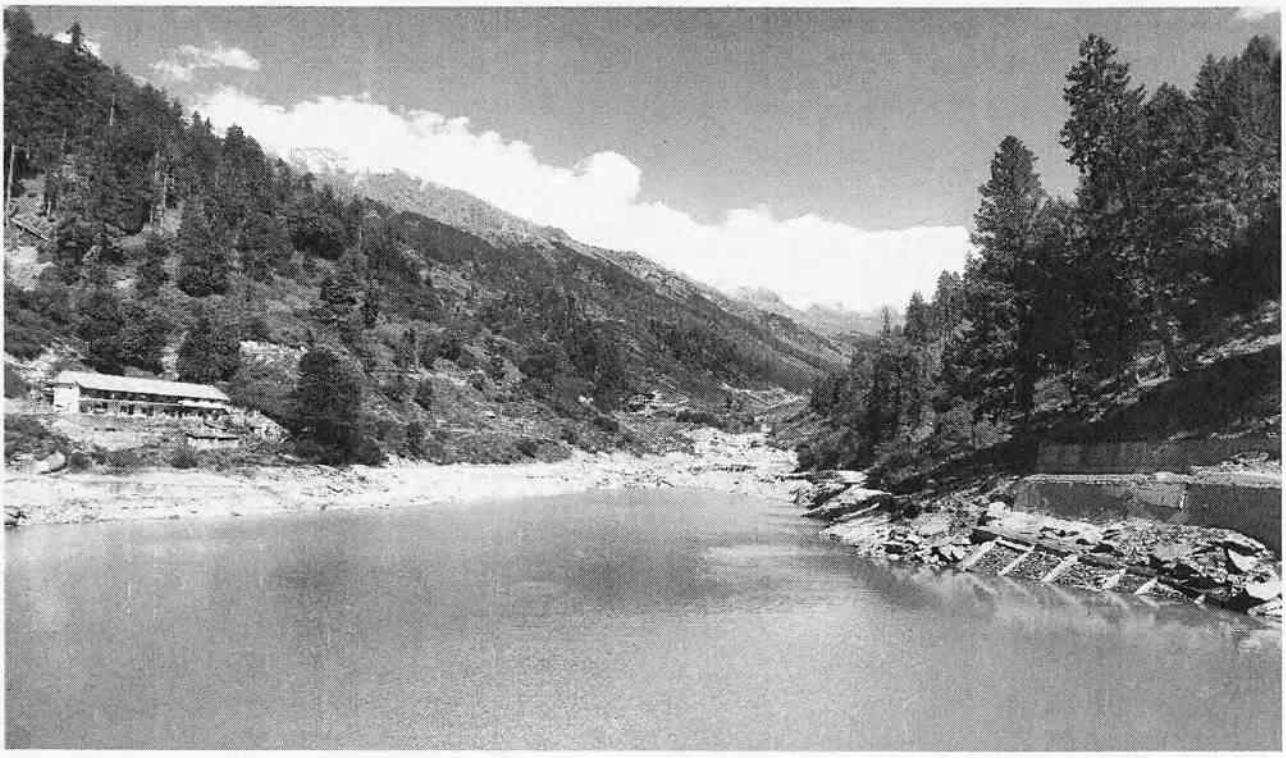
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Present View of Dam After Opening of the Gates

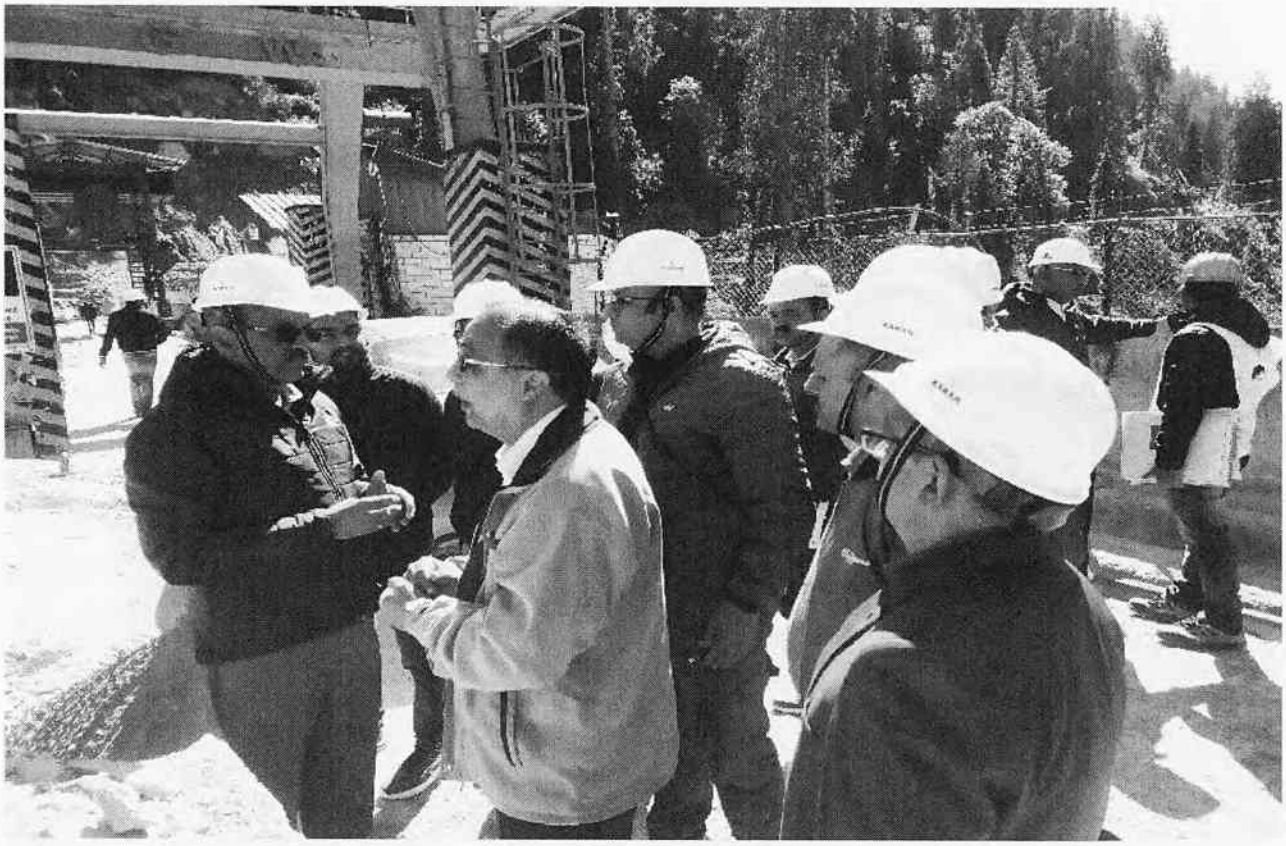


Upstream Reservoir View

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Dam Top Inspection

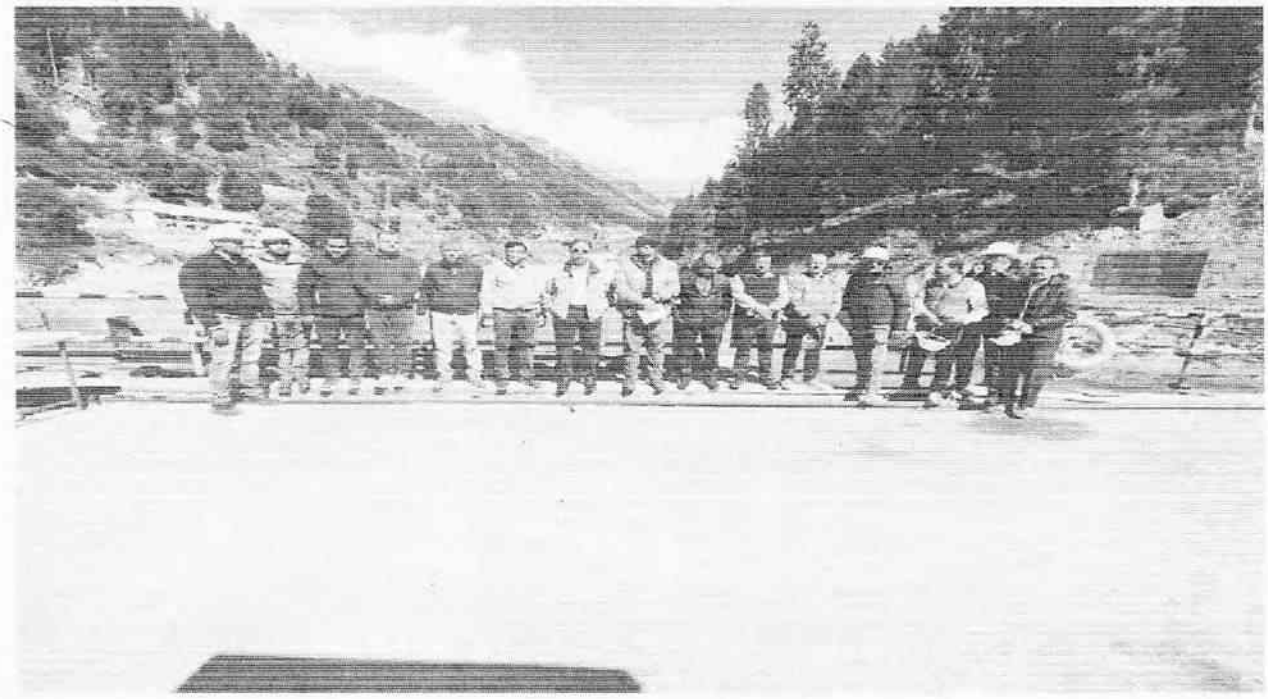


Undergoing Works of Dam Top Cutting

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Group Photograph



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6.0 General Recommendations of the Committee

Dam Safety Act-2021 has laid down various responsibilities of dam owners to be followed for safety of the dam and safety of the people residing in the downstream. Various actions are required to be taken up by dam owners for ensuring safety of the dams. These actions include periodical safety inspections, installation of instruments & inflow forecasting system, monitoring & surveillance, timely repair & maintenance, preparation of operation & maintenance manuals incorporating reservoir rule curves, preparation of a robust Emergency Action Plan based on different spillway releases & dam break analysis results etc. In this regard, Directorate of Energy, Govt. of HP and SDSO/SCDS have instructed dam owners of Pong, Pandoh, Parbati III and Malana II dams from time to time. However, most of the actions are still to be taken up by dam owners.

Central Water Commission (CWC) has issued guidelines for safety inspection of large dams, preparation of EAP, Preparation of O&M manuals, instrumentation and various other subjects related to dam safety. The committee recommends to follow these guidelines in robust manner and strict compliance of these guidelines may be ensured by every dam owner.

As per Dam Safety Act, a Dam Safety Unit must be established at each Dam and shall follow all instructions of SDSO.

Every Dam Owner must be aware about the various provisions made in different chapters of Dam SAfety Act. In case of any training need, they should write to SDSO or CWC.

A rule curve or rule level specifies the releases to be made through spillway and water level to be maintained in a reservoir during different times of the year. In a storage project, optimal flood moderation can be obtained by preparation of rule curve and its compliance.

An Early Warning System (EWS) is an Automated Data-Acquisition System equipped to transmit and process data to include early warning notification features, and programmed to operate without the need of human intervention. An EWS may include various types of sensors, including reservoir/tailwater level monitoring, stream gauges, and weather measurements. The EWS has a monitoring system that analyzes the risk of a dam rupture. There is a possibility that a dam may become inaccessible or limitedly accessible in case of a natural disaster. It issues a warning signal to the area that gets flooded within an hour of damaging the dam. Early Warning System provides continuous data in case of natural disaster such as flooding, snow, storms. It increases the accuracy, reliability, and consistency with the help of remote diagnostics. The first responders will be notified of emergency situation via voice or text message. The data and the information received from EWS helps the Dam owners to take preventive measures well before any emergency.

Safety and efficient operation of Dams can be ensured by installation of inflow forecasting system. Telemetry systems may be used for this purpose. Telemetry systems continuously collect data from various sensors and instruments installed in the catchment of dam and sends it to control room, at control room, inflow forecast is made using latest models.

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Preparation of a robust EAP is must for safety of people living in the downstream areas. EAP shall include inundation mapping based on the results of dam break modeling and after carrying out hydraulic channel routing studies for different releases from spillway. For proper co-ordination among different agencies dam owners shall organize trainings and workshops. Consultation meetings shall be organized by dam owners by involving all the stakeholders from time to time. It is important that the dam break analysis, hydraulic routing studies downstream and inundation mapping and flood marking etc. be taken up afresh and accordingly the EAP and the DMP be updated and implemented as well.

State Government should also take necessary steps to reduce encroachments in the flood prone area downstream of dam based on inundation mapping carried out by Dam authorities for different discharges from spillway & Dam Break Modeling.

Er. Raj Kumar
Assistant Executive Engineer (DoE)

Sh. R.P.S. Verma
Director, NDSA (Northern India),
Director, CWC)

Sh. Harkesh Kumar
(Ex. Director, CWC)

Sh. Goverdhan Prasad
Director, Hydrology (N) Dte, (CWC)

Er. Deepak Jasrotia
Dy. Chief Engineer (Dam Safety), GoHP

Sh. Balwan Kumar
(Director, CEA)

Er. D.P. Gupta
Chief Engineer (Energy), GoHP

Dr. R.K. Gupta
(Ex. Chairman, CWC)

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Annexure-I

Office Order

In line with the direction of GoHP following committee is here by constituted to carry out the detailed inspection of Pong, Pandoh and Parbati-III dams w.r.t. sudden releases and also Malana-II dam w.r.t. overtopping incident.

External Members

1.	Sh. R.K. Gupta, (Ex. Chairman CWC)	Head
2.	Sh. Harkesh Kumar, (Ex. Director CWC)	Member
3.	Goverdhan Prasad (Director Hydrology(N) Dte, HSO Unit CWC)	Member
4.	Sh. R.P.S. Verma, (Director NDSA Northern India , CWC- Chandigarh)	Member

Govt. of Himachal Pradesh

1.	Sh. D.P. Gupta, Chief Engineer (Energy), GoHP-cum-(Head SCDS-HP)	Member
2.	Sh. Deepak Jasrotia, Dy. Chief Engineer, DoE, GoHP-cum-(Head SDSO-HP)	Member Secretary
3.	Sh. Raj Kumar, AEE, DoE, GoHP	Member

Concerned Distt. Administration

ADC/ADM of concerned Distt. (Kangra, Mandi and Kullu for their respective Distt.)

One member (Director level officer from CEA) may join the committee as per availability.

Note:

1. The committee will investigate comprehensively the cause of sudden release happened from these dams which resulted heavy damages downstream.
2. The committee will investigate efficiency of EWS implemented and how effective these were, EWS not implemented Dam Break Analysis, Hydraulic Routing Study, Inundation Mapping carried out, if carried out how effectively it was executed.
3. Investigation of overtopping of Malana-II dam, sudden closure of gates and the action taken by dam authority in this regard and ineffectiveness if any on the part of dam authority which lead to this incident

31/1/25 2nd time.

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4. The committee will also review the reservoir and gate operation as executed by the Dam authorities during this heavy discharge release.
5. The committee on its findings, if found will define and indicate deficiencies observed on the part of Dam authorities and will clearly suggested the action to be taken in this regard.
6. On broader aspects committee will also suggest measures which should have been executed by all dam authorities as the lesson learnt from such incidents.
7. The committee will submit its report to the GoHP at the earliest.

By order

Harikesh Meena, IAS,
Director (Energy),
GoHP, Shimla-09.

No. HPDoE/CE (Energy)/SDSO -HP/2023-7108-25 **Dated:-** 28/09/2023

Copy to:

1. The Sr. Private Secretary to the worthy Chief Secretary to the Government of Himachal Pradesh, Shimla-171002.
2. The Principal Secretary (Rev-DM) to the Government of Himachal Pradesh, Shimla-171002.
3. The Secretary (MPP & Power) to the Government of Himachal Pradesh, Shimla-171002.
4. The Chairman –cum-Managing Director, NHPC Office Complex, Sector-33, Faridabad-121003.
5. The Chairman BBMB, Sector 19-B, Madhya Marg, Chandigarh- 160019.
6. The Director-cum Special Secretary (Rev-DM) to the Government of Himachal Pradesh, Shimla-171002.
7. The Member (Policy & Research), NDSA & Member Secretary NCDS, Dam Safety Design-II Directorate, Sewa Bhawan, R.K.Puram, New Delhi- 110066.
8. The Deputy Commissioner, Kullu, Distt. Kullu, Dhalpur, Near DC Office, Dhalpur, Kullu, Himachal Pradesh 175101.
9. The Deputy Commissioner, Mandi, Distt. Mandi, Bangala Muhalla, Bhagwan Muhalla, Samkhetar, Mandi, Himachal Pradesh 175001.
10. The Deputy Commissioner, Kangra, Distt. Kangra, Kachahri, Dharamshala, Himachal Pradesh-176215.
11. The Director, NDSA, Northern region, Block 4, 6th Floor, Kendriya Sadan, Sector 9A Chandigarh (UT).
12. All the respected committee members please.
13. M/s Everest Power Pvt. Ltd, Malana-II, HEP, First House, Bhumian Estate, NavBahar Bhumian Road, Chotta Shimla-171002

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Harikesh Meena, IAS,
Director (Energy),
GoHP, Shimla-09

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Annexure - II

DIRECTORATE OF ENERGY
GOVERNMENT OF HIMACHAL PRADESH
SHANTI BHAWAN PHASE-III SECTOR-6 NEW SHIMLA-9
Tel No: 0177-2673552, Fax No: 2673553, Email: dir.doehp@nic.in, ceenergy09@gmail.com

No. HPDoE/Dam Safety/ SDSO-HP/2023-7485-7503 **Dated:** 07/10/2023

To

1. The Chief Engineer,
   Bhakra Beas Management Board (IW)
   Talwara, District Hoshiarpur (PB) Pin-144216.
   (for Pong Dam)
2. The Chief Engineer,
   Bhakra Beas Management Board (IW) Sunder-Nagar,
   District Mandi (H.P.)-175018.
   (for Pandoh Dam)
3. The General Manager,
   Parbati Stage-III,HEP,NHPC Ltd.,
   Behali, P.O. Larji, Distt. Kullu (HP)-175122
4. M/s Everest Power Pvt Ltd,
   Malana-II HEP, First House, Bhumian Estate,
   Nav Bahar Bhumian Road, Chotta Shimla-171002

Subject: **Visit of Pong, Pandoh, Parbati-III and Malana-II dams in line with the direction of GoHP by the committee constituted to carry out the detailed inspection of Pong, Pandoh and Parbati-III dams w.r.t. sudden releases and also Malana-II dam w.r.t. overtopping incident.**

Sir,

On the subject cited matter and in reference to the GoHP office order No. 7108-25 dated 28.09.2023 vide which a committee has been constituted as per following:

Committee composition

External Members		
1.	Sh. R.K. Gupta, (Ex. Chairman CWC)	Head
2.	Sh. Harkesh Kumar, (Ex. Director CWC)	Member

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Central Water Commission, GoI		
3.	Goverdhan Prasad (Director Hydrology(N) Dte. HSO Unit CWC)	Member
4.	Sh. R.P.S. Verma. (Director NDSA Northern India , CWC-Chandigarh)	Member
Central Electricity Authority, GoI		
5.	Sh. Balwan Kumar, Director Hydro Project Planning and Investigation Division	Member
Govt. of Himachal Pradesh		
6.	Sh. D.P. Gupta, Chief Engineer (Energy), GoHP-cum-(Head SCDS-HP)	Member
7.	Sh. Deepak Jasrotia, Dy. Chief Engineer, DoE, GoHP-cum-(Head SDSO-HP)	Member Secretary
8.	Sh. Raj Kumar, AEE, DoE, GoHP	Member
Distt. Administration- Kangra, Mandi and Kullu		
9.	ADC/ADM of Distt. Kangra for Pong dam, Distt. Mandi for Pandoh dam and Distt. Kullu for Parbati-III and Malana-II dam	

In this context, it is intimated that the inspection of the respective dams has been scheduled as under:

Date	Description	Remark
16.10.2023	Team arrival at Dharamshala (Gaggal airport) Journey from Gaggal airport to Talwara Preliminary Meeting with Pong dam authorities later in the afternoon	Pong dam authorities to manage the meeting and stay of the visiting team at Talwara.
17.10.2023	Pong Dam Inspection i/c the upstream reservoir and downstream affected area (in the first half of the day) Concluding meeting with dam authorities in the afternoon.	Pong dam authorities to manage the inspection and meeting. Distt. Administration Kangra to manage the visit of affected area downstream of Pong dam. Pandoh dam authorities to

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	Journey from Talwara to Sundernagar (A.N./Evening)	manage the stay of the visiting team at Sundernagar.
18.10.2023	Preliminary Meeting with Pandoh dam authorities at Sundernagar (Morning). Pandoh Dam Inspection i/c the upstream reservoir and downstream affected area (in the first half of the day). Concluding meeting with dam authorities in the afternoon at Pandoh dam site. Journey from Pandoh to Nagwain/Sainj (A.N./Evening).	Pandoh dam authorities to manage the inspection and meeting. Distt. Administration Mandi to manage the visit of affected area downstream of Pandoh dam. Parbati-III dam authorities to manage the stay of visiting team at Nagwain/Sainj.
19.10.2023	Preliminary Meeting with Parbati-III dam authorities at Sainj (Morning). Parbati-III Dam Inspection i/c the upstream reservoir and downstream affected area (in the first half of the day). Concluding meeting with dam authorities in the afternoon at Parbati-III dam site/office. Journey from Sainj to Jari (A.N./Evening).	Parbati-III dam authorities to manage the inspection and meeting. Distt. Administration Kullu to manage the visit of affected area downstream of Parbati-III dam. Malana-I /Malana-II dam authorities to manage the stay of visiting team at Jari.
20.10.2023	Preliminary Meeting with Malana-II dam authorities at Jari (Morning). Malana-II Dam Inspection i/c the upstream tream affected area (in the first half of the Concluding meeting with Malana-II dam authorities in the afternoon at Malana-II dam site/office. Committee's visit closure meeting. Halt at Jari.	Malana-II dam authorities to manage the inspection and meeting. Distt. Administration Kullu to manage the visit of affected area downstream of Malana-II dam. Malana-I /Malana-II dam authorities to manage the stay of visiting team at Jari.
21.10.2023	Back Journey from Jari to Chandigarh / other places	--

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The committee has been mandated to investigate comprehensively the cause of sudden release happened from these dams which resulted heavy damages downstream in the month of July and August, 2023. The committee will investigate efficiency of EWS implemented and how effective these were. Proper implementation of Dam Break Analysis, Hydraulic Routing Study, Inundation Mapping carried out or not, if carried out how effectively these were executed. Investigation of overtopping of Malana-II dam, sudden closure of gates and the action taken by dam authority in this regard and ineffectiveness if any on the part of dam authority which lead to this incident 2nd time. The committee will also review the reservoir and gate operation as executed by the Dam authorities during this heavy discharge release and on its findings, if found the committee will define and indicate deficiencies observed on the part of Dam authorities and will clearly suggest the action to be taken in this regard. On broader aspects committee will also suggest measures which should have been executed by all dam authorities as the lesson learnt from such incidents.

In view of the above stated facts you are therefore requested to manage successfully the scheduled inspections of your respective dam. It is further stated to please made the data and information readily available as has been requested earlier alongwith all other important information and details during the inspection on site and do ensure the presence of all concerned associated technical officers /technicians other staff including the must presence of Head of the Project.

This is for your information and further necessary action please.

Yours faithfully,

Chief Engineer (Energy),
Directorate of Energy,
GoHP Shimla-09.

Copy to following for kind information please:

1. The Sr. Private Secretary to the worthy Chief Secretary to the Government of Himachal Pradesh, Shimla-171002.
2. The Principal Secretary (Rev-DM) to the Government of Himachal Pradesh, Shimla-171002.
3. The Secretary (MPP & Power) to the Government of Himachal Pradesh, Shimla-171002.

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4. The Chairman –cum-Managing Director, NHPC Office Complex, Sector-33, Faridabad-121003.
5. The Chairman BBMB, Sector 19-B, Madhya Marg, Chandigarh- 160019.
6. The Director-cum Special Secretary (Rev-DM) to the Government of Himachal Pradesh, Shimla-171002.
7. All the respected committee members as stated above.
8. The Member (Policy & Research), NDSA & Member Secretary NCDS, Dam Safety Design-II Directorate, Sewa Bhawan, R.K.Puram, New Delhi- 110066.
9. The Deputy Commissioner, Kullu, Distt. Kullu, Dhalpur, Near DC Office, Dhalpur, Kullu, Himachal Pradesh 175101 with the request to depute concerned ADC/ADM to associate with the committee please.
10. The Deputy Commissioner, Mandi, Distt. Mandi, Bangala Muhalla, Bhagwan Muhalla, Samkhetar, Mandi, Himachal Pradesh 175001 with the request to depute concerned ADC/ADM to associate with the committee please.
11. The Deputy Commissioner, Kangra, Distt. Kangra, Kachahri, Dharamshala, Himachal Pradesh-176215 with the request to depute concerned ADC/ADM to associate with the committee please.
12. The Director, NDSA, Northern region, Block 4, 6th Floor, Kendriya Sadan, Sector 9A Chandigarh (UT).
13. M/s Everest Power Pvt. Ltd, Malana-II, HEP, First House, Bhumian Estate, NavBahar Bhumian Road, Chotta Shimla-171002.
14. M/s Malana Power Company Ltd., Village Chowki, PO Jari, Distt Kullu-175105.

Chief Engineer (Energy),
Directorate of Energy,
GoHP Shimla-09.

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Annexure-III

Salient Features of Pong Dam

Total cost	:	Rs. 325.88 crores
Longitude (^{0}dec)		**75^{0}56'52" East**
Latitude (^{0}dec)		**31^{0}58'20" North**
DAM		
Cost	:	Rs.38.10 crores
Type of Dam	:	Earth Core Gravel Shell
Elevation at Top of Dam	:	El. 435.86 m. (El. 1430 ft.)
Free Board (above Max. RWL)	:	2.74 m. (9 ft.)
Maximum Height of Dam above Deepest Foundation Level	:	132.59 m. (435 ft.)
Crest Length/Earthen Dam	:	1950.70 m. (6400 ft.) approx.
Width at Crest	:	13.72 m. (45 ft.)
Maximum Width at Base	:	610 m. (2000 ft.)
RIVER DIVERSION WORKS		
Cost	:	Rs. 25.10 crores
No. of Tunnels	:	5 No.
Finished Dia of Each Tunnel	:	9.14 m. (30 ft.) diameter
Total Length	:	5016.70 m. (16459 ft.)
Minimum Thickness of R.C.C. Lining	:	76.2 centimeters (30 inches)
RESERVOIR		
Catchment Area	:	12,560 sq. kilometers (4850 sq. miles)
Maximum Reservoir Level	:	El. 433.12 m. (El. 1421 ft.)
Normal Reservoir Level	:	El. 426.72 m. (El. 1400 ft.)
Dead Storage Level	:	El. 384.05 m. (El. 1260 ft.)
Gross Storage Capacity	:	8570 million cum. (6.95 million acre ft.)
Live Storage Capacity	:	7290 million cum. (5.91 million acre ft.)
Maximum Reservoir Depth	:	97.84 m. (321 ft.)
Reservoir Length	:	41.8 kilometers (26 miles)
OUTLET WORKS		
No. of Outlet Tunnels	:	2 No.
No. of Outlets	:	4 No. (Two in each tunnel)
Type of Gates	:	Slide gates
Size of Gates	:	2.13m x 3.2 m (7ft. x 10.5 ft.)
Maximum Head	:	95.71 m. (314.0 ft.)
Minimum Head	:	46.7 m. (153.3 ft.)
Maximum Discharge Through Each Outlet	:	252.6 cumecs (8925 cusecs)

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Minimum Discharge Through Each Outlet	:	182.5 cumecs (6450 cusecs)
SPILLWAY		
Type of Spillway	:	Overflow gated chute
Overall Width at Crest	:	102.11 m. (335 ft.)
Crest Elevation	:	416.05 m. (1365 ft.)
Clear Water Way at Crest	:	86.9 m. (285 ft.)
Spillway Gates	:	Six radial gates 14.48 m x 12.344 m (47.5 ft. x 40.5 ft.) each.

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Pong Dam

Date:- 17 Oct, 2023

Annexure--IV

SR. No.	NAME	DESIGNATION	OFFICE	MOBILE No.	SIGNATURE
1.	Sh. R.K. Gupta	Ex. Chairman CWC	CWC	7911202528	R.K. Gupta
2.	R.P.S. VERMA	Dir, NR, NDSA	Chandigarh	9566681205	
3.	HARKESH KUMAR	EK. Director CWC	DELHI	9560452868	
4.	Rajeev Goyal	Dir. Regulation	Nangal	9915050434	
5.	Arun Kumar	C.E. BBMB DAM	Talwara.	9417216052	
6	Arvind Sharma	CE/DS	Dam Safety Distt	9988658563	
7.	S.K. Bedi	Director/Design	BBB Design Dte	9417202097	
8.	Surender Thakur	SDM Indora	SDM office Indora	7418107293	
9.	Vishant Bharati	SDM Fatehpur	SDM office Indora	8219035952	
10	Saurabh Jamal	ADC Kangra	o/o Deputy Commissioner Kangra.	8807794443	
11	GOVERDHAN PRASAD	Director, Hydrology(N) CWC	CWC, New Delhi	9734973696	
12	D.P GUPTA	C.E. DoE GOHP.	- DOE, GOHP- Shimla	9816102606	
13	Deepak Jaswal	Q C.E. DoE GOHP	DoE, GOHP Shimla	8894620001	
14	Balwan Kumar	Director CEA	CEA, N. Delhi	8920911682	21/11/25
15	Gaurav Lamba	Executive Engg (Mech Divn)	Mechanical Division BBMB, Talwara	99884-27291	
16	Harpreet Singh	Executive Engineer	R.M. Division, BBMB, Talwara	89681-76839	
17	Maureen Chaudhary	Addl Superintending Engineer	Pong Dam Division	82649-25934	
18.	RAT KUMAR	A.E.E	DoE, GoHP	98-55 95965	
19.	Charan Das	J.E.	DoE, GoHP	9459524975	

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Annexure-V

Salient Features of Pandoh Dam

Type of Dam	:	Earth - cum - rock fill.
Height above deepest foundation	:	76.20 Mtr. (250 ft)
Elevation of Top of Dam	:	899.16 Mtr.(2950 ft)
Length at Top	:	255 Mtr. (835ft.)
Width at Base	:	268.22 Mtr.(880ft.)
Width at Top	:	12.19 Mtr.(40ft.)

2. DIVERSION TUNNEL

No. of Tunnel & Diameter	:	One, 9.14 Mtr. (30 ft) diameter.
Length	:	664.16 Mtr. (2178.96 ft.)
Discharge	:	563.5 Cumes (19900) Cusecs.
Maximum Velocity	:	9.75 M/Sec.

3. RESERVOIR

Max. Reservoir Level	:	896.64 Mtr. (2941 ft)
Normal Reservoir Level	:	883.92 Mtr.(2900 ft)
Min. Reservoir Level	:	883.92 Mtr.(2900 ft)
Gross Storage Capacity	:	4100 Hect. Mtr.
Live storage capacity at 2900 ft.	:	1855.96 Hectare

4. SPILLWAY

Overall width at crest	:	74m (242.8 ft)
Clear water way at	:	60m (196.8 ft)
Crest EL	:	2870 ft.
Radial gates	:	5 Nos. 12m X 13m (39.375X65 ft)

5. PANDOH BAGGI TUNNEL

Diameter	:	7.62m (25ft)
Length	:	13.1 Km (8.14 Miles)
Capacity	:	254.85 Cumecs (9000 cusec)

6. BAGGI CONTROL WORKS

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No. of conduits	:	4
Size of conduits	:	2.67m X 4.27m
No of gates in each conduit	:	2

7. SUNDERNAGAR HYDEL CHANNEL

Full supply discharge at Head	:	240.69 Cumecs (9000 cusec)
Full supply discharge at Tail	:	212.38 cumecs (7500 cusecs)
Length	:	11.8 Km (7.33 Miles)
Bed width	:	9.45 Mtr. (32ft)
Maximum Depth	:	6.26m (20.53 ft)
Bed slope	:	1 in 6666
Average velocity	:	1.84m / Sec (6.05 ft / Sec)

8. SUNDERNAGAR BALANCING RESERVOIR

Capacity	:	370 Hect Mtr.(3000 Acr ft.)
Maximum height of embankment	:	21.34 Mtr. (70ft.)
Length of Reservoir	:	2134Mtr. (7000 ft.)
Maximum width of Reservoir	:	457.2 Mtr. (1500ft.)
Top Elevation of Embankment	:	844.49 Mtr. (2772 ft.)

9. SUNDERNAGAR SUTLEJ TUNNEL.

Diameter	:	8.53 (28ft.)
Length	:	12.35 Km (7.67 Miles)
Capacity	:	403.52 Cumecs (14250 Cusec)

10. BY PASS TUNNEL AND CHUTE

Diameter of Tunnel	:	8.71 Mtr. (22ft.)
Length of Tunnel	:	296.8 Mtr. (973.5ft.)
Width of tunnel	:	Varies from 14.63 Mtr. (48ft) to 10.35Mtr. (34ft)
No. of outlet Conduits	:	3

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11. SURGE SHAFT

Diameter of Main Shaft	:	22.86 Mtr. (75ft.)
Diameter of riser Shaft	:	7.62 Mtr. (25ft.)

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Height	:	125Mtr.(410.1ft.)

12. DEHAR POWER PLANT

Installed Capacity	:	990 MW 6 Unit of 165MW each
Designed Head	:	320Mtr. (1050ft.)
No.of Penstock Head	:	3 to 4.88 Mtr. (16ft.)
No. of Penstock branches	:	6 to 3.35m (11ft) diameter each

13. BENIFITS FROM PROJECT

Annual Irrigation	:	3.262 Lacs Hect. (8 Lac Acres)
Electrical Energy Delivered per annum	:	3000 Million units (Approx)

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PANDOH DAM

Date:- 18th Oct, 2023

Annexure –VI

Sr. No.	NAME	DESIGNATION	OFFICE	MOBILE NO.	SIGNATURE
01.	SH. R. K. GUPTA	EX-CHAIRMAN (CWC)	CWC	9911202505	R.K.Gupta
02.	GOVERDHAN BAGAD	Director, Hydrology(N), CWC	CWC	9734973606	
3.	S. D. Sharma	C.E BWS Sundernagar	BBMB	9418476304	
4.	Ajay Pal Singh	SE, Circle-1, SNGR	BBMB	9876028982	
5.	Onkar Thakur	EAS (SDM Mandi Sadar)	SDM	9459[illegible]	
6.	Er. Arvind Sharma	CE, BBMB	BBMB/DS	9988611113	
7.	S. K. Bedi	Director/Design	BBMB Nangal	9417202097	
8.	Sanjeev kuma	AE. JSV Mandi	AE-Sub-Div Panarsa	8219676930	
9.	Khushal Thakur	JE. JSV Mandi	N.G. Sub. Div. Panarsa	98166-24649	
10	Balwan Kumar	Director, CEA	CEA	8920911682	
11	R.P.S. Verma	Director	NDSA, CHD	9568685205	
12.	Deepak Jaorkar	Dy. Chief Engineer	DoE Shimla	9816200001	
13	Rajesh Gandhi	Sr. EM E&MD Shimla	BBMB	94181-18105	
14	DP. GUPTA	Chief Engr (Elect)	DOE-GOHP	9816102602	
15.	B. P. Yadav	SDO-II	BBMB	9466887110	
16.	Rakesh Kumar	SDO Dam Sply.	BBMB	9416151167	
17.	Ajay Nain 31/1/25	CE	BBMB	9418605225	

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Annexure- VII

PANDOH DAM INFLOW

P.B.T. Gate opening (BCW) + Sply. or ± P.R.Level = Inflow

इस P.R.level के लिए + Gate operation opening की

P.B.T. or B.C.W को Baggi से मापा जाता है।

Sply. Gate opening इस पर्चे से की जाती है.

P.R.L. ± होने से कि Inflow 1 cm से 137 cusec

बढ़ता व घटता है। — यह इस प्रकार को लिए

पहले से बना हुआ है।

Pandoh level factor = (137 * ± P.R. Level in mtrs)

1 Copy SDO:H

(B.P. Yadav SDO)

SE-1

31/1/25

CRADDY HANDA
XEN

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Annexure-VIII

Salient Features of Parbati III Dam

1. LOCATION	
1.1 State in which it is located	: HIMACHAL PRADESH
1.2 Name of the District	: Kullu
1.3 Name of the River	: Sainj (a tributary of Beas river), which also receives Parbati water from tailrace of Parbati Stage-II powerhouse in Sainj valley.
1.4 Location of the Rockfill dam	: Diversion dam on river Sainj at Suind village (around 40 km from Bhunter)
1.5 Location Power House	: Power House is situated near Behali village.
1.6 Nearest rail head	: Kiratpur
1.7 Nearest airport	: Bhuntar
2. HYDROLOGY (SAINJ RIVER)	
2.1 Catchment area at diversion site	: 650 square km
2.2 Snow catchment	: 152 square km
2.3 Design flood	: 3300 Cumecs(PMF)
3. DIVERSION CUM SPILLWAY TUNNELS	
3.1 Number, size, shape & length	: 2 nos., 6.75 m, Horse shoe shape 401 m & 460 m
3.2 Diversion discharge	: 800 m^3/sec
3.3 Invert level at entry	: EL.1300.00 m
3.4 Invert level at exit	: EL.1286.00 m
DIVERSION CUM SPILLWAY TUNNEL GATES	
EMERGENCY GATE	
3.5 Number, size & sill elevation	:2 nos., 5.6 m(B) x 6.75m(H), EL 1300.00m
SERVICE GATE	
3.6 Number, size & sill elevation	:2 nos., 5.6m(B) x 6.75m(H), EL

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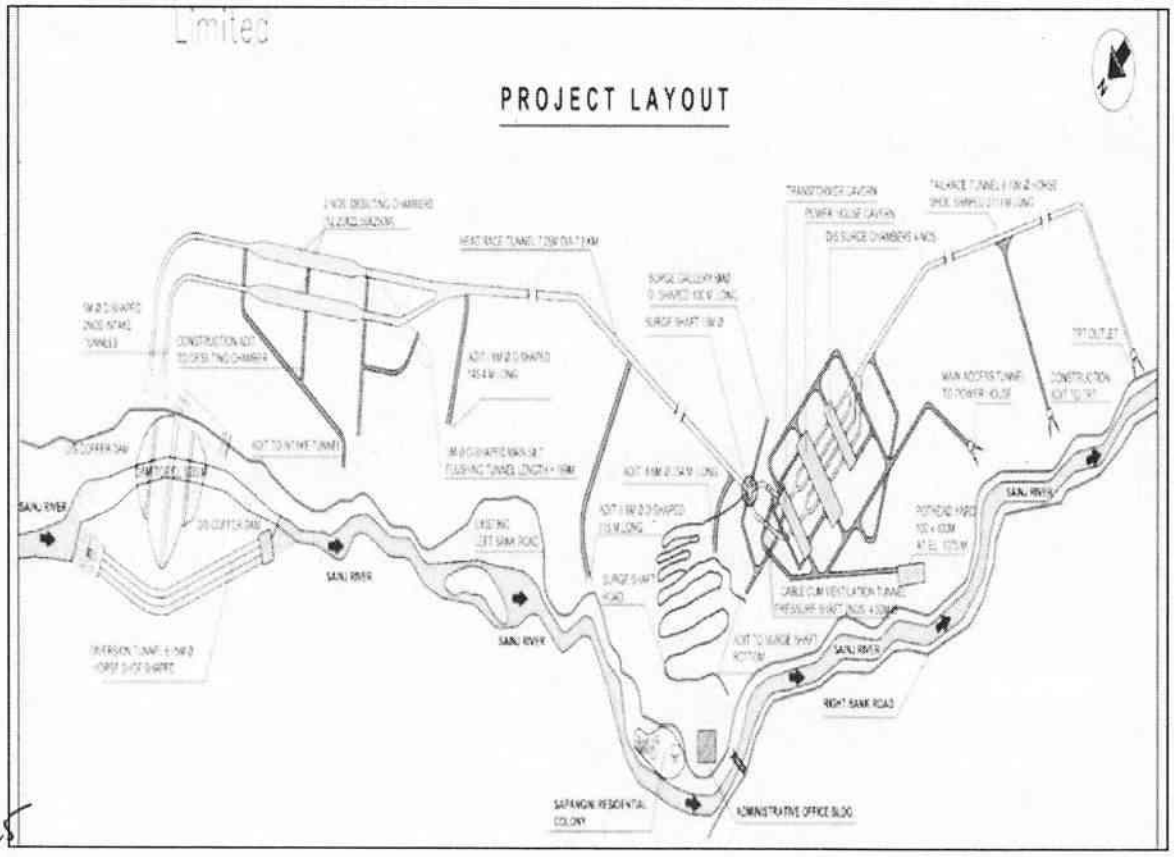
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	1300.00m
3.7 Operating platform	EL.1333.00 m
4. COFFER DAMS	
4.1 Location of U/S coffer dam	: 150 m u/s of dam axis
4.2 Location of D/S coffer dam	: 180 m d/s of dam axis
4.3 Height of U/S coffer dam	: 14 m (Top EL. 1314.00 m)
4.4 Height of D/S coffer dam	: 6 m (Top EL. 1294.00 m)
5. DIVERSION DAM	
5.1 Type	: Rockfill dam at Suind
5.2 Dam top	: EL. 1333 m
5.3 Maximum dam height	: 43 m
5.4 Length at top including spillway	: 218m
5.5 Length & thickness of cut-off wall	: 117 m, 0.8 m
6. SPILLWAY	
6.1 Location of Spillway	: Left Bank
6.2 Type of Spillway	: Orifice type
6.3 Total Width of spillway	: 26.40 m
6.4 No. of bays	: 2
6.5 Crest level of spillway	: EL. 1298 m
6.6 Width of each bay	: 7.2 m
6.7 Thickness of piers	: 6 m
6.8 Regulation gates	: Hydraulically operated radial gates 2 nos. (7.2m(B) x 14m(H))
6.9 R.C.C. Breast wall	: 21 m high
6.10 Energy dissipation system	: Ski-jump bucket with an apron
6.11 Design flood	: 3300 m^3/sec (PMF)
7. RESERVOIR	
7.1 Full reservoir level (FRL)	: EL. 1330 m

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7.2 Minimum draw down level (MDDL)	: EL. 1314 m
PRE-SEDIMENTATION	
7.3 Gross storage at FRL	: 166.79 ha-m
7.4 Gross storage at MDDL	: 38.54 ha-m
7.5 Live storage	: 128.25 ha-m
7.6 Reservoir area at FRL	: 12.51 ha
7.7 Length of reservoir (fetch)	: 1.05 km
POST-SEDIMENTATION	
7.8 Gross storage at FRL	: 98.92 ha-m
7.9 Gross storage at MDDL	: 12.44 ha-m
7.10 Live storage	: 86.48 ha-m
7.11 Reservoir area at FRL	: 8.78 ha
7.12 Length of reservoir (fetch)	: 0.68 km



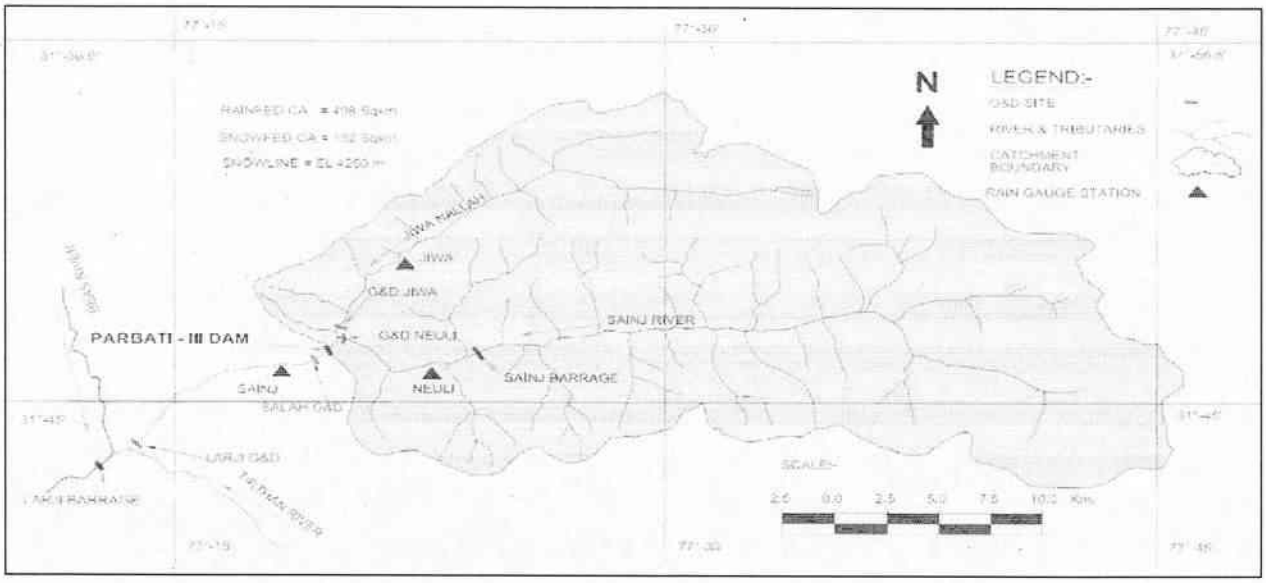
PROJECT LAYOUT PLAN-PARVATI-III DAM

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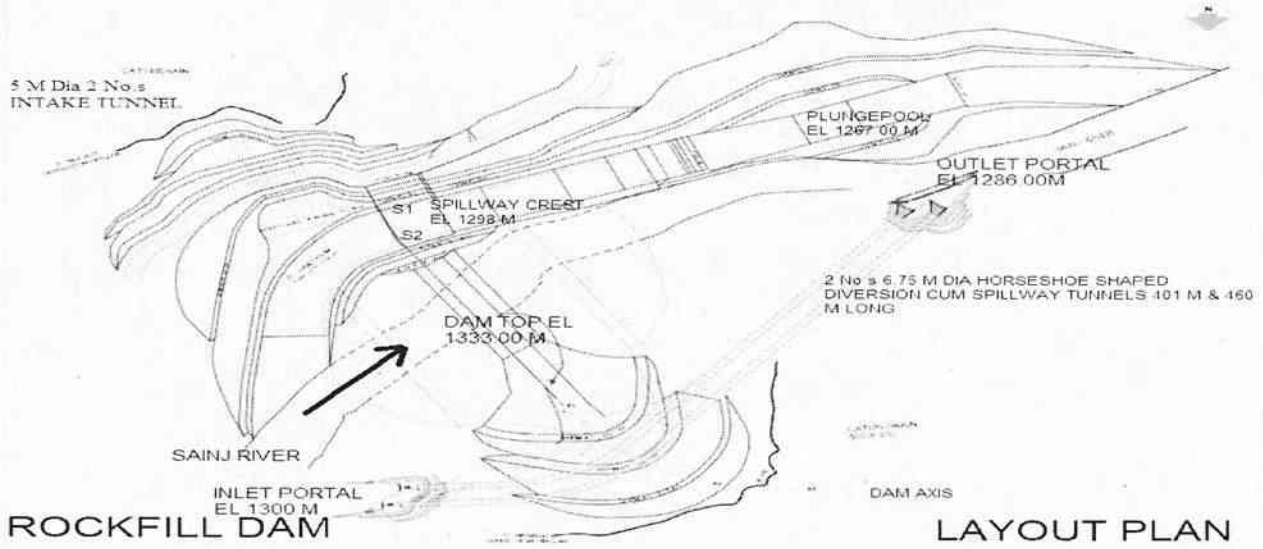
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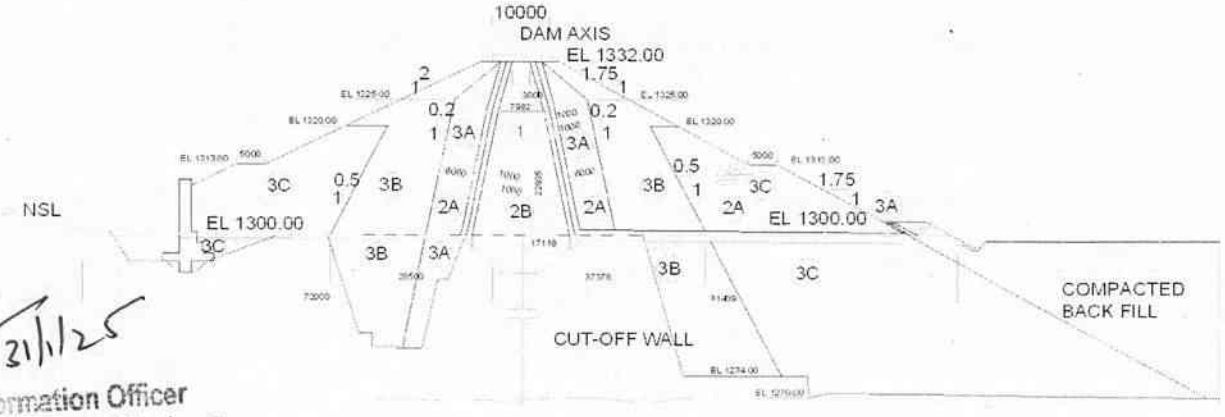
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CATCHMENT AREA PLAN –PARVATI-III DAM



ROCKFILL DAM LAYOUT PLAN



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Meeting at Parbati-II HE Project on 19.10.2023

Annexure - IX

Sno	Name	Designation	Office	Mobile No	Signature
1	Dr R.K. Gupta	former chairman CWC	—	7911202525	R.K.Gupta
2	Nirmal Singh	Executive Director		9816634585	
3	Prakash Chand	GM CE(S)		9736708656	
4	Achintai Kumar	AGM Hydro		94180-75566	
5	D.P. GUPTA	Chief Engineer	DoE, GoHP Shimla	9816101606	
6	Deepak Jamlia	Dy C.E.	DoE GoHP Shimla-04	85744 20001	
7	HARKESH KUMAR	Former Director CWC	—	9560452868	
8	GOVERDHAN PRASAD	Director, Hydrology (N)	CWC, New Delhi	9734973696	
9	R.P.S. VERMA	Director.	NA, NDSA, Chandigarh	9568681205	
10	Balwan Kumar	Director	CEA, N. Delhi	8920911682	
11	Kashyap Nayak	General Manager (E).	Parbati 3 Power station	9810104581	
12	Shanmugam. A	GM (civil)	Parbati-III PS	7637026866	19/10/23
13	VIJAY KUMAR JHA	GSM (C)	DGE DIV. C.O. FARIDABAD	9540994915	
14	MANJUSHA MISHRA	GM (C)	DGE Div, CO FBD	9540864301	
15	KUNDAN KUMAR	GSM (C)	DGE Div, CO FBD	9650012957	
16	BIJAY SINGH	SM (C)	NHPC Ltd.	9990014816	
17	DHANANJAY KUMAR SINGH	GSM (C)	Parbati-III NHPC Ltd.	7086071957	
18	PRADEEP DUBEY	DEPUTY MANAGER (C)	Parbati-III NHPC Ltd	9805519688	
19	GTS RAJU	SM (HR)	"	9910993044	

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Directorate of Energy,
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Sno	Name	Designation	Office	Mobile No	Signature
20	अमित चांदल	वरि. इ. (सं)	पांवी-III Ps.	7579456146	
21	RAJ KUMAR	A. E. E. (C)	DoE	9805595965	
22	Charan Das	J.E., DoE	DoE	9459539970	
23	Er. Sudesh Sharma	AGM Cum HOP Sainj HEP	Sainj HEP	9817699135	
24	ER. ANUPAM KAUSHAL	Sr. MANAGER SAINJ HEP	LARJI	941 8015511	
25	ER. Alexander K. Sharma	Dy. Manager (B/HM)	Sainj HEP (CHAMBA) Loji (Kullu)	8629068477	
26	Kamlesh S Mali	Dy. Manager (Safety)	NHPC	9426332266	
27	OM Parkash Sharma	Asst. Survey officer	NHPC	9816006962	
28					
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Annexure-X

Salient Features of Malana II Dam

1.1	**Location**		
	State	Himachal Pradesh	
	District	Kullu	
	River	MalanaNallah, a tributary of Parbati River in the Beas Basin	
	Vicinity of Dam	Dam Site located 3km upstream of Malana village at El. 2500m.	
	Vicinity for Power House	Power House on left bank of MalanaKhad immediately upstream of Malana-I HEP diversion Weir	
	Latitude	Between 32°0215"N and 32°05'06"N	
	Longitude	Between 77°15'26"E and 77°16'51"E	
	Access to project by road	Via Chandigarh (325 Km),-Kiraatpur, Bhunter.	
	Nearest rail head	Kiraatpur (225 Km)	
	Nearest airport	Bhunter (25 Km)	
1.2	**Hydrology**		
		Project Features	As Proposed
	Catchment Area	158 Sq Km	158 Sq Km
	90% Dependability discharge	328 cumecs	
	50% Dependability discharge	7.65 cumecs	
	Design discharge	20 cumecs	20 cumecs
	Design flood	650 cumecs	650 cumecs
	Snow fall Catchment	76.20 km2	76.20 km2
	Type of stream	Perennial	Perennial
	Average annual rainfall	218mm	218mm
	Probable maximum precipitation (24 Hr. PMP)	90mm	90mm
	Dependable discharge (Av. Lean period flow)	.05 cumecs	.05 cumecs
1.3	**Project Structure**		
1.3.1	**Diversion Structure**		
i)	**Reservoir**		
	F.R.L	2543.00m	2543.00m
	M.D.D.L	2528.00m	2528.00m
	Gross Storage	0.386 M m^3	0.386 M m^3
	Live Storage	0.2875 M m^3	0.2875 M m^3
	Submergence area at FRL	3.5Ha	3.5Ha
	Village affected	Nil	Nil
	Population affected	Nil	Nil
ii)	**Dam**		
	Type	Concrete Gravity	Concrete Gravity
	Height above river bed	45.00m	45.00m

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	Top of dam	El. 2545.0m	El. 2545.0m
	Crest Length	150.0 (Dam block) + 63m (Key wall)	150.0 (Dam block) + 63m (Key wall)
	FRL	El. 2543m	El. 2543m
	MDDL	El. 2528m	El. 2528m
	Live storage	0.2875 M.cum	0.2875 M.cum
iii)	**Spillway Bays**		
	Type	Breast wall type	Breast wall type + Surface type
	a) Breast wall	2 Nos.	2 Nos.
	b) Surface	-	7 Nos.
	Spillway		
	a) Breast wall	Chute Spillway	Chute Spillway
	b) Surface Type	-	Chute Spillway with spill channel
	Gates		
	a) Breast wall Type	Radial operated by Hydraulic Hoist	Gates Radial Gates operated by Hydraulic Hoist
	b) Surface Type	-	Un-gated
	Gate Size		
	a) Breast wall Type	4m x 5.5m	4m x 5.5m
	b) Surface Type	-	6.25 x 2.0m & 4.5m x 2.0m
	Crest Level		
	c) Breast wall Type	El. 2514.50m	El. 2514.50m
	d) Surface Type	-	El. 2543.00m
	Discharging Capacity		
	a) Breast wall Type	650cumecs	650cumecs
	b) Surface Type	-	260.97cumecs
iv)	**Power Intake**		
	Intake Structure	In non-overflow block no. 4 on left bank	In non-overflow block no. 4 on left bank
	No. & Size of opening	One number of 3m x 3m Bell mouth opening	One number of 3m x 3m Bell mouth opening
	Trash rack structure	In non-overflow block no. 4 on left bank	In non-overflow block no. 4 on left bank
v)	**Intake Pipe**		
	Size	One no. of 2.2m dia pipe	One no. of 2.2m dia pipe
	Length	144m long	144m long
	Centre line of pipe	El. 2523.1	El. 2523.1
1.3.2	**Head Race Tunnel**		
	Type	D-Shaped, Concrete and Shotcrete lined	D-Shaped, Concrete and Shotcrete lined
	Size and Length	2.9m x 2.9m D-Shaped	2.9m x 2.9m D-Shaped
	Bed Slope	1 in 151.00	1 in 151.00
	Invert level at portal	El. 2512.812m	El. 2512.812m
	Design Discharge	20cumecs	20cumecs
	Velocity	2.67m/sec	2.67m/sec
	Adit-1	3.5m D-shaped, 273m long	3.5m D-shaped, 273m

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			long
	Adit-2	3.5m D-shaped, 171m long	3.5m D-shaped, 171m long
	Adit-3	4m x 4m, 105m long	4m x 4m, 105m long
	Adit-3A	4.5m x 4.5m, 46.6m long	4.5m x 4.5m, 46.6m long
	Adit-4	4.5m x 4.5m, 248.5m long	4.5m x 4.5m, 248.5m long
	Adit-5	6m x 6m, 158m long	6m x 6m, 158m long
	Adit-6	4.5m x 4.5m, 180m long	4.5m x 4.5m, 180m long
	Adit-7	5m x 5m, 43m long	5m x 5m, 43m long
1.3.3	**Surge Shaft**		
	Type	Underground-simple surge shaft	Underground-simple surge shaft
	Size	6m dia., 80m height	6m dia., 80m height
1.3.4	**Bonnet Gate Chamber**		
	Size	2.2m x 2.2m	2.2m x 2.2m
	Invert Level	El. 2483.978m	El. 2483.978m
1.3.5	**Pressure Shaft**		
	Type	Underground	Underground
	Size/length	1 no. of 2.5 m dia.,	1 no. of 2.5 m dia.,
	Main Pressure Shaft	747m long	747m long
	Unit Pressure Shaft	2 nos. of 1.8m dia., 40.24m and 30.73long	2 nos. of 1.8m dia., 40.24m and 30.73long
	Design Discharge	20.0cumecs	20.0cumecs
	Type of Steel for steel liner	IS 2002- Grade 3 SAILMA 550 HI, ASTM A 517 Grade F	IS 2002- Grade 3 SAILMA 550 HI, ASTM A 517 Grade F
	Thickness	10mm-28mm	10mm-28mm
1.3.6	**Power House**		
	Type	Underground	Underground
	Size	67.5m (L) x 17.5m (W) x 35.85m (H)	67.5m (L) x 17.5m (W) x 35.85m (H)
	Transformer bay	26.5m x 12m x 13m, Size El. 1912.0m Bottom elevation of Power House	26.5m x 12m x 13m, Size El. 1912.0m Bottom elevation of Power House
	Power House Levels	El. 1947.85m, Tope elevation of Power House El. 1929.57m, Service Bay level	El. 1947.85m, Tope elevation of Power House El. 1929.57m, Service Bay level
	Control Block	Size, 12m (L) x 17.5m (W)	Size, 12m (L) x 17.5m (W)
	Bus Duct	Bust duct, 3m (W) x 4m (H), D-shaped	Bust duct, 3m (W) x 4m (H), D-shaped
	No. of units	2	2
	Type of Turbines	Vertical axis Pelton wheel	Vertical axis Pelton wheel
	C/L of Turbines	El. 1919.40m	El. 1919.40m
	Type of Generator	Vertical Shaft	Vertical Shaft
	Terminal Voltage	11kV	11kV
	Transformer Capacity	63.9 MVA	63.9 MVA
	Installed Capacity	100 MW (2 x 50 MW)	100 MW (2 x 50 MW)

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	Gross Head	623.60m	623.60m
	Rated net Head	608m	608m
1.3.7	**Main Access Tunnel**		
	Main Access Tunnel	Size, 6m x 6m, D-shaped Length: 982m long Starting Level: El. 1951.50m Slope of MAT: 1 in 17	Size, 6m x 6m, D-shaped Length: 982m long Starting Level: El. 1951.50m Slope of MAT: 1 in 17
1.3.8	**TRT**		
	Main Tail Race Tunnel		
		Unit-I TRT	Unit-I TRT
		Length of Unit-I TRT, 31.7m	Length of Unit-I TRT, 31.7m
		Size of Unit TRT, 2.5m (W) x 4.5m (H), D-shaped	Size of Unit TRT, 2.5m (W) x 4.5m (H), D-shaped
		Unit-II TRT	Unit-II TRT
		Length of Unit-II TRT, 22.11m	Length of Unit-II TRT, 22.11m
		Size of Unit-II TRT, 5m (W) x 6m (H), D-shaped	Size of Unit-II TRT, 5m (W) x 6m (H), D-shaped
		TRT cum Cable Tunnel	TRT cum Cable Tunnel
		Length of TRT cum cable Tunnel: 255m	Length of TRT cum cable Tunnel: 255m
		Size of TRT cum Cable Tunnel: 5m (W) x 6.75m (H), D-shaped	Size of TRT cum Cable Tunnel: 5m (W) x 6.75m (H), D-shaped
		Slope of TRT- 1 in 1000, Starting Level: El. 1912.4m	Slope of TRT- 1 in 1000, Starting Level: El. 1912.4m
	Control Cable Tunnel	Control Cable Tunnel, 3m (W) x 3.25m (H), D-shaped	Control Cable Tunnel, 3m (W) x 3.25m (H), D-shaped
1.4	**Energy Generation**		
	Energy Generation in 90% dependable year	409.77 M Kwh	409.77 M Kwh

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Annexure – XI

Meeting w.r.t. Inspection of Malana-II HEP w.r.t. sudden release of water in the month of July/ August 2023 and overtopping of Malana -II DAM

Venue: Malana II HEP DAM and Power house Date: October 20, 2023

S.No.	Name of the Participants	Designation	Department	Signature
1	Dr. R.K. Gupta	Former Chairman, CWC		
2	HARKESH KUMAR	Ex-Director CWC	—	
3	D P GUPTA	CE DoE	DoE- GoHP	
4	GOVERDHAN PRASAD	Director	CWC	
5	R.P.S. VERMA	Director	NRSA, NR. CWC	
6	Baldeem Kumar	Director	CEA	
7	Deepak Jaswalia	Dy CE DoE	DoE	
8	RAJ KUMAR	AEE(C) DoE	DoE	
9	Charan Dass	JE (DoE)	DoE	
10	Vikas Shukla	SDM Kullu	Revenue	
11	Suresh Kalsi	GM. (GAM)	Hydro	
12	JVSD PRASADA RAJU	Sr. V.P. Hydro	Corporate	
13	Anad Verma.	AGM (GAM)	Hydro	
14	Pankaj Kumar	Dy. Manager	Hydro	
15	Nirmal Kumar	GM	HR	
16	Sanjay Thakur	DGM	Hydro	
17				
18				
19				
20				
21	31/1/25			Sumit Mahar
22	Public Information Officer -cum- Sr. Executive Engineer, Directorate of Energy, H.P., Shimla-171005	Information Supplied to Sh Under RTI Act, 2005.		
23				
24				

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Annexure – II

20 pages

DIRECTORATE OF ENERGY
GOVERNMENT OF HIMACHAL PRADESH
MC PARKING BUILDING, 2ND FLOOR, TUTIKANDI CROSSING, SHIMLA-04
Phone/ Fax No: 0177-2673553, Email: dir.doehp@nic.in, ceauthoritydoe@gmail.com

HPDoE/CE (Energy)/ SCDS/ 2024- 1573-1613 **Dated:-** 05/06/2024

To

1. The Chief Engineer (Generation) HPSEBL,
   Sundernagar, Distt. Mandi, HP
2. The General Manager (Civil) Chamera-I,
   NHPC Ltd., Chamba,
   Distt. Chamba, HP
3. The General Manager (Kol Dam)
   NTPC, P.O. Barmana, District
   Bilaspur, H.P.
4. The General Manager (CP),
   HPPCL, Himfed Building, BCS,
   New Shimla-09
5. The Chief Engineer,
   BSL Project, BBMB Sundernagar,
   Distt. Mandi, H.P.
6. The Chief Engineer (Bhakra Water Service),
   Irrigation & Water Resources Department,
   Sinchai Bhawan, Sector-5, Panchkula, Haryana.
7. The Chief Engineer (Dam Safety),
   Department of Water Resource,
   Sector-18, Chandigarh, Punjab.
8. The Chief Engineer (I&FC),
   Irrigation and Flood Control,
   Jammu.
9. The Chief General Manager (Civil Design),
   SJVN Ltd., ShaktiSadan, Shanan,
   Shimla-06.
10. The General Manager (Civil Design),
    HPPCL Sundernagar, Distt.Mandi, H.P.
11. The Chief Engineer (Shimla Zone),
    Jal Shakti Vibhag, HimachalPradesh.
12. The Director, BCD (NW&S),
    Central Water Commission, New Delhi.
13. The Chief Engineer,
    Hydro Project Appraisal Division,
    Central Electricity Authority, New Delhi.
14. The Chief Engineer,
    Level-II, Irrigation Department,
    Uttrakhand, Dehradun.

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Subject :- **4th Meeting of the State Committee on Dam Safety constituted by GoHP vide notification dated 24.05.2022 in pursuance to the provision of Dam Safety Act, 2021.**

Sir,

Please find enclosed, herewith the minutes of 4th SCDS Himachal Pradesh meeting held on 30.05.2024 at 11:00 AM in the Conference Hall of Directorate of Energy, GoHP through hybrid mode for kind information please.

Yours faithfully,

D.A. As above:

Er. Deepak Jasrotia,
Member Secretary, SCDS
-cum- Dy. Chief Engineer ,
Directorate of Energy, GoHP
Shimla-171004.

Copy to the following:

1. Special Secretary (Power) to the, Government of Himachal Pradesh,Shimla-02 for kind information please.
2. The General Manager (Generation), HPPCL, Himfed Building, BCS, Shimla-09 for kind information please.
3. The Director, NDSA Northern Region, Chandigarh & Superintending Engineer (Co-ordination), O/o CE, Indus Basin Organization (IBO) #617 Block IV, 6th Floor, Kendriya Sadan, Sector 9A, Chandigarh (UT) for kind information please.
4. All the HOPs/Owners of 24 Specified Dams (as per list) in Himachal Pradesh for information and necessary action please.

D.A. As above:

Er. Deepak Jasrotia,
Member Secretary, SCDS
-cum- Dy. Chief Engineer ,
Directorate of Energy, GoHP
Shimla-171004.

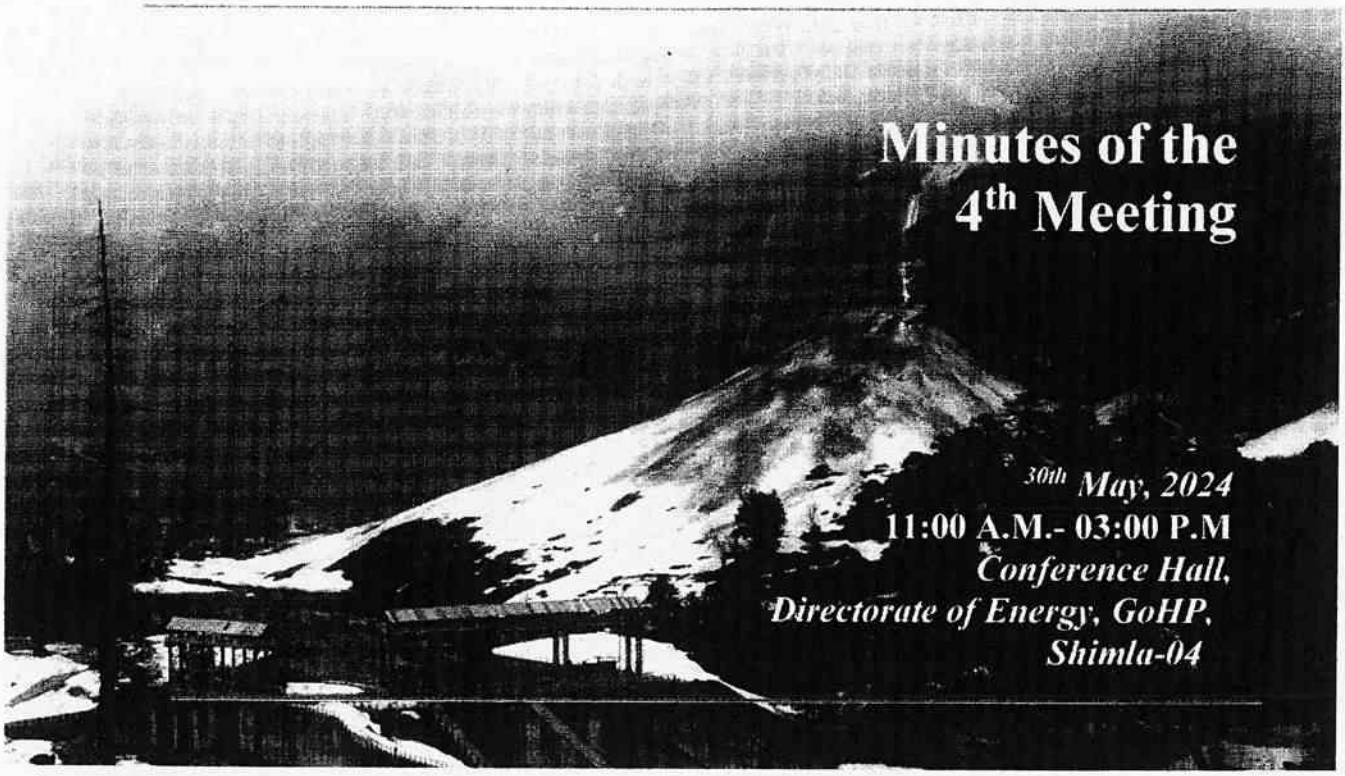
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Dam Safety Act, 2021

State Committee on Dam Safety



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GoHP, Shimla-04
Himachal Pradesh

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Government of Himachal Pradesh
State Committee on Dam Safety- Himachal Pradesh

MINUTES OF 4th MEETING OF THE STATE COMMITTEE ON DAM SAFETY CONSTITUTED BY GoHP VIDE NOTIFICATION DATED 24.05.2022 IN PURSUANCE TO THE PROVISION OF DAM SAFETY ACT, 2021.

Date: 30-05-2024 at 11:00 A.M.-03:00 P.M. **Venue-** Conference Hall, Directorate of Energy, GoHP, Shimla-04 and via virtual mode

Sr. No.	Item
1.0 Preface	
	The 4th meeting of the State Committee on Dam Safety "constituted by GoHP vide notification dated 24.05.2022 in pursuance to the provision of Dam Safety Act, 2021" was held under the chairmanship of the Chief Engineer (Energy)-Cum-Chairman, State Committee on Dam Safety, Himachal Pradesh (SCDS-HP) on 30th May, 2024 through hybrid mode i.e. virtual mode as well as physical mode in the office of Directorate of Energy to have detailed review on various aspects as per agenda annexed as **Annexure-I**. The Committee members from the Shimla vicinity were physically present in the meeting. Other committee members attended the meeting virtually. All the 24 commissioned specified dam authorities were also invited for the 4th meeting of the State Committee on Dam Safety and attended the meeting virtually. The consolidated list of participants (Physically & Virtually present) is enclosed as **Annexure-II.**
2.0 Welcome	
	At the outset, Er. D.P. Gupta, Chief Engineer (Energy)-Cum-Chairman of the State Committee on Dam Safety, Himachal Pradesh (SCDS) welcomed all the participants present physically & virtually in the meeting and briefly outlined the objective of 4th meeting of the State Committee on Dam Safety constituted by GoHP. The Chairman of the Committee then requested Er. Deepak Jasrotia, Dy. Chief Engineer-Cum- Head SDSO (H.P.) & Member Secretary SCDS (H.P.), Himachal Pradesh to give a detailed presentation along with status review of individual Specified Dams in the State of Himachal Pradesh.

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	Dy. Chief Engineer-Cum- Head SDSO, Himachal Pradesh once again welcomed all the participants physically and virtually present in the meeting.
3.0 Agenda Discussion	
	Starting the presentation, Er. Jasrotia gave a brief overview on agenda of the meeting. The agenda wise discussion was held as under:
4.0 Compliances of Previous Meeting and Individual Dam Review	
	The project wise critical observations came out of the Pre Monsoon inspection reports for the year 2024 and from Dam Safety inspections conducted by SDSO were placed before the committee. The project wise detail shared & deliberated is as under:
4.1	**Bhakra Dam (1532.73 MW)**
	With respect to the observations of Pre monsoon report, following was apprised by the representative of Bhakra Dam: ➢ W.r.t. silt accumulation in the reservoir, Hot Spots will be identified and DPR will be prepared. Accordingly compromised storage and live storage can be identified. ➢ Steel wire ropes of hoists in rusted condition will be examined and repaired accordingly. ➢ All the repair works have been planned to be executed under DRIP-II and DRIP-III program.
4.2	**Koldam HEP (800 MW)**
	The HOP Koldam apprised as under: ➢ The rectification works of flip bucket & plunge pool is being taken up and will be completed before next monsoon season (2025). Though the structure is safe now. ➢ Plugging of Luv diversion tunnel is in progress and will be completed by December, 2024. The SCDS Chairman asked the Kol Dam Authorities whether there is a movement in the gap between side and bottom of glacis of Flip Bucket in last Block and remaining sloping glacis. At this, it was apprised by Koldam authorities that the data is being maintained regularly and it has been observed stable. The Chairman directed the Koldam authorities to share the complete report of works with SDSO-HP alongwith photographs.
4.3	**Pong Dam (396 MW)**
	Status of Observations of Pre Monsoon report was reviewed by SDSO-HP, no one from Pong Dam attended the 4th SCDS meeting.

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	The committee has taken strong stand on this and the matter will be taken up with NDSA.
4.4	**Pandoh Dam (990 MW)**
	The representative from Pandoh Dam apprised as under: ➢ Protection works are at various stages. ➢ Relief well repair tender still to be floated. ➢ It was viewed seriously by the committee, that no senior level officer from DAM was present in the meeting as such information sharing and deliberation on main issues could not take place. ➢ The committee has taken strong stand on this and the matter will be taken up with NDSA in this regard.
4.5	**Baira Dam (180 MW)**
	With respect to the observations of Pre Monsoon report, following was apprised by HoP of Baira Dam: ➢ All the major works have been completed. ➢ Repair work of NOF block is in progress which will be completed in stipulated time period.
4.6	**Chamera-I Dam (540 MW)**
	With respect to the observations of Pre Monsoon report, following was apprised by the G.M. of Chamera-I Dam as under: ➢ 2 D Crack meters have been installed to monitor the Hair Line Cracks observed on breast wall D/s face at + EL 757.5 m and NOF blocks and no further increase in crack has been observed. ➢ The rim protection works will start soon as the budget has been received for the same. ➢ Bathymetric survey has been completed, report is still awaited which will be shared with SDSO-HP.
4.7	**Malana-I HEP (86 MW)**
	With respect to the observations of Pre Monsoon report, following was apprised by the dam authorities of Malana-I Dam: ➢ Bottom Seal of Under sluice gate no.2 repaired ➢ The protection works against sliding in U/s of head regulatory structure have been completed.

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	The Dy. Chief Engineer-Cum-Head SDSO pointed out that there is a provision of Gate at HRT Face in the DPR but not constructed. It was apprised by the representative of Malana-I dam that a trash rack with TRCM has been provided at the HRT inlet face to prevent the entry of debris into the HRT and matter will be taken with the design team and appropriate action will be taken up under intimation to SDSO-HP. Further, the Head SDSO-HP pointed out to both the Dam authorities i.e. Malana-I and Malana-II that the matter related to raising/modifying the deck level of bridge downstream of Malana-I balancing reservoir is pending since long, as the present bridge is the only mean of road communication to both dams and is not safe enough to pass the design flood. As such both dam authorities need to upgrade or construct a new bridge which would be safe enough to pass the designed flood.
4.8	**Baspa-II HEP (300 MW)**
	Er. Jasrotia, Head SDSO-HP apprised the committee about the issue regarding silt accumulation in Baspa-II HEP reservoir and rim protection work being taken up at right Bank. The representative from Baspa-II dam apprised the committee that protection work of 250 m long gabion structure is in progress and will be completed before this monsoon season. He further apprised that at present the reservoir capacity has been reduced upto 45%. However this year with the help of excavators, river training has been executed, hence during peak season flushing, there are chances that storage capacity may increase. The Head, SDSO directed the dam authorities to share the regular status of protection works to SDSO-HP.
4.9	**Chamera-II HEP (300 MW)**
	HoP, Chamera-II apprised the status of Pre Monsoon inspection observations as under: ➢ For repair work of exposed spillway glacis, tender has been floated and works will be completed soon. ➢ No change in leakage from plug of Adit-II, which is to the tune of 250-300 LPM. Dam authorities are trying different techniques for minimising the same. ➢ For installation of new TRCM tender are yet to be floated.
4.10	**Larji HEP (126 MW)**

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	Representative from Larji dam apprised the status of Pre Monsoon inspection observations as under: ➢ Repair of bottom seals of gate no. 5 is in progress and one by one bottom seals of all gates will be repaired. ➢ Reservoir protection works has been completed upto Aut town. ➢ Other important works have been added in the restoration budget received for Larji. ➢ The issue of fish ladder repair was also discussed and its rectification along with working on developing an access to downstream of dam was raised. These two aspects are long pending and dam authorities have yet not taken any step for rectification of same. ➢ Head SCDS raised serious concern for delay in the repair work despite the fact that the generation was held for such a long time and as such the repair should have been completed in that period.
4.11	**Nathpa Dam (1500 MW)**
	Dy. Chief Engineer-Cum- Head SDSO asked the Nathpa Dam Authorities to apprise the latest status of land sliding occurred near the intake of Nathpa dam and other observations of Pre Monsoon inspections. The representative of Nathpa Dam apprised as under:- ➢ Regarding land slide protection/prevention double layer protection work is in progress. ➢ Landslide location is stable since last 2-3 months. ➢ Deposition accumulated in the reservoir shall be assessed during flushing. ➢ Head SDSO asked dam authorities to continuously share the status and keep vigil on situation in the coming monsoon season.
4.12	**Chamera-III HEP (231 MW)**
	HoP, Chmera-III apprised the status of Pre monsoon inspection observations as under: ➢ Repair work of glacis is in progress and will be completed by 31st May. ➢ Gantry arrangement has now been repaired. ➢ For Encroachment observed at left bank reservoir rim near Khadamukh Village, that matter has been raised at District administration level.

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	Dy. Chief Engineer-Cum- Head SDSO pointed out the long pending problem of stone falling on the Right Bank of Dam. At this, HoD, Chamera-III project apprised that hill protection work being taken up in two stage first is through mapping up of vulnerable location uphill and their protection which is completed and 2nd is through shot creating and concreting strengthening at vulnerable location same shall be taken up ahead. HoP Chamera-III Dam also apprised about the formation of artificial lake of about 200m in length and about 5-6 m in depth in Ravi river due to landslide at left bank U/s of Budhil Power House. He stated that this pondage of water is a potential threat to the Power House of Budhil HEP, Khadamukh Bazar , HRT & Dam structure of Chamera-III HEP in case of sudden breach. The matter was deliberated in detail and it was decided by the committee that a team Headed by HOP, Chamera-III HEP, along with the HOPs of Budhil and Under construction Kutehr HEP will visit the site along with Distt. Administration and PWD officers. Accordingly the team will work out the mechanism for safe breaching of this artificial lake. The joint operation be conducted by these 3 dam authorities after taking all necessary protocols and sharing the necessary warning and precautionary information to all stakeholders. The local administration and PWD officials will necessarily be included in all the risk assessing and mitigations process.
4.13	**Karcham Dam (1000 MW)**
	Representative from Karchham Dam apprised the status of Pre Monsoon inspection observations and submitted that all the observations already have been attended. Further w.r.t. construction of captive power plant by utilising e-flow, Head SDSO asked the Dam authorities whether all clearances/NOCs have been obtained from respective authorities as per Dam safety Act, 2021 for installation of captive power plant. At this, the representative of Karchham Dam submitted that, all the required permissions/NOCs have been obtained. He further stated that work of captive power plant is in progress. Dy. Chief Engineer-cum- Head SDSO further directed the dam authorities to submit the same i.e. permissions/NOCs from CWC and NDSA along with status of construction.
4.14	**Malana-II Dam (100 MW)**
	Head SDSO asked the Malana-II Dam authorities whether they have carried out long pending Comprehensive Structural Safety Review of Malana-II Dam, for its stability and other safety aspects as recommended by the expert committee. At this, the representative of

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	Malana-II dam apprised the SCDS that the report has been submitted to their design team and is under internal review. The study has been conducted by retired CWC Officials. The Chairman of the State Committee on Dam Safety, Himachal Pradesh (SCDS) strongly directed dam authorities to complete the report immediately and submit the report to DoE. He further directed that in case this report is delayed, SCDS may recommend to put this dam under category-I, which will have far reaching impacts. With respect to other observations of Pre Monsoon inspections, it was apprised by Malana-II dam authorities that: ➢ Regarding the transmission line locals are objecting to give land for permanent dock construction for which local administration has been requested to intervene. ➢ Cutting work for construction of auxiliary spillway is undergoing. The cutting work is being taken up in 2 phases and top layer cutting work will be completed by 15th June, 2024. ➢ Work for protection on the U/s side of Dam against the Boulder has to be taken up. Head SDSO directed project officials to provide proper protection along the road to the dam top by providing RCC Retaining wall. He also directed the project authorities to raise the height of Bridge near balancing reservoir of Malana-I HEP jointly with the help of Malana-I HEP so that flood can be easily pass under this bridge w.r.t. construction of auxiliary spillway and further dam authorities were asked to provide the revised construction schedule along with status report of spillway under construction.
4.15	**Parbati-III Dam (520 MW)**
	HoP, Parbati-III apprised the status of Pre inspection observations as under: ➢ The repair and maintenance work of damages occurred to the Glacis and Spillway Beam during floods has been completed. ➢ The repair and maintenance work of plunge pool area will be completed by 10th June, 2024 ➢ Bathymetric survey has been conducted after the flood and the storage capacity is almost the same as before.
4.16	**Allain Barrage (192 MW)**

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	The HOP, Allain Barrage apprised the status of observations of Pre monsoon inspection as under: ➢ Erosion of concrete above spillway gate no. 1 has been repaired. ➢ HOP, Allain Barrage apprised that there is no considerable damage to Allain Barrage and its appurtenant structures and all components are working fine.
4.17	**Budhil Dam (70 MW)**
	HoP, Budhil HEP apprised the status of Pre inspection observations as under: ➢ Leakage through the gates to the tune of 0.10 cumecs has been catered and there is no leakage now. ➢ Bailey's bridge which is connecting main road and dam site has recieved damages and rendered unsafe due to shooting rock/stones from the hill. Award of work of rectification for the same is in final stage.
4.18	**Chanju-I Dam (36 MW)**
	The representative of Chanju-I dam apprised the committee that no considerable observations as per pre monsoon report for the year 2024 has been observed.
4.19	**Sainj Barrage (100 MW)**
	The HOP, Sainj Barrage apprised the status of observations of Pre monsoon inspection as under: ➢ The Waterway of Sainj River has been obstructed down-stream by job facilities area during construction period which needs to be removed immediately for smooth flow of water downstream. The dam authorities apprised that provision is kept this year for partly removing and partly keeping for plantation and protecting it by constructing protection walls. ➢ About, 400-500 m downstream of Barrage axis a huge land slide from the left bank obstructed the waterway of Sainj River, but in the last year flash flood same has been washed off to a considerable extent. ➢ Considerable water leakage from Radial Gate No. 2 & 3 has been observed which needs to be repaired. ➢ Debris filled in stilling basin has been removed.

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	➢ For gate operation in peak monsoon season the work of a dedicated 11kVA line to full fill the required load of approx. 80-85 kW for operation of all HM equipment's in emergency situation is being taken up. ➢ Bent Stem Roads of Fish latter (screw Hoists) service gates at El. 1737.50 needs to be rectified.
4.20	**Neogal Weir (15 MW)**
	No one from Neogal Weir attended the 4th SCDS meeting. Head SDSO, Himachal apprised the committee that Neogal Weir authorities has not attended the 3rd SCDS-HP meeting held on 15.12.2023 and this time also no one is present which is not a healthy practice and committee should take note of this and matter will be taken up separately in this regard with authorities of Neogal HEP
4.21	**Jateon Barrage (60 MW)**
	The representative from Jateon Barrage apprised the status of observations of Pre monsoon inspection as under: ➢ The slide at uphill side of Silt Ejector was seen which has been rectified by constructing wire crate wall and minor damages observed in the Gated structure and the repair work of same has been completed. ➢ In the expansion joint between gate number 8 & 9 settlement was observed, for which joint meters, tilt meters and prisms have been installed on spillway gate piers to measure the settlement, for analysis of data. Tender has been floated many times to study the measurement of these instrument but no party participated. ➢ Pot holes have been observed on the bridge and wearing coat. ➢ Dam authorities appraised the chair that no one from civil engineering background is posted in Giri Jateon Barrage. However the change is with A.E (Civil) at GIRI for looking after the related matters. ➢ The major issue is that flexible apron of concrete blocks have been completely washed away for which dam authorities are taking up the estimates for its speedy rectification. ➢ Regarding Penstock issue RLA study was awarded by CE (PCA) and the same has been completed for unit-1 in March and for unit-2 is also completed and the report is awaited for unit-2. Dy. Chief Engineer added that as per direction of Worthy Chief Secretary to the GoHP a separate meeting will be held with all the HPSEB project Officials to address these serious issues related to HPSEBL dams.

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4.22	**Sawra Dam (111 MW)**
	HoP, Sawra Kuddu HEP apprised the status of observations of Pre Monsoon inspections as under: ➢ Bottom seal of the under sluice gates have been replaced. Rollers maintenance of three gates has been completed and for 2 gates is still pending which will be completed by 10.06.2024. ➢ One number barrage regulating gate got bent from bottom which is under maintenance and being straighten up by hydraulic jack. ➢ Public road above barrage control room causing safety issue because of land slide in monsoon season of 2023 and shooting stones from the hill for which Head SCDS directed to install rolling stone protection. ➢ The protection/fencing along the rim got damaged during previous monsoon. The design proposal was not meeting site conditions and sent back to design office for re engineering. Accordingly the work shall be taken up after approvals.
4.23	**Bajoli Dam (180 MW)**
	The HOP, Bajoli Dam apprised the status w.r.t observations of Pre Monsoon inspections as under: ➢ The Bathometric Survey was carried out in Feb-24, wherein considerable deposition has been observed, which is proposed to flushed during monsoon season (25 June, 2024). ➢ Floating boom has been proposed in place of TRCM and commissioning of the same is expected by October-2024 due to problem/non availability of roads to site. ➢ Seepage into the drainage gallery from the porous pipes is between 07 to 08 LPS, no change has been observed since commissioning of the dam which is in safe permissible limits. ➢ Samples of seepage has been sent for testing and results are awaited. HoP Bajoli dam raised the issue of one village name Patola – Tyari under Tehsil Holi located on right bank of Ravi river downstream of Bajoli Dam which is susceptible to flood. The foot cover bridge connecting main approach road to said village is dislodged and river

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	bank is eroded largely and also prone to further erosion if flood passes again or proposed flushing by the dam authorities be carried out in coming days. He stated that DDMA, local Administration and PWD have been made aware of these facts. He further stated that if this happens then this may create havoc to the said village. On this Chief Engineer (Energy)-Cum-Chairman of the State Committee on Dam Safety, Himachal Pradesh (SCDS) and the Head, SDSO directed the Dam authorities to immediately request and have a meeting with District Administration, PWD and Local People in vicinity who would be immediately affecting in the scenario. He further stated that all the prior information sharing mechanism, precautionary measures and advance rescue plans be kept ready in consultation with all stakeholders and the water releases be taken up in a control way after serving proper prior information downstream and taking up evacuations wherever necessary. All the necessary protocols be taken up by the dam authorities in this regard.
4.24	**SVP Bhaba**
	The representative on behalf of SVP Bhaba apprised the status w.r.t observations of Pre Monsoon inspections as under: ➢ The cleaning work of silt sediments/debris in front of coffer Dam is remaining. ➢ The portion of balancing reservoir in front of Spill Weir which has been completely filled with the debris during last monsoon season has been cleared of debris. ➢ Restoration work of outer protection wall of spill weir is in tendering stage. Chief Engineer (Energy)-Cum-Chairman of the State Committee on Dam Safety, Himachal Pradesh (SCDS) and the Head, SDSO intimated the Dam authorities to conduct a separate meeting with HPSEBL authorities w.r.t. issues pertaining.
5.0	**Status with respect to the submission of Pre-Monsoon report on DHARMA Portal**
	Out of 13 specified dam under the jurisdiction of SDSO Himachal, the pre monsoon inspection reports have been uploaded by 10 dam owners on DHARMA portal. The pre-Monsoon inspection reports of the following dams are still to be submitted on DHARMA portal: 1. Neogal 2. Sawra Kuddu 3. Sainj On this, Project officials of Sainj and Sawra Dam apprised that they were facing login issue which now has been taken up with CWC Officials and the same has now been resolved. The report will be uploaded on the portal soon.

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6.0	**Budget allocation for FY 2024-25.**
	All the Dam/ HEP official were directed to share the budget allocation for FY 2024-25 in respect of their respective dams before 15.06.2024. As till date no dam authority had shared the dedicated budget detail.
7.0	**Present Status of Early Warning System and monsoon preparedness in respect of 24 Specified Dams in Himachal Pradesh**
	The latest status of EWS was apprised by the Head SDSO-HP to the committee and it was observed that 8 Dams viz: Bajoli Dam, Karcham, Baspa-II Barrage, Nathpa Dam ,Koldam, Allain Dam, Malana-I Dam and Chanju-I Dam have established full EWS as per required standard. Head SDSO-HP further asked the Koldam authorities to apprise regarding the status of extension of EWS in view of NH four lane upto Mand Bharari Bridge as directed during the 3rd meeting of SCDS held on 15.12.2023. At this Koldam authorities apprised that EWS stands installed upto old Dehar Bridge only. Chairman SCDS-HP directed the Koldam authorities to extend EWS upto Mandi Bharari bridge. Head SDSO-HP further apprised the committee that 8 dams viz: Chamera-II Dam, Chamera-III Dam, Baira Dam, Parbati-III Dam, Bhakra Dam, Sawra Barrage, Chamera-I Dam and Budhil Dam have required EWS. However in these dams old Dam break Analysis exist and inundation mapping etc. have been executed accordingly. Now new Dam Break Analysis considering GLOF is being taken up. These dam owners have been directed to taken up this tasks by 15th June, 2024. Further 8 dams viz: Giri Dam, Neogal, Sainj Dam, Pandoh Dam, Larji Dam, Malana-II Dam, Pong and Bhaba are lagging behind and do not have essential EWS installed as per the CWC guidelines. 3 dams namely Giri, Larji and Bhaba are owned by State utility HPSEBL and have no inflow forecasting system, no Dam Break Analysis, no full proof communication system. These dams need huge improvement. It was further decided by the committee that w.r.t. strengthening of EWS and issues, a separate meeting with HPSBEL authorities will be convened. 2 dams namely Sawra and Sainj are owned by State utility HPPCL. These dams also do not have inflow forecasting system, no Dam Break Analysis, no full proof communication

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	system. Further Sawra Barrage has warning system installed upto their Power House location only which needs to be extended to D/s up to a considerable distance as per requirement. Malana-II Dam have no inflow forecasting system, no Dam Break Analysis, no Full proof Communication system. The Chairman-SCDS-HP directed the dam authorities to have robust EWS in place for upcoming monsoon season. Neogal Weir has only hooters/sirens but there is no inflow forecasting system, no Dam Break Analysis, no full proof communication system, no voice broadcasting system in place. The committee directed that the matter will be taken up separately by SDSO-HP with Neogal HEP. Pong and Pandoh Dams are owned by BBMB and have no proper inflow forecasting system, no proper Dam Break Analysis, no full proof communication system, no voice broadcasting system in place. Despite the repeated directions from SDSO-HP and recommendations of the expert committee, BBMB has not installed EWS as per the guidelines/norms and even lacks basic required EWS. The Chairman, SCDS-HP directed all the dam authorities to have robust EWS in place before the onset of monsoon season. Further SCDS suggested to take up the matter with the Head of organisation & NDSA.
8.0	**Implementation of 6 Regulations notified by NDSA on 13.03.2024 and 8 Regulations notified by NDSA on 24.04.2024**
	Head SDSO apprised the Dam/ HEP authorities that 6 Regulations have been notified by NDSA on 13.03.2024 and another 8 Regulations have been notified by NDSA on 24.04.2024 which have also been shared through email with all projects authorities. He further directed all Dam/HEP owners have to comply and implement all these regulations. The tasks be completed by 15th June and compliance report be shared with SDSO-HP.
9.0	**Regular updation of Data on NIC Portal**
	Head SDSO directed all Dam authorities to upload all the data/important parameters in the NIC portal thrice in a day. As this has been viewed seriously by the authorities that most of dam authorities are not uploading data regularly.

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10.0	**Deployment of Manpower at State control room during monsoon from 15th June to 15th Sep.**
	In view of the regular monitoring on in flow, out flow and other safety aspects related to dams and their immediate information sharing SCDS suggested to depute 3 to 4 personal in the control room existing at SDMA Shimla. These officials will monitor important parameters of all the Dams round the clock. The official deployed will work in rotation basis and the cost of their stay, lodging boarding etc. will be borne by the respected Dam/organisation.
11.0 Closing comments	
	At the end, Chairman, SCDS and Head SDSO thanked all the participants present in the 4th meeting of State Committee on Dam Safety Himachal Pradesh and for providing valuable suggestions.

Er. Deepak Jasrotia,
Member Secretary,
State Committee on Dam Safety - HP,
Directorate of Energy, GoHP, Shimla-04.

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AGENDA ITEMS

SCDS HIMACHAL

- Status review of Individual Specified Dam in the State of Himachal Pradesh with respect to the decisions taken during the 3rd meeting of SCDS held on 15.12.2023.
- Essential Parameters Review on the Pre-Monsoon Inspection reports for the year 2024 and Status w.r.t. DHARMA Portal.
- Budget allocation for FY 2024-25.
- Present Status of Early Warning System and monsoon preparedness in respect of 24 Specified Dams in Himachal Pradesh.
- Status Review of Malana-II w.r.t. measures taken after overtopping incident in Malana-II Dam.
- Status Review of Koldam w.r.t. rectification of Flip Bucket at Plunge Pool area.
- Other Dams to be considered under Special Dam Categories even though the same do not meet the criteria specified in Dam Safety Act, 2021.
- Implementation of 6 Regulations notified by NDSA on 13.03.2024 and 8 Regulations notified by NDSA on 24.04.2024.
- Regular updation of data on NIC portal.
- Deployment of Manpower at State control room during monsoon from 15th June to 15th Sep.
- Any other point with permission of Chair.



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ATTENDANCE SHEET

4th Meeting of the State Committee on Dam Safety constituted by GoHP vide notification dated 24.05.2022 in pursuance to the provision of Dam Safety Act, 2021. under the chairmanship of Head SCOS – HP, -cum- Chief Engineer (Energy) GoHP, Shimla-05

Date: 30.05.2024 at 11:00 AM **Venue-** Directorate of Energy, GoHP, Shimla-04

Sr. no.	Name & Designation	Department	Phone No.	E-mail	Signature
1.	Sh. M.C. Sharma, GM	SJVN LIMITED	9418475712	m.chandu 1972 @gmail.ca	
2.	Er. Sandeep Prakash, DGM	SJVN LIMITED	8791171484	sandeep.prakash@sjvn.nic.in	
3	Er. Jayant Sharma, JE HPPCL, o/o GM(Gen)	HPPCL	9317528429	Jayant Sharma 6846 @gmail.com	30/5/2024
4.	Ajay Kumar Jasta AGM (CP)	HPPCL	8894610459	gm[illegible]25@gmail.com	
5.	Dheeraj Verma. Sr. EE, DoE	DoE	9805089496	doe.dheeraj@gmail.com	
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7.	Harshveer Singh, JE	DOE	9816705680	hsheoran[illegible]@gmail.com	
8.	Abhinav Thakur, JE	DoE	8626841994	ee.abhinavthakur09@gmail.com	
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Annexure – III

323 pages

HPDoE/CE(Energy)/SDSO-HP/2024-298 DATED:- 20-4-2024

DIRECTORATE OF ENERGY
GOVERNMENT OF HIMACHAL PRADESH
MC PARKING BUILDING, 2ND FLOOR, TUTIKANDI CROSSING, SHIMLA-04
Tel No: 0177-2673552, Fax No: 2673553, Email: ceauthoritydoe@gmail.com

From

Director (Energy),
GoHP, Shimla-04.

To

The Principal Secretary (Power),
To the Government of Himachal Pradesh.

Subject: **Site inspection report of Pong Dam, Pandoh Dam, Parbati-III Dam and Malana-II Dam.**

Sir,

This has reference to your office letter no. MPP-A(8)-1/2024 dated 11/01/2024 on the subject cited matter, wherein the detailed proposal with supportive documents /evidence have been sought from this office for taking further action of registering the case against erring Dam authorities as per Dam Safety Act, 2021 in the matter.

It is submitted, due to heavy rains in the month of July, 2023, huge volume of water was released from Pong Dam, Pandoh Dam and Parbati-III Dam and huge damages occurred in the downstream of these dams. The gates of Malana-II Dam were got stucked and dam overtopping took place, which resulted in the threat perception in the downstream area for almost 45 days. The discharges from Pandoh, Pong & Parbati-III dams created havoc in the downstream area and there happened huge losses to stocks and property, thousands of people were evacuated to make them reach to safe places.

In order to access the situation and to know the status of dam safety aspects in various dams, a meeting was held under the chairmanship of worthy Chief Secretary to the Government of Himachal Pradesh on dated 18.08.2023 **(Annexure-1)** vide which the review on installation and implementation of **Early Warning System (EWS)** by dam authorities in the State was taken up and in view of recent incidents in Malana-II dam, Parbati-III Dam, Pandoh Dam and Pong Dam. It was directed to have detailed inspection by DoE through a high level committee inclusive of independent appropriate level technical members from CEA & CWC and ADC/ADM level officer from respective Distt. and appropriate level Dam Safety experts from other agencies. It was also directed to issue the show cause notices to all the defaulter specified dam authorities who failed to have installation of adequate early warning systems at their respective dam sites.

In line with the decisions taken in the meeting held on 18.08.2023, show cause notices to all the specified dam authorities except Koldam and Nathpa Dam were issued on 22.08.2023 (Show Cuase Notices of Pong Dam, Pandoh Dam, Parbati-III Dam & Malana-II Dam are annexed at **Annexure-2-5)** and a committee comprising of members from CWC, CEA, and GoHP for the site inspection of **Pong Dam, Pandoh Dam, Parbati-III Dam and Malana-II Dam** was constituted by GoHP vide DoE order dated 28.09.2023 **(Annexure-6)**. The dam authorities of

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Pong Dam, Pandoh Dam, Parbati-III Dam and Malana-II Dam have submitted the reply of show cause notices **(Annexure-7-10)** which were not satisfying and in line with inspection taken up.

A committee headed by **Dr. R.K. Gupta, Ex. Chairman, Central Water Commission** with members having expertise in the field of gates, hydrology, hydropower conducted site inspections of four dams -Pong Dam, Pandoh Dam, Parbati-III Dam and Malana-II Dam w.e.f 16.10.2023 to 21.10.2023 to investigate comprehensively the cause of overtopping happened from Malan-II dam and flooding which took place from Pong Dam, Pandoh Dam, Parbati-III Dam which resulted in heavy damages downstream.

The committee submitted the report to **Directorate of Energy on 04.12.2023 (Annexure-11)**. The report includes observations and crucial recommendations related to the operation, maintenance, monitoring, and surveillance of these dams aligning with the provisions of the Dam Safety Act-2021.

The detailed proposal and the actions proposed against each dam with supportive documents /evidence are as under:

Sudden water releases from Pong Dam, Pandoh Dam and Parbati-III Dam:

Pandoh Dam:-

a) Detail of Water releases

The inflow to the tune of 212587 cusecs was reported in Pandoh dam accordingly huge volume of water was released from Pandoh Dam on 09.07.2023 & 10.07.2023 (maximum to the tune of 210890 cusecs) **(Annexure-12)**.

b) Damages

Huge loss to Government and public properties in Pandoh and Mandi towns was caused including washing away of historical bridge at Pandoh on Beas River, though due to promptness of District Administration, DDMA, NDRF and SDRF many human lives were reported rescued in Pandoh town, where some portion of the town got submerged.

c) Lapses observed

- Report stated that there is no adequate arrangement for automatic inflow measurement & forecasting system for Pandoh dam. Pandoh dam is dependent on the Larji project regarding inflow forecasting information. It states that data of inflow measured is calculated by reverse calculation.
- Only three Emergency Warning Hooters are installed (one at control room, 2nd at workshop gate near Pandoh bazaar and 3rd at fire station Pandoh), which cover the area upto 6 km downstream only.
- BBMB authorities did not have the Rule Curve for Pandoh Reservoir which is essential for proper reservoir operation.
- The Emergency Action Plan (EAP) has been prepared without incorporating the latest dam break analysis, inundation mapping and hydraulic routing studies. These are very important factors in safeguarding the loss of property and life of the general public residing in the vicinity of the downstream of the dam.

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- As per the available records of the dam break analysis, it has been noted that the analysis did not incorporate GLOF (Glacial Lake Outburst Flood) studies and potential cloud bursts phenomenon which potentially may contribute to flooding.
- Periodic stakeholder meetings involving the project affected Gram Panchayats and District Administration were not being conducted for creating awareness in the general public.
- The bathymetric survey has been conducted, but it is not up to standard and does not reveal the actual reservoir's storage capacity was not in accordance with standard guidelines.
- Seismological Station has not been established which is mandatory in the vicinity of the dam for recording micro and strong motion earthquake and such other data as may be specified by the regulations as per the Clause 34 (1) of Chapter VII of Dam Safety Act, 2021.
- It was observed that sharing of information regarding outflow/water release from spillway sharing through Early Warning System (EWS) is only upto a very small river length downstream. It is actually required up to a considerable length even beyond Mandi town downstream and there were no proper EWS as per CWC standard guidelines.

d) Actions recommended/proposed through report

- Rule curve for reservoir operation shall be provisional at dam site.
- It has been recommended by committee that proper EWS mechanism be installed and practiced by the dam authorities immediately.
- The proper inflow recording mechanism in the catchment of Pandoh dam covering catchment upstream of Larji dam and the intermediate catchment between Larji dam & Pandoh dam is essentially required to be established.
- The total absence of inflow forecasting system is major hurdle in implementation of EWS properly. The dam authorities must strive hard for developing and having a proper inflow forecasting system in the upstream either on its own or in coordination with other dam authorities upstream.
- **Emergency Action Plan (EAP) should be updated by including inundation mapping based on results of Dam Break Modelling and for different amount of releases from spillway after carrying out hydraulic channel routing studies etc., Proper Communication System, Public Awareness details, demarcation of duties of different organizations shall be included. Consultation meetings should be carried out with all stakeholders.**
- GLOF and the Potential Cloud Burst Phenomenon studies in the dam break analysis shall be taken up by the project authority.
- Trained and well conversant Engineers/Technicians shall be deputed at Dam site for operation and maintenance of the dam and reservoir. Their skill upgradation and capacity building must be taken up on regular basis.
- The dam authorities should immediately go for vegetation clearance from the dam top and embankment slopes downstream as per DSRP recommendations.
- The risk assessment and hazard potential in respect of Pandoh dam may be taken up by the dam authorities as required by Dam Safety Act.
- The dam authorities shall plan for retrieving back the lost live storage due to heavy siltation in the reservoir.
- I-SAT phones should be made operational as early as possible.

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- It is suggested that the project authority may devise /provide suitable dedicated arrangement for releasing the environmental flow as an alternative to meeting out this requirement by opening the radial gate by a very small amount.

Pong Dam:-

a) Detail of Water releases

During the period of heavy rains spell from 9th July to 12th July no significant releases were there from Pong dam however considerable volume of water to the tune of 32246 cusecs was released downstream from Pong Dam on 16th and 17th July, 2023. Again from 14th to 17th August, 2023 heavy outflow was released (maximum to the tune of approx. 147923 cusecs) from the Pong Dam **(Annexure-13)** which resulted in flooding downstream.

b) Damages

30 people got stranded in the downstream area which were rescued by District Administration with the help of NDRF in July. Due to heavy flooding in downstream area, the crops were totally submerged and evacuation of about 2155 people was taken up by district administration with the help of Indian Air Force and NDRF in August flooding. Due to these releases considerable loss of stocks have been reported in downstream in August.

c) Lapses observed

- Report states that there is no proper existing inflow forecasting system for Pong reservoir. Only few discharge measurement sites are available where old conventional float type method is being used for discharge measurement. Nowhere in upstream there exist automated or latest digital/electronic inflow forecasting /measurement devices. On the scrutiny of the record particularly for the highest discharge observed, a huge mismatch between the discharge data observed at discharge sites and recorded at dam site was found. It was found that basically inflow is used to be calculated by doing reverse calculation at dam site. Inflow is generally being calculated by adding all outflows from the dam and the increase/decrease in water level in the reservoir. Accordingly, the inflow observations and the early warning on flood releases executed are not based on the realistic and authentic data/information. In the absence of a proper inflow forecasting system, Early Warning regarding exact release of water from dam is difficult.
- **BBMB authorities do not have the Rule Curve for Pong Reservoir which need to be prepared for deciding the water to be released optimally based on current reservoir level and inflow and is, thus, an effective tool to utilize the reservoir storage for flood moderation. Rule curve or rule level is important to specify the water level to be maintained in a reservoir during different times of the year.**
- **The EAP has been prepared without incorporating the Dam Break analysis & inundation mapping. As this is very important factor in safeguarding the loss of property and life of the general public residing in the vicinity of the downstream of the dam. So EAP prepared without dam break analysis, inundation mapping and hydraulic routing study does not serve the required purpose.**
- It was observed by the committee that dam authorities have hardly taken up a proper well-coordinated consultation meeting with the relevant stakeholder's viz. people downstream, PRIs, Distt. Administration and other relevant departments.

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- The data collection and information sharing system within BBMB authorities is quite complex. The data collection is done by teams at various sites. The data interpretation and compilation is done by a team at Nangal and the approving authority is at Chandigarh, Finally, the same is shared with dam operating personnel at dam site which then further shares it with other stakeholder. The information sharing is mainly through telephone calls, WhatsApp or e-mails. The dam operating personnel shares data/information with all important stakeholder, mainly Distt. Administration, through email or WhatsApp it has been observed that this whole process is quite time consuming and not sound.
- Automatic Weather Station (AWS) has been established at Harsar (Automatic), Nangal Chowk (Manually operated). But data interpretation of these instruments are not done yet.
- 2 Nos. Emergency Warning Hooters (02 minutes sound blast with 30 seconds break 04 times) have been installed at Dam body and downstream of Dam which are not capable of broadcasting the voice messages/tailor made messages It was observed by the committee that there are many sites downstream of dam to a considerable length along the river where technologically latest broadcasting hooters are required to be installed.
- Seismological Station has not been established which is mandatory in the vicinity of the dam for recording micro and strong motion earthquake and such other data as may be specified by the regulations as per the Clause 34 (1) of Chapter VII of Dam Safety Act, 2021. However, as intimated by the project authority, 2 number accelerographs have been installed at the top and toe of the Dam which are not sufficient to measure the micro motion earthquake.
- Operation of spillway gates is yet executed manually and it was intimated by the project authority that the proposal for automation of Gates is yet under consideration.

d) Actions recommended/proposed

- Dam authorities should install telemetry system for inflow forecasting. Latest automatic instruments for flow and weather data recording and dissemination shall be installed as per the requirement. The model developed for this purpose shall include the likely releases from other upstream projects in the catchment area.
- The dam authorities shall prepare reservoir rule curve for optimal reservoir operation so that spillway discharges and reservoir water levels are calculated in a scientific basis and floods get moderated to the maximum.
- Dam authorities shall carry out dam break analysis immediately by considering the PMF. The analysis must incorporate GLOF (Glacial Lake Outburst Flood) studies and Cloud Bursts like incidents in upstream area which could potentially contribute to future flooding. Inundation mapping shall be carried out and downstream areas likely to be affected during dam break scenario shall be properly marked in maps.
- Even for no - Dam Break scenario also, the hydraulic routing studies shall be taken up for different amount of discharge releases from the reservoir and accordingly the inundation mapping shall be carried out and the water levels and the area likely to be inundated shall be marked in the maps specially in property maps in the State boundary of Himachal Pradesh.
- Emergency Action Plan (EAP) shall be revised considering the latest guidelines issued by CWC. EAP must include inundation mapping considering Dam Break Modeling and hydraulic routing studies for different releases from spillways in no-dam break scenario, proper Communication System, co-ordination system among different organizations etc.

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Public Awareness shall be created and consultation meetings shall be held with all stakeholders periodically.

- The Dam authority shall ensure that there should be a proper mechanism of communication system so that there should be sufficient time available with District administration for information sharing and evacuation of people at the time of flood. Full dependency on Verbal Communication only should not be encouraged. Other effective and modern ways of EWS system be installed and practiced. As more number of upgraded Emergency Warning Hooters shall be installed at vulnerable locations at the earliest.
- The dam authorities shall take necessary steps to implement the observations/recommendations of DSRP.
- Project authority should adhere to the instructions issued by CWC, CEA, GoHP and other concerned organizations in respect of operation, maintenance, disaster management, emergency planning etc. and shall adhere to all provisions of Dam Safety Act-2021 for safety of dam and downstream people.

Parbati-III Dam:-

a) Deatil of Water releases

The inflow to the tune of 36748 cusecs was reported in Parbati-III dam accordingly huge volume of water (maximum to the tune of approx. 38846 cusecs) was reported released from Parbati-III Dam on 09.07.2023 and 10.07.2023. **(Annexure-14)**

b) Damages

Heavy damage of public & private property in the downstream was caused and a portion of the Sainj town got washed away.

c) Lapses observed

- The inflow forecasting system to assess the inflow discharges during the flood situations was not present in upstream locations of dam body and also the discharge and gauge site on Jiva Nallah was not functional. For Inflow discharges, the personnel deployed at dam of Parbati-III were totally dependent on the Sainj HEP Authorities (located about 12 km upstream). For estimating the inflow discharges from Jiva nallah project authorities are using certain assumptions and thumb rule (certain percentage of sainj river). The Parvati-III Dam authorities were also not having the Early Warning System as per the CWC guidelines.
- As per the data supplied by the dam authorities the maximum peak floods observed since year 1973 to till date are as 724 cumecs (25568 cusecs) in year 1993, 984 cumecs (34750 cusecs) in 2019 and more than 1000 cumecs (35315 cusecs) in year 2023. The dam break analysis has been carried out by them and also the flood danger level marks at six number locations were also observed. After enquiring it was came to notice that these marks were with respect to 800 cumecs of flood discharge. The data supplied by the Parbati-III HEP shows that the maximum discharge of 1044 cumec (36868 cusecs) which was released through the spillway on dated 9th and 10th July 2023 during heavy rains in the Beas basin. However it has been observed during the visit from the flood marks that the discharges released from the spillway might be much more than 1044 cumec, which lead to the heavy property loss in Sainj town which is located about 3 km downstream of Parbati-III dam.

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- Parbati-III dam is not a storage dam, as its live storage capacity is of the order of only 0.97 MCM. It was observed that proper inflow forecasting system has not been installed in order to provide timely accurate information to the district administration for carrying out the evacuation during the release of flood water through spillway.
- From the data supplied by NHPC officials it has also been observed that, no reservoir levels were recorded on dated 10th July 2023 and tentative discharges based on anticipation only were reported which indicates that actual flood was of bigger intensity.
- The EAP has been prepared without incorporating the inundation mapping. It is very important factor in safeguarding the loss of property and life of the general public residing in the vicinity of the downstream of the dam.

d) Recommendations of the committee

- Proper inflow forecasting system should be installed so that information about the spillway releases & gate operation can be sent timely to downstream.
- Inundation mapping based on results of Dam break analysis and channel routing results for release of different discharges from spillway shall be carried out. These inundation maps should be part of EAP. Danger levels with respect to different discharges as per /inundation mapping results needs to be marked in downstream areas of dam and local administration needs to be made educated regarding these levels.
- An effective Emergency Action Plan (EAP) must include Inundation mapping, proper Communication System, Public Awareness and other details as per CWC guidelines. The Dam Beak analysis should also include the GLOF studies.
- Regarding EAP, periodic meetings of all stakeholders involving the project affected Gram Panchayats and District Administration are required to be conducted for creating awareness in the general public.
- The damaged Pre-warning system/Hooters need to be replaced immediately with latest ones as per the CWC guidelines.
- I-SAT phones should be made operational as early as possible.
- The EWS be strengthened to desired standards.

<u>Malana-II HEP –Occurrence of overtopping incidence:</u>

a) Detail of Incidence

An overtopping of dam incident took place on 24.07.2023 which lead to the situation of probable dam failure and as such the lives and stocks were put into danger and had the in time measures been taken by the dam owner, this incident could have been totally avoided.

A notice was served to the authorities of Malana-II by the Head SCDS-cum- Chief Engineer (Energy), Directorate of Energy vide letter dated 25.07.2023 **(Annexure-15)** seeking the explanation that why not an action as per clause 41 of Dam Safety Act, 2021 be initiated against them and further directed to take proper measures to open the gates and restore the Dam Operation back to safe parameters and maintain a proper co-ordination with District Administration and all stakeholders to ensure the, safety of lives and stocks downstream.

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The GoHP team headed by Chief Engineer (Energy)-cum-Head SCDS Himachal visited the dam site of Malana-II dam on 30.07.2023 **(Annexure-16)** and directions were imparted to take immediate measures w.r.t. safeguarding the lives and stock downstream and opening of gate for normalizing the situation and further to submit the daily progress and compliance to SDSO Himachal as well as to DDMA Kullu vide letter dated 31.07.2023 **(Annexure-17)**.

b) Earlier Inspections & Directions

An overtopping incident had already been occurred on 24th August, 2013 in Malana-II Dam. A panel of experts committee was constituted by GoHP which submitted its report vide letter no. HPDOE/PF/Inspection Malana-II-1-4 dated 30.09.2014 **(Annexure-18).** It was reported that on 24th August, 2013, both units of Malana-II HEP which were under operation with 16 cumecs discharge in the river ,tripped suddenly and due to non-operation of the radial gates, the water level in the reservoir started rising due to this sudden tripping of both the generating units. The Gates could not operate due to sloughing/collapse of the silt deposited in front of the radial gates. Water which was initially at MDDL, suddenly started rising & resulted in overtopping of the concrete dam and same has happened again.

As per finding of above said report, an additional spillway was recommended by the expert committee and proposal was asked from IPP vide DoE office letter no.HPDoE/CE/Authority/Safety/Malana-II HEP/2014-6392-93 dated 10.10.2014 **(Annexure-19)**.

A proposal for construction of additional spillway by converting Non- Overflow Blocks into spillway on right bank of Malana-II dam was submitted by the project developer vide letter dated 13th May, 2016 **(Annexure-20)** and same was allowed to be implemented vide DoE letter no. HPDoE/CE/Authority/Safety/Malana-II HEP/2014-1912-13 dated 01.06.2016 **(Annexure-21)** subject to fulfillment of the following conditions:

- The various important features of the proposed spillway needs to be vetted/ optimized through Model studies for hydraulic efficiencies w.r.t. discharge capability, efficient energy dissipation without any erosion at toe & right bank having PWD road for safety of the dam in particular before its implementation.
- Due precaution in construction as per specification & detailed design engineering needs to be carried out.
- All the codal formalities, if required, w.r.t. implementation from concerned agencies i.e. disposal of generated muck, provision of alternate road/ passage to village located on bank right, safety of downstream HEPS & habitats besides no interference with the levels of any upstream HEPs needs to be followed/ ensured.

Subsequently the proposal (DPR) was submitted by IPP vide letter dated 10.11.2017 **(Annexure-22)** and final go ahead to this proposal was given by DoE vide letter no. HPDOE/CE/Authority/Malana-II/2018-8760 dated 02.02.2018 **(Annexure-23)**.

The strong directions were again imparted through reminders and further during the project inspection of November, 2021 **(Annexure-24)** and subsequent State Committee on Dam Safety (SCDS) meetings held on November, 2022 **(Annexure-25)** & May, 2023 **(Annexure-26)** for

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immediately taking up the construction work of auxiliary spillway. At last, the construction schedule was submitted by the Dam authorities, however the observations raised on that were also not complied to.

Despite the repeated directions and instructions given, the construction of auxiliary spillway could not be taken up and again the 2nd overtopping incident took place on 24.07.2023.

c) Lapses observed

- Report stated that dams are not designed for overtopping. Overtopping may cause distress in the dam and sometimes failure also. As per the Dam Safety Act, 2021 the overtopping incidents are considered as dam failure situation wherein uncontrolled release of water takes place putting lives and stocks downstream under threat.
- The first overtopping of Malana II dam occurred in 2013. The dam overtopped for the second time in 2023. Measures to avoid repeat of such incidents should have been taken by dam owners.
- The long delays have been observed in execution of additional spillway. If the works of additional spillway would have been completed, overtopping of dam could have been avoided 2nd time.
- It could not be established that stucking of gates due to slush and boulder deposit took place after cloud burst like incident as during the duration /time period of stucking of gates, no cloud burst type incident occurred in Malana stream. So the IPP's stand/claim of cloud burst etc. doesn't hold true.
- During the visit committee observed that there are lots of boulders, debris, stacked upstream of reservoir in the river course and these are likely to slip into the reservoir.
- The Early Warning Systems as available were not compatible to the desired standards. The inflow forecast system along with inflow measurements in upstream reaches have not been established.
- As per project authorities, the dam break analysis does not cover the GLOF and cloud burst like incidents. Accordingly, the same needs review.

d) Actions recommended/proposed

- Since the overtopping remained continued for about 45 days it is strongly recommended that the comprehensive structural safety review of dam be conducted.
- In view of the overtopping and the condition prevailed for 45 days the additional spillway design may be reviewed again for dam stability and other safety aspects.
- It is very much essential that dam authorities have an advance inflow forecasting system of appropriate standards and of latest technology so that the prior actions be taken up for dam and reservoir operations.
- The river reach beyond reservoir in the upstream has lot of boulders, to trap these boulders, Boulder Traps of rock fill/boulder material having small heights may be constructed. These traps shall be cleaned whenever they are filled with boulders.
- The frequency of gate opening/closing be increased and every minute detail in this regard be recorded. Repair & maintenance of the gates and its associated arrangements be taken up on priority. If needed the old associated parts or accessories be replaced by adopting the internationally accepted standards.

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- The dam authority must ensure all safety protocols for the works related to additional spillway including safety of the existing dam in all conditions.
- An alternate access for the trespassers be immediately taken up from the downstream of the dam so that the unauthorized entry be restricted at the dam top so that rectification/restoration measures etc. be taken up smoothly.

In summary, the report concludes that the establishment of an adequate inflow forecasting system, complemented by a robust Emergency Action Plan containing inundation mapping and efficient Early Warning Systems by the dam authorities of *Pong Dam, Pandoh Dam and Parbati-III Dam* could have significantly mitigated the damages caused during the monsoon floods of 2023. The long delays have been observed in execution of additional spillway by the *Malana-II dam* authorities as directed by State Government agencies though necessary approvals were obtained by dam authorities in time. If the works of additional spillway would have been completed, overtopping of dam could have been avoided second time.

Accordingly in view of above, the DoE has strongly submit to take action against these four Dams authorities which have failed to comply the necessary provisions of Dam Safety Act-2021 and as a result the dam failure of Malana-II Dam happened and heavy damages were reported due to sudden discharge releases from these three dams (Pong Dam, Pandoh Dam and Parbati-III Dam).

The action recommended against erring Dam Authorities are as per following clause of Dam Safety Act, 2021 **(copy enclosed):**

Clause 41 (b) of the Dam Safety Act, 2021 stipulates as under:

"Whoever, without reasonable cause,—

(b) refuses to comply with any direction given by or on behalf of the Central Government or the State Government or the National Committee or the Authority or the State Committee or the State Dam Safety Organisation under this Act, shall be punishable with imprisonment for a term which may extend to one year or with fine, or with both, and if such obstruction or refusal to comply with directions results in loss of lives or imminent danger thereof, shall be punishable with imprisonment for a term which may extend to two years."

Clause 44 of the Dam Safety Act, 2021 stipulates as under:

"(1) No court shall take cognizance of any offence punishable under this Act, except on a complaint made by the Central Government or the State Government or a person authorised in this behalf by the National Committee or the Authority or the State Committee or the State Dam Safety Organisation, as the case may be.

(2) No court inferior to that of a Metropolitan Magistrate or a Judicial Magistrate of the first class shall try any offence punishable under this Act."

These actions are duly recommended in view of facts as stated above which are sufficient enough to establish the cause of action proposed.

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Hence, in this context, it is submitted that the necessary approval for registering the complaint against the erring Dam Authorities be accorded after taking advice of the advisory department.

This is for your kind information and necessary action in the matter please.

Yours faithfully,

Chief Engineer (Energy),
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MINUTES OF MEETING ON SAFETY ISSUES REGARDING DISCHARGE OF WATER FROM DAMS HELD UNDER CHAIRMANSHIP OF WORTHY CHIEF SECRETARY, GoHP ON 18.08.2023AT 11:30AM IN HP SECRETARIAT SHIMLA.

The meeting to review the safety issues related to sudden discharge of water from dams was held on 18.08.2023 under the chairmanship of the worthy Chief Secretary to the GoHP in the C.S. office Ellerslie Building HP Secretariat Shimla. The respective Dam authorities were connected through virtual mode.

2. The consolidated list of participants present (Physically & Virtually) is attached as per **Annexure-I.**
3. At the outset, the Shri D.C. Rana, Director-cum-Special Secretary (Rev-DM), GoHP welcomed the Chair & all the participants present physically & virtually. Director-cum-Special Secretary (Rev-DM) then submitted a brief overview of the meeting's agenda to all participants and stated that the State Disaster Management Authority (SDMA-HP) along with State Dam Safety Organization (SDSO-HP) will be jointly presenting a comprehensive Power Point presentation focusing on the safety issues associated with the sudden discharge releases from the dams and other related aspects.
4. Er. Deepak Jasrtotia Head SDSO-HP apprised the Chair and participants about the status of 23 Specified Dams & 7 under construction Dams in Himachal Pradesh. He briefed the participants about the issues related to sudden discharge of water from dams, other dam safety related issues and about the implementation of Dam Safety Act in the State after its enactment by parliament in December 2021 and subsequent GoHP notification w.r.t. constitution of State Committee on Dam Safety (SCDS-HP) & State Dam Safety Organization (SDSO-HP) in May 2022.
5. Shri Sanjay Kundu, Director General of Police, GoHP emphasized the importance of conducting pre-monsoon and post-monsoon inspections of Specified Dams and ensuring the implementation of Early Warning Systems (EWS) effectively. He highlighted the vulnerability factor associated with Dams in Himachal Pradesh in view of State's geographical situation and peculiar/unpredicted weather conditions. Shri Kundu suggested that Dam authorities must be directed to conduct the comprehensive Dam risk assessments analysis. He further suggested to develop and implement an integrated monitoring and data sharing information systems so that reservoir and operations of Dams situated in cascade in the basin be managed and controlled uniformly and more effectively in adverse conditions.
6. Taking the proceedings further Shri D.C. Rana recalled the tragic incident of 2014 in Beas River at Thalout, where in 24 students lost their lives due to the sudden release of water from the Larji Dam despite the sounding of hooters and sirens. He informed the participants that in response to this incident, the Central Water Commission (CWC), Government of India, introduced guidelines for Early Warning Systems (EWS) in 2014 and 2015. He stated that the State Executive Committee had directed Dam authorities to adhere to these guidelines and ensure the proper alert to populations downstream during release of water from dams but those were not complied by many a Dam authorities as a whole.
7. Shri D.C. Rain highlighted on the issue of non-effective implementation of proper Early Warning Systems (EWS) by Dam authorities. He stated a review meeting was taken up on 28/06/2023 with all Dam authorities wherein it was directed to dam authorities for establishing

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and implementing the comprehensive Early warning system (EWS) till 15th August, 2023, but it's unfortunate that many a Dam authorities have yet not complied upon the same . Shri Rana underscore the need for sirens to be accompanied by voice messages in both English and Hindi, which several dam authorities were failing to adhere to and still continuing with outdated warning system. He further recommended to establish a centralized control center with the capability to operate sirens and voice messages from remote not even by Dam authorities but also by SDMA, DDMA & SDSO.

8. Pr. Secretary Revenue Shri Onkar Sharma stated that indeed this is a failure on part of Dam authorities to implement the Dam Safety Acts's norms and CWC Guidelines effectively, as it has made the state to suffer heavy losses. He stated that the big projects even don't carry the basic requirements by citing the example of the Malana-II incident, where dam authorities lacked basic communication infrastructure, such as satellite phones, real-time monitoring and EWS. Shri Sharma stressed that there are other vulnerable HEPs with Dams/ barrages and having considerable storage also so SCDS & SDSO must consider them under Specified Dams to ensure their regular monitoring in line with Dam Safety Act. He highlighted that SVP Bhaba in Distt. Kinnaur is one such HEP which should immediately be considered.
9. Further in the meeting Er. Deepak Jasrotia apprised the Chair and the participants in a short span of one year after the constitution of SCDS & SDSO in the state they have taken up the task in line with roles and duties as defined in the Dam safety Act. He stated that SCDS have conducting the meeting regularly. A meeting for monsoon preparedness with all Dam authorities were taken on 30th May 2023, meeting on EWS installation was held in association with SDMA on 28th June and further the midterm monsoon review was taken up on 20th July 2023 where in even the concerned district authorities were also made part of. Recently on 26.06.2023 in the Board meeting of BBMB w.r.t. discharge release schedule/mechanism the concerns of state were effectively raised with BBMB authorities by associating the District authorities of Kangra , Mandi & Bilaspur along. Mr. Jasrotia further stated that as for as effective EWS implantation is concerned Nathpa & Koldam authorities are complying to desirable standards, However 11 Dam authorities have put in efforts but still not near to desirable norms and rest 10 dams just have basic EWS system and they seriously need to come up hard. For all 23 Dams the required pre monsoon inspections have been completed, 24 x 7 Dam safety units have been placed at all Dams but some of Dam are still lagging in placement of experienced staff. All Dams except Nathpa Dam do not possess the full proof communication system like the Satellite phones. The hydro metrological stations are in place but some of them required to be updated and further their integration with relevant stakeholders has been asked for. 14 dams have seismological station. Further as per Dam Safety Act all Dam authorities have been asked for taking up comprehensive dam safety evaluation through an independent panel of experts within five years of date of commencement of Dam safety Act. Mr. Jasrotia stated that Dam Break analysis have been taken up by some of the Dams authorities but they are required to be updated by including the GLOF aspects and changed river regime & its compromised/changed carrying capacity further it should compliment with hydraulic routing study taken up in different scenario through proper modeling, accordingly the Dam authorities have been directed.
10. On the issue of probable Dam breach scenario Er. Jasrotia stated that Malana-II & Koldam have developed problems. In Koldam the detachment of flip bucket and plunge pool sinking

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issues cropped up and SDSO immediately intervened, NTPC authorities made serious efforts, involved experts agencies and started the rectification work which is likely to be completed before next monsoon season as per dam authorities. The situation is under controlled as even with half measures they could pass a discharge of approx. 2200 cumex through spillway this year.

11. On Malana-II issue he stated that the sudden gates closure problem had happened again, in year 2013 and after having the detailed inspection the rectification and alternate safety measures were suggested and after submission of design & mechanism based on detailed investigation by the Dam authorities same were approved by Directorate of Energy 2018. But despite repeated and regular instructions dam authorities failed to comply the instructions. Immediately after 2nd incident of overtopping SDSO team visited the Dam Site on 30.07.2023 along with District administration and appropriate remedial measures were suggest in line with already approved proposal. The steps and measures with regard to EWS, to control the losses, taking up prior evacuation of vulnerable habitations downstream were all discussed and direction were imparted of is effective implementation. The ratification work is going and SDSO is continuously reviewing the situation on daily basis. With regard to issue of BBMB baggi canal it was apprised to the chair and participants that the site visit has been conducted by Chief Engineer (Energy), DoE and appropriate directions are being imparted to BBMB authorities.
12. On the suggestion of including SVP Bhaba in the category of specified dam list Er. Jasrotia apprised that in the SCDS meeting the matter has been deliberated at length and on receipt of few clarification from project developers in the next meeting it will be recommended to NCDS, NDSA and CWC for inclusion of this dam in the list of specified dams in the country so as to have its monitoring and surveillance in line with Dam Safety Act. On the suggestion to develop and implement an integrated monitoring and data sharing information systems so that reservoir and operations of Dams situated in cascade in the basin be managed and controlled uniformly and more effectively it was submitted that already in association with SDMA the State Dam Safety Organization is taking up a proposal of setting up basin level control centre in every basin which will be funded, established and run by the respective dams authorities of that particular basins and these will be connected with all stake holders. The target to complete this tasks has been kept 31st March, 2024.
13. In the end Mr. Jasrotia submitted that except few, most of the Dam authorities are not putting up the required efforts as are required as per Dam Safety ACT, related to installation and implementation of EWS, having sufficient funds for O&M, placing the required experienced staff for operation at Dam and timely and honestly adhering to the instructions of SDMA, SCDS & SDSO. Even the required in time information/data obtaining from most of the Dam authorities has become a challenge for State monitoring agencies. As for as monitoring and surveillance is concerned even with the very skeleton structure the SDSO is taking up the tasks by putting best of efforts and is in continuous touch with all dam authorities, concerned Distt. authorities and SDMAs for providing the necessary assistance and support.
14. Further in the meeting Shri Harikesh Meena, Director (Energy), GoHP stated that since all the dams in the States are of Hydroelectric projects hence every developer is more towards the commercial interests and the important safety concerns are being sidelined. Though after enactment of Dam Safety Act the SCDS and SDSO formed are taking up the tasks of

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surveillance and monitoring seriously and in line with the provision of Dam Safety Act. However for more effective functioning the SDSO needs to be strengthened. As the top level functionaries in SDSO are with additional charges and the middle and lower level functioning posts are vacant. This is more important in a view to have the regular monitoring and surveillance of the CPSU owned projects for which otherwise the SDSO is National Dam Safety Authority (NDSA) but the dams are in the state and impacting the State.

15. At last worthy Chief Secretary, GoHP stated that Dam Safety seems to be an area wherein more attention & focus is required in view of the current incidents reported wherein the sudden discharge of water from the Dams have created devastation downstream which has resulted in damage to the public & private property, agriculture produces, beside hampering the road networks significantly. He stressed that many dams authorities have failed in fulfilling their duties as specified under Dam Safety Act as the relevant provision under Dam safety Act like setting up of Early Warning Systems, Water release Guidelines, setting up of fully equipped Control rooms at Dam site, having updated Emergency Action Plans, reservoir operation manuals and all time communication networks have not been effectively adhered to as per CWC guidelines. Further the Dam owners across the state are yet to carry out comprehensive Dam risk assessments, which cannot be delayed more.
16. As such in view of the detailed deliberations held as stated above the following directions imparted by Worthy Chief Secretary, GoHP for immediate compliance:

    a) Since it is the prime responsibility of Dam authority to adhere and implement the provisions as stated in Dam Safety Act, 2021, guidelines of CWC, 2015 and to act upon the direction as imparted by other authorities such as SDMA, SCDS and SDSO, immediate show cause notices be issued to all concerned authorities which have failed to comply the provision and instructions which in turn has lead to devastation in the downstream area of dams. (Action by DoE)
    b) In view of recent incidents occurred in Malana-II Dam, Parbati-III Dam, Pandoh Dam and Pong Dam, these four dams needs specific investigation. As such a committee headed by Chief Engineer (Energy), DoE including head SDSO-HP, independent appropriate level technical members from CWC, ADM level officer from respective Distt. and appropriate level Dam Safety experts from other agencies may be constituted. The committee will inspect these four dams and based upon the inspection and the relevant data and information will submit a comprehensive report to the Govt.
    c) The cost incurred on rescue missions and the amount assessed for dam related damages and losses shall be recovered from the concerned dam owners. The concerned Department will initiate the process immediately after receiving the claims. Concerned DCs be asked to prepare damage and loss assessment reports. (Action by DMC Dept. Of Revenue)
    d) Initiate criminal cases against dam authorities, if the compliances to the instructions and the show cause notices are not adhered upon in time. Also if found responsible through the inspection reports as per above for four projects the criminal proceedings shall be taken up immediately. (Action by DoE)
    e) A good panel of lawyers be consulted and hired on the subject matter to take up further legal course as shall be required. (Action by DoE)

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f) BBMB BSL project authorities be asked for not maintaining the Baggi Canal and putting up the inhabitants surrounded at risk.

g) The State owned dams to be upgraded as a role model w.r.t. effective implementation of dam safety provisions within three months' time. (Action by DoE)

h) State Disaster Management Authority to analyse the violations under Disaster Management Act despite directions to the concerned dam authorities on setting up Early Warning Systems. (Action by DMC Dept. Of Revenue)

i) Directorate of Energy, GoHP to submit a proposal for SDSO strengthening for more effective functioning w.r.t. monitoring and surveillance of all dams in the State. (Action by DoE)

The meeting ended with vote of thanks to and from the chair.

Approved by

(Prabodh Saxena)
Chief Secretary to the
Government of Himachal Pradesh

Endst. No. Rev (DMC) (F) 11-45/2020-CB Dated August, 2023.

Copy forwarded for information and necessary action to all the participants of the meeting.

22/8/23

(D. C. Rana)
Director-cum-Spl. Secy. (Rev-DM)
Government of Himachal Pradesh

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H.P., Shimla-171005

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Annexure-A

List of the Participants

1. Sh. Onkar Chand Sharma (IAS), Principal Secretary (Rev-DM).
2. Sh. Rajeev Sharma, Secretary MPP & Power.
3. Sh. Sanjay Kundu, DGP, HP.
4. Sh. D.C. Rana (IAS), Director-cum-Special Secretary (Rev-DM).
5. Sh. Harikesh Meena, Director Energy.
6. Er. D.P. Gupta, CE (Energy) DOE.
7. Er. Deepak Jasrotia, Dy. Chief Engineer DoE.
8. Sh Vijay Singh, IT Coordinator, DM-Cell.

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DIRECTORATE OF ENERGY
GOVERNMENT OF HIMACHAL PRADESH
SHANTI BHAWAN PHASE-III SECTOR-6 NEW SHIMLA-9
Tel No: 0177-2673551, Fax No: 2673553, Email: dir.doehp@nic.in

No. HPDOE/CE (Energy)/SDSO/2023- 5620 - 5628 Dated 22/8/23

SHOW CAUSE NOTICE

Whereas, consequent upon the sudden water release incident from Larji Dam, which caused loss of lives in the year 2014, the CWC issued the comprehensive guidelines on dated 01.10.2015 for release of water, for strengthening of alarm and warning system, alerting the population downstream. Accordingly, Directorate of Energy, GoHP issued the instructions vide office letter dated 31.10.2015 to all the commissioned Hydro electric projects for strict compliance of the same, subsequent reminders were issued later vide DoE letter dated 26.06.2018, 03.08.2018, 12.06.2019.

Whereas, Chief Secretary to the Government of Himachal Pradesh vide letter No. Rev. (DMC) (F)4-3/2019- Dam Safety dated 18.07.2019 directed the dam authorities to follow the guidelines of CWC/NDMA dated 01.10.2015 for release of water, for strengthening of alarm and warning system, alerting the population downstream and report compliance to the State Executive Committee established under the Disaster Management Act, 2005;

Whereas, DoE issued the instructions to BBMB for strict compliance and implementation of Early Warning Systems in line with CWC guidelines vide letter dated 18.03.2020 and same instructions were issued to NHPC & HPPCL vide letter dated 18.07.2020.

Whereas, DoE again directed all the dam authorities for strengthening the Early Warning System in line with CWC guidelines vide letter dated 29.07.2020 and 25.08.2020. However, only few of the dam authorities submitted compliances which were also partial only.

Whereas, Government of India enacted Dam Safety Act, 2021 for surveillance, inspection, operation and maintenance of the specified dam for prevention of dam failure related disasters and to provide for institutional mechanism to ensure their safe functioning, which came into force w.e.f 30.12.2021;

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Whereas, in pursuance to the provision contained in Dam Safety Act, 2021 enacted by Government of India, the Government of Himachal Pradesh vide notification no. MPP-F010/6/2022 dated 24.05.2022 constituted the State Committee on Dam Safety (SCDS) and State Dam Safety Organization (SDSO) and both have come into force with effect from 24th May, 2022;

Whereas, a virtual meeting was conducted by the SDSO-HP on 20.06.2022 with all the existing and under-construction specified dam authorities and they were introduced about the main aspects of Dam Safety Act, 2021 and in particular about the functions & responsibilities of dam authorities/owners along with elaboration on penalty provisions under the Act. The directions were imparted to all the specified dam authorities to upgrade their functioning as specified in the Dam Safety Act on the part of Dam Authorities on priority;

Whereas, in pursuance to Clause- 13 (1) of the Dam Safety Act, 2021, 1st meeting of the State Committee on Dam Safety Himachal Pradesh was conducted on 18.11.2022 wherein review of all the 23 commissioned specified dams in the state of Himachal Pradesh w.r.t to safety aspects was conducted and directions were given to all the dam authorities for adoption, implementations & compliance of all provisions of Dam Safety Act, 2021.

Whereas, 2nd meeting of the State Committee on Dam Safety Himachal Pradesh was conducted on 30.05.2023 in presence of the specified dam authorities, wherein directions were imparted to all the specified dam authorities to follow proper SoPs during the monsoon season and to have full preparedness for the monsoon season. Further directions were imparted to all the dams to establish the 24x7 communication system like satellite phones and hotline communication system to have effective communication during the time of any eventuality/hazard, also to upgrade the Early warning Systems as per required norms and to complete the balance up gradation on other remaining safety, monitoring aspects ;

Whereas, to review the preparedness for the monsoon season w.r.t installation/strengthening of Early Warning System (EWS) in line with CWC Guidelines and the provisions of Dam Safety Act, 2021, a meeting was conducted by State Disaster Management Authority Himachal Pradesh on 28.06.2023 with all the specified dam authorities and it was found that present EWS in most of the dams was not in line with CWC Guidelines except for Nathpa dam and Koldam. Keeping in view this serious concern, directions were given to all the specified dam authorities who have not complied with the directions of the Govt. for installation of EWS as per CWC guidelines to ensure installation of same by 15.08.2023. Directions were also given to follow proper SOPs before releasing water and to be in continuous touch with DDMA, SDMA, PRIs and other stakeholders during release of water from the dams;

Whereas, unprecedented rainfall occurred in the State in the month of July, 2023 particularly on 9th, 10th and 11th July and due to sudden release of water from Pandoh Dam on 09.07.2023, not only many lives were put on threat but there occurred huge loss to Government and public properties in Pandoh and Mandiarea including washing away of historical bridge at Pandoh on Beas River, though, due to promptness of District Administration, DDMA, NDRF and SDRF many human lives were saved at Pandoh town, where some portion of the town got submerged and had the proper Early Warning System, inundation mapping and river routing

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studies, marking of danger marks which were asked to be done been executed and proper reservoir water management been taken up , this incident could have been dealt effectively and the losses could have been minimized or totally avoided;

Whereas, the information w.r.t. inflow, outflow, reservoir and gate operation w.e.f 07.07.2023 to 12.07.2023 was asked by SDSO Himachal vide letter dated 17.07.2023 within three days, but the requisite information was submitted by you on 19.08.2023after more than a month,further in past as well the continuous ignoring the regular uploading of daily Dam information on SDMA web portal shows your non-seriousness towards the adherence of the directions of the SDSO Himachal and violation of Clause No. 22 Section-I,Dam Safety Act;

Whereas, a virtual meeting was conducted by the SDSO Himachal on 20.07.2023 with all the specified dam authorities wherein directions were imparted again to improve EWS system in line with CWC guidelines and Dam Safety Act, 2021 and to install and implement the same by 15th August, 2023;

Whereas, the Clause no. 35 (1) stipulates as under:

(1) Every owner of a specified dam, in respect of each specified dam, shall,—

(a) establish well designed hydro-meteorological network and an inflow forecasting system;

(b) establish an emergency flood warning system for the probable flood affected areas downstream of the dam;

(c) test or cause to be tested periodically the functioning of systems referred toin clauses (a) and (b);

(d) install such scientific and technical instruments which are invented or adopted from time to time for the purpose of ensuring the dam safety and the life and property of people downstream;

(e) make available the information relating to maximum anticipated inflows and outflows including flood warning and an adverse impact of the same, if any, on persons and property towards the upstream or downstream of the dam, to the concerned district authorities and also make available the information in public domain; and

(f) render necessary assistance to the Authority in establishment and running of the early warning system for the exchange of real time hydrological and meteorological data and information related to the operation of reservoirs.

(2) Every owner of a specified dam, for each of its dam shall, carry out risk assessment studies at such interval as may be specified by the regulations and the first such study

a. shall be made within five years from the date of commencement of this Act.

Whereas, the Clause no. 36 stipulates as under:

(1) Every owner of a specified dam, in respect of each of specified dam, shall,—

(a) prepare emergency action plan before allowing the initial filling of the reservoir and thereafter update such plans at regular intervals;

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(b) in respect of the dam which is constructed and filled before the commencement of this Act, prepare emergency action plan within five years from the date of commencement of this Act and thereafter update such plans at regular intervals as may be specified by the regulations.

(2) The emergency action plan referred to in sub-section (1) shall,—

(a) set out the procedures to be followed for the protection of persons and property upstream or downstream of the specified dam in the event of an actual or imminent dam failure or to mitigate the effects of the disaster;

(b) include therein,—

(i) the type of emergencies which are likely to occur in the operation of any reservoir;

(ii) identification of the likely catastrophic flood in the event of any dam failure, along with probable areas, population, structures and installations likely to be adversely affected due to flood water released from the reservoir;

(iii) warning procedures, inundation maps and advance preparations for handling efficiently and in the best possible manner the likely adverse situations especially to avoid loss of human life;

(iv) such other matters which may having regard to the geographical conditions, size of the dam and other relevant factors as may be necessary.

(3) The emergency action plan under this section shall be put into action as and when conditions arise which are hazardous or likely to be hazardous to a specified dam or potentially hazardous to public safety, infrastructure, other property or to the environment.

(4) Every owner of the specified dam shall, while preparing and updating the emergency action plan, undertake a consultation process with all disaster management agencies and other Departments of the State entrusted with disaster management and relief in the area likely to be affected and owners of other dams in the immediate vicinity likely to be affected, so as to bring coordination and transparency and allay any unwarranted fear on dam safety issues.

Whereas, the Clause no. 37 stipulates as under:

"Without prejudice to the provisions of this Act or liability of the owner of the specified dam and other organizations and authorities under this Act, every owner, organisation and authority shall render necessary assistance, if so required by any authority under any law for the time being in force to meet or mitigate any disaster or emergency arising out of the specified dams."

Whereas, the Clause 41 (b) of the Dam Safety Act, 2021 stipulates as under:

"Whoever, without reasonable cause,—

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Directorate of Energy,
H.P., Shimla-171005

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(b) refuses to comply with any direction given by or on behalf of the Central Government or the State Government or the National Committee or the Authority or the State Committee or the State Dam Safety Organisation under this Act, shall be punishable with imprisonment for a term which may extend to one year or with fine, or with both, and if such obstruction or refusal to comply with directions results in loss of lives or imminent danger thereof, shall be punishable with imprisonment for a term which may extend to two years."

Since, you have failed to comply with the directions of the State Govt. of Himachal Pradesh, SCDS and SDSO Himachal Pradesh for installation/strengthening of Early Warning System in line with CWC Guidelines and the provisions of Dam Safety Act, 2021 and sudden release of huge volume of water downstream, taking up updated and latest dam break analysis for having the inundation mapping and river routing studies, marking of danger marks. You are hereby asked that why not this prolonged delay in execution and implementation of standard norms and repeated directions given by the State authorities from time to time be considered as refusal and accordingly you have been called upon to Show Cause within 15 days of issue of this notice that why the State Govt. Himachal Pradesh should not take action against you in line with clause 41 (b) of the Dam Safety Act, 2021.

Chief Engineer (Energy),
Directorate of Energy,
Govt. of Himachal Pradesh.

Chief Engineer (Head of Project)
Bhakra Beas Management Board (IW),
Sundernagar, DisttMandi, H.P.
Email: cebsl@bbmb.nic.in

Copy of the above is forwarded to the following for kind information please:

1. The Sr. Private Secretary to the worthy Chief Secretary to the Government of Himachal Pradesh, Shimla-171002.
2. The Principal Secretary (Rev-DM) to the Government of Himachal Pradesh, Shimla-171002.
3. The Secretary (MPP & Power) to the Government of Himachal Pradesh, Shimla-171002.
4. The Chairman BBMB, Sector 19-B, Madhya Marg, Chandigarh- 160019.
5. The Director-cum Special Secretary (Rev-DM) to the Government of Himachal Pradesh, Shimla-171002.
6. The Member (Policy & Research), NDSA & Member Secretary NCDS, Dam Safety Design-II Directorate, SewaBhawan, R.K.Puram, New Delhi- 110066.
7. The Director, NDSA, Northan region, Chandigarh and Superintending Engineer(Co-ordination), Ministry of Jal Shakti, Department of Water Resources, River Development & Ganga Rejuvenation, CWC, Govt. of India/O/c CE, Indus Basin Organization (IBO) # 617, Block 4 , 6th Floor, KendriyaSadan, Sector 9A Chandigarh (UT).
8. The Secretary,Bhakra Beas Management Board,Sector 19-B, Madhya Marg, Chandigarh-160019.

Chief Engineer (Energy),
Directorate of Energy
Govt. of Himachal Pradesh.

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GOVERNMENT OF HIMACHAL PRADESH
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Tel No: 0177-2673551, Fax No: 2673553, Email: dir.doehp@nic.in

No. HPDOE/CE (Energy)/SDSO/2023- 5602-5611 **Dated** 22/8/23

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Whereas, consequent upon the sudden water release incident from Larji Dam, which caused loss of lives in the year 2014, the CWC issued the comprehensive guidelines on dated 01.10.2015 for release of water, for strengthening of alarm and warning system, alerting the population downstream. Accordingly, Directorate of Energy, GoHP issued the instructions vide office letter dated 31.10.2015 to all the commissioned Hydro electric projects for strict compliance of the same, subsequent reminders were issued later vide DoE letter dated 26.06.2018, 03.08.2018, 12.06.2019.

Whereas, Chief Secretary to the Government of Himachal Pradesh vide letter No. Rev. (DMC) (F)4-3/2019- Dam Safety dated 18.07.2019 directed the dam authorities to follow the guidelines of CWC/NDMA dated 01.10.2015 for release of water, for strengthening of alarm and warning system, alerting the population downstream and report compliance to the State Executive Committee established under the Disaster Management Act, 2005;

Whereas, DoE issued the instructions to BBMB for strict compliance and implementation of Early Warning Systems in line with CWC guidelines vide letter dated 18.03.2020 and same instructions were issued to NHPC & HPPCL vide letter dated 18.07.2020.

Whereas, DoE again directed all the dam authorities for strengthening the Early Warning System in line with CWC guidelines vide letter dated 29.07.2020 and 25.08.2020. However, only few of the dam authorities submitted compliances which were also partial only.

Whereas, Government of India enacted Dam Safety Act, 2021 for surveillance, inspection, operation and maintenance of the specified dam for prevention of dam failure related disasters and to provide for institutional mechanism to ensure their safe functioning, which came into force w.e.f 30.12.2021;

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Directorate of Energy,
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Whereas, in pursuance to the provision contained in Dam Safety Act, 2021 enacted by Government of India, the Government of Himachal Pradesh vide notification no. MPP-F010/6/2022 dated 24.05.2022 constituted the State Committee on Dam Safety (SCDS) and State Dam Safety Organization (SDSO) and both have come into force with effect from 24th May, 2022;

Whereas, a virtual meeting was conducted by the SDSO-HP on 20.06.2022 with all the existing and under-construction specified dam authorities and they were introduced about the main aspects of Dam Safety Act, 2021 and in particular about the functions & responsibilities of dam authorities/owners along with elaboration on penalty provisions under the Act. The directions were imparted to all the specified dam authorities to upgrade their functioning as specified in the Dam Safety Act on the part of Dam Authorities on priority;

Whereas, in pursuance to Clause- 13 (1) of the Dam Safety Act, 2021, 1st meeting of the State Committee on Dam Safety Himachal Pradesh was conducted on 18.11.2022 wherein review of all the 23 commissioned specified dams in the state of Himachal Pradesh w.r.t to safety aspects was conducted and directions were given to all the dam authorities for adoption, implementations& compliance of all provisions of Dam Safety Act, 2021.

Whereas, 2nd meeting of the State Committee on Dam Safety Himachal Pradesh was conducted on 30.05.2023 in presence of the specified dam authorities, wherein directions were imparted to all the specified dam authorities to follow proper SoPs during the monsoon season and to have full preparedness for the monsoon season. Further directions were imparted to all the dams to establish the 24x7 communication system like satellite phones and hotline communication system to have effective communication during the time of any eventuality/hazard, also to upgrade the Early warning Systems as per required norms and to complete the balance up gradation on other remaining safety, monitoring aspects ;

Whereas, to review the preparedness for the monsoon season w.r.t. installation/strengthening of Early Warning System (EWS) in line with CWC Guidelines and the provisions of Dam Safety Act, 2021, a meeting was conducted by State Disaster Management Authority Himachal Pradesh on 28.06.2023 with all the specified dam authorities and it was found that present EWS in most of the dams was not in line with CWC Guidelines except for Nathpa dam and Koldam. Keeping in view this serious concern, directions were given to all the specified dam authorities who have not complied with the directions of the Govt. for installation of EWS as per CWC guidelines to ensure installation of same by 15.08.2023. Directions were also given to follow proper SOPs before releasing water and to be in continuous touch with DDMA, SDMA, PRIs and other stakeholders during release of water from the dams;

Whereas, unprecedented rainfall occurred in the State in the month of July, 2023 particularly on 9th, 10th and 11th July and as heavy outflow, huge volume of water was released from Pong Dam on 16th and 17th July, due to which 30 people got stranded in the downstream area which were rescued by District Administration with the help of NDRF.

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Whereas, the information w.r.t inflow, outflow, reservoir and gate operation w.e.f 07.07.2023 to 12.07.2023 was asked by SDSO Himachal vide letter dated 17.07.2023 within three days. But the requisite information has not been submitted by you till date which shows your non-seriousness towards the adherence of the directions of the SDSO Himachal and violation of Clause No. 22 Section-I, Dam Safety Act;

Whereas, a virtual meeting was conducted by the SDSO Himachal on 20.07.2023 with all the specified dam authorities wherein ADM Kangra was also present virtually, directions were imparted to you to mark the anticipated flood water levels/danger levels for the area likely to be inundated in the downstream of Pong Dam within State jurisdiction of Himachal Pradesh within one week so as to facilitate district administration to help the people informed/sensitize and to take necessary preparedness measures accordingly.

Whereas,a meeting on 26.07.2023 was conducted by the BBMB authorities in which the Deputy Commissioner Kangra, Head SDSO–HP and ADM Kangra were also the part of meeting and wherein after deliberation it was decided that the discharge will be released gradually and the reservoir operations will be so managed that the discharge releases will be kept to the tune of around 45000-50000 cusecs in normal conditions and even in the worst scenario this won't be let go more than 75000-80000 cusecs at the maximum by efficiently and effectively managing the reservoir operation in line with weekly weather forcast. In the meeting it was also agreed upon that the proper inundation mapping of the downstream area in view of the worst possible scenario/dam break situation will be taken up immediately within a week time and accordingly by taking along the Distt. Administration the danger level marks will be marked and the habitation downstream will be made fully aware and sensitized about the probable worst situation and possible threat;

Whereas, on 15-17th August, 2023, again heavy out flow was released (maximum to the tune of approx. 142967 cusecs) from the Pong Dam which resulted in heavy flooding in downstream area and lead to devastation, the crops were totally submerged and evacuation of about 2155 people was taken up with the help of Indian Air Force and NDRF. Due to this sudden release considerable loss caused to the stock and properties downstream but had the proper Early Warning System, inundation mapping and river routing studies, marking of danger marks and proper efficient and effective reservoir management been executed which were agreed upon in the above stated meetings been executed this incident could have been dealt effectively and the losses could have been minimized or totally avoided;

Whereas, the Clause no. 35 (1) stipulates as under:

(1) Every owner of a specified dam, in respect of each specified dam, shall,

(a) establish well designed hydro-meteorological network and an inflow forecasting system,

(b) establish an emergency flood warning system for the probable flood affected areas downstream of the dam;

(c) test or cause to be tested periodically the functioning of systems referred toin clauses (a) and (b);

(d) install such scientific and technical instruments which are invented or adopted from time to time for the purpose of ensuring the dam safety and the life and property of people downstream;

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(e) make available the information relating to maximum anticipated inflows and outflows including flood warning and an adverse impact of the same, if any, on persons and property towards the upstream or downstream of the dam, to the concerned district authorities and also make available the information in public domain; and

(f) render necessary assistance to the Authority in establishment and running of the early warning system for the exchange of real time hydrological and meteorological data and information related to the operation of reservoirs.

(2) Every owner of a specified dam, for each of its dam shall, carry out risk assessment studies at such interval as may be specified by the regulations and the first such study

a. shall be made within five years from the date of commencement of this Act.

Whereas, the Clause no. 36 stipulates as under:

(1) Every owner of a specified dam, in respect of each of specified dam, shall,—

(a) prepare emergency action plan before allowing the initial filling of the reservoir and thereafter update such plans at regular intervals;

(b) in respect of the dam which is constructed and filled before the commencement of this Act, prepare emergency action plan within five years from the date of commencement of this Act and thereafter update such plans at regular intervals as may be specified by the regulations.

(2) The emergency action plan referred to in sub-section (1) shall,—

(a) set out the procedures to be followed for the protection of persons and property upstream or downstream of the specified dam in the event of an actual or imminent dam failure or to mitigate the effects of the disaster;

(b) include therein,—

(i) the type of emergencies which are likely to occur in the operation of any reservoir;

(ii) identification of the likely catastrophic flood in the event of any dam failure, along with probable areas, population, structures and installations likely to be adversely affected due to flood water released from the reservoir;

(iii) warning procedures, inundation maps and advance preparations for handling efficiently and in the best possible manner the likely adverse situations especially to avoid loss of human life;

(iv) such other matters which may having regard to the geographical conditions, size of the dam and other relevant factors as may be necessary.

(3) The emergency action plan under this section shall be put into action as and when conditions arise which are hazardous or likely to be hazardous to a specified dam or potentially hazardous to public safety, infrastructure, other property or to the environment

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Directorate of Energy,
H.P., Shimla-171005

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(4) Every owner of the specified dam shall, while preparing and updating the emergency action plan, undertake a consultation process with all disaster management agencies and other Departments of the State entrusted with disaster management and relief in the area likely to be affected and owners of other dams in the immediate vicinity likely to be affected, so as to bring coordination and transparency and allay any unwarranted fear on dam safety issues.

Whereas, the Clause no. 37 stipulates as under:

"Without prejudice to the provisions of this Act or liability of the owner of the specified dam and other organizations and authorities under this Act, every owner, organisation and authority shall render necessary assistance, if so required by any authority under any law for the time being in force to meet or mitigate any disaster or emergency arising out of the specified dams."

Whereas, the Clause 41 (b) of the Dam Safety Act, 2021 stipulates as under:

"Whoever, without reasonable cause,—

(b) refuses to comply with any direction given by or on behalf of the Central Government or the State Government or the National Committee or the Authority or the State Committee or the State Dam Safety Organisation under this Act, shall be punishable with imprisonment for a term which may extend to one year or with fine, or with both, and if such obstruction or refusal to comply with directions results in loss of lives or imminent danger thereof, shall be punishable with imprisonment for a term which may extend to two years."

Since, you have failed to comply with the directions of the SDSO Himachal for installation/strengthening of Early Warning System in line with CWC Guidelines and the provisions of Dam Safety Act, 2021and managing sudden release of huge volume of water downstream. In line with the deliberation and decisions of the meetings as stated above you are hereby asked that why not this prolonged delay in execution and implementation of standard norms despite repeated directions given by the State authorities from time to time be considered as refusal and accordingly you have been called upon to Show Cause within 15 days of issue of this notice that why the State Govt. Himachal Pradesh should not take action against you in line with clause 41 (b) of the Dam Safety Act, 2021.

Chief Engineer (Energy),
Directorate of Energy
Govt. of Himachal Pradesh.

Chief Engineer (Head of Project)
Bhakra Beas Management Board (IW),
Talwara, Distt. Hoshiyarpur, Punjab-144216.
Email: cebdt@bbmb.nic.in,

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Public Information Officer
-cum- Sr. Executive Engineer,
Directorate of Energy,
H.P., Shimla-171005

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Copy of the above is forwarded to the following for kind information please:

1. The Sr. Private Secretary to the worthy Chief Secretary to the Government of Himachal Pradesh, Shimla-171002.
2. The Principal Secretary (Rev-DM) to the Government of Himachal Pradesh, Shimla-171002.
3. The Secretary (MPP & Power) to the Government of Himachal Pradesh, Shimla-171002.
4. The Chairman BBMB, Sector 19-B, Madhya Marg, Chandigarh- 160019.
5. The Director-cum Special Secretary (Rev-DM) to the Government of Himachal Pradesh, Shimla-171002.
6. The Member (Policy & Research), NDSA & Member Secretary NCDS, Dam Safety Design-II Directorate, Sewa Bhawan, R.K.Puram, New Delhi- 110066.
7. The Director, NDSA, Northan region, Chandigarh and Superintending Engineer(Co-ordination), Ministry of Jal Shakti, Department of Water Resources, River Development & Ganga Rejuvenation, CWC, Govt. of India/O/c CE, Indus Basin Organization (IBO) # 617, Block 4 , 6th Floor, Kendriya Sadan, Sector 9A Chandigarh (UT).
8. The Secretary,Bhakra Beas Management Board,Sector 19-B, Madhya Marg, Chandigarh-160019.

Chief Engineer (Energy),
Directorate of Energy
Govt. of Himachal Pradesh.

31.1.25

Public Information Officer
-cum- Sr. Executive Engineer
Directorate of Energy.
H.P., Shimla-171005

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DIRECTORATE OF ENERGY
GOVERNMENT OF HIMACHAL PRADESH
SHANTI BHAWAN PHASE-III SECTOR-6 NEW SHIMLA-9
Tel No: 0177-2673551, Fax No: 2673553, Email: dir.doehp@nic.in

No. HPDOE/CE (Energy)/SDSO/2023- 5642-56-19 Dated 22/8/23.

SHOW CAUSE NOTICE

Whereas, consequent upon the sudden water release incident from Larji Dam, which caused loss of lives in the year 2014, the CWC issued the comprehensive guidelines on dated 01.10.2015 for release of water, for strengthening of alarm and warning system, alerting the population downstream. Accordingly, Directorate of Energy, GoHP issued the instructions vide office letter dated 31.10.2015 to all the commissioned Hydro electric projects for strict compliance of the same, subsequent reminders were issued later vide DoE letter dated 26.06.2018, 03.08.2018, 12.06.2019.

Whereas, Chief Secretary to the Government of Himachal Pradesh vide letter No. Rev. (DMC) (F)4-3/2019- Dam Safety dated 18.07.2019 directed the dam authorities to follow the guidelines of CWC/NDMA dated 01.10.2015 for release of water, for strengthening of alarm and warning system, alerting the population downstream and report compliance to the State Executive Committee established under the Disaster Management Act, 2005;

Whereas, DoE issued the instructions to BBMB for strict compliance and implementation of Early Warning Systems in line with CWC guidelines vide letter dated 18.03.2020 and same instructions were issued to NHPC & HPPCL vide letter dated 18.07.2020.

Whereas, DoE again directed all the dam authorities for strengthening the Early Warning System in line with CWC guidelines vide letter dated 29.07.2020 and 25.08.2020. However, only few of the dam authorities submitted compliances which were also partial only.

Whereas, Government of India enacted Dam Safety Act, 2021 for surveillance, inspection, operation and maintenance of the specified dam for prevention of dam failure related disasters and to provide for institutional mechanism to ensure their safe functioning, which came into force w.e.f 30.12.2021;

31/1/25

Public Information Officer
-cum- Sr. Executive Engineer,
Directorate of Energy,
H.P., Shimla-171005

Information Supplied to Sh Sumit Mahar
Under RTI Act, 2005.

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Whereas,in pursuance to the provision contained in Dam Safety Act, 2021 enacted by Government of India, the Government of Himachal Pradesh vide notification no. MPP-F010/6/2022 dated 24.05.2022 constituted the State Committee on Dam Safety (SCDS) and State Dam Safety Organization (SDSO) and both have come into force with effect from 24th May, 2022;

Whereas, avirtual meeting was conducted by the SDSO-HPon 20.06.2022 with all the existing and under-construction specified dam authorities and they were introduced about the main aspects of Dam Safety Act, 2021 and in particular about the functions & responsibilities of dam authorities/owners along with elaboration on penalty provisions under the Act. The directions were imparted to all the specified dam authorities to upgrade their functioning asspecified in the Dam Safety Act on the part of Dam Authorities on priority;

Whereas, in pursuance to Clause- 13 (1) of the Dam Safety Act, 2021, 1st meeting of the State Committee on Dam Safety Himachal Pradesh was conducted on 18.11.2022 wherein review of all the 23 commissioned specified dams in the state of Himachal Pradesh w.r.t to safety aspects was conducted and directions were given to all the dam authorities for adoption, implementations& compliance of all provisions of Dam Safety Act, 2021.

Whereas,2nd meeting of the State Committee on Dam Safety Himachal Pradesh was conducted on 30.05.2023 in presence of the specified dam authorities, wherein directions were imparted to all the specified dam authorities to follow proper SoPs during the monsoon season and to have full preparedness for the monsoon season. Further directions were imparted to all the dams to establish the 24x7 communication system like satellite phones and hotline communication system to have effective communication during the time of any eventuality/hazard, also to upgrade the Early warning Systems as per required norms and to complete the balance up gradation on other remaining safety, monitoring aspects ;

Whereas,to review the preparedness for the monsoon season w.r.t installation/strengthening of Early Warning System (EWS) in line with CWC Guidelines and the provisions of Dam Safety Act, 2021, a meeting was conducted by State Disaster Management AuthorityHimachal Pradesh on 28.06.2023 with all the specified dam authoritiesand it was found that present EWSinmost of the damswas not in line with CWC Guidelines except for Nathpa dam and Koldam. Keeping in view this serious concern,directions were given to all thespecified dam authoritieswho have not complied with the directions of the Govt. for installation of EWS as per CWC guidelines to ensure installation of same by 15.08.2023. Directions were also given to follow proper SOPs before releasing water and to be in continuous touch with DDMA, SDMA, PRIs and other stakeholders during release of water from the dams;

Whereas, unprecedented rainfall occurred in the State in the month of July, 2023 particularly on 9th, 10th and 11th July, the heavy outflow, huge volume of water to the tune of approx. 1100 cumecs was released from Parbati-III Dam suddenly, due to which not only many lives were put on threat but heavy damage was caused in the downstream and portion of the Sainj town got washed away and had the proper Early Warning System, inundation mapping and river routing studies,marking of danger marks which were asked to be done been executed and proper reservoir water management been taken

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Public Information Officer
-cum- Sr. Executive Engineer,
Directorate of Energy,
H.P., Shimla-171005

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up, this incident could have been dealt effectively and the losses could have been minimized or totally avoided;

Whereas, the information w.r.t inflow, outflow, reservoir and gate operation w.e.f 07.07.2023 to 12.07.2023 was asked by SDSO Himachal vide letter dated 17.07.2023 within three days. The requisite information was submitted by you on 07.08.2023after a considerable gap, further in past as well the continuous ignoring the regular uploading of daily Dam information on SDMA web portal shows your non-seriousness towards the adherence of the directions of the SDSO Himachal and violation of Clause No. 22 Section-I,Dam Safety Act;

Whereas, a virtual meeting was conducted by the SDSO Himachal on 20.07.2023 with all the specified dam authorities wherein directions were imparted again to improve EWS system in line with CWC guidelines and Dam Safety Act, 2021 and to install and implement the same by 15th August, 2023;

Whereas, the Clause no. 35 (1) stipulates as under:

(1) Every owner of a specified dam, in respect of each specified dam, shall,—

(a) establish well designed hydro-meteorological network and an inflow forecasting system;

(b) establish an emergency flood warning system for the probable flood affected areas downstream of the dam;

(c) test or cause to be tested periodically the functioning of systems referred toin clauses (a) and (b);

(d) install such scientific and technical instruments which are invented or adopted from time to time for the purpose of ensuring the dam safety and the life and property of people downstream;

(e) make available the information relating to maximum anticipated inflows and outflows including flood warning and an adverse impact of the same, if any, on persons and property towards the upstream or downstream of the dam, to the concerned district authorities and also make available the information in public domain; and

(f) render necessary assistance to the Authority in establishment and running of the early warning system for the exchange of real time hydrological and meteorological data and information related to the operation of reservoirs.

(2) Every owner of a specified dam, for each of its dam shall, carry out risk assessment studies at such interval as may be specified by the regulations and the first such study

a. shall be made within five years from the date of commencement of this Act.

Whereas, the Clause no. 36 stipulates as under:

(1) Every owner of a specified dam, in respect of each of specified dam, shall,—

(a) prepare emergency action plan before allowing the initial filling of the reservoir and thereafter update such plans at regular intervals;

(b) in respect of the dam which is constructed and filled before the commencement of this Act, prepare emergency action plan within five years from the date of commencement of this

31/1/25

Public Information Officer
-cum- Sr. Executive Engineer,
Directorate of Energy,
H.P., Shimla-171005

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Act and thereafter update such plans at regular intervals as may be specified by the regulations.

(2) The emergency action plan referred to in sub-section (1) shall,—

(a) set out the procedures to be followed for the protection of persons and property upstream or downstream of the specified dam in the event of an actual or imminent dam failure or to mitigate the effects of the disaster;

(b) include therein,—

(i) the type of emergencies which are likely to occur in the operation of any reservoir;

(ii) identification of the likely catastrophic flood in the event of any dam failure, along with probable areas, population, structures and installations likely to be adversely affected due to flood water released from the reservoir;

(iii) warning procedures, inundation maps and advance preparations for handling efficiently and in the best possible manner the likely adverse situations especially to avoid loss of human life;

(iv) such other matters which may having regard to the geographical conditions, size of the dam and other relevant factors as may be necessary.

(3) The emergency action plan under this section shall be put into action as and when conditions arise which are hazardous or likely to be hazardous to a specified dam or potentially hazardous to public safety, infrastructure, other property or to the environment.

(4) Every owner of the specified dam shall, while preparing and updating the emergency action plan, undertake a consultation process with all disaster management agencies and other Departments of the State entrusted with disaster management and relief in the area likely to be affected and owners of other dams in the immediate vicinity likely to be affected, so as to bring coordination and transparency and allay any unwarranted fear on dam safety issues.

Whereas, the Clause no. 37 stipulates as under:

"Without prejudice to the provisions of this Act or liability of the owner of the specified dam and other organizations and authorities under this Act, every owner, organisation and authority shall render necessary assistance, if so required by any authority under any law for the time being in force to meet or mitigate any disaster or emergency arising out of the specified dams."

Whereas, the Clause 41 (b) of the Dam Safety Act, 2021 stipulates as under:

"Whoever, without reasonable cause,—

(b) refuses to comply with any direction given by or on behalf of the Central Government or the State Government or the National Committee or the Authority or the State Committee or the State Dam Safety Organisation under this Act, shall be punishable with imprisonment for a term which may extend to one year or with fine, or with both, and if such obstruction or refusal to comply with

31/1/25

Public Information Officer
-cum- Sr. Executive Engineer,
Directorate of Energy,
H.P., Shimla-171005

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directions results in loss of lives or imminent danger thereof, shall be punishable with imprisonment for a term which may extend to two years."

Since, you have failed to comply with the directions of the State Govt. of Himachal Pradesh, SCDS and SDSO Himachal Pradesh for installation/strengthening of Early Warning System in line with CWC Guidelines and the provisions of Dam Safety Act, 2021and sudden release of huge volume of water downstream, taking up updated and latest dam break analysis for having the inundation mapping and river routing studies, marking of danger marks.You are hereby asked that why not this prolonged delay in execution and implementation of standard norms and repeated directions given by the State authorities from time to time be considered as refusal and accordingly you have beencalled upon to Show Cause within 15 days of issue of this notice that why the State Govt. Himachal Pradesh should not take action against you in line with clause 41 (b) of the Dam Safety Act, 2021.

Chief Engineer (Energy),
Directorate of Energy,
Govt. of Himachal Pradesh.

The General Manager (Head of the Project),
Parbati Stage-III, HEP, NHPC Ltd.,
Behali, P.O. Larji, Distt. Kullu (HP)-175122
Email- hop-parbati-iii@nhpc.nic.in, hop-parbati3@nhpc.in

Copy of the above is forwarded to the following for kind information please:

1. The Sr. Private Secretary to the worthy Chief Secretary to the Government of Himachal Pradesh, Shimla-171002.
2. The Chairman –cum-Managing Director,NHPC Office Complex, Sector-33, Faridabad-121003.
3. The Principal Secretary (Rev-DM) to the Government of Himachal Pradesh, Shimla-171002.
4. The Secretary (MPP & Power) to the Government of Himachal Pradesh, Shimla-171002.
5. The Director-cum Special Secretary (Rev-DM) to the Government of Himachal Pradesh, Shimla-171002.
6. The Member (Policy & Research), NDSA & Member Secretary NCDS, Dam Safety Design-II Directorate, Sewa Bhawan, R.K.Puram, New Delhi- 110066.
7. The Director, NDSA, Northan region, Chandigarh and Superintending Engineer(Co-ordination), Ministry of Jal Shakti, Department of Water Resources, River Development & Ganga Rejuvenation, CWC, Govt. of India/O/c CE, Indus Basin Organization (IBO) # 617, Block 4 , 6th Floor, Kendriya Sadan, Sector 9A Chandigarh (UT).

Chief Engineer (Energy),
Directorate of Energy
Govt. of Himachal Pradesh.

31/1/25

Public Information Officer
-cum- Sr. Executive Engineer,
Directorate of Energy,
H.P., Shimla-171005

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THROUGH REGISTERED POST

DIRECTORATE OF ENERGY
GOVERNMENT OF HIMACHAL PRADESH
SHANTI BHAWAN PHASE-III SECTOR-6 NEW SHIMLA-9
Tel No: 0177-2673551, Fax No: 2673553, Email: dir.doehp@nic.in

No. HPDOE/CE (Energy)/SDSO/2023- 5592-98 **Dated** 22/08/2023

SHOW CAUSE NOTICE

WHEREAS, the overtopping incident occurred on 24th August, 2013 in Malana-II Dam. A panel of experts committee was constituted by GoHP which submitted its report vide letter no. HPDOE/PF/Inspection Malana-II-1-4 dated 30.09.2014. It was reported that on 24th August, 2013 both units which were under operation with 16 cumecs discharge in the river tripped suddenly and due to non-operation of the radial gates the water level in the reservoir started rising due to this sudden tripping of both the generating units. Gates could not operate due to sloughing/collapse of the silt deposited in front of the radial gates. Water which was initially at MDDL, suddenly started rising &resulted in overtopping of the concrete dam and same has happened again;

WHEREAS, as per finding of above said report an additional spillway was recommended by the expert committee and proposal was asked from IPP vide DoE office letter no.HPDoE/CE/Authority/Safety/Malana-II HEP/2014-6392-93 dated 10.10.2014;

WHEREAS, a proposal for construction of additional spillway by converting Non-Overflow Blocks into spillway on right bank of Malana-II dam was submitted by the project developer vide letter dated 13th May, 2016 and same was allowed to be implemented vide DoE letter no. HPDoE/CE/Authority/Safety/Malana-II HEP/2014-1912-13 dated 01.06.2016 subject to fulfillment of the following conditions:

- ❖ The various important features of the proposed spillway needs to be vetted/ optimized through Model studies for hydraulic efficiencies w.r.t. discharge capability, efficient energy dissipation without any erosion at toe & right bank having PWD road for safety of the dam in particular before its implementation.
- ❖ Due precaution in construction as per specification & detailed design engineering needs to be carried out.
- ❖ All the codal formalities, if required, w.r.t. implementation from concerned agencies i.e. disposal of generated muck, provision of alternate road/ passage to village located on bank right, safety of downstream HEPS & habitats besides no interference with the levels of any upstream HEPs needs to be followed/ ensured.

Subsequently the proposal (DPR) was submitted by you vide letter dated 10.11.2017 and final go ahead to this proposal was given by DoE vide letter no. HPDOE/CE/Authority/Malana-II/2018-8760 dated 02.02.2018;

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Public Information Officer
-cum- Sr. Executive Engineer,
Directorate of Energy,
H.P., Shimla-171005

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WHEREAS, the strong directions were again imparted through reminders and further during the project inspection of November, 2021 and subsequent State Committee on Dam Safety (SCDS) meetings held on November, 2022 & May, 2023 for immediately taking up the construction work of auxiliary spillway;

WHEREAS, at last the construction schedule was submitted by you, however the observations raised on that were also not complied to.

WHEREAS, despite the repeated directions and instructions given the construction of auxiliary spillway could not be taken up and again the overtopping incident took place again on 24.07.2023 which lead to the situation of probable dam breach and as such the lives and stocks were put into danger and had the in time measures been taken at your end this incident could have been totally avoided;

WHEREAS, a notice was served to you by the Head SCDS-cum- Chief Engineer (Energy), Directorate of Energy vide letter dated 25.07.2023 seeking the explanation that why not an action as per clause 41 of Dam Safety Act, 2021 be initiated against you and further directed to take proper measures to open the gates and restore the Dam Operation back to safe parameters and maintain a proper co-ordination with District Administration and all stakeholders to ensure the, safety of lives and stocks downstream;

WHEREAS, a GoHP team headed by Chief Engineer (Energy)-cum-Head SCDS Himachal visited the dam site of Malana-II dam on 30.07.2023 and directions were imparted to take immediate measures w.r.t. safeguarding the lives and stock downstream and opening of gate for normalizing the situation and further to submit the daily progress and compliance to SDSO Himachal as well as to DDMA Kullu vide letter dated 31.07.2023;

WHEREAS, the Clause 41 (b) of the Dam Safety Act, 2021 stipulates as under:

"Whoever, without reasonable cause,—

(b) refuses to comply with any direction given by or on behalf of the Central Government or the State Government or the National Committee or the Authority or the State Committee or the State Dam Safety Organisation under this Act, shall be punishable with imprisonment for a term which may extend to one year or with fine, or with both, and if such obstruction or refusal to comply with directions results in loss of lives or imminent danger thereof, shall be punishable with imprisonment for a term which may extend to two years."

Since, you have failed to comply with the time and again directions of the State Authorities and SDSO Himachal for construction of auxiliary spillway, putting lives and stocks at threat, not uttering to the notices of Directorate of Energy and taking the speedy remedial measures for opening of the gates in time, you are hereby asked that why not this prolonged delay in execution of auxiliary spillway and non-implementation of standard norms and repeatedly ignoring directions given by the State authorities from time to time be considered as refusal and accordingly you have been called upon to Show Cause within 15 days of issue of this notice that why the State Govt.

31/1/25

Public Information Officer
-cum- Sr. Executive Engineer,
Directorate of Energy,
H.P., Shimla-171005

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Himachal Pradesh should not take action against you in line with clause 41 (b) of the Dam Safety Act, 2021.

Chief Engineer (Energy),
Directorate of Energy
Govt. of Himachal Pradesh.

M/s Everest Power Pvt Ltd,
Malana-II, HEP, First House, Bhumian Estate,
NavBahar, Bhumian Road, Chotta Shimla-171002

Copy of the above is forwarded to the following for kind information please:

1. The Sr. Private Secretary to the worthy Chief Secretary to the Government of Himachal Pradesh, Shimla-171002.
2. The Principal Secretary (Rev-DM) to the Government of Himachal Pradesh, Shimla-171002.
3. The Secretary (MPP & Power) to the Government of Himachal Pradesh, Shimla-171002.
4. The Director-cum Special Secretary (Rev-DM) to the Government of Himachal Pradesh, Shimla-171002.
5. The Member (Policy & Research), NDSA & Member Secretary NCDS, Dam Safety Design-II Directorate, Sewa Bhawan, R.K.Puram, New Delhi- 110066.
6. The Director, NDSA, Northan region, Chandigarh and Superintending Engineer(Co-ordination), Ministry of Jal Shakti, Department of Water Resources, River Development & Ganga Rejuvenation, CWC, Govt. of India/O/c CE, Indus Basin Organization (IBO) # 617, Block 4 , 6th Floor, Kendriya Sadan, Sector 9A Chandigarh (UT).

Chief Engineer (Energy),
Directorate of Energy
Govt. of Himachal Pradesh.

31/1/25

Public Information Officer
-cum- Sr. Executive Engineer.
Directorate of Energy.
H.P., Shimla-171005

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Under RTI Act, 2005.

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Office Order

In line with the direction of GoHP following committee is here by constituted to carry out the detailed inspection of Pong, Pandoh and Parbati-III dams w.r.t. sudden releases and also Malana-II dam w.r.t. overtopping incident.

External Members

1.	Sh. R.K. Gupta, (Ex. Chairman CWC)	Head
2.	Sh. Harkesh Kumar, (Ex. Director CWC)	Member
3.	Goverdhan Prasad (Director Hydrology(N) Dte. HSO Unit CWC)	Member
4.	Sh. R.P.S. Verma, (Director NDSA Northern India , CWC- Chandigarh)	Member

Govt. of Himachal Pradesh

1.	Sh. D.P. Gupta, Chief Engineer (Energy), GoHP-cum-(Head SCDS-HP)	Member
2.	Sh. Deepak Jasrotia, Dy. Chief Engineer, DoE, GoHP-cum-(Head SDSO-HP)	Member Secretary
3.	Sh. Raj Kumar, AEE, DoE, GoHP	Member

Concerned Distt. Administration

ADC/ADM of concerned Distt. (Kangra, Mandi and Kullu for their respective Distt.)

One member (Director level officer from CEA) may join the committee as per availability.

Note:

1. The committee will investigate comprehensively the cause of sudden release happened from these dams which resulted heavy damages downstream.
2. The committee will investigate efficiency of EWS implemented and how effective these were, EWS not implemented Dam Break Analysis, Hydraulic Routing Study, Inundation Mapping carried out, if carried out how effectively it was executed.
3. Investigation of overtopping of Malana-II dam, sudden closure of gates and the action taken by dam authority in this regard and ineffectiveness if any on the part of dam authority which lead to this incident 2nd time.

31/1/25

Public Information Officer
-cum- Sr. Executive Engineer,
Directorate of Energy,
H.P., Shimla-171005

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4. The committee will also review the reservoir and gate operation as executed by the Dam authorities during this heavy discharge release.
5. The committee on its findings, if found will define and indicate deficiencies observed on the part of Dam authorities and will clearly suggested the action to be taken in this regard.
6. On broader aspects committee will also suggest measures which should have been executed by all dam authorities as the lesson learnt from such incidents.
7. The committee will submit its report to the GoHP at the earliest.

By order

Harikesh Meena, IAS,
Director (Energy),
GoHP, Shimla-09.

No. HPDoE/CE (Energy)/SDSO -HP/2023-7108-25 **Dated:-** 28/09/2023

Copy to:

1. The Sr. Private Secretary to the worthy Chief Secretary to the Government of Himachal Pradesh, Shimla-171002.
2. The Principal Secretary (Rev-DM) to the Government of Himachal Pradesh, Shimla-171002.
3. The Secretary (MPP & Power) to the Government of Himachal Pradesh, Shimla-171002.
4. The Chairman –cum-Managing Director, NHPC Office Complex, Sector-33, Faridabad-121003.
5. The Chairman BBMB, Sector 19-B, Madhya Marg, Chandigarh- 160019.
6. The Director-cum Special Secretary (Rev-DM) to the Government of Himachal Pradesh, Shimla-171002.
7. The Member (Policy & Research), NDSA & Member Secretary NCDS, Dam Safety Design-II Directorate, Sewa Bhawan, R.K.Puram, New Delhi- 110066.
8. The Deputy Commissioner, Kullu, Distt. Kullu, Dhalpur, Near DC Office, Dhalpur, Kullu, Himachal Pradesh 175101.
9. The Deputy Commissioner, Mandi, Distt. Mandi, Bangala Muhalla, Bhagwan Muhalla, Samkhetar, Mandi, Himachal Pradesh 175001.
10. The Deputy Commissioner, Kangra, Distt. Kangra, Kachahri, Dharamshala, Himachal Pradesh-176215.
11. The Director, NDSA, Northern region, Block 4, 6th Floor, Kendriya Sadan, Sector 9A Chandigarh (UT).
12. All the respected committee members please.
13. M/s Everest Power Pvt. Ltd, Malana-II, HEP, First House, Bhumian Estate, NavBahar Bhumian Road, Chotta Shimla-171002

31/1/25

Public Information Officer
-cum- Sr. Executive Engineer,
Directorate of Energy,
H.P., Shimla-171005

Harikesh Meena, IAS,
Director (Energy),
GoHP, Shimla-09

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Under RTI Act, 2005.

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कार्यालय मुख्य अभियन्ता, बीएसएल परियोजना, बी.बी.एम.बी., सुन्दर-नगर।
Tel. & Fax No. 01907-262371
E-mail ID : cebsl@bbmb.nic.in

क्रमांक 18151-55 / बीएसएल / एचआरडी / 1557 / 2010 दिनांक 22/11/23.

सेवा में

मुख्य अभियन्ता (ऊर्जा)
ऊर्जा निदेशालय,
हि0प्र0 सरकार शांति भवन, फेज-3,
सेक्टर-6, नया शिमला-9।

विषय – SHOW CAUSE NOTICE.

सदर्भ – आपका कार्यालय का पत्र क्रमांक HPDOE-(1-1)(Energy)/SDSC/2023-5620-5628 दिनांक 22.08.2023

उपरोक्त विषय एव सदर्भाधीन पत्र के सम्बन्ध में सूचित कर लेख है कि मांगा गया उत्तर बिन्दुसार निमन प्रकार से है –

1. Dam Safety Act, 2021 में दिए गए सुझावो अनुसार बीएसएल परियोजना का Emergency Action Plan पूर्व में ही तैयार किया जा चुका है। जिसकी प्रति आपके कार्यालय को भी प्रेषित कर दी गई है।

2. पण्डोह बाध से आमतौर पर पर्यावरण प्रवाह किसी भी गेट द्वारा छोडा जाता है। कंजर्वेन्ट एरिया में जब पानी 9000 क्यूसिक से बढने लगता है, और रिसलवे से पहली बार पर्यावरण प्रवाह से ज्यादा पानी छोडा जाता है तो अग्रिम सूचना Civil Adminstartion एव डाउन स्ट्रीम में अन्य विभागो को दी जाती है कि पानी का जलस्तर बढने के कारण किसी भी वक्त पण्डोह बाध रिसलवे से कभी भी पानी छोडा जा सकता है।

इसके अतिरिक्त मानसून सीजन में जब ज्यादा पानी की आमद होती है तो पण्डोह पुलिस चौकी, मण्डी पुलिस चौकी, आपदा प्रबन्धन मण्डी एव दण्डाधिकारी मण्डी एव आपदा प्रबन्धन कागडा को दूरभाष द्वारा पूर्व सूचना दी जाती है तथा इसके अलावा बीबीएमबी के वाहन द्वारा पण्डोह बाध से भ्यूली मण्डी तक Warning Vehicle के द्वारा भी सूचना दी जाती है। Gate Operation उपमण्डल कार्यालय द्वारा बाध के संचालन सम्बन्धित समस्त डाटा डी0डी0एम0ए0 मण्डी और एस0डी0एस0ओ0 हि0 प्र0 का प्रति घण्टा का डाटा अपडेट किया जाता है। इसके अतिरिक्त राज्य आपदा प्रबन्धन प्राधिकार हि0 प्र0 को प्रतिवर्ष जनवरी से दिसम्बर प्रतिदिन तीन समय 9.00 AM 2:00 PM एव 07:00 PM का डाटा उपमण्डल अधिकारी कन्ट्रोल रूम पण्डोह द्वारा भेजा जाता है।

वर्तमान में पण्डोह बाध से अतिरिक्त पानी छोडने से पहले स्थानीय लोगो को सर्तक करने के लिये SOP/ कार्य प्रणाली के अनुसार तीन जगह पर सायरन बजाया जाता है जो कि 6 कि0मी0 तक एरिया को कवर करता है। निम्नलिखित जगह पर सायरन लगाए गए है –

1. पण्डोह बाध,
2. वर्कशॉप गेट पण्डोह बाजार
3. बीबीएमबी कलोनी ।

Following Procedure is being followed before opening of Spillway Gates.

1. Inform at the BBMB fire station 10 minutes before the opening of the gate so that simultaneously siren can be activated at Control Room Pandoh, Workshop Gate, Pandoh Bazar and BBMB Fire Station.
2. Immediate opening after 5cm of 1 No. gate would be 10cm, after that 25cm after that according to inflow in the catchment area.
3. Two consecutive openings must have an interval of 20 minutes.

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Information Supplied to Sh Sumit Malar
Under RTI Act, 2005.

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राज्य सरकार, सी डब्ल्यु सी के दिशानिर्देश और Dam Safety Act 2021 के प्रावधानो के अनुरूप इस कार्यालय द्वारा Supply, Installation & Commissioning of gate sensors with suitable alert system downstream of Pandoh dam Under DRIP-II ~ 45 करोड का प्रस्ताव बनाकर इस कार्यालय के पत्र क्रमांक 2671–74/बीएसएल/एचआरडी/887/87 दिनांक 23.02.2023 के द्वारा मुख्य अभियन्ता बांध सुरक्षा, बीबीएमबी, नंगल कार्यालय को स्वीकृति हेतु भेजा गया था। तथा उनके कार्यालय के पत्र क्रमांक 15672–74/बीबीएमबी/3–बीडी/DRIP-II/Memo-1 दिनांक 27–7–2023 के द्वारा सचिव, बीबीएमबी, चण्डीगढ कार्यालय को स्वीकृति हेतु भेजा गया है। जो कि अभी प्रक्रियाधीन है। इस प्रस्ताव मे पण्डोह बाध के डाउनस्ट्रीम मे 06न0 कन्ट्रोल स्टेशन स्थापित किए जाने है Pandoh Dam Site, Samla Complex, Pandoh Town, Jaral Colony, Mandi-1 near Gurudwara, & Mandi-2 near Suketi Khad.

दिनांक 05.09.2023 को उर्जा निदेशालय शिमला की अध्यक्षता म प्रारम्भिक चेतावनी प्रणाली की स्थापना/मजबूतीकरण पर एक समीक्षा बैठक आयोजित की गई। बैठक के अनुसार क्षेत्र की आवश्यकता को मध्यनजर रखते हुए एव आपके कार्यालय से दिए गए दिशानिर्देशो पर विचार करते हुए इस कार्यालय द्वारा Providing & Installation of Automatic Operation of hooter with Public Assist System & Programmable voice massage at Pandoh रू 43.55 लाख का मीमो बनाकर इस कार्यालय के पत्रांक 16714–15/बीएसएल/टी–3 दिनांक 25/10/2023 द्वारा बोर्ड कार्यालय को स्वीकृति हेतु भेजा गया है। सक्षम स्तर से स्वीकृति प्राप्त होते ही उक्त System शीघ्र ही स्थापित कर दिया जाएगा।

इसके अतिरिक्त सलापड मण्डल बीबीएमबी सलापड कार्यालय के अधीन परियोजना के पेन स्टाक एवं वाई वास Chute पर पूर्व चेतावनी प्रणाली पहले से ही स्थापित है और सही तरीके से कार्य कर रही हैं एव इसकी प्राथमिकता के आधार पर पालना की जा रही हैं।

इस सम्बन्ध मे सूचित कर लेख है कि State dam Safety org. Himachal द्वारा मागा गया डाटा दिनांक 07.07.2023 से 12.07.2023 तक वरि0 कार्यकारी अभियन्ता विद्युत एव यात्रिक मण्डल, बीबीएमबी पण्डोह कार्यालय के पत्रांक 2052–53/बाध सुरक्षा दिनांक 19.07.2023 के द्वारा परिमण्डल न0–1 को भेजा गया डाटा उनके कार्यालय के पत्रांक 10229–30/डब्ल्यू दिनांक 27.07.2023 के द्वारा इस कार्यालय को भेज दिया गया था तथा इसे इस कार्यालय के पत्रांक 12297–98/बीएसएल/एचआरडी/887/87 दिनांक 04.08.2023 द्वारा उप मुख्य अभियन्ता, उर्जा निदेशालय हि0प्र0 सरकार नया शिमला को प्रेषित कर दिया गया था।

अतः यह आपके कार्यालय को सूचना एव आगामी आवश्यक कार्यवाही हेतु प्रेषित है।

उप मुख्य अभियन्ता/मुख्यालय
कृते: मुख्य अभियन्ता/बीएसएल
बीबीएमबी, सुन्दरनगर।
24/11/23

प्रतिलिपि:–

1. मुख्य अभियन्ता, बाध सुरक्षा, बी बी एम बी नगल को उनके कार्यालय के पत्रांक 2497-99/NGL/DS/05/A/07 DS दिनांक 21.09.2023 के संदर्भ मे सूचनार्थ।
2. सचिव, बी.बी.एम.बी चण्डीगढ को उनके कार्यालय के पत्रांक 29738–39/बी–1618 डीएचडी दिनांक 20.10.2023 के संदर्भ में सूचनार्थ।
3. उप मुख्य अभियन्ता, परिमण्डल न0–2, को उनके पत्रांक 8496/2 डब्ल्यू दिनांक 15.09.2023 के संदर्भ में सूचनार्थ।
4. अधीक्षण अभियन्ता, परिमण्डल न0–1, को उनके पत्रांक 15529–31/10–डब्ल्यू दिनांक 01.11.2023 के संदर्भ में सूचनार्थ।

31/11/23

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Information supplied to sh Sumit mahar
Under RTI Act, 2005.

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कार्यालय मुख्य अभियन्ता/ब्यास बाँध,
बीबीएमबी, तलवाड़ा टाऊनशिप -144216
दूरभाष नं० 01883-237131 फैक्स 01883-237233

क्रमांक: 12 803-05 /241-डब्ल्यू दिनांक: 13/10/2023

सेवा में

मुख्य अभियन्ता,
ऊर्जा (ऊर्जा)निदेशालय
हि.प्र. शिमला ।

विषय: SHOW CAUSE NOTICE

सन्दर्भ: आपके कार्यालय का पत्र क्रमांक HPDOE/CE/(Energy)/SDSO/2023/5602-5611 दिनांक. 22/08/2023

उपरोक्त संदर्भित पत्र के संबंध में लेख इस प्रकार से है कि ब्यास बांध के स्पिलवे से दिनांक 16.07.2023 को 4377 Cs एवं पावर हाउस से 22300 Cs पानी 4:00pm बजे छोड़ा गया था और दिनांक 14/08/2023 को ब्यास बांध के Spillway एवं पावर हाउस से 25000 Cs पानी 8.00am बजे को पानी छोड़े जाने के संबंध में वांछित सूचना निम्नलिखित अनुसार है :

पौंग बांध हिमाचल प्रदेश के जिला कांगड़ा में ब्यास नदी पर स्थित है । पौंग बांध की Downstream से लगभग 5.0 किलोमीटर की दूरी पर Shah Nehar Barrage स्थित है । ब्यास बांध के स्पिलवे एवं पावर हाउस द्वारा छोड़े जाने वाला पानी Shah Nehar Barrage में Accumulate किया जाता है, Mukerian Hydel Channel एवं Shah Nehar में जल वितरण इसी बैराज के माध्यम से किया जाता है । उल्लेखनीय है कि Mukerian Hydel Channel एवं Shah Nehar Barrage का रखरखाव एवं रेगुलेशन का कार्य पंजाब जल संसाधन विभाग द्वारा किया जाता है जबकि शाह नहर का रखरखाव हिमाचल प्रदेश के संबंधित विभाग द्वारा किया जाता है । Shah Nehar Barrage में यदि जलस्तर बढ़ता है तो उक्त संबंधी रेगुलेशन एवं पानी Shah Nehar Barrage की Downstream से ब्यास दरिया में छोड़ने का कार्य पंजाब जल संसाधन विभाग द्वारा ही किया जाता है | Shah Nehar Barrage की Downstream पर ब्यास दरिया के रखरखाव का कार्य लगभग 03 किलोमीटर की दूरी तक पंजाब इरीगेशन विभाग द्वारा किया जाता है व इस उपरांत ब्यास दरिया हिमाचल राज्य से गुजरता है, जिसका रखरखाव राज्य के संबंधित विभाग द्वारा ही किया जाता है । Shah Nehar Barrage की Downstream पर ब्यास दरिया का क्षेत्र एवं गाँव मिआनी , बदुखर, मिलवा, ठाकुरद्वारा, मंण्ड बहदपुर, गंधरा, अर्नी विश्वविद्यालय बी.बी.एम.बी. विभाग के अधिकार क्षेत्र से बाहर है।

उलेखनीय है कि दिनांक 16.07.2023 को ब्यास बांध के Spillway 4377 Cs एवं पावर हाउस से 22300 Cs पानी शाम 4:00 बजे छोड़ा गया था | उलेखनीय है की बीबीएमबी के Water Regulation cell द्वारा हिमाचल प्रदेश एवं पंजाब के Civil authorities के साथ साथ सिंचाई विंग के संबंधित अधिकारियों को 24 घंटे पूर्व सूचना देने के बाद ही बांध के स्पिलवे से पानी छोड़ा गया था । यहां यह उल्लेख करना उचित है कि पौंग बांध से अतिरिक्त पानी छोड़े जाने की संभावना के बारे में अग्रिम सूचना एस.डी.ई. के माध्यम से डी.सी कांगड़ा को भी दी गई थी ।

जल विनियमन कार्यालय पत्र क्रमांक. 1103-15/एफडब्ल्यू-2023 दिनांक 11-07-2023 ब्यास बांध के शीर्ष पर स्थित पुलिस वायरलेस स्टेशन के माध्यम से छोड़े जाने वाले पानी की मात्रा के बारे में एस.डी.ई., जल विनियमन कार्यालय के पत्र संख्या के माध्यम से नागरिक अधिकारियों को पहले ही बता दिया गया था। 46-58/FW-2023 दिनांक 15-07-2023 एवं पत्र क्रमांक. कार्यः 104-116/FW-2023 दिनांक 16-07-2023 । निदेशक विनियमन द्वारा बाढ़ चेतावनी पत्र संख्या 731- 85/274/बीबीएमबी/रजि दिनांक 05/05/2023 को हिमाचल प्रदेश और पंजाब के सभी संबंधित जिला प्रशासन प्रमुखों को ब्यास नदी में उच्च बाढ़ उत्पन्न होने की संभावना के बारे में सूचित करने और लोगों और संपत्ति की सुरक्षा के लिए आवश्यक उपाय करने के लिए काफी समय पहले ही लिखा जा चुका था ।

31/10/23

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Information Supplied to Sh Sumit Mahar
Under RTI Act, 2005.

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उपरोक्त सभी पत्र पानी छोड़े जाने से काफी पहले ही जारी किये गये थे। प्रोटोकॉल के अनुसार व्यास बांध प्रशासन द्वारा बांध के निचले हिस्से में स्थित सथाना, रे खास आदि गांवों में उचित घोषणा की जा रही है।

इस संबंध में अतिरिक्त जानकारी गांवों के सरपंचों को भी दी जाती है, जिसका दस्तावेजी रिकॉर्ड इस विभाग के पास उपलब्ध है । नागरिक प्राधिकारियों द्वारा जब भी बुलाया गया, मानसून सत्र की तैयारियों के संबंध में कई बैठकों में बीबीएमबी अधिकारियों ने भाग लिया और निर्देशों का अनुपालन सुनिश्चित किया गया। आगे बताया गया है कि प्रोटोकॉल बुक में उल्लिखित सभी उपाय जैसे बाढ़ चेतावनी हूटर पौंग बांध स्पिलवे से पानी छोड़ने से पहले संचालित किए गए है । आगे उल्लेख करना उचित है कि मुख्य अभियंता (सीई), व्यास बांध ने 16 जुलाई, 2023 यानी स्पिलवे से पानी छोड़ने के दिन श्री निपुण जिंदल, उपायुक्त, कांगड़ा (मोबाइल 7018578009) के साथ दोपहर के आसपास (पानी छोड़ने का समय - शाम 4.00 बजे) टेलीफोन पर चर्चा की थी, उस दिन पानी की मात्रा (स्पिलवे से 4000 क्यूसेक) छोड़ने के संबंध में। लगभग उसी समय, मुख्य अभियंता ने श्री रोहित ठाकुर, एडीएम, कांगड़ा (मोब: 9418089107) के साथ-साथ श्री सुंदर ठाकुर, एसडीएम, इंदौरा (मोब 9418107999) से भी बात की ।

बीबीएमबी विभाग द्वारा Early Warning System के तहत समय-समय पर चेतावनी, एवम Announcement की गयी थी जिसका विडियो रिकॉर्ड इस विभाग के पास उपलब्ध है । दिनांक 15/07/2023 को बीबीएमबी विभाग द्वारा पानी छोड़े जाने सम्बन्धी चेतावनी पत्र डीसी कांगड़ा, SDO सिविल फतेहपुर, SDO सिविल देहरा गोपीपुर, SDO सिविल Indora, SDO सिविल Jawali SDO सिविल नूरपुर, तहसीलदार इंदौर, तहसीलदार फतेहपुर, कार्यकारी अभियंता शाह नहर मंडल संसारपुर टेरेस, को जारी किए गए हैं । (प्रति स्लंगन) । पत्र जारी होने के तुरन्त बाद ही बीबीएमबी प्रशासन तलवाड़ा द्वारा ब्यास बांध downstream upto Shah Nehar Barrage के निकट स्थित गांव Sathana Khas व Rey के संबंधित प्रधानों से उक्त संबंधी तालमेल किया गया । दिनांक 16/07/2023 को पानी छोड़ने से पहले Emergency Warning Hooters (02 minutes sound blast with 30 seconds break 04 times) द्वारा संकेतित किया गया जिसका विडियो रिकॉर्ड इस विभाग के पास उपलब्ध है । इसके अतिरिक्त बी.बी.एम.बी. द्वारा Flood condition को ध्यान में रखते हुए समय समय पर पंजाब एवं हिमाचल सिविल प्रशासन द्वारा की गयी मांग के आधार पर Announcement व्हीकल भी उपलब्ध करवाया जा रहा है इसके अतिरिक्त सम्बंधित प्रशासन को हर संभव सहयोग करने हेतु भी आश्वासन दिया गया है । मौजूदा समय में भी बी.बी.एम.बी. विभाग के Revenue स्टाफ द्वारा ब्यास बाँध के D/S पर स्थित स्थाना खास एवं रे में सबंधित प्रधान एवं ग्राम वासियों से तालमेल कर समय समय पर मौके का निरिक्षण एवं चेतावनी जारी की जा रही है।

उपरोक्त तथ्यों से, यह बिल्कुल स्पष्ट है कि ब्यास बांध प्राधिकरण द्वारा सभी संबंधित क्षेत्रों में आवश्यक जानकारी के प्रसार में कोई चूक नहीं हुई है व ब्यास बांध प्राधिकरण द्वारा सिविल प्रशासन को हर संभव जानकार पूर्व ही दी गयी है एवं मौजूदा स्थिति को ध्यान में रखते हुए ब्यास बांध प्रशासन द्वारा पूर्ण रूप से सहयोग भी किया जा रहा है। अत: ब्यास बांध प्रशासन शाह नहर बैराज की D/S में किसी भी नुकसान के लिए जिम्मेदार नहीं है । बांध सुरक्षा अधिनियम 2021 के अनुसार आपातकालीन बाढ़ चेतावनी प्रणाली के कार्यान्वयन के लिए इस कार्यालय द्वारा तैयार किया गया ज्ञापन उच्च कार्यालय को प्रस्तुत किया गया है जिसमें voice message customised / pre-recorded and sirens of long range ।

यह आपके कार्यालय को सूचना एवं आगामी आवश्यक कार्यवाही हेतु प्रस्तुत है जी।

अधीक्षण अभियन्ता/मुख्यालय,
कृते: मुख्य अभियन्ता/ब्यास बांध

12/10/23

प्रतिलिपि 1. सचिव बीबीएमबी चण्डीगढ़ को आपके कार्यालय के पत्र 26959-60/बी-1618/DHD दिनांक 27/09/2023 के संदर्भ में ।

2. मुख्य अभियन्ता बांध सुरक्षा बीबीएमबी नंगल टाउनशिप को आपके कार्यालय के पत्र क्रमांक 2608-10/NGL/DS/05/FL/07/DS/दिनांक 6/10/2023 के संदर्भ में ।

31/1/25

Public Information Officer
-cum- Sr. Executive Engineer,
Directorate of Energy,
H.P., Shimla-171005

Information Supplied to Sh Sumit Mahar
Under RTI Act, 2005

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एन एच पी सी लिमिटेड
NHPC Limited
CIN: L4010HR1975GOI032564

महाप्रबंधक (प्रभारी) कार्यालय पार्वती-III पावर स्टेशन
बहाली, पो0- लारजी, जिला- कुल्लू (हि0 प्र0) 175122
Off. Of General Manager (I/C) Parbati-III
Power Station Behali PO- Larji, Distt. Kullu
(H.P.)-175122
Ph. 01903-235100,Telefax- 01903-235102

NH/PPS-III/E&M/2023/147

दिनांक: 04.09.2023

To,
The Chief Engineer (Energy),
Directorate of Energy,
Govt. of Himachal Pradesh, Shimla-09

Subject: SHOW CAUSE NOTICE NO. HPDOE/CE(Energy)/SDSO/2023-5612-5619 dt. 22.08.2023.

Sir,

This is in reference to the subject cited above, show cause notice issued in respect to compliance of CWC Guidelines and the provisions of Dam Safety Act, 2021. In this regard it is stated as follows:

i) Parbati-III Power Station is constructed and operated by NHPC Limited, under the aegis of Ministry of Power, Govt. Of India. NHPC being a responsible organization and pioneer in Hydro Power, always strictly comply with the guidelines of guiding organizations and along with Dam safety Compliances as per prevailing safety acts.

ii) The information regarding early warning and alert system was submitted to DoE, GoHP vide letter NH/PPS-III/Dam/2020/193 dt. 05.08.2020 (copy enclosed as Annexure-I) in response to DoE, GoHP letter dt. 18.07.2020.

iii) The information regarding strengthening of alarm and warning system for the safety of people from sudden release of water from Dam, was again submitted to DoE, GoHP vide letter PPS-III/GM/1.07(A)/2020/177 dt. 30.07.2020 (copy enclosed as Annexure-II) in response to DoE, GoHP letter dt. 29.07.2020.

iv) Regarding the information pertaining to inflow, outflow, reservoir and gate operation w.e.f 07.07.2023 to 12.07.2023 asked by SDSO, Himachal vide letter dated 17.07.2023, it is important to mention that Dam site was worst hit due to the unprecedented natural calamity occurred in July-2023. The road connectivity, power supply and communication etc. were completely disrupted at Dam site. Thereby it was a huge task to sustain the operation of Dam as there was no power as well as shortage of diesel. Due to disruption of road connectivity and communication, many officers who were outside the PS were not able to join the duty and Power Station was working under-staffed. Further, Spillway of dam was

31/8/23

Public Information Officer
-cum- Sr. Executive Engineer,
Directorate of Energy,
H.P., Shimla-171005

4/9/23

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damaged due to heavy flood and Power Station was trying to reduce the leakage from spillway so that power generation could be started at the earliest.

The requisite information was provided as and when possible towards the adherence of the directions of the SDSO Himachal. The data was being regularly uploaded on SDMA web portal before the occurrence of natural calamity. However, after disaster the Power Supply, Internet Connectivity and Road Connectivity was badly affected at Dam Site. Hence the data could not be uploaded then.

v) Further a comprehensive summary of compliance to CWC guidelines for Release of water, 2015 and Dam Safety Act, 2021 being followed at Parbati-III PS is also enclosed as Annexure-III & Annexure-IV respectively, for your kind perusal and further advice.

vi) All SOPs are being followed by the Power Station before releasing water from Dam (for details kindly refer Annexure-III).

vii) Power Station remain in continuous touch with DDMA, SDMA, PRI and other stakeholders during release of water from the dam (kindly refer Annexure-V).

viii) Regarding communication network at Parbati-III PS, it is to intimate that Control Room for EWS at Dam is equipped with Cellular network mobile phones (Airtel, Jio & BSNL), IP Phone via MPLS with uninterrupted power supply/UPS as well as DG Back up in case of black out, in case of any emergency. In addition, Internet connectivity with adequate Data Plan (MPLS from BSNL and P2P from Elysium), Search light/Long Beam Torch and Public Address system is provided in the Control Room. Moreover there is another P2P link from BSNL which is being used for monitoring of reservoir level at Powerhouse Control Room. Further, the purchase of INMARSAT is under process.

ix) The allegation of "releasing huge volume of water to the tune of approx. 1100 cumecs from Parbati-III Dam suddenly due to which not only many lives were put on threat but heavy damaged was caused in the downstream and potion of the Sainj Town got washed away", is denied. Message about flood discharge in Sainj river and impending danger were being continuously given to the downstream people, local authorities & stakeholders vide Whatsapp Group namely "DDMA Kullu". This group consists of key personnel of State Administrative Authority, other Hydro Projects etc. Some crucial messages are as under kindly refer Annexure-V):-

"Flushing of about 390 cumecs is continue due to heavy rain and high silt content from Sainj Dam of NHPC Ltd. Keep away from Sainj River."

"Due to heavy rain and silt content about 450 cumecs water spilled from PARBATI-III Dam presently and may be increased as water level is increasing. Please keep away from Sainj river."

"Parbati-III Power Plant was shut down from 10:32PM on 08.07.2023 due to heavy silt and water inflow."

The Gates were operated very gradually in line with the SOP and in accordance with inflow in the river.All reservoir safety precautions/ SOP for reservoir operation were followed and opening of gates was gradual. All reservoir safety precautions/ SOP for reservoir operation were followed and opening of gates was gradual. Data in this regard has already been provided vide letter dated 07.08.2023. It is to be noted that as per record of last 50 years, maximum flood observed is 724

31/1/25

Public Information Officer
-cum- Sr. Executive Engineer,
Directorate of Energy,
H.P., Shimla-171005

4/1/23

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m3/sec. Moreover, the state hydro project (Sainj Power Station of HPPCL, 100MW capacity) is at the upstream of Parbati-III power Station and serves the purpose of early warning station. Parbati-III operates as per information received from Sainj barrage of HPPCL. Inundation mapping and river routing studies have been carried out by the Power Station. Danger levels have been marked for 100 year return flood. Furthermore, it is important to mention here that Parbati-III Power Station is pondage type scheme with very little capacity having live storage of 0.97 MCM only. Despite small storage capacity, Parbati-III PS operated the dam very effectively during the unprecedented flood when the inflow exceeded the record inflow of 1000 cumecs.

x) During flood caused by heavy rain from 8.07.2023 to 11.07.2023, with the increase in silt level up to 10360 ppm and inflow of 249 m3/sec, sirens were blown on 08.07.2023 at 07:10 PM. The Hooters/Sirens installed at vulnerable locations i.e. Dam Top, Sainj Colony NHPC, Talara village, Sapangani village, Old Behali village & Larji TRT outlet along the river stretch at downstream inhabitants upto Largi village at six locations. Alarms are manual operated by mobile phones from Dam control room. The Hooters/Sirens are blown as and when required for flushing operation, periodic gate operations and in any emergency situations. The generating machines were stopped and dam spillway radial gate no. 2 was opened very gradually. Thereafter, radial gate no 1 was also opened very gradually. The Gates were operated very gradually in line with the SOP and in accordance with inflow in the river. The inflow in upstream of dam reached to a peak value of about 1000 cumec on 09.07.2023 and with the gradual operation of gates free flow from dam was achieved at 11PM. By this time silt content had reached 19300 ppm. All reservoir safety precautions/ SOP for reservoir operation were followed and opening of gates was gradual.

xi) It is important to mention here that at later stage it was found that the unprecedented flood in Sainj Valley was due to the incidence of glacier burst in Bhatijot. Apart from that State Government has declared it a State Disaster and further demanded the Central Govt. to declare it a National Disaster, as most of the districts of Himachal Pradesh have been affected by such repeated cloud bursts (kindly refer news clipping attached at Annexure-VI). The damage of properties in downstream area is due to unprecedented natural calamity, hence Parbati-III Power Station cannot be held responsible. In view of the above compliances it is humbly submitted that Parbati-III PS, NHPC has complied with all the directions of State Govt. Of Himachal Pradesh, SDCS and SDSO Himachal Pradesh and thus no punitive action is leviable under Section 41(b) of Dam Safety Act, 2021. It is further to reiterate that Parbati-III PS, NHPC, remains committed to adhere to any and all directions of Govt. of Himachal Pradesh, SDCS and SDSO Himachal Pradesh in this regard and has always rendered necessary assistance to State Authorities.

Thanking You.

Yours Sincerely,

04/09/23

Head of the Project

Parbati-III Power Station, NHPC Ltd.

31/1/25

Public Information Officer
-cum- Sr. Executive Engineer,
Directorate of Energy
H.P., Shimla-171005

Information Supplied to Sh Sumit mahar
Under RTI Act, 2005.

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एनएचपीसी लिमिटेड
(भारत सरकार का उद्यम)
NHPC Limited
(A Govt. of India Enterprise)

पार्बती (III) पावर स्टेशन
बांध परिसर, सैंज, जिला- कुल्लू (हि.प्र.)-175134
Parbati (III) Power Station
Sainj, Distt.- Kullu (H.P)-175134
ईमेल : damcomplex@rediffmail.com

Annexure- I

एनएच/पीपीएस-III/बांध/2020/193 दिनाँक: 05. 08. 2020

To,

(Er. Deepak Jasrotia)
Superintending Engineer (Dam Safety)
Directorate of Energy,
Shimla-09

विषय: Regarding – Installation of Early warning & Alert System by the Dam Authorities in the State.
संदर्भ: HPDOE/CE (Energy)/Dam Safety/(Vol-VIII)/2020/2704-06 Dated 18.07.2020

महोदय,

उपरोक्त विषय के संदर्भ मे पार्वती-III पावर स्टेशन बांध से संबंधित जानकारी इस पत्र के साथ अनुलग्नक-I मे संलग्न कर प्रेषित है-

सधन्यवाद,

05/08/2020

महा प्रबन्धक(प्रभारी)
एनएचपीसी चरण-III विहाली,
जिला-कुल्लू (हि. प्र.)

SE(C) DM(C) O/C 5/5/2020

05/08/2020 SE(C)

31.1.25

Public Information Officer
-cum- Sr. Executive Engineer,
Directorate of Energy,
H.P., Shimla-171005

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31/2003-13 -I

ACTION TAKEN REPORT

Reply of Observations raised by Directorate of Energy, Himachal Pradesh

Sl No.	Observations	Reply
1.	i) Hydraulic routing studies for downstream river reach for different dam-outflow conditions to identify vulnerable areas in terms of depth/level and velocities of flow. In such vulnerable areas, project authorities shall mark danger levels at appropriate places and setup permanent warning posts (In English, Hindi and Local Language) visible with naked eyes from reasonable distances.	Dam break analysis of Parbati-III Dam has been done in case of Dam break and full gate opening and depth/level and velocities has been found at different locations in downstream of dam. At appropriate locations sign boards has also been fixed not to enter into the river.
2.	ii) The concerned project authorities shall establish a control room to keep watch on probable water inflow to have advance information and sufficient lead time for protective measures.	The two nos. of G&D sites 01 km u/s of Dam have been established to watch inflow and providing its information to control room round the clock. Also, about 12 km from upstream of Parbati-III Dam there is Sainj Barrage of HPPCL; from there we get the information about the quantum of water release.
3.	iii) A fool proof warning system to alert downstream habitants up to a considerable distance before release of water shall be put in place. The warning for release of water shall be given through speakers, sirens or Hooters adequately in advance of Dam releases (minimum 15 minutes) and all such instruments shall be directly connected to the control room eliminating dependence on watch-staff stationed at vulnerable areas. The warning system shall be backed up by alternate power sources in control room as well as vulnerable locations to avoid malfunctioning of system in case of	Sirens at different locations i.e Dam top, Sainj, Talada, Sapangani and Behali in downstream of Dam have been installed and directly connected to control room to warn the people in downstream before release of water from dam All the Sirens having power backup.

31/1/25

Public information Officer
-cum- Sr. Executive Engineer.
Directorate of Energy,
H.P., Shimla-171005

Information Supplied to Sh Sumit Mahar (Sonu) for DM(C)
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	power failure.	
4.	iv) Tourists entering the vulnerable zones shall be forewarned of dangers of sudden water releases.	To forewarned tourists, sign boards have been installed at appropriate places and also sirens are blown for significant time before release of water from Dam.
5.	v) For dealing with extreme weather and flood conditions, accurate and reliable hydro meteorological network, inflow forecasting and communication mechanism shall be established in coordination with State Meteorological department.	We have two rain gauge sites near the confluence of Jeeva and Nully nallah and reading observed and discharge are being monitored round the clock. Also about 12 Km U/s of dam, there is Sainj Barrage of HPPCL from where we remains in continuous communication regarding release of water. However, Disaster Management, Kullu send the weather forecasting data by whatsapp group in advance.
6.	vi) The concerned project authorities shall develop appropriate mechanism to keep local administration informed about the extreme inflow, sudden release of water and any other exigency conditions.	Before release of extreme inflow, sudden release of water its information is given to local police, SDM Banjar, District Disaster Management Kullu and Largi Dam by Phone Call (Landline/Cellular phone) and Whatsapp group.

Sonee, DM(C)

31/1/25

Public Information Officer
-cum- Sr. Executive Engineer,
Directorate of Energy,
H.P., Shimla-171005

Information Supplied to Sh Sumit Thakur
Under RTI Act, 2005.

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Annexure -II

एनएचपीसी लिमिटेड
NHPC Limited
(A Govt. of India Enterprise)

महाप्रबंधक(प्रभारी) कार्यालय, पार्वती-III पावर स्टेशन
बिहाली, पोस्ट- लारजी, जिला- कुल्लू (हि॰ प्र॰)-175122
Off Of General Manager (I/c) Parbati-III Power
Station,Behali, PO- Larji, Distt Kullu (H.P.)-175122
Ph. 01903-235100, Telefax- 01903-235102
E-mail: phepstage3@gmail.com

CIN: L4010HR1975GOI032564

पीपीएस-III/जीएम/1.07(A)/2020/177 दिनांक: 30.07.2020

Er. Deepak Jasrotia
Superintending Engineer (Dam Safety),
Directorate of Energy, GoHP,
Shanti Bhawan Phase-III, Sector-06,
New Shimla – 9
Email: ceenergy09@gmail.com

Sub: Regarding Strengthening of Alarm and Warning System for the safety of people from Sudden Release of Water from Dams- Supply of Information thereof.

Ref: 1. HPDOE/CE(Energy)/Dam Safety (Vol-VIII)/2019-2963-86 दिनांक 29.07.2020

उपरोक्त संदर्भित पत्र के संबंध मे पार्वती-III पावर स्टेशन से संबन्धित वांछित जानकारी संलग्नक –अ के अनुसार संलग्न पायें।

धन्यवाद।

संलग्नक: उपरोक्तानुसार।

भवदीय,
30/7/2020
(बिक्रम सिंह)
रियोजना प्रमुख, पीपीएस-III

31/1/25

Public Information Officer
-cum- Sr. Executive Engineer,
Directorate of Energy,
H.P., Shimla-171005

Information Supplied to Sh Sumit Mahar
Under RTI Act, 2005.

स्वहित एंव राष्ट्र हित में ऊर्जा बचाएँ
Save Energy for Benifit of Self and nation

Annexure A

Status of Implementation CWC Gludelines for Strengthening of Alarm and Warning System by Dam Authority

S.N.	Action	Status	Remarks
a.	Reservoir Operation Manual Prepared	Yes	
b.	Hydraulic Routing Studies for the downstream river reaches got conducted	Yes	
c.	Have danger level marked downstream setup	No	To be marked as early as possible
d.	Warning posts downstream setup	Yes	
e.	Control Room to keep watch on probable water inflow setup	Yes	
f.	Foolproof warning system to alert downstream	Yes	
	(i) Total lenght of venerable Location downstream	13.07 Knts	
	(ii) Number of hooters/Sirens setups	5 Nos	
	(iii) Has the alert system provision of broadcasting tailored made voice messages	Yes	
	(iv) Can the warning system be remotely operated	Yes	
g.	SMS System to target vunerable group/location of all mobile user available	Yes	
h.	Accurate and reliable hydro metrological network inflow forcasting and communication mechanism established	Yes	
i.	Mechenism to keep local administration informed about the extreme inflow	Yes	
j.	Emergency Action Plan (EAP)	Yes	

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DM(C)

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Annexure-III

Check List of CWC Guidelines 2015 - Parbati-III Power Station

S.No.	CWC Guidelines 2015	Status
1	☑ Reservoir Operation manual ☑ SOP ☑ Annual inflow –Outflow	• Power Station is following the Reservoir Operation Guidelines (updated on 13.01.2016) and SoP for downstream release of Water (updated on 04.07.2016) in coordination with upstream projects and State Authorities for advance information about their releases/flows.
		All SOPs are being followed by the Power Station before releasing water as follows. i) The Hooters/Sirens installed at vulnerable locations i.e. Dam Top, Sainj Colony NHPC, Talara village, Sapangani village, Old Behali village&Larji TRT outletalong the river stretch at downstream inhabitants uptoLargi village at sixlocations.Alarms are manual operated by mobile phones from Dam control room.The Hooters/Sirens are blown as and when required for flushing operation, periodic gate operations and in any emergency situations. ii) Before releasing the water from Dam, an inspection vehicle is deployed to make announcement (warning) by Public Address (PA) System from Dam to Larji. iii) Flood inundation studies carried out for identification of vulnerable areas in the downstream of Dam/Power House along the river course which are easily accessible to local people, pilgrims and tourists for taking various safety measures and map of the same placed in Control Room for reference. iv) Danger levels at vulnerable places along the river course in the downstream area are marked. v) Vulnerable locations at downstream are Sainj, Salwad, Talara, Tareda and Sapangini. iv) Patrolling of downstream is always done during periods of abnormal release of water Power Station remain in continuous touch with DDMA, SDMA, PRI and other stakeholders during release of water from the dam
		• EWS system is in place in terms of Disaster Management Plan (DMP) and Emergency Action Plan (EAP) as per guidelines of CWC/NDMA. These have been updated on September 2020 & November 2020 respectively.
		• Hourly Discharge Data is being sent on monthly basis to CO, Design Division, on basis of which annual inflow & outflow is calculated.

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2	⍰ Hydraulic routing study ⍰ Vulnerable Locations in D/s ⍰ Depth, Velocity , ⍰ Danger Level Marking ⍰ Warning Posts ⍰ Movable barriers	• Dam Break Analysis has been conducted & prepared in September'2019 and its findings such as hydraulic routing studies for the downstream river reaches for different dam-outflow conditions, have been incorporated in Emergency Action plan. • Dam Break Analysis have been carried out for Parbati-III Dam and based on these studies inundation of downstream areas in different conditions has been worked out. • Vulnerable locations in Downstream have been identified and marked. • Various Danger Levels marking and Warning Posts placed on different locations for creating local awareness. • Warning Posts already in place at various locations. • Barricates are available at Power Station for any adverse situation.
3	Warning System to alert downstream population before release of water	As explained in Point No-1 above.
4	Fenced Locations / Public Areas Near DAM (very Close)	• Locations/public area near Dam are protected by fencing.
5	⍰ Set up of Control Room ⍰ Lead Time for protective measure ⍰ Upstream Project Communication ⍰ Control room -Qualified Person	• Control room regularly takes information from Weather reports, Forecasts, Nowcasts on different websites (mosdac.gov.in, ffc-india.gov.in, cwc.gov.in, city.imf.gov.in etc.) coordination/communication with the centralized Control Room and D&E Division at NHPC Corporate Office is established. • A Central Command & Control Station is established at Dam (kept operational by duty officers round the clock as per Reservoir Operation Guidelines) where information from the network of equipment/sensors installed in the catchment at Jiwa Nallah (G&D) site and a rain gauge installed at Neuli is available in real time, 24X7 basis. The state hydro project (Sainj Power Station of HPPCL, 100MW capacity) is at the 10 km upstream of Parbati-III power Station and serves the purpose of early warning station. Parbati-III operates as per information received from Sainj barrage of HPPCL.
		• Control Room of Dam is maintaining a logbook wherein data as well as operational activities are physically recorded. • Contact numbers of Project-In-Charge, Project Control Room, local administration and other relevant agencies is prominently displayed at suitable locations for early information of any impeding emergency, if any, to all concerned authorities in parallel for necessary action. • Safe assembly points(s) are identified for all plant personnel working in the field in case of any emergency.

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		Control Room for EWS at Dam is equipped with Cellular network mobile phones (Airtel, Jio & BSNL), IP Phone via MPLS with uninterrupted power supply/UPS as well as DG Back up in case of black out, in case of any emergency. In addition, Internet connectivity with adequate Data Plan (MPLS from BSNL and P2P from Elysium), Search light/Long Beam Torch and Public Address system is provided in the Control Room. Moreover there is another P2P link from BSNL which is being used for monitoring of reservoir level at Powerhouse Control Room.

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6	Tourist Entering in Vulnerable Locations –SMS facility through operators	• The Hooters/Sirens are installed and operational at vulnerable locations i.e. Dam Top, Sainj Colony NHPC, Talara village, Sapangani village, Old Behali village & Larji TRT outlet along the river stretch at downstream upto Larji village at six locations. Alarms are manually operated by mobile phones from Dam control room. The Hooters/Sirens are blown as and when required for flushing operation, periodic gate operations and in any emergency situations.
7	Establish well designed hydro-meteorological network and an inflow forecasting system.	• The hydro-meteorological network has been improved by installing three numbers of Automatic Water Level Recording Systems with telemetry at Jiwa G&D Site, Surge shaft & TRT. Data is being updated and displayed at website. The same is monitored regularly. Water level may be fetched from website www.ehydromet.in for real time transmission (DWLR Data). Data such as Rainfall, temperature, etc may be fetched from website. https://www.dataloggersindia.org, however inflow data, water level and discharge etc are being shared in WhatsApp group of Parbati-III Dam Control Room.
8	Local Administration Information	• Control Room having proper Coordination through What's App/SMS group with downstream projects while releasing water from Dam, both planned releases during reservoir flushing operation and as well as unplanned release of water/Flash flood etc. and before release of water from Dam, blowing of Sirens/Hooters and information through PA system vehicle give prior warning to the people is ensured as per SOP. Few WhatsApp group including DDMA are created to pass the information to all concerned on immediate basis in case of any emergency situation/Early Warning and all concerned contact numbers are displayed. In addition to above, information is provided telephonically to Police Station, Sainj, DDMA (Contact No.: 1077) and Larji Dam before release of water from Dam.
9	Emergency Action Plan	• EWS system is in place in terms of Disaster Management Plan (DMP) and Emergency Action Plan (EAP) as per guidelines of CWC/NDMA. These have been updated on September 2020 & November 2020 respectively

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Check List of Dam Safety Act 2021 - Parbati-III Power Station

Clause: 35(1): Stipulates that Every owner of a specified dam, in respect of each specified dam shall:-

S.No.	DSA Provision	Status
1 (a)	Establish well designed hydro-meteorological network and an inflow forecasting system;	• The hydro-meteorological network has been improved by installing three numbers of Automatic Water Level Recording Systems with telemetry at Jiwa G&D Site, Surge shaft & TRT. Data is being updated and displayed at website. • A Central Command & Control Station is established at Dam (kept operational by duty officers round the clock as per Reservoir Operation Guidelines) where information from the network of equipment/sensors installed in the catchment at Jiwa Nallah (G&D) site and a rain gauge installed at Neuli is available in real time, 24X7 basis. The state hydro project (Sainj Power Station of HPPCL, 100MW capacity) is at the 10 km upstream of Parbati-III power Station and serves the purpose of early warning station. Parbati-III operates as per information received from Sainj barrage of HPPCL. • Control room regularly takes information from Weather reports, Forecasts, Nowcasts on different websites (mosdac.gov.in, ffc-india.gov.in, cwc.gov.in, city.imf.gov.in etc.) coordination/communication with the centralized Control Room and D&E Division at NHPC Corporate Office is established. • Control Room having proper Coordination through What's App/SMS group with downstream projects while releasing water from Dam, both planned releases during reservoir flushing operation and as well as unplanned release of water/Flash flood etc. and before release of water from Dam, blowing of Sirens/Hooters and information through PA system vehicle give prior warning to the people is ensured as per SOP. Few WhatsApp group including DDMA are created to pass the information to all concerned on immediate basis in case of any emergency situation/Early Warning and all concerned contact numbers are displayed. In addition to above, information is provided telephonically to Police Station, Sainj, DDMA (Contact No.: 1077) and Larji Dam before release of water from Dam.

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(b)	Establish an emergency flood warning system for the probable flood affected areas downstream of the dam	All SOPs are being followed by the Power Station before releasing water as follows. i) The Hooters/Sirens installed at vulnerable locations i.e. Dam Top, Sainj Colony NHPC, Talara village, Sapangani village, Old Behali village&Larji TRT outletalong the river stretch at downstream inhabitants uptoLargi village at sixlocations.Alarms are manual operated by mobile phones from Dam control room.The Hooters/Sirens are blown as and when required for flushing operation, periodic gate operations and in any emergency situations. ii) Before releasing the water from Dam, an inspection vehicle is deployed to make announcement (warning) by Public Address (PA) System from Dam to Larji. iii) Flood inundation studies carried out for identification of vulnerable areas in the downstream of Dam/Power House along the river course which are easily accessible to local people, pilgrims and tourists for taking various safety measures and map of the same placed in Control Room for reference. iv) Danger levels at vulnerable places along the river course in the downstream area are marked. v) Vulnerable locations at downstream are Sainj, Salwad, Talara, Tareda and Sapangini. iv) Patrolling of downstream is always done during periods of abnormal release of water Power Station remain in continuous touch with DDMA, SDMA, PRI and other stakeholders during release of water from the dam
(c)	Test or cause to be tested periodically the functioning of systems referred to in clauses (a) and (b) Mock Drills for Blowing of Sirens is being conducting on Monthly basis	The data of installed DWLR's and also data from upstream projects as defined in (a) above is being monitored regularly and mock drills for blowing of Sirens is also being conducting on Monthly basis.
(d)	Install such scientific and technical instruments which are invented or adopted from time to time for the purpose of ensuring the dam safety and the life and property of people downstream	Timely Complied from time to time

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(e)	Make available the information relating to maximum anticipated inflows and outflows including flood warning and an adverse impact of the same, if any, on persons and property towards the upstream or downstream of the dam, to the concerned district authorities and also make available the information in public domain	• Control Room having proper Coordination through What's App/SMS group with downstream projects while releasing water from Dam, both planned releases during reservoir flushing operation and as well as unplanned release of water/Flash flood etc. and before release of water from Dam, blowing of Sirens/Hooters and information through PA system vehicle give prior warning to the people is ensured as per SOP. Few WhatsApp group including DDMA are created to pass the information to all concerned on immediate basis in case of any emergency situation/Early Warning and all concerned contact numbers are displayed. In addition to above, information is provided telephonically to Police Station, Sainj, DDMA (Contact No.: 1077) and Larji Dam before release of water from Dam. • Dam Break Analysis have been carried out for Parbati-III Dam and based on these studies inundation of downstream areas in different conditions has been worked out. • Vulnerable locations in Downstream have been identified and marked. • Various Danger Levels marking and Warning Posts placed on different locations for creating local awareness • Warning Posts already in place at various locations.
(f)	Render necessary assistance to the Authority in establishment and running of the early warning system for the exchange of real time hydrological and meteorological data and information related to the operation of reservoirs.	Timely complied as and when required.

Clause 35 (2): Every owner of a specified dam, for each of its dam shall, carry out risk assessment studies at such interval as may be specified by the regulations and the first such study shall be made within five years from the date of commencement of this Act

35(2)	Reply: 31/1/25	Power Station is following the Reservoir Operation Guidelines (updated on 13.01.2016) and SoP for downstream release of Water (updated on 04.07.2016) in coordination with upstream projects and State Authorities for advance information about their releases/flows. Further pre and post monsoon inspections of the dam and reservoir are carried out by in-house NHPC experts from Corporate Office and remedial measures as suggested are taken up. These reports are regularly shared with CWC and DoE, Himachal Pradesh. The last of such pre-monsoon inspection was done during April 2023. Apart from above, External dam safety inspection through external dam safety experts is carried out at periodic intervals.

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Clause 36. (1) Stipulates that Every owner of a specified dam, in respect of each specified dam, shall,—

S.No.	DSA Provision	Status
1(a)	Prepare emergency action plan before allowing the initial filling of the reservoir and thereafter update such plans at regular intervals;	Not Applicable as construction of project completed in 2014.
(b)	in respect of the dam which is constructed and filled before the commencement of this Act, prepare emergency action plan within five years from the date of commencement of this Act and thereafter update such plans at regular intervals as may be specified by the regulations.	Already developed - EAP for Parbati-III was developed and latest updation of EAP has been done in Nov 2020.

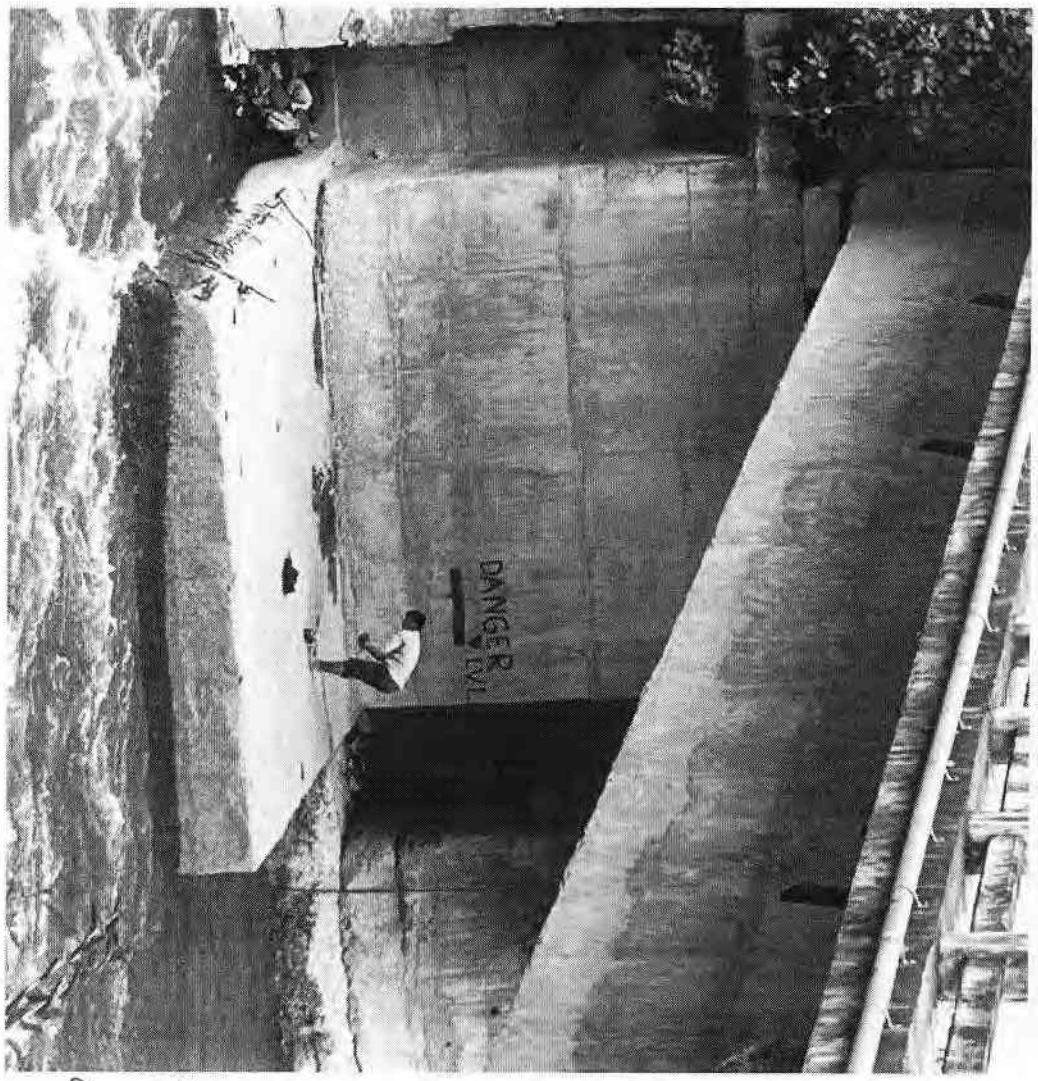
Clause 37: Stipulates as under:-

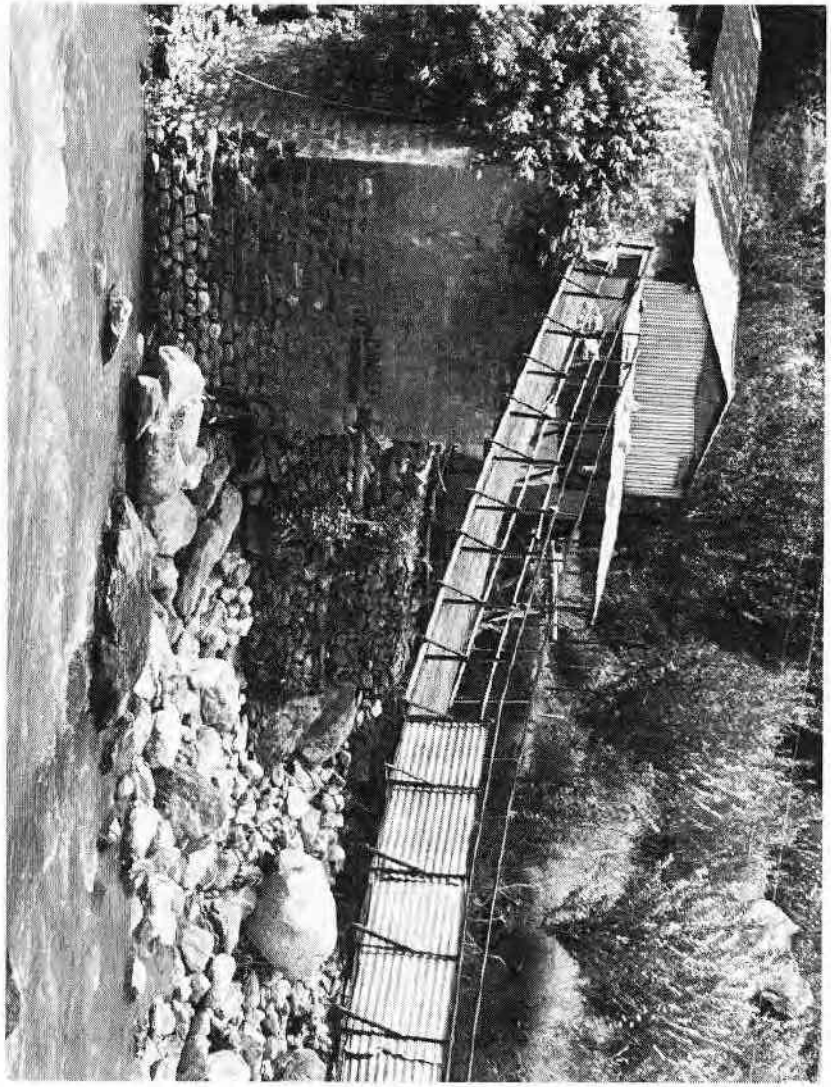
S.No.	DSA Provision	Status
37	Without prejudice to the provisions of this Act or liability of the owner of the specified dam and other organization and authorities under this Act, every owner, organization and authority shall render necessary assistance, if so required by any autjority under any law for the time being in force to meet or mitigate any disaster or emergency arising out of the specified dams.	Parbati-III PS has always extended assistance to the administrative bodies by providing JCBs, Truck, Tipper etc., as and when required to meet or mitigate any disaster or emergency arising out of the specified dams.

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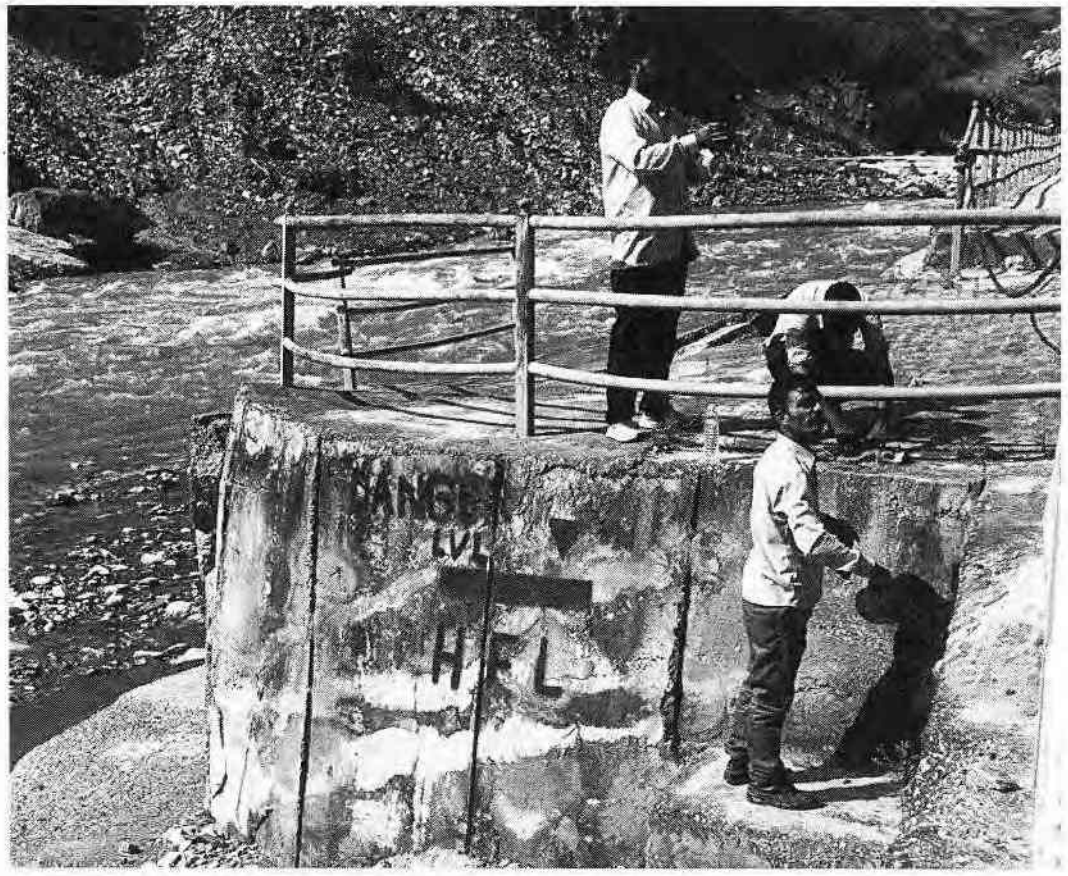


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DANGER LEVEL MARKING



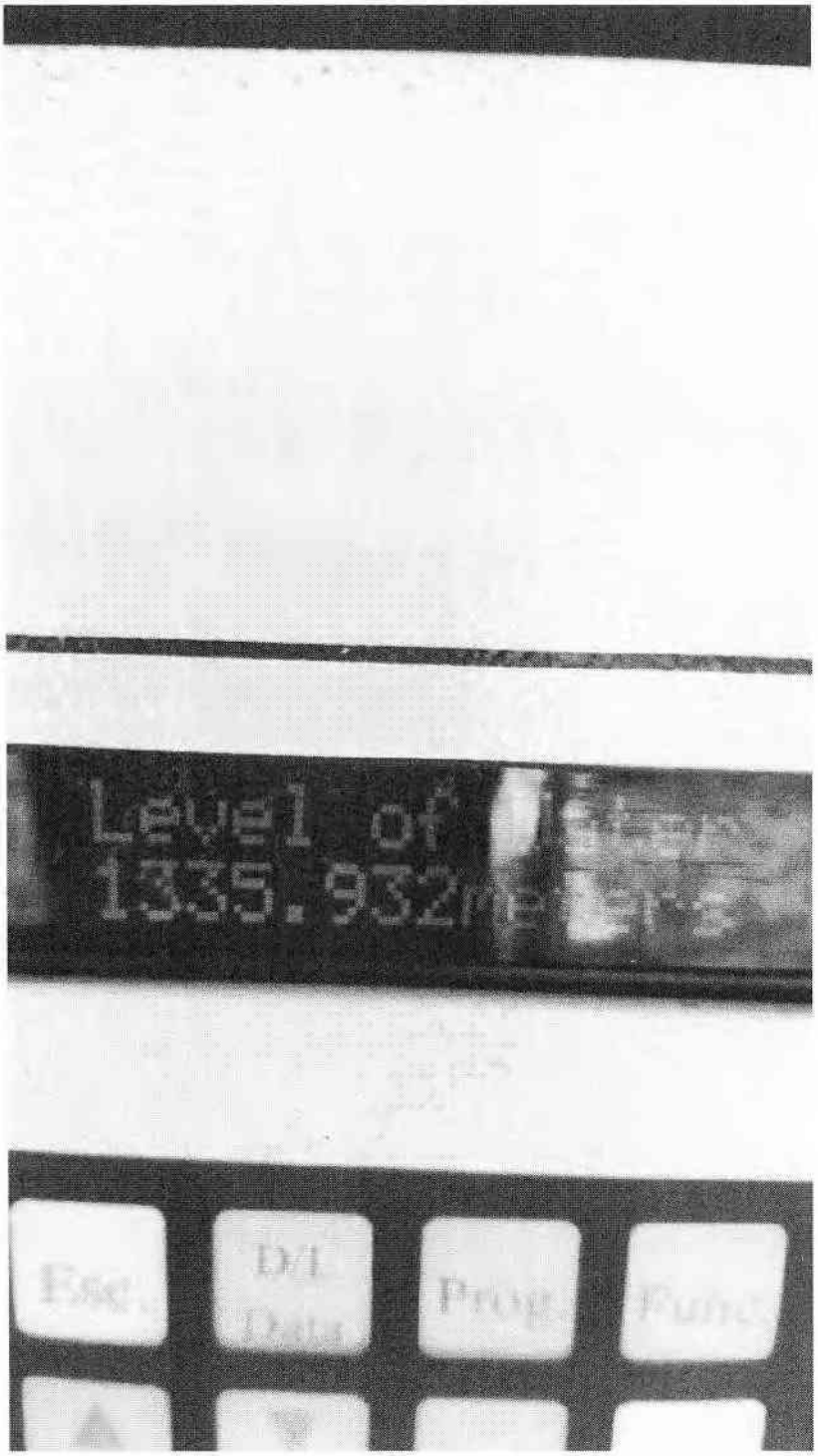


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DIGITAL WATER LEVEL RECORDER (DWLR)



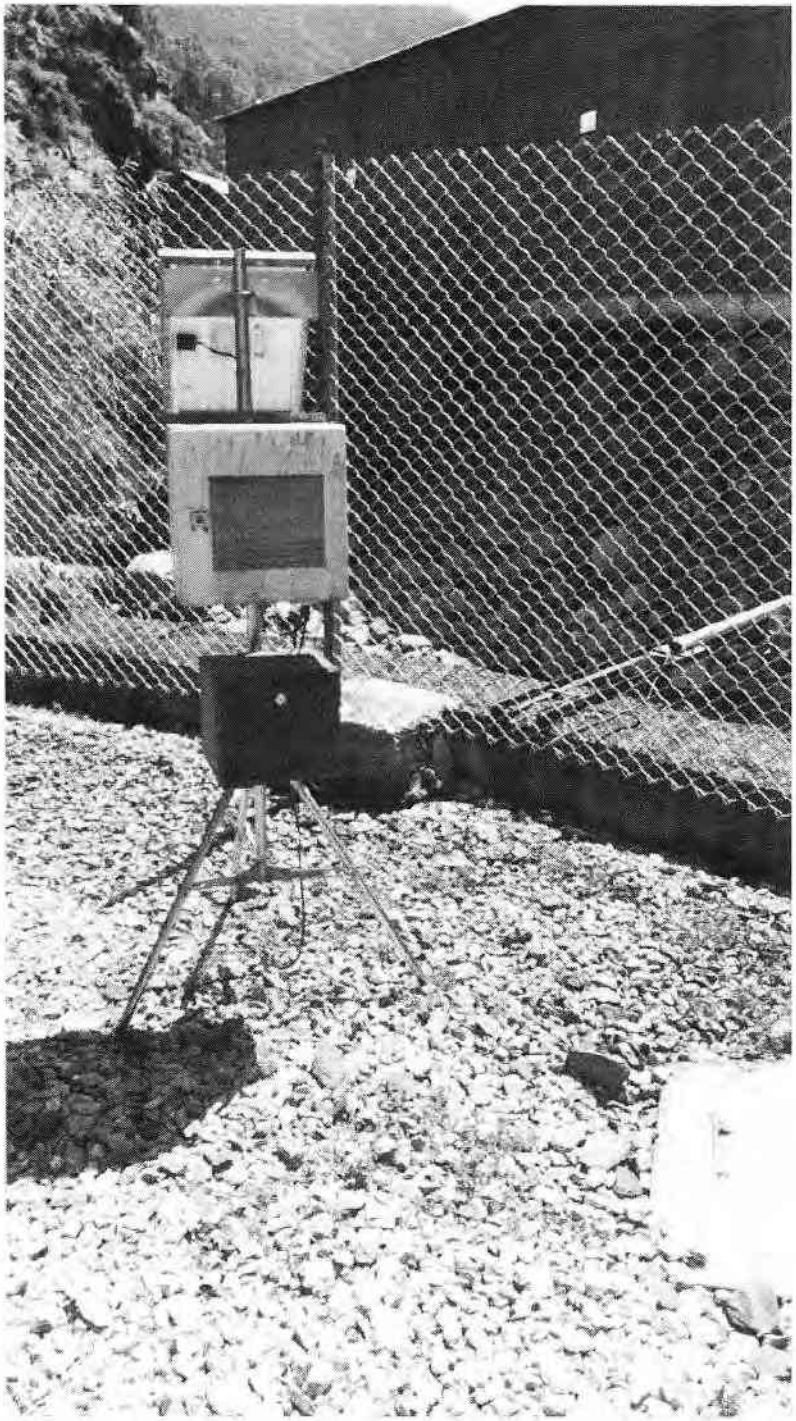
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DIGITAL WATER LEVEL RECORDER (DWLR)



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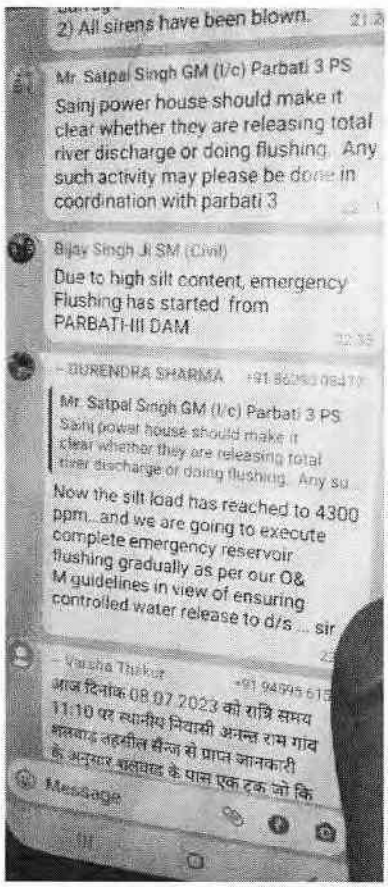
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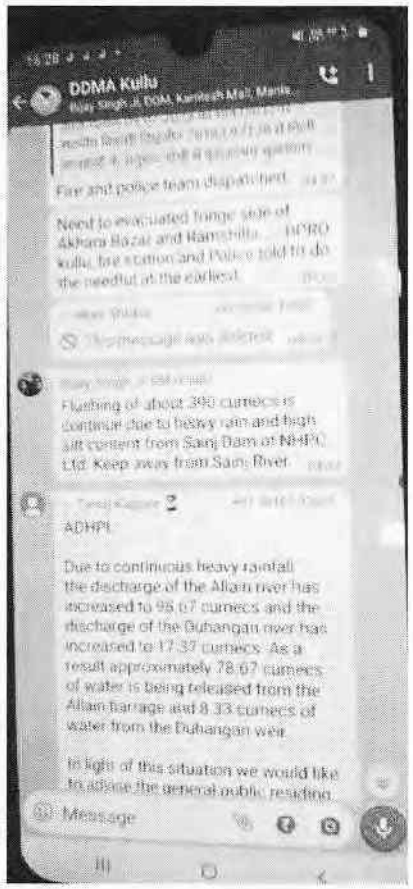
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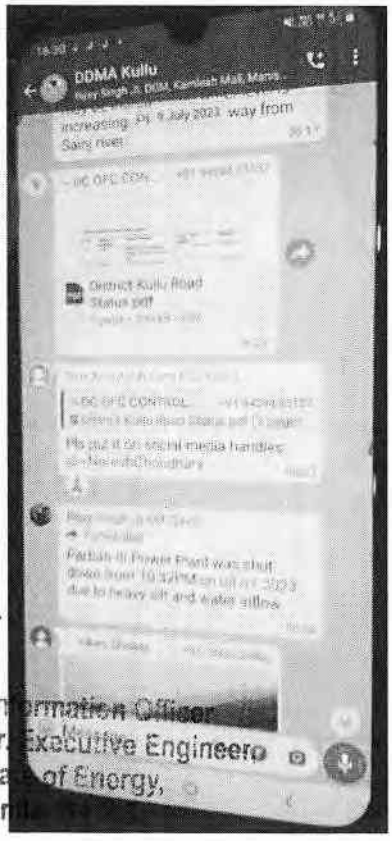
Annexure-V

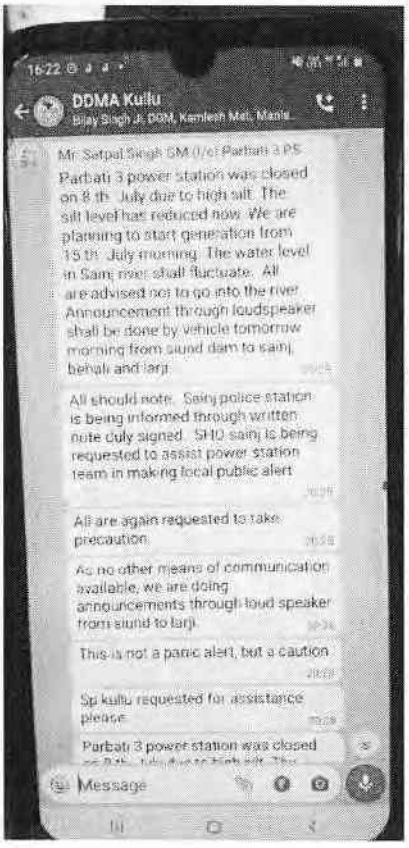
COMMUNICATION WITH STATE AUTHORITIES

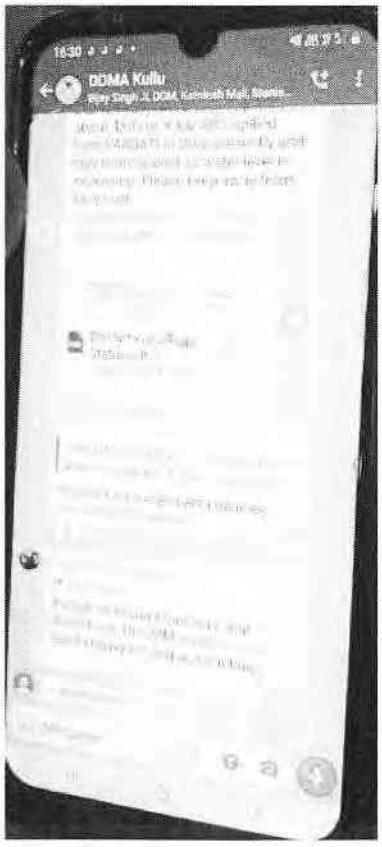








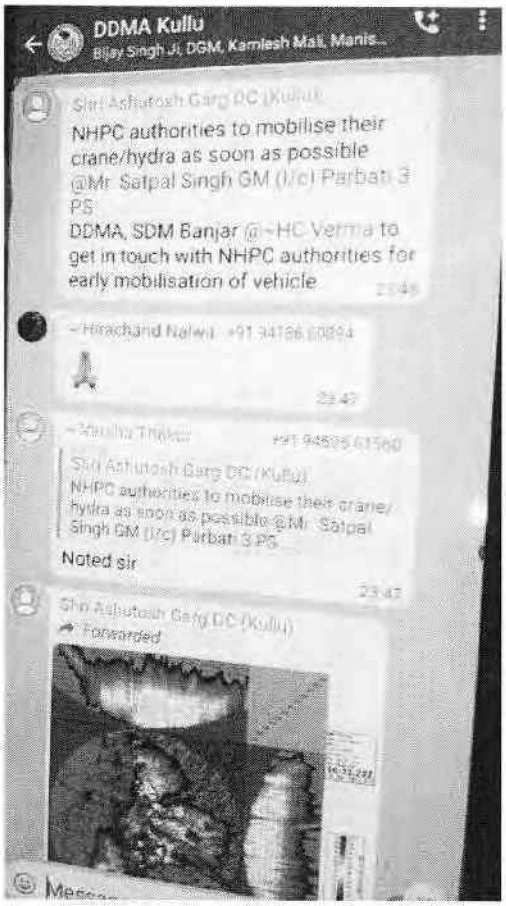


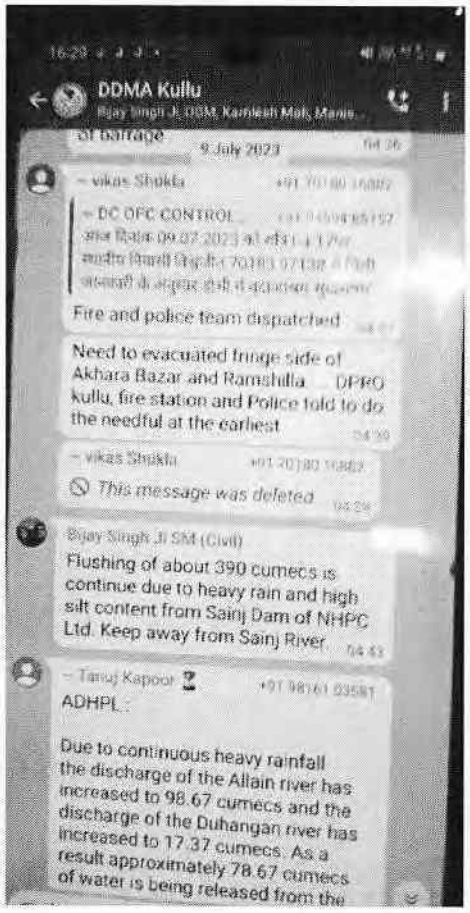


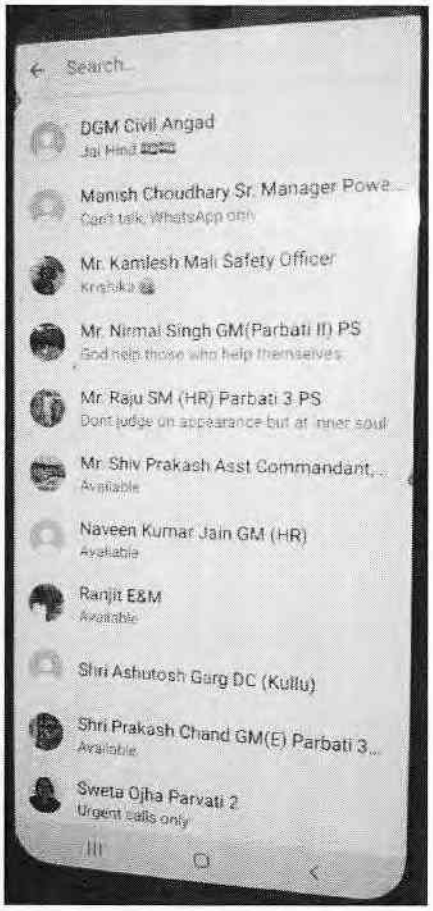
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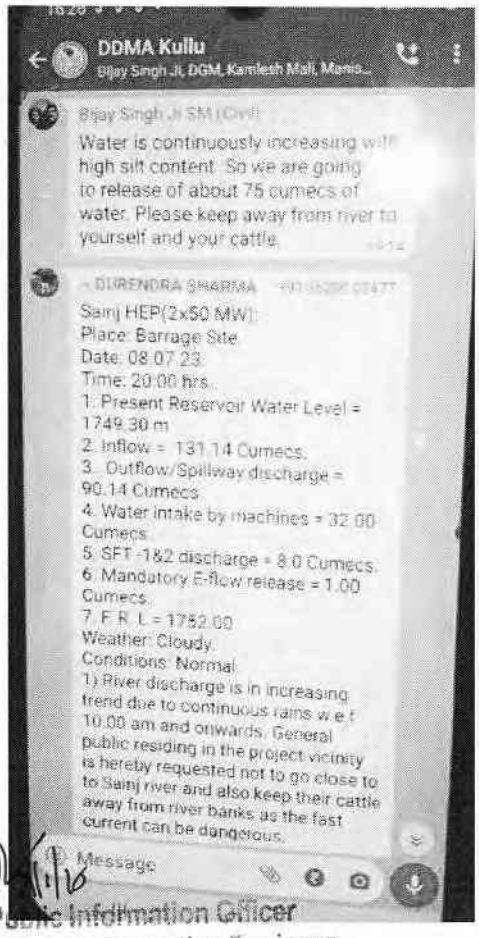
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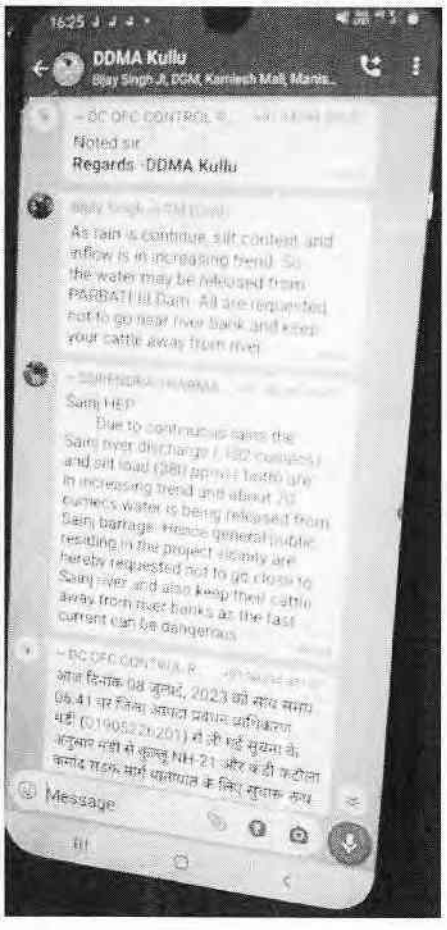
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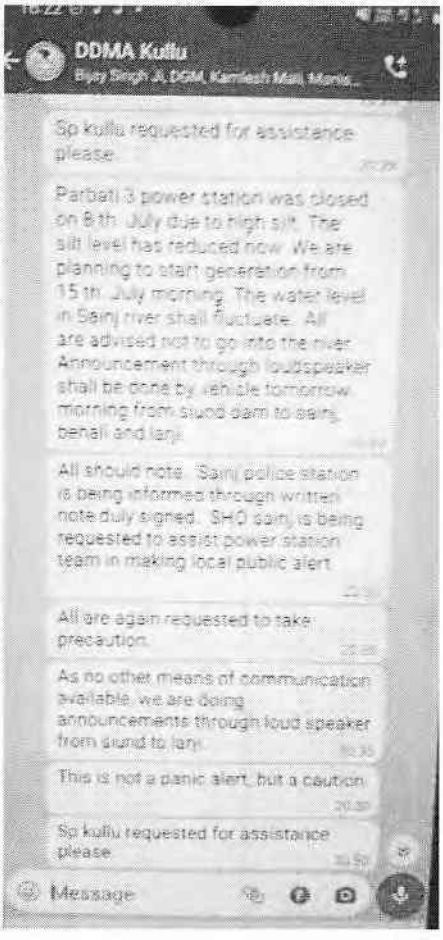












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Annexure-VI

Himachal Disaster: हिमाचल में तबाही के बाद राज्य आपदा घोषित, CM सुक्खू बोले- जल्द जारी होगा नोटिफिकेशन

Himachal Rains: हिमाचल में भारी बारिश ने जमकर तबाही मचाई. अब हिमाचल सरकार ने इस तबाही को राज्य आपदा घोषित कर दिया है. इसकी नोटिफिकेशन भी जल्द हो जाएगी.

By: अंकुश डोभाल, शिमला | Updated at : 18 Aug 2023 03:35 PM (IST)



हिमाचल प्रदेश के मुख्यमंत्री सुखविंदर सिंह सुक्खू. (Image Source : PTI)

Share:

Himachal News: हिमाचल प्रदेश में जुलाई-अगस्त के महीने में हुई बारिश में जमकर तबाही मचाई. इससे आम जन जीवन पूरी तरह अस्त-व्यस्त हुआ है. हिमाचल प्रदेश सरकार लगातार केंद्र सरकार से मांग कर रही है कि इस तबाही को राष्ट्रीय आपदा घोषित की जाए, लेकिन अब तक ऐसा नहीं हो सका है. इसकी हिमाचल प्रदेश के मुख्यमंत्री सुखविंदर सिंह सुकून ने बताया कि सरकार ने इस तबाही को राज्य आपदा घोषित कर दिया है. जल्द ही इसकी नोटिफिकेशन जारी हो जाएगी.

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'केंद्रीय मंत्रियों से मुलाकात करेंगे सीएम'

हिमाचल प्रदेश के मुख्यमंत्री सुखविंदर सिंह सुक्खू ने कहा कि बीते दिनों प्रदेश में हुई बारिश की वजह से भारी नुकसान हुआ है. सरकार आर्थिक बदहाली के बावजूद प्रभावितों तक राहत पहुंचाने का काम कर रही है. उन्होंने कहा

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कि सरकार प्रतिबद्धता के साथ काम कर रही है. बीते दिन हुई बारिश की वजह से हिमाचल प्रदेश को अब तक 10 हजार करोड़ रुपए का नुकसान हो चुका है. मुख्यमंत्री सुखविंदर सिंह सुक्खू ने कहा कि वह दिल्ली जा रहे हैं और यहां केंद्रीय मंत्रियों से मुलाकात करेंगे. मुख्यमंत्री ने कहा कि हिमाचल प्रदेश ने बीते 50 सालों में कभी ऐसी तबाही नहीं देखी.

अबतक 7659.93 करोड़ रुपए का नुकसान

बता दें कि हिमाचल प्रदेश को 24 जून से लेकर अब तक सेवंथ 7659.93 करोड़ रुपए का नुकसान हो चुका है. बकौल मुख्यमंत्री सुखविंदर सिंह सुक्खू या नुकसान 10 हजार करोड़ रुपए के पार जाने की आशंका है. प्रदेश में 1 हजार 957 घर पूरी तरह तबाह हो चुके हैं, जबकि 9 हजार 344 घरों को आंशिक तौर पर नुकसान हुआ है. इसके अलावा 293 दुकानें और 4 हजार 072 पशु घर भी तबाह हो गए हैं. प्रदेश भर में डेढ़ महीने के छोटे से अंतराल में ही 113 भूस्खलन और 58 फ्लैश फ्लड की घटनाएं रिकॉर्ड की गई हैं. प्रदेश में अब तक 330 लोग अपनी जान गवा चुके हैं, जबकि 38 लोग अलग-अलग दुर्घटनाओं में लापता हैं. प्रदेश भर में घायलों का आंकड़ा भी 322 तक जा पहुंचा है.



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'Declare Himachal Calamity A Natural Disaster': Congress Urges Centre To Announce Rs 10,000-Crore Package

Congress urges Rs 10,000-cr relief for Himachal's rain crisis, seeks "national disaster" status. Leader Rajeev Shukla appeals for MPs' aid through MP Local Area Development Fund.

By: ABP News Bureau | Updated at : 23 Aug 2023 05:20 PM (IST)



A section of the Chandigarh-Manali highway is seen damaged after a landslide, near Mandi. (Image used for representational purposes only.) (Image Source : PTI)

Share:

The Congress demanded on Wednesday (August 23) that the central government announce a Rs 10,000 crore special package for Himachal Pradesh and declare the rain-related devastation there a "national disaster". Rajeev Shukla, Congress leader, and Himachal Pradesh in-charge, also urged Lok Sabha Speaker Om Birla and Rajya Sabha Chairman Jagdeep Dhankhar to allow all MPs in both Houses of Parliament to provide relief to the hill state through the MP Local Area Development Fund.

He also described the state's crisis as unprecedented, claiming that the northern state is not receiving the necessary national attention because it has never experienced such devastation in its history.

Shukla stressed that the current crisis in Himachal Pradesh is unprecedented, as the state has never experienced such severe damage in its history. "The state has suffered a Rs 13,000 crore loss. Highways have been destroyed. Heavy rainfall has harmed the entire Himachal region, both upper and lower reaches," Shukla was quoted as saying by news agency PTI.

The region has suffered substantial damage, including the destruction of highways and extensive disruption across upper and lower reaches, as per the PTI report. Shukla noted that the rains struck Himachal Pradesh in multiple waves: from July 7 to 15, then again from August 10 to 14, and now in the present period.

"We demand that the central government declare the devastation caused by heavy rains in Himachal Pradesh a national calamity and provide it with a special package similar to that provided to Uttarakhand. We are asking for a package worth Rs 10,000 crore. With the Rs 200 crore announced so far by the Centre, nothing will happen," the Congress leader said.

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Heavy rain, landslides & consequent disasters have caused significant damage to lives, properties & infrastructure in Himachal Pradesh. I appealed the Central Govt. to declare it a national disaster & to provide central assistance to the State. (1/2) @SukhuSukhvinder pic.twitter.com/Sq7MrTnrLc
— Rajeev Shukla (@ShuklaRajiv) August 23, 2023

"I urge both the Lok Sabha Speaker and the Chairman of the Rajya Sabha to allow MPs to donate to the Himachal Pradesh government from their MP Development Fund," he said.

While several states have already offered assistance, Shukla pleaded with Chhattisgarh, Rajasthan, Karnataka, Haryana, and other states to help Himachal Pradesh recover. Two central teams assessed the damage, emphasising the importance of immediate action.

The Congress leader urged Prime Minister Narendra Modi and Home Minister Amit Shah to provide Himachal Pradesh with the necessary assistance. He mentioned that Chief Minister Sukhvinder Sukhu has already met with the central leadership to discuss the pressing issue.

Published at : 23 Aug 2023 05:20 PM (IST)

सामने आया सच...भाटीजोत में ग्लेशियर टूटने से सैंज में तबाही

सैंज घाटी के भेड़पालक उत्तम सिंह ने खड़ाधार से वापस आने पर बताई हकीकत, ग्लेशियर टूटने से पिन पार्वती में समाया पाच नदियों का पानी, फिर घाटी में तबाही



रेड लाइन से पहले पानी छोड़ जाता तो नहीं होती तबाही

एनएचपीसी को ठहराया लापरवाही का जिम्मेदार





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-cum- Sr. Executive Engineer,
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EVEREST POWER PRIVATE LIMITED

CIN: U40101HP2001PTC024679

EPPL/ DOE/2023-24/ 16 **Dated: 28.08.2023**

The Chief Engineer (Energy)
Directorate of Energy ,
Shanti Bhawan, Phase III , Sector 6
Government of Himachal Pradesh
New Shimla - 171 009

Director (Energy)
C.E (Energy)
S.E -1 (Dam,Env. I.T. Wb, SCA, Safety)
S.E -2 (TEC)
S.E-3 (Power Sale,SCA, Commercial Billing)
S.E-4 (Allot, Policy, LAQF Legal, I.S., Monitoring)
Admin., Accounts & Finance)

Subject: **Malana-II Dam – Overtopping**

Ref.: **1. Show Cause Notice no. HPDOE/CE(Energy)/ HDSO/ 2023/ 5592-98 dt. 22 Aug 2023 ("Malana II Show Cause Notice")**

Respected Sir,

1. We write with reference to the captioned Malana Show Cause Notice, addressed to us, Everest Power Private Limited, which owns and operates a 100 MW (2 x 50 MW) hydro power plant on Malana Khad, which is a tributary of Parbati river situated at Village Malana, Tehsil Bhuntar , District Kullu , Himachal Pradesh (**"Malana II Project"**) The Malana II Project achieved commercial operation on 12.07.2012 and has been operating successfully since then.

2. We write to inform you that the concrete gravity dam is 45 m. high X 158.5 m. long at top with a live storage of 0.2875 Mcum. The Malana II Project is located in the Lesser Himalayan Belt, extending from EL. 2545 m to EL. 1908 m. The crest level of the spillway has been kept at EL 2514.50 m. and the intake invert has been provided at EL 2522.0 m level, which means 21.0 m below the F.R.L. The dam site is 10 kms away from the power house and is in an interior and remote location. The dam is accessible by the only approach road developed by rock cutting and some of the span on the bank of Malana river. The temperature at Dam site varies from -5 degree centigrade to 25 degree centigrade. The entire stretch of the approach road has propensity to get damaged at multiple locations during rainy and winter seasons.

3. We wish to humbly submit the reply to show cause notice referred above for your consideration as under:

   a. At the outset, we write to submit that the current shareholder of our company, Everest Power Private Limited, is the Greenko group. Greenko has taken over the company and the Malana-II Project in March 2020 from its erstwhile shareholders.

   b. The letters referred in the aforesaid Show Cause Notice are matter of record.

   As you are well aware, torrential rains in the entire state of Himachal Pradesh since July 08, 2023, has wreaked havoc and has caused a lot of devastation in the entire state of Himachal

Regd. Office: H No. C-35, Sector II, Phase I Main Road, New Shimla, Shimla (HP) 171009.
Corp. Office:Plot No. 13, Sy.No.64 Part, Block-D, Third Floor, Hitech City Layout, Madhapur Village, Hyderabad (TS) 500 081
Ph: +91 4040301000, Fax: +91 4023540287, Email: info@greenkogroup.com

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Pradesh.. Our Malana II Project suffered disastrous consequences too, as a result of very heavy rain. On 09 July 2023 tower No. 17 (located near the right bank to Parbati river) of 132 KV transmission line from Malana II Project to Chhour substation got washed away due to flash-floods in the Parbati river which caused a forced shutdown of the plant subsequently due to the sudden cloud burst in the upstream catchment area induced flash floods on the early hours of 24 July 2023, the radial gates of the dam got choked with silt, boulders, heavy wood and debris, and got jammed and could not be opened, leading to overflowing of water from the Dam top. This overflowing water has cut the soil on the left bank abutment slope as well as about 50 m. length of the earthfill road which is the only access to the Dam top. All out efforts were made/ are being made to move/ open the choked and jammed Dam gates to release/ allow the water to flow through the Dam gates including support from the District administration for deploying of NDRF personnel from 25th July 2023 till 28th July 2023 (4 days) and the NDRF team provided valuable support/ safe access to our teams to reach the Power Pack room at dam top in adverse conditions. Our team with the support of NDRF team tried different options and methods to open the Dam gates. As all the electrical systems on Dam top got affected due to water inundation and had ceased functioning, efforts were made to build Hydraulic Pressure to manually lift the gates and simultaneously along with it to pull the sling attached to the gate(s) with the Jacks. These efforts were not fruitful, but we did try with modifications in the Jacking. A team of Radial gates erection specialists also visited the site to support our team in their effort to open the gates. Besides the aforesaid efforts to move/ open the gates, various other alternatives were explored. On 7/8/2023 a team of video/photographer visited to dam site to shoot the photographs of dam structure with the help drone and it was observed that the health of dam structure was stable.

c. That there can be an extremely remote possibility for failure of our concrete dam, we prepared for the worst case possible scenario in hypothetical condition of dam failure for safety and security of life and assets downstream. We deployed surveyor teams to mark the points of maximum wave level in the downstream of Malana Khad. We are keeping constant close watch and have organised for Downstream Warning System in case of any emergency *viz.* Siren alarms, mega phone on Jeep for announcements, alerts/ mobile communications to locals.

d. That due to incessant heavy rain in the upstream of power plant the approach road leading to the Malana Dam was badly damaged. Specifically, a patch of approach road near to Nirang village was caved in . However, the approach road to dam site was speedily restored. Further, power supply through the 11kv line from Power House to the Malana Dam, which was damaged in the heavy rains, was also speedily restored.. We additionally moved a 125 kVA DG Set to the Malana Dam site as an alternate power supply with Change over.

e. We submit that a Detailed Project Report on construction of additional un-gated surface Spillway was submitted to the Office of Directorate of Energy (DOE) Shimla. The DOE granted its approval vide letter No. HPDOE/CE/Authority/Malana II/2018-8760 dated 02.02.2018.

f. We had also approached the Forest Department, District Kullu, for approval for construction of additional spillway. The Kullu Forest Department granted its approval on **31.10.2018.**

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g. We subsequently submitted an application for construction of the additional spillway to MoEF & CC, New Delhi through online portal. Our application was referred to the Environment Appraisal Committee (EAC), which made its recommendation on 23.04.2019 to the Ministry of Power for consideration of our proposal, which in turn cleared our proposal. We received final clearance of our proposal on **05.08.2019**.

h. We had, in parallel in March 2016, engaged Aquagreen Engineering Management Pvt Ltd (a reputable contractor with experience in discharging the relevant works) on 21 March 2016 for preparation of a detailed project report, design and engineering & project management consultancy. This detailed designing process was completed on **12.10.2019** after taking feedback from all relevant stakeholders [including taking into account the recommendations made by the relevant authorities. We thereafter initiated a tender for construction activities, which included site visits by interested parties. Unfortunately, due to the sudden and unexpected outbreak of the COVID-19 pandemic in late 2019 and early 2020, such site visits were inordinately delayed. Consequent to the undertaking of various mitigation measures and ensuring compliance of all safety protocols by Greenko (which had taken over the project in end of March 2020), various interested vendors visited the site and the work was awarded to M/s. BOMS Private Limited on **20.09.2020.**

i. BOMS had planned to mobilize the resources within a month of its engagement, but due to seasonal and heavy snowfall in the Malana commencing in the month of October (with a pattern to cover approach road with snow leading to land slide etc on approach road), it was compelled to schedule the construction activities only from March 2021. However, due to the unfortunate outbreak of 2nd phase of Covid Pandemic in the month of March 2021, the contractor was unable to mobilize the required resources. The second wave of Covid-19 lasted till June 2021 and during this period of Covid-19 waves, significant restrictions were imposed with regard to movement of people and material across the country and also in the state of H.P. Following this, the monsoon season and the rains (and resultant landslides) between July 2021 and September 2021 (which usually damage approach road and disrupt access to Dam site) once again hampered commencement of the required works.. The landslide pictures of the dam approach road in the month of September 2021 are enclosed below for your kind reference. Further the 3rd wave of the Covid-19 (Omicron) prevailed during January to March 2022 in the country, due to which also it was not conducive to initiate any large scale new major construction works involving large number of workers, in the remote areas, in the uncertain/ unstable conditions for continuous working.

j. Subsequently, the dam approach road was repaired and access to the dam was restored in May 2022 after melting of the snow in the valley.. However, once again due to heavy rain and cloud burst incidents at our project premises on 06 Jul 2022, the road, office and other infrastructure were badly damaged. We reported this incident to your good office and other concerned authorities through our letter No. EPPL-Malana II/HR-2022-23/02 dated 25 July 2022. Necessary resources were deployed for removal of muck and boulders for restoration of road and other

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infrastructure/services. As a result of our consistent efforts, the boulders and muck were removed and the road was partially opened for small vehicle movement in the Month of October 2022. However, heavy snow and landslides in December 2022 damaged the approach road from the project powerhouse to the Malana dam (photographs enclosed for you reference), which again hampered the works.

k. The road was partially reopened for movement of light vehicles in January 2023 after removal of heavy boulders and muck. However, this was not sufficient to commence construction of the Additional Spillway, as we needed to further strengthen the dam approach road to transit the construction machinery and materials. We write to inform you that we have have started the strengthening of road protection wall works and other road repair works and the said road repair works shall complete by the end of November 2023.

l. Amid all of this, we have, vide our letter no. EPPL/DOE/2023-24/20230520 dated 20.05.2023, submitted to your good office our continued commitment to construct the additional ungated spillway, whose construction and completion has only been hampered as a result of extraneous events outside our control.

m. We have duly complied the directive issued vide your office letter no. HPDOE/SCDS-HP/Malana-II HEP/2023/3846-49 dated 25 July 2023 and HPDOE/CE(Energy) /HDSO/2023/3985-88 dt. 31 July 2023 and have submitted periodical updates to the concerned authorities in compliance thereto. We assure you of our commitment to continue complying with the directives, guidelines and our own internal standard operating procedures.

n. In view of the present situation as explained above, so as to divert the overflowing water from dam top, we have engaged with a concrete cutting agency, M/s Abhay Sahni PPL, which has a team with all machines, tools, equipment, materials. The vendor has already been deployed to the Dam right bank side on 11th August 2023. The first channel cut (1 m wide x 0.5 m Deep) is opened towards the downstream side, and it is yet to be opened from upstream side, which will be done together after 3-4 channels are cut, for safety. This channel is covered with chequered plates at present. Cutting of second channel is in the area already isolated.

o. That before commencement of construction of additional spillway the SCDS and SDSO will be duly informed .

p. That we are committed to provide an ungated Surface Spillway as an additional safety feature in the Concrete Gravity Dam as per the directives and approval of the Department of Energy (DOE), Govt. of Himachal Pradesh, in line with the thrust given by the Central Water Commission, Govt. of India for safe and smooth operation of all Hydro Electric Projects .

4. As is evident from the above, we have made our best efforts to complete construction of the additional spillway commencing March 2016, right from engaging consultants and experts to prepare DPRs and submit detailed designing reports, making applications and following up with the

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H.P., Shimla 171005

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relevant authorities for their approval, and engaging contractors to undertake the works. However, due to unforeseen circumstances described above (which were akin to force majeure situations), the work is pending .

5. In view of the aforesaid facts and circumstances it may kindly be appreciated that the delay in execution of work is due to the Force Majure and the other factors beyond our control and we have initiated all reasonable steps hence not violated the provision of Dam Safety Act 2021.

6. We request you to take note of the aforesaid and acknowledge our continuous efforts in ensuring completion and construction of the additional spillway. We remain committed to ensuring the safety of the structure and ensuring compliance of the provisions of the Dam Safety Act and all directives issued by the relevant authorities. We trust our response above has satisfied your good office of our efforts, and we would welcome any suggestions or recommendations you may have in this regard..

Thanking You,

Yours Faithfully,

For Everest Power Pvt. Ltd.

Authorised Signatory

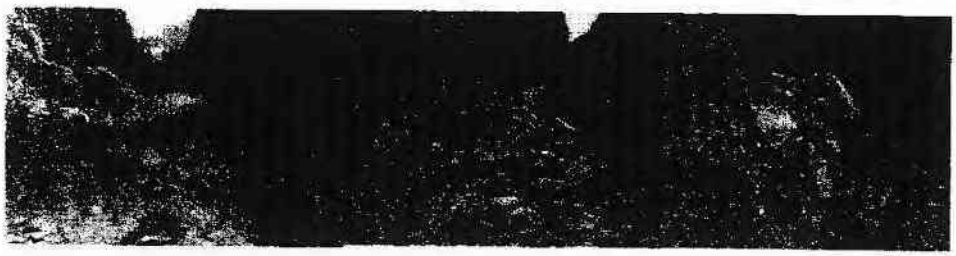
Copy to the following Honourable Authorities:

1. The Sr Private Secretary to the Worthy Chief Minister to the Government of Himachal Pradesh, Shimla-02.
2. The Principal Secretary (Rev-DM) to the Government of Himachal Pradesh, Shimla-02.
3. The Secretary (MPP & Power to the Government of Himachal Pradesh, Shimla-02.
4. The Director cum Special Secretary (Rev-DM) to the Government of Himachal Pradesh, Shimla-02.
5. The Member (Policy & Search) NDSA & Member Secretary NCDS DAM safety and Design Directorate , Sewa Bhawan , R.K. Puram , New Delhi -66
6. The Director, NDSA , North Region , Chandigarh and Superintending Engineer (Co-ordination) , Ministry of Jal Shakti , Department of Water Resources , River Development and Ganga Re-juvination , CWC , Government of India, Indus Basin Organisation -617 , Block No. 4, 6th Floor , Kendriya Sadan, Sector 9A, Chandigarh

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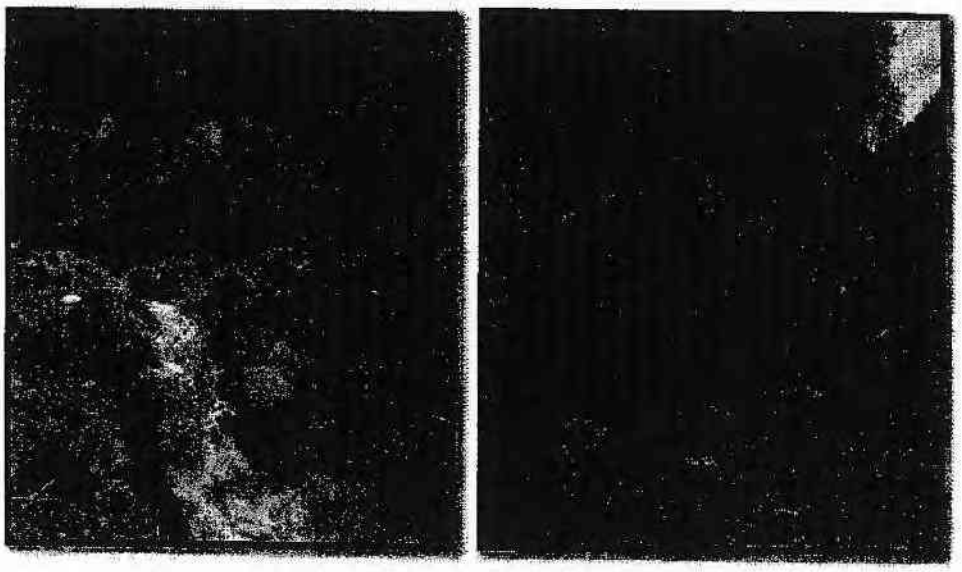
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The Dam approach road was cleared, and road was restored by placing the concerting in the month of May 2022.

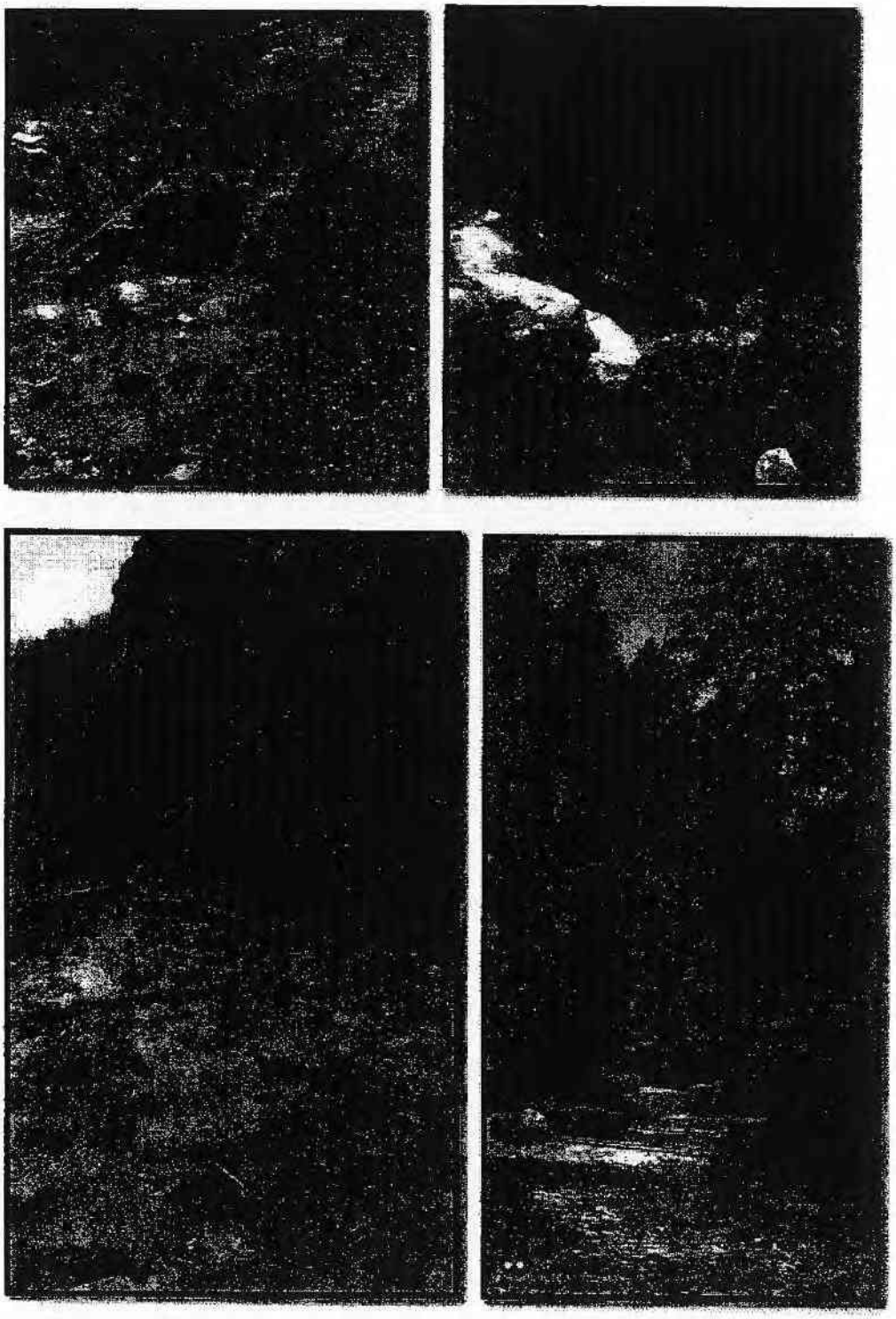
In Jul 2022, Due to heavy rains and multiple cloud burst incidents in the parbati river valley (downstream of our Malana-II Dam) our powerhouse to dam approach road got damaged at several places and several landslides also happened.



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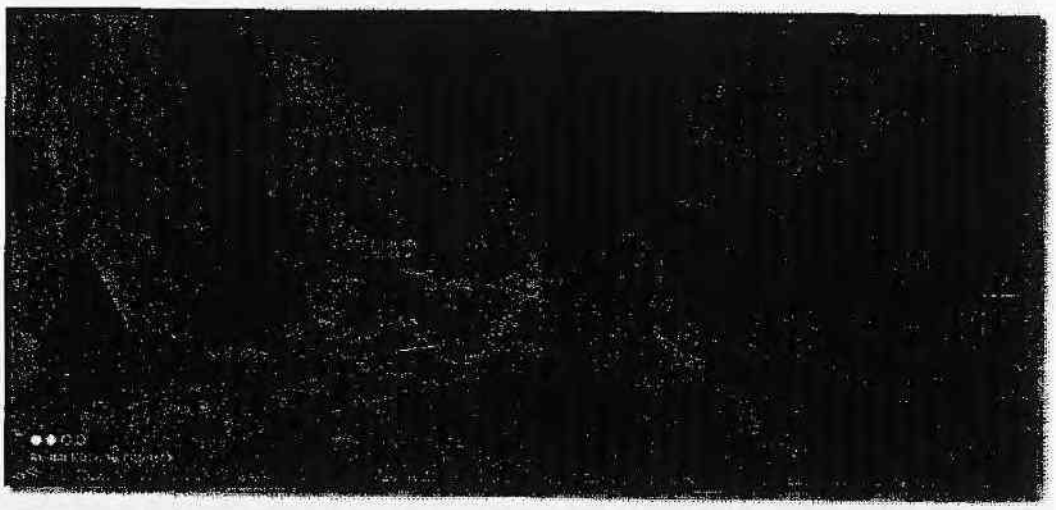
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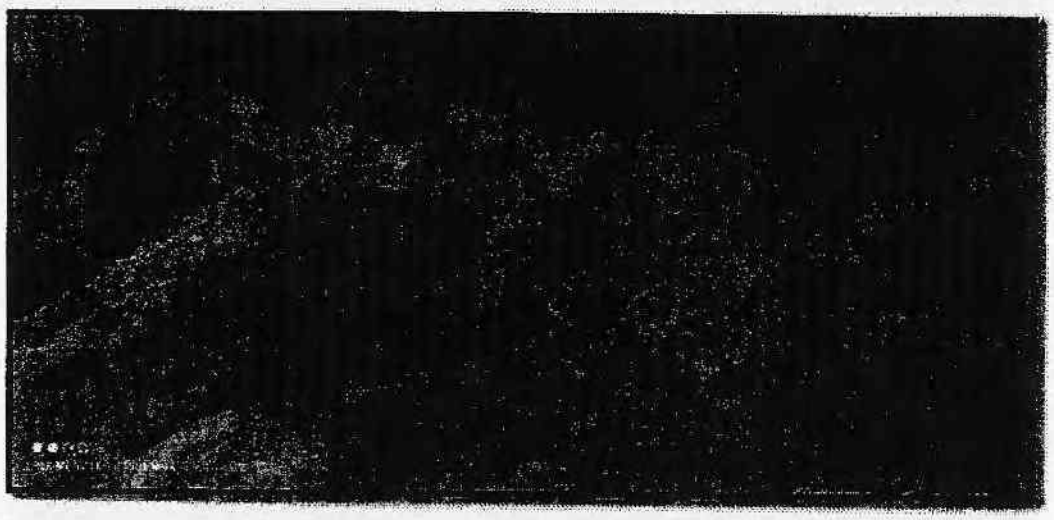


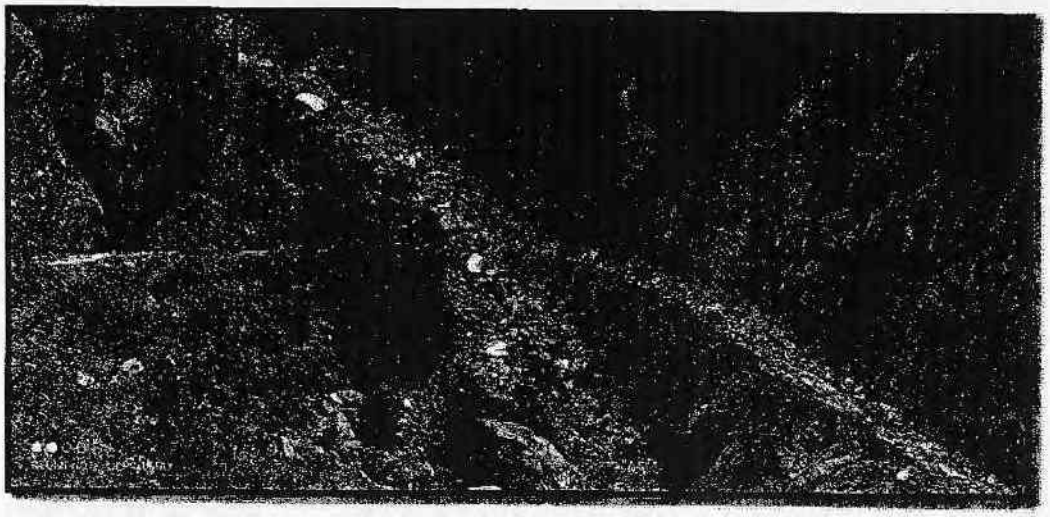
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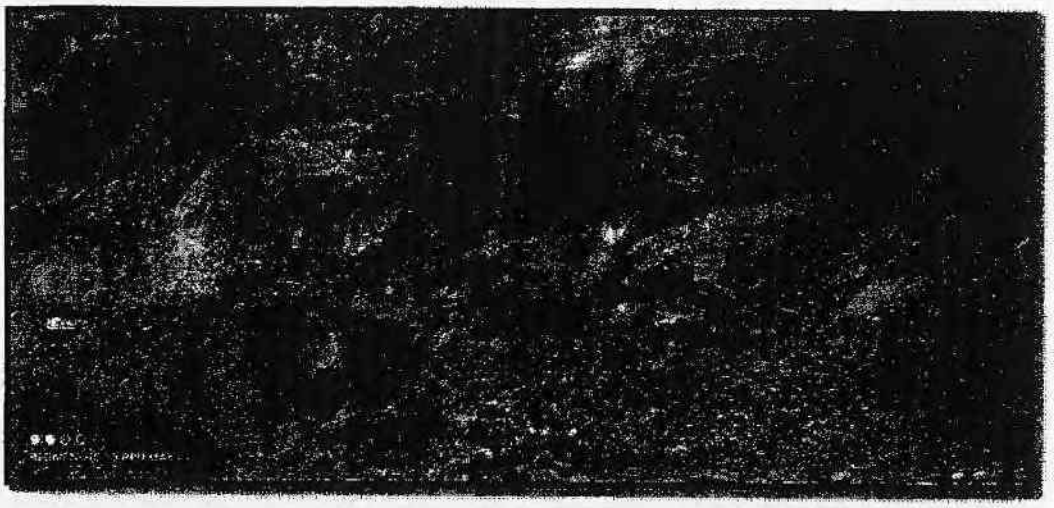


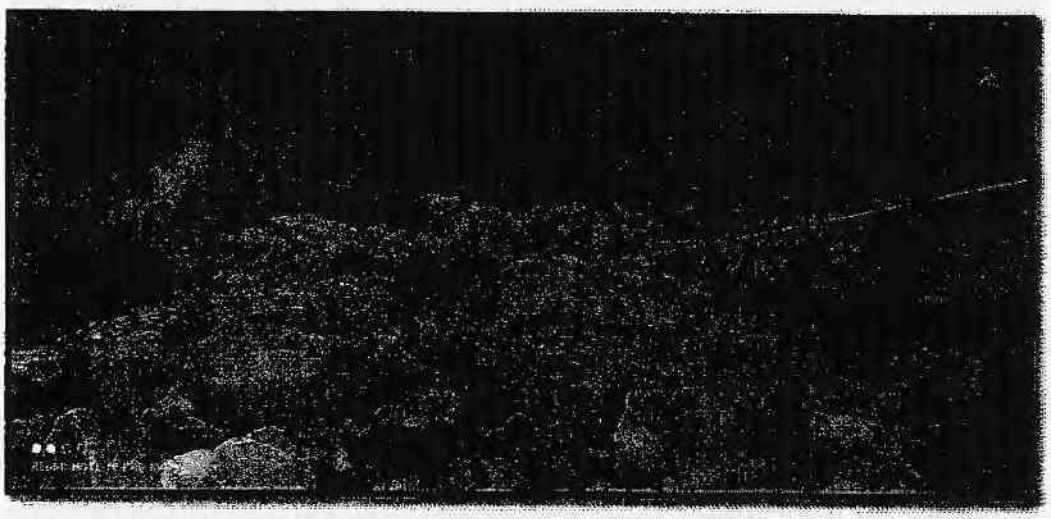


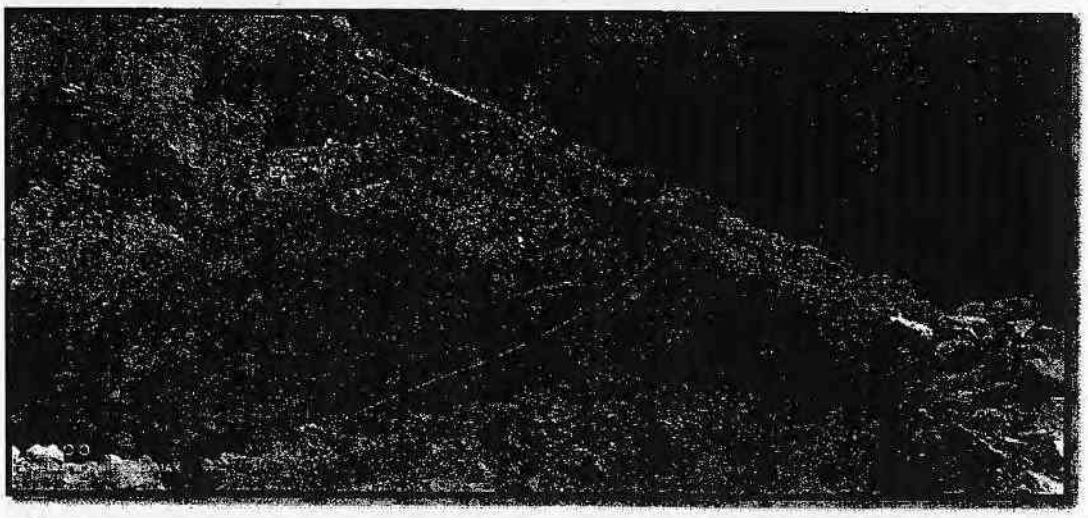
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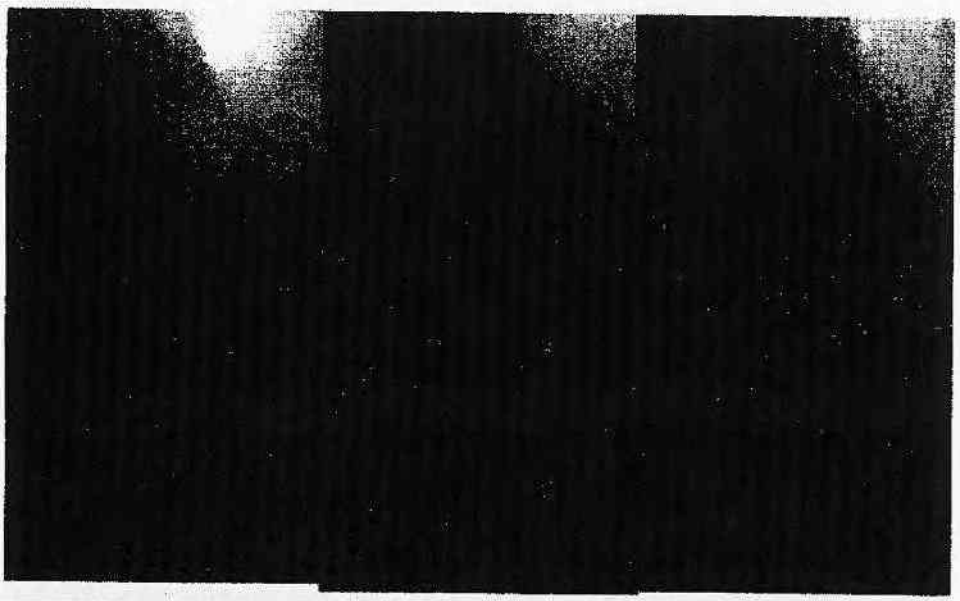


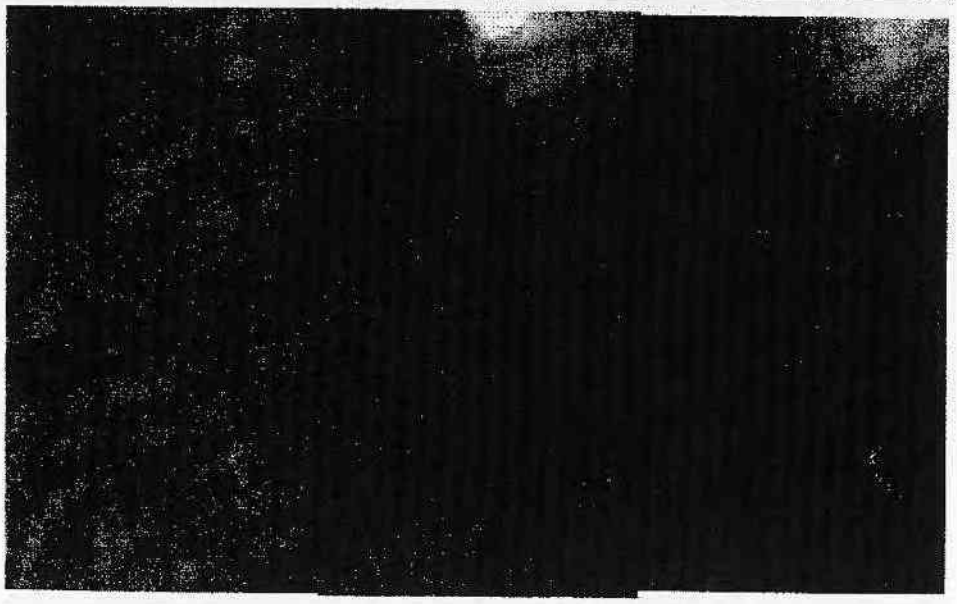
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The land slide pictures of dam approach road in the month of Dec 2022 are enclosed below for your kind reference,





31.1.23

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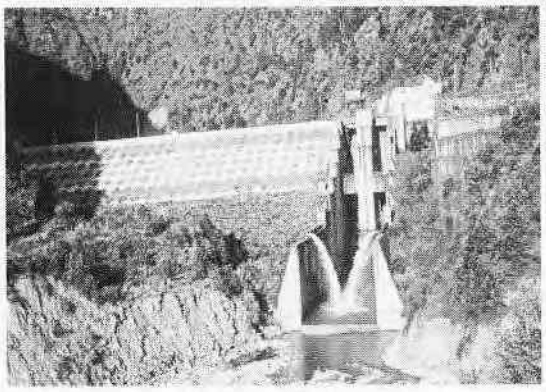
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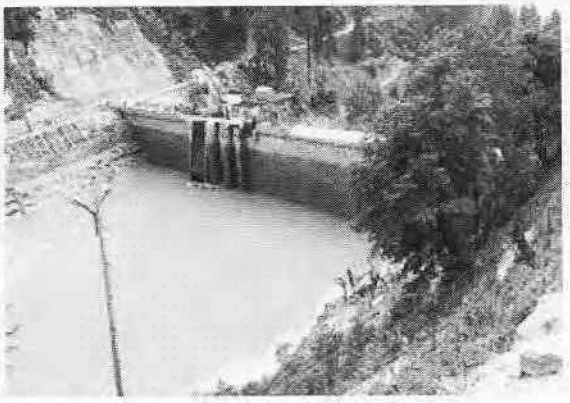
Pong Dam



Pandoh Dam



Parbati-III Dam



Malana-II Dam

Report of the committee constituted by Directorate of Energy, Govt. of HP to examine various aspects of sudden releases from Pong, Pandoh & Parbati-III dams and overtopping incident of Malana-II dam.

November, 2023 **Shimla (H.P.)**

31/1/24

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Preface and Acknowledgements

During the months of July and August 2023, there was widespread rainfall with isolated heavy rainfall in catchments of Beas River and its tributaries. Flooding & associated damages in downstream areas of Pong, Pandoh & Parbati-III dams occurred due to water released from spillways of these dams. Further, incident of overtopping of Malana-II dam also happened during July 2023. In view of the above incidences, Directorate of Energy (DoE), Govt. of Himachal Pradesh vide Order No. HPDoE/CE (Energy)/SDSO-HP/ 2023/7108-25 dated 28-9-23 constituted a committee with members having expertise in the field of dam safety management, gates, hydrology, hydropower to look into its various aspects.

The committee examined various documents and data as submitted by project authorities related to operation and maintenance of these dams, visited the project sites, held discussions with project authorities, district administration and local people and studied & looked into the various reasons for the flooding and overtopping incidences. This report presents the various reasons for occurrence of flooding in the downstream areas of Pong, Pandoh & Parbati III dams and overtopping incident in Malana II dam. Various recommendations have also been made related to operation, maintenance, monitoring and surveillance of these dams, which are necessary for the safety of the dam and for the safety of people residing in the downstream areas. The recommendations made are in line with the provisions of the Dam Safety Act-2021.

I am thankful to the officials of Department of Energy, Government of HP for organization of the visit of the committee to the project sites and for excellent logistic arrangements. Special thanks to Er. D.P Gupta, Chief Engineer (Energy) and Er. Deepak Jasrotia, Dy. Chief Engineer (Dam Safety), GoHP for their meticulous planning, proper co-ordination with all the concerned agencies and for looking into the minutest details of the visit and various meetings of the committee with project authorities, district administration etc. I am also thankful to all the dam authorities, their officials and staff for extending their full co-operation.

In the end, I am thankful to all the members of the committee for their sincere efforts in studying and analyzing the various causes of flooding and overtopping incidents and also for recommending various measures for the safety of dam and people.

R K Guta

31/1/25

(Dr. R.K. Guta)
Ex-Chairman, CWC
and Chairman of the Committee

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Report of the committee constituted by Directorate of Energy, Govt. of HP to examine various aspects of sudden releases from Pong, Pandoh & Parbati-III dams and overtopping incident of Malana-II dam.

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1.0 Background

During the months of July and August 2023, there was widespread rainfall with isolated heavy rainfall in catchments of Beas River and its tributaries. Accordingly, water was released from Pong, Pandoh & Parbati-III dams thereby causing localized flooding & associated damages in downstream areas of these dams. Further, incident of overtopping of Malana-II dam was also happened during July 2023.

To look into various aspects of aforesaid incidences, Directorate of Energy (DoE), Govt. of Himachal Pradesh constituted a committee headed by Dr. R K Gupta, Ex Chairman, CWC with members having expertise in the field of gates, hydrology, hydropower. Officers of DoE are also the members of the committee. The composition of the committee is given below:

Table 1 Composition of the Committee

External Members		
1.	Dr. R. K .Gupta (Ex. Chairman, CWC)	Head
2.	Shri Harkesh Kumar (Ex. Director, CWC)	Member
3.	Shri Goverdhan Prasad, Director, Hydrology (N) Dte, HSO Unit, CWC	Member
4.	Shri R.P.S. Verma, Director, NDSA Northern India, CWC, Chandigarh	Member
5.	Shri Balwan Kumar, Director, HPP&I, CEA, New Delhi	Member
Govt. of Himachal Pradesh		
1.	Shri D. P. Gupta, Chief Engineer (Energy), GoHP-cum-Head SCDS-HP	Member
2.	Shri Deepak Jasrotia, Dy. Chief Engineer, DoE, GoHP-cum-Head SDSO-HP	Member Secretary
3.	Shri Raj Kumar, AEE, DoE, GoHP	Member
Members from Distt. Administration		
ADC/ADM of concerned Distt. (Kangra, Mandi and Kullu for their respective Distt.)		

Govt. of Himachal Pradesh order No. HPDoE/ CE (Energy)/ SDSO-HP/2023-7108-25 dated 28.09.2023 constituting the committee is placed as **Annexure-I**.

1.1 Terms of Reference of the Committee

Terms of reference of the committee are given below:

I. The committee will investigate comprehensively the cause of sudden release happened from these dams which resulted in heavy damages downstream.

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II. The committee will investigate efficiency of EWS implemented, how effective these were, EWS not implemented, Dam Break Analysis, Hydraulic Routing Study, Inundation Mapping carried out, if carried out how effectively it was executed

III. Investigation of overtopping of Malana-II dam due to sudden closure of gates and the action taken by dam authority in this regard and ineffectiveness if any on the part of dam authority which lead to this incident 2nd time.

IV. The committee will also review the reservoir and gate operation as executed by the Dam authorities during this heavy discharge release.

V. The committee on its findings, if found will define and indicate deficiencies observed on the part of Dam authorities and will clearly suggest the action to be taken in this regard.

VI. On broader aspects committee will also suggest measures which should have been executed by all dam authorities as lesson learnt from such incidents.

1.2 Detail of Information sought and received from Project Authorities

Before visit to the project sites, project authorities were requested to provide certain information as per details given below:

- Index map showing catchment area of all the dams, discharge sites, rain gauge stations existing projects, etc.
- Salient features, brief of the important & critical design parameters of Civil Structure & H.M. equipment.
- Copies of the Reports of the Pre & Post Monsoon Inspections undertaken in the last five years. Also, copy of the report of Special inspection if any undertaken in the last five years
- Copies of the log books i.e. Record (i.e. date/time, Reservoir water level, bay number & quantum of gate opening, etc.) of Spillway Gate operations of the last five years period.
- Copies of record of the servicing/maintenance, routine & special repair/servicing carried out/undertaken during the last five year concerning operational reliability of equipment & safety of the gated installation.
- Reservoir & Gate operation schedule concerning flood /outflow regulation.
- Copies of the Operation and Maintenance Manual concerning Civil and Hydro-mechanical equipment (i.e. Hydraulic Gates & their operating equipment).
- Information in respect of incidents of failure, malfunctioning or abnormal observations if any concerning functioning of Hydro-mechanical equipment
- Brief note on Early Warning System installed, its usage & copies of the Study reports
- Copies of the Record of Daily Water levels u/s & d/s of Dam/barrage for the last five years.
- Dam Break Modelling Report including inundation mapping
- Emergency Action Plan
- Communication/warning system to different authorities and downstream communities about the water release from spillway
- Hourly & daily rainfall of June, July & August 2023 of rain gauge stations in and around the catchment of these 4 dams

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- Annual Maximum Peak 1 day / 2 day / 3 day rainfall as long as possible (40-50 years say) at locations of each dam
- Hourly & daily discharges of June, July & August 2023 at locations of each dam
- Annual Maximum Peak Discharges as long as possible (40-50 years say) at locations of each dam
- Latest Bathymetry survey Reports/Elevation Area Capacity of the Reservoirs
- Spillway Capacity and Design Flood of Pong Dam

After receipt of details submitted by project authorities, the committee examined the data, carried out site visits to all the four projects and held discussions with project authorities. The report has been prepared based on the information received from project authorities, observations made during the site visits and discussions held with project authorities during the site visit.

1.3 Site Visit of the Committee

The committee was mandated to carry out the detailed inspection of Pong, Pandoh and Parbati-III dams w.r.t. sudden releases and also Malana-II dam w.r.t. overtopping incident.

Accordingly, the committee visited the Pong, Pandoh, Parbati-III and Malana-II dams w.e.f 16.10.2023 to 21.10.2023 as per the programme given DoE, Govt. of HP letter No. HPDoE/ CE (Energy)/ SDSO-HP/2023-7485-7503 dated 07.10.2023 (**Annexure-II**).

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2.0 Visit to Pong Dam

Pong Dam is a Earth Core Gravel Shell type dam on river Beas located just upstream of Talwara . The live storage of the reservoir is 7290 MCM. It has a concrete ogee type gated spillway for releasing flood water. Spillways with crest elevation at 1365 ft. has six bays fitted with radial gates. Project has a dam toe Power House having installed capacity of 396 MW. Six penstocks each of 5.025 m diameter feed six turbines of 66 MW each. The project is owned and managed by Bhakra Beas Management Board (BBMB). The salient features as provided by the Pong Dam Authority are given in **Annexure-III**.



Pong Dam on River Beas

A preliminary meeting with Project authorities (BBMB) was held on 16.10.2023 to have an understanding of the project features, mechanism being adopted for release of flood water and early warning system. Discussions were also held regarding sudden release of water from Pong dam and affected areas in the downstream.

On 17.10.2023, the committee visited the Pong dam site and also had a reservoir rim inspection to some extent. The gates and spillway structures were inspected by the committee and the non-overflow portion of the dam was also inspected. Thereafter discussions were held at dam site with dam authorities in presence of the Distt. Administration team headed by ADC Kangra. The mechanism of information sharing within the BBMB related to the dam specially inflow in the reservoir and outflow from spillways and its further dissemination to important stakeholders like Distt. Administration, other local departments, PRIs and people downstream was deliberated at length.

Thereafter, the team visited the areas downstream of the Pong Dam. The affected village, Riyali and a bridge site where the river diversion has taken place was also visited. The interactions were also held with the local people in the presence of Distt. Administration at these places.
After the dam and downstream area inspections, committee returned back to the project office at Talwara and a concluding meeting was conducted at BBMB Guest House at Talwara. List of participants in the meeting is given in **Annexure-IV**.

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2.1 Observations of Committee

Project authorities informed the committee that the maximum overflow which can pass through spillway is to the tune of 4,37,000 cusecs and in addition about 7600 cusecs can pass through each of the three penstocks. Further, the maximum reservoir level is 1421 feet and the normal reservoir level is 1400 feet. It was told by the project authority that only in exceptional cases the reservoir filling is taken up to 1400 feet level and generally the HFL is maintained at 1390 feet only. This is so because the HFL is yet to be defined and fix for Pong dam as stated by the dam authorities.

- During the visit it was found that there is no proper existing inflow forecasting system for Pong reservoir. Only few discharge measurement sites are available where old conventional float type method is being used for discharge measurement. Nowhere in upstream there exist automated or latest digital/electronic inflow forecasting /measurement devices. On the scrutiny of the record particularly for the highest discharge observed, a huge mismatch between the discharge data observed at discharge sites and recorded at dam site was found. It was found that basically inflow is used to be calculated by doing reverse calculation at dam site. Inflow is generally being calculated by adding all outflows from the dam and the increase/decrease in water level in the reservoir. Accordingly, the inflow observations and the early warning on flood releases executed are not based on the realistic and authentic data/information. In the absence of a proper inflow forecasting system, early warning regarding exact release of water from dam is difficult.
- BBMB authorities do not have the Rule Curve for Pong Reservoir which need to be prepared for deciding the water to be released optimally based on current reservoir level and inflow and is, thus, an effective tool to utilize the reservoir storage for flood moderation. Rule curve or rule level is important to specify the water level to be maintained in a reservoir during different times of the year.
- The EAP has been prepared without incorporating the Dam Break analysis & inundation mapping. As this is very important factor in safeguarding the loss of property and life of the general public residing in the vicinity of the downstream of the dam. So EAP prepared without dam break analysis, inundation mapping and hydraulic routing study does not serve the required purpose.
- It was observed by the committee that dam authorities have hardly taken up a proper well-coordinated consultation meeting with the relevant stakeholder's viz. people downstream, PRIs, Distt. Administration and other relevant departments.
- The data collection and information sharing system within BBMB authorities is quite complex. The data collection is done by teams at various sites. The data interpretation and compilation is done by a team at Nangal and the approving authority is at Chandigarh. Finally, the same is shared with dam operating personnel at dam site which then further shares it with other stakeholder. The information sharing is mainly through telephone calls, WhatsApp or e-mails. The dam operating personnel shares data/information with all important stakeholder, mainly Distt. Administration, through email or WhatsApp it has been observed that this whole process is quite time consuming and not sound.
- Considerable vegetation growth has been observed on the NOF portion of dam crest and on the slopping embankment downstream which has also been mentioned in the DSRP Report.

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- Automatic Weather Station (AWS) has been established at Harsar (Automatic), Nangal Chowk (Manually operated). But data interpretation of these instruments are not done yet.

- 2 Nos. Emergency Warning Hooters (02 minutes sound blast with 30 seconds break 04 times) have been installed at Dam body and downstream of Dam which are not capable of broadcasting the voice messages/tailor made messages It was observed by the committee that there are many sites downstream of dam to a considerable length along the river where technologically latest broadcasting hooters are required to be installed.

- Seismological Station has not been established which is mandatory in the vicinity of the dam for recording micro and strong motion earthquake and such other data as may be specified by the regulations as per the Clause 34 (1) of Chapter VII of Dam Safety Act, 2021. However, as intimated by the project authority, 2 number accelerographs have been installed at the top and toe of the Dam which are not sufficient to measure the micro motion earthquake.

- Operation of spillway gates is executed manually and it was intimated by the project authority that the proposal for automation of Gates is under consideration in DRIP-II project.

- The committee visited the affected village Ryali which is about 10-12 kms distance from the dam. It was observed that river is wide spread at that location and in this monsoon season has changed its course. Distt. Administration reported that flooding had badly affected the crops and fields in the Ryali village.

- With respect to flooding of downstream area following has been observed by the committee:

  - The Spillway crest is at 1365 feet and MDDL is at 1260 feet. Below level 1260 feet there is dead storage. Hence in no case the spilling is possible till the reservoir level touches 1365 feet level. Only releases possible are through penstocks which have cumulative capacity of 22800 cusec. Out of the releases from penstocks, about 11500 cusecs is diverted to Mukeriyan Hydel Channel (MHC) and balance goes back to river.

  - As per the record it was observed that during the period of heavy rainfall in the State from 9th to 12th July, 2023 the reservoir level of Pong Dam was below crest level and so no outflow was released from spillway except releases through machines/power house till 16th July, 2023.

  - On 17th July, 2023 at 11:00 A.M. when the reservoir level was at about 1372.11 feet and the inflow reported was 65097 cusecs, the outflow/release of water from spillway was started. The outflow from spillway was of the order of 32242 cusecs which was increased to about 40000 cusecs and were continued till 26th July, 2023. During this period the evacuation of the people in the downstream areas was carried out with the help of NDMA and Indian Air Force. The Distt. Administration authorities pointed out that these sudden releases were executed without pre warning or without prior information. The Distt. Administration authorities apprised that these initial releases on 16th and 17th July submerged the downstream area due to which 30 people got stranded though rescued by District Administration with the help of NDRF.

  - Taking the cognizance of the situation, SDSO conducted a meeting on 20th July 2023 with project authorities along with Distt. Administration and directions were imparted to dam authorities to mark the anticipated flood water levels/danger levels in the area likely to be inundated in the downstream of Pong Dam within the State jurisdiction of Himachal Pradesh in

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a week time to facilitate district administration to take necessary preparedness measures accordingly.

- Again on 26.07.2023 a meeting was conducted by the BBMB authorities in which the Deputy Commissioner Kangra, Head SDSO–HP and ADM Kangra also participated. In the meeting it was decided that the discharge from spillway will be released gradually and the efficient and effective reservoir operations shall be carried out considering weekly weather forecast and the discharge releases shall be kept to the tune of around 45000-50000 cusecs in normal conditions and not more than 75000-80000 cusecs in the worst scenario. In the meeting it was also agreed upon that the proper inundation mapping of the downstream area in view of the worst possible scenario/dam break situation will be taken up immediately within a week time and based on the studies the danger level marks shall be marked taking along the Distt. Administration and the habitation downstream shall be made fully aware and sensitized about the probable worst situation.

- On 15-17th August, 2023, again heavy outflows were released (maximum to the tune of approx. 142967 cusecs) from the Pong Dam resulting in heavy flooding in downstream areas. As per district administration, the crops got submerged and evacuation of about 2155 people was taken up with the help of Indian Air Force and NDRF. Due to this sudden releases considerable loss to the properties reported to have occurred in the downstream.

- As per the record provided by dam authority, surprisingly, from 10th August onwards when the reservoir level was 1373.40 feet and inflow was 37833 cusecs, the spillway gates were kept closed and the reservoir filling was allowed till 14th August, 2023. Spillway gates were opened on 14th August, 2023 when the reservoir level was 1389.40 feet and the inflow was 513552 cusecs. The initial outflow on 14th morning was 17312 cusecs which reached maximum to the tune of 142583 cusecs at 1:00 A.M. early morning of 15.08.2023. The trend of outflow to the tune of 1,00,000 cusecs approximately continued till 18.08.2023.

2.2 Recommendations of the committee

- Dam authorities should install telemetry system for inflow forecasting. Latest automatic instruments for flow and weather data recording and dissemination shall be installed as per the requirement. The model developed for this purpose shall include the likely releases from other upstream projects in the catchment area.
- The dam authorities shall prepare reservoir rule curve for optimal reservoir operation so that spillway discharges and reservoir water levels are calculated in a scientific basis and floods get moderated to the maximum.
- Dam authorities shall carry out dam break analysis immediately by considering the PMF. The analysis must incorporate GLOF (Glacial Lake Outburst Flood) studies and Cloud Bursts like incidents in upstream area which could potentially contribute to future flooding. Inundation mapping shall be carried out and downstream areas likely to be affected during dam break scenario shall be properly marked in maps.
- For No - Dam Break scenario also, the hydraulic routing studies shall be taken up for different amount of discharge releases from the reservoir and accordingly the inundation mapping shall be

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carried out and the water levels and the area likely to be inundated shall be marked in the maps specially in property maps in the State boundary of Himachal Pradesh.

- Emergency Action Plan (EAP) shall be revised considering the latest guidelines issued by CWC. EAP must include inundation mapping considering Dam Break Modeling and hydraulic routing studies for different releases from spillways in no-dam break scenario, proper Communication System, co-ordination system among different organizations etc. Public Awareness shall be created and consultation meetings shall be held with all stakeholders periodically.
- The Dam authority shall ensure that there should be a proper mechanism of communication system so that there should be sufficient time available with District administration for information sharing and evacuation of people at the time of flood. Full dependency on Verbal Communication only should not be encouraged. Other effective and modern ways of EWS system be installed and practiced. As intimated by the project authority proposal for up gradation of the hooters is under consideration of DRIP-II project and ensured that the work for these hooters up gradation will be completed before the lean season. These hooters may not be sufficient to alert the downstream habitants. More number of upgraded Emergency Warning Hooters shall be installed at vulnerable locations at the earliest
- The dam authorities shall take necessary steps to implement the observations/recommendations of DSRP.
- Project authority should adhere to the instructions issued by CWC, CEA, GoHP and other concerned organizations in respect of operation, maintenance, disaster management, emergency planning etc. and shall adhere to all provisions of Dam Safety Act-2021 for safety of dam and downstream people.

2.3 Concluding Remarks

Based on the data/information provided by dam authorities, site visit and discussions held with project authorities & Distt. Administration, the committee is of the view that considerable improvements have to be carried out by dam authorities in the area of inflow forecasting, optimal reservoir operation, early warning system, and emergency action plan and communication system.

Dam Safety Act-2021 has laid down various provisions to be implemented by owners of the dams for the safety of the dam and people. For this purpose, directions were imparted by state agencies to dam authorities from time to time. Establishment of an adequate inflow forecasting system complimented by a robust Emergency Action Plan containing the inundation mapping and efficient Early Warning Systems might have mitigated the damages caused in the monsoon floods.

State Government should also take necessary steps to reduce encroachments in the flood prone area downstream of dam based on inundation mapping carried out by Dam authorities for different discharges from spillway & Dam Break Modeling.

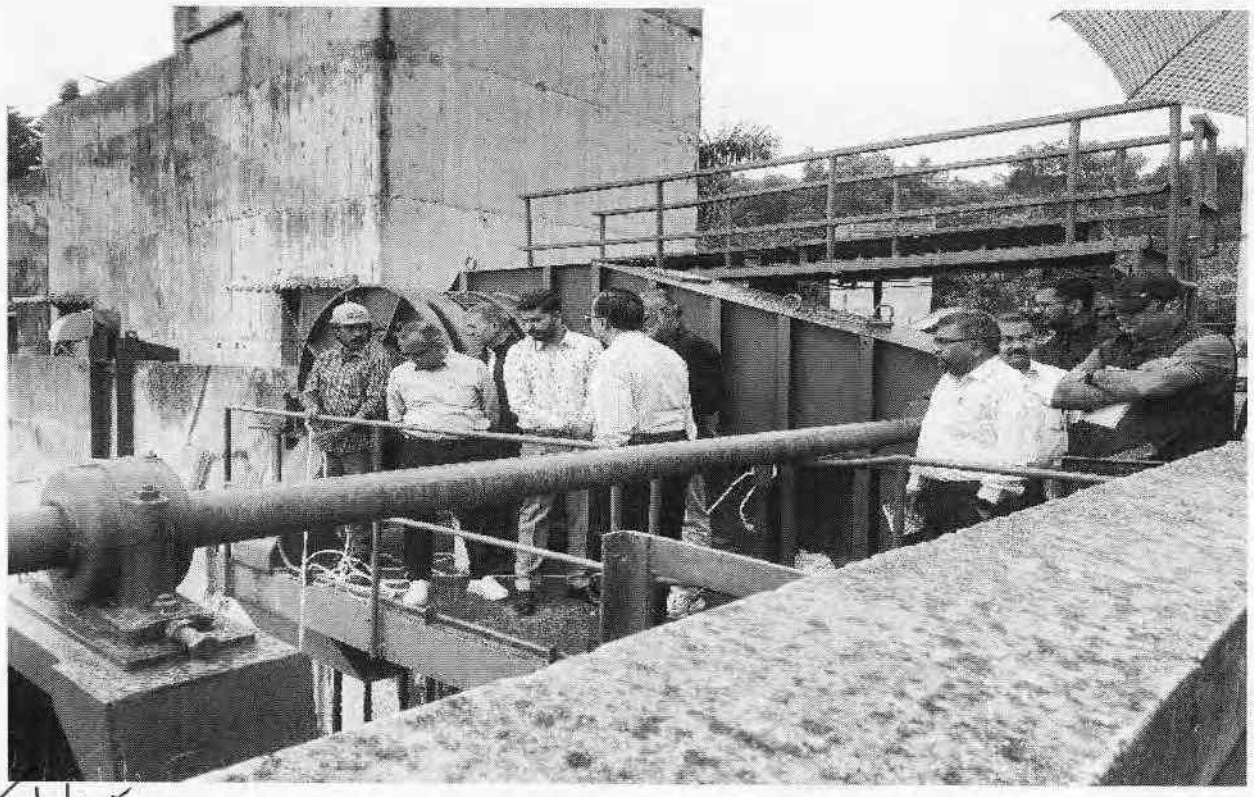
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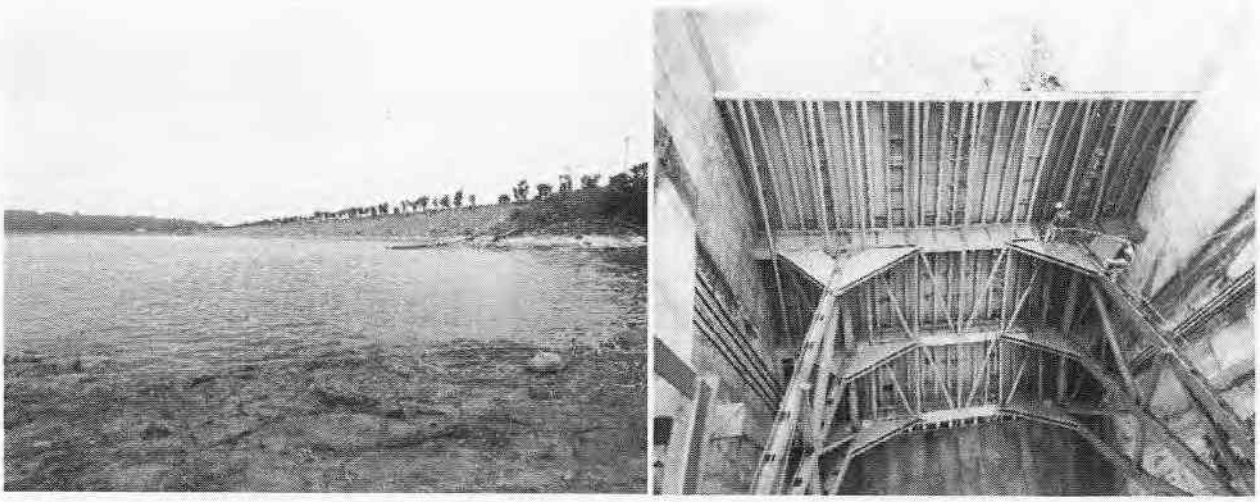


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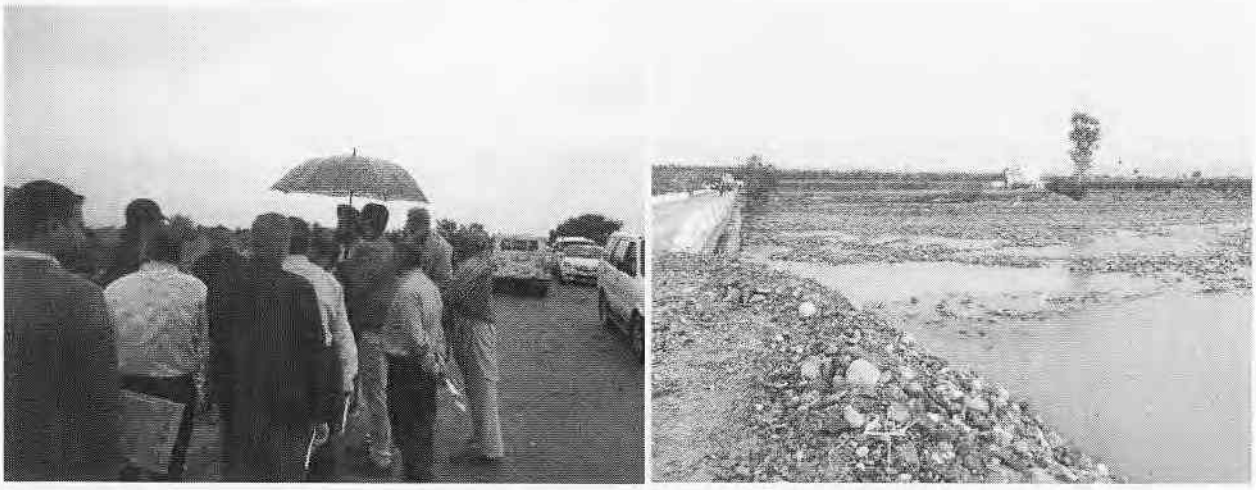
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Dam & Gate Snaps





Downstream Flooded Area Visit

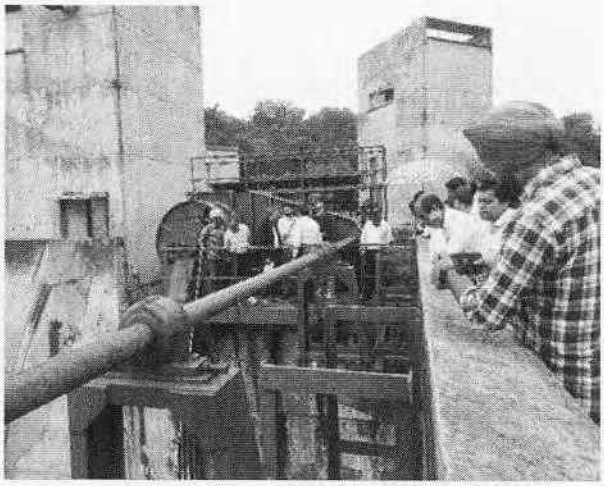
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Downstream River Area



Reservoir & Gate Inspection

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3.0 Visit to Pandoh Dam

Pandoh dam is an embankment dam on river Beas in Mandi district, HP. Maximum height of the dam is 76.2 m . It's live storage is 18.56 MCM. It has a concrete spillway fitted with five radial gates of size 12m x 13m. Benefits from project include annual irrigation of 8 lakh acres and generation of 3000 million units of electrical energy through Deher power house having an installed capacity of 990 MW. The project is owned by BBMB. The salient features of the project are enclosed as **Annexure-V**.

The committee conducted a preliminary meeting with Project authorities (BBMB) on 18.10.2023 at Sundernagar. Discussions were held regarding sudden release of heavy discharge from Pandoh dam and affected areas in the downstream due to sudden release.

The committee also had a meeting with Deputy Commissioner, Mandi. Detailed discussions were held regarding damages caused by the sudden releases from Pandoh Dam. The officers of relevant departments were also present in the meeting. After the meeting, the team visited the flood affected area in and around Mandi town along with the Distt. Administration and local officers. After that, the committee visited the Pandoh town and visited the area of the Bazar and the bridge which got washed away during the floods. The committee also interacted with the affected families and the local shopkeepers. The representatives of district administration were present during these spot visits.

Later in the afternoon, committee carried out inspection of the dam site. Spillway, intake arrangement, gates and the dam embankments (downstream) were inspected. Thereafter, a meeting was held at Dam Site with project authorities along with officials of district administration. List of participants in the meeting is enclosed at **Annexure-VI.**

3.1 Observations of the committee

- During visit, it was found that there is no adequate arrangement for automatic inflow measurement & forecasting system for Pandoh dam. Pandoh dam is dependent on the Larji project regarding inflow forecasting information. The water release from Larji Dam takes about 30 minutes to reach Pandoh Dams reservoir. The only communication mode is through mobile and WhatApp with Larji Dam.
- At the time of visit, it was also observed that data of inflow was calculated by reverse calculation. Details are enclosed as **Annexure-VII.**
- Three Emergency Warning Hooters are installed (one at control room, 2nd at workshop gate near Pandoh bazaar and 3rd at fire station Pandoh), which cover the area upto 6 km downstream only. As intimated by the project authority proposal for upgradation of these hooters is under consideration of DRIP-II project and ensured that the work for these hooters' upgradation will be completed soon.
- BBMB authorities do not have the Rule Curve for Pandoh Reservoir which is essential for proper reservoir operation.
- The EAP has been prepared without incorporating the latest dam break analysis, inundation mapping and hydraulic routing studies. These are very important factors in safeguarding the loss of property and life of the general public residing in the vicinity of the downstream of the dam.

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- As per the available records of the dam break analysis, it has been noted that the analysis did not incorporate GLOF (Glacial Lake Outburst Flood) studies and potential cloud bursts phenomenon which could potentially contribute to future flooding.
- Periodic stakeholder meetings involving the project affected Gram Panchayats and District Administration are not being conducted for creating awareness in the general public.
- The bathymetric survey has been conducted, but it is not up to standard and does not reveal the actual reservoir's storage capacity. It is essential to update it in accordance with standard guidelines.
- Seismological Station has not been established which is mandatory in the vicinity of the dam for recording micro and strong motion earthquake and such other data as may be specified by the regulations as per the Clause 34 (1) of Chapter VII of Dam Safety Act, 2021.
- With regard to the damages occurred during the floods, the committee inspected the Sewage Treatment Plant (STP) site, landslide sites and the damaged road. The officers of concerned departments elaborated to the committee about the damages and the protection work being taken and required to be taken up.
- The committee visited the Pandoh Bazaar, where the damages have occurred to properties of local residents and a bridge had been washed away during the flood. The local residents expressed significant concerns about the losses. As per the local people, this bridge was the sole means of access to neighboring villages on the other side and its absence now requires them to travel a considerable distance (10-15 kilometers) to reach those villages. Sub-Divisional Magistrate (SDM), Mandi apprised to the committee that a proposal for the construction of a new bridge has been submitted to the government and its being taken up. Further the funds have already been disbursed to affected families as an immediate relief measure.
- It was observed that sharing of information regarding outflow/water release from spillway sharing through EWS is only upto a very small river length downstream. It is actually required up to a considerable length even beyond Mandi town downstream.
- Considerable vegetation growth has been observed on the NOF portion of dam crest and the slopping embankment downstream.
- One of the Radial gate is continuously kept open by very small amount ***say few millimeters*** to meet out the requirement of environmental flow. Such a very small opening of the gate is not advisable because it may have serious implications on the structural safety of gated installation.

3.2 Recommendations of the committee

- It is recommended by committee that proper EWS mechanism be installed and practiced by the dam authorities.
- The proper inflow recording mechanism in the catchment of Pandoh dam covering catchment upstream of Larji dam and the intermediate catchment between Larji dam & Pandoh dam is essentially required to be established.
- The total absence of inflow forecasting system is major hurdle in implementation of EWS properly. The dam authorities must strive hard for developing and having a proper inflow forecasting system in the upstream either on its own or in coordination with other dam authorities upstream.

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- Emergency Action Plan (EAP) should be updated by including inundation mapping based on results of Dam Break Modelling and for different amount of releases from spillway after carrying out hydraulic channel routing studies etc., Proper Communication System, Public Awareness details, demarcation of duties of different organizations shall be included. Consultation meetings should be carried out with all stakeholders.
- GLOF and the Potential Cloud Burst Phenomenon studies in the dam break analysis shall be taken up by the project authority.
- Trained and well conversant Engineers/Technicians shall be deputed at Dam site for operation and maintenance of the dam and reservoir. Their skill upgradation and capacity building must be taken up on regular basis.
- The dam authorities should immediately go for vegetation clearance from the dam top and embankment slopes downstream as per DSRP recommendations.
- The risk assessment and hazard potential in respect of Pandoh dam may be taken up by the dam authorities as required by Dam Safety Act.
- The dam authorities shall plan for retrieving back the lost live storage due to heavy siltation in the reservoir.
- It is suggested that the project authority may devise /provide suitable dedicated arrangement for releasing the environmental flow as an alternative to meeting out this requirement by opening the radial gate by a very small amount.

3.3 Concluding Remarks

Based on the data/information provided by project authorities, site visit and discussions held with dam authorities, Distt. Administrations & affected people, committee is of the opinion that Pandoh Dam authorities (BBMB) are required to develop a proper inflow forecasting system and an effective EAP. Inundation maps are required to be developed based on the results of Dam Break Modeling and hydraulic channel routing studies for different amount of spillway discharges up to the considerable length of river beyond Mandi town.

Pandoh dam is not a storage dam and has limited live storage. Hence, not much flood moderation is expected from the dam. However, a proper inflow forecasting system may provide early warning in the downstream about the releases from the spillway.

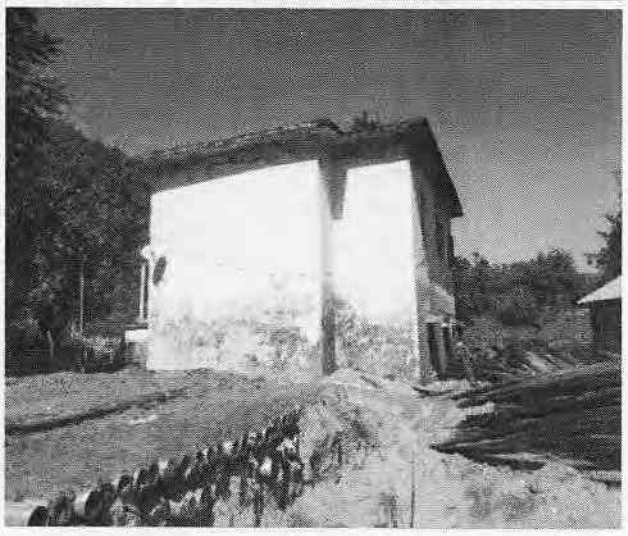
Dam Safety Act-2021 has laid down various provisions to be implemented by owners of the dams for the safety of the dam and people. For this purpose, directions were imparted by state agencies to dam authorities from time to time. Establishment of an adequate inflow forecasting system complimented by a robust Emergency Action Plan containing the inundation mapping and efficient Early Warning Systems might have mitigated the damages caused in the monsoon floods.

State Government should also take necessary steps to reduce encroachments in the flood prone area downstream of dam based on inundation mapping carried out by Dam authorities for different discharges from spillway & Dam Break Modeling.

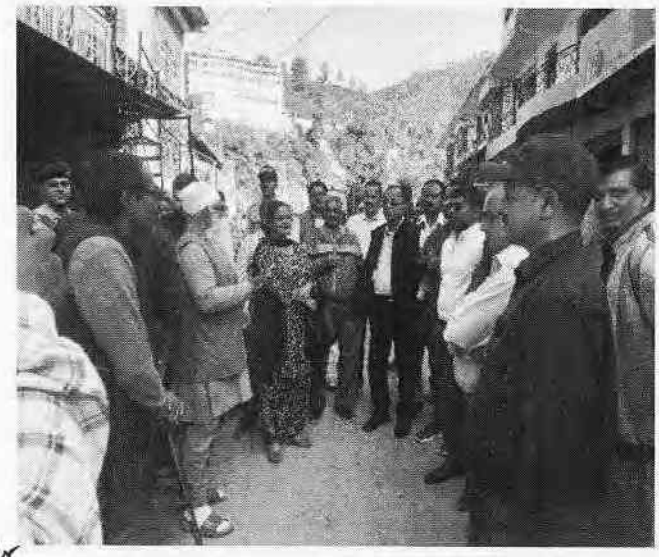
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Downstream Flooded Area & Submerged Store




Interaction with Local Resident at Pandoh

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4.0 Visit to Parbati-III Dam

Parbati III dam is a diversion structure of run-of-the-river type hydroelectric scheme located on river Sainj (a tributary of river Beas) near village Suind just about 1 km downstream of the confluence of Sainj River with Jiva Nallah and also d/s of the tail race of Parbati-II HE Project. It is a rockfill dam of maximum height 43m. The project was commissioned in 2014. The project is owned & managed by NHPC.

The dam body has been provided with the spillway of the left hand side with two radial gates to pass design flood of 3300 Cumecs. The reservoir area also has provisions of two tunnel spillways which were used to be diversion tunnel during construction period to pass flood discharge of 1314 cumecs each at FRL. The salient features of the project are enclosed as **Annexure-VIII**

The committee conducted a preliminary meeting with NHPC officials of Parbati-III Project on 18.10.2023. Discussions were held regarding sudden release of water from Parbati-III dam and affected areas in the downstream. The NHPC officials of Parbati-III Dam made a presentation regarding dam features and studies carried out on dated 19.10.2023. ADM Kullu was also present during the presentation. After the presentation the committee visited the dam site of Parbati-III dam along with SDM Banjar and affected areas downstream of the Parbati-III Dam specially the Sainj Village. A concluding meeting was conducted at NHPC Site office at Parbati-III Dam. The list of participants in the meeting is enclosed as **Annexure-IX.**

4.1 Observations of Committee

The observation of the committee are as under:

- As intimated by the Parbati-III project authority, two Digital Water Level Recorder (DWLR) have been installed. One is installed at G&D site in Jiwa Nallah (1.2 km upstream of Parbati-III Dam) and other is at the Surge Shaft, observing the data round the clock. The DWLRs having solar supply power backup are equipped with GSM based data transmission system and data is recorded at an interval of 10 minutes. The real time water level data of above two sites can be accessed online at EWS control room established at Dam Top.
- Two G& D sites have been established at Jiwa and Neuli which are about 1.20 KM and 1.40 Km respectively from dam site and manpower has been deployed 24X7 in monsoon season with cellular phones connectivity with control room. As intimated by the project authority, Control room regularly takes information from weather reports/forecasts available on different websites (mosdac.gov.in, ffc-india.gov.in, cwc.gov.in, city.imf.gov.in etc.)
- The inflow forecasting system to assess the inflow discharges during the flood situations was not present in upstream locations of dam body and also the discharge and gauge site on Jiva Nallah was not functional. For Inflow discharges, the personnel deployed at dam of Parbati-III were totally dependent on the Sainj HEP Authorities (located about 12 km upstream). For estimating the inflow discharges from Jiva nallah project authorities are using certain assumptions and thumb rule (certain percentage of sainj river). The Parvati-III Dam authorities were also not having the Early Warning System as per the CWC guidelines.

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- As per the data supplied by the dam authorities the maximum peak floods observed since year 1973 to till date are as 724 cumecs in year 1993, 984 cumecs in 2019 and more than 1000 cumecs in year 2023. The dam break analysis has been carried out by them and also the flood danger level marks at six number locations were also observed. After enquiring it was came to notice that these marks were with respect to 800 cumecs of flood discharge. The data supplied by the Parbati-III HEP shows that the maximum discharge of 1044 cumec which was released through the spillway on dated 9th and 10th July 2023 during heavy rains in the Beas basin, however it has been observed during the visit from the flood marks that the discharges released from the spillway might be much more than 1044 cumec, which lead to the heavy property loss in Sainj town which is located about 3 km downstream of Parbati-III dam.
- Parbati-III dam is not a storage dam as its live capacity is of the order of only 0.97 MCM. It was observed that proper inflow forecasting system has not been installed in order to provide timely accurate information to the district administration for carrying out the evacuation during the release of flood water through spillway.
- From the data supplied by NHPC officials it has also been observed that, no reservoir levels were recorded on dated 10th July 2023 and tentative discharges were reported.
- An Automatic Weather Station (AWS) has been installed at NHPC Colony at Sainj, which comprises multiple equipment's i.e. rain gauge sensor, temperature sensor, humidity sensor, wind speed sensor, wind direction sensor, evaporation etc. AWS having solar supply power backup are equipped with GSM based data transmission system and data is recorded at an interval of 30 minutes.
- It was apprised by Parbati-III authority that purchase order for three I-SAT phones has been placed vide their office letter no. NH/PPS-III/IT &C/131 dated 13.09.2023 and project authority ensured that these will be procured by the end of Dec, 2023.
- The EAP has been prepared without incorporating the inundation mapping. It is very important factor in safeguarding the loss of property and life of the general public residing in the vicinity of the downstream of the dam.
- It has been intimated by the project authorities that early warning system/Hooters were damaged completely during current floods. There were six upgraded sirens in downstream from Parbati III Dam to Larji (At dam Top (3.25 km Range, at Sainj NHPC Colony (5 km Range), at Talada (3.25 Km Range), at Sapangani (5 Km Range), at Behali(5 Km Range) and at Larji (5 km range)).
- During the duration of flood occurred between 8th to 11th July, 2023, the sequence of action taken by the project authorities are as under :
- EWS of Parbati-III has coordination with Sainj Barrage (10 km upstream).
- Project authorities received information at around 6 PM on 08.07.2023 from Sainj Barrage about the rising trend of inflow.
    - Sensing the upcoming flood, the hooters, installed at 6 vulnerable locations, were blown.
    - Excess flow managed by gradually opening the spillway gates.
    - Power Plant was shut down from 10:32 PM on 08.07.2023 due to heavy sediment and water inflow
    - At 5 PM of 09.07.2023, a flood of about 1000 Cumec was observed at Parbati III dam.
    - The Power Station came into active mode timely and managed to pass the heavy flood gradually and successfully through the gates of dam.

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- All reservoir safety precautions/ SOP for reservoir operation were followed and opening of gates were gradual.
- This unprecedented flood damaged not only downstream location but also damaged dam structure i.e. spillway glacis, part of gates etc. extensively leading to stoppage of power generation.

- The committee members and team of Parbati-III project had a discussion on 19.10.2023 with local people of Sainj village to have an idea about extent of damage caused by the floods downstream of the Parbati-III dam. The local people were agitated and were concerned about the washing out of dumping site downstream of dam. They apprehended that this was the major reason for the damage caused by flood which brought big boulders along with water resulting in loss of their property. As per Parbati-III project authorities a landslide occurred in the vicinity due to heavy rain and flood water carried landslide material. They also apprised that they have already released the required funds to the District Administrations for the construction of bridge which has been damaged/washed out during the floods.

4.2 Recommendations of the committee

- Proper inflow forecasting system should be installed so that information about the spillway releases & gate operation can be sent timely to downstream.
- Inundation mapping based on results of Dam break analysis and channel routing results for release of different discharges from spillway shall be carried out. These inundation maps should be part of EAP. Danger levels with respect to different discharges as per /inundation mapping results needs to be marked in downstream areas of dam and local administration needs to be made educated regarding these levels.
- An effective Emergency Action Plan (EAP) must include Inundation mapping, proper Communication System, Public Awareness and other details as per CWC guidelines. The Dam Beak analysis should also include the GLOF studies.
- Regarding EAP, periodic meetings of all stakeholders involving the project affected Gram Panchayats and District Administration are required to be conducted for creating awareness in the general public.
- The damaged Pre-warning system/Hooters need to be replaced immediately with latest ones as per the CWC guidelines.
- I-SAT phones should be made operational as early as possible.

4.3 Concluding Remarks

Based on the data/information provided by project authorities, site visit and discussions held with dam authorities, Distt. Administrations & affected people, committee is of the opinion that Parbati III Dam authorities (NHPC) are required to develop a proper inflow forecasting system and an effective EAP. Inundation maps are required to be developed based on the results of Dam Break Modeling and hydraulic channel routing studies for different amount of spillway discharges up to the considerable length of river.

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Parbati III dam is not a storage dam and has limited live storage. Hence, almost negligible flood moderation is expected from the dam. However, a proper inflow forecasting system may provide early warning in the downstream about the releases from the spillway.

Dam Safety Act-2021 has laid down various provisions to be implemented by owners of the dams for the safety of the dam and people. For this purpose, directions were imparted by state agencies to dam authorities from time to time. Establishment of an adequate inflow forecasting system complimented by a robust Emergency Action Plan containing the inundation mapping and efficient Early Warning Systems might have mitigated the damages caused in the monsoon floods.

State Government should also take necessary steps to reduce encroachments in the flood prone area downstream of dam based on inundation mapping carried out by Dam authorities for different discharges from spillway & Dam Break Modeling.

Pictures of PARBATI-III HEP VISIT:-



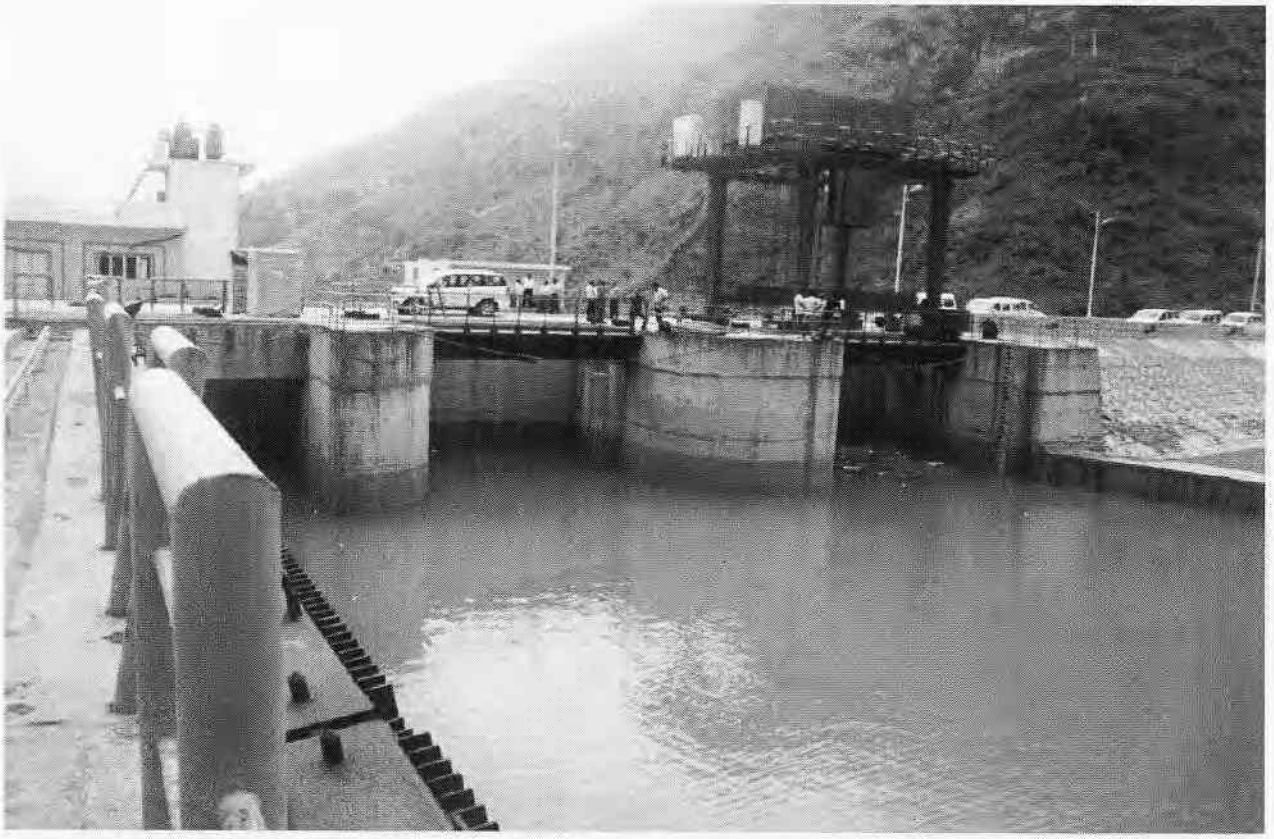
Upstream Face view of Parvati-III Dam

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Gated Spillway view of Parvati-III Dam

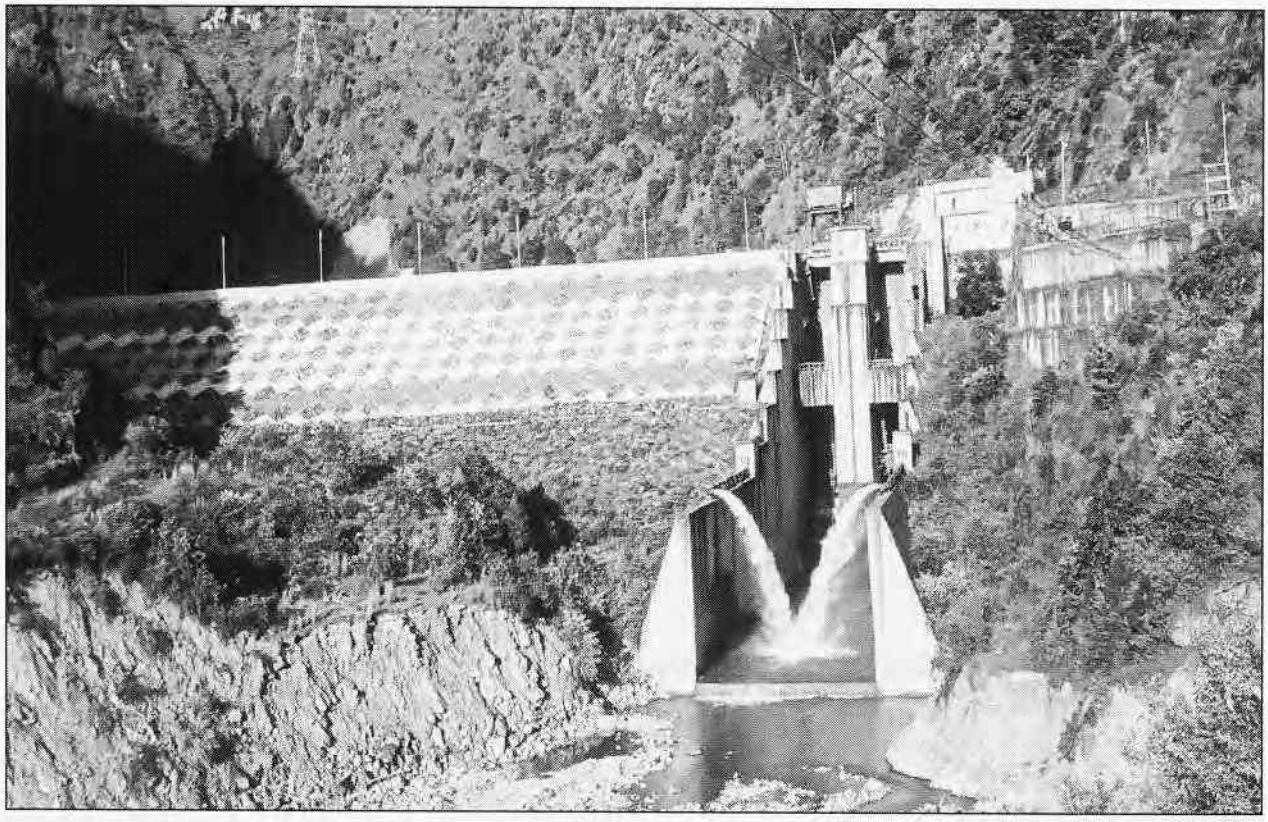


Power Intake view of Parvati-III Dam

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Downstream Face view of Parvati-III Dam



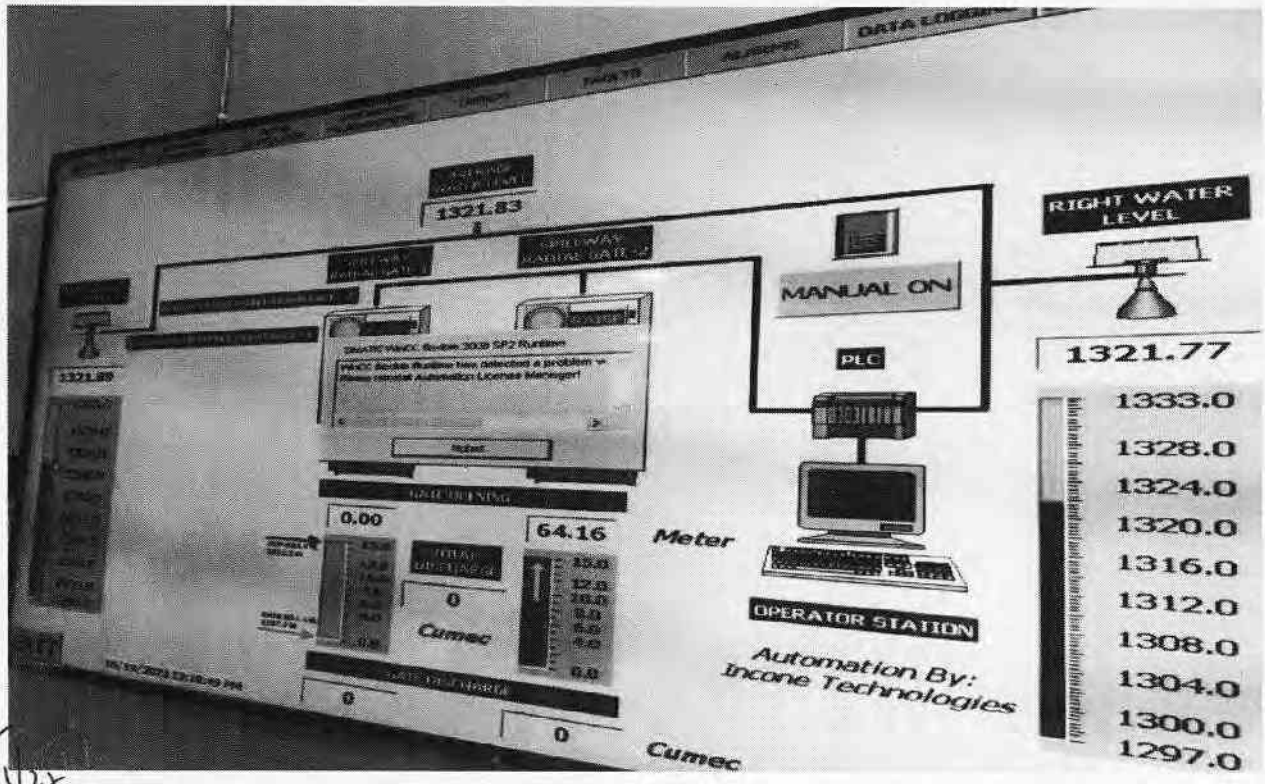
Discussions at Dam crest of Parbati-III HEP

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Reservoir area and DT Inlet of Parvati-III Dam

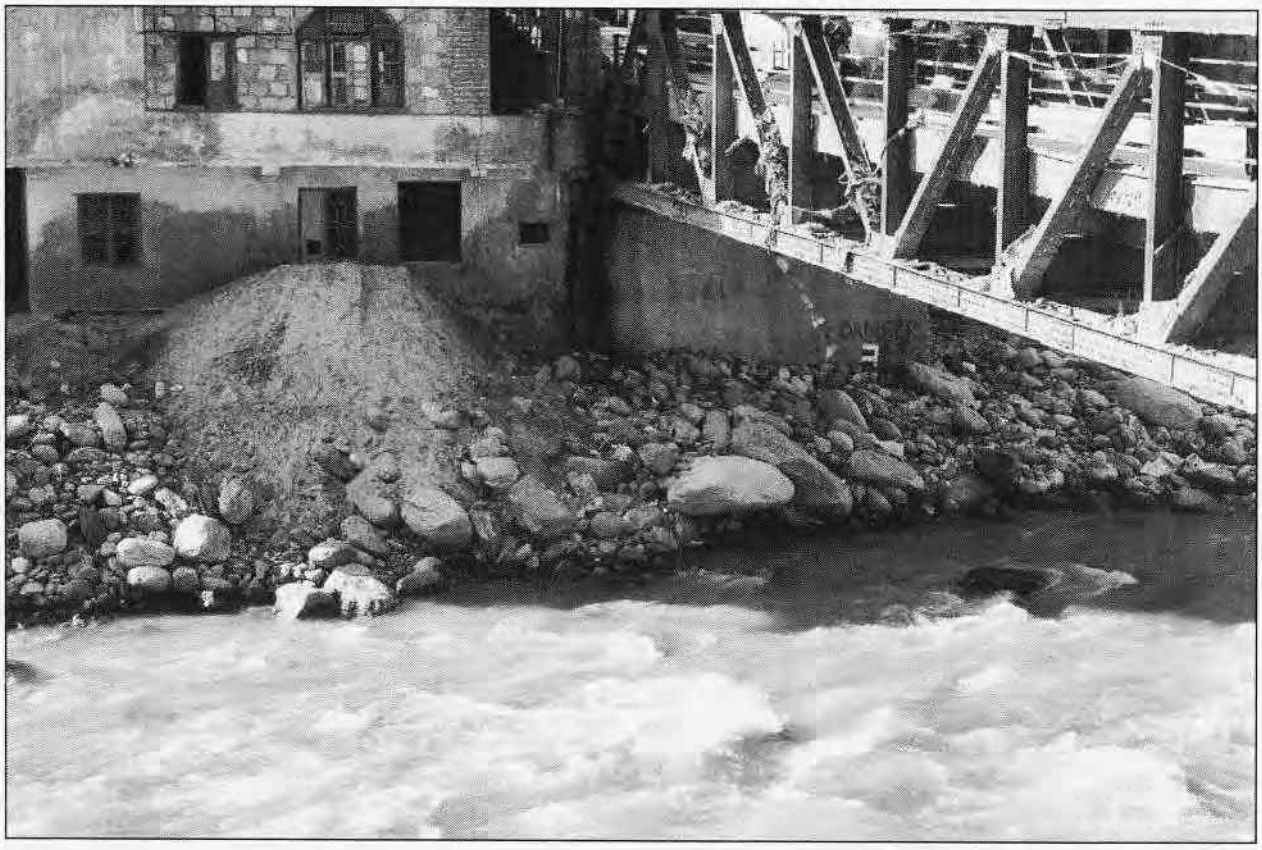


Digital gate opening and discharge in control room of Parvati-III Dam

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Flood danger level wrt 800 cumecs below the bridge in Sainj Town



Meeting/Discussions with local people in Sainj Town

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Sainj Town Before Flood and after Flooding



Sainj Town Downstream of Bridge

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5.0 Malana-II Dam

The Govt. of HP had allotted Malana-II HEP (100 MW) to M/s Everest Power Private Limited which entered into a Memorandum of Understanding (MoU), with Govt. of Himachal Pradesh on 27th May 2002. Subsequently, Implementation Agreement (IA) was signed between GoHP and M/s Everest Power Private Limited on 14th January 2003 for implementation of Malana-II HEP (100 MW).The Project Proponent has achieved the Commercial Operation Date of the Project on 12th July 2012.

Malana-II is a conventional gravity type concrete dam of ±53 meter high above the deepest foundation level. As reported by dam authorities, it is founded on sound rock. As per record, the foundation of the dam has been kept at EL ± 2492 meter. Length of dam at the top is ± 150 m (Dam block)+ 63 m (Key wall into the LHS Hill Mass). Two number 4.00 m x 5.50 m size Spillway Radial Gates have been provided in the dam. One set of 4.00m (W) x 7.10m (H) size stop log gate has been provided to facilitate maintenance of the radial gate. For the operation of radial gates the control room is provided at the top of Dam body just above the gates. The reservoir capacity is (Gross Storage is 0.386 MCM and Live Storage is 0.2875 MCM). For the operation of stop log gates gantry crane has been provided at the top of dam body. The salient features of the project are enclosed as **Annexure-X**.

The committee conducted a preliminary meeting with Project authorities of Malana-II Dam Authorities on 19.10.2023 regarding overtopping incident occurred in Malana-II Dam. Further, the committee visited the dam site on 20.10.2023 of Malana-II Dam and a concluding meeting was conducted at Dam Site of Malana-II Dam. The list of participants of the meeting at Malana-II HEP is enclosed at **Annexure-XI.**

It was informed to the committee that first overtopping of Malana-II dam happened on 24th August, 2013. As per previous DoE Inspection Reports submitted by the panel of expert committee vide letter No. HPDOE/PF/Inspection Malana-II-1-4 dated 30.09.2014, it was stated that on 24th August, 2013, both units which were under operation with 16 cumec discharge in the river, tripped suddenly and due to non-operation of the radial gates the water level in the reservoir started rising due to this sudden tripping of both the generating units. Gates could not operate due to sloughing/collapse of the silt deposited in front of the radial gates. Water which was initially at MDDL, suddenly started rising & resulted in overtopping of the concrete/gravity dam and same incident happened again on 24.07.2023.
As per finding of above said report an additional spillway was recommended by the expert committee and proposal was asked from IPP vide DoE office letter no. HPDoE/CE/Authority/Safety/Malana-II HEP/2014-6392-93 dated 10.10.2014. Accordingly proposal for construction of additional spillway by converting Non Overflow Blocks into spillway on right bank of Malana-II dam was submitted by the project developer vide letter dated 13th May, 2016 and same was allowed to be implemented vide DoE letter no. HPDoE/CE/Authority/Safety/Malana-II HEP/2014-1912-13 dated 01.06.2016 subject to fulfillment of the following conditions:

- The various important features of the proposed spillway needs to be vetted/ optimized through Model studies for hydraulic efficiencies w.r.t. discharge capability, efficient energy dissipation without any erosion at toe & right bank having PWD road for safety of the dam in particular before its implementation.

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- Due precaution in construction as per specification & detailed design engineering needs to be carried out.
- All the codal formalities, if required, w.r.t. implementation from concerned agencies i.e. disposal of generated muck, provision of alternate road/ passage to village located on bank right, safety of downstream HEPS & habitats besides no interference with the levels of any upstream HEPs needs to be followed/ ensured.

Subsequently, the proposal (DPR) was submitted by the dam authority vide letter dated 10.11.2017 and final go ahead to this proposal was given by DoE vide letter no. HPDOE/CE/Authority/Malana-II/2018-8760 dated 02.02.2018. It was observed that despite the final approval given by DoE in February, 2018, the dam authorities could not take up the work for almost next five and half years. The reasons stated by the dam authorities are as under:

- Dam authorities approached for the Forest Department approval in October, 2018 and accordingly attained the approval on 31st October, 2018.
- Dam authorities obtain the MoEF&CC approval on 5th August, 2019.
- Though the dam authority had approached /engaged M/s Aqua Green Company for detail designing of the proposals but it took almost three and half years for finalization of the design report which was /completed on 12th October, 2019.
- In March, 2022 M/s Greenko took over the project ownerships however no approval has been taken in this regard from GoHP.
- The work was awarded to be BOMS Pvt. Ltd. by dam authorities on 20.09.2020.
- The work could not started and project developer has given the reason stating the restrictions of COVID-19 outbreak and the poor road network issues etc.

In the present overtopping case, the gate opening rectification measures were taken up only after the intervention of SDSO and the site visit was conducted after overtopping. The overtopping of Malana-II dam continued for about 45 days and as per the Dam Safety Act it is considered as dam failure.

5.1 Observations of the Committee

Based on the site visit and discussions with project authorities, the committee observed as under.

- Two no radial gates of size 4 x 5.5 m each got stuck at 3:00AM on 24.07.2023 as reported by the dam authorities . As quoted by project authorities, ***"At approximately 03:00 am flash flood arrived due to cloud burst in the catchment area. Both the radial gates were already opened with 350 mm and 250 mm openings respectively. Suddenly it was observed that the discharge from the spillway radial gates started to reduce. The gates were operated with the power pack to increase the gate opening but were observed to have been stuck due to overload. This overload and choking of the passage was due to accumulation of large debris and boulders behind and below the gates. Repeated trials were made to open the gates, but the efforts were in vain. Further keeping in view of the safety, the power supply was shut down and the dam premises was evacuated. As of now the water is flowing from above the dam top and all the team has been moved to safe location (All the team members are safe)".***
- As per Dam authorities overtopping started after one and half hour of flood arrival and the left bank started eroding. Accordingly the approach road from the left bank side got washed away and

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the movement to the Dam top got disconnected. On 25.07.2023 with the help of NDRF team the dam operation & maintenance team managed to reach to the control room for taking up gates opening operation.

- They tried to move the gates by building hydraulic pressure manually and pulling the gates upwards with slings. Later due to increased discharge in the river the team had to come back. The same process was also tried from 26.07.2023 to 29.07.2023. However no fruitful results were achieved. In between the BBMB divers were also called on the site to provide their support through under water action and to access the deposition of silt but due to high turbidity and turbulence, they showed their inability to help in the cause. The gate erection expert was also called on site on dated 28.07.2023. Though he tried his best after reaching in the control room but his efforts also gone in vain.

- On 30th July, 2023 SDSO, GoHP, DoE team visited the dam site and after analyzing the situation the necessary directions were imparted to dam authorities regarding restricting the flow on left bank side, taking up works for the road access to dam top and for taking up cutting of the dam top at right bank in line with the approved proposals on priority basis. Regarding taking up the necessary actions for safeguarding the lives and stocks downstream, the downstream area survey was conducted with DDMA team and accordingly in line with the dam break analysis report the area was got vacated downstream. Necessary guidance was taken up from CWC and other experts and continuously the information sharing was maintained. SDSO kept a continuous vigil on the situation and finally on 10th September, 2023 when the road access were through, the heavy excavator machinery were brought to the dam top and with the help of slings and other arrangements and by utilizing the power of excavator the gates were opened.

- During the visit committee observed that there are lots of boulders, debris, stacked upstream of reservoir in the river course and these are likely to slip into the reservoir.

- The Early Warning Systems as available are not compatible to the desired standards. The inflow forecast system along with inflow measurements in upstream reaches have not been established.

- As per project authorities, the dam break analysis does not cover the GLOF and cloud burst like incidents. Accordingly, the same needs review.

5.2 Recommendations of the Committee

- Since the overtopping remained continued for about 45 days it is strongly recommended that the comprehensive structural safety review of dam be conducted.
- In view of the overtopping and the condition prevailed for 45 days the additional spillway design may be reviewed again for dam stability and other safety aspects.
- It is very much essential that dam authorities have an advance inflow forecasting system of appropriate standards and of latest technology so that the prior actions be taken up for dam and reservoir operations.

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- The river reach beyond reservoir in the upstream has lot of boulders, to trap these boulders, Boulder Traps of rock fill/boulder material having small heights may be constructed. These traps shall be cleaned whenever they are filled with boulders.
- The frequency of gate opening/closing be increased and every minute detail in this regard be recorded. Repair & maintenance of the gates and its associated arrangements be taken up on priority. If needed the old associated parts or accessories be replaced by adopting the internationally accepted standards. Following measures are suggested in respect of hydro-mechanical components:

  - It is suggested to review the grade of Hydraulic Oil being used in the system of hydraulic hoist of Radial Gate concerning compatibility of grade of oil with ambient temperature at dam site. Considering the low temperature prevailing at site, also ensure provision of heater in the oil tank of Power Pack of Hydraulic hoisting arrangement.

  - Considering prevailing site conditions/location and venerability, the likelihood of blocking/jamming of low level gate is more, it is therefore suggested to strictly follow/adhere to the protocols mentioned in Operation & Maintenance Manuals especially regarding the provisions of frequent operation /exercising (frequent gate movement i.e. lifting/lowering) of low level radial gates. This will help to certain extent in removal of debris accumulated/likely to be accumulated in vicinity of gate leaf and thereby reducing the possibility of jamming of gate.

  - The project may also thought of providing a removable type coarse debris screen/trash rack in front of Radial gates on trial basis. Suitably designed trash rack of about 1.0 m height can be handled by existing spillway gantry crane & the same can placed/kept in stoplog grooves. The debris screen/trash rack shall remain placed in the stoplog groove for smaller outflow condition (i.e. small partial opening of gate) and the same may be completely removed from stoplog groove for larger opening of radial gate / while disposing of the flood.

  - The project may also review the end details of gate leaf *side seal arrangement (Figure 5.1). There is likely hood of deposition*/wedging of debris in between the gate leaf ends and pier face/side wall plates.

- The dam authority must ensure all safety protocols for the works related to additional spillway including safety of the existing dam in all conditions.
- An alternate access for the trespassers be immediately taken up from the downstream of the dam so that the unauthorized entry be restricted at the dam top so that rectification/restoration measures etc. be taken up smoothly.

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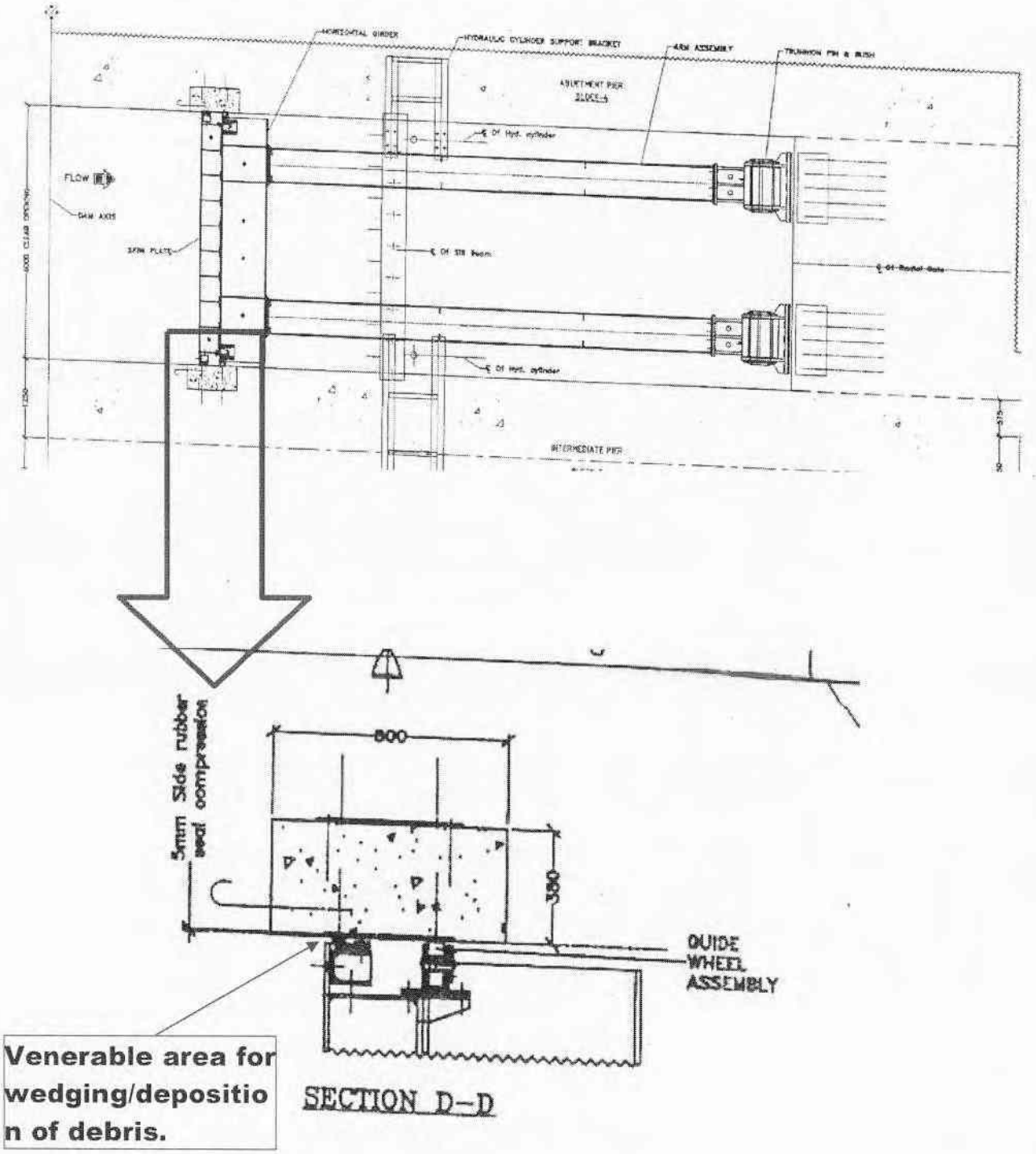


Figure 5.1

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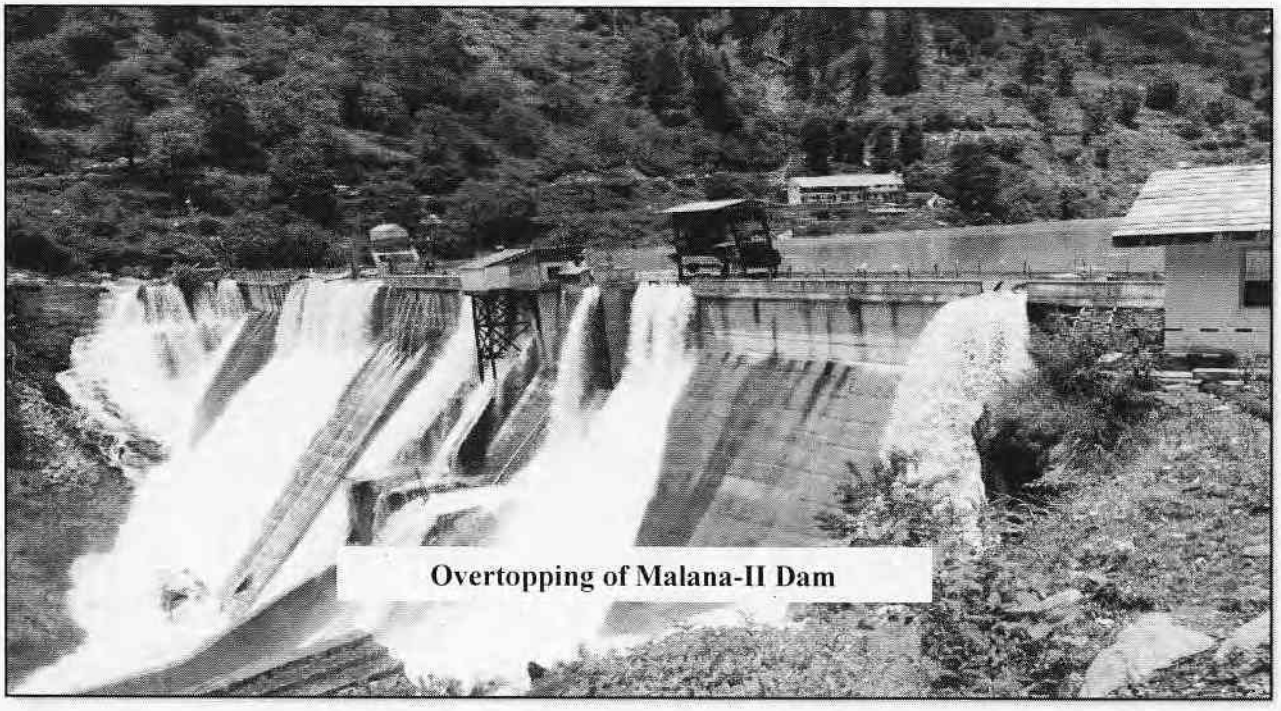
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5.3 Concluding Remarks

Dams are not designed for overtopping. Overtopping may cause distress in the dam and sometimes failure also. As per the Dam Safety Act, 2021 the overtopping incidents are considered as dam failure situation wherein uncontrolled release of water takes place putting lives and stocks downstream under threat. The first overtopping of Malana II dam occurred in 2013. The dam overtopped for the second time in 2023. Measures to avoid repeat of such incidents should have been taken by dam owners.

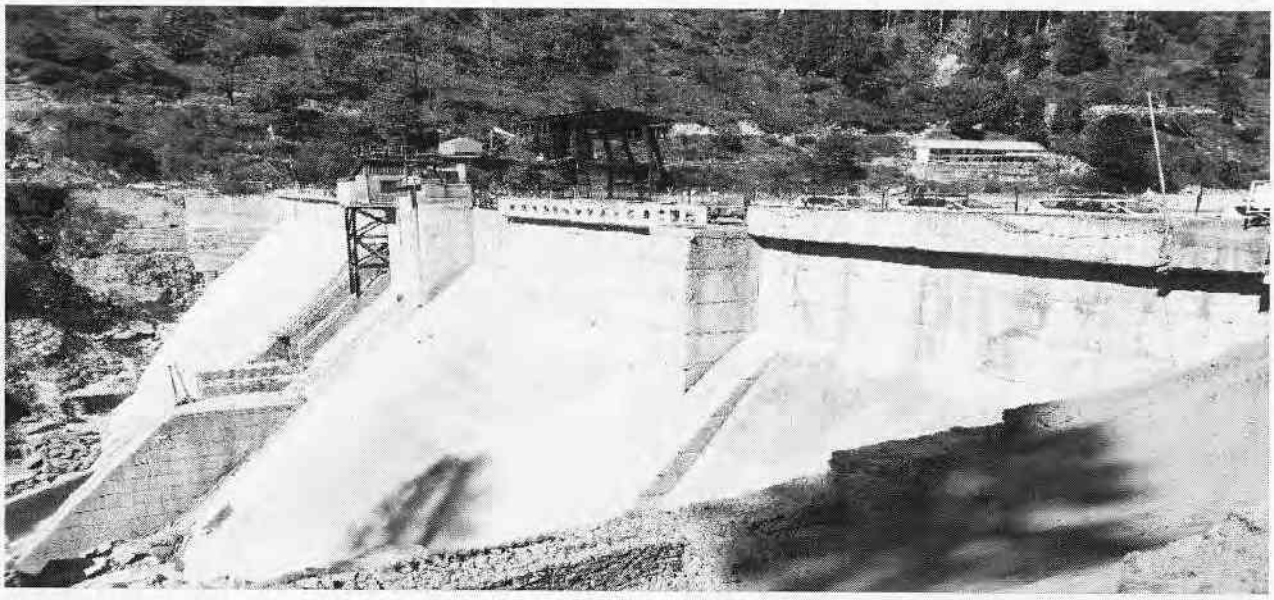
The long delays have been observed in execution of additional spillway as directed by State Government agencies though necessary approvals were obtained by dam authorities in time. If the works of additional spillway would have been completed, overtopping of dam could have been avoided this year. It could not be established that stucking of gates due to slush and boulder deposit took place after cloud burst like incident as during the duration /time period of stucking of gates, no cloud burst type incident occurred in Malana stream.



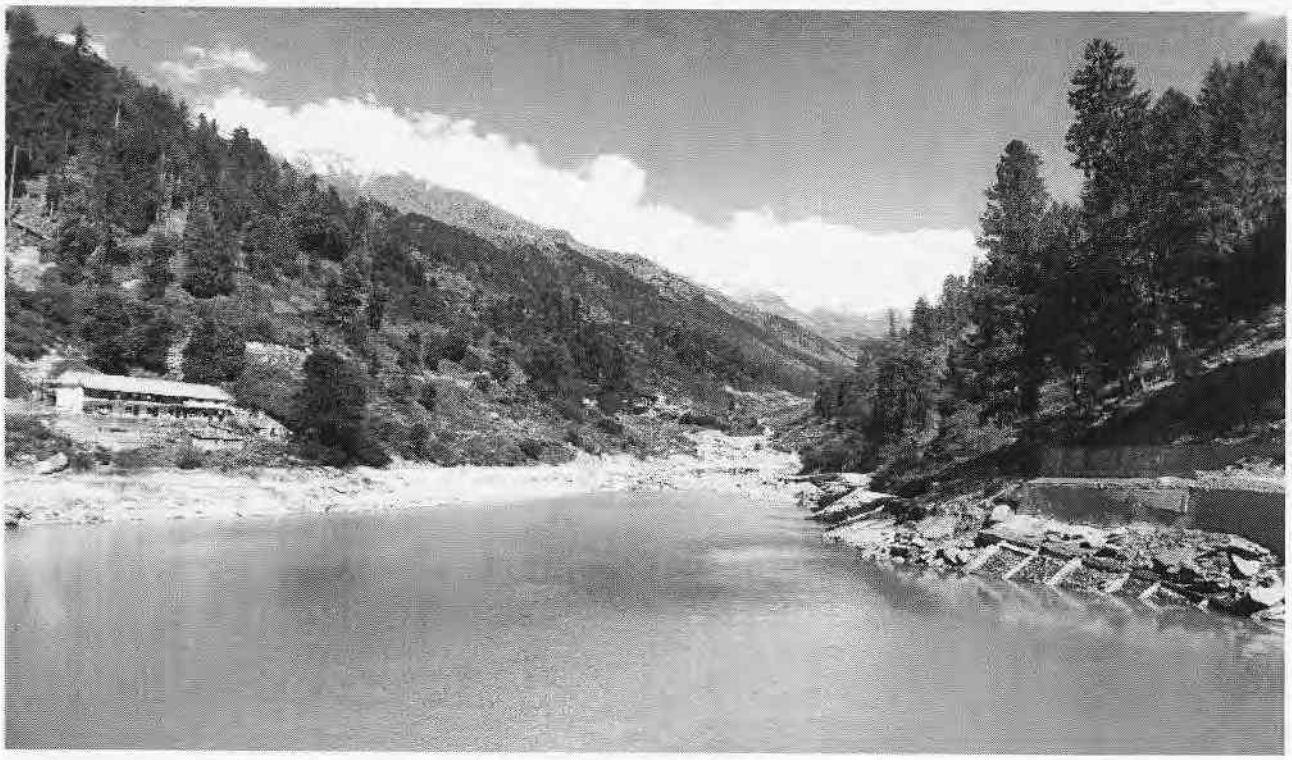
Overtopping of Malana-II Dam

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Present View of Dam After Opening of the Gates



Upstream Reservoir View

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Dam Top Inspection



Undergoing Works of Dam Top Cutting

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Group Photograph



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6.0 General Recommendations of the Committee

Dam Safety Act-2021 has laid down various responsibilities of dam owners to be followed for safety of the dam and safety of the people residing in the downstream. Various actions are required to be taken up by dam owners for ensuring safety of the dams. These actions include periodical safety inspections, installation of instruments & inflow forecasting system, monitoring & surveillance, timely repair & maintenance, preparation of operation & maintenance manuals incorporating reservoir rule curves, preparation of a robust Emergency Action Plan based on different spillway releases & dam break analysis results etc. In this regard, Directorate of Energy, Govt. of HP and SDSO/SCDS have instructed dam owners of Pong, Pandoh, Parbati III and Malana II dams from time to time. However, most of the actions are still to be taken up by dam owners.

Central Water Commission (CWC) has issued guidelines for safety inspection of large dams, preparation of EAP, Preparation of O&M manuals, instrumentation and various other subjects related to dam safety. The committee recommends to follow these guidelines in robust manner and strict compliance of these guidelines may be ensured by every dam owner.

As per Dam Safety Act, a Dam Safety Unit must be established at each Dam and shall follow all instructions of SDSO.

Every Dam Owner must be aware about the various provisions made in different chapters of Dam SAfety Act. In case of any training need, they should write to SDSO or CWC.

A rule curve or rule level specifies the releases to be made through spillway and water level to be maintained in a reservoir during different times of the year. In a storage project, optimal flood moderation can be obtained by preparation of rule curve and its compliance.

An Early Warning System (EWS) is an Automated Data-Acquisition System equipped to transmit and process data to include early warning notification features, and programmed to operate without the need of human intervention. An EWS may include various types of sensors, including reservoir/tailwater level monitoring, stream gauges, and weather measurements. The EWS has a monitoring system that analyzes the risk of a dam rupture. There is a possibility that a dam may become inaccessible or limitedly accessible in case of a natural disaster. It issues a warning signal to the area that gets flooded within an hour of damaging the dam. Early Warning System provides continuous data in case of natural disaster such as flooding, snow, storms. It increases the accuracy, reliability, and consistency with the help of remote diagnostics. The first responders will be notified of emergency situation via voice or text message. The data and the information received from EWS helps the Dam owners to take preventive measures well before any emergency.

Safety and efficient operation of Dams can be ensured by installation of inflow forecasting system. Telemetry systems may be used for this purpose. Telemetry systems continuously collect data from various sensors and instruments installed in the catchment of dam and sends it to control room, at control room, inflow forecast is made using latest models.

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Preparation of a robust EAP is must for safety of people living in the downstream areas. EAP shall include inundation mapping based on the results of dam break modeling and after carrying out hydraulic channel routing studies for different releases from spillway. For proper co-ordination among different agencies dam owners shall organize trainings and workshops. Consultation meetings shall be organized by dam owners by involving all the stakeholders from time to time. It is important that the dam break analysis, hydraulic routing studies downstream and inundation mapping and flood marking etc. be taken up afresh and accordingly the EAP and the DMP be updated and implemented as well.

State Government should also take necessary steps to reduce encroachments in the flood prone area downstream of dam based on inundation mapping carried out by Dam authorities for different discharges from spillway & Dam Break Modeling.

Er. Raj Kumar
Assistant Executive Engineer (DoE)

Sh. R.P.S. Verma
Director, NDSA (Northern India),
Director, CWC)

Sh. Harkesh Kumar
(Ex. Director, CWC)

Sh. Goverdhan Prasad
Director, Hydrology (N) Dte, (CWC)

Er. Deepak Jasrotia
Dy. Chief Engineer (Dam Safety), GoHP

Sh. Balwan Kumar
(Director, CEA)

Er. D.P. Gupta
Chief Engineer (Energy), GoHP

Dr. R.K. Gupta
(Ex. Chairman, CWC)

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Annexure-I

Office Order

In line with the direction of GoHP following committee is here by constituted to carry out the detailed inspection of Pong, Pandoh and Parbati-III dams w.r.t. sudden releases and also Malana-II dam w.r.t. overtopping incident.

External Members

1.	Sh. R.K. Gupta, (Ex. Chairman CWC)	Head
2.	Sh. Harkesh Kumar, (Ex. Director CWC)	Member
3.	Goverdhan Prasad (Director Hydrology(N) Dte, HSO Unit CWC)	Member
4.	Sh. R.P.S. Verma, (Director NDSA Northern India , CWC- Chandigarh)	Member

Govt. of Himachal Pradesh

1.	Sh. D.P. Gupta, Chief Engineer (Energy), GoHP-cum-(Head SCDS-HP)	Member
2.	Sh. Deepak Jasrotia, Dy. Chief Engineer, DoE, GoHP-cum-(Head SDSO-HP)	Member Secretary
3.	Sh. Raj Kumar, AEE, DoE, GoHP	Member

Concerned Distt. Administration

ADC/ADM of concerned Distt. (Kangra, Mandi and Kullu for their respective Distt.)

One member (Director level officer from CEA) may join the committee as per availability.

Note:

1. The committee will investigate comprehensively the cause of sudden release happened from these dams which resulted heavy damages downstream.
2. The committee will investigate efficiency of EWS implemented and how effective these were, EWS not implemented Dam Break Analysis, Hydraulic Routing Study, Inundation Mapping carried out, if carried out how effectively it was executed.
3. Investigation of overtopping of Malana-II dam, sudden closure of gates and the action taken by dam authority in this regard and ineffectiveness if any on the part of dam authority which lead to this incident 2nd time.

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4. The committee will also review the reservoir and gate operation as executed by the Dam authorities during this heavy discharge release.
5. The committee on its findings, if found will define and indicate deficiencies observed on the part of Dam authorities and will clearly suggested the action to be taken in this regard.
6. On broader aspects committee will also suggest measures which should have been executed by all dam authorities as the lesson learnt from such incidents.
7. The committee will submit its report to the GoHP at the earliest.

By order

Harikesh Meena, IAS,
Director (Energy),
GoHP, Shimla-09.

No. HPDoE/CE (Energy)/SDSO -HP/2023-7108-25 **Dated:-** 28/09/2023

Copy to:

1. The Sr. Private Secretary to the worthy Chief Secretary to the Government of Himachal Pradesh, Shimla-171002.
2. The Principal Secretary (Rev-DM) to the Government of Himachal Pradesh, Shimla-171002.
3. The Secretary (MPP & Power) to the Government of Himachal Pradesh, Shimla-171002.
4. The Chairman –cum-Managing Director, NHPC Office Complex, Sector-33, Faridabad-121003.
5. The Chairman BBMB, Sector 19-B, Madhya Marg, Chandigarh- 160019.
6. The Director-cum Special Secretary (Rev-DM) to the Government of Himachal Pradesh, Shimla-171002.
7. The Member (Policy & Research), NDSA & Member Secretary NCDS, Dam Safety Design-II Directorate, Sewa Bhawan, R.K.Puram, New Delhi- 110066.
8. The Deputy Commissioner, Kullu, Distt. Kullu, Dhalpur, Near DC Office, Dhalpur, Kullu, Himachal Pradesh 175101.
9. The Deputy Commissioner, Mandi, Distt. Mandi, Bangala Muhalla, Bhagwan Muhalla, Samkhetar, Mandi, Himachal Pradesh 175001.
10. The Deputy Commissioner, Kangra, Distt. Kangra, Kachahri, Dharamshala, Himachal Pradesh-176215.
11. The Director, NDSA, Northern region, Block 4, 6th Floor, Kendriya Sadan, Sector 9A Chandigarh (UT).
12. All the respected committee members please.
13. M/s Everest Power Pvt. Ltd, Malana-II, HEP, First House, Bhumian Estate, NavBahar Bhumian Road, Chotta Shimla-171002

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Harikesh Meena, IAS,
Director (Energy),
GoHP, Shimla-09

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Annexure - II

DIRECTORATE OF ENERGY
GOVERNMENT OF HIMACHAL PRADESH
SHANTI BHAWAN PHASE-III SECTOR-6 NEW SHIMLA-9
Tel No: 0177-2673552, Fax No: 2673553, Email: dir.doehp@nic.in, ceenergy09@gmail.com

No. HPDoE/Dam Safety/ SDSO-HP/2023-7485-7503 **Dated:** 07/10/2023

To

1. The Chief Engineer,
   Bhakra Beas Management Board (IW)
   Talwara, District Hoshiarpur (PB) Pin-144216.
   (for Pong Dam)
2. The Chief Engineer,
   Bhakra Beas Management Board (IW) Sunder-Nagar,
   District Mandi (H.P.)-175018.
   (for Pandoh Dam)
3. The General Manager,
   Parbati Stage-III,HEP,NHPC Ltd.,
   Behali, P.O. Larji, Distt. Kullu (HP)-175122
4. M/s Everest Power Pvt Ltd,
   Malana-II HEP, First House, Bhumian Estate,
   Nav Bahar Bhumian Road, Chotta Shimla-171002

Subject: **Visit of Pong, Pandoh, Parbati-III and Malana-II dams in line with the direction of GoHP by the committee constituted to carry out the detailed inspection of Pong, Pandoh and Parbati-III dams w.r.t. sudden releases and also Malana-II dam w.r.t. overtopping incident.**

Sir,

On the subject cited matter and in reference to the GoHP office order No. 7108-25 dated 28.09.2023 vide which a committee has been constituted as per following:

Committee composition

External Members		
1.	Sh. R.K. Gupta, (Ex. Chairman CWC)	Head
2.	Sh. Harkesh Kumar, (Ex. Director CWC)	Member

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Directorate of Energy,
H.P., Shimla-171005

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Central Water Commission, GoI		
3.	Goverdhan Prasad (Director Hydrology(N) Dte, HSO Unit CWC)	Member
4.	Sh. R.P.S. Verma, (Director NDSA Northern India , CWC-Chandigarh)	Member
Central Electricity Authority, GoI		
5.	Sh. Balwan Kumar, Director Hydro Project Planning and Investigation Division	Member
Govt. of Himachal Pradesh		
6.	Sh. D.P. Gupta, Chief Engineer (Energy), GoHP-cum-(Head SCDS-HP)	Member
7.	Sh. Deepak Jasrotia, Dy. Chief Engineer, DoE, GoHP-cum-(Head SDSO-HP)	Member Secretary
8.	Sh. Raj Kumar, AEE, DoE, GoHP	Member
Distt. Administration- Kangra, Mandi and Kullu		
9.	ADC/ADM of Distt. Kangra for Pong dam, Distt. Mandi for Pandoh dam and Distt. Kullu for Parbati-III and Malana-II dam	

In this context, it is intimated that the inspection of the respective dams has been scheduled as under:

Date	Description	Remark
16.10.2023	Team arrival at Dharamshala (Gaggal airport) Journey from Gaggal airport to Talwara Preliminary Meeting with Pong dam authorities later in the afternoon	Pong dam authorities to manage the meeting and stay of the visiting team at Talwara.
17.10.2023	Pong Dam Inspection i/c the upstream reservoir and downstream affected area (in the first half of the day) Concluding meeting with dam authorities in the afternoon.	Pong dam authorities to manage the inspection and meeting. Distt. Administration Kangra to manage the visit of affected area downstream of Pong dam. Pandoh dam authorities to

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	Journey from Talwara to Sundernagar (A.N./Evening)	manage the stay of the visiting team at Sundernagar.
18.10.2023	Preliminary Meeting with Pandoh dam authorities at Sundernagar (Morning). Pandoh Dam Inspection i/c the upstream reservoir and downstream affected area (in the first half of the day). Concluding meeting with dam authorities in the afternoon at Pandoh dam site. Journey from Pandoh to Nagwain/Sainj (A.N./Evening).	Pandoh dam authorities to manage the inspection and meeting. Distt. Administration Mandi to manage the visit of affected area downstream of Pandoh dam. Parbati-III dam authorities to manage the stay of visiting team at Nagwain/Sainj.
19.10.2023	Preliminary Meeting with Parbati-III dam authorities at Sainj (Morning). Parbati-III Dam Inspection i/c the upstream reservoir and downstream affected area (in the first half of the day). Concluding meeting with dam authorities in the afternoon at Parbati-III dam site/office. Journey from Sainj to Jari (A.N./Evening).	Parbati-III dam authorities to manage the inspection and meeting. Distt. Administration Kullu to manage the visit of affected area downstream of Parbati-III dam. Malana-I /Malana-II dam authorities to manage the stay of visiting team at Jari.
20.10.2023	Preliminary Meeting with Malana-II dam authorities at Jari (Morning). Malana-II Dam Inspection i/c the upstream tream affected area (in the first half of the Concluding meeting with Malana-II dam authorities in the afternoon at Malana-II dam site/office. Committee's visit closure meeting. Halt at Jari.	Malana-II dam authorities to manage the inspection and meeting. Distt. Administration Kullu to manage the visit of affected area downstream of Malana-II dam. Malana-I /Malana-II dam authorities to manage the stay of visiting team at Jari.
21.10.2023	Back Journey from Jari to Chandigarh / other places	--

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The committee has been mandated to investigate comprehensively the cause of sudden release happened from these dams which resulted heavy damages downstream in the month of July and August, 2023. The committee will investigate efficiency of EWS implemented and how effective these were. Proper implementation of Dam Break Analysis, Hydraulic Routing Study, Inundation Mapping carried out or not, if carried out how effectively these were executed. Investigation of overtopping of Malana-II dam, sudden closure of gates and the action taken by dam authority in this regard and ineffectiveness if any on the part of dam authority which lead to this incident 2nd time. The committee will also review the reservoir and gate operation as executed by the Dam authorities during this heavy discharge release and on its findings, if found the committee will define and indicate deficiencies observed on the part of Dam authorities and will clearly suggest the action to be taken in this regard. On broader aspects committee will also suggest measures which should have been executed by all dam authorities as the lesson learnt from such incidents.

In view of the above stated facts you are therefore requested to manage successfully the scheduled inspections of your respective dam. It is further stated to please made the data and information readily available as has been requested earlier alongwith all other important information and details during the inspection on site and do ensure the presence of all concerned associated technical officers /technicians other staff including the must presence of Head of the Project.

This is for your information and further necessary action please.

Yours faithfully,

Chief Engineer (Energy),
Directorate of Energy,
GoHP Shimla-09.

Copy to following for kind information please:

1. The Sr. Private Secretary to the worthy Chief Secretary to the Government of Himachal Pradesh, Shimla-171002.
2. The Principal Secretary (Rev-DM) to the Government of Himachal Pradesh, Shimla-171002.
3. The Secretary (MPP & Power) to the Government of Himachal Pradesh, Shimla-171002.

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4. The Chairman –cum-Managing Director, NHPC Office Complex, Sector-33, Faridabad-121003.
5. The Chairman BBMB, Sector 19-B, Madhya Marg, Chandigarh- 160019.
6. The Director-cum Special Secretary (Rev-DM) to the Government of Himachal Pradesh, Shimla-171002.
7. All the respected committee members as stated above.
8. The Member (Policy & Research), NDSA & Member Secretary NCDS, Dam Safety Design-II Directorate, Sewa Bhawan, R.K.Puram, New Delhi- 110066.
9. The Deputy Commissioner, Kullu, Distt. Kullu, Dhalpur, Near DC Office, Dhalpur, Kullu, Himachal Pradesh 175101 with the request to depute concerned ADC/ADM to associate with the committee please.
10. The Deputy Commissioner, Mandi, Distt. Mandi, Bangala Muhalla, Bhagwan Muhalla, Samkhetar, Mandi, Himachal Pradesh 175001 with the request to depute concerned ADC/ADM to associate with the committee please.
11. The Deputy Commissioner, Kangra, Distt. Kangra, Kachahri, Dharamshala, Himachal Pradesh-176215 with the request to depute concerned ADC/ADM to associate with the committee please.
12. The Director, NDSA, Northern region, Block 4, 6th Floor, Kendriya Sadan, Sector 9A Chandigarh (UT).
13. M/s Everest Power Pvt. Ltd, Malana-II, HEP, First House, Bhumian Estate, NavBahar Bhumian Road, Chotta Shimla-171002.
14. M/s Malana Power Company Ltd., Village Chowki, PO Jari, Distt Kullu-175105.

Chief Engineer (Energy),
Directorate of Energy,
GoHP Shimla-09.

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Annexure-III

Salient Features of Pong Dam

Total cost	:	Rs. 325.88 crores
Longitude (^{0}dec)		**75^{0}56'52" East**
Latitude (^{0}dec)		**31^{0}58'20" North**
DAM		
Cost	:	Rs.38.10 crores
Type of Dam	:	Earth Core Gravel Shell
Elevation at Top of Dam	:	El. 435.86 m. (El. 1430 ft.)
Free Board (above Max. RWL)	:	2.74 m. (9 ft.)
Maximum Height of Dam above Deepest Foundation Level	:	132.59 m. (435 ft.)
Crest Length/Earthen Dam	:	1950.70 m. (6400 ft.) approx.
Width at Crest	:	13.72 m. (45 ft.)
Maximum Width at Base	:	610 m. (2000 ft.)
RIVER DIVERSION WORKS		
Cost	:	Rs. 25.10 crores
No. of Tunnels	:	5 No.
Finished Dia of Each Tunnel	:	9.14 m. (30 ft.) diameter
Total Length	:	5016.70 m. (16459 ft.)
Minimum Thickness of R.C.C. Lining	:	76.2 centimeters (30 inches)
RESERVOIR		
Catchment Area	:	12,560 sq. kilometers (4850 sq. miles)
Maximum Reservoir Level	:	El. 433.12 m. (El. 1421 ft.)
Normal Reservoir Level	:	El. 426.72 m. (El. 1400 ft.)
Dead Storage Level	:	El. 384.05 m. (El. 1260 ft.)
Gross Storage Capacity	:	8570 million cum. (6.95 million acre ft.)
Live Storage Capacity	:	7290 million cum. (5.91 million acre ft.)
Maximum Reservoir Depth	:	97.84 m. (321 ft.)
Reservoir Length	:	41.8 kilometers (26 miles)
OUTLET WORKS		
No. of Outlet Tunnels	:	2 No.
No. of Outlets	:	4 No. (Two in each tunnel)
Type of Gates	:	Slide gates
Size of Gates	:	2.13m x 3.2 m (7ft. x 10.5 ft.)
Maximum Head	:	95.71 m. (314.0 ft.)
Minimum Head	:	46.7 m. (153.3 ft.)
Maximum Discharge Through Each Outlet	:	252.6 cumecs (8925 cusecs)

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Minimum Discharge Through Each Outlet	:	182.5 cumecs (6450 cusecs)
SPILLWAY		
Type of Spillway	:	Overflow gated chute
Overall Width at Crest	:	102.11 m. (335 ft.)
Crest Elevation	:	416.05 m. (1365 ft.)
Clear Water Way at Crest	:	86.9 m. (285 ft.)
Spillway Gates	:	Six radial gates 14.48 m x 12.344 m (47.5 ft. x 40.5 ft.) each.

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Pong Dam

Date:- 17 Oct, 2023

Annexure--IV

SR. No.	NAME	DESIGNATION	OFFICE	MOBILE No.	SIGNATORE
1.	Sh. R.K. Gupta	Ex. Chairman CWC	CWC	7911202525	
2.	R.P.S. VERMA	Dir, NR, NDSA	Chandigarh	9568681205	
3.	HARIKESH KUMAR	EK. Director CWC	DELHI	9560452468	
4.	Rajeev Goyal	Dir. Regulation	Nangal	9915050434	
5.	Arun Kumar	C.E. RES DHM	Talwara.	9417216052	
6	Arvind Sharma	CE/DS	Dam Safety Distt	9988158563	
7.	S.K. Bedi	Director/Design	BBB Design Dte	9417202097	
8.	Surender Thakur	SDM Indora	SDM office Indora	7485107209	
9.	Vikrant Bharati	SDM Fatehpur	SDM office Indora	8219035952	
10	Saurabh Jamwal	ADC Kangra	O/o Deputy Commissioner Kangra.	8807794443	
11	GOVERDHAN PRASAD	Director, Hydrology(N) CWC	CWC, New Delhi	9734973696	
12	D.P GUPTA	C.E DoE GoHP.	- DOE, GoHP- Shimla	9816102606	
13	Deepak Jaswal	Q C.E. DoE GoHP	DoE, GoHP Shimla	8894620001	
14	Balwan Kumar	Director CEA	CEA, N. Delhi	8920911682	31.10.23
15	Gaurav Lamba	Executive Engg (Mech Divn)	Mechanical Division BBMB, Talwara	99884-27291	
16	Harpreet Singh	Executive Engineer	R.M. Division, BBMB, Talwara	89681-76239	
17	Manveer Chaudhary	Addl Superintending Engineer	Pong Dam Division	82649-25934	
18.	RAT KUMAR	A.E.E	DoE, GoHP	98-55 95965	
19.	Charan Das	J.E.	DoE, GoHP	9459522975	

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Annexure-V

Salient Features of Pandoh Dam

Type of Dam	:	Earth - cum - rock fill.
Height above deepest foundation	:	76.20 Mtr. (250 ft)
Elevation of Top of Dam	:	899.16 Mtr.(2950 ft)
Length at Top	:	255 Mtr. (835ft.)
Width at Base	:	268.22 Mtr.(880ft.)
Width at Top	:	12.19 Mtr.(40ft.)

2. DIVERSION TUNNEL

No. of Tunnel & Diameter	:	One, 9.14 Mtr. (30 ft) diameter.
Length	:	664.16 Mtr. (2178.96 ft.)
Discharge	:	563.5 Cumes (19900) Cusecs.
Maximum Velocity	:	9.75 M/Sec.

3. RESERVOIR

Max. Reservoir Level	:	896.64 Mtr. (2941 ft)
Normal Reservoir Level	:	883.92 Mtr.(2900 ft)
Min. Reservoir Level	:	883.92 Mtr.(2900 ft)
Gross Storage Capacity	:	4100 Hect. Mtr.
Live storage capacity at 2900 ft.	:	1855.96 Hectare

4. SPILLWAY

Overall width at crest	:	74m (242.8 ft)
Clear water way at	:	60m (196.8 ft)
Crest EL	:	2870 ft.
Radial gates	:	5 Nos. 12m X 13m (39.375X65 ft)

5. PANDOH BAGGI TUNNEL

Diameter	:	7.62m (25ft)
Length	:	13.1 Km (8.14 Miles)
Capacity	:	254.85 Cumecs (9000 cusec)

6. BAGGI CONTROL WORKS

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No. of conduits	:	4
Size of conduits	:	2.67m X 4.27m
No of gates in each conduit	:	2

7. SUNDERNAGAR HYDEL CHANNEL

Full supply discharge at Head	:	240.69 Cumecs (9000 cusec)
Full supply discharge at Tail	:	212.38 cumecs (7500 cusecs)
Length	:	11.8 Km (7.33 Miles)
Bed width	:	9.45 Mtr. (32ft)
Maximum Depth	:	6.26m (20.53 ft)
Bed slope	:	1 in 6666
Average velocity	:	1.84m / Sec (6.05 ft / Sec)

8. SUNDERNAGAR BALANCING RESERVOIR

Capacity	:	370 Hect Mtr.(3000 Acr ft.)
Maximum height of embankment	:	21.34 Mtr. (70ft.)
Length of Reservoir	:	2134Mtr. (7000 ft.)
Maximum width of Reservoir	:	457.2 Mtr. (1500ft.)
Top Elevation of Embankment	:	844.49 Mtr. (2772 ft.)

9. SUNDERNAGAR SUTLEJ TUNNEL.

Diameter	:	8.53 (28ft.)
Length	:	12.35 Km (7.67 Miles)
Capacity	:	403.52 Cumecs (14250 Cusec)

10. BY PASS TUNNEL AND CHUTE

Diameter of Tunnel	:	8.71 Mtr. (22ft.)
Length of Tunnel	:	296.8 Mtr. (973.5ft.)
Width of tunnel	:	Varies from 14.63 Mtr. (48ft) to 10.35Mtr. (34ft)
No. of outlet Conduits	:	3

11. SURGE SHAFT

Diameter of Main Shaft	:	22.86 Mtr. (75ft.)
Diameter of riser Shaft	:	7.62 Mtr. (25ft.)

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Height	:	125Mtr.(410.1ft.)

12. DEHAR POWER PLANT

Installed Capacity	:	990 MW 6 Unit of 165MW each
Designed Head	:	320Mtr. (1050ft.)
No.of Penstock Head	:	3 to 4.88 Mtr. (16ft.)
No. of Penstock branches	:	6 to 3.35m (11ft) diameter each

13. BENIFITS FROM PROJECT

Annual Irrigation	:	3.262 Lacs Hect. (8 Lac Acres)
Electrical Energy Delivered per annum	:	3000 Million units (Approx)

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PANDOH DAM

Date - 18th Oct, 2023

Annexure –VI

SR. No.	NAME	DESIGNATION	OFFICE	MOBILE NO.	SIGNATURE
01.	SH. R. K. GUPTA	EX - CHAIRMAN (CWC)	CWC	9911202505	
02.	GOVERDHAN PRASAD	Director, Hydrology (N), CWC	CWC	9734937607	
3.	S. D. Sharma	C.E BWS Sundernagar	SMB	9418476304	
4.	Ajay Pal Singh	SE, Circle-I, SNGR	BBMB	9876028982	
5.	Onkar Thakur	DAS (SDM Mandi Sadar)	SDM	9459[illegible]	
6.	E. Nand Charan	CE, BBMB	BBMB/DS	9988611113	
7.	S. K. Bedi	Director/Design	BBMB Nangal	9417202097	
8.	Sanjeev Kumar	AE. JSV Mandi	AE-Sub-Div Panarsa	8219676930	
9.	Khushal Thakur	JE. JSV Mandi	A.E. Sub. Div. Panarsa	98166-24649	
10	Balwan Kumar	Director, CEA	CEA	8920911682	
11	R.P.S. Verma	Director	NDSA, CWC	9968681205	
12.	Deepak Jaswal	Dy. Chief Engineer	DoE Shimla	9459620001	
13	Rajesh Jamwal	Sr. EEN & AMDO Joint	BBMB	94181-18105	
14	DD. GUPTA	Chief Engr (Ency	DOE-GOHP	9816102602	
15.	B. P. Yadav	SDO-II	BBMB	9466887110	
16.	Rakesh Kumar	SDO Dam Sply.	BBMB	9416151167	
17.	Ajay Nain	CE	BBMB	9418605215	

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Annexure- VII

PANDOH DAM INFLOW

P.B.T. Gate opening (BCW) + Sply. or ± P.R.Level = Inflow

इस P.R.Level मीटर में + Gate operation opening जोड़ें

P.B.T. or B.C.W की Baggi में मापा जाता है।

Sply. Gate opening इस पैमाने से जोड़ें.

P.R.L. ± होता है जब Inflow 1 cum में 137 cusecs. बढ़ता व घटता है। — यह इस मीटर की 1 cm पैमाने से बना हुआ है।

Pandoh level factor = (137 * ± P.R.Level in mtrs)

1
SDO-II
(B.P. Yadav SDO)

SE-1

(RAJESH SHARMA
XEN

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Annexure-VIII

Salient Features of Parbati III Dam

1. LOCATION	
1.1 State in which it is located	: HIMACHAL PRADESH
1.2 Name of the District	: Kullu
1.3 Name of the River	: Sainj (a tributary of Beas river), which also receives Parbati water from tailrace of Parbati Stage-II powerhouse in Sainj valley.
1.4 Location of the Rockfill dam	: Diversion dam on river Sainj at Suind village (around 40 km from Bhunter)
1.5 Location Power House	: Power House is situated near Behali village.
1.6 Nearest rail head	: Kiratpur
1.7 Nearest airport	: Bhuntar
2. HYDROLOGY (SAINJ RIVER)	
2.1 Catchment area at diversion site	: 650 square km
2.2 Snow catchment	: 152 square km
2.3 Design flood	: 3300 Cumecs(PMF)
3. DIVERSION CUM SPILLWAY TUNNELS	
3.1 Number, size, shape & length	: 2 nos., 6.75 m, Horse shoe shape 401 m & 460 m
3.2 Diversion discharge	: 800 m^3/sec
3.3 Invert level at entry	: EL.1300.00 m
3.4 Invert level at exit	: EL.1286.00 m
DIVERSION CUM SPILLWAY TUNNEL GATES	
EMERGENCY GATE	
3.5 Number, size & sill elevation	:2 nos., 5.6 m(B) x 6.75m(H), EL 1300.00m
SERVICE GATE	
3.6 Number, size & sill elevation	:2 nos., 5.6m(B) x 6.75m(H), EL

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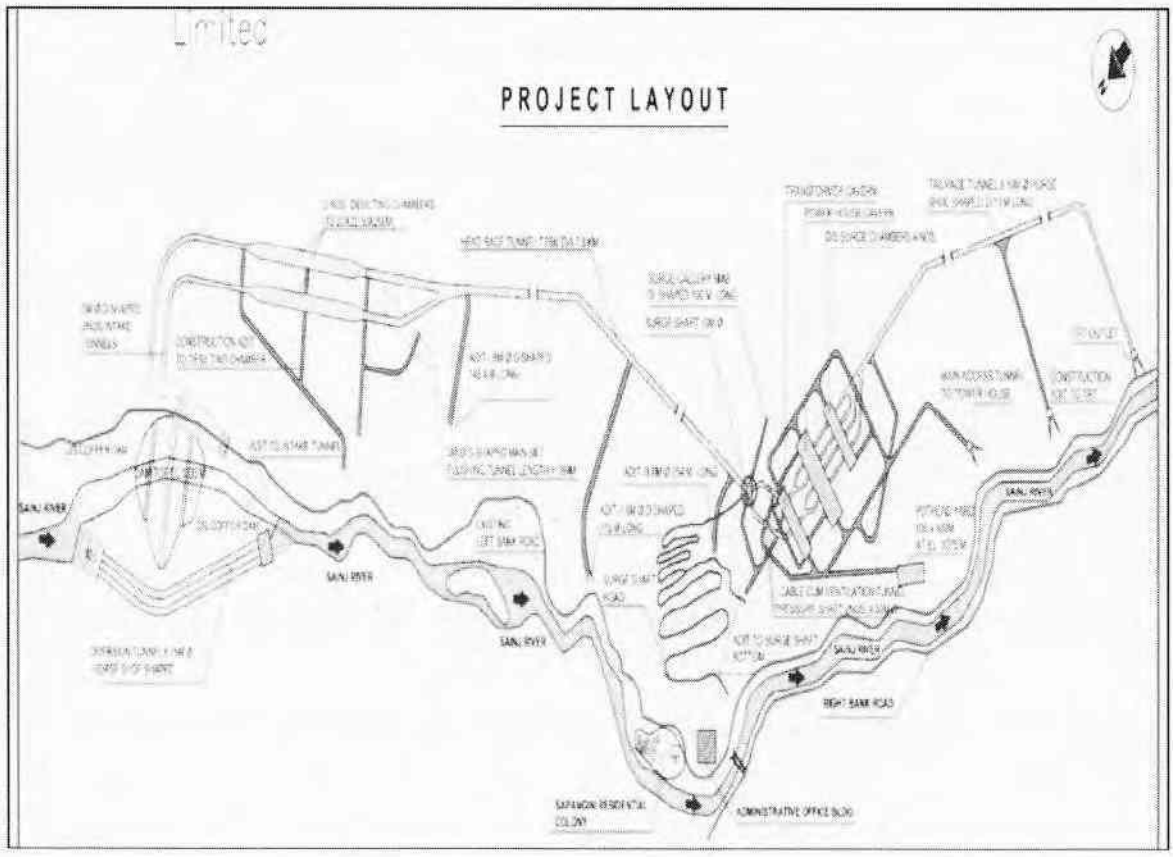
	1300.00m
3.7 Operating platform	EL.1333.00 m
4. COFFER DAMS	
4.1 Location of U/S coffer dam	: 150 m u/s of dam axis
4.2 Location of D/S coffer dam	: 180 m d/s of dam axis
4.3 Height of U/S coffer dam	: 14 m (Top EL. 1314.00 m)
4.4 Height of D/S coffer dam	: 6 m (Top EL. 1294.00 m)
5. DIVERSION DAM	
5.1 Type	: Rockfill dam at Suind
5.2 Dam top	: EL. 1333 m
5.3 Maximum dam height	: 43 m
5.4 Length at top including spillway	: 218m
5.5 Length & thickness of cut-off wall	: 117 m, 0.8 m
6. SPILLWAY	
6.1 Location of Spillway	: Left Bank
6.2 Type of Spillway	: Orifice type
6.3 Total Width of spillway	: 26.40 m
6.4 No. of bays	: 2
6.5 Crest level of spillway	: EL. 1298 m
6.6 Width of each bay	: 7.2 m
6.7 Thickness of piers	: 6 m
6.8 Regulation gates	: Hydraulically operated radial gates 2 nos. (7.2m(B) x 14m(H))
6.9 R.C.C. Breast wall	: 21 m high
6.10 Energy dissipation system	: Ski-jump bucket with an apron
6.11 Design flood	: 3300 m^3/sec (PMF)
7. RESERVOIR	
7.1 Full reservoir level (FRL)	: EL. 1330 m

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7.2 Minimum draw down level (MDDL)	: EL. 1314 m
PRE-SEDIMENTATION	
7.3 Gross storage at FRL	: 166.79 ha-m
7.4 Gross storage at MDDL	: 38.54 ha-m
7.5 Live storage	: 128.25 ha-m
7.6 Reservoir area at FRL	: 12.51 ha
7.7 Length of reservoir (fetch)	: 1.05 km
POST-SEDIMENTATION	
7.8 Gross storage at FRL	: 98.92 ha-m
7.9 Gross storage at MDDL	: 12.44 ha-m
7.10 Live storage	: 86.48 ha-m
7.11 Reservoir area at FRL	: 8.78 ha
7.12 Length of reservoir (fetch)	: 0.68 km



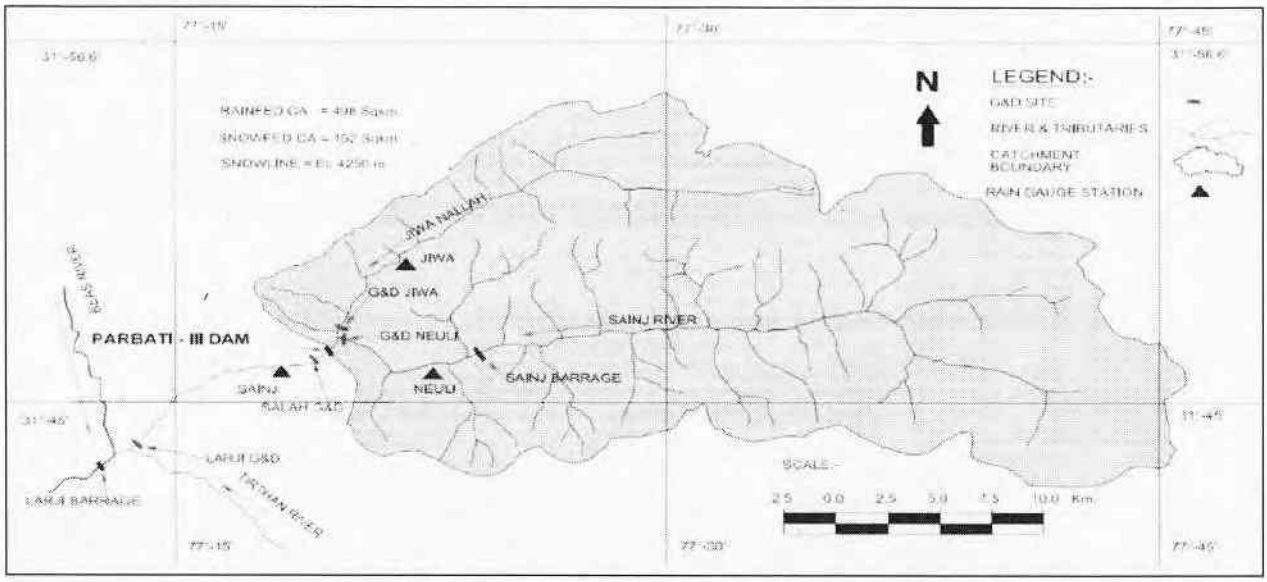
PROJECT LAYOUT PLAN-PARVATI-III DAM

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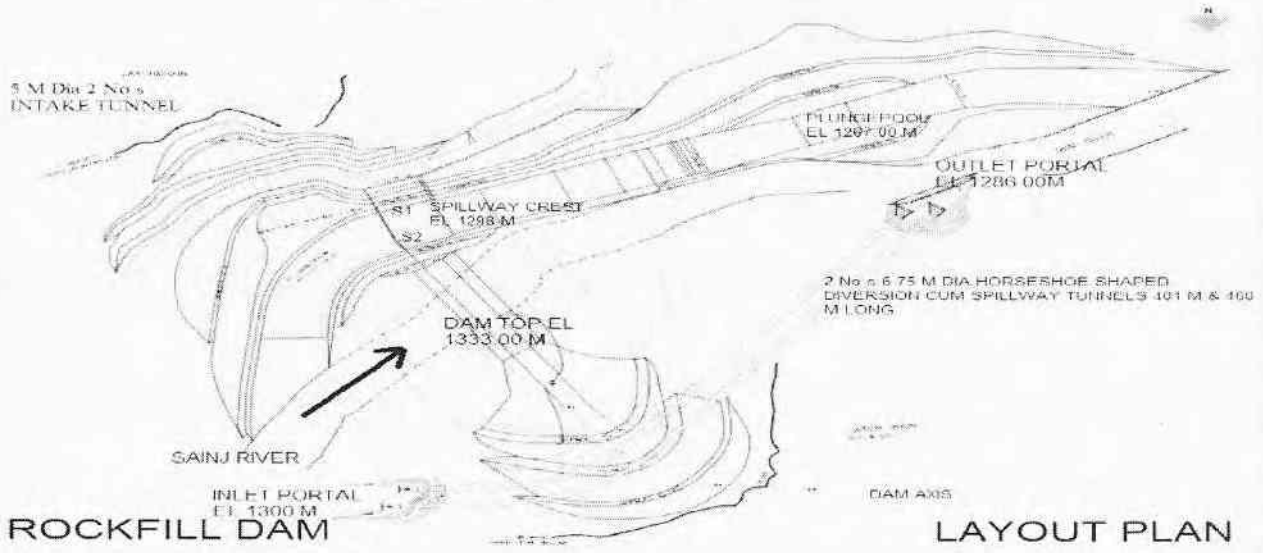
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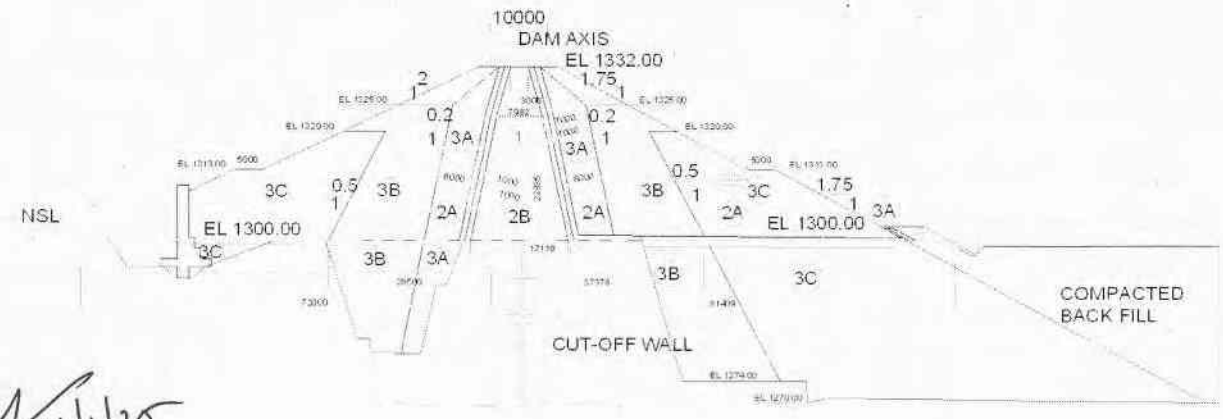
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CATCHMENT AREA PLAN –PARVATI-III DAM



ROCKFILL DAM LAYOUT PLAN



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Meeting at Parbati-II HE Project on 19.10.2023

Annexure - IX

Sno	Name	Designation	Office	Mobile No	Signature
1	Dr R.K. Gupta	former chairman CWC	—	9711202525	R.K.Gupta
2	Nirmal Singh	Executive Director		9816132505	
3	Prakash Chand	GM CE's		9704708656	
4	Archchi Kumar	ADM Hallh		94182-95566	
5	D.P. GUPTA	Chief Engineer	DoE, GoHP Shimla	9816101606	
6	Deepak Jamlia	Dy C.E.	DoE GoHP Shimla-05	8894620001	
7	HARKESH KUMAR	Former Director CWC	—	9560452868	
8	GOVERDHAN PRASAD	Director Hydrology (N)	CWC, New Delhi	9734973696	
9	R.P.S. VERMA	Director.	NA, NDSA, Chandigarh	9568681205	
10	Balwan Kumar	Director	CEA, N. Delhi	8920911682	
11	Kashyap Nayak	General Manager (E).	Parbati 3 Power station	9810104581	
12	Shanmugam. A	GM (civil)	Parbati-III PS	7637026866	19/10/23
13	VIJAY KUMAR JHA	GSM (C)	DGE DIV. C.O. FARIDABAD	9540994915	
14	MANJUSHA MISHRA	GM (C)	DGE Div, CO FBD	9540084301	
15	KUNDAN KUMAR	GSM(C)	DGE Div, CO FBD	9650012957	
16	BIJAY SINGH	SM(C)	NHPC Ltd	9990014816	
17	DHANANJAY KUMAR SINGH	GSM(C)	Parbati-III NHPC Ltd.	7086071057	
18	PRADEEP DUBEY	DEPUTY MANAGER(C) 31/10/23	Parbati-III NHPC Ltd.	9805519688	
19	GJS RAJU	G.M. (HR)	"	9910993044	

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Sno	Name	Designation	Office	Mobile No	Signature
20	[illegible]	[illegible]	[illegible]	7579456146	
21	RAJ KUMAR	A.E.E.(C)	DoG	9805595965	
22	Charan Das	J.E., DoE	DoE	9459522970	
23	Er. Inder Sharma	AGM(Com) HCP Sainj HEP	Sainj HEP	9817699135	
24	ER. ANUPAM RAIL S	Sr. MANAGER	SAINJ HEP	941 [illegible]	
25	ER. Narender K. Sharma	Dy. Manager (E/M)	Sainj HEP (100MW)	8629068477	
26	Kamlesh S Mali	Dy. Manager (Safety)	NHPC	9426332266	
27	OM Parkash Sharma	Asst. Survey officer	NHPC	9816006962	
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Annexure-X

Salient Features of Malana II Dam

1.1	**Location**		
	State	Himachal Pradesh	
	District	Kullu	
	River	MalanaNallah. a tributary of Parbati River in the Beas Basin	
	Vicinity of Dam	Dam Site located 3km upstream of Malana village at El. 2500m.	
	Vicinity for Power House	Power House on left bank of MalanaKhad immediately upstream of Malana-I HEP diversion Weir	
	Latitude	Between 32°0215"N and 32°05'06"N	
	Longitude	Between 77°15'26"E and 77°16'51"E	
	Access to project by road	Via Chandigarh (325 Km),-Kiraatpur, Bhunter.	
	Nearest rail head	Kiraatpur (225 Km)	
	Nearest airport	Bhunter (25 Km)	
1.2	**Hydrology**		
		Project Features	As Proposed
	Catchment Area	158 Sq Km	158 Sq Km
	90% Dependability discharge	328 cumecs	
	50% Dependability discharge	7.65 cumecs	
	Design discharge	20 cumecs	20 cumecs
	Design flood	650 cumecs	650 cumecs
	Snow fall Catchment	76.20 km2	76.20 km2
	Type of stream	Perennial	Perennial
	Average annual rainfall	218mm	218mm
	Probable maximum precipitation (24 Hr. PMP)	90mm	90mm
	Dependable discharge (Av. Lean period flow)	.05 cumecs	.05 cumecs
1.3	**Project Structure**		
1.3.1	**Diversion Structure**		
i)	**Reservoir**		
	F.R.L	2543.00m	2543.00m
	M.D.D.L	2528.00m	2528.00m
	Gross Storage	0.386 M m^3	0.386 M m^3
	Live Storage	0.2875 M m^3	0.2875 M m^3
	Submergence area at FRL	3.5Ha	3.5Ha
	Village affected	Nil	Nil
	Population affected	Nil	Nil
ii)	**Dam**		
	Type	Concrete Gravity	Concrete Gravity
	Height above river bed	45.00m	45.00m

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	Top of dam	El. 2545.0m	El. 2545.0m
	Crest Length	150.0 (Dam block) + 63m (Key wall)	150.0 (Dam block) + 63m (Key wall)
	FRL	El. 2543m	El. 2543m
	MDDL	El. 2528m	El. 2528m
	Live storage	0.2875 M.cum	0.2875 M.cum
iii)	**Spillway Bays**		
	Type	Breast wall type	Breast wall type + Surface type
	a) Breast wall	2 Nos.	2 Nos.
	b) Surface	-	7 Nos.
	Spillway		
	a) Breast wall	Chute Spillway	Chute Spillway
	b) Surface Type	-	Chute Spillway with spill channel
	Gates		
	a) Breast wall Type	Radial operated by Hydraulic Hoist	Gates Radial Gates operated by Hydraulic Hoist
	b) Surface Type	-	Un-gated
	Gate Size		
	a) Breast wall Type	4m x 5.5m	4m x 5.5m
	b) Surface Type	-	6.25 x 2.0m & 4.5m x 2.0m
	Crest Level		
	c) Breast wall Type	El. 2514.50m	El. 2514.50m
	d) Surface Type	-	El. 2543.00m
	Discharging Capacity		
	a) Breast wall Type	650cumecs	650cumecs
	b) Surface Type	-	260.97cumecs
iv)	**Power Intake**		
	Intake Structure	In non-overflow block no. 4 on left bank	In non-overflow block no. 4 on left bank
	No. & Size of opening	One number of 3m x 3m Bell mouth opening	One number of 3m x 3m Bell mouth opening
	Trash rack structure	In non-overflow block no. 4 on left bank	In non-overflow block no. 4 on left bank
v)	**Intake Pipe**		
	Size	One no. of 2.2m dia pipe	One no. of 2.2m dia pipe
	Length	144m long	144m long
	Centre line of pipe	El. 2523.1	El. 2523.1
1.3.2	**Head Race Tunnel**		
	Type	D-Shaped, Concrete and Shotcrete lined	D-Shaped, Concrete and Shotcrete lined
	Size and Length	2.9m x 2.9m D-Shaped	2.9m x 2.9m D-Shaped
	Bed Slope	1 in 151.00	1 in 151.00
	Invert level at portal	El. 2512.812m	El. 2512.812m
	Design Discharge	20cumecs	20cumecs
	Velocity	2.67m/sec	2.67m/sec
	Adit-1	3.5m D-shaped, 273m long	3.5m D-shaped, 273m

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			long
	Adit-2	3.5m D-shaped, 171m long	3.5m D-shaped, 171m long
	Adit-3	4m x 4m, 105m long	4m x 4m, 105m long
	Adit-3A	4.5m x 4.5m, 46.6m long	4.5m x 4.5m, 46.6m long
	Adit-4	4.5m x 4.5m, 248.5m long	4.5m x 4.5m, 248.5m long
	Adit-5	6m x 6m, 158m long	6m x 6m, 158m long
	Adit-6	4.5m x 4.5m, 180m long	4.5m x 4.5m, 180m long
	Adit-7	5m x 5m, 43m long	5m x 5m, 43m long
1.3.3	**Surge Shaft**		
	Type	Underground-simple surge shaft	Underground-simple surge shaft
	Size	6m dia., 80m height	6m dia., 80m height
1.3.4	**Bonnet Gate Chamber**		
	Size	2.2m x 2.2m	2.2m x 2.2m
	Invert Level	El. 2483.978m	El. 2483.978m
1.3.5	**Pressure Shaft**		
	Type	Underground	Underground
	Size/length	1 no. of 2.5 m dia.,	1 no. of 2.5 m dia.,
	Main Pressure Shaft	747m long	747m long
	Unit Pressure Shaft	2 nos. of 1.8m dia., 40.24m and 30.73long	2 nos. of 1.8m dia., 40.24m and 30.73long
	Design Discharge	20.0cumecs	20.0cumecs
	Type of Steel for steel liner	IS 2002- Grade 3 SAILMA 550 HI, ASTM A 517 Grade F	IS 2002- Grade 3 SAILMA 550 HI, ASTM A 517 Grade F
	Thickness	10mm-28mm	10mm-28mm
1.3.6	**Power House**		
	Type	Underground	Underground
	Size	67.5m (L) x 17.5m (W) x 35.85m (H)	67.5m (L) x 17.5m (W) x 35.85m (H)
	Transformer bay	26.5m x 12m x 13m, Size El. 1912.0m Bottom elevation of Power House	26.5m x 12m x 13m, Size El. 1912.0m Bottom elevation of Power House
	Power House Levels	El. 1947.85m, Tope elevation of Power House El. 1929.57m, Service Bay level	El. 1947.85m, Tope elevation of Power House El. 1929.57m, Service Bay level
	Control Block	Size, 12m (L) x 17.5m (W)	Size, 12m (L) x 17.5m (W)
	Bus Duct	Bust duct, 3m (W) x 4m (H), D-shaped	Bust duct, 3m (W) x 4m (H), D-shaped
	No. of units	2	2
	Type of Turbines	Vertical axis Pelton wheel	Vertical axis Pelton wheel
	C/L of Turbines	El. 1919.40m	El. 1919.40m
	Type of Generator	Vertical Shaft	Vertical Shaft
	Terminal Voltage	11kV	11kV
	Transformer Capacity	63.9 MVA	63.9 MVA
	Installed Capacity	100 MW (2 x 50 MW)	100 MW (2 x 50 MW)

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	Gross Head	623.60m	623.60m
	Rated net Head	608m	608m
1.3.7	**Main Access Tunnel**		
	Main Access Tunnel	Size, 6m x 6m, D-shaped Length: 982m long Starting Level: El. 1951.50m Slope of MAT: 1 in 17	Size, 6m x 6m, D-shaped Length: 982m long Starting Level: El. 1951.50m Slope of MAT: 1 in 17
1.3.8	**TRT**		
	Main Tail Race Tunnel		
		Unit-I TRT	Unit-I TRT
		Length of Unit-I TRT, 31.7m	Length of Unit-I TRT, 31.7m
		Size of Unit TRT, 2.5m (W) x 4.5m (H), D-shaped	Size of Unit TRT, 2.5m (W) x 4.5m (H), D-shaped
		Unit-II TRT	Unit-II TRT
		Length of Unit-II TRT, 22.11m	Length of Unit-II TRT, 22.11m
		Size of Unit-II TRT, 5m (W) x 6m (H), D-shaped	Size of Unit-II TRT, 5m (W) x 6m (H), D-shaped
		TRT cum Cable Tunnel	TRT cum Cable Tunnel
		Length of TRT cum cable Tunnel: 255m	Length of TRT cum cable Tunnel: 255m
		Size of TRT cum Cable Tunnel: 5m (W) x 6.75m (H), D-shaped	Size of TRT cum Cable Tunnel: 5m (W) x 6.75m (H), D-shaped
		Slope of TRT- 1 in 1000, Starting Level: El. 1912.4m	Slope of TRT- 1 in 1000, Starting Level: El. 1912.4m
	Control Cable Tunnel	Control Cable Tunnel, 3m (W) x 3.25m (H), D-shaped	Control Cable Tunnel, 3m (W) x 3.25m (H), D-shaped
1.4	**Energy Generation**		
	Energy Generation in 90% dependable year	409.77 M Kwh	409.77 M Kwh

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Annexure – XI

Meeting w.r.t. Inspection of Malana-II HEP w.r.t. sudden release of water in the month of July/ August 2023 and overtopping of Malana -II DAM

Venue: Malana II HEP DAM and Power house Date: October 20, 2023

S.No.	Name of the Participants	Designation	Department	Signature
1	Dr. R.K. Gupta	Former Chairman, CWC		
2	HARKESH KUMAR	Ex-Director CWC	—	
3	D P GUPTA	CE DoE	DoE- GoHP	
4	GOVERDHAN PRASAD	Director Hydrology	CWC	
5	R.P.S. VERMA	Director	NDSA / NR. CWC	
6	Balveer Kumar	Director	CEA	
7	Deepak Jabroli	Dy CE DoE	DoE	
8	RAJ KUMAR	AEE(C) DoE	DoE	
9	Charan Dass	JE (D&C)	DoE	
10	Vikas Mahajan	SDM Kullu	Permanent	
11	Suresh Kalsi	GM. (GAM)	Hydro	
12	JVSD PRASADA RAJU	Sr. V.P. Hydro	Corporate	
13	Anad Verma.	AGM (GAM)	Hydro	
14	Pankaj Kumar	Dy. Manager	Hydro	
15	Nirmal Kumar	GM	HR	
16	Sanjay Thakur	DGM	Hydro	
17				
18				
19				
20				
21				
22				
23				
24				

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CP-149-55
141-47

क्रमांक 12917-98 / बीएसएल / एचआरडी / 887 / 87 दिनांक: 04/08/2023

सेवा में,

उप मुख्य अभियन्ता,
उर्जा निदेशालय हि0प्र0 सरकार,
शान्ति भवन फेरा–3 सैक्टर–6,
नया शिमला–9।

विषयः– Details of Reservoir & Gate Operation along with Inflow and Outflow discharge data Statuus w..e.f. 07/07/2023 to 12/07/2023 in respect of Sainj Dam, Parbati-III Dam, Larji Dam, Allain Dam (AD-Hydro), Pandoh Dam, Malana-I Dam, Pong Dam & Malana-II in Beas River Basin.

संदर्भः– आपके कार्यालय का पत्र क्रमांक HPDOE/CE (Energy)/SDSO-Specified Dams/2023- 3518-25 दिनांक 17–7–2023.

उपरोक्त विषय एवं संदर्भाधीन पत्र के सम्बन्ध में सूचित कर लेख है कि आपके कार्यालय द्वारा मांगा गया डाटा दिनांक 07–07–2023 से 12–07–2023 तक संलग्न प्रोफार्मे में भरकर आपके कार्यालय को आगामी आवश्यक कार्यवाही हेतु प्रेषित किया जाता है।

संलग्न / 06 नं0 पेज

उप मुख्य अभियन्ता / मुख्यालय,
कृतेः मुख्य अभियन्ता / बीएसएल,
बीबीएमबी, सुन्दरनगर।

प्रतिलिपिः–

अधीक्षण अभियन्ता, बीएसएल परिमण्डल नं0–1, बीबीएमबी, सुन्दरनगर को उनके कार्यालय के पत्र क्रमांक 10229–30 / 10–डब्लयू दिनांक 27–7–2023 के संदर्भ में सूचनार्थ।

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Details of Reservoir & Gate Operation alongwith Inflow & Outflow Discharge ..ata w.e.f. 07/07/2023 to 12/07/2023												
Name of Project with capacity		Pandoh Dam, 990 MW										
Name of Dam		Pandoh Dam										
Owner Agency		BBMB										
DATE	TIME	Inflow observed		Outflow from dam i/c flow from silt flusing conduits, Env. Flow and Radial gates		FRL		Detail of Gates Operation / level (In mtr.)				
		In Cusecs	*In Cumecs*	*In Cusecs*	*In Cumecs*	*In Feet*	*In Metre*	*1 no.*	*2 no.*	*3 no.*	*4 no.*	*5 no.*
07-07-2023	00.00 hrs	28272	800.68	20310	575.19	2923.00	890.96	-	-		3.00	0.75
	02.00 hrs	30510	864.06	22000	623.05	2923.75	891.14	-		-	3.00	0.75
	04.00 hrs	26798	758.94	17440	493.91	2923.75	891.12				3.00	
	06.00 hrs	24719	700.06	17305	490.09	2923.75	891.12	-	-		3.00	-
	08.00 hrs	33709	954.65	22185	628.29	2924.50	891.38	-		-	3.00	0.75
	10.00 hrs	20672	585.44	12710	360.00	2923.50	891.06	-	-	-	2.00	-
	12.00 hrs	19279	546.00	11865	336.00	2923.50	891.06	-	-	-	2.00	-
	14.00 hrs	17970	508.92	9460	269.91	2923.00	890.90	-	-		1.50	-
	16.00 hrs	16374	463.72	7590	214.95	2923.25	890.00	-	-	-	1.25	-
	18.00 hrs	15288	432.96	7600	215.24	2923.25	891.02	-	-	-	1.25	-
	20.00 hrs	16942	479.81	7610	215.52	2923.50	891.06	-	-	-	1.25	
	22.00 hrs	20694	586.07	11910	337.30	2923.75	891.16	-		-	2.00	-

Sub Divisional Officer,
Gate Operation Sub Division,
BBMB, Pandoh

(Er. Rajesh Handa)
Sr. Executive Engineer,
Elect. & Mech Division,
BBMB, Pandoh.

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-cum- Sr. Executive Engineer,
Directorate of Energy,
H.P., Shimla-171005

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DATE	TIME	Inflow observed		Outflow from dam i/c flow from silt flusing conduits, Env. Flow and Radial gates		FRL		Detail of gates operation / level (In mtr.)				
		In Cusecs	In Cumecs	In Cusecs	In Cumecs	In Feet	In Metre	1 no.	2 no.	3 no.	4 no.	5 no.
08.07.2025	00.00 hrs	18611	527.07	9005	255.03	2923.25	890.98	-	-	-	1.50	-
	02.00 hrs	16758	474.60	9050	256.30	2923.75	891.12	-	-	-	1.50	-
	04.00 hrs	17271	489.12	9035	255.88	2923.50	891.08	-	-	-	1.50	-
	06.00 hrs	18656	528.35	9050	256.30	2923.75	891.12	-	-	-	1.50	-
	08.00 hrs	22626	640.78	11924	337.69	2924.00	891.20	-	-	-	2.00	-
	10.00 hrs	20985	594.31	11105	314.50	2923.00	890.92	-	-	-	1.75	-
	12.00 hrs	20081	568.71	11475	324.98	2923.50	891.08	-	-	-	1.75	-
	14.00 hrs	20385	577.32	10505	297.51	2923.75	891.16	-	-	-	1.75	-
	16.00 hrs	21159	599.24	12375	350.47	2923.75	891.18	-	-	-	2.25	-
	18.00 hrs	27418	776.52	18360	519.97	2923.75	891.18	-	-	-	3.00	1.00
	20.00 hrs	43351	1227.72	36485	1033.28	2923.50	891.06	-	-	-	3.75	3.00
	22.00 hrs	51593	1461.14	41165	1165.82	2923.75	891.14	-	-	-	3.75	3.75

Sub Divisional Officer,
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Elect. & Mech. Division,
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Sr. Executive Engineer,
Directorate of Energy,
H.P., Shimla-171005

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Under RTI Act, 2005.

DATE	TIME	Inflow observed		Outflow from dam i/c flow from silt flusing conduits, Env. Flow and Radial gates		FRL		Detail of gates operation / level (In mtr.)				
		In Cusecs	In Cumecs	In Cusecs	In Cumecs	In Feet	In Metre	1 no.	2 no.	3 no.	4 no.	5 no.
09.07.2023	00.00 hrs	62125	1759.42	57175	1619.23	2923.00	890.96	-	-		5.5	5.5
	02.00 hrs	75083	2126.39	73515	2081.99	2924.00	891.24		-	4.00	6.00	4.00
	04.00 hrs	92184	2610.71	81240	2300.76	2926.75	892.08	-		4.00	6.00	7.00
	06.00 hrs	117407	3325.04	108830	3082.13	2928.25	892.50		-	5.00	8.00	7.00
	08.00 hrs	157215	4452.42	154320	4370.43	2928.75	892.68		3.00	10.00	10.00	10.00
	10.00 hrs	153940	4359.67	148310	4200.23	2922.50	890.80	2.00	3.00	8.00	8.00	8.00
	12.00 hrs	161803	4582.36	162870	4612.57	2921.75	890.58	7.00	7.00	7.00	7.00	7.00
	14.00 hrs	190597	5397.82	189525	5367.46	2920.75	890.24	9.00	5.00	9.00	9.00	9.00
	16.00 hrs	199660	5654.49	199410	5647.41	2921.75	890.54	10.00	5.00	9.00	10.00	10.00
	18.00 hrs	201404	5703.88	203305	5757.72	2921.25	890.38	10.00	6.00	10.50	10.50	10.50
	20.00 hrs	212587	6020.59	210890	5972.53	2921.00	890.32	9.00	9.00	10.00	10.00	10.00
	22.00 hrs	182585	5170.91	183500	5196.83	2920.50	890.20	7.00	7.00	7.00	8.00	8.00

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Elect. & Mech. Division,
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DATE	TIME	Inflow observed		Outflow from dam i/c flow from silt flusing conduits, Env. Flow and Radial gates		FRL		Detail of Gates Operation / level (In mtr.)				
		In Cusecs	In Cumecs	In Cusecs	In Cumecs	In Feet	In Metre	1 no.	2 no.	3 no.	4 no.	5 no.
10.07.2023	00.00 hrs	152743	4325.77	157220	4452.36	2920.5	890.2	5	5	7	6	6
	02.00 hrs	116722	3305.64	114075	3230.67	2920.25	890.12	3.00	3.00	7.00	4.00	4.00
	04.00 hrs	111870	3168.22	111415	3155.34	2920.50	890.20	3.00	3.00	7.00	4.00	4.00
	06.00 hrs	106349	3011.87	106990	3030.02	2920.75	890.22	3.00	3.00	7.00	4.00	3.00
	08.00 hrs	115409	3268.45	108585	3075.19	2922.25	890.72	3.00	3.00	7.00	4.00	3.00
	10.00 hrs	136628	3869.38	129930	3679.69	2923.25	891.00	3.00	3.00	6.75	7.00	7.00
	12.00 hrs	172863	4895.58	166569	4717.08	2922.00	890.64	4.00	3.00	6.75	9.00	9.00
	14.00 hrs	169058	4787.82	170585	4831.07	2921.75	890.54	7.00	3.00	6.75	12.00	12.00
	16.00 hrs	187032	5296.86	187580	5312.38	2923.00	890.96	10.00	3.00	6.75	12.00	12.00
	18.00 hrs	184726	5231.55	191850	5433.31	2920.75	890.28	9.00	7.00	9.00	9.00	9.00
	20.00 hrs	163952	4643.22	176360	4994.62	2918.00	889.38	7.00	7.00	7.00	9.00	9.00
	22.00 hrs	118490	3355.71	121065	3428.63	2918.00	889.40	5.00	5.50	6.00	7.00	7.00

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DATE	TIME	Inflow observed		Outflow from dam i/c flow from silt flusing conduits, Env. Flow and Radial gates		FRL		Detail of Gates Operation / level (In mtr.)				
		In Cusecs	In Cumecs	In Cusecs	In Cumecs	In Feet	In Metre	1 no.	2 no.	3 no.	4 no.	5 no.
11.07.2023	00.00 hrs	123332	3493.4	120510	3412.91	2918.75	889.60	3.00	4.00	4.50	6.00	5.00
	02.00 hrs	101982	2888.19	95985	2718.35	2919.00	889.74	1.00	4.00	3.00	3.00	4.00
	04.00 hrs	89685	2539.93	85875	2432.03	2919.75	889.96	1.00	4.00	3.00	3.50	4.00
	06.00 hrs	84832	2402.49	83355	2360.56	2920.00	890.00	1.00	3.00	3.00	3.50	4.00
	08.00 hrs	69151	1958.4	67395	1908.67	2920.00	890.00	1.00	3.00	2.50	2.50	2.50
	10.00 hrs	64281	1820.48	61545	1742.98	2920.00	890.04	1.00	2.25	2.50	2.50	2.50
	12.00 hrs	57995	1642.45	52240	1479.47	2920.50	890.20	1.50	1.50	2.00	2.00	2.00
	14.00 hrs	57124	1617.79	56585	1602.52	2920.00	889.98	1.50	2.00	2.00	2.00	2.00
	16.00 hrs	53939	1527.58	49660	1406.40	2920.00	890.02	1.50	1.50	2.00	2.00	1.50
	18.00 hrs	56180	1591.05	54435	1541.63	2920.00	890.00	1.50	1.50	2.00	3.00	3.00
	20.00 hrs	43455	1230.67	54675	1548.43	2908.25	886.40	1.50	1.50	2.00	3.00	3.00
	22.00 hrs	57420	1626.17	62300	1764.37	2896.00	882.68	2.50	1.50	2.00	5.00	5.00

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DATE	TIME	Inflow observed		Outflow from dam i/c flow from silt flusing conduits, Env. Flow and Radial gates		FRL		Detail of Gates Operation / level (In mtr.)				
		In Cusecs	In Cumecs	In Cusecs	In Cumecs	In Feet	In Metre	1 no.	2 no.	3 no.	4 no.	5 no.
12.07.2023	00.00 hrs	78290	2217.22	83090	2353.16	2888.00	880.26	5.00	1.50	4.00	5.00	5.00
	02.00 hrs	70130	1986.12	70130	1986.12	2887.00	879.96	Free Flow				
	04.00 hrs	69365	1964.45	69365	1964.45	2886.25	879.76	Free Flow				
	06.00 hrs	68435	1938.12	69365	1964.45	2885.50	879.52	Free Flow				
	08.00 hrs	67596	1914.36	67596	1914.36	2885.00	879.30	Free Flow				
	10.00 hrs	62527	1770.80	62800	1778.53	2884.25	879.14	Free Flow				
	12.00 hrs	62214	1761.94	62762	1777.45	2884.00	879.08	Free Flow				
	14.00 hrs	46628	1320.53	40508	1147.21	2892.00	881.50	1.50	2.00	2.00	2.00	2.00
	16.00 hrs	33120	937.98	28320	802.04	2900.00	883.90	0.50	0.50	1.50	1.75	1.50
	18.00 hrs	43155	1236.34	17843	505.38	2912.75	887.80	0.50	0.50	1.00	0.50	0.50
	20.00 hrs	41036	1162.16	24690	699.24	2922.00	890.60			1.00	2.00	2.00
	22.00 hrs	24984	707.56	30170	854.43	2920.00	890.06			1.00	2.00	2.00

Sub Divisional Officer,
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BBMB, Pandoh

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	Pong Dam				
	Water Level	Inflow Actual	Turbine	Spillway	Outflow
5/Jul/2023 0:00	0.00	0	16987	0	16987
5/Jul/2023 1:00	0.00	0	16987	0	16987
5/Jul/2023 2:00	0.00	0	16987	0	16987
5/Jul/2023 3:00	1336.95	16987	16987	0	16987
5/Jul/2023 4:00	0.00	0	16987	0	16987
5/Jul/2023 5:00	0.00	0	16987	0	16987
5/Jul/2023 6:00	1336.94	15310	16987	0	16987
5/Jul/2023 7:00	0.00	0	16987	0	16987
5/Jul/2023 8:00	0.00	0	16987	0	16987
5/Jul/2023 9:00	1336.95	18640	16987	0	16987
5/Jul/2023 10:00	0.00	0	16987	0	16987
5/Jul/2023 11:00	0.00	0	16987	0	16987
5/Jul/2023 12:00	1337.00	25370	16987	0	16987
5/Jul/2023 13:00	0.00	0	16987	0	16987
5/Jul/2023 14:00	0.00	0	16987	0	16987
5/Jul/2023 15:00	1337.03	22017	16987	0	16987
5/Jul/2023 16:00	0.00	0	16987	0	16987
5/Jul/2023 17:00	0.00	0	16987	0	16987
5/Jul/2023 18:00	1337.05	20340	16987	0	16987
5/Jul/2023 19:00	0.00	0	16987	0	16987
5/Jul/2023 20:00	0.00	0	19812	0	19812
5/Jul/2023 21:00	1337.06	19866	17690	0	17690
5/Jul/2023 22:00	0.00	0	13920	0	13920
5/Jul/2023 23:00	0.00	0	13920	0	13920
6/Jul/2023 0:00	1337.09	18950	13920	0	13920
6/Jul/2023 1:00	0.00	0	13920	0	13920
6/Jul/2023 2:00	0.00	0	13920	0	13920
6/Jul/2023 3:00	1337.12	18950	13920	0	13920
6/Jul/2023 4:00	0.00	0	13920	0	13920
6/Jul/2023 5:00	0.00	0	13920	0	13920
6/Jul/2023 6:00	1337.16	20626	13920	0	13920
6/Jul/2023 7:00	0.00	0	13871	0	13871
6/Jul/2023 8:00	0.00	0	13871	0	13871
6/Jul/2023 9:00	1337.20	20577	13871	0	13871
6/Jul/2023 10:00	0.00	0	13871	0	13871
6/Jul/2023 11:00	0.00	0	13871	0	13871
6/Jul/2023 12:00	133.23	18901	13871	0	13871
6/Jul/2023 13:00	0.00	0	16998	0	16998
6/Jul/2023 14:00	0.00	0	16998	0	16998
6/Jul/2023 15:00	133.23	16998	16998	0	16998
6/Jul/2023 16:00	0.00	0	16998	0	16998
6/Jul/2023 17:00	0.00	0	16998	0	16998
6/Jul/2023 18:00	1337.24	18675	16998	0	16998
6/Jul/2023 19:00	0.00	0	16998	0	16998
6/Jul/2023 20:00	0.00	0	16998	0	16998
6/Jul/2023 21:00	1337.24	16998	16998	0	16998
6/Jul/2023 22:00	0.00	0	13346	0	13346
6/Jul/2023 23:00	0.00	0	13110	0	13110
7/Jul/2023 0:00	1337.27	16210	7084	0	7084
7/Jul/2023 1:00	0.00	0	7084	0	7084
7/Jul/2023 2:00	0.00	0	7084	0	7084
7/Jul/2023 3:00	1337.33	17143	7084	0	7084

31/1/25

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-cum- Sr. Executive Engineer
Directorate of Energy,
H.P., Shimla-171005

Information Supplied to Sh. Sumit Mahar
Under RTI Act, 2005.

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7/Jul/2023 4:00	0.00	0	7084	0	7084
7/Jul/2023 5:00	0.00	0	7084	0	7084
7/Jul/2023 6:00	1337.40	18820	7084	0	7084
7/Jul/2023 7:00	0.00	0	10813	0	10813
7/Jul/2023 8:00	0.00	0	10813	0	10813
7/Jul/2023 9:00	1337.43	15843	10813	0	10813
7/Jul/2023 10:00	0.00	0	10813	0	10813
7/Jul/2023 11:00	0.00	0	10813	0	10813
7/Jul/2023 12:00	1337.47	17591	10813	0	10813
7/Jul/2023 13:00	0.00	0	10813	0	10813
7/Jul/2023 14:00	0.00	0	10813	0	10813
7/Jul/2023 15:00	1337.52	20314	14168	0	14168
7/Jul/2023 16:00	0.00	0	14168	0	14168
7/Jul/2023 17:00	0.00	0	14168	0	14168
7/Jul/2023 18:00	1337.54	17521	14168	0	14168
7/Jul/2023 19:00	0.00	0	14168	0	14168
7/Jul/2023 20:00	0.00	0	14168	0	14168
7/Jul/2023 21:00	1337.58	20874	14168	0	14168
7/Jul/2023 22:00	0.00	0	14168	0	14168
7/Jul/2023 23:00	0.00	0	14168	0	14168
8/Jul/2023 0:00	1337.62	20874	14168	0	14168
8/Jul/2023 1:00	0.00	0	14168	0	14168
8/Jul/2023 2:00	0.00	0	14168	0	14168
8/Jul/2023 3:00	1337.66	20874	14168	0	14168
8/Jul/2023 4:00	0.00	0	14168	0	14168
8/Jul/2023 5:00	0.00	0	14168	0	14168
8/Jul/2023 6:00	1337.70	20502	13050	0	13050
8/Jul/2023 7:00	0.00	0	10813	0	10813
8/Jul/2023 8:00	0.00	0	10813	0	10813
8/Jul/2023 9:00	1337.75	19196	10813	0	10813
8/Jul/2023 10:00	0.00	0	10813	0	10813
8/Jul/2023 11:00	0.00	0	10813	0	10813
8/Jul/2023 12:00	1337.83	24225	10813	0	10813
8/Jul/2023 13:00	0.00	0	10813	0	10813
8/Jul/2023 14:00	0.00	0	10813	0	10813
8/Jul/2023 15:00	1337.92	25209	10813	0	10813
8/Jul/2023 16:00	0.00	0	10813	0	10813
8/Jul/2023 17:00	0.00	0	10813	0	10813
8/Jul/2023 18:00	1338.04	30932	10813	0	10813
8/Jul/2023 19:00	0.00	0	10813	0	10813
8/Jul/2023 20:00	0.00	0	10813	0	10813
8/Jul/2023 21:00	1338.18	33166	7457	0	7457
8/Jul/2023 22:00	0.00	0	3729	0	3729
8/Jul/2023 23:00	0.00	0	3729	0	3729
9/Jul/2023 0:00	1338.35	30988	0	0	0
9/Jul/2023 1:00	0.00	0	0	0	0
9/Jul/2023 2:00	0.00	0	0	0	0
9/Jul/2023 3:00	1338.60	41914	0	0	0
9/Jul/2023 4:00	0.00	0	0	0	0
9/Jul/2023 5:00	0.00	0	0	0	0
9/Jul/2023 6:00	1338.87	45267	0	0	0
9/Jul/2023 7:00	0.00	0	0	0	0
9/Jul/2023 8:00	1339.11	60356	0	0	0
9/Jul/2023 9:00	1339.26	75445	0	0	0

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Public Information Officer
-cum- Sr. Executive Engineer,
Directorate of Energy,
H.P., Shimla-171005

Information Supplied to Sh. Sumit Nahar
Under RTI Act, 2005.

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9/Jul/2023 10:00	1339.45	95564	0	0	0
9/Jul/2023 11:00	1339.70	125742	0	0	0
9/Jul/2023 12:00	1340.00	150890	0	0	0
9/Jul/2023 13:00	1340.35	184521	0	0	0
9/Jul/2023 14:00	1340.85	263602	0	0	0
9/Jul/2023 15:00	1341.50	342682	0	0	0
9/Jul/2023 16:00	1342.20	369043	0	0	0
9/Jul/2023 17:00	1342.94	390131	0	0	0
9/Jul/2023 18:00	1343.69	395405	0	0	0
9/Jul/2023 19:00	1344.33	337411	0	0	0
9/Jul/2023 20:00	1344.93	320037	3714	0	3714
9/Jul/2023 21:00	1345.52	314765	3714	0	3714
9/Jul/2023 22:00	1346.11	314765	3714	0	3714
9/Jul/2023 23:00	1346.70	311051	929	0	929
10/Jul/2023 0:00	1347.28	305778	0	0	0
10/Jul/2023 1:00	1347.86	305778	0	0	0
10/Jul/2023 2:00	1348.45	311051	0	0	0
10/Jul/2023 3:00	1349.02	300506	0	0	0
10/Jul/2023 4:00	1349.57	289962	0	0	0
10/Jul/2023 5:00	1350.09	278506	0	0	0
10/Jul/2023 6:00	1350.63	284610	0	0	0
10/Jul/2023 7:00	1351.17	307850	0	0	0
10/Jul/2023 8:00	1350.72	313551	0	0	0
10/Jul/2023 9:00	1352.22	285047	0	0	0
10/Jul/2023 10:00	1352.70	273645	0	0	0
10/Jul/2023 11:00	1353.15	256542	0	0	0
10/Jul/2023 12:00	1353.55	228037	0	0	0
10/Jul/2023 13:00	1353.90	199533	0	0	0
10/Jul/2023 14:00	1354.22	182430	0	0	0
10/Jul/2023 15:00	1354.53	176729	0	0	0
10/Jul/2023 16:00	1354.82	165327	0	0	0
10/Jul/2023 17:00	1355.10	159626	0	0	0
10/Jul/2023 18:00	1355.40	171028	0	0	0
10/Jul/2023 19:00	1355.71	178500	1778	0	1778
10/Jul/2023 20:00	1356.03	185972	3542	0	3542
10/Jul/2023 21:00	1356.36	191673	3542	0	3542
10/Jul/2023 22:00	1356.69	191378	3247	0	3247
10/Jul/2023 23:00	1357.04	199533	0	0	0
11/Jul/2023 0:00	1357.42	216635	0	0	0
11/Jul/2023 1:00	1357.82	228037	0	0	0
11/Jul/2023 2:00	1358.22	228037	0	0	0
11/Jul/2023 3:00	1358.67	256542	0	0	0
11/Jul/2023 4:00	1359.12	256542	0	0	0
11/Jul/2023 5:00	1359.58	252243	0	0	0
11/Jul/2023 6:00	1360.04	264321	0	0	0
11/Jul/2023 7:00	1360.45	255039	0	0	0
11/Jul/2023 8:00	1360.84	242598	0	0	0
11/Jul/2023 9:00	1361.20	223936	0	0	0
11/Jul/2023 10:00	1361.51	192834	0	0	0
11/Jul/2023 11:00	1361.77	161732	0	0	0
11/Jul/2023 12:00	1361.98	130630	0	0	0
11/Jul/2023 13:00	1362.15	105748	0	0	0
11/Jul/2023 14:00	1362.30	93307	0	0	0
11/Jul/2023 15:00	1362.44	87086	0	0	0

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Public Information Officer
-cum- Sr. Executive Engineer,
Directorate of Energy,
H.P., Shimla-171005

Information Supplied to Sh Sumit Mahar
Under RTI Act, 2005.

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11/Jul/2023 16:00	1362.58	87086	0	0	0
11/Jul/2023 17:00	1362.72	87086	0	0	0
11/Jul/2023 18:00	1362.84	83912	9267	0	9267
11/Jul/2023 19:00	1362.94	80168	17963	0	17963
11/Jul/2023 20:00	1363.04	80613	18408	0	18408
11/Jul/2023 21:00	1363.14	80613	18408	0	18408
11/Jul/2023 22:00	1363.24	80613	18408	0	18408
11/Jul/2023 23:00	1363.33	74392	18408	0	18408
12/Jul/2023 0:00	1363.42	74392	18408	0	18408
12/Jul/2023 1:00	1363.51	74392	18408	0	18408
12/Jul/2023 2:00	1363.60	74392	18408	0	18408
12/Jul/2023 3:00	1363.69	74392	18408	0	18408
12/Jul/2023 4:00	1363.78	74392	18408	0	18408
12/Jul/2023 5:00	1363.87	74392	18408	0	18408
12/Jul/2023 6:00	1363.96	111173	18408	0	18408
12/Jul/2023 7:00	1364.04	67998	18234	0	18234
12/Jul/2023 8:00	1364.11	74392	18234	0	18234
12/Jul/2023 9:00	1364.18	61777	18234	0	18234
12/Jul/2023 10:00	1364.24	55557	18234	0	18234
12/Jul/2023 11:00	1364.30	55557	18234	0	18234
12/Jul/2023 12:00	1364.36	55557	18234	0	18234
12/Jul/2023 13:00	1364.42	55557	18234	0	18234
12/Jul/2023 14:00	1364.47	49336	18234	0	18234
12/Jul/2023 15:00	1364.52	49336	18234	0	18234
12/Jul/2023 16:00	1364.57	47015	15913	0	15913
12/Jul/2023 17:00	1364.63	46718	9395	0	9395
12/Jul/2023 18:00	1364.69	46718	9395	0	9395
12/Jul/2023 19:00	1364.76	48241	4698	0	4698
12/Jul/2023 20:00	1364.83	46916	3373	0	3373
12/Jul/2023 21:00	1364.90	46916	3373	0	3373
12/Jul/2023 22:00	1364.97	46916	3373	0	3373
12/Jul/2023 23:00	1365.04	46916	3373	0	3373
13/Jul/2023 0:00	1365.11	46916	3373	0	3373
13/Jul/2023 1:00	1365.19	53137	3373	0	3373
13/Jul/2023 2:00	1365.27	53137	3373	0	3373
13/Jul/2023 3:00	1365.35	53137	3373	0	3373
13/Jul/2023 4:00	1365.42	46916	3373	0	3373
13/Jul/2023 5:00	1365.49	46916	3373	0	3373
13/Jul/2023 6:00	1365.55	40696	3373	0	3373
13/Jul/2023 7:00	1365.61	43746	6423	0	6423
13/Jul/2023 8:00	1365.67	43746	6423	0	6423
13/Jul/2023 9:00	1365.73	43746	6423	0	6423
13/Jul/2023 10:00	1365.79	43746	6423	0	6423
13/Jul/2023 11:00	1365.85	43746	6423	0	6423
13/Jul/2023 12:00	1365.90	39064	7961	0	7961
13/Jul/2023 13:00	1365.95	40600	9498	0	9498
13/Jul/2023 14:00	1366.00	40600	9498	0	9498
13/Jul/2023 15:00	1366.05	40600	9498	0	9498
13/Jul/2023 16:00	1366.10	40600	9498	0	9498
13/Jul/2023 17:00	1366.15	40600	9498	0	9498
13/Jul/2023 18:00	1366.20	42274	11172	0	11172
13/Jul/2023 19:00	1366.25	43948	12846	0	12846
13/Jul/2023 20:00	1366.30	43948	12846	0	12846
13/Jul/2023 21:00	1366.35	43948	12846	0	12846

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Public Information Officer
-cum- Sr. Executive Engineer,
Directorate of Energy,
H.P., Shimla-171005

Information Supplied to Sh Sumit Mahar
Under RTI Act, 2005.

13/Jul/2023 22:00	1366.40	43948	12846	0	12846
13/Jul/2023 23:00	1366.45	43948	12846	0	12846
14/Jul/2023 0:00	1366.50	43948	12846	0	12846
14/Jul/2023 1:00	1366.54	37728	12846	0	12846
14/Jul/2023 2:00	1366.58	37728	12846	0	12846
14/Jul/2023 3:00	1366.62	34938	10056	0	10056
14/Jul/2023 4:00	1366.66	34380	9498	0	9498
14/Jul/2023 5:00	1366.70	34380	9498	0	9498
14/Jul/2023 6:00	1366.75	40600	9498	0	9498
14/Jul/2023 7:00	1366.80	40536	9434	0	9434
14/Jul/2023 8:00	1366.85	40536	9434	0	9434
14/Jul/2023 9:00	1366.90	40536	9434	0	9434
14/Jul/2023 10:00	1366.95	40536	9434	0	9434
14/Jul/2023 11:00	1367.00	40536	9434	0	9434
14/Jul/2023 12:00	1367.06	46757	9434	0	9434
14/Jul/2023 13:00	1367.12	46757	9434	0	9434
14/Jul/2023 14:00	1367.18	46757	9434	0	9434
14/Jul/2023 15:00	1367.24	46757	9434	0	9434
14/Jul/2023 16:00	1367.30	46757	9434	0	9434
14/Jul/2023 17:00	1367.36	46757	9434	0	9434
14/Jul/2023 18:00	1367.42	46757	9434	0	9434
14/Jul/2023 19:00	1367.47	47135	16033	0	16033
14/Jul/2023 20:00	1367.51	42880	17998	0	17998
14/Jul/2023 21:00	1367.55	42880	17998	0	17998
14/Jul/2023 22:00	1367.59	42880	17998	0	17998
14/Jul/2023 23:00	1367.63	42880	17998	0	17998
15/Jul/2023 0:00	1367.66	36659	17998	0	17998
15/Jul/2023 1:00	1367.69	36659	17998	0	17998
15/Jul/2023 2:00	1367.72	36659	17998	0	17998
15/Jul/2023 3:00	1367.75	36659	17998	0	17998
15/Jul/2023 4:00	1367.78	36659	17998	0	17998
15/Jul/2023 5:00	1367.81	36659	17998	0	17998
15/Jul/2023 6:00	1367.84	36659	17998	0	17998
15/Jul/2023 7:00	1367.88	41516	16634	0	16634
15/Jul/2023 8:00	1367.92	40209	15327	0	15327
15/Jul/2023 9:00	1367.96	37596	12714	0	12714
15/Jul/2023 10:00	1368.00	37596	12714	0	12714
15/Jul/2023 11:00	1368.04	37596	12714	0	12714
15/Jul/2023 12:00	1368.08	37596	12714	0	12714
15/Jul/2023 13:00	1368.12	37596	12714	0	12714
15/Jul/2023 14:00	1368.16	38903	14021	0	14021
15/Jul/2023 15:00	1368.21	46429	15327	0	15327
15/Jul/2023 16:00	1368.26	46429	15327	0	15327
15/Jul/2023 17:00	1368.31	47736	16634	0	16634
15/Jul/2023 18:00	1368.36	49042	17940	0	17940
15/Jul/2023 19:00	1368.41	49042	17940	0	17940
15/Jul/2023 20:00	1368.47	55263	17940	0	17940
15/Jul/2023 21:00	1368.53	55263	17940	0	17940
15/Jul/2023 22:00	1368.59	55263	17940	0	17940
15/Jul/2023 23:00	1368.65	55263	17940	0	17940
16/Jul/2023 0:00	1368.71	55263	17940	0	17940
16/Jul/2023 1:00	1368.77	55263	17940	0	17940
16/Jul/2023 2:00	1368.83	55263	17940	0	17940
16/Jul/2023 3:00	1368.89	55263	17940	0	17940

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Public Information Officer
-cum- Sr. Executive Engineer,
Directorate of Energy,
H.P., Shimla-171005

Information Supplied to Sh Sumit Mahajan
Under RTI Act, 2005.

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16/Jul/2023 4:00	1368.96	60830	17287	0	17287
16/Jul/2023 5:00	1369.05	71311	15327	0	15327
16/Jul/2023 6:00	1369.15	77582	15327	0	15327
16/Jul/2023 7:00	1369.26	83701	15276	0	15276
16/Jul/2023 8:00	1369.38	89921	15276	0	15276
16/Jul/2023 9:00	1369.50	89921	15276	0	15276
16/Jul/2023 10:00	1369.62	91224	16579	0	16579
16/Jul/2023 11:00	1369.74	92527	17882	0	17882
16/Jul/2023 12:00	1369.86	92527	17882	0	17882
16/Jul/2023 13:00	1369.98	92527	17882	0	17882
16/Jul/2023 14:00	1370.10	90790	16145	0	16145
16/Jul/2023 15:00	1370.22	89921	15276	0	15276
16/Jul/2023 16:00	1370.34	95431	16579	0	16579
16/Jul/2023 17:00	1370.45	94551	17882	4388	22270
16/Jul/2023 18:00	1370.56	94551	17882	4388	22270
16/Jul/2023 19:00	1370.67	94551	17882	4388	22270
16/Jul/2023 20:00	1370.78	94551	17882	4388	22270
16/Jul/2023 21:00	1370.89	94551	17882	4388	22270
16/Jul/2023 22:00	1371.00	94551	17882	4388	22270
16/Jul/2023 23:00	1371.10	88463	17882	4871	22753
17/Jul/2023 0:00	1371.20	88463	17882	4871	22753
17/Jul/2023 1:00	1371.30	88463	17882	4871	22753
17/Jul/2023 2:00	1371.40	88463	17882	4871	22753
17/Jul/2023 3:00	1371.50	88463	17882	4871	22753
17/Jul/2023 4:00	1371.60	88463	17882	4871	22753
17/Jul/2023 5:00	1371.70	88463	17882	4871	22753
17/Jul/2023 6:00	1371.78	75321	17882	4871	22753
17/Jul/2023 7:00	1371.85	68634	17766	4871	22637
17/Jul/2023 8:00	1371.92	68634	17766	4871	22637
17/Jul/2023 9:00	1371.99	68634	17766	4871	22637
17/Jul/2023 10:00	1372.06	68634	17766	4871	22637
17/Jul/2023 11:00	1372.11	65097	17942	14300	32242
17/Jul/2023 12:00	1372.16	65097	17942	14300	32242
17/Jul/2023 13:00	1372.21	64895	18142	13898	32040
17/Jul/2023 14:00	1372.25	58324	18142	13898	32040
17/Jul/2023 15:00	1372.29	55732	15550	13898	29448
17/Jul/2023 16:00	1372.32	49161	15550	13898	29448
17/Jul/2023 17:00	1372.35	50241	16630	13898	30528
17/Jul/2023 18:00	1372.37	45182	18142	13898	32040
17/Jul/2023 19:00	1372.39	45182	18142	13898	32040
17/Jul/2023 20:00	1372.41	45182	18142	13898	32040
17/Jul/2023 21:00	1372.43	45182	18142	13898	32040
17/Jul/2023 22:00	1372.45	45182	18142	13898	32040
17/Jul/2023 23:00	1372.47	45182	18142	13898	32040
18/Jul/2023 0:00	1372.49	45182	18142	13898	32040
18/Jul/2023 1:00	1372.51	45182	18142	13898	32040
18/Jul/2023 2:00	1372.53	45182	18142	13898	32040
18/Jul/2023 3:00	1372.55	45182	18142	13898	32040
18/Jul/2023 4:00	1372.57	45182	18142	13898	32040
18/Jul/2023 5:00	1372.59	45182	18142	13898	32040
18/Jul/2023 6:00	1372.61	45182	18142	13898	32040
18/Jul/2023 7:00	1372.63	45114	18074	13898	31972
18/Jul/2023 8:00	1372.66	51685	18074	13898	31972
18/Jul/2023 9:00	1372.70	58256	18074	13898	31972

31/1/25
Public Information Officer
-cum- Sr. Executive Engineer,
Directorate of Energy,
H.P., Shimla-171005

31/1/25
Information Supplied to Sh Sumit Thakur
Under RTI Act, 2005.

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18/Jul/2023 10:00	1372.74	58264	18082	13898	31980
18/Jul/2023 11:00	1372.78	58264	18082	13898	31980
18/Jul/2023 12:00	1372.82	58264	18082	13898	31980
18/Jul/2023 13:00	1372.86	58264	18082	13898	31980
18/Jul/2023 14:00	1372.90	58264	18082	13898	31980
18/Jul/2023 15:00	1372.94	58264	18082	13898	31980
18/Jul/2023 16:00	1372.98	58264	18082	13898	31980
18/Jul/2023 17:00	1373.02	59624	18082	15258	33340
18/Jul/2023 18:00	1373.06	56260	14718	15258	29976
18/Jul/2023 19:00	1373.10	56260	14718	15258	29976
18/Jul/2023 20:00	1373.13	55920	14718	21492	36210
18/Jul/2023 21:00	1373.16	57044	15839	21492	37331
18/Jul/2023 22:00	1373.19	59287	18082	21492	39574
18/Jul/2023 23:00	1373.22	59287	18082	21492	39574
19/Jul/2023 0:00	1373.25	59287	18082	21492	39574
19/Jul/2023 1:00	1373.28	59287	18082	21492	39574
19/Jul/2023 2:00	1373.30	52716	18082	21492	39574
19/Jul/2023 3:00	1373.32	52716	18082	21492	39574
19/Jul/2023 4:00	1373.34	52716	18082	21492	39574
19/Jul/2023 5:00	1373.36	52716	18082	21492	39574
19/Jul/2023 6:00	1373.38	52716	18082	21492	39574
19/Jul/2023 7:00	1373.40	52656	18022	21492	39514
19/Jul/2023 8:00	1373.42	52656	18022	21492	39514
19/Jul/2023 9:00	1373.44	52656	18022	21492	39514
19/Jul/2023 10:00	1373.46	52656	18022	21492	39514
19/Jul/2023 11:00	1373.48	52656	18022	21492	39514
19/Jul/2023 12:00	1373.50	52656	18022	21492	39514
19/Jul/2023 13:00	1373.52	52498	18022	21334	39356
19/Jul/2023 14:00	1373.54	52498	18022	21334	39356
19/Jul/2023 15:00	1373.56	52498	18022	21334	39356
19/Jul/2023 16:00	1373.59	59069	18022	21334	39356
19/Jul/2023 17:00	1373.62	59069	18022	21334	39356
19/Jul/2023 18:00	1373.65	59069	18022	21334	39356
19/Jul/2023 19:00	1373.68	59069	18022	21334	39356
19/Jul/2023 20:00	1373.71	59069	18022	21334	39356
19/Jul/2023 21:00	1373.74	59069	18022	21334	39356
19/Jul/2023 22:00	1373.77	59069	18022	21334	39356
19/Jul/2023 23:00	1373.80	59069	18022	21334	39356
20/Jul/2023 0:00	1373.83	59069	18022	21334	39356
20/Jul/2023 1:00	1373.86	59069	18022	21334	39356
20/Jul/2023 2:00	1373.89	59069	18022	21334	39356
20/Jul/2023 3:00	1373.92	59069	18022	21334	39356
20/Jul/2023 4:00	1373.95	59069	18022	21334	39356
20/Jul/2023 5:00	1373.98	59069	18022	21334	39356
20/Jul/2023 6:00	1374.00	52498	18022	21334	39356
20/Jul/2023 7:00	1374.02	52438	17962	21334	39296
20/Jul/2023 8:00	1374.04	52438	17962	21334	39296
20/Jul/2023 9:00	1374.06	52438	17962	21334	39296
20/Jul/2023 10:00	1374.08	52340	17864	21334	39198
20/Jul/2023 11:00	1374.10	52242	17766	21334	39100
20/Jul/2023 12:00	1374.12	52242	17766	21334	39100
20/Jul/2023 13:00	1374.14	52242	17766	21334	39100
20/Jul/2023 14:00	1374.16	52242	17766	21334	39100
20/Jul/2023 15:00	1374.17	45671	17766	21334	39100

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Public Information Officer
-cum- Sr. Executive Engineer,
Directorate of Energy,
H.P., Shimla-171005

Information Supplied to Sh Sumit Mahar
Under RTI Act, 2005.

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20/Jul/2023 16:00	1374.18	45867	17962	21334	39296
20/Jul/2023 17:00	1374.19	45867	17962	21334	39296
20/Jul/2023 18:00	1374.20	45867	17962	21334	39296
20/Jul/2023 19:00	1374.21	45867	17962	21334	39296
20/Jul/2023 20:00	1374.22	45867	17962	21334	39296
20/Jul/2023 21:00	1374.23	45867	17962	21334	39296
20/Jul/2023 22:00	1374.24	45867	17962	21334	39296
20/Jul/2023 23:00	1374.25	45867	17962	21334	39296
21/Jul/2023 0:00	1374.26	45867	17962	21334	39296
21/Jul/2023 1:00	1374.27	45867	17962	21334	39296
21/Jul/2023 2:00	1374.28	45867	17962	21334	39296
21/Jul/2023 3:00	1374.29	45867	17962	21334	39296
21/Jul/2023 4:00	1374.30	45867	17962	21334	39296
21/Jul/2023 5:00	1374.31	45867	17962	21334	39296
21/Jul/2023 6:00	1374.32	45867	17962	21334	39296
21/Jul/2023 7:00	1374.33	45867	17962	21334	39296
21/Jul/2023 8:00	1374.34	45867	17962	21334	39296
21/Jul/2023 9:00	1374.35	45867	17962	21334	39296
21/Jul/2023 10:00	1374.36	45867	17962	21334	39296
21/Jul/2023 11:00	1374.37	45867	17962	21334	39296
21/Jul/2023 12:00	1374.38	45867	17962	21334	39296
21/Jul/2023 13:00	1374.39	45867	17962	21334	39296
21/Jul/2023 14:00	1374.40	45867	17962	21334	39296
21/Jul/2023 15:00	1374.42	52438	17962	21334	39296
21/Jul/2023 16:00	1374.44	52438	17962	21334	39296
21/Jul/2023 17:00	1374.46	52438	17962	21334	39296
21/Jul/2023 18:00	1374.48	52438	17962	21334	39296
21/Jul/2023 19:00	1374.50	52438	17962	21334	39296
21/Jul/2023 20:00	1374.52	52428	17962	21324	39286
21/Jul/2023 21:00	1374.54	52428	17962	21324	39286
21/Jul/2023 22:00	1374.56	52428	17962	21324	39286
21/Jul/2023 23:00	1374.58	52428	17962	21324	39286
22/Jul/2023 0:00	1374.60	52428	17962	21324	39286
22/Jul/2023 1:00	1374.62	52428	17962	21324	39286
22/Jul/2023 2:00	1374.64	52428	17962	21324	39286
22/Jul/2023 3:00	1374.66	52428	17962	21324	39286
22/Jul/2023 4:00	1374.68	52428	17962	21324	39286
22/Jul/2023 5:00	1374.70	52428	17962	21324	39286
22/Jul/2023 6:00	1374.72	52428	17962	21324	39286
22/Jul/2023 7:00	1374.74	52428	17962	21324	39286
22/Jul/2023 8:00	1374.77	58999	17962	21324	39286
22/Jul/2023 9:00	1374.80	58999	17962	21324	39286
22/Jul/2023 10:00	1374.83	58999	17962	21324	39286
22/Jul/2023 11:00	1374.86	58999	17962	21324	39286
22/Jul/2023 12:00	1374.89	58999	17962	21324	39286
22/Jul/2023 13:00	1374.93	65570	17962	21324	39286
22/Jul/2023 14:00	1374.97	65570	17962	21324	39286
22/Jul/2023 15:00	1375.01	65570	17962	21324	39286
22/Jul/2023 16:00	1375.05	65570	17962	21324	39286
22/Jul/2023 17:00	1375.09	65570	17962	21324	39286
22/Jul/2023 18:00	1375.14	65570	17962	21324	39286
22/Jul/2023 19:00	1375.20	78712	17962	21324	39286
22/Jul/2023 20:00	1375.27	85283	17962	21324	39286
22/Jul/2023 21:00	1375.35	91854	17962	21324	39286

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Public Information Officer
-cum- Sr. Executive Engineer,
Directorate of Energy,
H.P., Shimla-171005

Information Supplied to Sh Sumit Mahar
Under RTI Act, 2005.

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22/Jul/2023 22:00	1375.43	91854	17962	21324	39286
22/Jul/2023 23:00	1375.51	91854	17962	21324	39286
23/Jul/2023 0:00	1375.59	92287	17962	21757	39719
23/Jul/2023 1:00	1375.67	92287	17962	21757	39719
23/Jul/2023 2:00	1375.75	92287	17962	21757	39719
23/Jul/2023 3:00	1375.84	98858	17962	21757	39719
23/Jul/2023 4:00	1375.92	92287	17962	21757	39719
23/Jul/2023 5:00	1375.99	85726	17962	21757	39719
23/Jul/2023 6:00	1376.05	79145	17962	21757	39719
23/Jul/2023 7:00	1376.09	65886	17845	21757	39602
23/Jul/2023 8:00	1376.13	65886	17845	21757	39602
23/Jul/2023 9:00	1376.16	59315	17845	21757	39602
23/Jul/2023 10:00	1376.19	59315	17845	21757	39602
23/Jul/2023 11:00	1376.22	59315	17845	21757	39602
23/Jul/2023 12:00	1376.25	59315	17845	21757	39602
23/Jul/2023 13:00	1376.28	59315	17845	21757	39602
23/Jul/2023 14:00	1376.31	59315	17845	21757	39602
23/Jul/2023 15:00	1376.34	59315	17845	21757	39602
23/Jul/2023 16:00	1376.37	59315	17845	21757	39602
23/Jul/2023 17:00	1376.40	59315	17845	21757	39602
23/Jul/2023 18:00	1376.43	59315	17845	21757	39602
23/Jul/2023 19:00	1376.46	59315	17845	21757	39602
23/Jul/2023 20:00	1376.48	52744	17845	21757	39602
23/Jul/2023 21:00	1376.50	52744	17845	21757	39602
23/Jul/2023 22:00	1376.51	45922	17845	21506	39351
23/Jul/2023 23:00	1376.52	45922	17845	21506	39351
24/Jul/2023 0:00	1376.53	45922	17845	21506	39351
24/Jul/2023 1:00	1376.54	45922	17845	21506	39351
24/Jul/2023 2:00	1376.55	45922	17845	21506	39351
24/Jul/2023 3:00	1376.56	45922	17845	21506	39351
24/Jul/2023 4:00	1376.57	45922	17845	21506	39351
24/Jul/2023 5:00	1376.58	45922	17845	21506	39351
24/Jul/2023 6:00	1376.59	45922	17845	21506	39351
24/Jul/2023 7:00	1376.60	45922	17845	21506	39351
24/Jul/2023 8:00	1376.61	45922	17845	21506	39351
24/Jul/2023 9:00	1376.62	45922	17845	21506	39351
24/Jul/2023 10:00	1376.62	39351	17845	21506	39351
24/Jul/2023 11:00	1376.61	32780	17845	21506	39351
24/Jul/2023 12:00	1376.60	32780	17845	21506	39351
24/Jul/2023 13:00	1376.59	32780	17845	21506	39351
24/Jul/2023 14:00	1376.58	32780	17845	21506	39351
24/Jul/2023 15:00	1376.57	32780	17845	21506	39351
24/Jul/2023 16:00	1376.56	32780	17845	21506	39351
24/Jul/2023 17:00	1376.55	32780	17845	21506	39351
24/Jul/2023 18:00	1376.54	32780	17845	21506	39351
24/Jul/2023 19:00	1376.53	32780	17845	21506	39351
24/Jul/2023 20:00	1376.52	32780	17845	21506	39351
24/Jul/2023 21:00	1376.51	32780	17845	21506	39351
24/Jul/2023 22:00	1376.50	32780	17845	21506	39351
24/Jul/2023 23:00	1376.49	33031	17845	21757	39602
25/Jul/2023 0:00	1376.48	33031	17845	21757	39602
25/Jul/2023 1:00	1376.47	33031	17845	21757	39602
25/Jul/2023 2:00	1376.46	33031	17845	21757	39602
25/Jul/2023 3:00	1376.45	33031	17845	21757	39602

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Public Information Officer
-cum- Sr. Executive Engineer,
Directorate of Energy,
H.P., Shimla-171005

Information Supplied to Sh Sumit Mahar
Under RTI Act, 2005.

25/Jul/2023 4:00	1376.44	33031	17845	21757	39602
25/Jul/2023 5:00	1376.43	33031	17845	21757	39602
25/Jul/2023 6:00	1376.42	33031	17845	21757	39602
25/Jul/2023 7:00	1376.41	33031	17845	21757	39602
25/Jul/2023 8:00	1376.40	33031	17845	21757	39602
25/Jul/2023 9:00	1376.39	33031	17845	21757	39602
25/Jul/2023 10:00	1376.40	39602	17845	21757	39602
25/Jul/2023 11:00	1376.40	39602	17845	21757	39602
25/Jul/2023 12:00	1376.40	39602	17845	21757	39602
25/Jul/2023 13:00	1376.40	39602	17845	21757	39602
25/Jul/2023 14:00	1376.40	39602	17845	21757	39602
25/Jul/2023 15:00	1376.40	39602	17845	21757	39602
25/Jul/2023 16:00	1376.40	39602	17845	21757	39602
25/Jul/2023 17:00	1376.40	39602	17845	21757	39602
25/Jul/2023 18:00	1376.40	39602	17845	21757	39602
25/Jul/2023 19:00	0.00	0	17845	21757	39602
25/Jul/2023 20:00	1376.41	42888	17845	21757	39602
25/Jul/2023 21:00	1376.41	39602	17845	21757	39602
25/Jul/2023 22:00	1376.41	39602	17845	21757	39602
25/Jul/2023 23:00	1376.41	39602	17845	21757	39602
26/Jul/2023 0:00	1376.41	39602	17845	21757	39602
26/Jul/2023 1:00	1376.41	39602	17845	21757	39602
26/Jul/2023 2:00	1376.41	39602	17845	21757	39602
26/Jul/2023 3:00	1376.41	39602	17845	21757	39602
26/Jul/2023 4:00	1376.42	46173	17845	21757	39602
26/Jul/2023 5:00	1376.43	46173	17845	21757	39602
26/Jul/2023 6:00	1376.44	46173	17845	21757	39602
26/Jul/2023 7:00	1376.45	46173	17845	21757	39602
26/Jul/2023 8:00	1376.46	46173	17845	21757	39602
26/Jul/2023 9:00	1376.47	46173	17845	21757	39602
26/Jul/2023 10:00	1376.47	44586	17845	26741	44586
26/Jul/2023 11:00	1376.47	44586	17845	26741	44586
26/Jul/2023 12:00	1376.47	44586	17845	26741	44586
26/Jul/2023 13:00	1376.47	44586	17845	26741	44586
26/Jul/2023 14:00	1376.47	44586	17845	26741	44586
26/Jul/2023 15:00	1376.47	44736	17995	26741	44736
26/Jul/2023 16:00	1376.47	44736	17995	26741	44736
26/Jul/2023 17:00	1376.47	44736	17995	26741	44736
26/Jul/2023 18:00	1376.47	44736	17995	26741	44736
26/Jul/2023 19:00	1376.47	44736	17995	26741	44736
26/Jul/2023 20:00	1376.47	44736	17995	26741	44736
26/Jul/2023 21:00	1376.47	44736	17995	26741	44736
26/Jul/2023 22:00	1376.47	44736	17995	26741	44736
26/Jul/2023 23:00	1376.47	44736	17995	26741	44736
27/Jul/2023 0:00	1376.47	44736	17995	26741	44736
27/Jul/2023 1:00	1376.47	44736	17995	26741	44736
27/Jul/2023 2:00	1376.47	44736	17995	26741	44736
27/Jul/2023 3:00	1376.47	44736	17995	26741	44736
27/Jul/2023 4:00	1376.47	44736	17995	26741	44736
27/Jul/2023 5:00	1376.47	44736	17995	26741	44736
27/Jul/2023 6:00	1376.47	44736	17995	26741	44736
27/Jul/2023 7:00	1376.47	44736	17995	26741	44736
27/Jul/2023 8:00	1376.48	51307	17995	26741	44736
27/Jul/2023 9:00	1376.49	51307	17995	26741	44736

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Public Information Officer
-cum- Sr. Executive Engineer,
Directorate of Energy,
H.P., Shimla-171005

Information Supplied to Sh Sumit Nahar
Under RTI Act, 2005.

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27/Jul/2023 10:00	1376.49	49511	17995	31516	49511
27/Jul/2023 11:00	1376.49	49511	17995	31516	49511
27/Jul/2023 12:00	1376.49	49511	17995	31516	49511
27/Jul/2023 13:00	1376.49	49511	17995	31516	49511
27/Jul/2023 14:00	1376.48	42940	17995	31516	49511
27/Jul/2023 15:00	1376.47	42940	17995	31516	49511
27/Jul/2023 16:00	1376.46	42940	17995	31516	49511
27/Jul/2023 17:00	1376.45	42940	17995	31516	49511
27/Jul/2023 18:00	1376.44	42940	17995	31516	49511
27/Jul/2023 19:00	1376.43	42940	17995	31516	49511
27/Jul/2023 20:00	1376.41	36369	17995	31516	49511
27/Jul/2023 21:00	1376.39	36369	17995	31516	49511
27/Jul/2023 22:00	1376.37	36369	17995	31516	49511
27/Jul/2023 23:00	1376.35	36369	17995	31516	49511
28/Jul/2023 0:00	1376.33	36369	17995	31516	49511
28/Jul/2023 1:00	1376.31	36369	17995	31516	49511
28/Jul/2023 2:00	1376.29	36369	17995	31516	49511
28/Jul/2023 3:00	1376.27	36369	17995	31516	49511
28/Jul/2023 4:00	1376.25	36369	17995	31516	49511
28/Jul/2023 5:00	1376.23	36369	17995	31516	49511
28/Jul/2023 6:00	1376.21	36369	17995	31516	49511
28/Jul/2023 7:00	1376.19	36369	17995	31516	49511
28/Jul/2023 8:00	1376.17	36369	17995	31516	49511
28/Jul/2023 9:00	1376.15	36369	17995	31516	49511
28/Jul/2023 10:00	1376.13	36369	17995	31516	49511
28/Jul/2023 11:00	1376.11	36369	17995	31516	49511
28/Jul/2023 12:00	1376.09	36369	17995	31516	49511
28/Jul/2023 13:00	1376.07	36369	17995	31516	49511
28/Jul/2023 14:00	1376.05	36369	17995	31516	49511
28/Jul/2023 15:00	1376.03	36369	17995	31516	49511
28/Jul/2023 16:00	1376.01	36369	17995	31516	49511
28/Jul/2023 17:00	1375.99	36369	17995	31516	49511
28/Jul/2023 18:00	1375.97	36369	17995	31516	49511
28/Jul/2023 19:00	1375.95	36369	17995	31516	49511
28/Jul/2023 20:00	1375.93	36369	17995	31516	49511
28/Jul/2023 21:00	1375.91	36369	17995	31516	49511
28/Jul/2023 22:00	1375.89	36369	17995	31516	49511
28/Jul/2023 23:00	1375.87	36369	17995	31516	49511
29/Jul/2023 0:00	1375.85	36369	17995	31516	49511
29/Jul/2023 1:00	1375.83	36369	17995	31516	49511
29/Jul/2023 2:00	1375.81	36369	17995	31516	49511
29/Jul/2023 3:00	1375.79	36369	17995	31516	49511
29/Jul/2023 4:00	1375.77	36369	17995	31516	49511
29/Jul/2023 5:00	1375.75	36369	17995	31516	49511
29/Jul/2023 6:00	1375.73	36369	17995	31516	49511
29/Jul/2023 7:00	1375.71	36427	18053	31516	49569
29/Jul/2023 8:00	1375.69	36427	18053	31516	49569
29/Jul/2023 9:00	1375.67	36427	18053	31516	49569
29/Jul/2023 10:00	1375.65	36427	18053	31516	49569
29/Jul/2023 11:00	1375.64	42998	18053	31516	49569
29/Jul/2023 12:00	1375.63	42998	18053	31516	49569
29/Jul/2023 13:00	1375.63	49569	18053	31516	49569
29/Jul/2023 14:00	1375.64	54140	18053	31516	49569
29/Jul/2023 15:00	1375.65	54140	18053	31516	49569

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Public Information Officer
-cum- Sr. Executive Engineer,
Directorate of Energy,
H.P., Shimla-171005

Information Supplied to Sh Sumit Mahar
Under RTI Act, 2005.

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29/Jul/2023 16:00	1375.66	54140	18053	31516	49569
29/Jul/2023 17:00	1375.67	54140	18053	31516	49569
29/Jul/2023 18:00	1375.68	54140	18053	31516	49569
29/Jul/2023 19:00	1375.69	54140	18053	31516	49569
29/Jul/2023 20:00	1375.70	54140	18053	31516	49569
29/Jul/2023 21:00	1375.71	54140	18053	31516	49569
29/Jul/2023 22:00	1375.72	54140	18053	31516	49569
29/Jul/2023 23:00	1375.73	54140	18053	31516	49569
30/Jul/2023 0:00	1375.74	54140	18053	31516	49569
30/Jul/2023 1:00	1375.75	54140	18053	31516	49569
30/Jul/2023 2:00	1375.76	54140	18053	31516	49569
30/Jul/2023 3:00	1375.77	54140	18053	31516	49569
30/Jul/2023 4:00	1375.78	54140	18053	31516	49569
30/Jul/2023 5:00	1375.79	54140	18053	31516	49569
30/Jul/2023 6:00	1375.80	54140	18053	31516	49569
30/Jul/2023 7:00	1375.81	54140	18053	31516	49569
30/Jul/2023 8:00	1375.82	54140	18053	31516	49569
30/Jul/2023 9:00	1375.82	49569	18053	31516	49569
30/Jul/2023 10:00	1375.82	49569	18053	31516	49569
30/Jul/2023 11:00	1375.82	49569	18053	31516	49569
30/Jul/2023 12:00	1375.82	49569	18053	31516	49569
30/Jul/2023 13:00	1375.82	49569	18053	31516	49569
30/Jul/2023 14:00	1375.83	56140	18053	31516	49569
30/Jul/2023 15:00	1375.83	49569	18053	31516	49569
30/Jul/2023 16:00	1375.83	49569	18053	31516	49569
30/Jul/2023 17:00	1375.83	49569	18053	31516	49569
30/Jul/2023 18:00	1375.83	49569	18053	31516	49569
30/Jul/2023 19:00	1375.82	42998	18053	31516	49569
30/Jul/2023 20:00	1375.81	42998	18053	31516	49569
30/Jul/2023 21:00	1375.80	42998	18053	31516	49569
30/Jul/2023 22:00	1375.79	42998	18053	31516	49569
30/Jul/2023 23:00	1375.78	42998	18053	31516	49569
31/Jul/2023 0:00	1375.77	42998	18053	31516	49569
31/Jul/2023 1:00	1375.76	42998	18053	31516	49569
31/Jul/2023 2:00	1375.75	42998	18053	31516	49569
31/Jul/2023 3:00	1375.74	42998	18053	31516	49569
31/Jul/2023 4:00	1375.73	42998	18053	31516	49569
31/Jul/2023 5:00	1375.72	42998	18053	31516	49569
31/Jul/2023 6:00	1375.71	42998	18053	31516	49569
31/Jul/2023 7:00	1375.70	42998	18053	31516	49569
31/Jul/2023 8:00	1375.69	42998	18053	31516	49569
31/Jul/2023 9:00	1375.68	42998	18053	31516	49569
31/Jul/2023 10:00	1375.67	42998	18053	31516	49569
31/Jul/2023 11:00	1375.66	42998	18053	31516	49569
31/Jul/2023 12:00	1375.65	42998	18053	31516	49569
31/Jul/2023 13:00	1375.64	42998	18053	31516	49569
31/Jul/2023 14:00	1375.63	42998	18053	31516	49569
31/Jul/2023 15:00	1375.62	42998	18053	31516	49569
31/Jul/2023 16:00	1375.61	42998	18053	31516	49569
31/Jul/2023 17:00	1375.60	42998	18053	31516	49569
31/Jul/2023 18:00	1375.59	42998	18053	31516	49569
31/Jul/2023 19:00	1375.58	42998	18053	31516	49569
31/Jul/2023 20:00	1375.56	36427	18053	31516	49569
31/Jul/2023 21:00	1375.54	36427	18053	31516	49569

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Public Information Officer
-cum- Sr. Executive Engineer,
Directorate of Energy,
H.P., Shimla-171005

Information Supplied to Sh. Sumit Mahar
Under RTI Act, 2005.

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31/Jul/2023 22:00	1375.52	36427	18053	31516	49569
31/Jul/2023 23:00	1375.50	36427	18053	31516	49569
1/Aug/2023 0:00	1375.48	36439	18053	31528	49581
1/Aug/2023 1:00	1375.46	36439	18053	31528	49581
1/Aug/2023 2:00	1375.44	36439	18053	31528	49581
1/Aug/2023 3:00	1375.42	36439	18053	31528	49581
1/Aug/2023 4:00	1375.40	36439	18053	31528	49581
1/Aug/2023 5:00	1375.38	36439	18053	31528	49581
1/Aug/2023 6:00	1375.36	36439	18053	31528	49581
1/Aug/2023 7:00	1375.34	36439	18053	31528	49581
1/Aug/2023 8:00	1375.31	29868	18053	31528	49581
1/Aug/2023 9:00	1375.28	29868	18053	31528	49581
1/Aug/2023 10:00	1375.24	23297	18053	31528	49581
1/Aug/2023 11:00	1375.20	23297	18053	31528	49581
1/Aug/2023 12:00	1375.16	20011	18053	31528	49581
1/Aug/2023 13:00	1375.11	20011	18053	31528	49581
1/Aug/2023 14:00	1375.07	23297	18053	31528	49581
1/Aug/2023 15:00	1375.03	23297	18053	31528	49581
1/Aug/2023 16:00	1374.99	23297	18053	31528	49581
1/Aug/2023 17:00	1374.95	23297	18053	31528	49581
1/Aug/2023 18:00	1374.91	23297	18053	31528	49581
1/Aug/2023 19:00	1374.87	23297	18053	31528	49581
1/Aug/2023 20:00	1374.83	23297	18053	31528	49581
1/Aug/2023 21:00	1374.79	23297	18053	31528	49581
1/Aug/2023 22:00	1374.75	23282	18053	31513	49566
1/Aug/2023 23:00	1374.71	23282	18053	31513	49566
2/Aug/2023 0:00	1374.67	22797	18053	31027	49080
2/Aug/2023 1:00	1374.63	22796	18053	31027	49080
2/Aug/2023 2:00	1374.59	22312	18053	30543	48596
2/Aug/2023 3:00	1374.55	22312	18053	30543	48596
2/Aug/2023 4:00	1374.51	22312	18053	30543	48596
2/Aug/2023 5:00	1374.47	21831	18053	30062	48115
2/Aug/2023 6:00	1374.43	21831	18053	30060	48115
2/Aug/2023 7:00	1374.39	21412	18112	29584	47696
2/Aug/2023 8:00	1374.35	21412	18112	29584	47696
2/Aug/2023 9:00	1374.31	21412	18112	29584	47696
2/Aug/2023 10:00	1374.27	20936	18112	29108	47220
2/Aug/2023 11:00	1374.24	27507	18112	29108	47220
2/Aug/2023 12:00	1374.21	27507	18112	29108	47220
2/Aug/2023 13:00	1374.18	27033	18112	28634	46746
2/Aug/2023 14:00	1374.15	26981	18060	28634	46694
2/Aug/2023 15:00	1374.12	26981	18060	28634	46694
2/Aug/2023 16:00	1374.09	26511	18060	28164	46224
2/Aug/2023 17:00	1374.06	26511	18060	28164	46224
2/Aug/2023 18:00	1374.03	26511	18060	28164	46224
2/Aug/2023 19:00	1374.00	26511	18060	28164	46224
2/Aug/2023 20:00	1373.97	26043	18060	27696	45756
2/Aug/2023 21:00	1373.94	26043	18060	27696	45756
2/Aug/2023 22:00	1373.91	26043	18060	27696	45756
2/Aug/2023 23:00	1373.88	25577	18060	27230	45290
3/Aug/2023 0:00	1373.85	25577	18060	27230	45290
3/Aug/2023 1:00	1373.82	25577	18060	27230	45290
3/Aug/2023 2:00	1373.79	25114	18060	26767	44827
3/Aug/2023 3:00	1373.76	25114	18060	26767	44827

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Public Information Officer
-cum- Sr. Executive Engineer,
Directorate of Energy,
H.P., Shimla-171005

Information Supplied to Sh. Sumit Achar
Under RTI Act, 2005.

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3/Aug/2023 4:00	1373.73	25114	18060	26767	44827
3/Aug/2023 5:00	1373.70	25114	18060	26767	44827
3/Aug/2023 6:00	1373.67	24654	18060	26307	44367
3/Aug/2023 7:00	1373.64	24714	18120	26307	44427
3/Aug/2023 8:00	1373.61	24714	18120	26307	44427
3/Aug/2023 9:00	1373.58	24257	18120	25850	43970
3/Aug/2023 10:00	1373.55	24257	18120	25850	43970
3/Aug/2023 11:00	1373.52	24257	18120	25850	43970
3/Aug/2023 12:00	1373.50	30828	18120	25850	43970
3/Aug/2023 13:00	1373.48	30373	18120	25395	43515
3/Aug/2023 14:00	1373.46	30373	18120	25395	43515
3/Aug/2023 15:00	1373.44	30373	18120	25395	43515
3/Aug/2023 16:00	1373.42	30373	18120	25395	43515
3/Aug/2023 17:00	1373.40	30373	18120	25395	43515
3/Aug/2023 18:00	1373.38	29921	18120	24943	43060
3/Aug/2023 19:00	1373.36	29921	18120	24943	43060
3/Aug/2023 20:00	1373.34	29921	18120	24943	43060
3/Aug/2023 21:00	1373.32	29921	18120	24943	43060
3/Aug/2023 22:00	1373.30	29921	18120	24943	43060
3/Aug/2023 23:00	1373.28	29471	18120	24493	42613
4/Aug/2023 0:00	1373.26	29471	18120	24493	42613
4/Aug/2023 1:00	1373.24	29471	18120	24493	42613
4/Aug/2023 2:00	1373.22	29471	18120	24493	42613
4/Aug/2023 3:00	1373.20	29471	18120	24493	42613
4/Aug/2023 4:00	1373.18	29025	18120	24047	42167
4/Aug/2023 5:00	1373.16	29025	18120	24047	42167
4/Aug/2023 6:00	1373.14	29025	18120	24047	42167
4/Aug/2023 7:00	1373.12	29025	18120	24047	42167
4/Aug/2023 8:00	1373.10	29025	18120	24047	42167
4/Aug/2023 9:00	1373.09	32152	18120	23603	41723
4/Aug/2023 10:00	1373.08	32152	18120	23603	41723
4/Aug/2023 11:00	1373.07	32152	18120	23603	41723
4/Aug/2023 12:00	1373.06	32152	18120	23603	41723
4/Aug/2023 13:00	1373.05	32152	18120	23603	41723
4/Aug/2023 14:00	1373.04	32152	18120	23603	41723
4/Aug/2023 15:00	1373.03	32152	18120	23603	41723
4/Aug/2023 16:00	1373.02	32152	18120	23603	41723
4/Aug/2023 17:00	1373.01	32152	18120	23603	41723
4/Aug/2023 18:00	1373.00	32152	18120	23603	41723
4/Aug/2023 19:00	1373.00	41723	18120	23603	41723
4/Aug/2023 20:00	1373.00	41723	18120	23603	41723
4/Aug/2023 21:00	1373.01	48294	18120	23603	41723
4/Aug/2023 22:00	1373.02	48294	18120	23603	41723
4/Aug/2023 23:00	1373.03	48294	18120	23603	41723
5/Aug/2023 0:00	1373.04	48294	18120	23603	41723
5/Aug/2023 1:00	1373.05	48294	18120	23603	41723
5/Aug/2023 2:00	1373.06	48294	18120	23603	41723
5/Aug/2023 3:00	1373.07	48294	18120	23603	41723
5/Aug/2023 4:00	1373.08	48294	18120	23603	41723
5/Aug/2023 5:00	1373.09	48294	18120	23603	41723
5/Aug/2023 6:00	1373.10	48294	18120	23603	41723
5/Aug/2023 7:00	1373.11	48738	18120	24047	42167
5/Aug/2023 8:00	1373.12	48738	18120	24047	42167
5/Aug/2023 9:00	1373.13	48738	18120	24047	42167

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Public Information Officer
cum-Sr. Executive Engineer,
Directorate of Energy,
H.P., Shimla-171005

Information supplied to Sh Sumit Kumar
Under RTI Act, 2005.

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5/Aug/2023 10:00	1373.14	48738	18120	24047	42167
5/Aug/2023 11:00	1373.15	48738	18120	24047	42167
5/Aug/2023 12:00	1373.16	48738	18120	24047	42167
5/Aug/2023 13:00	1373.17	48738	18120	24047	42167
5/Aug/2023 14:00	1373.18	48738	18120	24047	42167
5/Aug/2023 15:00	1373.18	42167	18120	24047	42167
5/Aug/2023 16:00	1373.18	42167	18120	24047	42167
5/Aug/2023 17:00	1373.18	42167	18120	24047	42167
5/Aug/2023 18:00	1373.18	42167	18120	24047	42167
5/Aug/2023 19:00	1373.18	42167	18120	24047	42167
5/Aug/2023 20:00	1373.17	35596	18120	24047	42167
5/Aug/2023 21:00	1373.17	42167	18120	24047	42167
5/Aug/2023 22:00	1373.17	42167	18120	24047	42167
5/Aug/2023 23:00	1373.17	42167	18120	24047	42167
6/Aug/2023 0:00	1373.17	42167	18120	24047	42167
6/Aug/2023 1:00	1373.17	42167	18120	24047	42167
6/Aug/2023 2:00	1373.17	42167	18120	24047	42167
6/Aug/2023 3:00	1373.17	42167	18120	24047	42167
6/Aug/2023 4:00	1373.16	35596	18120	24047	42167
6/Aug/2023 5:00	1373.16	42167	18120	24047	42167
6/Aug/2023 6:00	1373.16	42147	18120	24047	42167
6/Aug/2023 7:00	1373.15	35596	18120	24047	42167
6/Aug/2023 8:00	1373.14	35596	18120	24047	42167
6/Aug/2023 9:00	1373.13	35596	18120	24047	42167
6/Aug/2023 10:00	1373.12	35596	18120	24047	42167
6/Aug/2023 11:00	1373.11	35596	18120	24047	42167
6/Aug/2023 12:00	1373.10	35596	18120	24047	42167
6/Aug/2023 13:00	1373.10	42167	18120	24047	42167
6/Aug/2023 14:00	1373.10	42167	18120	24047	42167
6/Aug/2023 15:00	1373.10	42167	18120	24047	42167
6/Aug/2023 16:00	1373.10	42167	18120	24047	42167
6/Aug/2023 17:00	1373.09	35152	18120	23603	41723
6/Aug/2023 18:00	1373.08	35152	18120	23603	41723
6/Aug/2023 19:00	1373.07	35152	18120	23603	41723
6/Aug/2023 20:00	1373.07	34893	18120	16773	34893
6/Aug/2023 21:00	1373.07	34893	18120	16773	34893
6/Aug/2023 22:00	1373.07	34893	18120	16773	34893
6/Aug/2023 23:00	1373.07	34893	18120	16773	34893
7/Aug/2023 0:00	1373.07	34893	18120	16773	34893
7/Aug/2023 1:00	1373.07	34893	18120	16773	34893
7/Aug/2023 2:00	1373.07	34893	18120	16773	34893
7/Aug/2023 3:00	1373.07	34893	18120	16773	34893
7/Aug/2023 4:00	1373.07	34893	18120	16773	34893
7/Aug/2023 5:00	1373.06	28322	18120	16773	34893
7/Aug/2023 6:00	1373.06	34893	18120	16773	34893
7/Aug/2023 7:00	1373.06	34893	18120	16773	34893
7/Aug/2023 8:00	1373.06	34893	18120	16773	34893
7/Aug/2023 9:00	1373.06	34893	18120	16773	34893
7/Aug/2023 10:00	1373.06	34893	18120	16773	34893
7/Aug/2023 11:00	1373.06	34893	18120	16773	34893
7/Aug/2023 12:00	1373.06	34893	18120	16773	34893
7/Aug/2023 13:00	1373.06	34893	18120	16773	34893
7/Aug/2023 14:00	1373.06	34893	18120	16773	34893
7/Aug/2023 15:00	1373.06	34893	18120	16773	34893

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Public Information Officer
-cum- Executive Engineer
Directorate of Energy,
H.P., Shimla-171005

Information Supplied to Sh Sumit Mahar
Under RTI Act, 2005.

7/Aug/2023 16:00	1373.07	41464	18120	16773	34893
7/Aug/2023 17:00	1373.08	41464	18120	16773	34893
7/Aug/2023 18:00	1373.09	41464	18120	16773	34893
7/Aug/2023 19:00	1373.10	41464	18120	16773	34893
7/Aug/2023 20:00	1373.10	34893	18120	16773	34893
7/Aug/2023 21:00	1373.10	34893	18120	16773	34893
7/Aug/2023 22:00	1373.10	34893	18120	16773	34893
7/Aug/2023 23:00	1373.10	34893	18120	16773	34893
8/Aug/2023 0:00	1373.10	34893	18120	16773	34893
8/Aug/2023 1:00	1373.10	34893	18120	16773	34893
8/Aug/2023 2:00	1373.10	34893	18120	16773	34893
8/Aug/2023 3:00	1373.10	34893	18120	16773	34893
8/Aug/2023 4:00	1373.09	28322	18120	16773	34893
8/Aug/2023 5:00	1373.08	28322	18120	16773	34893
8/Aug/2023 6:00	1373.07	28322	18120	16773	34893
8/Aug/2023 7:00	1373.06	28322	18120	16773	34893
8/Aug/2023 8:00	1373.05	28322	18120	16773	34893
8/Aug/2023 9:00	1373.04	28322	18120	16773	34893
8/Aug/2023 10:00	1373.04	34893	18120	16773	34893
8/Aug/2023 11:00	1373.04	34893	18120	16773	34893
8/Aug/2023 12:00	1373.04	34893	18120	16773	34893
8/Aug/2023 13:00	1373.06	35546	18120	4248	22404
8/Aug/2023 14:00	1373.08	35546	18120	4248	22404
8/Aug/2023 15:00	1373.10	35546	18120	4248	22404
8/Aug/2023 16:00	1373.12	35546	18120	4248	22404
8/Aug/2023 17:00	1373.13	28975	18120	4248	22404
8/Aug/2023 18:00	1373.14	28975	18120	4248	22404
8/Aug/2023 19:00	1373.15	28975	18120	4248	22404
8/Aug/2023 20:00	1373.16	28975	18120	4248	22404
8/Aug/2023 21:00	1373.17	28975	18120	4248	22404
8/Aug/2023 22:00	1373.18	28975	18120	4248	22404
8/Aug/2023 23:00	1373.19	28975	18120	4248	22404
9/Aug/2023 0:00	1373.20	28975	18120	4248	22404
9/Aug/2023 1:00	1373.21	28975	18120	4248	22404
9/Aug/2023 2:00	1373.22	28975	18120	4248	22404
9/Aug/2023 3:00	1373.23	28975	18120	4248	22404
9/Aug/2023 4:00	1373.23	22404	18120	4248	22404
9/Aug/2023 5:00	1373.23	22404	18120	4248	22404
9/Aug/2023 6:00	1373.23	22404	18120	4248	22404
9/Aug/2023 7:00	1373.23	22404	18120	4248	22404
9/Aug/2023 8:00	1373.23	22404	18120	4248	22404
9/Aug/2023 9:00	1373.23	22404	18120	4248	22404
9/Aug/2023 10:00	1373.24	28975	18120	4248	22404
9/Aug/2023 11:00	1373.25	28975	18120	4248	22404
9/Aug/2023 12:00	1373.26	28975	18120	4248	22404
9/Aug/2023 13:00	1373.27	28975	18120	4248	22404
9/Aug/2023 14:00	1373.27	22404	18120	4248	22404
9/Aug/2023 15:00	1373.27	22404	18120	4248	22404
9/Aug/2023 16:00	1373.27	22404	18120	4248	22404
9/Aug/2023 17:00	1373.27	22404	18120	4248	22404
9/Aug/2023 18:00	1373.27	22404	18120	4248	22404
9/Aug/2023 19:00	1373.27	22404	18120	4248	22404
9/Aug/2023 20:00	1373.27	22404	18120	4248	22404
9/Aug/2023 21:00	1373.27	22404	18120	4248	22404

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Public Information Officer
-cum- Sr. Executive Engineer,
Directorate of Energy,
H.P., Shimla-171005

Information Supplied to Sh Sumit Thakur
Under RTI Act, 2005.

9/Aug/2023 22:00	1373.27	22404	18120	4248	22404
9/Aug/2023 23:00	1373.28	28975	18120	4248	22404
10/Aug/2023 0:00	1373.29	28975	18120	4248	22404
10/Aug/2023 1:00	1373.29	22404	18120	4248	22404
10/Aug/2023 2:00	1373.29	22404	18120	4248	22404
10/Aug/2023 3:00	1373.29	22404	18120	4248	22404
10/Aug/2023 4:00	1373.29	22404	18120	4248	22404
10/Aug/2023 5:00	1373.29	22404	18120	4248	22404
10/Aug/2023 6:00	1373.30	28975	18120	4248	22404
10/Aug/2023 7:00	1373.31	28975	18120	4248	22404
10/Aug/2023 8:00	1373.33	35546	18120	4248	22404
10/Aug/2023 9:00	1373.35	35546	18120	4248	22404
10/Aug/2023 10:00	1373.37	35546	18120	4248	22404
10/Aug/2023 11:00	1373.40	37833	18120	0	18120
10/Aug/2023 12:00	1373.43	37833	18120	0	18120
10/Aug/2023 13:00	1373.46	37833	18120	0	18120
10/Aug/2023 14:00	1373.50	41409	15125	0	15125
10/Aug/2023 15:00	1373.54	42907	16623	0	16623
10/Aug/2023 16:00	1373.58	44404	18120	0	18120
10/Aug/2023 17:00	1373.62	44404	18120	0	18120
10/Aug/2023 18:00	1373.66	44404	18120	0	18120
10/Aug/2023 19:00	1373.70	44404	18120	0	18120
10/Aug/2023 20:00	1373.74	44404	18120	0	18120
10/Aug/2023 21:00	1373.78	44404	18120	0	18120
10/Aug/2023 22:00	1373.82	44404	18120	0	18120
10/Aug/2023 23:00	1373.86	44404	18120	0	18120
11/Aug/2023 0:00	1373.90	44404	18120	0	18120
11/Aug/2023 1:00	1373.93	37833	18120	0	18120
11/Aug/2023 2:00	1373.96	37833	18120	0	18120
11/Aug/2023 3:00	1373.99	37833	18120	0	18120
11/Aug/2023 4:00	1374.04	[illegible]	18120	0	18120
11/Aug/2023 5:00	1374.11	[illegible]	18120	0	18120
11/Aug/2023 6:00	1374.20	[illegible]	18120	0	18120
11/Aug/2023 7:00	1374.30	[illegible]	18060	0	18060
11/Aug/2023 8:00	1374.41	[illegible]	18060	0	18060
11/Aug/2023 9:00	1374.51	[illegible]	18060	0	18060
11/Aug/2023 10:00	1374.61	[illegible]	18060	0	18060
11/Aug/2023 11:00	1374.71	[illegible]	18060	0	18060
11/Aug/2023 12:00	1374.82	[illegible]	18060	0	18060
11/Aug/2023 13:00	1374.93	[illegible]	18060	0	18060
11/Aug/2023 14:00	1375.03	[illegible]	18060	0	18060
11/Aug/2023 15:00	1375.13	[illegible]	18060	0	18060
11/Aug/2023 16:00	1375.23	[illegible]	18060	0	18060
11/Aug/2023 17:00	1375.33	[illegible]	18060	0	18060
11/Aug/2023 18:00	1375.45	[illegible]	18060	0	18060
11/Aug/2023 19:00	1375.57	[illegible]	18060	0	18060
11/Aug/2023 20:00	1375.69	[illegible]	18060	0	18060
11/Aug/2023 21:00	1375.81	[illegible]	18060	0	18060
11/Aug/2023 22:00	1375.96	[illegible]	18060	0	18060
11/Aug/2023 23:00	1376.10	[illegible]	18060	0	18060
12/Aug/2023 0:00	1376.24	[illegible]	18060	0	18060
12/Aug/2023 1:00	1376.38	[illegible]	18060	0	18060
12/Aug/2023 2:00	1376.52	[illegible]	18060	0	18060
12/Aug/2023 3:00	1376.66	[illegible]	18060	0	18060

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H.P., Shimla-171005

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12/Aug/2023 4:00	1376.81	[illegible]	18060	0	18060
12/Aug/2023 5:00	1376.96	[illegible]	18060	0	18060
12/Aug/2023 6:00	1377.12	[illegible]	18060	0	18060
12/Aug/2023 7:00	1377.30	[illegible]	17884	0	17884
12/Aug/2023 8:00	1377.48	[illegible]	17884	0	17884
12/Aug/2023 9:00	1377.66	[illegible]	17884	0	17884
12/Aug/2023 10:00	1377.84	[illegible]	17884	0	17884
12/Aug/2023 11:00	1378.03	[illegible]	17884	0	17884
12/Aug/2023 12:00	1378.22	[illegible]	17884	0	17884
12/Aug/2023 13:00	1378.42	[illegible]	17884	0	17884
12/Aug/2023 14:00	1378.62	[illegible]	17884	0	17884
12/Aug/2023 15:00	1378.81	[illegible]	17884	0	17884
12/Aug/2023 16:00	1379.00	[illegible]	17884	0	17884
12/Aug/2023 17:00	1379.19	[illegible]	17884	0	17884
12/Aug/2023 18:00	1379.38	[illegible]	17884	0	17884
12/Aug/2023 19:00	1379.57	[illegible]	17884	0	17884
12/Aug/2023 20:00	1379.76	[illegible]	17884	0	17884
12/Aug/2023 21:00	1379.95	[illegible]	17884	0	17884
12/Aug/2023 22:00	1380.13	[illegible]	17884	0	17884
12/Aug/2023 23:00	1380.30	[illegible]	17884	0	17884
13/Aug/2023 0:00	1380.47	[illegible]	17884	0	17884
13/Aug/2023 1:00	1380.64	[illegible]	17884	0	17884
13/Aug/2023 2:00	1380.81	[illegible]	17884	0	17884
13/Aug/2023 3:00	1380.98	[illegible]	17884	0	17884
13/Aug/2023 4:00	1381.16	[illegible]	17884	0	17884
13/Aug/2023 5:00	1381.36	[illegible]	17884	0	17884
13/Aug/2023 6:00	1381.58	[illegible]	17884	0	17884
13/Aug/2023 7:00	1381.80	[illegible]	17649	0	17649
13/Aug/2023 8:00	1382.02	[illegible]	17649	0	17649
13/Aug/2023 9:00	1382.25	[illegible]	17649	0	17649
13/Aug/2023 10:00	1382.50	[illegible]	17649	0	17649
13/Aug/2023 11:00	1382.75	[illegible]	17649	0	17649
13/Aug/2023 12:00	1383.05	[illegible]	17649	0	17649
13/Aug/2023 13:00	1383.38	[illegible]	17649	0	17649
13/Aug/2023 14:00	1383.71	[illegible]	17649	0	17649
13/Aug/2023 15:00	1384.04	[illegible]	17649	0	17649
13/Aug/2023 16:00	1384.37	[illegible]	17649	0	17649
13/Aug/2023 17:00	1384.67	[illegible]	17649	0	17649
13/Aug/2023 18:00	1384.93	[illegible]	17649	0	17649
13/Aug/2023 19:00	1385.15	[illegible]	17649	0	17649
13/Aug/2023 20:00	1385.37	[illegible]	17649	0	17649
13/Aug/2023 21:00	1385.59	[illegible]	17649	0	17649
13/Aug/2023 22:00	1385.81	[illegible]	17649	0	17649
13/Aug/2023 23:00	1386.02	[illegible]	17649	0	17649
14/Aug/2023 0:00	1386.23	[illegible]	17649	0	17649
14/Aug/2023 1:00	1386.44	[illegible]	17649	0	17649
14/Aug/2023 2:00	1386.67	[illegible]	17649	0	17649
14/Aug/2023 3:00	1386.91	[illegible]	17649	0	17649
14/Aug/2023 4:00	1387.20	[illegible]	17649	0	17649
14/Aug/2023 5:00	1387.55	[illegible]	17649	0	17649
14/Aug/2023 6:00	1388.05	[illegible]	17649	0	17649
14/Aug/2023 7:00	1388.70	[illegible]	17312	0	17312
14/Aug/2023 8:00	1389.40	[illegible]	17312	0	17312
14/Aug/2023 9:00	1390.20	[illegible]	17312	7585	24897

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14/Aug/2023 10:00	1391.00	[illegible]	17312	22751	40063
14/Aug/2023 11:00	1391.81	[illegible]	17312	32846	50158
14/Aug/2023 12:00	1392.76	[illegible]	17312	33528	50840
14/Aug/2023 13:00	1393.66	[illegible]	17312	34197	51509
14/Aug/2023 14:00	1394.56	[illegible]	17312	34853	52165
14/Aug/2023 15:00	1395.31	[illegible]	17312	42550	59862
14/Aug/2023 16:00	1395.91	[illegible]	17312	52568	69880
14/Aug/2023 17:00	1396.31	[illegible]	17312	62723	80035
14/Aug/2023 18:00	1396.69	[illegible]	17312	72403	89715
14/Aug/2023 19:00	1397.00	[illegible]	17312	82649	99961
14/Aug/2023 20:00	1397.30	[illegible]	17312	82649	99961
14/Aug/2023 21:00	1397.60	[illegible]	17312	82649	99961
14/Aug/2023 22:00	1397.89	[illegible]	17312	82683	99995
14/Aug/2023 23:00	1398.16	[illegible]	17312	90104	107416
15/Aug/2023 0:00	1398.38	[illegible]	17312	112034	129346
15/Aug/2023 1:00	1398.60	[illegible]	17312	125234	142583
15/Aug/2023 2:00	1398.80	[illegible]	17312	125473	142785
15/Aug/2023 3:00	1398.99	[illegible]	17312	125473	142785
15/Aug/2023 4:00	1399.16	[illegible]	17312	125473	142785
15/Aug/2023 5:00	1399.30	[illegible]	17312	125473	142785
15/Aug/2023 6:00	1399.42	[illegible]	17312	125473	142785
15/Aug/2023 7:00	1399.52	[illegible]	16801	125473	142274
15/Aug/2023 8:00	1399.60	[illegible]	16801	126166	142967
15/Aug/2023 9:00	1399.65	[illegible]	16801	126166	142967
15/Aug/2023 10:00	1399.65	[illegible]	16801	126166	142967
15/Aug/2023 11:00	1399.65	[illegible]	16801	126166	142967
15/Aug/2023 12:00	1399.65	[illegible]	16801	126166	142967
15/Aug/2023 13:00	1399.64	[illegible]	16801	126166	142967
15/Aug/2023 14:00	1399.62	[illegible]	16801	126166	142967
15/Aug/2023 15:00	1399.59	[illegible]	16801	126166	142967
15/Aug/2023 16:00	1399.56	[illegible]	16801	126166	142967
15/Aug/2023 17:00	1399.53	[illegible]	16801	126166	142967
15/Aug/2023 18:00	1399.48	[illegible]	16801	131122	147923
15/Aug/2023 19:00	1399.43	[illegible]	16801	123796	140597
15/Aug/2023 20:00	1399.38	[illegible]	16801	123796	140597
15/Aug/2023 21:00	1399.33	[illegible]	16801	123796	140597
15/Aug/2023 22:00	1399.28	[illegible]	16801	123796	140597
15/Aug/2023 23:00	1399.23	[illegible]	16801	123796	140597
16/Aug/2023 0:00	1399.17	[illegible]	16801	123796	140597
16/Aug/2023 1:00	1399.11	[illegible]	16801	123796	140597
16/Aug/2023 2:00	1399.04	[illegible]	16801	123796	140597
16/Aug/2023 3:00	1398.96	[illegible]	16801	123796	140597
16/Aug/2023 4:00	1398.87	[illegible]	16801	123796	140597
16/Aug/2023 5:00	1398.78	[illegible]	16801	123796	140597
16/Aug/2023 6:00	1398.68	[illegible]	16801	123796	140597
16/Aug/2023 7:00	1398.58	[illegible]	16845	123796	140641
16/Aug/2023 8:00	1398.48	[illegible]	16845	123796	140641
16/Aug/2023 9:00	1398.38	[illegible]	16845	121378	138223
16/Aug/2023 10:00	1398.28	[illegible]	16845	121378	138223
16/Aug/2023 11:00	1398.18	[illegible]	16845	121378	138223
16/Aug/2023 12:00	1398.08	[illegible]	16845	121378	138223
16/Aug/2023 13:00	1397.98	[illegible]	16845	121378	138223
16/Aug/2023 14:00	1397.88	[illegible]	16845	121378	138223
16/Aug/2023 15:00	1397.78	[illegible]	16845	121378	138223

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16/Aug/2023 16:00	1397.68	[illegible]	16845	121378	138223
16/Aug/2023 17:00	1397.57	[illegible]	16845	121378	138223
16/Aug/2023 18:00	1397.46	[illegible]	16845	118909	135754
16/Aug/2023 19:00	1397.35	[illegible]	16845	118909	135754
16/Aug/2023 20:00	1397.25	[illegible]	16845	111012	127857
16/Aug/2023 21:00	1397.16	[illegible]	16845	103114	119959
16/Aug/2023 22:00	1397.07	[illegible]	16845	103114	119959
16/Aug/2023 23:00	1396.98	[illegible]	16845	103114	119959
17/Aug/2023 0:00	1396.88	44635	16845	103114	119959
17/Aug/2023 1:00	1396.78	44635	16845	103114	119959
17/Aug/2023 2:00	1396.68	44635	16845	103114	119959
17/Aug/2023 3:00	1396.58	44635	16845	103114	119959
17/Aug/2023 4:00	1396.48	44635	16845	103114	119959
17/Aug/2023 5:00	1396.38	42565	16845	101044	117889
17/Aug/2023 6:00	1396.28	42565	16845	101044	117889
17/Aug/2023 7:00	1396.18	42659	16939	101044	117983
17/Aug/2023 8:00	1396.08	42659	16939	101044	117983
17/Aug/2023 9:00	1395.98	42659	16939	101044	117983
17/Aug/2023 10:00	1395.88	42659	16939	101044	117983
17/Aug/2023 11:00	1395.78	42659	16939	101044	117983
17/Aug/2023 12:00	1395.68	42659	16939	101044	117983
17/Aug/2023 13:00	1395.58	42659	16939	101044	117983
17/Aug/2023 14:00	1395.48	42659	16939	101044	117983
17/Aug/2023 15:00	1395.38	41353	16939	99738	116677
17/Aug/2023 16:00	1395.29	43292	16939	94144	111083
17/Aug/2023 17:00	1395.22	47168	16939	82956	99895
17/Aug/2023 18:00	1395.15	47168	16939	82956	99895
17/Aug/2023 19:00	1395.08	47168	16939	82956	99895
17/Aug/2023 20:00	1395.01	47168	16939	82956	99895
17/Aug/2023 21:00	1394.94	47066	16939	82854	99793
17/Aug/2023 22:00	1394.87	46947	16939	82735	99674
17/Aug/2023 23:00	1394.80	46828	16939	822216	99555
18/Aug/2023 0:00	1394.73	46709	16939	82497	99436
18/Aug/2023 1:00	1394.66	46589	16939	82477	99316
18/Aug/2023 2:00	1394.59	46470	16939	82258	99197
18/Aug/2023 3:00	1394.52	46350	16939	82138	99077
18/Aug/2023 4:00	1394.45	46230	16939	82018	98957
18/Aug/2023 5:00	1394.38	46110	16939	81898	98837
18/Aug/2023 6:00	1394.31	45989	16939	81777	98716
18/Aug/2023 7:00	1394.24	45960	17030	81657	98687
18/Aug/2023 8:00	1394.17	45839	17030	81536	98566
18/Aug/2023 9:00	1394.10	45718	17030	81415	98445
18/Aug/2023 10:00	1394.03	45597	17030	81294	98324
18/Aug/2023 11:00	1393.96	45476	17030	81173	98203
18/Aug/2023 12:00	1393.89	45423	17030	81121	98151
18/Aug/2023 13:00	1393.83	44269	8516	80947	98463
18/Aug/2023 14:00	1393.78	43285	0	80947	80947
18/Aug/2023 15:00	1393.73	46082	2884	80860	83744
18/Aug/2023 16:00	1393.67	41588	14709	71875	86782
18/Aug/2023 17:00	1393.62	42118	17030	62750	79780
18/Aug/2023 18:00	1393.57	42053	17030	62685	79715
18/Aug/2023 19:00	1393.52	41989	17030	62621	79651
18/Aug/2023 20:00	1393.47	41925	17030	62557	79587
18/Aug/2023 21:00	1393.42	41860	17030	62492	79522

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18/Aug/2023 22:00	1393.37	41796	17030	62428	79458
18/Aug/2023 23:00	1393.32	41731	17030	62363	79393
19/Aug/2023 0:00	1393.27	41667	17030	62299	79329
19/Aug/2023 1:00	1393.22	41602	17030	62234	79264
19/Aug/2023 2:00	1393.17	41538	17030	62170	79200
19/Aug/2023 3:00	1393.12	41473	17030	62105	79135
19/Aug/2023 4:00	1393.07	41408	17030	62040	79070
19/Aug/2023 5:00	1393.02	41343	17030	61975	79005
19/Aug/2023 6:00	1392.97	43039	17030	61910	78940
19/Aug/2023 7:00	1392.92	41307	17124	61845	78969
19/Aug/2023 8:00	1392.87	41242	17124	61780	78904
19/Aug/2023 9:00	1392.82	41177	17124	61715	78839
19/Aug/2023 10:00	1392.77	41111	17124	61649	78773
19/Aug/2023 11:00	1392.72	41046	17124	61584	78708
19/Aug/2023 12:00	1392.67	40981	17124	61519	78643
19/Aug/2023 13:00	1392.62	40915	17124	61453	78577
19/Aug/2023 14:00	1392.57	40859	17124	61388	78512
19/Aug/2023 15:00	1392.51	33239	17124	61309	78433
19/Aug/2023 16:00	1392.45	33160	17124	61230	78354
19/Aug/2023 17:00	1392.39	33081	17124	61151	78275
19/Aug/2023 18:00	1392.33	33002	17124	61072	78196
19/Aug/2023 19:00	1392.27	32923	17124	60993	78117
19/Aug/2023 20:00	1392.21	32544	17124	60914	78038
19/Aug/2023 21:00	1392.16	36181	17124	56719	73843
19/Aug/2023 22:00	1392.11	31929	17124	52467	69591
19/Aug/2023 23:00	1392.06	31873	17124	52411	69535
20/Aug/2023 0:00	1392.01	31818	17124	52356	69480
20/Aug/2023 1:00	1391.96	31762	17124	52300	69424
20/Aug/2023 2:00	1391.91	31706	17124	52244	69368
20/Aug/2023 3:00	1391.86	31650	17124	52188	69312
20/Aug/2023 4:00	1391.81	31594	17124	52132	69256
20/Aug/2023 5:00	1391.76	31538	17124	52076	69200
20/Aug/2023 6:00	1391.71	31482	17124	52020	69144
20/Aug/2023 7:00	1391.66	31474	17172	51964	69136
20/Aug/2023 8:00	1391.61	31418	17172	51908	69080
20/Aug/2023 9:00	1391.56	31361	17172	51851	69023
20/Aug/2023 10:00	1391.51	31305	17172	51795	68967
20/Aug/2023 11:00	1391.45	23705	17172	51727	68899
20/Aug/2023 12:00	1391.39	23638	17172	51660	68832
20/Aug/2023 13:00	1391.33	23570	17172	51592	68764
20/Aug/2023 14:00	1391.27	23502	17172	51524	68696
20/Aug/2023 15:00	1391.21	23434	17172	51456	68628
20/Aug/2023 16:00	1391.15	23366	17172	51388	68560
20/Aug/2023 17:00	1391.09	23297	17172	51319	68491
20/Aug/2023 18:00	1391.03	23229	17172	51251	68423
20/Aug/2023 19:00	1390.97	23161	17172	51183	68355
20/Aug/2023 20:00	1390.91	23092	17172	51114	68286
20/Aug/2023 21:00	1390.85	23024	17172	51046	68218
20/Aug/2023 22:00	1390.79	22955	17172	50977	68149
20/Aug/2023 23:00	1390.73	22931	17172	50908	68080
21/Aug/2023 0:00	1390.67	22862	17172	50839	68011
21/Aug/2023 1:00	1390.61	22748	17172	50770	67942
21/Aug/2023 2:00	1390.55	22679	17172	50701	67873
21/Aug/2023 3:00	1390.49	22610	17172	50632	67804

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21/Aug/2023 4:00	1390.43	22541	17172	50563	67735
21/Aug/2023 5:00	1390.37	22472	17172	50494	67666
21/Aug/2023 6:00	1390.31	22402	17172	50424	67596
21/Aug/2023 7:00	1390.25	22379	17218	50355	67573
21/Aug/2023 8:00	1390.19	22309	17218	50285	67503
21/Aug/2023 9:00	1390.13	22239	17218	50215	67433
21/Aug/2023 10:00	1390.07	22169	17218	50145	67363
21/Aug/2023 11:00	1390.01	22099	17218	50075	67293
21/Aug/2023 12:00	1389.95	24245	17218	50005	67223
21/Aug/2023 13:00	1389.89	24618	17218	49935	67153
21/Aug/2023 14:00	1389.83	24548	17218	49865	67083
21/Aug/2023 15:00	1389.77	24478	17218	49795	67013
21/Aug/2023 16:00	1389.71	24404	17218	49724	66942
21/Aug/2023 17:00	1389.65	24337	17218	49654	66872
21/Aug/2023 18:00	1389.59	24266	17218	49583	66801
21/Aug/2023 19:00	1389.53	24195	17218	49512	66730
21/Aug/2023 20:00	1389.47	24125	17218	49442	66660
21/Aug/2023 21:00	1389.41	24054	17218	49371	66589
21/Aug/2023 22:00	1389.35	23983	17218	49300	66518
21/Aug/2023 23:00	1389.29	23911	17218	49228	66446
22/Aug/2023 0:00	1389.23	23840	17218	49157	66375
22/Aug/2023 1:00	1389.17	23769	17218	49086	66304
22/Aug/2023 2:00	1389.11	23697	17218	49014	66232
22/Aug/2023 3:00	1389.05	23626	17218	48943	66161
22/Aug/2023 4:00	1388.99	23554	17218	48871	66089
22/Aug/2023 5:00	1388.93	23482	17218	48799	66017
22/Aug/2023 6:00	1388.87	23411	17218	48728	65946
22/Aug/2023 7:00	1388.83	37615	17292	48680	65972
22/Aug/2023 8:00	1388.79	37567	17292	48632	65924
22/Aug/2023 9:00	1388.76	44620	17292	48595	65887
22/Aug/2023 10:00	1388.74	[illegible]	17292	48571	65863
22/Aug/2023 11:00	1388.73	[illegible]	17292	48559	65851
22/Aug/2023 12:00	1388.72	[illegible]	17292	48547	65839
22/Aug/2023 13:00	1388.72	[illegible]	17292	48547	65839
22/Aug/2023 14:00	1388.72	[illegible]	17292	48547	65839
22/Aug/2023 15:00	1388.71	[illegible]	17292	48535	65827
22/Aug/2023 16:00	1388.70	[illegible]	17292	48523	65815
22/Aug/2023 17:00	1388.69	[illegible]	17292	48511	65803
22/Aug/2023 18:00	1388.68	[illegible]	17292	48499	65791
22/Aug/2023 19:00	1388.67	[illegible]	17292	48487	65779
22/Aug/2023 20:00	1388.66	[illegible]	17292	48475	65767
22/Aug/2023 21:00	1388.65	[illegible]	17292	48463	65755
22/Aug/2023 22:00	1388.64	[illegible]	17292	48451	65743
22/Aug/2023 23:00	1388.63	[illegible]	17292	48439	65731
23/Aug/2023 0:00	1388.62	[illegible]	17292	48427	65719
23/Aug/2023 1:00	1388.62	[illegible]	17292	48427	65719
23/Aug/2023 2:00	1388.62	[illegible]	17292	48427	65719
23/Aug/2023 3:00	1388.67	[illegible]	17292	48487	65779
23/Aug/2023 4:00	1388.77	[illegible]	17292	48608	65900
23/Aug/2023 5:00	1388.92	[illegible]	17292	48787	66079
23/Aug/2023 6:00	1389.10	[illegible]	17292	49003	66295
23/Aug/2023 7:00	1389.21	[illegible]	17265	49133	66398
23/Aug/2023 8:00	1389.28	[illegible]	17265	49217	66482
23/Aug/2023 9:00	1389.37	[illegible]	17265	49323	66588

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-cum- Sr. Executive Engineer
Directorate of Energy,
H.P., Shimla-171005

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Under RTI Act, 2005.

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23/Aug/2023 10:00	1389.47	[illegible]	17265	49442	66707
23/Aug/2023 11:00	1389.52	[illegible]	17265	49560	66825
23/Aug/2023 12:00	1389.67	[illegible]	17265	49677	66942
23/Aug/2023 13:00	1389.79	[illegible]	17265	49818	67083
23/Aug/2023 14:00	1389.91	[illegible]	17265	49959	67224
23/Aug/2023 15:00	1390.01	[illegible]	17265	50075	67340
23/Aug/2023 16:00	1390.11	[illegible]	17265	50192	67457
23/Aug/2023 17:00	1390.21	[illegible]	17265	50308	65573
23/Aug/2023 18:00	1390.31	[illegible]	17265	50424	67689
23/Aug/2023 19:00	1390.42	[illegible]	17265	50551	67816
23/Aug/2023 20:00	1390.56	[illegible]	17265	50713	67978
23/Aug/2023 21:00	1390.72	[illegible]	17265	50897	68162
23/Aug/2023 22:00	1390.89	[illegible]	17265	51091	68356
23/Aug/2023 23:00	1391.06	[illegible]	17265	51285	68550
24/Aug/2023 0:00	1391.23	[illegible]	17265	51479	68744
24/Aug/2023 1:00	1391.38	[illegible]	17265	51648	68913
24/Aug/2023 2:00	1391.51	[illegible]	17265	51795	69060
24/Aug/2023 3:00	1391.56	[illegible]	17265	51851	69116
24/Aug/2023 4:00	1391.59	[illegible]	17265	51885	69150
24/Aug/2023 5:00	1391.62	[illegible]	17265	51919	69184
24/Aug/2023 6:00	1391.65	[illegible]	17265	51953	69218
24/Aug/2023 7:00	1391.68	[illegible]	17172	51986	69158
24/Aug/2023 8:00	1391.70	[illegible]	17172	52009	69181
24/Aug/2023 9:00	1391.72	[illegible]	17172	52031	69203
24/Aug/2023 10:00	1391.74	[illegible]	17172	52054	69226
24/Aug/2023 11:00	1391.76	[illegible]	17172	52076	69248
24/Aug/2023 12:00	1391.78	[illegible]	17172	52099	69271
24/Aug/2023 13:00	1391.80	[illegible]	17172	52121	69293
24/Aug/2023 14:00	1391.82	[illegible]	17172	52143	69315
24/Aug/2023 15:00	1391.84	[illegible]	17172	52166	69338
24/Aug/2023 16:00	1391.87	[illegible]	17172	52190	69371
24/Aug/2023 17:00	1391.90	[illegible]	17172	52233	69405
24/Aug/2023 18:00	1391.93	[illegible]	17172	52266	69438
24/Aug/2023 19:00	1391.96	[illegible]	17172	52300	69472
24/Aug/2023 20:00	1391.99	[illegible]	17172	52333	69505
24/Aug/2023 21:00	1392.01	[illegible]	17172	52356	69528
24/Aug/2023 22:00	1392.03	[illegible]	17172	52378	69550
24/Aug/2023 23:00	1392.04	[illegible]	17172	52389	69561
25/Aug/2023 0:00	1392.05	[illegible]	17172	52400	69572
25/Aug/2023 1:00	1392.05	[illegible]	17172	52400	69572
25/Aug/2023 2:00	1392.05	[illegible]	17172	52400	69572
25/Aug/2023 3:00	1392.05	[illegible]	17172	52400	69572
25/Aug/2023 4:00	1392.05	[illegible]	17172	52400	69572
25/Aug/2023 5:00	1392.05	[illegible]	17172	52400	69572
25/Aug/2023 6:00	1392.05	[illegible]	17172	52400	69572
25/Aug/2023 7:00	1392.06	[illegible]	17124	52411	69555
25/Aug/2023 8:00	1392.07	[illegible]	17124	52423	69547
25/Aug/2023 9:00	1392.08	[illegible]	17124	52434	69558
25/Aug/2023 10:00	1392.09	[illegible]	17124	52445	69569
25/Aug/2023 11:00	1392.10	[illegible]	17124	52456	69580
25/Aug/2023 12:00	1392.11	[illegible]	17124	52467	69591
25/Aug/2023 13:00	1392.12	[illegible]	17124	52478	69602
25/Aug/2023 14:00	1392.12	[illegible]	17124	52478	69602
25/Aug/2023 15:00	1392.11	[illegible]	17124	52467	69591

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Public Information Officer
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Directorate of Energy,
H.P., Shimla-171005

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25/Aug/2023 16:00	1392.10	[illegible]	17124	52456	69580
25/Aug/2023 17:00	1392.09	[illegible]	17124	52445	69569
25/Aug/2023 18:00	1392.08	[illegible]	17124	52434	69558
25/Aug/2023 19:00	1392.07	[illegible]	17124	52423	69547
25/Aug/2023 20:00	1392.06	[illegible]	17124	52411	69535
25/Aug/2023 21:00	1392.05	[illegible]	17124	52400	69524
25/Aug/2023 22:00	1392.04	47011	17124	52389	69513
25/Aug/2023 23:00	1392.03	[illegible]	17124	52378	69502
26/Aug/2023 0:00	1392.02	[illegible]	17124	52367	69491
26/Aug/2023 1:00	1392.01	[illegible]	17124	52356	69480
26/Aug/2023 2:00	1392.00	[illegible]	17124	52345	69469
26/Aug/2023 3:00	1391.99	[illegible]	17124	52333	69457
26/Aug/2023 4:00	1391.98	[illegible]	17124	52322	69446
26/Aug/2023 5:00	1391.97	[illegible]	17124	52311	69435
26/Aug/2023 6:00	1391.95	[illegible]	17124	52289	69413
26/Aug/2023 7:00	1391.92	46830	17172	52255	69427
26/Aug/2023 8:00	1391.89	46797	17172	52222	69394
26/Aug/2023 9:00	1391.86	46763	17172	52188	69360
26/Aug/2023 10:00	1391.83	46730	17172	52155	69327
26/Aug/2023 11:00	1391.80	46696	17172	52121	69293
26/Aug/2023 12:00	1391.77	45712	16222	52087	68309
26/Aug/2023 13:00	1391.74	43778	14321	52054	66375
26/Aug/2023 14:00	1391.71	43744	14321	52020	66341
26/Aug/2023 15:00	1391.67	38116	16271	51975	68246
26/Aug/2023 16:00	1391.63	38546	16746	51930	68676
26/Aug/2023 17:00	1391.59	38927	17172	51885	69057
26/Aug/2023 18:00	1391.55	38882	17172	51840	69012
26/Aug/2023 19:00	1391.51	38837	17172	51795	68967
26/Aug/2023 20:00	1391.46	31249	17172	51739	68911
26/Aug/2023 21:00	1391.41	31192	17172	51682	68854
26/Aug/2023 22:00	1391.36	31136	17172	51626	68798
26/Aug/2023 23:00	1391.31	31079	17172	51569	68741
27/Aug/2023 0:00	1391.26	31023	17172	51513	68685
27/Aug/2023 1:00	1391.21	30966	17172	51456	68628
27/Aug/2023 2:00	1391.16	30909	17172	51399	68571
27/Aug/2023 3:00	1391.11	30852	17172	51342	68514
27/Aug/2023 4:00	1391.06	30795	17172	51285	68457
27/Aug/2023 5:00	1391.01	30738	17172	51228	68400
27/Aug/2023 6:00	1390.95	23138	17172	51160	68332
27/Aug/2023 7:00	1390.89	23115	17172	51091	68309
27/Aug/2023 8:00	1390.83	23047	17218	51023	68241
27/Aug/2023 9:00	1390.77	22978	17218	50954	68172
27/Aug/2023 10:00	1390.71	22909	17218	50885	68103
27/Aug/2023 11:00	1390.65	22840	17218	50816	68034
27/Aug/2023 12:00	1390.61	19664	17218	32576	49794
27/Aug/2023 13:00	1390.57	19636	17218	32548	49766
27/Aug/2023 14:00	1390.53	19608	17218	32520	49738
27/Aug/2023 15:00	1390.49	19580	17218	32492	49710
27/Aug/2023 16:00	1390.45	19553	17218	32465	49683
27/Aug/2023 17:00	1390.41	19525	17218	32437	49655
27/Aug/2023 18:00	1390.37	19497	17218	32409	49627
27/Aug/2023 19:00	1390.33	19469	17218	32381	49599
	1390.29	19441	17218	32355	49571
27/Aug/2023 21:00	1390.25	19413	17218	32325	49543

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27/Aug/2023 22:00	1390.22	16754	17218	22133	39351
27/Aug/2023 23:00	1390.20	16726	17218	22105	39323
28/Aug/2023 0:00	1390.16	16712	17218	22091	39309
28/Aug/2023 1:00	1390.13	16698	17218	22077	39295
28/Aug/2023 2:00	1390.10	16684	17218	22063	39281
28/Aug/2023 3:00	1390.07	16670	17218	22049	39267
28/Aug/2023 4:00	1390.04	16656	17218	22035	39253
28/Aug/2023 5:00	1390.01	16642	17218	22021	39239
28/Aug/2023 6:00	1389.98	17515	17218	22007	39225
28/Aug/2023 7:00	1389.95	17991	17265	21993	39258
28/Aug/2023 8:00	1389.92	17977	17265	21979	39244
28/Aug/2023 9:00	1389.89	17963	17265	21965	39230
28/Aug/2023 10:00	1389.86	17949	17265	21951	39216
28/Aug/2023 11:00	1389.83	17935	17265	21937	39202
28/Aug/2023 12:00	1389.80	17920	17265	21922	39187
28/Aug/2023 13:00	1389.77	17906	17265	21908	39173
28/Aug/2023 14:00	1389.74	17892	17265	21894	39159
28/Aug/2023 15:00	1389.72	15330	17265	12243	29508
28/Aug/2023 16:00	1389.70	15325	17265	12238	29503
28/Aug/2023 17:00	1389.68	15320	17265	12233	29498
28/Aug/2023 18:00	1389.66	15315	17265	12228	29493
28/Aug/2023 19:00	1389.64	15310	17265	12223	29488
28/Aug/2023 20:00	1389.62	15305	17265	12218	29483
28/Aug/2023 21:00	1389.60	15300	17265	12213	29478
28/Aug/2023 22:00	1389.58	15294	17265	12207	29472
28/Aug/2023 23:00	1389.56	15289	17265	12202	29467
29/Aug/2023 0:00	1389.54	15284	17265	12197	29462
29/Aug/2023 1:00	1389.52	15279	17265	12192	29457
29/Aug/2023 2:00	1389.50	15274	17265	12187	29452
29/Aug/2023 3:00	1389.48	15269	17265	12182	29447
29/Aug/2023 4:00	1389.46	15264	17265	12177	29442
29/Aug/2023 5:00	1389.44	15258	17265	12171	29436
29/Aug/2023 6:00	1389.42	15253	17265	12166	29431
29/Aug/2023 7:00	1389.40	15248	17265	12161	29426
29/Aug/2023 8:00	1389.38	15243	17265	12156	29421
29/Aug/2023 9:00	1389.36	15238	17265	12151	29416
29/Aug/2023 10:00	1389.34	15233	17265	12146	29411
29/Aug/2023 11:00	1389.32	15227	17265	12140	29405
29/Aug/2023 12:00	1389.30	15222	17265	12135	29400
29/Aug/2023 13:00	1389.28	15217	17265	12130	29395
29/Aug/2023 14:00	1389.27	17804	17265	7628	24893
29/Aug/2023 15:00	1389.26	17803	17265	7627	24892
29/Aug/2023 16:00	1389.25	17801	17265	7625	24890
29/Aug/2023 17:00	1389.24	17799	17265	7623	24888
29/Aug/2023 18:00	1389.23	17798	17265	7622	24887
29/Aug/2023 19:00	1389.22	17796	17265	7620	24885
29/Aug/2023 20:00	1389.21	17795	17265	7619	24884
29/Aug/2023 21:00	1389.20	17793	17265	7617	24882
29/Aug/2023 22:00	1389.19	17791	17265	7615	24880
29/Aug/2023 23:00	1389.18	17790	17265	7614	24879
30/Aug/2023 0:00	1389.17	17788	17265	7612	24877
30/Aug/2023 1:00	1389.17	24877	17265	7612	24877
30/Aug/2023 2:00	1389.17	24877	17265	7612	24877
30/Aug/2023 3:00	1389.17	24877	17265	7612	24877

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Public Information Officer
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Directorate of Energy,
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Information supplied to Sh Sumit Nahar
Under RTI Act, 2005.

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30/Aug/2023 4:00	1389.17	24877	17265	7612	24877
30/Aug/2023 5:00	1389.17	24877	17265	7612	24877
30/Aug/2023 6:00	1389.17	24877	17265	7612	24877
30/Aug/2023 7:00	1389.16	17787	17265	7611	24876
30/Aug/2023 8:00	1389.15	17785	17265	7609	24874
30/Aug/2023 9:00	1389.14	17783	17265	7607	24872
30/Aug/2023 10:00	1389.13	17782	17265	7606	24871
30/Aug/2023 11:00	1389.12	17780	17265	7604	24869
30/Aug/2023 12:00	1389.11	17779	17265	7603	24868
30/Aug/2023 13:00	1389.10	17777	17265	7601	24866
30/Aug/2023 14:00	1389.09	17775	17265	7599	24864
30/Aug/2023 15:00	1389.10	17777	17265	7601	24866
30/Aug/2023 16:00	1389.07	17772	17265	7596	24861
30/Aug/2023 17:00	1389.06	17770	17265	7594	24859
30/Aug/2023 18:00	1389.05	17769	17265	7593	24858
30/Aug/2023 19:00	1389.04	17769	17265	7591	24856
30/Aug/2023 20:00	1389.03	17766	17265	7590	24855
30/Aug/2023 21:00	1389.02	17764	17265	7588	24853
30/Aug/2023 22:00	1389.01	17762	17265	7586	24851
30/Aug/2023 23:00	1389.00	17761	17265	7585	24850
31/Aug/2023 0:00	1389.00	24850	17265	7585	24850
31/Aug/2023 1:00	1389.00	24850	17265	7585	24850
31/Aug/2023 2:00	1389.00	24850	17265	7585	24850
31/Aug/2023 3:00	1389.00	24850	17265	7585	24850
31/Aug/2023 4:00	1389.00	24850	17265	7585	24850
31/Aug/2023 5:00	1388.99	17759	17265	7583	24848
31/Aug/2023 6:00	1388.98	17758	17265	7582	24847
31/Aug/2023 7:00	1388.97	17803	17312	7580	24892
31/Aug/2023 8:00	1388.96	17801	17312	7578	24890
31/Aug/2023 9:00	1388.95	17800	17312	7577	24889
31/Aug/2023 10:00	1388.94	17798	17312	7575	24887
31/Aug/2023 11:00	1388.93	17796	17312	7573	24885
31/Aug/2023 12:00	1388.92	17795	17312	7572	24884
31/Aug/2023 13:00	1388.91	17793	17312	7570	24882
31/Aug/2023 14:00	1388.90	17792	17312	7569	24881
31/Aug/2023 15:00	1388.89	17790	17312	7567	24879
31/Aug/2023 16:00	1388.88	17788	17312	7565	24877
31/Aug/2023 17:00	1388.87	17787	17312	7564	24876
31/Aug/2023 18:00	1388.86	17785	17312	7562	24874
31/Aug/2023 19:00	1388.85	17784	17312	7561	24873
31/Aug/2023 20:00	1388.84	17784	17312	7559	24871
31/Aug/2023 21:00	1388.83	17780	17312	7557	24869
31/Aug/2023 22:00	1388.82	17779	17312	7556	24868
31/Aug/2023 23:00	1388.81	17777	17312	7554	24866
1/Sep/2023 0:00	1388.80	17775	17312	7552	24864
1/Sep/2023 1:00	1388.79	17774	17312	7551	24863
1/Sep/2023 2:00	1388.78	17772	17312	7549	24861
1/Sep/2023 3:00	1388.77	17771	17312	7549	24860
1/Sep/2023 4:00	1388.76	17769	17312	7546	24858
1/Sep/2023 5:00	1388.75	17767	17312	7544	24856
1/Sep/2023 6:00	1388.74	17766	17312	7543	24855
1/Sep/2023 7:00	1388.73	17764	17312	7541	24853
1/Sep/2023 8:00	1388.72	17762	17312	7539	24851
1/Sep/2023 9:00	1388.71	17761	17312	7538	24850

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Public Information Officer
-cum-Sr. Executive Engineer
Directorate of Energy,
H.P., Shimla-171005

Information Supplied to Sh. Sumit Nakar
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1/Sep/2023 10:00	1388.70	17759	17312	7536	24848
1/Sep/2023 11:00	1388.69	17758	17312	7535	24847
1/Sep/2023 12:00	1388.68	17756	17312	7533	24845
1/Sep/2023 13:00	1388.66	10664	17312	7530	24842
1/Sep/2023 14:00	1388.64	10660	17312	7526	24838
1/Sep/2023 15:00	1388.63	10223	17312	0	17312
1/Sep/2023 16:00	1388.62	10223	17312	0	17312
1/Sep/2023 17:00	1388.61	10223	17312	0	17312
1/Sep/2023 18:00	1388.60	10223	17312	0	17312
1/Sep/2023 19:00	1388.59	10223	17312	0	17312
1/Sep/2023 20:00	1388.58	10223	17312	0	17312
1/Sep/2023 21:00	1388.57	10223	17312	0	17312
1/Sep/2023 22:00	1388.56	10223	17312	0	17312
1/Sep/2023 23:00	1388.56	10223	17312	0	17312
2/Sep/2023 0:00	1388.54	14031	17312	0	17312
2/Sep/2023 1:00	1388.53	10223	17312	0	17312
2/Sep/2023 2:00	1388.52	10223	17312	0	17312
2/Sep/2023 3:00	1388.51	10223	17312	0	17312
2/Sep/2023 4:00	1388.50	10223	17312	0	17312
2/Sep/2023 5:00	1388.49	10223	17312	0	17312
2/Sep/2023 6:00	1388.48	10223	17312	0	17312
2/Sep/2023 7:00	1388.47	10223	17312	0	17312
2/Sep/2023 8:00	1388.46	10223	17312	0	17312
2/Sep/2023 9:00	1388.45	10223	17312	0	17312
2/Sep/2023 10:00	1388.44	10223	17312	0	17312
2/Sep/2023 11:00	1388.43	10223	17312	0	17312
2/Sep/2023 12:00	1388.42	10223	17312	0	17312
2/Sep/2023 13:00	1388.41	10223	17312	0	17312
2/Sep/2023 14:00	1388.40	10223	17312	0	17312
2/Sep/2023 15:00	1388.40	17312	17312	0	17312
2/Sep/2023 16:00	1388.40	17312	17312	0	17312
2/Sep/2023 17:00	1388.40	17312	17312	0	17312
2/Sep/2023 18:00	1388.40	17312	17312	0	17312
2/Sep/2023 19:00	1388.40	17312	17312	0	17312
2/Sep/2023 20:00	1388.41	24401	17312	0	17312
2/Sep/2023 21:00	1388.42	24401	17312	0	17312
2/Sep/2023 22:00	1388.43	24401	17312	0	17312
2/Sep/2023 23:00	1388.44	24401	17312	0	17312
3/Sep/2023 0:00	1388.45	24401	17312	0	17312
3/Sep/2023 1:00	1388.46	24401	17312	0	17312
3/Sep/2023 2:00	1388.47	24401	17312	0	17312
3/Sep/2023 3:00	1388.48	24401	17312	0	17312
3/Sep/2023 4:00	1388.49	24401	17312	0	17312
3/Sep/2023 5:00	1388.50	24401	17312	0	17312
3/Sep/2023 6:00	1388.51	18398	17312	0	17312
3/Sep/2023 7:00	1388.52	24401	17312	0	17312
3/Sep/2023 8:00	1388.53	24401	17312	0	17312
3/Sep/2023 9:00	1388.54	24401	17312	0	17312
3/Sep/2023 10:00	1388.55	24401	17312	0	17312
3/Sep/2023 11:00	1388.56	24401	17312	0	17312
3/Sep/2023 12:00	1388.58	25543	11365	0	11365
3/Sep/2023 13:00	1388.60	26137	11959	0	11959
3/Sep/2023 14:00	1388.62	26096	11918	0	11918
3/Sep/2023 15:00	1388.63	19007	11918	0	11918

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Public Information Officer
-cum- Sr. Executive Engineer,
Directorate of Energy,
H.P., Shimla-171005

Information Supplied to Sh. Sumit Thakur
Under RTI Act, 2005.

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3/Sep/2023 16:00	1388.64	19007	11918	0	11918
3/Sep/2023 17:00	1388.65	19007	11918	0	11918
3/Sep/2023 18:00	1388.66	19007	11918	0	11918
3/Sep/2023 19:00	1388.67	19007	11918	0	11918
3/Sep/2023 20:00	1388.67	11918	11918	0	11918
3/Sep/2023 21:00	1388.67	11918	11918	0	11918
3/Sep/2023 22:00	1388.67	11918	11918	0	11918
3/Sep/2023 23:00	1388.67	11918	11918	0	11918
4/Sep/2023 0:00	1388.67	11918	11918	0	11918
4/Sep/2023 1:00	1388.67	11918	11918	0	11918
4/Sep/2023 2:00	1388.67	10961	10961	0	10961
4/Sep/2023 3:00	1388.67	9048	9048	0	9048
4/Sep/2023 4:00	1388.67	9048	9048	0	9048
4/Sep/2023 5:00	1388.67	9048	9048	0	9048
4/Sep/2023 6:00	1388.67	9048	9048	0	9048
4/Sep/2023 7:00	1388.67	9048	9048	0	9048
4/Sep/2023 8:00	1388.67	9048	9048	0	9048
4/Sep/2023 9:00	1388.68	16137	9048	0	9048
4/Sep/2023 10:00	1388.69	16137	9048	0	9048
4/Sep/2023 11:00	1388.70	16137	9048	0	9048
4/Sep/2023 12:00	1388.70	11685	11685	0	11685
4/Sep/2023 13:00	1388.70	11685	11685	0	11685
4/Sep/2023 14:00	1388.70	11685	11685	0	11685
4/Sep/2023 15:00	1388.70	11685	11685	0	11685
4/Sep/2023 16:00	1388.70	11685	11685	0	11685
4/Sep/2023 17:00	1388.70	14555	14555	0	14555
4/Sep/2023 18:00	1388.70	14555	14555	0	14555
4/Sep/2023 19:00	1388.70	14555	14555	0	14555
4/Sep/2023 20:00	1388.70	14555	14555	0	14555
4/Sep/2023 21:00	1388.70	14555	14555	0	14555
4/Sep/2023 22:00	1388.70	14555	14555	0	14555
4/Sep/2023 23:00	1388.70	14555	14555	0	14555
5/Sep/2023 0:00	1388.70	14555	14555	0	14555
5/Sep/2023 1:00	1388.70	13292	13292	0	13292
5/Sep/2023 2:00	1388.70	14555	14555	0	14555
5/Sep/2023 3:00	1388.70	14555	14555	0	14555
5/Sep/2023 4:00	1388.70	14316	14316	0	14316
5/Sep/2023 5:00	1388.70	11685	11685	0	11685
5/Sep/2023 6:00	1388.70	11685	11685	0	11685
5/Sep/2023 7:00	1388.70	11685	11685	0	11685
5/Sep/2023 8:00	1388.70	11685	11685	0	11685
5/Sep/2023 9:00	1388.70	11685	11685	0	11685
5/Sep/2023 10:00	1388.71	18774	11685	0	11685
5/Sep/2023 11:00	1388.72	18774	11685	0	11685
5/Sep/2023 12:00	1388.73	18774	11685	0	11685
5/Sep/2023 13:00	1388.74	18774	11685	0	11685
5/Sep/2023 14:00	1388.75	18774	11685	0	11685
5/Sep/2023 15:00	1388.76	18774	11685	0	11685
5/Sep/2023 16:00	1388.77	18774	11685	0	11685
5/Sep/2023 17:00	1388.78	18774	11685	0	11685
5/Sep/2023 18:00	1388.79	18774	11685	0	11685
5/Sep/2023 19:00	1388.80	18774	11685	0	11685
5/Sep/2023 20:00	1388.80	14555	1455	0	14555
5/Sep/2023 21:00	1388.80	14555	1455	0	14555

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Public Information Officer
-cum- Sr. Executive Engineer,
Directorate of Energy,
H.P., Shimla-171005

Information Supplied to Sh Sumit Nakar
under RTI Act, 2005.

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5/Sep/2023 22:00	1388.80	14555	1455	0	14555
5/Sep/2023 23:00	1388.80	14555	1455	0	14555
6/Sep/2023 0:00	1388.80	14555	1455	0	14555
6/Sep/2023 1:00	1388.80	14555	14555	0	14555
6/Sep/2023 2:00	1388.80	14077	14077	0	14077
6/Sep/2023 3:00	1388.81	18774	11685	0	11685
6/Sep/2023 4:00	1388.82	18774	11685	0	11685
6/Sep/2023 5:00	1388.83	18774	11685	0	11685
6/Sep/2023 6:00	1388.84	18774	11685	0	11685
6/Sep/2023 7:00	1388.85	18774	11685	0	11685
6/Sep/2023 8:00	1388.86	18774	11685	0	11685
6/Sep/2023 9:00	1388.87	18774	11685	0	11685
6/Sep/2023 10:00	1388.88	18774	11685	0	11685
6/Sep/2023 11:00	1388.89	18774	11685	0	11685
6/Sep/2023 12:00	1388.90	18774	11685	0	11685
6/Sep/2023 13:00	1388.90	11685	11685	0	11685
6/Sep/2023 14:00	1388.90	11685	11685	0	11685
6/Sep/2023 15:00	1388.90	11685	11685	0	11685
6/Sep/2023 16:00	1388.90	11685	11685	0	11685
6/Sep/2023 17:00	1388.90	11685	11685	0	11685
6/Sep/2023 18:00	1388.90	11685	11685	0	11685
6/Sep/2023 19:00	1388.90	12403	12403	0	1203
6/Sep/2023 20:00	1388.90	14555	14555	0	14555
6/Sep/2023 21:00	1388.90	14555	14555	0	14555
6/Sep/2023 22:00	1388.90	14555	14555	0	14555
6/Sep/2023 23:00	1388.90	14555	14555	0	14555
7/Sep/2023 0:00	1388.90	14555	14555	0	14555
7/Sep/2023 1:00	1388.90	14555	14555	0	14555
7/Sep/2023 2:00	1388.90	13359	13359	0	13359
7/Sep/2023 3:00	1388.91	18774	11685	0	11685
7/Sep/2023 4:00	1388.92	18774	11685	0	11685
7/Sep/2023 5:00	1388.93	18774	11685	0	11685
7/Sep/2023 6:00	1388.94	18774	11685	0	11685
7/Sep/2023 7:00	1388.95	18774	11685	0	11685
7/Sep/2023 8:00	1388.96	18774	11685	0	11685
7/Sep/2023 9:00	1388.97	18774	11685	0	11685
7/Sep/2023 10:00	1388.98	18774	11685	0	11685
7/Sep/2023 11:00	1388.99	18774	11685	0	11685
7/Sep/2023 12:00	1389.00	18774	11685	0	11685
7/Sep/2023 13:00	1389.01	18774	11685	0	11685
7/Sep/2023 14:00	1389.01	15794	15794	0	15794
7/Sep/2023 15:00	1389.00	9943	17032	0	17032
7/Sep/2023 16:00	1389.00	14397	14397	0	14397
7/Sep/2023 17:00	1389.00	15794	15794	0	15794
7/Sep/2023 18:00	1389.00	14555	14555	0	14555
7/Sep/2023 19:00	1388.99	9943	17032	0	17032
7/Sep/2023 20:00	1388.98	9943	17032	0	17032
7/Sep/2023 21:00	1388.97	9943	17032	0	17032
7/Sep/2023 22:00	1388.96	9943	17032	0	17032
7/Sep/2023 23:00	1388.96	14555	14555	0	14555
8/Sep/2023 0:00	1388.96	14555	14555	0	14555
8/Sep/2023 1:00	1388.96	14555	14555	0	14555
8/Sep/2023 2:00	1388.96	14555	14555	0	14555
8/Sep/2023 3:00	1388.96	14555	14555	0	14555

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Public Information Officer
-cum- Sr. Executive Engineer,
Directorate of Energy,
H.P., Shimla-171005

Information Supplied to Sh Sumit nahar
Under RTI Act, 2005.

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8/Sep/2023 4:00	1388.96	11918	11918	0	11918
8/Sep/2023 5:00	1388.96	11918	11918	0	11918
8/Sep/2023 6:00	1388.96	11918	11918	0	11918
8/Sep/2023 7:00	1388.96	13237	13237	0	13237
8/Sep/2023 8:00	1388.96	14555	14555	0	14555
8/Sep/2023 9:00	1388.96	14555	14555	0	14555
8/Sep/2023 10:00	1388.96	13237	13237	0	13237
8/Sep/2023 11:00	1388.96	11918	11918	0	11918
8/Sep/2023 12:00	1388.96	11918	11918	0	11918
8/Sep/2023 13:00	1388.96	11918	11918	0	11918
8/Sep/2023 14:00	1388.96	11918	11918	0	11918
8/Sep/2023 15:00	1388.96	11918	11918	0	11918
8/Sep/2023 16:00	1388.96	14555	14555	0	14555
8/Sep/2023 17:00	1388.96	15794	15794	0	15794
8/Sep/2023 18:00	1388.95	9943	17032	0	17032
8/Sep/2023 19:00	1388.94	9943	17032	0	17032
8/Sep/2023 20:00	1388.93	9943	17032	0	17032
8/Sep/2023 21:00	1388.92	9943	17032	0	17032
8/Sep/2023 22:00	1388.91	9943	17032	0	17032
8/Sep/2023 23:00	1388.90	9943	17032	0	17032
9/Sep/2023 0:00	1388.89	9943	17032	0	17032
9/Sep/2023 1:00	1388.88	9943	17032	0	17032
9/Sep/2023 2:00	1388.87	9943	17032	0	17032
9/Sep/2023 3:00	1388.86	9943	17032	0	17032
9/Sep/2023 4:00	1388.85	8085	15175	0	15175
9/Sep/2023 5:00	1388.84	7466	14555	0	14555
9/Sep/2023 6:00	1388.83	7466	14555	0	14555
9/Sep/2023 7:00	1388.82	7466	14555	0	14555
9/Sep/2023 8:00	1388.81	7466	14555	0	14555
9/Sep/2023 9:00	1388.80	7466	14555	0	14555
9/Sep/2023 10:00	1388.79	7466	14555	0	14555
9/Sep/2023 11:00	1388.78	7466	14555	0	14555
9/Sep/2023 12:00	1388.77	7466	14555	0	14555
9/Sep/2023 13:00	1388.76	7466	14555	0	14555
9/Sep/2023 14:00	1388.75	7466	14555	0	14555
9/Sep/2023 15:00	1388.74	7466	14555	0	14555
9/Sep/2023 16:00	1388.73	7466	14555	0	14555
9/Sep/2023 17:00	1388.72	7466	14555	0	14555
9/Sep/2023 18:00	1388.71	7466	14555	0	14555
9/Sep/2023 19:00	1388.70	7466	14555	0	14555
9/Sep/2023 20:00	1388.69	9943	17032	0	17032
9/Sep/2023 21:00	1388.68	9943	17032	0	17032
9/Sep/2023 22:00	1388.67	9943	17032	0	17032
9/Sep/2023 23:00	1388.66	9943	17032	0	17032
10/Sep/2023 0:00	1388.65	8292	15381	0	15381
10/Sep/2023 1:00	1388.64	7466	14555	0	14555
10/Sep/2023 2:00	1388.63	7466	14555	0	14555
10/Sep/2023 3:00	1388.62	7466	14555	0	14555
10/Sep/2023 4:00	1388.61	7466	14555	0	14555
10/Sep/2023 5:00	1388.60	7466	14555	0	14555
10/Sep/2023 6:00	1388.59	7466	14555	0	14555
10/Sep/2023 7:00	1388.58	7466	14555	0	14555
10/Sep/2023 8:00	1388.57	7466	14555	0	14555
10/Sep/2023 9:00	1388.56	7466	14555	0	14555

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Public Information Officer
-cum- Sr. Executive Engineer,
Directorate of Energy,
H.P., Shimla-171005

Information Supplied to Sh. Sumit Mahar
Under RTI Act, 2005.

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10/Sep/2023 10:00	1388.55	7466	14555	0	14555
10/Sep/2023 11:00	1388.54	7466	14555	0	14555
10/Sep/2023 12:00	1388.53	7466	14555	0	14555
10/Sep/2023 13:00	1388.52	7466	14555	0	14555
10/Sep/2023 14:00	1388.51	7466	14555	0	14555
10/Sep/2023 15:00	1388.50	7466	14555	0	14555
10/Sep/2023 16:00	1388.49	7466	14555	0	14555
10/Sep/2023 17:00	1388.48	7466	14555	0	14555
10/Sep/2023 18:00	1388.47	7466	14555	0	14555
10/Sep/2023 19:00	1388.46	7466	14555	0	14555
10/Sep/2023 20:00	1388.45	9943	17032	0	17232
10/Sep/2023 21:00	1388.44	9943	17032	0	17232
10/Sep/2023 22:00	1388.43	9943	17032	0	17232
10/Sep/2023 23:00	1388.42	9943	17032	0	17232
11/Sep/2023 0:00	1388.41	8292	15381	0	15381
11/Sep/2023 1:00	1388.40	7466	14555	0	14555
11/Sep/2023 2:00	1388.39	7466	14555	0	14555
11/Sep/2023 3:00	1388.38	7466	14555	0	14555
11/Sep/2023 4:00	1388.37	7466	14555	0	14555
11/Sep/2023 5:00	1388.36	7466	14555	0	14555
11/Sep/2023 6:00	1388.35	7466	14555	0	14555
11/Sep/2023 7:00	1388.34	7507	14596	0	14596
11/Sep/2023 8:00	1388.33	7507	14596	0	14596
11/Sep/2023 9:00	1388.32	7507	14596	0	14596
11/Sep/2023 10:00	1388.31	7507	14596	0	14596
11/Sep/2023 11:00	1388.30	7507	14596	0	14596
11/Sep/2023 12:00	1388.29	7507	14596	0	14596
11/Sep/2023 13:00	1388.28	7507	14596	0	14596
11/Sep/2023 14:00	1388.27	7507	14596	0	14596
11/Sep/2023 15:00	1388.26	7507	14596	0	14596
11/Sep/2023 16:00	1388.25	7507	14596	0	14596
11/Sep/2023 17:00	1388.25	14596	14596	0	14596
11/Sep/2023 18:00	1388.25	14596	14596	0	14596
11/Sep/2023 19:00	1388.25	14596	14596	0	14596
11/Sep/2023 20:00	1388.24	9990	17079	0	17079
11/Sep/2023 21:00	1388.23	9990	17079	0	17079
11/Sep/2023 22:00	1388.22	9990	17079	0	17079
11/Sep/2023 23:00	1388.21	9990	17079	0	17079
12/Sep/2023 0:00	1388.20	9990	17079	0	17079
12/Sep/2023 1:00	1388.19	9990	17079	0	17079
12/Sep/2023 2:00	1388.18	9990	17079	0	17079
12/Sep/2023 3:00	1388.17	9990	17079	0	17079
12/Sep/2023 4:00	1388.16	9369	16458	0	16458
12/Sep/2023 5:00	1388.15	7507	14596	0	14596
12/Sep/2023 6:00	1388.14	7507	14596	0	14596
12/Sep/2023 7:00	1388.13	7507	14596	0	14596
12/Sep/2023 8:00	1388.12	7507	14596	0	14596
12/Sep/2023 9:00	1388.11	7507	14596	0	14596
12/Sep/2023 10:00	1388.10	8128	15217	0	15217
12/Sep/2023 11:00	1388.09	9990	17079	0	17079
12/Sep/2023 12:00	1388.08	9990	17079	0	17079
12/Sep/2023 13:00	1388.07	9990	17079	0	17079
12/Sep/2023 14:00	1388.06	9990	17079	0	17079
12/Sep/2023 15:00	1388.05	9990	17079	0	17079

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Public Information Officer
-cum-Sr. Executive Engineer,
Directorate of Energy,
H.P., Shimla-171005

Information Supplied to Sh. Sumit Malar
Under RTI Act, 2005.

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12/Sep/2023 16:00	1388.04	9990	17079	0	17079
12/Sep/2023 17:00	1388.03	9990	17079	0	17079
12/Sep/2023 18:00	1388.02	8957	16046	0	16046
12/Sep/2023 19:00	1388.02	13980	13980	0	13980
12/Sep/2023 20:00	1388.02	13980	13980	0	13980
12/Sep/2023 21:00	1388.01	9990	17079	0	17079
12/Sep/2023 22:00	1388.00	9990	17079	0	17079
12/Sep/2023 23:00	1387.99	9990	17079	0	17079
13/Sep/2023 0:00	1387.98	9990	17079	0	17079
13/Sep/2023 1:00	1387.97	9990	17079	0	17079
13/Sep/2023 2:00	1387.96	9990	17079	0	17079
13/Sep/2023 3:00	1387.95	9990	17079	0	17079
13/Sep/2023 4:00	1387.94	9990	17079	0	17079
13/Sep/2023 5:00	1387.93	9990	17079	0	17079
13/Sep/2023 6:00	1387.92	9990	17079	0	17079
13/Sep/2023 7:00	1387.91	9990	17079	0	17079
13/Sep/2023 8:00	1387.90	9990	17079	0	17079
13/Sep/2023 9:00	1387.89	9990	17079	0	17079
13/Sep/2023 10:00	1387.88	9990	17079	0	17079
13/Sep/2023 11:00	1387.87	9990	17079	0	17079
13/Sep/2023 12:00	1387.86	9990	17079	0	17079
13/Sep/2023 13:00	1387.85	9990	17079	0	17079
13/Sep/2023 14:00	1387.84	9990	17079	0	17079
13/Sep/2023 15:00	1384.83	9990	17079	0	17079
13/Sep/2023 16:00	1387.82	9990	17079	0	17079
13/Sep/2023 17:00	1387.81	9990	17079	0	17079
13/Sep/2023 18:00	1387.80	9990	17079	0	17079
13/Sep/2023 19:00	1387.79	9990	17079	0	17079
13/Sep/2023 20:00	1387.78	9990	17079	0	17079
13/Sep/2023 21:00	1387.77	9990	17079	0	17079
13/Sep/2023 22:00	1387.76	9990	17079	0	17079
13/Sep/2023 23:00	1387.75	9990	17079	0	17079
14/Sep/2023 0:00	1387.74	9990	17079	0	17079
14/Sep/2023 1:00	1387.73	9990	17079	0	17079
14/Sep/2023 2:00	1387.72	9990	17079	0	17079
14/Sep/2023 3:00	1387.71	9990	17079	0	17079
14/Sep/2023 4:00	1387.70	9990	17079	0	17079
14/Sep/2023 5:00	1387.69	9990	17079	0	17079
14/Sep/2023 6:00	1387.68	9990	17079	0	17079
14/Sep/2023 7:00	1387.67	9990	17079	0	17079
14/Sep/2023 8:00	1387.66	9990	17079	0	17079
14/Sep/2023 9:00	1387.65	9990	17079	0	17079
14/Sep/2023 10:00	1387.64	9990	17079	0	17079
14/Sep/2023 11:00	1387.63	9990	17079	0	17079
14/Sep/2023 12:00	1387.62	9990	17079	0	17079
14/Sep/2023 13:00	1387.61	9990	17079	0	17079
14/Sep/2023 14:00	1387.60	9990	17079	0	17079
14/Sep/2023 15:00	1387.59	9990	17079	0	17079
14/Sep/2023 16:00	1387.58	9990	17079	0	17079
14/Sep/2023 17:00	1387.57	9990	17079	0	17079
14/Sep/2023 18:00	1387.56	9990	17079	0	17079
14/Sep/2023 19:00	1387.55	9990	17079	0	17079
14/Sep/2023 20:00	1387.54	9990	17079	0	17079
14/Sep/2023 21:00	1387.53	9990	17079	0	17079

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Public Information Officer
-cum- Sr. Executive Engineer,
Directorate of Energy,
H.P., Shimla-171005

Information Supplied to Sh. Sumit Nahar
Under RTI Act, 2005

14/Sep/2023 22:00	1387.52	9990	17079	0	17079
14/Sep/2023 23:00	1387.51	9990	17079	0	17079
15/Sep/2023 0:00	1387.50	9990	17079	0	17079
15/Sep/2023 1:00	1387.49	9990	17079	0	17079
15/Sep/2023 2:00	1387.48	9990	17079	0	17079
15/Sep/2023 3:00	1387.47	9990	17079	0	17079
15/Sep/2023 4:00	1387.46	9990	17079	0	17079
15/Sep/2023 5:00	1387.45	9990	17079	0	17079
15/Sep/2023 6:00	1387.44	9990	17079	0	17079
15/Sep/2023 7:00	1387.43	10036	17125	0	17125
15/Sep/2023 8:00	1387.42	10036	17125	0	17125
15/Sep/2023 9:00	1387.41	10036	17125	0	17125
15/Sep/2023 10:00	1387.40	10036	17125	0	17125
15/Sep/2023 11:00	1387.39	10036	17125	0	17125
15/Sep/2023 12:00	1387.39	10036	17125	0	17125
15/Sep/2023 13:00	1387.39	14015	14015	0	14015
15/Sep/2023 14:00	1387.39	14015	14015	0	14015
15/Sep/2023 15:00	1387.40	18615	11526	0	11526
15/Sep/2023 16:00	1387.41	18615	11526	0	11526
15/Sep/2023 17:00	1387.42	18615	11526	0	11526
15/Sep/2023 18:00	1387.43	18615	11526	0	11526
15/Sep/2023 19:00	1387.44	19237	12148	0	12148
15/Sep/2023 20:00	1387.44	14015	14015	0	14016
15/Sep/2023 21:00	1387.44	14015	14015	0	14016
15/Sep/2023 22:00	1387.44	14015	14015	0	14016
15/Sep/2023 23:00	1387.44	14015	14015	0	14016
16/Sep/2023 0:00	1387.44	12573	12573	0	12573
16/Sep/2023 1:00	1387.45	18221	11132	0	11132
16/Sep/2023 2:00	1387.46	18221	11132	0	11132
16/Sep/2023 3:00	1387.47	18221	11132	0	11132
16/Sep/2023 4:00	1387.48	18221	11132	0	11132
16/Sep/2023 5:00	1387.50	25310	11132	0	11132
16/Sep/2023 6:00	1387.52	28193	14015	0	14015
16/Sep/2023 7:00	1387.54	28158	13980	0	13980
16/Sep/2023 8:00	1387.56	28158	13980	0	13980
16/Sep/2023 9:00	1387.58	28158	13980	0	13980
16/Sep/2023 10:00	1387.60	28158	13980	0	13980
16/Sep/2023 11:00	1387.62	28421	14243	0	14243
16/Sep/2023 12:00	1387.64	28552	14374	0	14374
16/Sep/2023 13:00	1387.66	28626	14448	0	14448
16/Sep/2023 14:00	1387.68	28774	14596	0	14596
16/Sep/2023 15:00	1387.69	21685	14596	0	14596
16/Sep/2023 16:00	1387.70	21685	14596	0	14596
16/Sep/2023 17:00	1387.71	21685	14596	0	14596
16/Sep/2023 18:00	1387.72	21685	14596	0	14596
16/Sep/2023 19:00	1387.73	21685	14596	0	14596
16/Sep/2023 20:00	1387.73	17079	17079	0	17079
16/Sep/2023 21:00	1387.73	17079	17079	0	17079
16/Sep/2023 22:00	1387.73	17079	17079	0	17079
16/Sep/2023 23:00	1387.73	17079	17079	0	17079
17/Sep/2023 0:00	1387.73	17079	17079	0	17079
17/Sep/2023 1:00	1387.73	15217	15217	0	15217
17/Sep/2023 2:00	1387.73	14596	14596	0	14596
17/Sep/2023 3:00	1387.73	14596	14596	0	14596

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Public Information Officer
-cum- Sr. Executive Engineer
Directorate of Energy,
H.P., Shimla-171005

Information Supplied to Sh Sumit makar /83
Under RTI Act, 2005.

17/Sep/2023 4:00	1387.73	14596	14596	0	14596
17/Sep/2023 5:00	1387.73	14596	14596	0	14596
17/Sep/2023 6:00	1387.73	14596	14596	0	14596
17/Sep/2023 7:00	1387.74	21685	14596	0	14596
17/Sep/2023 8:00	1387.75	21685	14596	0	14596
17/Sep/2023 9:00	1387.76	21685	14596	0	14596
17/Sep/2023 10:00	1387.77	20247	13158	0	13158
17/Sep/2023 11:00	1387.78	18808	11719	0	11719
17/Sep/2023 12:00	1387.79	18808	11719	0	11719
17/Sep/2023 13:00	1387.80	18808	11719	0	11719
17/Sep/2023 14:00	1387.81	18808	11719	0	11719
17/Sep/2023 15:00	1387.82	18586	11497	0	11497
17/Sep/2023 16:00	1387.83	18586	11497	0	11497
17/Sep/2023 17:00	1387.84	18642	11553	0	11553
17/Sep/2023 18:00	1387.85	21685	14596	0	14596
17/Sep/2023 19:00	1387.86	20050	12961	0	12961
17/Sep/2023 20:00	1387.86	17079	17079	0	17079
17/Sep/2023 21:00	1387.86	17079	17079	0	17079
17/Sep/2023 22:00	1387.86	17079	17079	0	17079
17/Sep/2023 23:00	1387.87	21524	14435	0	14435
18/Sep/2023 0:00	1387.88	19776	12687	0	12687
18/Sep/2023 1:00	1387.89	18425	11336	0	11336
18/Sep/2023 2:00	1387.90	18425	11336	0	11336
18/Sep/2023 3:00	1387.90	18425	11336	0	11336
18/Sep/2023 4:00	1387.92	18425	11336	0	11336
18/Sep/2023 5:00	1387.93	18425	11336	0	11336
18/Sep/2023 6:00	1387.94	18425	11336	0	11336
18/Sep/2023 7:00	1387.95	18425	11336	0	11336
18/Sep/2023 8:00	1387.96	18425	11336	0	11336
18/Sep/2023 9:00	1387.97	18425	11336	0	11336
18/Sep/2023 10:00	1387.98	18425	11336	0	11336
18/Sep/2023 11:00	1387.99	18425	11336	0	11336
18/Sep/2023 12:00	1388.00	19955	12886	0	12886
18/Sep/2023 13:00	1388.01	21524	14435	0	14435
18/Sep/2023 14:00	1388.02	21524	14435	0	14435
18/Sep/2023 15:00	1388.03	21524	14435	0	14435
18/Sep/2023 16:00	1388.04	21524	14435	0	14435
18/Sep/2023 17:00	1388.05	21524	14435	0	14435
18/Sep/2023 18:00	1388.06	21524	14435	0	14435
18/Sep/2023 19:00	1388.07	21524	14435	0	14435
18/Sep/2023 20:00	1388.08	21524	14435	0	14435
18/Sep/2023 21:00	1388.09	21524	14435	0	14435
18/Sep/2023 22:00	1388.10	21524	14435	0	14435
18/Sep/2023 23:00	1388.11	18425	11336	0	11336
19/Sep/2023 0:00	1388.12	18425	11336	0	11336
19/Sep/2023 1:00	1388.13	18425	11336	0	11336
19/Sep/2023 2:00	1388.14	18425	11336	0	11336
19/Sep/2023 3:00	1388.15	18425	11336	0	11336
19/Sep/2023 4:00	1388.16	18425	11336	0	11336
19/Sep/2023 5:00	1388.18	25514	11336	0	11336
19/Sep/2023 6:00	1388.22	39693	11336	0	11336
19/Sep/2023 7:00	1388.28	[illegible]	11336	0	11336
19/Sep/2023 8:00	1388.35	[illegible]	11336	0	11336
19/Sep/2023 9:00	1388.43	[illegible]	11336	0	11336

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Public Information Officer
-cum- Sr. Executive Engineer,
Directorate of Energy,
H.P., Shimla-171005

Information Supplied to Sh. Sumit Mahar
Under RTI Act, 2005.

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19/Sep/2023 10:00	1388.51	[illegible]	11336	0	11336
19/Sep/2023 11:00	1388.58	[illegible]	11336	0	11336
19/Sep/2023 12:00	1388.65	[illegible]	11336	0	11336
19/Sep/2023 13:00	1388.71	[illegible]	12886	0	12886
19/Sep/2023 14:00	1388.77	[illegible]	12886	0	12886
19/Sep/2023 15:00	1388.82	46782	11336	0	11336
19/Sep/2023 16:00	1388.87	46782	11336	0	11336
19/Sep/2023 17:00	1388.91	39693	11336	0	11336
19/Sep/2023 18:00	1388.95	39693	11336	0	11336
19/Sep/2023 19:00	1388.99	39693	11336	0	11336
19/Sep/2023 20:00	1389.02	35702	14435	0	14435
19/Sep/2023 21:00	1389.04	28613	14435	0	14435
19/Sep/2023 22:00	1389.06	28613	14435	0	14435
19/Sep/2023 23:00	1389.08	28613	14435	0	14435
20/Sep/2023 0:00	1389.10	26031	11853	0	11853
20/Sep/2023 1:00	1389.12	25514	11336	0	11336
20/Sep/2023 2:00	1389.14	25514	11336	0	11336
20/Sep/2023 3:00	1389.16	25514	11336	0	11336
20/Sep/2023 4:00	1389.18	25514	11336	0	11336
20/Sep/2023 5:00	1389.20	25514	11336	0	11336
20/Sep/2023 6:00	1389.22	25514	11336	0	11336
20/Sep/2023 7:00	1389.23	18395	11306	0	11306
20/Sep/2023 8:00	1389.24	18395	11306	0	11306
20/Sep/2023 9:00	1389.25	18395	11306	0	11306
20/Sep/2023 10:00	1389.26	16960	9871	0	9871
20/Sep/2023 11:00	1389.27	15525	8436	0	8436
20/Sep/2023 12:00	1389.28	15525	8436	0	8436
20/Sep/2023 13:00	1389.29	15525	8436	0	8436
20/Sep/2023 14:00	1389.30	15525	8436	0	8436
20/Sep/2023 15:00	1389.31	15525	8436	0	8436
20/Sep/2023 16:00	1389.32	15525	8436	0	8436
20/Sep/2023 17:00	1389.33	15525	8436	0	8436
20/Sep/2023 18:00	1389.34	15525	8436	0	8436
20/Sep/2023 19:00	1389.35	15525	8436	0	8436
20/Sep/2023 20:00	1389.36	15722	8633	0	8633
20/Sep/2023 21:00	1389.37	15918	8829	0	8829
20/Sep/2023 22:00	1389.38	15918	8829	0	8829
20/Sep/2023 23:00	1389.39	15918	8829	0	8829
21/Sep/2023 0:00	1389.40	8829	8829	0	8829
21/Sep/2023 1:00	1389.40	8829	8829	0	8829
21/Sep/2023 2:00	1389.40	8829	8829	0	8829
21/Sep/2023 3:00	1389.40	8829	8829	0	8829
21/Sep/2023 4:00	1389.40	8829	8829	0	8829
21/Sep/2023 5:00	1389.40	8829	8829	0	8829
21/Sep/2023 6:00	1389.40	8829	8829	0	8829
21/Sep/2023 7:00	1389.40	8829	8829	0	8829
21/Sep/2023 8:00	1389.40	8829	8829	0	8829
21/Sep/2023 9:00	1389.40	8829	8829	0	8829
21/Sep/2023 10:00	1389.40	8829	8829	0	8829
21/Sep/2023 11:00	1389.40	8829	8829	0	8829
21/Sep/2023 12:00	1389.40	7394	7394	0	7394
21/Sep/2023 13:00	1389.41	13048	5959	0	5959
21/Sep/2023 14:00	1389.42	13048	5959	0	5959
21/Sep/2023 15:00	1389.43	13048	5959	0	5959

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Public Information Officer
-cum- Sr. Executive Engineer,
Directorate of Energy,
H.P., Shimla-171005

Information Supplied to Sh Sunil Kumar
Under RTI Act, 2005.

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21/Sep/2023 16:00	1389.44	13048	5959	0	5959
21/Sep/2023 17:00	1389.45	13048	5959	0	5959
21/Sep/2023 18:00	1389.45	5959	5959	0	5959
21/Sep/2023 19:00	1389.45	5959	5959	0	5959
21/Sep/2023 20:00	1389.45	5959	5959	0	5959
21/Sep/2023 21:00	1389.45	5959	5959	0	5959
21/Sep/2023 22:00	1389.45	5959	5959	0	5959
21/Sep/2023 23:00	1389.45	8829	8829	0	8829
22/Sep/2023 0:00	1389.45	8829	8829	0	8829
22/Sep/2023 1:00	1389.45	8829	8829	0	8829
22/Sep/2023 2:00	1389.45	8829	8829	0	8829
22/Sep/2023 3:00	1389.45	8829	8829	0	8829
22/Sep/2023 4:00	1389.45	8829	8829	0	8829
22/Sep/2023 5:00	1389.45	8829	8829	0	8829
22/Sep/2023 6:00	1389.45	7155	7155	0	7155
22/Sep/2023 7:00	1389.45	5959	5959	0	5959
22/Sep/2023 8:00	1389.45	5959	5959	0	5959
22/Sep/2023 9:00	1389.45	5959	5959	0	5959
22/Sep/2023 10:00	1389.45	10374	10374	0	10374
22/Sep/2023 11:00	1389.44	7466	14555	0	14555
22/Sep/2023 12:00	1389.43	7466	14555	0	14555
22/Sep/2023 13:00	1389.42	7466	14555	0	14555
22/Sep/2023 14:00	1389.41	7466	14555	0	14555
22/Sep/2023 15:00	1389.40	7466	14555	0	14555
22/Sep/2023 16:00	1389.39	7466	14555	0	14555
22/Sep/2023 17:00	1389.38	7466	14555	0	14555
22/Sep/2023 18:00	1389.37	7466	14555	0	14555
22/Sep/2023 19:00	1389.36	9943	17032	0	17032
22/Sep/2023 20:00	1389.35	9943	17032	0	17032
22/Sep/2023 21:00	1389.34	9943	17032	0	17032
22/Sep/2023 22:00	1389.33	9943	17032	0	17032
22/Sep/2023 23:00	1389.32	9943	17032	0	17032
23/Sep/2023 0:00	1389.31	9943	17032	0	17032
23/Sep/2023 1:00	1389.30	9943	17032	0	17032
23/Sep/2023 2:00	1389.29	9943	17032	0	17032
23/Sep/2023 3:00	1389.28	9943	17032	0	17032
23/Sep/2023 4:00	1389.27	9943	17032	0	17032
23/Sep/2023 5:00	1389.26	9943	17032	0	17032
23/Sep/2023 6:00	1389.25	9943	17032	0	17032
23/Sep/2023 7:00	1389.24	9943	17032	0	17032
23/Sep/2023 8:00	1389.23	9943	17032	0	17032
23/Sep/2023 9:00	1389.22	9943	17032	0	17032
23/Sep/2023 10:00	1389.21	9943	17032	0	17032
23/Sep/2023 11:00	1389.20	9943	17032	0	17032
23/Sep/2023 12:00	1389.19	9943	17032	0	17032
23/Sep/2023 13:00	1389.18	9943	17032	0	17032
23/Sep/2023 14:00	1389.17	9943	17032	0	17032
23/Sep/2023 15:00	1389.16	9943	17032	0	17032
23/Sep/2023 16:00	1389.15	9943	17032	0	17032
23/Sep/2023 17:00	1389.14	9943	17032	0	17032
23/Sep/2023 18:00	1389.13	9943	17032	0	17032
23/Sep/2023 19:00	1389.12	9943	17032	0	17032
23/Sep/2023 20:00	1389.11	9943	17032	0	17032
23/Sep/2023 21:00	1389.10	9943	17032	0	17032

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Public Information Officer
-cum- Sr. Executive Engineer,
Directorate of Energy,
H.P., Shimla-171005

Information Supplied to Sh Sumit Nakar
Under RTI Act, 2005.

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23/Sep/2023 22:00	1389.09	9943	17032	0	17032
23/Sep/2023 23:00	1389.08	9943	17032	0	17032
24/Sep/2023 0:00	1389.07	9943	17032	0	17032
24/Sep/2023 1:00	1389.06	9943	17032	0	17032
24/Sep/2023 2:00	1389.05	9943	17032	0	17032
24/Sep/2023 3:00	1389.04	9943	17032	0	17032
24/Sep/2023 4:00	1389.03	9943	17032	0	17032
24/Sep/2023 5:00	1389.02	9943	17032	0	17032
24/Sep/2023 6:00	1389.01	9943	17032	0	17032
24/Sep/2023 7:00	1389.00	9943	17032	0	17032
24/Sep/2023 8:00	1388.99	9943	17032	0	17032
24/Sep/2023 9:00	1388.98	9943	17032	0	17032
24/Sep/2023 10:00	1388.97	9943	17032	0	17032
24/Sep/2023 11:00	1388.96	9943	17032	0	17032
24/Sep/2023 12:00	1388.95	8399	15488	0	15488
24/Sep/2023 13:00	1388.94	6854	13943	0	13943
24/Sep/2023 14:00	1388.93	6854	13943	0	13943
24/Sep/2023 15:00	1388.92	6854	13943	0	13943
24/Sep/2023 16:00	1388.91	6854	13943	0	13943
24/Sep/2023 17:00	1388.90	6854	13943	0	13943
24/Sep/2023 18:00	1388.89	6854	13943	0	13943
24/Sep/2023 19:00	1388.88	6854	13943	0	13943
24/Sep/2023 20:00	1388.87	7111	14200	0	14200
24/Sep/2023 21:00	1388.86	9943	17032	0	17032
24/Sep/2023 22:00	1388.85	9943	17032	0	17032
24/Sep/2023 23:00	1388.84	9943	17032	0	17032
25/Sep/2023 0:00	1388.83	9943	17032	0	17032
25/Sep/2023 1:00	1388.82	9943	17032	0	17032
25/Sep/2023 2:00	1388.81	9324	16413	0	16413
25/Sep/2023 3:00	1388.80	7466	14555	0	14555
25/Sep/2023 4:00	1388.79	7466	14555	0	14555
25/Sep/2023 5:00	1388.78	7466	14555	0	14555
25/Sep/2023 6:00	1388.77	7466	14555	0	14555
25/Sep/2023 7:00	1388.76	7466	14555	0	14555
25/Sep/2023 8:00	1388.75	8704	15793	0	15793
25/Sep/2023 9:00	1388.74	9943	17032	0	17032
25/Sep/2023 10:00	1388.73	9943	17032	0	17032
25/Sep/2023 11:00	1388.72	9943	17032	0	17032
25/Sep/2023 12:00	1388.71	9943	17032	0	17032
25/Sep/2023 13:00	1388.70	9943	17032	0	17032
25/Sep/2023 14:00	1388.69	8398	15487	0	15487
25/Sep/2023 15:00	1388.68	6854	13943	0	13943
25/Sep/2023 16:00	1388.67	6854	13943	0	13943
25/Sep/2023 17:00	1388.66	9943	17032	0	17032
25/Sep/2023 18:00	1388.65	9943	17032	0	17032
25/Sep/2023 19:00	1388.64	9943	17032	0	17032
25/Sep/2023 20:00	1388.63	9943	17032	0	17032
25/Sep/2023 21:00	1388.62	9943	17032	0	17032
25/Sep/2023 22:00	1388.61	9943	17032	0	17032
25/Sep/2023 23:00	1388.60	9943	17032	0	17032
26/Sep/2023 0:00	1388.59	9943	17032	0	17032
26/Sep/2023 1:00	1388.58	9943	17032	0	17032
26/Sep/2023 2:00	1388.57	9943	17032	0	17032
26/Sep/2023 3:00	1388.56	9943	17032	0	17032

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Public Information Officer
-cum- Sr. Executive Engineer,
Directorate of Energy,
H.P., Shimla-171005

Information Supplied to Sh Sumit Mahar
Under RTI Act, 2005.

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26/Sep/2023 4:00	1388.55	9943	17032	0	17032
26/Sep/2023 5:00	1388.54	9943	17032	0	17032
26/Sep/2023 6:00	1388.53	9943	17032	0	17032
26/Sep/2023 7:00	1388.52	9990	17079	0	17079
26/Sep/2023 8:00	1388.51	9990	17079	0	17079
26/Sep/2023 9:00	1388.50	9990	17079	0	17079
26/Sep/2023 10:00	1388.49	9990	17079	0	17079
26/Sep/2023 11:00	1388.48	9990	17079	0	17079
26/Sep/2023 12:00	1388.47	9990	17079	0	17079
26/Sep/2023 13:00	1388.46	9990	17079	0	17079
26/Sep/2023 14:00	1388.45	9990	17079	0	17079
26/Sep/2023 15:00	1388.44	9990	17079	0	17079
26/Sep/2023 16:00	1388.43	9990	17079	0	17079
26/Sep/2023 17:00	1388.42	9990	17079	0	17079
26/Sep/2023 18:00	1388.41	9990	17079	0	17079
26/Sep/2023 19:00	1388.40	9990	17079	0	17079
26/Sep/2023 20:00	1388.39	9990	17079	0	17079
26/Sep/2023 21:00	1388.38	9990	17079	0	17079
26/Sep/2023 22:00	1388.37	9990	17079	0	17079
26/Sep/2023 23:00	1388.36	9990	17079	0	17079
27/Sep/2023 0:00	1388.35	9990	17079	0	17079
27/Sep/2023 1:00	1388.34	9990	17079	0	17079
27/Sep/2023 2:00	1388.33	9990	17079	0	17079
27/Sep/2023 3:00	1388.32	9990	17079	0	17079
27/Sep/2023 4:00	1388.31	9990	17079	0	17079
27/Sep/2023 5:00	1388.30	9990	17079	0	17079
27/Sep/2023 6:00	1388.29	9990	17079	0	17079
27/Sep/2023 7:00	1388.28	9990	17079	0	17079
27/Sep/2023 8:00	1388.27	9990	17079	0	17079
27/Sep/2023 9:00	1388.26	9990	17079	0	17079
27/Sep/2023 10:00	1388.25	9990	17079	0	17079
27/Sep/2023 11:00	1388.24	9990	17079	0	17079
27/Sep/2023 12:00	1388.23	9990	17079	0	17079
27/Sep/2023 13:00	1388.22	9990	17079	0	17079
27/Sep/2023 14:00	1388.21	9990	17079	0	17079
27/Sep/2023 15:00	1388.20	9990	17079	0	17079
27/Sep/2023 16:00	1388.19	9990	17079	0	17079
27/Sep/2023 17:00	1388.18	9990	17079	0	17079
27/Sep/2023 18:00	1388.17	9990	17079	0	17079
27/Sep/2023 19:00	1388.16	9990	17079	0	17079
27/Sep/2023 20:00	1388.15	9990	17079	0	17079
27/Sep/2023 21:00	1388.14	9990	17079	0	17079
27/Sep/2023 22:00	1388.13	8957	16046	0	16046
27/Sep/2023 23:00	1388.12	6891	13980	0	13980
28/Sep/2023 0:00	1388.11	6891	13980	0	13980
28/Sep/2023 1:00	1388.10	6891	13980	0	13980
28/Sep/2023 2:00	1388.09	6891	13980	0	13980
28/Sep/2023 3:00	1388.08	6891	13980	0	13980
28/Sep/2023 4:00	1388.07	6891	13980	0	13980
28/Sep/2023 5:00	1388.06	6891	13980	0	13980
28/Sep/2023 6:00	1388.05	6891	13980	0	13980
28/Sep/2023 7:00	1388.04	6891	13980	0	13980
28/Sep/2023 8:00	1388.03	6891	13980	0	13980
28/Sep/2023 9:00	1388.02	6891	13980	0	13980

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28/Sep/2023 10:00	1388.01	6891	13980	0	13980
28/Sep/2023 11:00	1388.00	6891	13980	0	13980
28/Sep/2023 12:00	1387.99	6891	13980	0	13980
28/Sep/2023 13:00	1387.98	6891	13980	0	13980
28/Sep/2023 14:00	1387.97	6891	13980	0	13980
28/Sep/2023 15:00	1387.96	6891	13980	0	13980
28/Sep/2023 16:00	1387.95	6891	13980	0	13980
28/Sep/2023 17:00	1387.94	6891	13980	0	13980
28/Sep/2023 18:00	1387.93	6891	13980	0	13980
28/Sep/2023 19:00	1387.92	9990	17079	0	17079
28/Sep/2023 20:00	1387.91	9990	17079	0	17079
28/Sep/2023 21:00	1387.90	9990	17079	0	17079
28/Sep/2023 22:00	1387.89	9990	17079	0	17079
28/Sep/2023 23:00	1387.88	9990	17079	0	17079
29/Sep/2023 0:00	1387.87	9990	17079	0	17079
29/Sep/2023 1:00	1387.86	9990	17079	0	17079
29/Sep/2023 2:00	1387.85	9990	17079	0	17079
29/Sep/2023 3:00	1387.84	6891	13980	0	13980
29/Sep/2023 4:00	1387.83	6891	13980	0	13980
29/Sep/2023 5:00	1387.82	6891	13980	0	13980
29/Sep/2023 6:00	1387.81	6891	13980	0	13980
29/Sep/2023 7:00	1387.80	6891	13980	0	13980
29/Sep/2023 8:00	1387.79	6891	13980	0	13980
29/Sep/2023 9:00	1387.78	6891	13980	0	13980
29/Sep/2023 10:00	1387.77	6891	13980	0	13980
29/Sep/2023 11:00	1387.76	6891	13980	0	13980
29/Sep/2023 12:00	1387.75	6891	13980	0	13980
29/Sep/2023 13:00	1387.74	6891	13980	0	13980
29/Sep/2023 14:00	1387.73	6891	13980	0	13980
29/Sep/2023 15:00	1387.72	6891	13980	0	13980
29/Sep/2023 16:00	1387.71	6891	13980	0	13980
29/Sep/2023 17:00	1387.70	6891	13980	0	13980
29/Sep/2023 18:00	1387.69	6891	13980	0	13980
29/Sep/2023 19:00	1387.68	6891	13980	0	13980
29/Sep/2023 20:00	1387.67	6891	13980	0	13980
29/Sep/2023 21:00	1387.66	6891	13980	0	13980
29/Sep/2023 22:00	1387.65	6891	13980	0	13980
29/Sep/2023 23:00	1387.64	6891	13980	0	13980
30/Sep/2023 0:00	1387.63	6891	13980	0	13980
30/Sep/2023 1:00	1387.62	6891	13980	0	13980
30/Sep/2023 2:00	1387.61	6891	13980	0	13980
30/Sep/2023 3:00	1387.60	6891	13980	0	13980
30/Sep/2023 4:00	1387.59	6891	13980	0	13980
30/Sep/2023 5:00	1387.58	6891	13980	0	13980
30/Sep/2023 6:00	1387.57	6891	13980	0	13980
30/Sep/2023 7:00	1387.56	6891	13980	0	13980
30/Sep/2023 8:00	1387.55	6891	13980	0	13980
30/Sep/2023 9:00	1387.54	6891	13980	0	13980
30/Sep/2023 10:00	1387.53	6891	13980	0	13980
30/Sep/2023 11:00	1387.52	6891	13980	0	13980
30/Sep/2023 12:00	1387.51	6891	13980	0	13980
30/Sep/2023 13:00	1387.50	6891	13980	0	13980
30/Sep/2023 14:00	1387.49	6891	13980	0	13980
30/Sep/2023 15:00	1387.48	6891	13980	0	13980

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30/Sep/2023 16:00	1387.47	6891	13980	0	13980
30/Sep/2023 17:00	1387.46	6891	13980	0	13980
30/Sep/2023 18:00	1387.45	6891	13980	0	13980
30/Sep/2023 19:00	1387.44	6891	13980	0	13980
30/Sep/2023 20:00	1387.43	6891	13980	0	13980
30/Sep/2023 21:00	1387.42	6891	13980	0	13980
30/Sep/2023 22:00	1387.41	6891	13980	0	13980
30/Sep/2023 23:00	1387.40	6891	13980	0	13980
1/Oct/2023 0:00	1387.39	6891	13980	0	13980
1/Oct/2023 1:00					
1/Oct/2023 2:00					
1/Oct/2023 3:00					
1/Oct/2023 4:00					
1/Oct/2023 5:00					
1/Oct/2023 6:00					
1/Oct/2023 7:00					
1/Oct/2023 8:00					

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एन एच पी सी लिमिटेड
NHPC Limited

CIN:L40101HR1975GOI032564
An ISO 9001, 14001 &45001 Certified Power Station
पार्वती जल विद्युत परियोजना-III, डाकघर व तहसील बंजार, जिला कुल्लू (हि.प्र.) 175123
Parbati Hydro Power Project-III, Post Office & Tehsil Banjar, Distt. Kullu (H.P.) 175123
Email ID: [illegible]
फोन (01903) 222[illegible]

No. :एनएच/पीपीएस III /एचओपी/ 2023/ 193

दिनाँक : 07.08.2023

To,

(Er. Deepak Jasrotia)
Head SDSO, Himachal-Cum-
Dy. Chief Engineer,
Directorate of Energy,
GoHP, Shimla -171009

Subject: - Details of Reservoir & Gate Operation along with Inflow and Outflow discharge data status w.e.f. 07/07/2023 to 12/07/2023 in respect of Sainj Dam, Parbati-III Dam, Largi Dam, Allain Dam (AD-Hydro), Pandoh Dam, Malana-I, Pong Dam & Malana-II in Beas River Basin.

Ref.: HPDOE/CE (Energy)/SDSO-Specified Dams/2023-3518-25 dated 17/07/2023.

Sir,

In reference to the letter referred above for the subject cited, the desired informations in respect of Parbati-III Power Station, are enclosed in Annexure-A.

Thank you,

Encls: As above

Yours faithfully,

07/08/23

General Manager-Incharge (HOP)

31/1/25

Public Information Officer
-cum- Sr. Executive Engineer,
Directorate of Energy,
H.P., Shimla-171005

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Save Energy for Benefit of Self and Nation

Annexure-A

Details of Reservoir & Gate Operation alongwith Inflow and Outflow discharge data w.e.f. 07/07/2023 to 12/07/2023

Name of Project with Capacity: Parbati-III Power Station (520 MW)
Name of Dam: Parbati-III Dam (Sound Dam)
Owner Agency: NHPC Limited

Date	Time	Inflow observed in cumecs	Outflow from dam including flow from Silt flushing Conduits, Env. Flow and Radial gates (Cumecs)	Outflow from Tail Race Channel (Cumecs)	Reservoir Level in m (FRL=1330 m)	Details of gates operation/levels
07.07.2023	00:00 hours	128.73	2.49	174.28	1326.40	-
	02:00 hours	106.16	2.33	113.69	1326.20	-
	04:00 hours	90.56	2.32	95.99	1326.10	-
	06:00 hours	70.80	2.39	176.32	1324.15	-
	08:00 hours	71.05	2.06	86.80	1319.60	-
	10:00 hours	67.83	2.05	85.10	1318.40	-
	12:00 hours	62.92	2.00	40.85	1320.40	-
	14:00 hours	60.86	1.92	40.83	1323.50	-
	16:00 hours	61.65	1.92	42.71	1325.00	-
	18:00 hours	62.89	2.83	42.55	1337.00	-
	20:00 hours	68.58	2.70	177.00	1321.70	-
	22:00 hours	75.22	1.94	83.19	1322.10	-

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Date	Time	Inflow observed in cumecs	Outflow from dam including flow from Silt flushing Conduits, Env. Flow and Radial gates (Cumecs)	Outflow from Tail Race Channel (Cumecs)	Reservair Level in m (FRL=1330 m)	Details of gates operation/levels
08.07.2023	00:00 hours	72.96	2.45	52.08	1332.90	-
	02:00 hours	70.37	2.64	18.04	1326.00	-
	04:00 hours	69.24	2.85	53.78	1328.20	-
	06:00 hours	70.09	2.61	177.00	1325.40	-
	08:00 hours	69.83	1.91	52.76	1322.50	-
	10:00 hours	73.78	1.92	51.74	1322.80	-
	12:00 hours	81.19	1.90	81.69	1325.10	-
	14:00 hours	79.94	2.04	85.10	1325.30	-
	16:00 hours	102.45	2.33	88.50	1327.80	-
	18:00 hours	167.08	2.50	173.60	1328.45	-
	20:00 hours	247.19	77.25	177.00	1329.00	Radial Gate No. 2 opened 10 cm at 19:35 and Gate No. 1 opened 40cm at 20:00
	22:00 hours	254.73	101.83	177.00	1327.40	Radial Gate No. 1 Opening - 0.5 m Radial Gate No. 2 Opening - 0.3 m Machine unit no. 1, 2 & 3 stopped at 22:28 hours and Machine unit no. 4 stopped at 22:55 hours due to high silt content. Thereafter Intake gate No.1 & 2 closed at 23:30 & 23:46 respectively.

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Date	Time	Inflow observed in cumecs	Outflow from dam including flow from Silt flushing Conduits, Env. Flow and Radial gates (Cumecs)	Outflow from Tail Race Channel (Cumecs)	Reservoir Level in m (FRL=1330 m)	Details of gates operation/levels
09.07.2023	00:00 hours	324.27	305.50	0.00	1324.00	Radial Gate No. 1 Opening - 1.5 m Radial Gate No. 2 Opening - 1.1 m Diversion Tunnel (DT) Gate No.1 opened 30 cm at 00:05 hours and Gate No. 2 opened 30 cm opened at 00:08 hours
	02:00 hours	357.49	328.94	0.00	1321.40	Radial Gate No. 1 Opening - 1.5 m Radial Gate No. 2 Opening - 1.1 m DT Gate No. 1 Opening - 0.3 m DT Gate No. 2 Opening - 0.3 m
	04:00 hours	389.33	176.39	0.00	1322.30	Radial Gate No. 1 Opening - 1.6 m Radial Gate No. 2 Opening - 1.4 m DT Gate No. 1 Opening - 0.3 m DT Gate No. 2 Opening - 0.3 m
	06:00 hours	429.43	489.97	0.00	1325.60	Radial Gate No. 1 Opening - 1.9 m Radial Gate No. 2 Opening - 1.9 m DT Gate No. 1 Opening - 0.3 m DT Gate No. 2 Opening - 0.3 m
	08:00 hours	425.61	537.84	0.00	1325.70	Radial Gate No. 1 Opening - 2.1 m Radial Gate No. 2 Opening - 2.0 m DT Gate No. 1 Opening - 0.3 m DT Gate No. 2 Opening - 0.3 m

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09.07.2023	10:00 hours	590.48	579.21	0.00	1327.10	Radial Gate No. 1 Opening - 2.1 m Radial Gate No. 2 Opening - 2.3 m DT Gate No. 1 Opening - 0.3 m DT Gate No. 2 Opening - 0.3 m
	12:00 hours	608.80	601.30	0.00	1327.40	Radial Gate No. 1 Opening - 2.1 m Radial Gate No. 2 Opening - 2.5 m DT Gate No. 1 Opening - 0.3 m DT Gate No. 2 Opening - 0.3 m
	14:00 hours	700.51	729.16	0.00	1328.90	Radial Gate No. 1 Opening - 2.7 m Radial Gate No. 2 Opening - 3.2 m DT Gate No. 1 Opening - 0.3 m DT Gate No. 2 Opening - 0.3 m
	16:00 hours	940.43	969.27	0.00	1328.90	Radial Gate No. 1 Opening - 3.1 m Radial Gate No. 2 Opening - 5.1 m DT Gate No. 1 Opening - 0.3 m DT Gate No. 2 Opening - 0.3 m
	17:00 hours	1001.38	1044.07	0.00	1326.90	Radial Gate No. 1 Opening - 3.1 m Radial Gate No. 2 Opening - 6 m DT Gate No. 1 Opening - 0.3 m DT Gate No. 2 Opening - 0.3 m
	18:00 hours	890.92	923.81	0.00	1326.00	Radial Gate No. 1 Opening - 3.1 m Radial Gate No. 2 Opening - 5 m DT Gate No. 1 Opening - 0.3 m DT Gate No. 2 Opening - 0.3 m
	20:00 hours	804.81	883.98	0.00	1324.00	Radial Gate No. 1 Opening - 2.6 m Radial Gate No. 2 Opening - 5.3 m DT Gate No. 1 Opening - 0.3 m DT Gate No. 2 Opening - 0.3 m
	22:00 hours	706.44	792.96	0.00	1317.00	Radial Gate No. 1 Opening - 3.1 m Radial Gate No. 2 Opening - 5.6 m
	23:00 hours	676.80	676.80	0.00	1311.50	Radial Gate No. 1 & 2 opened 7.0 m each at 22:56 & 22:58 respectively (Free Flow Started)

Executive Engineer,
Directorate of Energy,
H.P., Shimla-171005

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Date	Time	Inflow observed in cumecs	Outflow from dam including flow from Silt flushing Conduits, Env. Flow and Radial gates (Cumecs)	Outflow from Tail Race Channel (Cumecs)	Reservoir Level in m (FRL=1338 m)	Details of gates operation/levels
10.07.2021	00:00 hours	649.32	649.32	0.00		Gauge Level Plate below 1311 m washed out and Gauges of both G&D sites washed out due to heavy flood and trash. Hence Inflow and Outflow data is taken tentatively and Reservoir level could not be recorded. -free flow
	02:00 hours	648.47	648.47	0.00		free flow
	04:00 hours	632.66	632.66	0.00		free flow
	06:00 hours	572.00	572.00	0.00		do
	08:00 hours	486.43	486.43	0.00		-do-
	10:00 hours	434.33	434.33	0.00		-do-
	12:00 hours	496.15	496.15	0.00		-do-
	14:00 hours	1040.25	1040.25	0.00		-do-
	16:00 hours	1040.59	1040.59	0.00		-do-
	18:00 hours	849.65	849.65	0.00		-do-
	20:00 hours	821.76	821.76	0.00		-do-
	22:00 hours	793.18	793.18	0.00		-do-

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H.P., Shimla-171002

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Date	Time	Inflow observed in cumecs	Outflow from dam including flow from Silt flushing Conduits, Env. Flow and Radial gates (Cumecs)	Outflow from Tail Race Channel (Cumecs)	Reservoir Level in m (FRL=1338 m)	Details of gates operation/levels
11.07.2023	00:00 hours	507.63	507.63	0.00		Free flow
	02:00 hours	357.10	357.10	0.00		-do-
	04:00 hours	340.51	340.51	0.00		-do-
	06:00 hours	336.55	336.55	0.00		-do-
	08:00 hours	315.15	315.15	0.00		-do-
	10:00 hours	248.88	248.88	0.00		-do-
	12:00 hours	217.90	217.90	0.00		-do-
	14:00 hours	203.10	203.10	0.00		-do-
	16:00 hours	184.73	184.73	0.00		-do-
	18:00 hours	196.32	196.32	0.00		-do-
	20:00 hours	206.39	206.39	0.00		-do-
	22:00 hours	214.91	214.91	0.00		-do-

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Date	Time	Inflow observed in cumecs	Outflow from dam including flow from Silt flushing Conduits, Env. Flow and Radial gates (Cumecs)	Outflow from Tail Race Channel (Cumecs)	Reservoir Level in m (FRL-1330 m)	Details of gates operation/levels
12.07.2023	00.00 hours	216.65	216.65	0.00		Free flow
	02:00 hours	208.01	208.01	0.00		-do-
	04:00 hours	170.56	170.56	0.00		-do-
	06:00 hours	135.78	135.78	0.00		-do-
	08.00 hours	75.84	75.84	0.00		-do-
	10:00 hours	66.31	66.31	0.00		-do-
	12:00 hours	63.85	63.85	0.00		-do-
	14:00 hours	65.05	65.05	0.00		-do-
	16:00 hours	62.08	62.08	0.00		-do-
	18:00 hours	78.90	78.90	0.00		-do-
	20:00 hours	91.17	91.17	0.00		-do-
	22:00 hours	96.38	96.38	0.00		-do-

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STATE COMMITTEE ON DAM SAFETY HIMACHAL PRADESH
SHANTI BHAWAN PHASE-III SECTOR-6 NEW SHIMLA-9
Tel No: 0177-2673552, Fax No: 2673553, Email: dir.doehp@nic.in, eeenergy09@gmail.com

No. HPDoE/SCDS-HP/Malana-II HEP/2023- 3846-49 **Dated** 25/07/2023

To

M/s Everest Power Pvt. Ltd.
Malana-II, HEP , First House, Bhumian Estate,
NavBahar Bhumian Road, Chotta Shimla-171002

Subject: **Notice Regarding – Overtopping incident happened in Malana-II HEP.**
Ref: **Your office e-mail dated 24.07.2023.**

Sir,

This has reference to recently reported incident of overtopping from Malana-II Dam caused due to non-operation of radial gates. The reported incident of overtopping is a matter of concern and warrants immediate action as it may lead to failure of dam & may cause losses in the downstream. Same incident has already happened on 24th August, 2013 which has also been reflected in previous Directorate of Energy, GoHP Inspection Reports submitted by the panel of expert committee vide letter no. HPDOE/PF/Inspection Malana-II-1-4 dated 30.09.2014 that on 24th August, 2013 both units which were under operation with 16 cumecs discharge in the river tripped suddenly and due to non-operation of the radial gates the water level in the reservoir started rising due to this sudden tripping of both the generating units. Gates could not operate due to sloughing/collapse of the silt deposited in front of the radial gates. Water which was initially at MDDL, suddenly started rising & resulted in overtopping of the concrete dam and same has happened again.

As per finding of above said report an additional spillway was recommended by the expert committee and proposal was asked from you vide DoE office letter no.HPDoE/CE/Authority/Safety/Malana-II HEP/2014-6392-93 dated 10.10.2014.

Accordingly proposal for construction of additional spillway by converting Non Overflow Blocks into spillway on right bank of Malana-II dam was submitted by you vide letter dated 13th May, 2016 and same was allowed to be implemented vide DoE letter no. HPDoE/CE/Authority/Safety/Malana-II HEP/2014-1912-13 dated 01.06.2016 subject to fulfillment of the following conditions:

- The various important features of the proposed spillway needs to be vetted/ optimized through Model studies for hydraulic efficiencies w.r.t. discharge capability, efficient energy dissipation without any erosion at toe & right bank having PWD road for safety of the dam in particular before its implementation.
- Due precaution in construction as per specification & detailed design engineering needs to be carried out.
- All the codal formalities, if required, w.r.t. implementation from concerned agencies i.e. disposal of generated muck, provision of alternate road/ passage to village located on bank right, safety of downstream HEPS & habitats besides no interference with the levels of any upstream HEPs needs to be followed/ ensured.

Public Information Officer
Sh. Sr. Executive Engineer,
Directorate of Energy,
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Subsequently the proposal (DPR) was submitted by you vide letter dated 10.11.2017 and final go ahead to this proposal was given by DoE vide letter no. HPDOE/CE/Authority/Malana-II/2018-8760 dated 02.02.2018. The strong directions were again imparted through reminders and further during the project inspection of November, 2021 and subsequent SCDS meetings held on November, 2022 & May, 2023.

At last the construction schedule was submitted by you however the observations raised on that were also not complied to. This shows the non-seriousness towards the safety of dam and people in the downstream by the Dam Authority of Malana-II HEP and this non-serious attitude of authorities of Malana-II has made the situation reach to this level that the overtopping has taken place again. Had the in time measures been taken at your end this incident could have been avoided.

In view of the above stated facts and looking to this critical situation where in the lives and property have been put into the danger, you are directed to explain that why not action as per clause 41 of Dam Safety Act,2021 be initiated against you. It is again directed that proper measures be taken to open the gates and restore the Dam Operation back to safe parameters. A proper co-ordination with Distt. Administration and all stakeholders be maintained to ensure the safety of lives and stocks downstream.

In this regard a joint team of representative SCDS, SDSO -HP along with experts will visit the Dam site shortly. The relevant record of gates operation logbook, inflow & outflow detail with corresponding reservoir levels be provided to this office within 3 days time positively. Further the rectification, all safety measures needs to be ensured and ascertained prior to start of commercial operation again.

"Please treat it most urgent".

Yours faithfully,

25/7/2023

Head, SCDS Himachal-cum-
Chief Engineer (Energy),
Directorate of Energy, Shimla-09

Copy to:

1. The Special Secretary (MPP & Power),to the Govt. of Himachal Pradesh, Shimla – 171002 for information please.
2. The Director (Gates Design & NW&S), Ministry of Jal Shakti, Department of Water Resources, RD & GR, National Dam Safety Authority, GoI, New Delhi for information please.
3. The Director, NDSA, Northern Region, Chandigarh&Superintending Engineer (Co-ordination), / Ministry of Jal Shakti, Department of Water Resources, River Development & Ganga Rejuvenation, Central Water Commission, Govt. of India/ O/o CE, Indus Basin Organisation(IBO)#617, Block-IV, 6th-Floor, KendriyaSadan,Sector-9A,Chandigarh (UT) for information please.

Head, SCDS Himachal-cum-
Chief Engineer (Energy),
Directorate of Energy, Shimla-09

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-cum- Sr. Executive Engineer,
Directorate of Energy,
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DIRECTORATE OF ENERGY, GoHP



Inspection Report of Malana-II Dam in Distt. Kullu Himachal Pradesh by GoHP team on 30.07.2023

31.1.25

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-cum- Sr. Executive Engineer
Directorate of Energy,
H.P., Shimla-171005

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Directorate of Energy,
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Inspection Report of Malana-II Dam by GoHP team on 30.07.2023

1. **Preface**

In compliance to the Head State Dam Safety Organization Himachal Pradesh letter no. HPDOE/CE (Energy)/Malana-II HEP /2023- 3961-66 dated 29.07.2023, the Site visit of Malana-II HEP (100 MW) regarding overtopping of Malana-II Dam was conducted on 30.07.2023 by GoHP team. Following were the team members of GoHP and representatives of Malana-II HEP (100 MW).

Team:-

1. Er. D.P. Gupta, Chief Engineer (Energy) DoE, GoHP- Head SCDS-Himachal Pradesh
2. Er. Deepak Jasrotia (Dy. Chief Engineer, DoE)- Head SDSO, Himachal Pradesh.
3. Er. Ashit Kashyap, Sr. Executive Engineer, SDSO- Himachal Pradesh

Dam Design Expert, Er. Arun Kumar Kapoor (AGM - HPPCL) accompanied the visiting teams on special Team Member.

S.D.M. Kullu, Shri. Vikas Shukla (HPAS) also accompanied the visiting team.

Malana-II HEP (100 MW) representatives present at the time of visit:-

1. Mr. JVSD Prasad Raju, Sr. Vice President – M/s Greenko
2. Er. Suresh Chand Kalsi, General Manager
3. Er. Ananda Varma, AGM (Electrical) – HoP- Malana-II
4. Mr. Shivpardeep, Sr. Manager
5. Mr. Ashwani, Dy. Manager

Er. Charan Dass, Junior Engineer, DoE, assisted the visiting team during the inspection.

2. **Objective:**

The objective of the visit of Malana-II HEP (100 MW) was to examine the situation of overtopping from Malana-II Dam and to have onsite assessment of all other possibilities as can be applied looking to constraints, other aspects and to analyze and review the advance preparedness/prior actions on safety aspects as per the probable existing threat.

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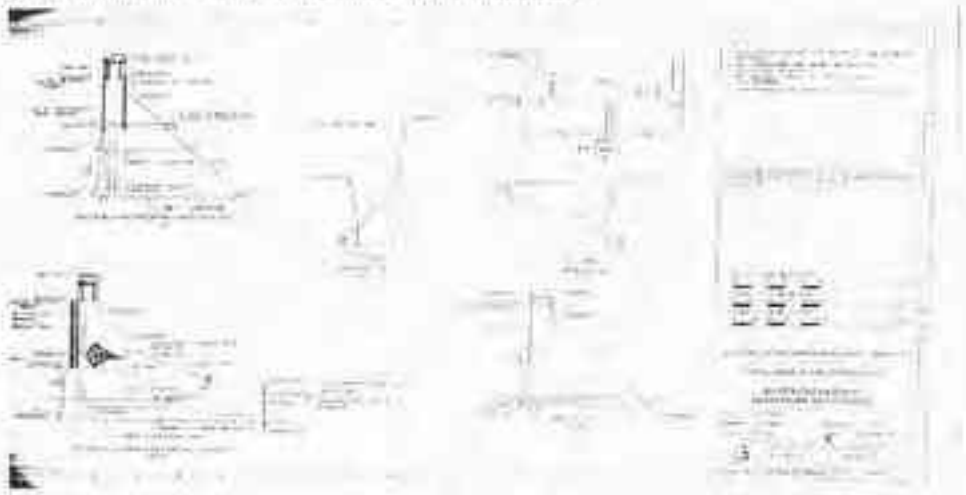
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3. **Background:-**

The Govt. of HP had allotted Malana-II HEP (100 MW) to M/s Everest Power Private Limited which entered into a Memorandum of Understanding (MoU), with Govt. of Himachal Pradesh on 27th May 2002 in accordance with Hydro Power Policy of GoHP, for carrying out detailed investigation, techno-economic studies and submission of Detailed Project Report (DPR) for the implementation of Malana-II HEP (100 MW) in District Kullu, Himachal Pradesh. Subsequently, Implementation Agreement (IA) was signed between GoHP and M/s Everest Power Private Limited on 14th January 2003 for implementation of Malana-II HEP (100 MW).The Project Proponent has achieved the Commercial Operation Date of the Project on 12th July 2012.

4. **Dam Detail**

A conventional gravity type concrete dam of ≈53 meter high above the deepest foundation level has been constructed. As reported by dam authorities, it is founded on sound rock. As per record, the foundation of the dam has been kept at El. ± 2492 meter. Length of dam at the top is ± 150 m (Dam block)+ 63 m (Key wall into the LHS Hill Mass). Two number 4.00 m x 5.30 m size Spillway Radial Gates have been provided in the dam. One set of 4.00m (W) x 7.10m (H) size stop log gate has been provided to facilitate maintenance of the radial gate. For the operation radial gates the control room is provided at the top of Dam body just above the gates. For the operation of stop log gates gantry crane has been provided at the top of dam body.



Dam Sections

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H.P., Shimla-171005

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The main features of the dam are:-

Top of dam:	2545.0m	**Spill Radial Gates**	2 Nos.
FRL	2543.0 m	**Size**	4.0mx5.5m
MDDL	2528.0 m	**Sill Level**	2514.19m
Bed level	2500.0m	**Gross Storage:**	0.386Mcm
Deepest Foundation Level	2492.0 m	**Live Storage**	0.2875 MCM

5. Dam Safety Concerns: -

The reported incident of overtopping is a matter of concern and warrants immediate action as it may lead to failure of dam & may cause huge losses in the downstream. Same incident has already happened on 24th August, 2013 which has also been reflected in previous DoE Inspection Reports submitted by the panel of expert committee vide letter no. HPDOE/PF/Inspection Malana-II-1-4 dated 30.09.2014. On 24th August, 2013, both units which were under operation with 16 cumecs discharge in the river tripped suddenly and due to non-operation of the radial gates the water level in the reservoir started rising due to this sudden tripping of both the generating units. Gates could not operate due to sloughing/collapse of the silt deposited in front of the radial gates. Water which was initially at MDDL, suddenly started rising & resulted in overtopping of the concrete/gravity dam and same has happened again on 24.07.2023.

As per finding of above said report an additional spillway was recommended by the expert committee and proposal was asked from IPP vide DoE office letter no. HPDoE/CE/Authority/Safety/Malana-II HEP/2014-8392-93 dated 10.10.2014. Accordingly proposal for construction of additional spillway by converting Non Overflow Blocks into spillway on right bank of Malana-II dam was submitted by the project developer vide letter dated 13th May, 2016 and same was allowed to be implemented vide DoE letter no. HPDoE/CE/Authority/Safety/Malana-II HEP/2014-1912-13 dated 01.06.2016 subject to fulfillment of the following conditions:

- The various important features of the proposed spillway needs to be vetted/ optimized through Model studies for hydraulic efficiencies w.r.t. discharge capability, efficient energy dissipation without any erosion at toe & right bank having PWD road for safety of the dam in particular before its implementation.

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- Due precaution in construction as per specification & detailed design engineering needs to be carried out.
- All the codal formalities, if required, w.r.t. implementation from concerned agencies i.e. disposal of generated muck, provision of alternate road/ passage to village located on bank right, safety of downstream HEPS & habitats besides no interference with the levels of any upstream HEPs needs to be followed/ ensured.

Subsequently, the proposal (DPR) was submitted by the dam authority vide letter dated 10.11.2017 and final go ahead to this proposal was given by DoE vide letter no. HPDOE/CE/Authority/Malana-II/2018-8760 dated 02.02.2018. However the project authorities has not executed the same. The dam authority delayed the start of the construction of additional spillway. Further during the project inspection carried by DoE team in November, 2021, the project authorities were again directed to start construction of additional spillway. After the enactment of Dam safety Act, 2021, the strong directions were again imparted through reminders.

The cloud burst accident occurred in the vicinity of Malana khad on 06.07.2022. The project authorities were asked to submit the report of incident, Damage report and preventive measures taken by the project authority vide DoE office letter no. HPDoE/CE(Energy) /Malana-II HEP (Vol-IV)/2022-3501-03 dated 07.07.2022. During the 1st meeting of State Committee on Dam Safety (SCDS) Himachal Pradesh held in November, 2022, directions were also given to the dam authorities to submit the construction schedule for the construction of additional spillway. At last the construction schedule was submitted by the project authority of Malana-II HEP in May, 2023, however the observations raised on that were also not complied. During the 2nd meeting of the SCDS Himachal Pradesh held on 30.05.2023, the dam authorities were again directed to start construction of additional spillway at the earliest.Despite all the necessary and repeatedly timely directions imparted by the Dam Safety Authority, SCDS and SDSO the timely execution of additional spillway has been delayed and again the overtopping incident occurred in Malana-II Dam on 24.07.2023 due to jamming of radial gates.

31/1/25

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Directorate of Energy,
H.P., Shimla-171005

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Overtopping of Malana-II Dam

6. **Inspection's Observations:** - Following are the observations:

i. Two no radial gates of size 4 x 5.5 m each got stuck at 3:00AM on 24.07.2023 as quoted and reported by the dam authorities. ***"At approximately 03:00 am flash flood happens due to cloud burst in the catchment area and both the radial gates which were previously opened with 350 mm and 250 mm opening respectively and suddenly it was observed that the discharge from the spillway radial gates started to reduce. The gates were operated with the power pack to increase the gate opening but were observed to have been stuck due to overload. This overload and choking of the passage opened with radial gate is due to accumulation of large debris and boulders behind and below the gates. After continually trials the efforts were in vain. Further keeping in view of the safety the power supply was shut down and the dam premises was evacuated. As of now the water is flowing from above the dam top and all the team has been moved to safe location (All the team members are safe)".***

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2. They further stated that Overtopping started immediately after one and half hour and the left bank started eroding. Accordingly the approach road from the left bank side got washes away and the movement to the Dam top got disconnected. On 25.07.2023 with the help of NDRF team the dam operation maintenance team managed to reach to control room for taking up gates opening operation.

They tried to move the gates by building hydraulic pressure manually and pulling the gates upwards with slings. Later due to increase discharge in the river the team had to come back. The same process also tried from 26.07.2023 to 29.07.2023. However no fruitful results were achieved. In between the BBMB divers were also called on the site to provide their support through under water action and to access the deposition of silt but due to high turbidity and turbulence, they showed their inability to help in the cause. The gate erection expert was also called on site on dated 28.07.2023. Though he tried his best after reaching in the control room but his efforts also gone in vain.

Other alternative were also thought of the by project authorities such as:

- **Underwater blasting**–However this was discouraged in view of structural stability and safety of Dam body.
- **Transportation and placing the excavator on the Dam top through helicopter**. However due to unfavorable weather conditions and narrow gauge, this option was also not found feasible.
- **Poking of the small choked opening of Gates-** This was also thought off however same could not be executed due to non access to bottom of gates and flow of heavy water on the Dam top.

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- **Churning of water and silt upstream of gates with compressed air** has been thought but same could not be applied because of no access to dam top. However this is still under consideration and as and when the situation becomes favorable this will be tried.
- **Dredging with high-capacity pumps u/s of gates**. Same constraints of lack of access for many requirements and then the present turbulent, muddy waters with floating logs, was the reason not to go for this option.
- The main constraint for carrying out any of the above alternatives was the overflowing water on the Dam top, which is not only obstructing the feasibility of many alternatives but also endangering the safety. In view of this, it is very much essential to control/ divert this water overflowing on the Dam top to carry out various alternatives to move/ open the Dam gates. In view of this, it being planned to cut the Dam top portion in the blocks on the right side, i.e. 7, 8 and 9 upto suitable depth and widths so as to control/ divert this water from overflowing on the Dam top, in technically acceptable manner and ensuring the safety, and this cutting will be compatible to the c/o Additional Ungated Spillway as approved. This work will be started in 6 days from 31st July i.e. 6th Aug, 2023. And also, the remaining parapets on the d/s side of the Dam top on the 7 & 8 no. Blocks will also cut/removed to divert more water towards right side of dam, so as to reduce the water flowing towards left side. During this period also, the present ongoing combined efforts of i) manual building of Hydraulic Pressure for moving the gates and ii) pulling the sling attached to the Dam gate with the Jacks, shall be continued, by observing the Safety precautions.

3. After the overtopping due to flow from left bank the road approach leading to Dam Top from left bank got washed away and that exposed the key wall leading from Block No. 1 towards hill mass on left bank.



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4. After the incident the Dam authorities informed DDMA at 2:30 P.M. dated 24/07/2023 through telephonically and through Whatsapp group at 3:43 P.M. Accordingly the DDMA took the required action of informing the downstream inhabitant area and the alert was given.
5. At present there is no power at Dam site. Both the power alternatives viz. 11 Kv power supplies as well as DG set are at breakdown
6. At present there is no mean available with Dam authorities w.r.t. EWS upstream of Dam Reservoir and also to measure the inflow.
7. The left bank hill mass has destabilized due to erosion of approach road leading to Dam top.
8. The downstream habitants have been reported on high alert and most vulnerable area have been reported evacuated
9. The DDMA authorities and local administration have also made high alert in the downstream river regime of Parbati and Beas keeping in view of the probable threat sudden heavy release of water from reservoir.
10. The reservoir operation & gate operation log book was not provided by Dam authorities stating that same is in the control room, so will be provided later. However same has not been provided till date. This is a very important document to understand about the gates behavior & their operation.

7. **Conclusion & Suggestions :**

1. As per site visit and detail of inflow/outflow reported by D/s Malana-I HEP, the fact of flash flood/ Cloud burst occurrence upstream of Malana-II Dam needs to be established on part of Malana-II Dam authorities. The other probable causes of sudden closures of gates can't be ignored and these do require proper thought & examination in view of the occurrence of same incident in 2013. Further the gates operation log book needs to be provided by Dam authorities as early as possible.
2. As an immediate measure the d/s parapet wall on Dam Top towards right bank needs to be removed to guide water D/s from right hand side of spillway block. The efforts should be ensured to restrict the water leading towards left bank.
3. As per submitted proposal by the Dam authorities and also in line with approved auxiliary spillway proposal, the Dam portion form Block no. 6 onwards towards Block No.10 (Block no. 7 to 9) needs to be cut to a suitable depth without

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Directorate of Energy,
H.P., Shimla-171005

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compromising the safety of dam in order to divert the overtopping water through this portion of Dam body for facilitating the rectification/ restoration of spillway gates. This may be taken up by IPP in line with approval and guidance of their design Consultants team.

4. As per visual inspection exposed sound rock is available on D/s side of Dam on right hand side of Dam Body which will help in proper dissipation of falling water energy and further safely guide the water back in river course.
5. As soon as the water is diverted through right side of Dam body , immediately the restoration work of approach road to Dam Top on left bank should be started. For this purpose stacking of material required be stacked immediately.
6. The gate rectification/restoration be taken up immediately after the water is diverted.
7. Immediately measures be ensured w.r.t. establishing the Early Warning System on upstream of Dam Reservoir and also to measure the inflow.
8. The hill mass on left bank needs to be stabilized along with restoration of road.
9. The infrastructure facilities viz: Roads and main Power supply to the Dam site be ensured/rectified immediately.
10. As per the dam break analysis conclusions the preparedness towards safety and security of the life and stocks downstream for the worst possible scenario needs to be ensured i.e. the area needs to be at high alert downstream w.r.t. the timing and the intensity of water hitting the downstream river regime in case when the total dam break failure occurs. As per the record provided Disaster Management Plan for Malana-II HEP Chapter-VII covers the whole scenario wherein the water depth and spread in downstream of dam in the event of dam break given. This document also cover the Inundation map, Emergency Action Plan and Administration and procedural aspects, preventive action, communication systems, management after receding of flood water etc. Hence the visiting team directed, that the preparedness be ascertained to the standards as are essential keeping in view the worst possible scenario. The proper coordination and information be conveyed to all stakeholders viz. local administration, DDMA Authorities, PRIs, Inhabitants along the river banks & to other relevant departments and agencies etc. An effective EWS needs to be ensured all time. It is important to mention here that this dam break analysis has been conducted only up to the confluence of Malana river with Parbati. However no plan or information is available in the Disaster Management Plan d/s this confluence

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H.P., Shimla-171005

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towards Bhuntar and further downstream regime of Beas River. Hence the Dam authorities were directed that in line with the Parbati and Beas river profiles and earlier experience of such extreme incidents the safety plan for downstream area be also analysed and immediately shared with the Distt. Administration and other stakeholders for proper security and safety of lives and stocks downstream the confluence of Malana stream with Parbati River.

The directions as stated above along with timelines stands imparted to Project Authorities on site as further also conveyed through **DoE Office letter No. 3985-88 Dated 31/08/2023.** The undertaking of Dam authorities are attached here with the reports as ready reference please.

(Er. Ashit Kashyap),
Sr. Executive Engineer,
SDSO- GoHP.

(Er. Arun Kumar Kapoor),
Addl. General Manager (Dam Design),
O/o General Manager Design,
HPPCL, Sunder Nagar.

(Er. Deepak Jasrotia)
Dy. Chief Engineer, DoE,
Head SDSO, GoHP.

(Er. D.P. Gupta)
Chief Engineer (Energy),
Head SCDS-GoHP.

31/1/25
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-cum- Sr. Executive Engineer,
Directorate of Energy,
H.P., Shimla-171005

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DIRECTORATE OF ENERGY
GOVERNMENT OF HIMACHAL PRADESH
SHANTI BHAWAN PHASE-III SECTOR-6 NEW SHIMLA-9
Tel No: 0177-2673552, Fax No: 2673553, E.mail: dir.dechp@nic.in, ceenergy09@gmail.com

No. HPDoE/CE (Energy)/Malana-II HEP/2023- 3985-88 Dated: 31-07-2023

To:

M/s Everest Power Pvt. Ltd.
Malana-II, HEP, First House, Bhumian Estate,
NayBahar Bhumian Road, Chotta Shimla-171002

Subject: Overtopping of Malana-II Dam and DoE Team Visit on dated 30th July, 2023 therof.

Sir,

This has reference with the visual inspection of the dam and facts gathered on site by the visiting team on dated 30th July, 2023. In this regard in line with the proposal submitted by you and as per deliberation held following actions may be initiated immediately:

i. As an immediate measure the parapet wall on Dam Top towards right bank needs to be removed to guide water D/s from right hand side of spillway block. The efforts should be ensured to restrict the water leading towards left bank (this is to be started by 31st July, 2023)

ii. As per your submitted proposal and also in line with approved auxillary spillway proposal the Dam portion form Block no. 6 onwards towards Block No.10 (Block no. 7 to 9) needs to be cut to a suitable depth without compromising the safety of dam in order to divert the overtopping water through this portion of Dam body for facilitating the rectification/ restoration of spillway gates. This may be taken up in line with the consultation and directions of your design team (as per your timeline given which is to be started within 6 days time i.e. on or before 5th August, 2023).

iii. As soon as the water is diverted through right side of Dam body , immediately the restoration work of approach road to Dam Top on left bank should be started. For this purpose stacking of material be taken up immediately. The hill mass on left bank needs to be stabilized along with restoration of road.

iv. The gate rectification/restoration be taken up immediately once the water level is reduced at dam top.

v. Immediately measures be ensured w.r.t. establishing the Early Warning System on upstream of Dam Reservoir and also to measure the inflow.

vi. The infrastructure facilities viz: Road and main Power supply to the Dam site be ensured/rectified immediately.

vii. As per the dam break analysis conclusions the preparedness towards safety and security of the life and stocks downstream for the worst possible scenario needs to be ensured i.e. the area needs to be at high alert downstream w.r.t. the timing and the intensity of water hitting the downstream river regime in case when the total dam break failure occurs. As per the record provided by you Disaster Management Plan for Malana-II HEP Chapter-VII covers the whole scenario wherein the water

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Directorate of Energy,
H.P., Shimla-171005

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depth and spread in downstream of dam in the event of dam break given. This document also cover the Inundation map, Emergency Action Plan and Administration and procedural aspects, preventive action, communication systems, management after receding of flood water etc. hence it is directed that the preparedness be taken to the standards as are essential keeping in view the worst possible scenario. The proper coordination and information be dissipated to all stakeholders viz: local administration, DDMA Authorities, PRIs, Inhabitants along the river banks & to other relevant departments and agencies etc. An effective EWS needs to be ensured all time. It is important to mention here that this dam break analysis has been conducted only up to the Malana stream confluence downstream with river Parbati. However no plan or information is available in the Disaster Management Plan below the confluence towards Bhuntar and downstream regime of Beas River. You are therefore directed that in line with the Parbati and Beas river profiles and earlier experience of such extreme incidents the safety plan for downstream area be also analysed and immediately shared with the Distt. Administration and other stakeholders for proper security and safety of lives and stock downstream the confluence of Malana stream with Parbati River (as per the direction given on the site this was to be started on 30th July, 2023 and process to be completed within 2 days i.e. latest by 1st August, 2023).

The aforesaid instructions be followed immediately and its daily progress and compliances be submitted to this office as well as to DDMA Kullu regularly. The detail report is to be followed soon.

"Please treat it Most Urgent"

Yours faithfully,

Chief Engineer (Energy)-cum-
Chairman-SCDS-HP-&Technical Head SDSO-HP
Directorate of Energy, GoHP, Shimla-09.

D.A: As above

Copy to:

1. The Special Secretary (MPP&Power), to the Government of Himachal Pradesh, 171002 for kind information please.
2. The Deputy Commissioner, District Kullu, Himachal Pradesh, 175101 for kind information please.
3. The Sub divisional Magistrate Kullu, Distt. Kullu, Himachal Pradesh, 175101 for information and further favour of necessary action please.

D.A: As above:

Chief Engineer (Energy)-cum-
Chairman-SCDS-HP-&Technical Head SDSO-HP
Directorate of Energy, GoHP, Shimla-09.

31/1/25

Public Information Officer
-cum- Executive Engineer,
Directorate of Energy,
H.P., Shimla-171005

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Under RTI Act, 2005.

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DIRECTORATE OF ENERGY
GOVERNMENT OF HIMACHAL PRADESH
SHANTI BHAWAN PHASE-III SECTOR-6 NEW SHIMLA-9
Tel No: 0177-2673976, Fax No: 2673553, Email: monitoringdoe09@gmail.com

OFFICE ORDER

A committee consisting of the following officers is hereby constituted to inspect the Malana-II (100 MW) Hydro Electric Project in connection with the recent incident of sudden flow of water from surge shaft bottom area, resulting in the stoppage of generation.

1. Er. Subash Gupta (Retd. Chief Engineer Energy), Chief Consultant (DoE).
2. Er. R.N. Sharma (Retd. Executive Director, SJVNL), Consultant (DoE).
3. Er. B.S. Mehta (Retd. Superintending Engineer), Consultant (DoE).

The committee is requested to carry out joint inspection in association with project authorities of Malana-II (100 MW) HEP and to submit the detailed report in the matter within one week positively. Er. B.R. Lactoo AAE, Directorate of Energy, shall co-ordinate & assist the committee.

30/8/2014
Chief Engineer,
Directorate of Energy,
Govt. of Himachal Pradesh

No. HPDoE/CE/Authority/Safety/Malana-IIHEP/2014 5114-48 Dated: 30/8/2014

Copy is forwarded to the :-

1. Principal Secretary (Power) to GoHP, for kind information please.
2. Copy to the above members of the Committee for information and necessary compliance.

30/8/2014
Chief Engineer,
Directorate of Energy,
Govt. of Himachal Pradesh

21/1/25
Public Information Officer
-cum- Sr. Executive Engineer,
Directorate of Energy,
H.P., Shimla-171005

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GOVERNMENT OF HIMA HAL PRADESH
SHANTI BHAWAN PHASE-III SE TOR-6 NEW SHIMLA-9
Tel No: 0177-2673976, Fax No: 2673553, E: ail: monitoringdoe09@gmail.com

No.HPDOE/CE /Authority/Safety/Malana-II H P/2014- 5149-54 Dated: 30/8/2014

To

M/s Everest Power Private Limited
Ground Floor, 145-146, Udyog Vih : Phase-IV,
Gurgaon-122015.
Fax-124-4356757.

Subject:- Inspection of Malana-II (100 MW HEP.

Ref: Your letter No. EPPL/Reporting/ 40828 dated 20th August, 2014.

Sir,

This has reference to above refe ced letter. A team of experts from Directorate of Energy shall be visiting to your Project site to ascertain the issue of sudden flow of water from surge shaft of Malana- (100 MW) HEP resulting stoppage of generation.

Sr.No.	Name of Visiting Officer	Sch dule of Visit
1.	Er. Subhash Gupta (Chief Consultant).	01/ 9/2014 Shimla to Bhunter & Halt.
2.	Er. R.N. Sharma (Consultant).	02/ 9/2014 to 03/09/2014 Site Insp ction.
3.	Er. R.S. Mehta (Retd Superintending Engineer) Consultant.	04/ 9/2014 back to Head Quarter.

Er. B.P. Lachoo AAE, Directorate of Energy shall co-ordinate & assist the committee.

You are requested to make necessa / arrangement for the site inspection accordingly and also make available the relevant p oject component drawing/data of the project during site inspection.

Yours faithfully,

30/8/2014
Chief Engineer,
Directorate of Energy,
Govt. of Himachal Pradesh

Copy to:

1. The Principal Secretary (Power) to GoHP, fo kind information please.
2. Copy to the above members of the Comm tee for information and necessary compliance.

30/8/2014
Chief Engineer,
Directorate of Energy,
Govt. of Himachal Pradesh

31/1/25
Public Information Officer
-cum- Sr. Executive Engineer,
Directorate of Energy,
H.P., Shimla-171005

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DIRECTORATE OF ENERGY
GOVERNMENT OF HIMACHAL PRADESH
PHASE-III, SECTOR-VI NEW SHIMLA-9

No: HPDOE/PF/Inspection Malana-II - 1-4 Dated: 30.09.2014

To

The Chief Engineer,
Directorate of Energy,
GoHP, Shimla-171009.

Subject: Inspection of Malana-II HEP by the committee constituted vide office order No. HPDoE/CE/Authority/Safety/Malana-II HEP/2014-5144-48 dated 30.08.2014.

Sir,

Enclosed please find herewith the inspection report of the committee constituted vide office order No. HPDoE/CE/Authority/Safety/Malana-II HEP/2014-5144-48 dated 30.08.2014 in respect of Malana-II HEP in connection with recent incident of sudden flow of water from the surge shaft bottom area resulting in the stoppage of generation. This is for your information and further necessary action please.

Yours faithfully,

30.9.14

Subhash Gupta,
Chief Consultant,
Directorate of Energy.

DA: Inspection Report.

Copy to the Director, Directorate of Energy, GoHP, New Shimla-9 for kind information please.

30.9.14

Subhash Gupta,
Chief Consultant,
Directorate of Energy.

31/10/25

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Inspection Report of Committee on the incident of sudden flow of water from the surge-shaft bottom area resulting stoppage of generation from the Malana –II project.

1.0 A Committee of Panel of Experts comprising Er Subhash Gupta, Er R.N Sharma and Er B.S. Mehta was Constituted by the Director Energy Govt. of H.P. vide its office order No. HPDOE/CE/Authority/ Safety/Malana-II HEP/2014- 5144-48 dated 30.08.2014 to carry out joint inspection of Malana-II HEP with respect to the recent incident of sudden flow of water from the surge-shaft bottom area resulting stoppage of generation from the project. Er B.R.Lacktoo AAE of DoE was deputed to assist the committee and co-ordinate with the developer M/s EPPL to facilitate the inspection.

The committee inspected the Malana stage –II on 2nd and 3rd September,2014 and Barrage , Intake works & Reservoir of Malana-I HEP on 3rd September,2014 to assess damages to their structures . These structures are located just d/s, about 200m from the Powerhouse of Malana-II HEP, where the incident had occurred. The layout of the two Projects which are cascade developments on Malana river are enclosed at **Plate-** .

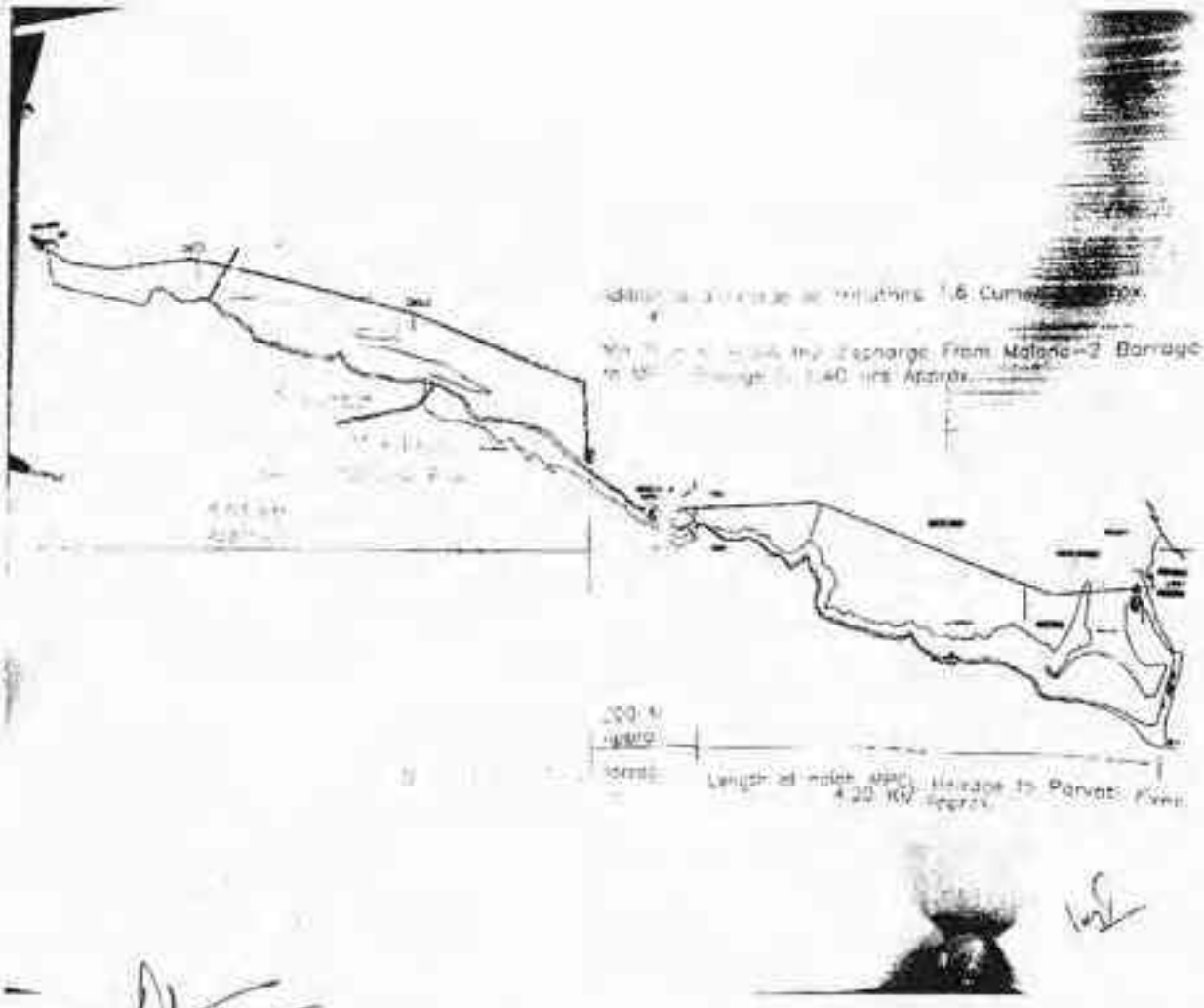
Malana HEP Stage-II (2x50MW) Hydroelectric Project has been built on river Malana a tributary of river Parbati to harness a drop of about 624m (head) available between the Diversion Dam located about 3 km upstream of Malana Village & Power House Site near the Diversion Barrage of Malana HEP-I. This project was allotted to M/s Everest Power Private Ltd. (EPPL) by the Govt. of H.P. in the year 2002 and MoU was signed with Company on 27.05.2002. The Implementation Agreement was signed with the company on 14.01.2003. The project was declared commissioned on 12 July, 2012.

Malana Stage-II Project consists of 53m(45m above the river bed) high Concrete Gravity Diversion Dam,4.987km long , 2.9mx2.9m D-shape HRT with concrete, shotcrete and steel lining provided in the poor geological strata & squeezing ground conditions , 6m dia,81m. high underground Surgeshaft open to sky , 759m long vertical steel lined pressure shaft of 2.5 m dia bifurcating into 1.8m dia branches , underground Powerhouse Complex consisting of 67.5m(L)x17.5m(W)x35.5m(H) underground Powerhouse housing 2 units of Pelton turbine of

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50MW capacity each and Transformer cavern of 26.5m(L) x 12.0m (W) x 13.4 m(H) & 365m long TRT cum Cable Tunnel D- shaped 5.4m (W)x4.0m(H

As per the scope of the inspection in the above referred order of the DoE "the committee would inspect the project w.r.t. the incident which occurred on 28th of August, 2014 ...."

The report is based on the documents / information supplied by M/s Everest Power Private Ltd. Project Authorities of Malana Stage-II HEP and Malana Stage-I HEP as Annexed with the report as Annexure-A and B respectively, site inspection and the discussions held with project authorities at site during inspection.

2.0 Site Inspection Details and General Observations

Committee inspected (2x50MW) Malana-II HEP on 02.09.2014 alongwith the Project Authorities consisting of Sh. Yogendra Kumar (COO), Sh. Javed Moshin (Sr. Consultant), Sh. S.S.Gariah (Sr. V.P Geology) and Sh. Dinesh Singh (G.M.)/ HoP (O &M).

At the outset of the visit, Sh. Yogendra Kumar, COO of the Project gave a brief presentation to the Committee about the project layout and details of Project components as constructed .Thereafter he briefed the committee about the incident of sudden outflow/ gushing out of the water from Adit-3 along the existing natural depression Nallah which flowed towards tailrace tunnel portal and switchyard on 28th August, 2014 at about10 AM. The waterfall was accompanied by slush, debris, boulders and uprooted trees with huge force with thunderous sound. The water flow continued for about two hours before the intake gate of the HRT was lowered and the water conductor system became empty. The detailed report and photographs highlighting the sequence of occurrence of incident and action taken by the company in this regard is enclosed as Annexure-A1. As per the Project Authorities they immediately took action, as per the emergency preparedness procedures. These included :

- Both the units which were in operation at the time of incidence were emergency shutdown due to sudden drop of pressure.

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- Malana-I Hydro Electric Project authorities were informed about the incident and they were further informed that the sluice radial gates of the Dam are going to be opened.
- HRT Intake gate was closed and the water in the reservoir of the Dam was started to be depleted by opening the radial gates after observing the necessary protocol.
- Prior to the opening of the radial gates, warning sirens were blown at Dam, Power House and Nirmand and local residents downstream were informed.
- District administration was informed through phones and letters were faxed.
- NRLDC, SLDC Shimla, PTC India Ltd., PSPTCL Patiala were informed about the incident.
- Tehsildar visited the site & enquired about the incident. There was no loss of human life both of Company & adjoining areas but they suffered damages to their structures & equipments besides loss of generation. The Company was assessing the total loss & the root cause of sudden flow of water from Adit -3.
- Loss of generation for about 4 hours besides other losses had also been experienced by Malana-I HEP due to the incident.

It was reported that the affected area of Adit-3 was inspected by the Project officials, who reported following observations.

- Due to flowing water through Adit-3 Portal, bench along with equipment and labour sheds had been washed away.
- The entire steel liner downstream of Bonnet Gate and the Surge shaft was found to be intact along with a concrete back filling. The Adit-3 and the HRT Section upstream of Bonnet gate including transition was intact with no visible sign of distress.
- Huge cavity below the invert of the steel liner in the concrete back fill and rock was noticed with approximate size 10 m long 1m wide and depth varying up to 2.0 meters was observed u/s of steel liner at its junction with concrete lining. This cavity was connected to the Adit-3 invert immediately downstream of Adit 3 plug towards left wall of Adit-3 which eroded concrete and parent rock below the plug. The water of the HRT got depleted through this cavity to Adit-3 onwards.

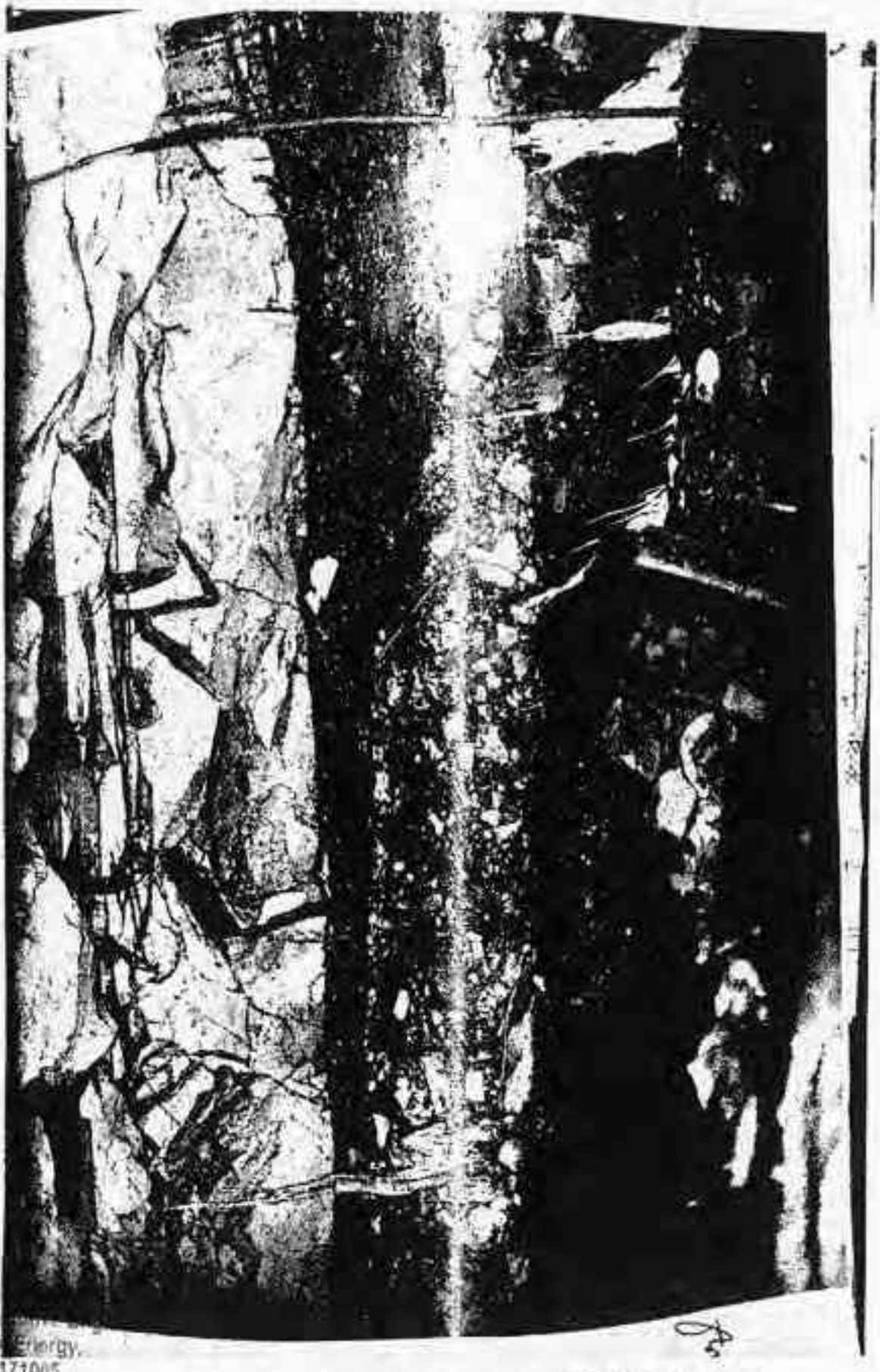
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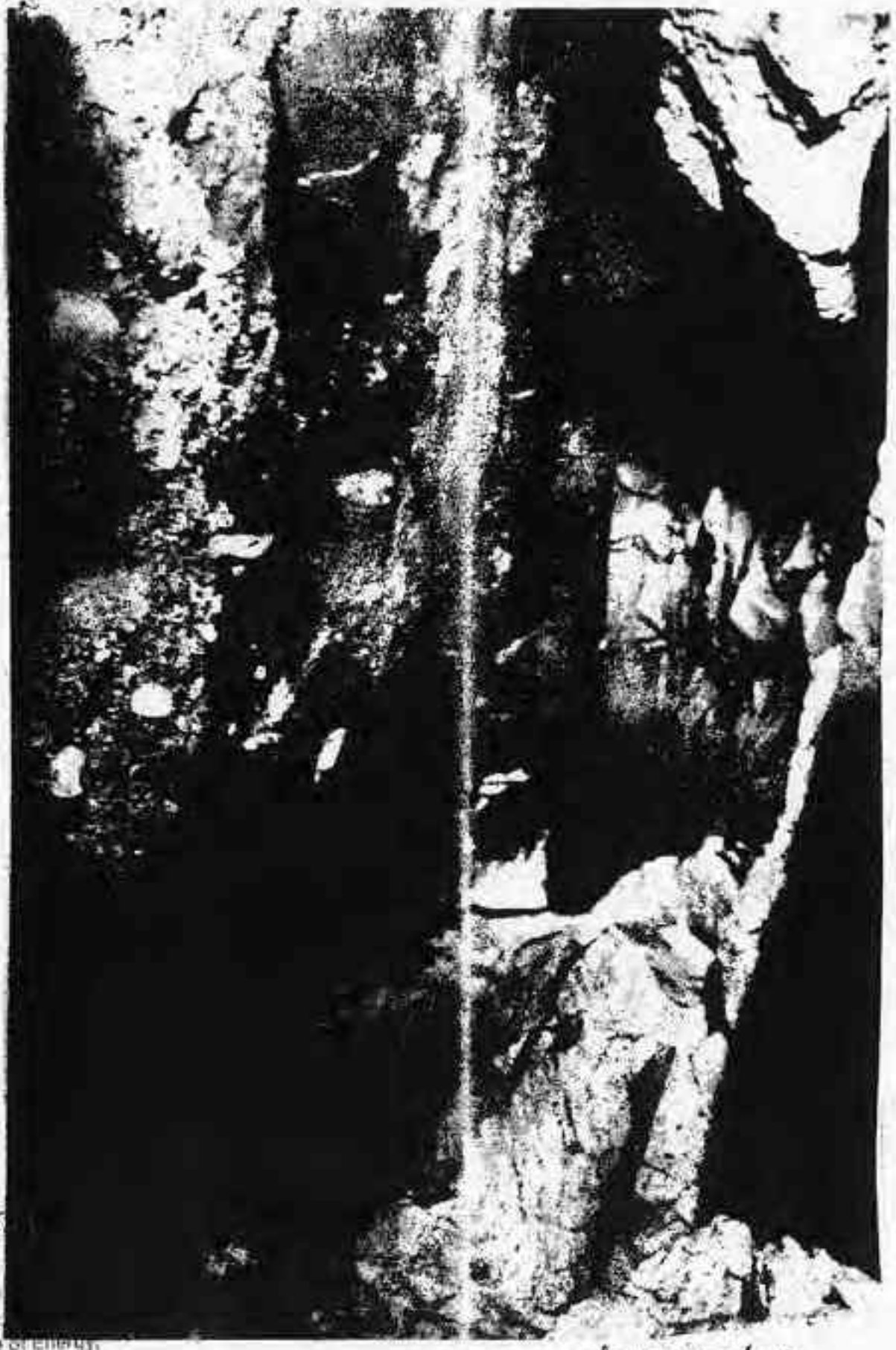


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Directorate of Ener
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maintained properly to ensure that components of the project are accessible in all weather conditions.

The Committee, then visited Power House and it was noticed that there was still heavy leakage/ seepage in the various galleries, adits, MAT and underground complex caverns of power house such as machine hall, transformer hall, cable tunnel & exhaust duct tunnel & drainage galleries etc. These flows of seepage water from the charged hill may be compared with the seepage water which will add to it after filling of complete water conductor and any remedial measures which may be required to tackle excessive seepage water be devised. The authority has no system to measure this seepage water inside the PH which may be installed immediately. Further, these flows should be constantly monitored to safeguard against any future damage to the power house structure.

On the morning of 3rd September,2014, the Committee attempted to approach the site of incidence through the steps alongwith Project Authorities. There are more than 2500 steps which commence near tail race out fall structure 80 to the Adit4 portal which is an intermediate Adit to pressure shaft and then to Adit 3 area where bonnet gate is located.

The pressure shaft and surge shaft are not visible from the road and no approach road has been constructed up to surge shaft. The construction of Surge shaft, Pressure shaft and erection of steel liner was done by employing rope ways. The site can only be approached through these steps; which have been washed away by the water which came below from the surge shaft on 28th August2014 at about 10 AM. However the committee could not proceed beyond Adit-4, as the approach to the Adit3 bench where this incident took place has been washed away. As such, Committee could not visit the actual incident site. However, the committee could reach about 100m above Adit-4, where it was noticed that 15-20 litres per second water was still coming out from this adit which was being collected in the chamber below the bench of Adit-4 and further discharged through two pipes into the nallah. The reasons of flow of water despite of the fact that the HRT was empty could not be explained by the company officials. The source of water may be from the pressure shaft was still fully charged. This leakage also needs to be monitored closely by the project authority after filling of complete water conductor system. The committee found that no communication system was established /functional in Adit-III and Adit-IV to the power house/office which was a serious lapse on the part of company despite earlier advised by the committee during its previous inspection.

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The committee on the fore noon of 3rd Sep 2014 also inspected the 132kV switch yard bench which has been developed on the right bank of Malana Nallah with filled material i.e. the switch yard bench has been created by dumping/filling the excavated material from the power house complex and the same has been retained by providing a retaining wall along the right bank of river. The size of the switch yard is approx. 70m x 55m. The switch yard is having 5 nos. bays of 132kV, i.e. two for unit transformers, two for outgoing feeders and one for auxiliary transformer. The power is evacuated through double circuit 132kV transmission line. The equipment such as LAs, Insulators of isolators, Bushing of Station Auxiliary 132kV/11 kV transformer, part of retaining wall, fencing, etc in this substation has been damaged by the rolling boulders which came along with the gushing water from the surge shaft area. Some of the post insulators had been changed by the time of inspection and the Substation had been back charged and supply restored in the project area through auxiliary transformer. TRT outfall gate which is Vertical Lift Type Gate of size 5m x 3m alongwith rope drum hoisting structure has also been damaged badly.

3.0 Inspection of the Barrage, Intake & Reservoir of Malana-I HEP

The committee on the afternoon of 03/09/2014 inspected the Barrage, Intake & Reservoir Open Works of Malana-I HEP to see the damages to their works by the incident of heavy water flow from Adit-III of Malana Stage II-HEP along which had brought huge rock slide material, boulders and uprooted trees on the morning of 28th August 2014. Er. Beshtoo, Sr. Vice President/ HOP(O&M) of Malana-I HEP and their GM Operation Er. Bhatia along with other officers, were present during inspection and discussions. They also discussed the losses suffered by them due to Heavy Rock Slide and Water Leakage through Surge Shaft Area of Malana-II HEP of M/s EPPL in the Present incident. They informed the committee that details of total financial loss suffered by them are being worked out and will be sent to the Govt. of HP in due course of time. They also supplied to the committee a copy of their representation addressed to Principal Secretary MPP & Power, Govt. of HP dated 29th August 2014 along with photographs regarding present incident and their earlier representations along with four Annexures, highlighting, inter alia, their concern of safety of structures of Malana-I HEP due to such incidents and the resulting generation losses suffered by them due to stoppage of their Power Plant. In this reference letter they have enclosed their earlier representations dated 01/06/2013, 25/09/2013 & 18/06/2014 sent to the Govt. of HP giving details of previous incidents that have happened during operation of Malana-II HEP during the year 2013-14

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and 2014-15 ,which contain interlia, details of heavy leakages from surge shaft area, Jamming of under Dam gates and overtopping of Diversion Dam and also problems faced by them due to the cascade operation of the two projects.

The open works of Malana Stage-I consists of Barrage with gated under sluices bay and ungated spillway, Intake Structure, Desilting Chambers and the Reservoir located on the left bank of Malana view, about 200m d/s of the tailrace outfall gate/ open switchyard of Malana Stage -II HEP and the site of incident where the heavy waterfall from Adit-3 along the Nallah joined the Malana river along with heavy rock slide material, boulders and uprooted trees.

As per the details of incident by the Malana-I HEP Authorities, as reported by their staff present during the time of incident, the heavy water flow blocked along with the debris intake pond area and the Under sluices bay of barrage got filled. The intakes got choaked resulting in complete stoppage of flow of water into the Intake. The under sluice gates which were closed at the time of incident got jammed due to debris/flowing slush material, trash and tree trunks. The entire inflow of river got diverted through ungated weir to Malana-I HEP. The generation of Malana-I HEP had to be stopped. Not only the Malana-I HEP suffered loss of generation but the heavy accumulated rock debris/muck upstream and downstream of under sluice, intake pond is required to be cleared for smooth operation of the project. The Malana-I HEP authorities have supplied the photographs of the damage to their structure as well as the damage to the Malana Stage-II Project. The Committee observed the heavy muck deposited & still lying in front of Under Sluice, Intake Pond and river channel u/s and d/s of barrage which was being cleared by them on the day of inspection. The photographs taken by the committee are enclosed along with this report.

4.0 Findings and Conclusions of the Committee

I) As per the preliminary assessment by experts of M/S EPPL, the incident of heavy inflow of water from Adit 3 on 28th August 2014 was due to bad geology of the area, which resulted in undermining of the rock under the invert of HRT U/S of steel lining junction with concrete lining. With progressive erosion of the rock, the cavity in the invert below steel liner progressed towards the nearby Adit-3 spring, resulting in leakage of water in HRT under pressure toward Adit-3. The cavity progressed rapidly with the erosive action of flowing water and resulted in heavy outflow of water from HRT. However, the exact cause of failure is still being investigated by them. M/S EPPL should provide detailed report of the cause of failure along with remedial measures proposed/undertaken by

31/1/25

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H.P., Shimla-171005

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them after thorough investigations. The concrete steel liner joints, which is generally very vunerable to damage, may be properly designed along with concrete lining up to suitable length U/S of the joint taking into account the geology. It is recommended that the remedial measures undertakes by project authorities are inspected and certified by an independent third party engineer.

Due to sudden emptying, there is possibility of damage to the water conductor system, which may be thoroughly inspected/checked and certified that no such damage has occurred before filling of the water conductor system.

The side and vertical rock covers of the tunnel V13-to-V13 ~~V-15 to V-15~~ interval water pressure may also be checked and certified to be safe.

2) The mandate of the committee was " to inspect the Malana Stage-II HEP with respect to the recent incident of sudden flow of water from the surge shaft bottom area resulting in stoppage of generation from the project" However, the incident cannot be seen in isolation because of serious safety implications not only on the structure of Malana Stage-II project but also the danger to d/s Malana Stage-I HEP and the habitation along the Malana river.

It is pertinent to mention here that the construction of Malana-II HEP was completed and the water conductor system was filled during July,2011. Both the units were synchronized in August,2011 but the trials had to be stopped and units shutdown due to damages in the HRT face-III and face-IV. There were also damages reported in the Pressure Shaft, Dam slope protection and heavy leakages were reported from various places along the water conductor and in the Power House Complex and areas around Surge shaft. After the repair works which took more-than 10 months, the power plant was again synchronized in May,2012 and finally COD declared on 12.07.2012.

Inspite of these extensive repairs, there were reports of heavy leakages/seepages of water from the hill along water conductor system presumably from the water conductor system, particulars near surge shaft area/Adit-3 & 4 locations and in and around the underground Power House Complex. These were reported in the inspection report of Panel of Experts during October,2013 and was also reported by the Malana-I HEP authorities from time to time in their representations to the Directorate of Energy. Which have been discussed in the copy given to the present committee on 03.09.2014, of their representation to Principal Secretary (MPP & Power) Dated 29.08.2014 and enclosed at [redacted]. They also discussed their concerns with the Committee while they were inspecting the damages to Malana-I HEP Barrage, Intake, Desilting Tanks and Reservoir Open works located about 200m downstream from the point of incidence of waterfall of 26.08.2014.

31/1/25

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The Malana-II HEP took another shutdown during November,2013 and carried out repairs of cracks in concrete/shotcrete and erection of steel liner in the lower portion of surge shaft when they took shutdown after November,2013.

There was also report of overtopping of the Dam of Malana Stage-I HEP during August,2013, when both the Radial gates of under sluices of the Dam could not be opened because they were struck due to silt of reservoir. There was damage to the left flank and hill slopes of left bank of Dam where the concrete wall has been constructed to act as barrier to the flow of the water through the overburden on the left abutment of the dam. This resulted in heavy erosion on the left abutment of the dam and washing away of approach road. The Malana stage-II dam does not have provision of open spillway at the top in such eventuality.

In their representation Malana Stage-I management has also reported presence of Oil content immediately after the TRT outfall of Malana-II HEP in May,2014.

All these incidents are of serious nature which needs extensive investigation by the authorities of Malana stage-II HEP to find out the reasons of their repeated occurrences. It seems that remedial action/repairs undertaken by them are not adequate to address the problem. It is recommended that all the occurrences/incidents since the first filling of water conductor system from July, 2011 alongwith reports giving details of investigation findings of cause of failure and remedial measures taken by the Project Management of Malana Stage-II HEP may be provided. The details of generation, month wise a/w outage and stoppage of generation since the commissioning of the project, both planned and emergency may be provided, along with reasons thereof.

3) A comprehensive plan of remedial measures both short term and long term may be worked out after inspection of all structures and civil works. The remedial measures may be worked out and implemented at site by M/s EPPL in consultation with independent engineer to ensure that such incidents are avoided in future.

4). The project authorities of M/s EPPL were asked to provide data as listed in the report but a part of data has been made available. The project authorities may be asked to provide all key drawings of the structures and geological appraisal reports at the time of construction of project. They may be asked to provide the Quality Assurance procedures adopted by them during construction along with test reports. The seepage/leakage measurement observation records being maintained by the Project

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Authorities for at least one year and SCADA data for one month prior to incident may also be provided.

5) All approaches to the Adit 3/Adit 4 & Surge Shaft should be immediately repaired/restored with proper hand railings, lighting and other measures to ensure safety of the personnel, wherever required to access these areas for inspection repair work.

6) All arrangements in respect of lighting for inspection of HRT should be immediately made.

7) The all-weather approach to Dam work Adit-I & Adit-II should be ensured by proper maintenance of roads.

8) M/s EPPL may consider providing gate to access the HRT, through the Adit-I or Adit 2 plug. The gate should be big enough to allow small vehicle to go in, if required, for inspection and repair.

9) Similarly provision of inspection trolley for inspection of pressure Shaft be made for inspection & repair of steel liner, if required.

10) The provision of proper overflow spill-way in the Dam should be planned so that water can safely pass in case under sluice gates do not work during high floods.

11) Seepage/leakage data at all points in the project should be systematically recorded.

12) The project authorities should provide the list of all instruments provided in the Dam, hill slopes and underground structures and the system of recording instrument data along with records if any, maintained by them. Similarly the details of instruments for recording rain/snowfall data in the catchment area and the gauge discharge/silt data, if any along with data record maintained by them may be provided.

13) Proper lighting, provision of video cameras at dam and near PH with the facility to view them in the control room of Power House may be provided.

14) Disaster Management plan & emergency preparedness plan along with dam break analysis with full proof/all ~~wealth~~ well communication system between all important locations and Power House Control room may be put in place.

15) The action taken report on the suggestion given by the panel of experts in their report of project inspection during October, 2011 may be provided/ April, 2013.

16). The action taken report to improve the approach roads to various project components in particular surge shaft area, communication system of the project, safety & security system at the project may be provided.

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Directorate of Energy,
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17) The management was asked to set up proper O&M system for the project the details of which may also be provided.

18) The short term and long term remedial measures proposed/taken by M/s EPPL to restore the generation of the project and to address the issue raised by the Malana Stage-I HEP may be intimated to the DoE.

19) The steps taken by M/s EPPL to ensure the safety of Dam and downstream habitation along Malana as per the latest instructions of Directorate of Energy may be provided to DoE.

Er. Subhash Gupta	Er. R.N. Sharma	Er. B.S. Mehta	Er. B.R. Lucktoo
Chief Consultant	Consultant	Consultant	AAE (Co-ordinater)
DoE	DoE	DoE	DoE

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DIRECTORATE O ENERGY
GOVERNMENT OF HIM IAL PRADESH
SHANTI BHAWAN PHASE-III SI TOR-6 NEW SHIMLA-9
Tel No: 0177-2673976, Fax No: 2673553, I mail: monitoringdoe09@gmail.com

No.HPDOE/CE /Authority/Safety/Malana-II HEP/2014- 6392-93 Dated: 10-10-2014

To

M/s Everest Power Private Limit
Ground Floor, 145-146, Udyog Vi , Phase-IV,
Gurgaon-122015 (Haryana),
Fax-91-124-4356757

Subject:- Inspection of Malana-II (100 M) HEP by the Consultant and officers from DoE.

Ref: This office letter no. HPDoE/ E/Authority/Safety/ Malana-II HEP/ 2014-5144-48 dated 30.08.20 4 and letter even file no.5202-08 dated 3.09.2014.

Sir,

The inspection made w.r.t lett under reference by the empaneled Consultant of DoE on dated 2nd and 3rd Septem 2014, enclosed please find herewith a copy of detailed inspections report highlightin observations/ short coming as observed during the site visit for further necessary actio please.

In addition due attention is also invited towards the following shortcomings noticed during the inspection officers at DoE on 5th and 6th September 2014.

1. The housing arrangement at the Tail R e Tunnel should be well protected with permanent RCC roof with shock absorbing m hanism to reduce the impact/velocity of falling/rolling stone from the adjoining hill.

2. A suitable deflector at the boundary e he switchyard facing TRT to deflect the falling/ shooting stone from left bank tow is upstream side of river needs to be provided so that damage to electrical equ ment of switchyard/ intake structure of Malana-I HEP (86 MW) could be avoided in a type of eventuality, if any, in future.

3. Concrete plug length in the HRT Adits ed to be strengthened/ provided as per the relevant IS codes.

4. PWD road to Malana village is taking from dam top at right bank. Keeping in view the safety of the dam structures, no bl ting for construction of road should be allowed in its vicinity for at least 30m from th dam.

31.10.14

Public Information Officer
-cum- Sr. Executive Engineer.
Directorate of Energy,
H.P., Shimla-17

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Under RTI Act, 2005.

5. The instrument installed in Dam body is [illegible] much on the lower side than the bare minimum required as per CWC norms, besides improper access from D/s side of Dam body to the instrumentation gallery at the foundation level & needs to be updated/ improved to adjudge the healthiness of the dam structure/ taking appropriate remedial measures during its life span.

6. The periodical pre and post monsoon inspection reports in respect of dam to adjudge its healthiness for the intended purpose as per the CWC norms should be carried out each year and the reports be made available to this office for quality audit and onward submission to Dam Director to CW[illegible].

7. The venerable reaches from intake to [illegible] race, if any, be fenced adequately and install hordings at required suitable locations to warn the general public to keep away from the river banks. The compliance report along with the photographs in this regard may be supplied to this office.

8. The probable cause of occurrence of leakage from downstream of surge shaft through Adit-3 as per the discussion seems to be improper concrete & steel liner joint. Remedial measures to provide proper concrete & steel joint conforming to the relevant literature on cited issues in Army Manual Code / Latest IS Codes latest IS Codes may be taken and the action taken report thereof supported with photographs be supplied to this office.

It is requested that after going through the contents in the enclosed inspection report, and the above cited observations a detailed point wise reply and action taken report thereof may be supplied to this office within a week's time positively.

DA: Inspection Report.

Yours faithfully,

Chief Engineer,
Directorate of Energy,
Govt. of Himachal Pradesh

Copy to;

1. The Principal Secretary (MPP & Power) to GoHP, along with the copy of inspection report for kind perusal and information please.

Chief Engineer,
Directorate of Energy,
Govt. of Himachal Pradesh

31/1/25

Public Information Officer
-cum-Sr. Executive Engineer
Dir[illegible]
[illegible]2025.

Information Supplied to Sh. Sumit mehar
Under RTI Act, 2005.

2-34

EVEREST POWER PRIVATE LIMITED

Corporate Office : Hall A, First Floor, Plot No. 143-144, Udyog Vihar Phase - I, Gurgaon - 122015, Haryana, Tel : +91-124-4630870, Fax : +91-11-49522662

No.EPPL/DOE/Addl.Spillway/1604-160513 Dated13th May, 2016

To,
The Chief Engineer (Authority Safety)
Directorate of Energy
Government of Himachal Pradesh
Shanti Bhawan, Phase-III, Sector-6
New Shimla-9

Director
CEN(Gen)SO
CE (T&C)
CE (Hydel Sala)
SE (C Hdly
Sr.XEN
Legal Cell
ACF
S.O.
P.S.

Rec'd (Hdqrs.) No. 874 18/05/2016

Amity 17/05/2016

Sub: 100 MW Malana-II HEP – construction of additional spillway converting non-over flow blocks into spillway on right bank of dam.

Ref: DOE's letter No. HPDOE/CE/Authority Safety/Malana-II HEP/2014- 6392-93 dated 10.10.2014.

Dear Sir,

Kind attention is drawn to your letter under reference above forwarding the recommendations / observations of the Expert Committee deputed by Directorate of Energy for inspection visit of our 100 MW Malana-II HE Project and directing us to take action on the recommendations / observations of the Committee. One of the recommendations of the said Expert Committee was *"The provision of proper overflow spillway in the Dam should be planned so that water can safely pass in case under sluice gates do not work during high floods"*.

Accordingly, a proposal on the Construction of Additional Spillway in the Project has been prepared through an independent expert agency namely M/s Aquagreen Engineering Management Pvt. Ltd., and the same is enclosed. As per the advice tendered by the Expert Committee of DOE during its inspection of the Project, the Project Report has been prepared after considering the dam safety aspects. The cost of the proposed works will be incurred by the Project Proponent and submitted to the Hon'ble Punjab State Electricity Regulatory Commission, which is the appropriate Authority under the Electricity Act, 2003 to determine the completed cost (including additional capitalization) of the Malana-II HE Project. Construction of

31/1/25
Public Information Officer
-cum- Sr. Executive Engineer,
Directorate of Energy
H.P., Shimla-171 009

Regd. Office : Malana Stage – II Hydro Electric Plant, Power House Village Chowki, Near Jam, Chhota Kullu, Himachal Pradesh, Tel. +91-1902-273444, 4809276444, Fax : +91-11-43852507, email : powerhouse@everestpower.in, dehecfice@everestpower.in
Corp. Office : First Floor, Plot No. 143-144, Udyog Vihar Phase-I, Gurgaon-122015, Haryana, Tel. : +91-124-4630870, Fax : +91-11-49522662 Shimla, Shimla-171002 Himachal Pradesh | Telefax : +91-177-2627345
Fax : First Floor, Bhartiya Estate, New Bahai Bhuvan Road, Connaught Place, New Delhi-110001 www.everestpower.in
CIN: U40101HP2007PTC024679

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the additional spillway, which has been pointed out to be an essential safety feature, will neither increase the generation capacity of the Malana-II H.E. Plant nor it will interfere/ overlap with the levels of upstream project if any.

It is requested that the enclosed report may be appraised by the Directorate of Energy, Government of Himachal Pradesh and further advice/direction, as considered appropriate, be given to us in the matter.

Thanks & Regards
For **Everest Power Private Ltd.**

(Jaideep Lakhtakia)
General Manager

Enclosures: As above.

31/1/25
Public Information Officer
-cum- Dy. Executive Engineer,
Directorate of Energy,
H.P., Shimla-171005

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1/36



DIRECTORATE OF ENERGY
GOVERNMENT OF HIMACHAL PRADESH
SHANTI BHAWAN PHASE-III SECTOR-6 NEW SHIMLA-9
Phone/ Fax No: 0177-2673553, Email: manjeevarya5@gmail.com

No. HPDOE/CE /Authority/Safety/Malana-II HEP/201 - 1918-13 Dated: 01/06/2016

To

M/s Everest Power Private Ltd.
First House, Bhumian Estate
Nav Bahar Bhumian Road
Chotta Shimla, Shimla - 171002.

Subject:- **100 MW Malana-II HEP – construction of additional spillway converting non-over flow blocks into spillway.**

Reference:- **Your office letter no. EPPL/DOE/Add. Spillway/1604-160513 dated 13th May 2016**

Sir,

This is w.r.t your office letter under reference vide which the proposal on the cited subject, in compliance to the particular observation" to enhance the spillway capacity of Malana-II dam as per the requirement of BIS, IS: 1123-1984 to ensure the safety of the dam in particular & of downstream run of the river HEPs & people in large against failure/overtopping due to malfunctioning of gate / human error, even witnessed during August 2013 leading to overtopping of dam" vide inspection report forwarded vide this office even file letter no-- 6392-93 dated 10.10.2014 for needful. Also Dam safety directorate, CWC is giving more thrust to review the design flood in view of global warming & to provide/enhance the spillway capacity adequately in wider interest of all concerned.

The proposal of additional spillway (ungated) envisages:-

- converting the NOF blocks nos. 6,7,8 and 9 into overflow blocks with spillway crest level at EL. 2543.00m(FRL) & maximum water level in reservoir at EL. 2545m(top of dam) to provide an overall water bay of 42m(6 bays of .0m & one bay 4.5m wide) enabling to safely pass a discharge of 260.97 cumecs against the required 255.91 cumecs at MWL(2545m) for safe discharging of PMF (650 cumecs) considering one gate inoperative.
- A flip bucket with plunge pool arrangement for energy dissipation.
- RCC Bridge (70 R, Class AA) over proposed spill- by piers with invert & top of deck slab as 2545.10m & 2545.75m respectively & shall be connected to existing NOF blocks at EL2545.0m by a slope of 1V: 12H in NOF block no & 10.
- No enhancement in the rated generation capacity due to construction of the proposed additional spillway.
- No interference in levels of upstream HEPs.
- The envisaged changes in salient feature due to proposal vis-a-vis completed project is annexed at Annexure A.

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-cum-Executive Engineer,
Directorate of Energy,
H.P., Shimla-171005

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The design calculation for proposed sp :way discharge, stability analysis with proposed spillway & after dismantling NOF for its : plementation, hydraulic & structural design for proposed spillway & allied works annexed ith the proposal by & large seem to be in order.

In view of above, it is requested to imp ment the cited proposal expeditiously. This is also essential from dam safety aspects & ever highlighted/ thruster by Directorate of Energy, GOHP & dam safety directorate CWC, time & gain through various communications/ minutes of meeting, subject to fulfillment of the follow g:-

- The various important features of the pr osed spillway needs to be vetted/ optimized through Model studies for hydraul efficiencies w.r.t. discharge capability, efficient energy dissipation without any erosi at toe & right bank having PWD road for safety of the dam in particular before its im lementation.
- Due precaution in construction as per specific on & detailed design engineering needs to be carried out.
- All the codal formalities, if required, w.r.t. imp mentation from concerned agencies i.e disposal of generated muck, provision of alte ate road/ passage to village located on bank right, safety of downstream HEPs & h bitats besides no interference with the levels of any upstream HEPs needs to be follow d/ ensured.

Yours sincerely,

11/1/16

Chief Engineer (Authority),
Directorate of Energy
Govt. of Himachal Pradesh

Copy to the Additional Chief Secretary (Power), to the G t. of Himachal Pradesh, Shimla-171002 for kind information please.

1/6/16

Chief Engineer (Authority),
Directorate of Energy
Govt. of Himachal Pradesh

31/1/25

Public Information Officer
-cum- Sr. Executive Engineer,
Directorate of Energy,
H.P., Shimla-171005

Received by Ashish (EPPL)
01/06/16

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EVEREST POWER PRIVATE LIMITED

Corporate Office: Hall A, First Floor, Plot No. 143-144, Udyog Vihar Phase-I, Gurgaon – 122015, Haryana, Tel.: +91-124-4630670, Fax: +91-11-45823862

No.EPPL/DOE/Addl.Spillway/20171110 Dated 10.11.2017

To,
The Chief Engineer
Directorate of Energy
Government of Himachal Pradesh
Shanti Bhawan, Phase-III, Sector-6
New Shimla-171009

Sub: Submission of revised DPR of 100 MW MALANA-II HEP Additional spillway construction converting non-over flow blocks to spillway on right bank of dam.

Dear Sir,

The revised DPR of additional spillway construction at 100 MW MALANA-II HEP project along with physical model studies carried out by IIT Roorkee is enclosed for your kind perusal and approval please.

Thanking you sir.

Yours faithfully,
For Everest Power Private Ltd.

(Dr. Surendra Singh Garhia)
Chief Operating Officer

Enclosures: As above.

31/1/25
Public Information Officer
cum- Executive Engineer,
Directorate of Energy,
H.P., Shimla-171005

Plant Office: Malana Stage – II Hydro Electric Plant, Power House and Colony, Jari Chowki, Near Jari, District Kullu, Himachal Pradesh,
Phone: +91-9805015444, 9805015444, Fax: +91-11-43552507, email: malanahouse@everestpower.in, delhioffice@everestpower.in,
Registered Office: First House, Dhannon Estate, Nan Behar Bhuman Road, Chotta Shimla, Shimla-171002, Himachal Pradesh | Telefax: +91-177-2627345
www.everestpo...
CIN: U40101HP2001...02879

Information Supplied to Sh. Sumit Mahar
Under RTI Act, 2005.

DIRECTORATE O[F] ENERGY
GOVERNMENT OF HIM[A]CHAL PRADESH
SHANTI BHAWAN PHASE-III SE[C]TOR-6 NEW SHIMLA-9
Phone/ Fax No: 0177-2673553, Emai[l]: ceauthoritydoe@gmail.com

No. HPDOE/CE /Authority/Malana-II/2018- 8 60 Dated: 02/02/2018

To

M/s Everest Power Private Limited,
First House, Bhumian Estate, Nav Bah[a]r Bhumian Road,
Chotta Shimla, Shimla-171002, HP.

Subject:- **Submission of revised DPR of 100 MW Malana-II HEP Additional spillway construction converting non-over flow blocks into spillway on right bank of dam.**

Ref:- **Your letter No. EPPL/DOE/Addl. Sp[i]llway/20171110 dated 10.11.2017.**

Sir,

This is with reference to your offic[e] letter under reference wherein you have forwarded revised proposed Additional Spillway Construction converting non-over-flow blocks into Spillway on right bank of dam by car[r]ying out the necessary model studies as advised by the DoE vide No. HPDoE/CE/Authori[ty]/ Safety/ Malana-II HEP/2014-1912-13 dated 01.06.2016. The report dated Sept. 2017 r[e]garding Physical Model Study of ungated Surface Spillway Arrangement submitted by Dept[t]. of Civil Engineering of IIT Roorkee has been annexed with the proposal. The modification [i]n the arrangement of surface spillway & Energy Dissipation system thereof from earlier Fl[i]p Bucket Type with Plunge Pool to Stilling Basin with broad crested weir has been found inc[o]rporated as per recommendations of the Model Studies in the revised proposal.

In view of above, the proposal for s[e]tting up of additional surface spillway is found to be in order and as such, you are reque[s]ted to implement the proposed spillway works expeditiously due to its urgent requirement [f]or the safety of dam. In addition, following points to be looked into during construction:

- Due precaution with respect to spec[i]fications and detailed design engineering as per applicable BIS codes be carried [o]ut for safety of Dam Structure.
- All the codal formalities if require[d] w.r.t. implementation from concerned agencies, may be completed.

31/1/25

Yours faithfully,

Public Information Officer
-cum- Sr. Executive Engineer,
Directorate of Energy,
H.P., Shimla-171005

Chief Engineer(Energy), 2/2/18
Directorate of Energy,
Govt. of Himachal Pradesh.

Received
Abhishek (EPPL)
02/02/18

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Directorate of Energy, GoHP







20 Years Mandatory Inspection Report of Malana-I HEP (86MW) in Distt. Kullu (H.P.) (November 2021)

31/1/25

Public Information Officer
-cum-Sr. Executive Engineer,
Directorate of Energy,
H.P. Shimla-171005

Information supplied to all
Under RTI Act, 2005.

1.0 Background

In compliance to Director (Energy), GoHP, letter no. HPDOE/CE/Authority/Malana-I HEP (86 MW)/2021-6026-30 dated 02/11/2021, the 20 Years Mandatory Inspection and annual Dam Safety Audit of Malana-I HEP (86 MW) was carried out by a team of DoE w.e.f. 22/11/2021 to 27/11/2021. Following were the team members:-

Directorate of Energy, GoHP:-

1. Er. Deepak Jasrotia, Superintending Engineer

Empanelled Technical Experts DoE, GoHP :-

1. Er. K.K. Goel (Rtd. Chief Engineer, Civil (C/M)
2. Er. B.S. Mehta (Rtd. Dy. Chief Engineer, (E)

Malana-I HEP (86 MW):-

1. Er. T.K. Trehan, Vice President (O&M)
2. Er. M.A. Rafiq, Sr. Manager (E)
3. Er. H.C. Sharma, Manager (C)
4. Dr. Ashok Kumar, Deputy Manager (EHS)
5. Sh. Sunny Thakur, Assistant Manager
6. Er. Ankit Bakshi, Sr. Engineer (E)

The DoE team was assisted by Er. Harshveer Singh J.E., DoE.

2.0 Introduction

As per the refereece from Directorate of Energy the scope of work was to inspect the Project with respect to maintenance of Project assets to the required standard by the IPP, in a condition to ensure the specified generation capabilities and residual life of the Project at the rated capacity for at least next 20 years at any point of time as per the provision contained in Hydro Power Policy of GoHP regarding mandatory Inspection of commissioned projects during the **10th, 20th, 30th and 35th year** of operation.

Further as per the reference from Directorate of Energy the scope of work was also to inspect the dam (Barrage) of Project w.r.t. NCDS mandatory Annual Inspection/Audit to be conducted by DoE being Dam Safety Organization (DSO) for the state of H.P. after the receipt of Pre and Post monsoon inspection being conducted by the dam owner.

10 years mandatory inspection of this project was carried out by a team of Empanelled Consultants of DoE w.e.f. 22nd April to 25th April, 2013. Present report contains details and observations of the project after 10 years mandatory inspection. The earlier details of the project from the date of commissioning up to April, 2013 already stands contained in the above said 10 years mandatory inspection report.

31/1/25

Public Information Officer
-cum- Sr. Executive Engineer,
Directorate of E
H.P., Shimla-17

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Malana HEP Stage-I has been built on river Malana (a tributary of river Parbati) to utilize a gross head about 505m available between the Barrage site D/s of Malana village and Power House site near village Chowki (P.O. Jari) , in Distt. Kullu of HP.

The project was allotted by the GoHP to M/s Rajasthan Spinning and Weaving Mills Ltd. (RSWML) in the year 1993 and MoU was signed with the IPP on 28.08.1993 and accordingly Implementation Agreement (IA) was signed on 13.03.1997.

The Detailed Project Report for 2x43 MW was submitted by the developer, M/s RSWML in 1998 and the DPR was approved by CEA for 2x43 MW installed capacity vide their letter no. II (HP / 11 / 98 - PAC - 74022-25 dated 27.07.1998 for an estimated cost of Rs. 381.39 Crore and accordingly TEC was accorded for an estimated completed cost of Rs. 341.911 Crore to construct the project in a period of 60 months from the date of financial closure. However the project was completed in 30 months with total cost/expenditure of Rs. 330 Crore (approx.).

As per the information supplied by the Project Authorities, the work on the Project was commenced on 01.01.1999 and the project was commissioned on 05.07.2001.

Evacuation of power from the Malana-I HEP (86MW) is through 132 kV D/C transmission line between 132kV Sub Station at the generation end (Malana-I) and Bajaura Sub Station at the receiving end. The Bajaura Sub Station belongs to HPSEBL whereas the Malana-I Sub Station and Transmission line belongs to the IPP. The total length of this D/C line is 24.10 km which comprises of 74 nos. of towers.

The salient features of the project as per TEC dated 27.07.1998 and as per actual execution by IPP are as follows:

Salient Features of the project Malana-I Hydroelectric Project (86 MW) are summarized below:

Location		
	As per TEC	**As per Execution**
State District River	Himachal Pradesh Kullu Malana (Tributary of Parbati)/ Beas	Himachal Pradesh Kullu Malana (Tributary of Parbati)/ Beas
Hydrology		
	As per TEC	**As per Execution**
• Catchment area	178.50 Sq. kms (including 76.20 Sq. Kms. Snow catchment)	178.50 Sq. kms (including 76.20 Sq. Kms. Snow catchment)
• Design flood	450 cumecs	614 cumecs

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-cum- Sr. Executive Engineer
Directorate of Energy,
H.P., Shimla-171005

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Diversion Barrage		
	As per TEC	**As per Execution**
• Length between abutments. • Number and width of spillway bays • Pond Level • Average River bed level at barrage axis	50m 3 Nos., 10 m width of each 1893.75 m 1889.00 m	**36m** **Ungated spillwier 22m long and gated undersluice sections of size 12m with 2 bays each of 5m.** **1894.20m** 1889.00m
Head Regulator		
• Bays • Width of head regulator • Design discharge	3 Nos 2.75m width of each 9.95 m 26.25 cumecs	**4 Nos. 2m x 1.9m each** 9.95m 26.25 cumecs
Desilting Arrangement		
• Number and size	3 nos. 102m x 11.5m x 5.2m each	**4 nos., 102m x 8.5m x 8.45m each**
Reservoir		
• FRL • MDDL • Live storage	1893.00 m 1879.00 m 24.90 ha m	1893.00m **1878.75m** 24.90 ha m
Diversion Channel		
• Type • Size	Trapezoidal channel 400m long, 25 minimum bed width	Trapezoidal channel 400m long, 25 minimum bed width
Head Race Tunnel		
• Type • Length & Dia. • Design Discharge • Velocity	D- Shaped, Concrete Lined 2800m, 2.85m Dia. 21.00 cumecs 2.896 m/sec	D- Shaped **(lined at few vulnerable locations only)** **3278m, 3.65m Dia.** 21.00 cumecs
Surge Shaft		
• Type • Height • Diameter	Open at top, restricted orifice 32 m 5m	**Inclined 72°54'**, Open at top, restricted orifice **254m (as reported by Project Developer)** **2m (5.6m at upper 70m)**

31/12/25

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-cum- Executive Engineer,
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H.P., Shimla-171005

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• Orifice Diameter	1.4m	
Pressure Shaft		
• Length, Type &Size	360m. Concrete/Steel lined 2.2m (Finished in horizontal reach) 2.5m (Finished) in vertical reach	**380m**, Concrete/Steel lined 2.2m (Dia.)
Penstock		
• No. & Type • Length/Dia • Length & Dia beyond bifurcation	One, surface 580m / 2.2m 8m, 1.5m	**One, surface** **480m / 2.2m** **5.8m, 1.1m**
Power House		
• Type • Installed capacity • Size (L x W x H) • Max. Gross Head • Min Gross Head • Rated head • Type of Turbine • Maximum TWL (Bellow Runner) • Rated Discharge • Highest Flood Level • Speed	Surface 2 x 43 MW 55x 18.7x 28.9m 505m 491m 480m Pelton, Vertical axis El. 1385.50m 10.50 cumecs El. 1385.5 m 500 RPM	Surface 2 x 43 MW 55x 18.7x 28.9m 505m 491m 480m Pelton, Vertical axis El. 1385.50m 10.50 cumecs El. 1385.5 m 500 RPM
Tail Race Tunnel		
• Type • No. and Size/ length of each duct • No. & size of combined duct	Cut & cover duct 2 nos. and 3m x 4m/5m each 1no. 4m x 3m, 80m long	Cut & cover duct 2 nos. and 3m x 4m/5m each 1no. 4m x 3m, 80m long
Transmission Line		
• No.	2 no. single circuit 132 kV	**1no. Double circuit 132 kV**
Power Benefits		
• Annual Energy Generation in 90% dependable year • Annual Avg. load factor	370.93 GWh 49.24%	328.77 GWh (Avg. of 20 years) 44.64%

31/1/25
Public Information Officer
Sr. Executive Engineer,
Directorate of Energy,
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Construction Period		
• Time period	5 years	**30 Months (Unit-I)** **32 Months (Unit-II)**

3.0 Detail of Project Components:-

As per site inspection detail of observations of various Project components is described as below:-

3.1 Diversion Barrage and Intake Structure:

Diversion Barrage is situated about 8.5 km from the Power House. Diversion Barrage of the Malana - I HEP project is an ungated spillwier with 2 nos. gated under sluices to divert design discharge of 26 cumecs (including silt flushing discharge) and inclined Intake Structure on the left bank of the Malana nallah with following features:



- Total length of diversion Barrage is 36m between the abutments, with ungated spill weir of 22m length and gated under sluice section of 12m with 2 bays each of 5m.
- Design flood discharge is 614m³ / sec.
- Under sluice section has 2 Nos. 5m x 3m vertical drum hoist lift gates with independent drum hoist.
- One maintenance gate (vertical lift) 5m x 3m size with independent gantry hoist.
- Inclined to the Barrage axis, 10m long Intake Structure has four intake bays each 2m wide.
- Intake gate, 4 Nos. 2m x1.9m vertical lift gates with independent drum hoist.
- One maintenance vertical lift gate 2mx1.9m size with independent gantry hoist.
- Sets of trash racks are there of adequate size.

31/1/25

Public Information Officer
-cum- Sr. Executive Engineer
Directorate of Energy
H.P., Shimla-171005

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Under RTI Act, 2005.

2/16

- Stilling basin type energy dissipation arrangement which lead the water to a 400m long 25 m wide trapezoidal channel to take the spilled water back to downstream of the river.



- The Intake / Head regulator consists of 4 numbers intake gates, each of sizes 2m x1.9m vertical lift drum hoist gate the hoisting arrangement of one of the gate has been replaced with new one, with one number maintenance gate which is operated by gantry crane. ***The condition of these gates & hoist structure is generally in order however the greasing of the ropes for all the gates is required for smooth operation of the gate, At the time of inspection only one bay was working corresponding to the available water which was coming from the downstream catchment of Malana -II HEP reservoir because the water being stored in the Malana -II HEP reservoir for peaking.***
- The power supply for the operation of the gates with Manual changeover is available from three independent sources that is one from HPSEBL, second from 63 kVA DG-Set and third from 25 kVA DG-Set.

3.1.1 The following observations were made during the inspection:

The Malana-I HEP barrage is located around 50 m downstream of Malana-II HEP tail race outfall. During the time of inspection Malana-II HEP was not in operation. Only the leakage water from TRT of Malana-II HEP and environmental flow of Malana-II HEP along with discharge of two small nallahs about 0.3 cumecs was flowing.

- Considerable Boulder deposition was observed upstream of barrage
- There is no major active area between barrage and TRT outfall of Malana-II HEP
- It was intimated by the IPP's representative that a cloudburst took place in July, 2018 when large scale debris came from the left Bank hillslope near the Desilting arrangement and intake area. The project authorities removed the debris and repaired the project components in a record time and at the same time keeping the project operative with two out of four desilting chambers.

21/11/18
Public Information Officer
cum- Sr. Executive Engineer,
Directorate of Energy,
H.P., Shimla-171005

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247



- The Malana Khad reach between the barrage and TRT outfall of Malana-II was observed filled with boulders and is restricting the smooth inflow of water into the barrage area of Malana-I HEP. An island has been formed upstream of ungated portion of the barrage, thereby disturbing the e-flow from the ungated portion of the barrage. This island and the boulders between the barrage and TRT outfall of Malana-II needs to be removed immediately, for the smooth operation. It is also advised that this stretch be properly channelized and maintained regularly.

3.2 Downstream Drainage:-

There is water accumulation immediately downstream of spillway and undersluice. The water is generally clean and no boils etc. observed in the downstream. However, there is silt deposition near exit and in between area. This needs to be checked by the Project Authorities.

3.3 Seepage Measurement:

There is no considerable seepage observed from gate or dam body.

3.4 Abutment Contacts:-

There is no presence of springs, leaks or wet spots near the abutments.

3.5 Dam and Dam Block Reach (Concrete Masonry):-

There is not any major alteration since last inspection, no changes, no misalignment of poles, fencing or walls etc. has been observed.

Public Information Officer
-cum- Sr. Executive Engineer,
Directorate of Energy,
H.P., Shimla-171005

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Under RTI Act, 2005.

3.6 Spillway and Energy Dissipation arrangement:

- There is no problem in inspecting spillway and there is no obstruction in or immediately downstream of spillway. There is no presence of displaced, offset or open joints neither any surface defects honeycombing, staining, stratification has been observed. The dissipation arrangement provided was filled with the water and debris and hence bottom surface could not be inspected properly.
- Some debris was observed accumulated on the right bank of the ungated spillway which needs to be removed.



- The inspection was conducted through this accumulated water only by visualizing from the top of the accumulated water. It is advised that available electronic and digital underwater techniques for proper inspection of the bottom surface of dissipation arrangement may be taken up and reported accordingly.
- Left of downstream glacis section of under sluice has been provided steel plates. It was intimated by the IPP representatives that the steel plates were provided as the M35 concrete was eroded with passage of time.



Public Information Officer
-cum- Sr. Executive Engineer,
Directorate of Energy,
H.P., Shimla-171005

Information Supplied to an Sumit Mahar
Under RTI Act, 2005.

These plates have been found rusted and needs immediate epoxy paint to restrict its further damage. Some rust was seen flowing with water from the right section also which needs to be checked and remedial measures taken accordingly.

3.7 Spillway Bridge, Hoist Bridge, Catwalks:



- The decking girders and structural supports of the Spillway Bridge and Hoist Bridge were found structurally sound. There are satisfactory arrangements to prevent the unauthorized entry in to the control structures and bridges. All the steel components were found painted 2 years back and require fresh painting. However all the structural members and joints observed sound and generally free from corrosion.
- Hoisting ropes needs lubrication as their outer single core of the rope may break due to operation in dried condition.
- Left side embankments of under sluice gates have been found bit disturbed and considerable vegetation, weeds growth have been observed. This needs to be checked.
- Maintenance gate hoisting arrangement was making huge noise during its operation which needs to be rectified.
- Two numbers under sluice bay each of size 3m x3m , having vertical drum hoist lift gates and one number vertical lift maintenance gate. The hoisting arrangement of maintenance gate was giving considerable noise the same needs to be tackled immediately.
- The condition of these gates & hoist structure is generally in satisfactory condition however the greasing/lubrication of the ropes for all the gates is required for smooth operation of the gates. At the time of inspection only one bay was working corresponding to the available water which was coming from the downstream catchment of Malana -II HEP reservoir because the water being stored in the Malana -II HEP reservoir for peaking.

3.8 Access Road to Barrage Area:

- There is a 8.5 Km project road constructed and is being maintained by the Project Authorities. This road provides access to Barrage, intake, Desilting arrangement and reservoir. A 400 m road bifurcates from this road to PPV location. There is also one access road (approx. 250m) to Adit-II which is ill maintained and left out totally un-attended.
- There is no access road to surge shaft. However a narrow path has been constructed from Adit-II to surge shaft top which is also almost un-attended.
- The access road to Barrage needs repair at some locations. Though patchwork was being done by IPP and needs to be completed soon.

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- A firefighting and drinking water supply line from Adit-II to anchor block-II of Penstock runs on the hill side of this road and is prone to be hit by the moving vehicles. Measures for the safety of this water supply line be taken to avoid any untoward incident in future.
- There are some vulnerable points on this road where incidents of stone falls/shooting stones do occur frequently. Though the warning sign boards/ signals have been provided but these are required to be placed well before such vulnerable points so as to caution the commuters well in time.
- There is bridge crossing on Malana Khad just D/s of the balancing reservoir. It appears that the cross section of the water way beneath this bridge is insufficient to pass the design flood to the tune of about 614 cumecs. It is advised that a study be carried out by the project developer to work out the cross sectional area beneath this bridge. If the said cross sectional area is insufficient to pass the said amount of flood discharge, then the bridge be redesigned and reconstructed accordingly.



- More safety/warning signals for tourist/trespassers be installed at suitable places for their safety and for ensuring smooth movement of vehicles on road.
- The road has not been still handed over to HPPWD as this road is being used by the general public also. Efforts may be made by the IPP to hand over this road to HPPWD so that necessary sanction/approval/passing for general use be granted by the competent authorities.

3.9 Instrumentation:-

Some instruments have been installed in the dam body and drainage gallery of the reservoir to assess stability of these structures. The instruments installed are working well.

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- There is also one automatic weather station installed at barrage site which is capable of providing 3 days advance weather forecasting detail viz. rainfall, wind velocity, humidity, temperature etc.



- IPP has also undertaken the work of GLOF forecasting in the U/s reaches of Malana Khad for which the tendering process for the feasibility of the same has been completed.

3.10 Communication Facilities:

Airtel and Jio mobile phones keep a direct communication with power house and other project components. Motorola handsets have also been provided to keep a communication with power house. In addition a local EPABX within Barrage has also been provided to communicate in the barrage intake area. A control room has been established at the Barrage area. IPP has plan to connect this control room by SCADA through laying OFC cable from Power House to maintain all time uninterrupted control of operation and surveillance of the intake area. At present the visual monitoring of important locations through 10 nos. CCTV cameras is carried out.

3.11 Emergency Action Plan (EAP):-

Emergency Action Plan has already been updated in October, 2021. The last Mock drill and other preparatory exercises have been taken up by the project developer on 3rd September, 2021.

- Hooters installed at different site were found ok and in working order.

3.12 Other Observations:-

- Gates operations are manually/ electrically operated from local panel as well as from Dam control room.

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- Safety and other firefighting apparatus are in order. The license renewal is due in January 2022.
- More warning signs needs to be installed in the barrage, intake, reservoir area for the safety of workers and public using the project road. Some boards showing Do's & Don'ts also needs to be installed at site for the safety of the workers.
- There is no discharge site of the project. The discharge data of Malana-II HEP is being taken and further data being observed at power house only. The discharge measurement system be developed at intake site.
- The silt laboratory is at Power house and the samples are being carried to this place.
- 10 number CCTV cameras have been installed for surveillance of Barrage and Intake sites. These cameras continuously keep surveillance on the Barrage, Intake, Desilting arrangement, Reservoir and left bank hill mass.
- Available power supply at Barrage site is HPSEBL supply however during failure of HPSEBL supply the same is restored through 2 no. DG installed at Barrage site having capacities 62.5 kVA and 25 kVA.
- The gauges at Dam sites require fresh painting /marking.



3.13 De-silting Basin

The water from the intake structure is fed to a surface desilting structure consisting of 4 Nos. independent delisting chamber through 4 Nos. curved bays to remove all particles down to 0.2mm size. The Desilting Structure has the following features:



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- 4 nos. 102 m long, 8.5m wide and 8.45m deep independent chamber designed to arrest silt particles size of 0.2mm and higher.
- 4 nos. gated flushing ducts of size 2m x 2.04m leading the flushing discharge back to the river.
- 8 nos. trash rack panels of size 4.5m x 1.4m each located on the top of spillway (downstream) of desilting chamber leading the water to the surface reservoir.
- 4 nos. screw type vertical lift gates of size 2m x 2.04m in the flushing ducts out of which 1 no. gate has been replaced.
- It was observed during the inspection that some algae and weed growth have taken place on the wall of connecting bays and chambers. This may be removed and cleaned.

3.14 Storage Reservoir:

A surface reservoir with the storage capacity of 24.90 Hectare meter, sufficient for 4 hour peaking has been created in the river terrace / channel as a concrete structure gravity wall of varying height adjacent to the river / diversion channel on the left bank and natural slope towards right bank of the river , cut and dressed to stable slopes. The reservoir has the following features:



- Reservoir wall is a concrete gravity type of structure of varying height with maximum height of 20.40m with a provision of stepped ogee type spill section. The FRL of reservoir is at EL 1893.0m, max water level is up to EL 1893.6 m and minimum water level of reservoir is at EL 1878.75m.
- Bed of reservoir and slopes have been protected through laying of concrete panels, on impervious membranes and drainage system below it.
- Effective system of sealing between the reservoir wall and panels / bed concrete panels have been provided with the construction joints. The impervious membrane provides protection against any leakage of water from the reservoir.
- Drainage system consisting of gravel , geo - textile membrane and with drainage pipes below the reservoir concrete bed of 300mm thick and geo membrane , concrete walls and hill slopes has been constructed to trap any underground seepage water on hill side or

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from river to prevent erosion / damage due to piping action and / or building up of up lift pressure.

- A low bed RCC channel has been provided below the reservoir floor to carry the water from reservoir to the HRT intake structure. This provision allows the availability of water for generation of power in case of any damage to the reservoir structure or during any desilting operation of the reservoir or repair work, which can be carried out without any interruption to power generation.
- System of drainage conduits below the reservoir bed and concrete walls have been provided to trap any leakage / seepage water safely into the river.
- 10 nos. of piezo meter have been provided below the reservoir in the drainage gallery to monitor uplift pressure below the reservoir.

It was intimated by the representative of IPP that approx. 10% of the live storage capacity has been reduced over the period of time due to deposition of silt and this reduction in the storage capacity is not affecting the generation in any way as it is below the MDDL. Earlier there was a silt excluder installed in the reservoir but the same has been removed now and silt extraction / reservoir cleaning is taken up through opening of reservoir drain valve during the high flood season.

- The gauge marking is to be taken up afresh also electronic instruments be installed for the water level observation in the reservoir and the same may be regularly monitored through CCTV cameras and connected to SCADA.
- The reservoir capacity analysis be taken up through latest available technique and also the reservoir floor healthiness be checked periodically through available under water electronic robotics system etc.

3.15 Intake Structure of HRT

It is an ungated Intake Structure which direct the water from the reservoir to HRT. It has the provision of trash racks consisting of 3 panels each of 4.8mx1.62m size with an opening of 40mm to avoid any trash entering into the water conductor system from the reservoir.



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- The TRCM installed at the intake of HRT was found in order.
- ***No gate has been provided at the intake of HRT, though a gate has been proposed in the TEC. But only a Trash Rack has been installed at this location. For the safety of the water conductor system in view of the cloud burst like incident already taken place during July 2018, it is advised that the possibility be explored for the installation of a gate at this location on priority.***

3.16 Head Race Tunnel (HRT)

From the reservoir, water is carried to the surge shaft through a 3278m long Head Race Tunnel which has the following features:

- This is a pressurized 3.65m dia. D- shaped, unlined tunnel. However, the shear zones / very poor rock zones and Adit Plug reaches have been concreted / steel lined.
- The invert of intake is at EL. 1870.5m
- Invert bed of tunnel is concrete lined with layer of shoteerte and grouted rock bolts in the overt.
- Gradient of the tunnel is 7 %.
- There are two nos. Adits, each of approximately of 300m long 5m D - shaped.

  As the project was in operation and HRT being a pressurised tunnel, this component could not be inspected. However as per the project representative this component is working satisfactorily for the last 20 years and no considerable leakage/ seepage and any other problem has been faced. During the span of 20 years only once the HRT has been drained off and a walk through inspection has beeg carried out by project authorities. Next time whenever HRT is drained off the DoE be informed and DoE official be made part of inspection.

- Out of two Adits, Adit-I has been plugged at face hence could not been inspected. However Adit-II has been inspected and following are the observations:

  "This is an unmanned but a gated Adit. The Adit leads to the junction of Pressure Shaft and HRT. There is a manhole placed in the Pressure Shaft liner which is accessible through this Adit. Being the only approach to the two important locations of the project it is advised that proper lighting arrangement be made in this Adit. A leakage was observed from the junction of Pressure Shaft and HRT which has been trapped and channelized. As reported by the representatives of the project the leakage is almost constant and does not vary seasonally or otherwise. It is further advised that the leakage be measured and recorded regularly. Project Authorities are further advised to make this Adit a manned location or the continuous surveillance through other electronic means be taken up as this Adit houses two important locations."

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3.17 Surge Shaft

HRT terminate into 254m high inclined restricted orifice type underground Surge Shaft which is open to the sky at an EL 1925. The surge shaft is having the following features:

- Surge shaft has 2m finished internal dia. except the top 70m where the finished diameter is 5.6m.
- The surge shaft is underground inclined at an angel of 72 ° 54 ' with the horizontal.
- At the beginning the surge shaft was unlined and only supported with shotcrete / rock bolts. However, later on steel liner has been provided.
- The invert of HRT at surge shaft is at EL 1677.4m.

The surge shaft was visited and following are the observations:

- ***There is no road to Surge shaft. However it is connected through an approach path. The Approach path to Surge shaft requires proper maintenance. As revealed by the Security officer the surge shaft site is inspected only once in every three months. The location is unmanned. During the construction time the material and other articles have been carried to this location through ropeway. The top of surge shaft is covered with steel mesh. Lot of vegetation, weed growth has been observed in and around the surge shaft. The steel mesh has lots of stones and debris etc. accumulated on its top. Overall it is visible that the site is ill maintained. Following is advised to be undertaken immediately:***
- ***The frequency of the inspection by concerned officials be taken up fortnightly.***
- ***As there is a LT line already placed the power supply be maintained for the surveillance of this location. The electronic surveillance through movable or fixed CCTV cameras can also be thought of.***
- ***The surge shaft top area needs to fenced properly and gated as well so as to restrict the entry of trespassers and wild animals etc.***
- ***It is advised that on the uphill side portion a stone/ masonry wall of considerable height and thickness be taken up to restrict the stone / debris falling directly into the surge shaft.***
- ***The surge shaft top may be roofed properly with CGI sheet roofing etc.***



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3.18 Pressure Shaft / Penstock and Valve Chamber:

A pressure shaft / penstock 896 m long, underground / surface has been provided D/s of surge shaft with the following features:

- Initial reach of pressure shaft is nearly horizontal and underground steel lined from surge shaft to valve chamber located at an El. 1656m. In this reach pressure shaft is 352 m long with internal dia. 2.20m.
- After Valve Chamber the Penstock is inclined and surface type up to power house. The length of this reach is 544m with 2.20 internal dia. This has been further bifurcated near power house into 1.10m dia. 5.8m long to feed two generating units.
- Steel liner thickness varies from 25mm to 38mm with ASTM - A - 516 grade 7 and A 537 class 2 Steel.
- 2.20m dia. butterfly valve with provision of counter weight closing has been provided in the valve chamber building d/s of the horizontal reach of pressure shaft.
- Team visited the penstock protection Valve House of size 13m long 10m width and 12m Height and inspected all the equipment installed in the valve chamber including Butterfly Valve. In the year 2016 MPCL replaced PPV Control panel to facilitate remote control of Butterfly valve through SCADA installed in power house. In the same year the OPU (Oil Pumping Unit) of the Butterfly valve has also been changed. With these replacement now all the equipment's were found in good working condition.





The valve can be easily opened & closed from the power house in emergency; the open / close signal of the valve is available in the power house. The power supply for the operation and indication of valve oil pressure system, opening / closing of valve etc. is available from the Power House. ***To increase the reliability of power supply it is advised that one no 3.5Core X 120mm LT cable be laid from power house, similarly one no. 12CoreX 2.5MM Control Cable be also laid from Power House Control room. Also to avoid the fast aging of the equipments it is advised to install De-Humidifier in the valve House.***

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The surface penstock is visible from the Valve House as well as form the Power House. The condition of the penstock is good and it has been adequately strengthened. The corrosion protection has been applied on the penstock.



Following are the observations:

The pressure shaft being an underground component and also the project was in operation could not be inspected. The surface penstock area was inspected and following is required to be taken up:

- ***The drainage system provide along surface penstock be cleaned a maintained to pass the rain water etc.***
- ***The painting of the penstock was taken up in 2019. It is advised that the fresh painting may be taken up early in 2022.***
- ***The approach/inspection path from anchor block-I to anchor block-II be constructed.***

3.19 Power House Complex:

A surface Power House, along with Unit Transformers and open Switchyard has been built on the right bank of river Parbati on a terrace, near village Chowki which has following features:

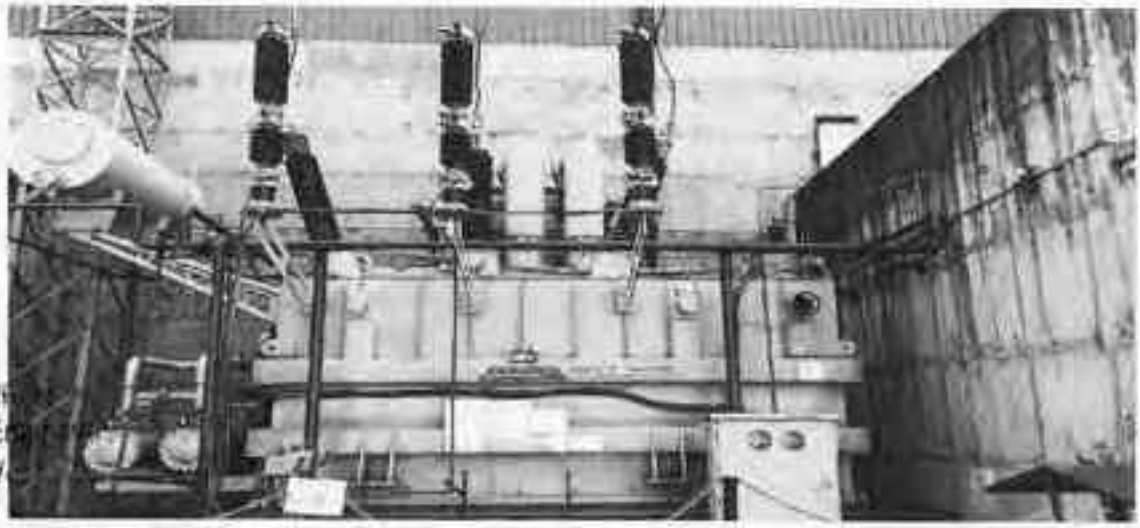
- Surface power house is 55.00m (L) x 18.7m (W) x 28.9m (H) RCC structure to house 2 nos. generating units and its associated Auxiliaries, each of 43 MW, with a provision of 15 % over load capacity. However now with modification in the nozzles the overload capacity is observed being taken up to 23%. This has been generally observed utilized during high flow season that is from mid-July to end of August.
- 6 - jet vertical Pelton turbines with rated speed of 500 rpm have been installed. The Rated Head of the turbine is 480m & maximum gross head is 505m and minimum gross head is 491m with a design discharge of 10.5m³ / sec. On overloading the discharge has been observed being consumed up to 12.15m³ /

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- The center line of the turbine is at El 1388m and highest flood level (H F L) is up to EL 1385.5 in tail race.
- MIV (Main Inlet Valve) is 1.1m dia. spherical valve.
- The Outlet Discharge from the units is led to the Prabati River through 80m long, 4mx3m cut and cover RCC tail race duct having provision of vertical lift gate of size 4m x3m with drum hoist at the out fall. A maintenance hoist type of gate operated hoisting arrangement installed on gantry crane has been provided to isolate the unit for repair just d / s of the power house.
- 2 Nos. Unit transformers, 3 phase, 58 MVA, 11kV / 132kV OFWF type are located outdoor of upstream of the power house. The fire protection system of this Transformer is with emulsifier system and necessary fire wall & hydrant system. The necessary hydrant system has been provided in the power house, transformer yard and around the switchyard.



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- 2 Nos. Aux. transformers, 3phase, 750kVA, 11kV / 0.40kV AN type located outdoor of upstream of the power house.
- One No. 132kV open, switch yard with 5nos. bays of size 65mx40m has been provided to evacuate the generated power to HPSEBL Grid at Bajaura.

After commissioning of Malana – II HEP the power plant operates in cascade with Malana - II HEP which is having diurnal storage for peaking, however on the day of inspection, one machine was running at 25 % load from the water which was available from the downstream catchment area of the Malana - II HEP reservoir and some accumulated water in Malana-I reservoir.

The (2 x 43 MW) generating units are housed in a surface Power House. The generating units are vertical Pelton turbine driven configuration type. The machines are generally in good condition as the project authorities have in the year 2005 replaced with modified runner of ANDRITZ make to obtain better efficiency and they have also replaced the Nozzle assembly of Unit-2 in the year 2010 with ANDRITZ make which they claim that these are capable to give more discharge. Further they stated that they are carrying - out maintenance regularly and have four numbers of spare runners and one set of nozzles for maintenance of plant. The nozzles and runners are got repaired and hard coated from M/s ANDRITZ Hydro after every year before monsoon season. The generators and its thrust and guide bearing are maintained properly during annual maintenance. The machines are operated from control room through SCADA which has been replaced in the year 2021 with ANDRITZ make. **The team advises project authority to change all the earlier version of analog meters with Digital meters to ensure the accurate measurement and status of the equipment on the panels in control room as well as on SCADA System.**



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The efficiency of the machines has not gone down due to regular and proper maintenance and replacing all silt susceptible parts such as Runner and nozzles etc. as being carried out by the company. It was reported 87 % at the time of commissioning where as it has been achieved up to 89% with replacement of Turbine parts. At partial load it even crosses 90%.

The team has noticed that the Oil Pumping Unit (OPU) of MIV has been replaced with nitrogen accumulator in the year 2021 with HYDEC make which has increased reliability for emergency closing of Spherical Valve and project as whole. It is advised that governor OPU be replaced on same analogy. The team had inspection of the runner and Nozzle of machine which was not in operation and noticed that some of the buckets have damaged due to pitting and asked the staff from where they get the same repaired. Project official revealed that these are being repaired from the reputed factories on outsource basis. "This aspect needs to be taken care of."

3.19.1 Communication System:

There is effective and adequate communication system available within Power house control room, Barrage and Valve house. It comprises the following:-

Power House to Barrage:

1. Walkie Talkie (MOTOROLA): 12 Sets
2. Airtel Mobile (Dedicated Company): 2No.
3. JIO Mobile (Dedicated Company): 2No.
4. EPBAX Barrage : 24 Lines
5. EPBAX Power House & Valve House : 100 Lines (Including residential and office complex)

3.19.2 LT Distribution System:

The power supply for the operation of the Power house Auxiliaries system is sufficient and a reliable system is available with Auto changeover with difference source of supply that is each UAT of 750 kVA which is capable to supply whole load of the power house and Butterfly valve. In addition 2 nos. 250 kVA DG-Sets are available to meet emergency requirement and black start of the power house. this system can be Auto changed from SCADA.

3.19.3 Cooling Water System:

The Cooling Water for the Generator, Bearings and Power transformer of the Units is open loop system comprising of 3 No. 93 KW Pumping sets which pumps the water from the tail race. Both units cooling systems can be fed from one pump and the header of cooling water is interchangeable. The drive for the cooling pump is now VFD drive which was installed during the year 2019.

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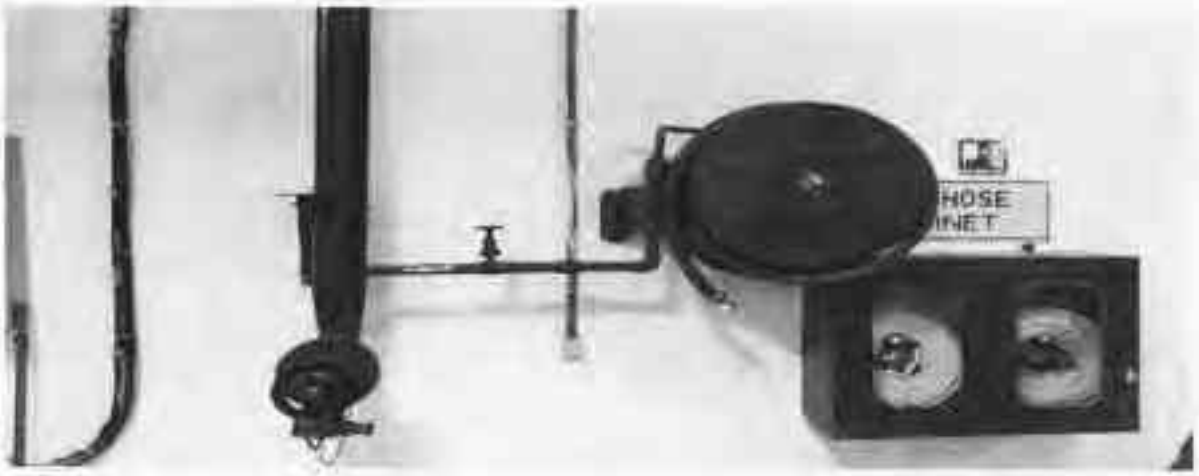
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3.19.4 Ventilation System:

The Ventilation system for power house is provided by circulating fresh air through 2 Nos. Ventilation fan installed at the entrance of Power house and duct has been routed in all the floors. The system is functioning well.

3.19.5 Firefighting System:

The Firefighting system for power house is provided through water, CO2 and portable extinguishers and water is used for hydrant system and Transformer Emulsifier system. The water is made available through a tank of capacity approx. 1.25 lac liters which is constructed at El: 1420 Mtr below Batterfly Valve. The tank can be filled from two sources either lifting from tailrace or filled from natural source through gravity. The water level of the tank is monitored in Power House Control room.



- CO2 system is installed for Generators
- Portable extinguishers have been installed adjoining to the panels and conspicuous locations as advised by Fire authority of HP.

Overall Condition of Plant:

All the electro mechanical equipment's housed in power house and switchyard are generally in good working conditions, however to have batter reliability and long life of some of the equipment the following modification may be carried out:

1. **Carbon dust collector system be installed for each Generating Unit**
2. **Break dust Collector system be installed for each Generating Unit**
3. **De-Humidifier system be installed for High Pressure (HP) & Low Pressure (LP) Compressors**
4. **The annunciators windows for Generators and Transformers be changed with a State of art system**
5. **Fire alarm panel be replace with state of art system**

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6. **Dressing of cables of SCADA system, DC Battery System and other location be carried out.**
7. **It is noticed that considerable vibrations of Units are transferred to the floor of power house, the same may be tackled by providing rubber seal between floor and barrel. This may be taken up on priority and immediately.**

The unit transformers temperature has never gone beyond 50° centigrade for oil and 52° centigrade for winding. No buchhaloz alarm and trip signals have been ever observed for these transformers, however it is suggested that these relays be observed and tested regularly.

From the above, it can be gathered that the company is maintaining the project components as per available guide lines in line with different codes and standard applicable for the operation and maintenance of the Hydro Electric Power Project. This has resulted in nearly 100% availability of the plant.

Operation and Maintenance schedule

A Supervisory Control and Data Acquisition (SCADA) system have been recently provided and installed for the efficient operation of power plant with three levels of controls:-

- From control cubicles of each element located adjacent to the equipment.
- From the control room.

A comprehensive condition monitoring system has been included in the design for safety reasons and followed by an effective maintenance strategy which, inter - alia, include.

- Air gap monitoring
- Partial discharge monitoring
- Stator winding and core temperature monitoring
- Machine vibration monitoring
- Shaft current monitoring
- Generator and turbine bearing temperature monitoring.

Proper metering and communication system suitable for transmission on SCADA system along with facilities for comprehended monitoring of important events and for post fault analysis has been provided.

During discussion with project Authorities visiting team asked for operation and maintenance system being adopted at the project. Project authorities, in response to the query, explained in detail their operation maintenance schedules of Electrical, Electro - mechanical equipment followed by them and also showed the record sheets maintained by them in this regard.

It was explained that the temperature of oil, winding, bearing, cooling water of all related equipment is checked physically as well as displayed on the panels and SCADA system on real time basis, level of oil, flow of cooling water and pressure of oil and water is also monitored for

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the applicable equipment physically daily and same is displayed on the panel and SCADA system on real time basis.

Silica gel condition of transformers, breaker SF leakage, current of LA, SF6 gas pressure of circuit barkers and oil or water leakage are physically checked daily.

The Physical conditions of all the equipment installed in the Power House & Switch Yard is physical checked daily and any abnormality is recorded and reported to the maintenance incharge for taking immediate rectification action.

Monthly Checks:

Project authorities also conduct monthly preventive maintenance on all the electro mechanical & hydro - Mechanical equipment.

The major works being done in this preventive maintenance are as follows:-

- Cleaning of equipment , tightening of all nuts & bolts , checking of all indicating lamps for their function , taking IR values of motors , checking function of limit switches , relays and cleaning insulators , checking of seals , taking specific gravity of batteries ' Functioning of electrical cards , cleaning of slip rings and changing of brushes of main exciter of generator
- Functioning of Stand by DGs sets , healthiness of fire fitting system and operation of crane and gate valves etc.

Annual maintenance

As stated by project authorities the annual major maintenance is carried out for each turbine by replacing runner and nozzle of the unit by repaired & coated runner and nozzle set. The bearing clearances of thrust bearing guide bearing and filling of oil is being regularly carried out. The adjustment is made in the shaft while thrust bearing pads are replaced. The conjugate operation of deflector and Nozzle is also checked during this maintenance. The Jacking and braking system is checked for clearance and functioning. Calibration of all the relays & instruments installed in the power plant and switch yard are carried out at the interval of two years.

- Closing and opening time of circuit barker is adjusted, closing and opening time of butterfly valve & spherical value is also verified. The oil sample of transformers oil and bearing oil are taken & tested.
- The log sheets are maintained properly for recording and showing the above activities performed on the equipment.
- From site visit it is also found that Project authorities have maintained the equipment properly.

In addition to this they have kept sufficient, stock of spare parts for plant maintenance.

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- They have also installed Job- Tech / Computerized maintenance management system (CMMS). This system comprises of online details of jobs to be under taken as per maintenance schedule along with the details of personnel working on the job. This provides advance notice to prepare for the maintenance of equipment when it is due.

3.20 TRT Outlet:

Tale race outfall structure was inspected and it has been observed that gates and other hoisting arrangements have not been operated for a long time. To the matter of surprise project authorities themselves accepted that gates operations and regular maintenance etc. have been left unattended for quite some time.



On the direction of the visiting team the maintenance work was taken up by the project authorities instantly during the course of inspection and gates operation was checked next day which were found satisfactory. It is advised that the TRT outfall structures are of utmost importance and its regular maintenance be ensured and executed periodically.

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3.21 Switchyard:

The switchyard is well maintained, well taken up and better managed by Project Authorities. The Unit-2 132 kV SF6 Circuit Breakers installed in switch yard have been replaced as they have rendered their useful life of 5000 operating cycle in the year 2018 ,whereas the condition of other Breakers is in reliable condition and have not been replaced. It is advised that the second feeder of DC for stand by tripping coil be taken directly from the battery board to switchyard board and distributed to individual breaker by modifying distribution through Busbar.



3.22 Transmission line

1 no.132 kV, D/C (double circuit) comprising 74 Nos. Towers, 24.10 km long transmission line has been constructed to evacuate the power to the HPSEBL system at 132 kV sub-station at Bajaura.

During these 20 years mandatory inspection of transmission line has not been inspected. However the operation and maintenance record has been provided by the project authority. As per Project authority the operation of the transmission line is working satisfactorily and no major failure / power interruption has been observed in last 20 years.

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3.23 Power generation and Power Sale Scenario:

Annual design energy in 90 % dependable year is 370.93 GWH. Whereas the average load factor has been worked out to be about 44.64 % based on 20 years generation detail against 49.24% mentioned in the TEC.

The 20 years generation detail as given by IPP is enclosed as **annexure –A**. It has been noticed that only once in 20 years i.e. in the year 2011-12 plant has exceeded the design energy.

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The maximum energy generation record has been scrutinized and it has been observed that during the high flow period of the year from July to August the plant has been operated at the overloading capacity to the tune of 110%-125% (108MW) maximum.

However, as per CEA notification no. 12/X/STD(CONN)GM/CEA Dated15 Oct.,2013 " The hydro generating units shall be capable of generating up to 110% of rated capacity (subject to rated head being available) on continuous basis.

The matter was taken up with project authorities and following has been gathered on this account through them:

- The as built unlined HRT is varying from 2.85 to 3.65m Dia. against 2.85m Dia. concrete lined HRT mentioned in the TEC. This variation is accounting extra discharge availability in the water conductor system.
- The turbines, generators, transformers and other auxiliary electro mechanical equipment are also capable of sustaining the over generation to the range of 20-30% extra. The detail is as per **annexure-B.**
- Further the runner and the nozzle replacement from "BHEL" make to "ANDRITZ" make has also resulted for attaining the higher efficiency from 0.87 to 0.89 which even goes to 0.92 at part load.
- The size of pressure shaft/Penstock liner has been kept same as per the TEC. So it can be presumed that the excessive extraction of the discharge through this component certainly increases the velocity during overloaded generation intervals.
- As the machines are Pelton wheel driven so pressure rise and over speeds are not going to increase in this condition as the deflectors comes in the front of nozzles when the machines are tripped/stopped to limit the pressure rise and over speed.
- The project is working for last 20 years and it has sustained these overloading conditions all the years and no problem/untoward incident encountered so far.

But all above aspect requires to be analyzed as per the present norms/notification of CEA, GoI and related safety concerns. Project Developer is requested to submit its detail stand to DoE on this aspect along with Generation and other relevant detail of all previous years as the said notification of CEA does not allow generation beyond 110% of rated capacity (subjected to rated head being available) on continuous basis and this should be obeyed to.

Certificate & Achievements:

It is pertinent to mention here that M/s MPC Ltd. have got a certificate from OHSAS 18001 : 2007 regarding occupational Health and Safely Management System Standard for the operation and maintenance of 86 MW Hydro Power Plant.

3.24 Security and Vigilance Plan

The visiting team has also gone into the details of deployment of security staff and safety measures adopted in the project. The project has well laid - out security plan along with deployment of security staff at various sensitive positions. In total about 32 Nos. security people have been deployed for this purpose.

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3.25 Environment and Corporate Social Responsibility

The visiting team has also gone in to the details of environment management system / activities and corporate social responsibility system / local development activities being carried - out by MPCL. Following are the observations:

The company has environment management system which is certified by QVQA Certification Authority as per NS - E N- ISO, 14001: 2004/150 14001: 2004, complaint. The certificate has been issued in October, 2012 was valid up to October 2015. This is being renewed after every 3 years.

The panel found Management of M/s MPCL quite well aware and responsive to the environmental issues.

3.26 Discharge & Silt Measurement / Silt management System:

3.26.1 Discharge Measurement

Discharge in Malana Stream is measured by taking level measurements at the spill channel by applying rectangular weir method for calculating discharge spilled over. There is real time monitoring of discharge data through serial link installed in the pond and data communication available through SCADA System. Release of mandatory environment discharge is also ensured by this method. Water level records have also been installed at all the four Desilting chambers for calculating the discharge going into the reservoir / generation of power. Discharge going through machine is also measured through sensors installed at the turbine.

As per Company records HFL at El.1896m was observed on 16th August 2011 which correspond to 100 cumecs of flood discharge. However The Intake structure has been designed to withstand the flood of intensity of 614 cumecs. Ungated spillway of 22m wide has been provided in addition to under sluice way having two vents size 5mx3m to handle heavy floods.

3.26.2 Silt Management System

Silt measurement:

There is no permanent silt measurement system at Barrage. However silt measurement is being done from time to time by taking water samples which are being sent to Lab. at AD Hydro - Manali . The test results shows that silt has been found varying from 58.45 ppm to 553.40 ppm. (Silt analysis report attached). It is further added that the company is planning to install an on line silt monitoring device also.

3.27 E-flow arrangement:

The e-flow arrangement has been ensured through an ungated spillway portion of Barrage on the right bank side. Though there are two monitors one each of HPPCB and Project authority installed at Barrage site but still it is confusing to understand that how the e-flow releases are

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being maintained & measured. Further the situation has been made complex due to formation of debris island just U/s of ungated spillway. So at present only the excess water of the pondage created in front of spillway gates and intake gates of Barrage goes downstream in the river as e-flow. Overall there is a considerable complexity observed as far as the smooth e-flow releases at Barrage is concerned. **The recommendations for channelization of the upstream stretch from Barrage to Malana-II TRT along with removal of accumulated debris in between has been given in the preceding Paras. It is advised that smooth e-flow release mechanism be accordingly developed at the time of channelization of the nallah in consultation with HPPCB.**

4.0 Dumping Sites:

There were 5 nos. dumping sites. Out of which two nos. dumping sites were created on acquired private land out of which one has been reclaimed and one was returned to land owner which was taken on lease. Three dumping sites were created on forest land. Out of which two are located near to Adit-I & Adit-II respectively of the project and the third dumping sites is near to the Barrage area. All the sites were found stable and the vegetation and plant growth has taken place on these sites. It is advised that the Project Authorities may expedite to handover these 3 sites back to the Forest Department, GoHP.

Team during the inspection visited some of these works and dumping site rehabilitate by IPP. The one of such site is near the power house site, where now project houses, their offices, colonies, and Guest Houses located on the terrace on right bank of river Parbati. This dumpling site has been very well rehabilitated by the company. They have grown fruit bearing trees such as apple, peach and other valuable species like Deodar, Kail etc. The area has been beautifully landscaped with grass and flowering plants. The team also observed newly grown young trees & saplings of coniferous trees and other flowering trees.

Head of the Project (HOP) informed that they have planted 2000 trees. He further informed that the company has very cordial relations , with the local people and has been providing them all amenities like , medicines , mobile health medical camps , school rooms , foot bridges foot paths etc. They are also providing training centers for the local youth.

5.0 Infrastructure:

The detail of assets of the project as submitted by the project authorities is appended as **annexure-C**. This includes the detail of infrastructure also.

Following are the observations and recommendations:

- The residential colony ahead of Jari bazar towards Bhunter requires some painting and other maintenance works etc. which may be taken up in due course of time.
- The renovation of the VIP guest house is being undertaken which is likely to be completed in March, 2022.

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- The treated sewage water is directly released to the river after treatment. This water may be used for irrigation, gardening etc.



- The infrastructure and colony on the left bank at Dunkhara is mostly of old prefab/construction time temporary buildings. It is advised that in due course of time as per availability of funds and requirement of infrastructure, all these buildings/assets be constructed as safe and permanent structures.



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6.0 Conclusion:-

Overall the project has been maintained very well and is running successfully for the last 20 years. No major threat or any untoward incident has taken place in all these year and all the components are running well for more than a decade time. The team of experienced & dedicated professionals is running the project up to the desired standard. The project has achieved international and national level certification on aspects like they have got a certificate from OHSAS 18001 : 2007 regarding occupational Health and Safety Management System Standard for the operation and maintenance of 86 MW Hydro Power Plant. Also the Project has environment management system which is certified by QVQA Certification Authority as per NS - E N- ISO, 14001: 2004/150 14001: 2004, complaint. The certificate has been issued in October, 2012 was valid up to October 2015. This is being renewed after every 3 years, which is appreciable.

However following are some important observations which requires immediate attention, understanding and rectification:

- The condition of Intake/ head regulator gates & hoist arrangements needs improvements on maintenance aspects .
- The river stretch just upstream of Intake of Malana-I HEP to TRT outfall of Malana-II HEP needs to be proper channelized for smooth flow and effective release of e-flow.
- The Bridge crossing on Malana Khad just D/s of balancing reservoir does not seems to have sufficient cross sectional area to pass the design flood to the tune of about 614 cumecs. It is advised that a study be carried out by the project developer to work out the cross sectional area beneath this bridge. If the said cross sectional area is insufficient to pass the said amount of flood discharge, then the bridge be redesigned and reconstructed accordingly.
- The reservoir capacity analysis be taken up through latest available technique and also the reservoir floor healthiness be checked periodically through available under water electronic robotics system etc.
- It was observed during inspection that no gate has been provided at the intake of HRT, though a gate has been proposed in the TEC. A Trash Rack has been installed at this location. For the safety of the water conductor system keeping in view of the cloud burst incident already taken place during July 2018, it is advised that the possibility be explored for the installation of a gate at this location on priority.
- The Adit – II leads to the junction of Pressure Shaft and HRT. There is a manhole placed in the Pressure Shaft liner which is accessible through this Adit. Being the only approach to the two important locations of the project it is advised that proper lighting arrangement be made in this Adit. A leakage was observed from the junction of Pressure Shaft and HRT which has been trapped and channelized. As reported by the representatives of the project the leakage is almost constant and does not vary seasonally or otherwise. It is further advised that the leakage be measured and recorded regularly. Project Authorities

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are further advised to make this Adit a manned location or the continuous surveillance through other electronic means be taken up as this Adit houses two important locations.

- The Approach path to Surge shaft requires proper maintenance. As revealed by the Security officer the surge shaft site is inspected only once in every three months. The location is unmanned. The top of surge shaft is covered with steel mesh but lot of vegetation, weed growth has been observed in and around the surge shaft. The steel mesh has lots of stones and debris etc. accumulated on its top. Overall it is visible that the ***site is*** ill maintained. Following is advised to be undertaken immediately:
    - The frequency of the inspection by concerned officials be taken up fortnightly.
    - As there is a LT line already placed the power supply be maintained for the surveillance of this location. The electronic surveillance through movable or fixed CCTV cameras can also be thought of.
    - The surge shaft top area needs to fenced properly and gated as well so as to restrict the entry of trespassers and wild animals etc.
    - It is advised that on the uphill side portion a stone/ masonry wall of considerable height and thickness be taken up to restrict the stone / debris falling directly into the surge shaft.
    - The surge shaft top may be roofed properly with CGI sheet roofing etc.

- Pressure Shaft , Valve Chamber & Penstock are well maintained but following is recommended for improvement:
    - To increase the reliability of power supply it is advised that one no 3.5Core X 120mm LT cable be laid from power house similarly one no. 12CoreX 2.5MM Control Cable be also laid from Power House Control room. Also to avoid the fast aging of the equipments it is advised to install De-Humidifier in the valve House.
    - The drainage system provide along surface penstock be cleaned a maintained to pass the rain water etc.
    - The painting of the penstock was taken up in 2019. It is advised that the fresh painting may be taken up early in 2022.
    - The approach/inspection path from anchor block-I to Anchor Block-II be constructed.
- For the Power House complex following is recommended :-
    - The team advises project authority to change all the earlier version of analog meters with Digital meters to ensure the accurate measurement and status of the equipment on the panels in control room as well as on SCADA System.
    - Carbon dust collector system be installed for each Generating Unit
    - Break dust Collector system be installed for each Generating Unit
    - De-Humidifier system be installed for High Pressure (HP) & Low Pressure (LP) Compressors

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- The annunciators windows for Generators and Transformers be with State of art system
- Fire alarm panel be replace with state of art system
- Dressing of cables of SCADA system, DC Battery System and other location be carried out.
- It is noticed that considerable vibrations of Units are transferred to the floor of power house, the same may be tackled by providing rubber seat between floor and barrel. This may be taken up on priority.

- After going through the 20 years generation detail as shared by IPP. It has been noticed that only once in 20 years i.e. in the year 2011-12 plant has exceeded the design energy. The maximum energy generation record has been scrutinized and it has been observed that during the high flow period of the year from July to August the plant has been even operated at the overloading capacity to the tune of 110%-125% (108MW) maximum.

  Though as per CEA notification no. 12/X/STD(CONN)GM/CEA Dated15 Oct.,2013 " **The hydro generating units shall be capable of generating up to 110% of rated capacity (subject to rated head being available) on continuous basis.**

  During the course of inspection the matter was taken up with project authorities and following has been gathered on this account through them:

  - The as built unlined HRT is varying from 2.85 to 3.65m Dia. against 2.85m Dia. concrete lined HRT mentioned in the TEC. This variation is accounting extra discharge availability in the water conductor system.
  - The turbines, generators, transformers and other auxiliary electro mechanical equipment are also capable of sustaining the over generation to the range of 20-30% extra.
  - Further the runner and the nozzle replacement from "BHEL" make to "ANDRITZ" make has also resulted for attaining the higher efficiency from 0.87 to 0.89 which even goes to 0.92 at part load.
  - The size of pressure shaft/Penstock liner has been kept same as per the TEC. So it can be presumed that the excessive extraction of the discharge through this component certainly increases the velocity during overloaded generation intervals.
  - As the machines are Pelton wheel driven so pressure rise and over speeds are not going to increase in this condition as the deflectors comes in the front of nozzles when the machines are tripped/stopped to limit the pressure rise and over speed.
  - The project is working for last 20 years and it has sustained these overloading conditions all the years and no problem/untoward incident encountered so far.

  This is an important aspect in view of said notification of CEA which does not allow generation beyond 110% of rated capacity (subjected to rated head being available) on continuous basis and also w.r.t. safety concerns of the project to an extent.

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All above aspect requires to be analyzed as per the prevailing norms/notification of CEA, GoI and related safety concerns. Project Developer is requested to submit its detail stand to DoE on this aspect along with Generation and other relevant detail of all previous years. So that appropriate action through appropriate authority be taken up in the matter.

- The e-flow arrangement has been ensured through an ungated spillway portion of Barrage on the right bank side. Though there are two monitors one each of HPPCB and Project authority installed at Barrage site but still it is confusing to understand that how the e-flow releases are being maintained & measured. Further the situation has been made complex due to formation of debris island just U/s of ungated spillway. So at present only the excess water of the poundage created in front of spillway gates and intake gates of Barrage goes downstream in the river as e-flow. Overall there is a considerable complexity observed as far as the smooth e-flow releases at Barrage is concerned. The recommendations for channelization of the upstream stretch from Barrage to Malana-II TRT along with removal of accumulated debris in between has been given in the preceding Paras. It is advised that smooth e-flow release mechanism be accordingly developed at the time of channelization of the nallah in consultation with HPPCB.
- There were 5 nos. dumping sites. Out of which two nos. dumping sites were created on acquired private land out of which one has been reclaimed and one was returned to land owner which was taken on lease. Three dumping sites were created on forest land. Out of which two are located near to Adit-I & Adit-II respectively of the project and the third dumping sites is near to the Barrage area. All the sites were found almost stable and the vegetation and plant growth has taken place on these sites. It is advised that the Project Authorities may expedite to handover these 3 sites back to the Forest Department, GoHP.
- The other infrastructures like office and residential buildings etc. are well maintained however the old prefabricated / construction time temporary buildings being put in use be replaced with permanent structures as per requirement of infrastructure and availability of funds in time frame manner.

The overall inspection was conducted with full cooperation from the management of Malana-I HEP (86 MW). The authorities are already keeping up the mandatory operational & safety standards and also maintaining most of the record w.r.t. various operational, maintenance and safety aspects etc. More active coordination with district administration, a continuous healthy association with local administration, locals, PRIs and surrounding inhabitants is essential which project authorities are keeping up, it requires to be carried forward. Regular stakeholder consultation meeting/mock drills in order to ensure the preparedness during emergency be conducted. The maintenance, operational and other related officers/staff deployed in the project are technically sound and are well aware of their responsibilities. Their regular up-gradation of skills with regard to the latest available technology must be taken up regularly.

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The inspection team thanks project authorities of Malana-I HEP (86 MW) specially Er. T.K. Trehan (Project Head) and also Er. H.C. Sharma (DGM), Sh. Sunny Thakur (Asst. Manager), Er. M.A. Rafiq (Sr. Manager), Dr. Ashok Kumar (Deputy Manager) and Er. Ankit

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Bakshi (Sr. Engineer) for making all the arrangements for extending their co-operation during inspection. The inspection report is based on the information provided by the project authorities, available documents and physical site inspection of various Civil, Hydro Mechanical and Electro-Mechanical components of the project.



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Superintending Engineer (DoE),
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(Er. K.K. Goel)
Empanelled Technical Expert (DoE)

(Er. B.S. Mehta)
Empanelled Technical Expert (DoE)

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Government of Himachal Pradesh
State Committee on Dam Safety- Himachal Pradesh

MINUTES OF 1ST MEETING OF THE STATE COMMITTEE ON DAM SAFETY CONSTITUTED BY GoHP VIDE NOTIFICATION DATED 24.05.2022 IN PURSUANCE TO THE PROVISION OF DAM SAFETY ACT, 2021.

Date: 18.11.2022 at 2:30P.M.-04:30P.M. **Venue-** Conference Hall, Directorate of Energy, GoHP, Shimla-09 and via virtual mode

A meeting of the State Committee on Dam Safety constituted by GoHP vide notification dated 24.05.2022 in pursuance to the provision of Dam Safety Act, 2021 was held under the chairmanship of the Chief Engineer (Energy) –cum-Chairman Ex-officio, State Committee on Dam Safety, Himachal Pradesh (SCDS-HP) on 18th November, 2022 in the office of Directorate of Energy, GoHP-Shimla-09 and also via virtual mode to review the status of implementation of Dam Safety Act, 2021 in the State of Himachal Pradesh, to review the status of individual Specified Dams in the State and for deliberation on the observations/suggestions/comments of members from the downstream States of Himachal Pradesh and technical members and the members from CEA& CWC. The participants from the Shimla vicinity were physically present in the meeting and rest were joined through virtual mode. The consolidated list of participants (Physically & Virtually present) is enclosed as **Annexure-I.**

At the outset, the Chairman of the State Committee on Dam Safety, Himachal Pradesh (SCDS), Chief Engineer (Energy), DoE: welcomed all the participants present physically & virtually in the meeting and briefly outlined the objective of 1st meeting of the State Committee on Dam Safety constituted by GoHP. He apprised the committee that State of Himachal Pradesh has number of considerable large/specified dams mostly related to Hydro Power generation and some are multi-purpose projects as well. Few of the dams are old and some have been recently constructed. He stated that Himachal

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Pradesh has the pride of having few of the National importance dams which are widely contributing in the nation's overall development and economy strengthening.

He further apprised that Dam Safety aspect has always remained of utmost importance for state of Himachal Pradesh. State has constituted and established it's Dam Safety Cell in the year 2013 and later Himachal Pradesh became the member of erstwhile NCDS in the year 2015. He stated that since then all the provisions and regulations as have been notified at National & State level are being implemented in the State.

He further added that now this has been strengthened more after the enactment of GoI, Dam Safety Act, 2021. The state is following all the mandates of this act. State Dam Safety Organization (SDSO) has been established in Directorate of Energy and State Committee on Dam Safety (SCDS) has also been formed. The regular monitoring on all the aspects covered in the Act are being taken up.

The Chairman of the Committee then requested Dy. Chief Engineer, DoE –cum- Head SDSO, Himachal Pradesh to give a detailed presentation on status of implementation of Dam Safety Act, 2021 in the State of Himachal Pradesh along with status review of individual Specified Dams in the State of Himachal Pradesh.

Er. Deepak Jasrotia, Dy. Chief Engineer –cum- Head SDSO, Himachal Pradesh once again welcomed all the participants physically and virtually present in the meeting. He further apprised that Dam Safety aspect has always remained of utmost importance for state of Himachal Pradesh since the time Dam Safety Cell was constituted in the year 2013 and later when Himachal Pradesh became the member of erstwhile NCDS in the year 2015.

He stated that after the enactment of GoI, Dam Safety Act, 2021, the state is following all the mandates of this act. State Dam Safety Organization (SDSO) has been established in Directorate of Energy and State Committee on Dam Safety (SCDS) has

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also been formed and both have come into force w.e.f. 24.05.2022. The regular monitoring on all the aspects covered in the act are being taken up.

Further, Er. Jasrotia apprised about the functions of SCDS as per the provisions contained in Dam Safety Act, 2021 to all the committee members and elaborated on the purpose of meeting.

Starting the presentation he gave a brief introduction about the 23 commissioned specified dams and 6 under construction specified dams in the State to all the committee members. Further, he apprised about the various activities performed by the SDSO Himachal Pradesh after the enactment of Dam Safety Act, 2021.

He stated that immediately after constitution of SDSO- HP a virtual meeting was conducted on dated 20.06.2022 by the SDSO Himachal in which all specified dam authorities were introduced to the main aspects of Dam Safety Act, 2021 such as functions of State Dam Safety Organisation and functions & responsibilities of dam authorities/owners along with elaboration on penalty provisions under the Act.

He apprised that the SDSO itself has conducted Dam Safety Inspection of Bajoli Holi HEP & Koldam HEP so far and the Dam Safety Inspection of remaining specified dams is being taken up as per schedule and will be concluded by March, 2023.

Er. Jasrotia stated that in collaboration with SDMA, a web portal has been developed wherein all daily dam safety parameters are uploaded by each Dam Authority 3 times a day and in case of any eventuality important information is shared immediately. On this web portal daily reservoir information, status of dams at various check points viz. Pool Elevation/ Reservoir level of the day (m) , Estimated Inflow (m3/s), Withdrawals (m3/s), Spillways Discharge/ Discharge Released (m3/s), Machine/ machines Discharge During Powerhouse Operations (timing as per schedule) (m3/s), Dam Site Weather, Precipitation (mm), Temperature (C), Wind Speed Direction (Km/Hr.), Siren, Alarms, Warning issued Prior to release of discharge, Any other relevant information w.r.t any

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kind of disaster/ damage/ emergency at any time and dam safety parameters can be monitored. Further 24 hour working Whatsapp group has been formed wherein hourly dam operation parameters are shared by all dam authorities and through telephonic call and other media also dam authorities inform SDSO and other stakeholders regarding sudden release of water, Cloud Burst or any similar kind of eventuality.

He stated that all the instructions as received from GoI, NDMA and SDMA are instantly shared and got implemented through Dam Authorities.

He further apprised that all the 23 Commissioned Specified Dam Owners in Himachal Pradesh have conducted the Pre -Monsoon Inspections for the year 2022 and submitted the reports to the SDSO Himachal same also stands shared with NDSA as by SDSO-HP. As the monsoon season is over, accordingly the Post monsoon inspections are being carried out by the Dam owners and these are targeted to be completed by December 2022.

Er. Jasrotia apprised that the Log Book system exists in 22 out of 23 Specified Dams in Himachal Pradesh. Koldam is one Specified Dam which updates all the data online and digitally. All the 23 Specified Dams in Himachal Pradesh are instrumented. All the 23 Dams have prepared Emergency Action Plan, Disaster Management Plan and Operation & Maintenance Manual which are being implemented by the dam authorities.

He shared that out of 23, 17 Commissioned Specified Dams have installed the Hydro Meteorological Stations & the implementation for Early Warning Systems as per CWC guidelines has been done by the 21 Specified Dam Authorities.

Head, SDSO then apprised that out of 23, 14 Commissioned Specified Dams have installed the Seismological Stations & the Risk Assessment Studies have been carried out by 13 out of 23 Commissioned Specified Dams.

He further apprised the individual project wise status of every Specified dam to the committee members. Further in the meeting Er. Jasrotia invited attention of the

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committee members on some serious & critical observations on few Dams which have come forward during the individual dam's inspections conducted by SDSO and as have been highlighted in the Pre & Post- Monsoon reports submitted by Dam Authorities.

The following critical points & observations as gathered from the Pre-Monsoon inspection reports and Dam Safety inspection of the Specified Dams conducted by SDSO were brought in front of committee by Head SDSO-HP and were accordingly deliberated upon in detail:-

1. Koldam HEP (800 MW):-

The dam is owned by Central Public Sector Undertaking NTPC and SDSO is construed as for the purpose of this act. However the issues relates were brought out as under:

"An issue regarding settlement and erosion of rock mass beneath Flip Bucket and sinking of plunge pool area in respect of Koldam HEP".

Head SDSO stated that it has been observed in this year inspection conducted by SDSO that the settlement and erosion of flip bucket and plunge pool area is going on. This is a long pending problem but during the inspection it was observed that now it has creeped out to an alarming level. It is visible from the huge horizontal cracks developed below flip bucket area that this entire zone is sinking. Erosion has already taken place in downstream and upstream river bank of plunge pool area. Though the erosion in the upstream of left bank has been checked to some extent by placing concrete tetra pods. In conclusion entire outfall area and plunge pool is sinking. The dilation/expansion joint of flip bucket & spillway has been reported widened 200 mm in last few years. It has increased drastically in last two years. It was informed that as an immediate remedy 73 cable anchors each 60 meters deep (each having 100 ton ultimate capacities) have been placed to restrict the movement of flip bucket. Out of these 73 cable anchors 3 are test anchors. But looking to the maximum design flood and also the amount of floods observed in river Satluj in past, these remedial measures seems insufficient. Though the project authorities are well aware of the gravity of matter and also have taken immediate

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short term measures but this is not sufficient for tackling the situation beyond a certain point.

Further Head SDSO requested DGM, Koldam who was present in the meeting to explain the issue to the committee members.

Er. Surender Garg, DGM, NTPC, Koldam apprised that NTPC authorities are well aware of this issue and the rectification work tender has already been awarded. He further added that due to excess backflow of Bhakra dam reservoir, the work could not be started yet and NTPC authorities are facing the water level problem from BBMB authorities. He stated that NTPC authorities are continuously taking up this matter with BBMB authorities so that rectification work can be started as soon as possible.

Taking the cognizance of the issue, SCDS members requested NTPC authorities to share the water level data to be maintained by BBMB with SDSO Himachal Pradesh for start of rectification work so that matter can be taken up with BBMB authorities immediately. Committee further advised that due care and precautionary measures be maintained so as to avoid any untoward incidents.

2. Larji HEP :

Er. Jasrotia apprised the committee about the issue regarding slow operation rate of existing TRCM. On this issue, the Chief Engineer (Generation), HPSEBL apprised that tender of new TRCM has already been awarded and the installation work is scheduled to be completed by Feb., 2023. Er. Jasrotia further apprised members that a stoplog has been stuck at bay No. 5 of Radial Gate No. - 5 for last so many years and this issue has not been addressed by the dam authorities. At this the Chief Engineer (Generation), HPSEBL apprised that the work of removal of stuck stoplog will be awarded by Dec., 2022. An issue of ill maintenance fish ladder was also discussed.

The SCDS requested the HPSEBL authorities to complete all the pending works in a time bound manner and submit compliance report to SDSO Himachal Pradesh.

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3. **Karcham Wangtoo HEP :-**

The Head, SDSO stated that though the Dam operation is going smoothly to the satisfactory level at this dam but there is a development which is proposed at this dam site which is "utilization of e-flow to construct an another unit of 1 MW at the left bank on Downstream side of dam for captive use". Further he stated that at present the matter is with the MoEF& CC, GoI as the dam authorities have taken up the matter with MoEF & CC, GoI for the environmental clearances.

On this, one of the technical committee members Shri. Sharwan Kumar, Chief Engineer (CEA) stated that this is a well raised issue by the Head, SDSO and he appreciated that all such modifications, changes or rectifications in the existing dam body be necessarily brought to the knowledge of SCDS.

4. Malana-II HEP:-

Er. Jasrotia stated that there is an issue in Malana-II dam, it is about the overtopping. He apprised that an overtopping incident had occurred at this Dam in year 2013 due to sudden tripping of both the generating units and non-operation of the radial gates. After this incident, the panel of expert committee of Directorate of Energy inspected the Malana-II HEP and an additional spillway was recommended to prevent such incident in the future. Subsequently, the Project authority of Malana-II HEP had submitted proposal for construction of additional spillway to DoE in November, 2017 which was approved by Directorate of Energy, GoHP in February, 2018. However due to change in ownership of project, the work has yet not started and now new Dam owners i.e. M/s Greenko has been directed to initiate the work immediately so that any unwanted incident could be prevented.

On this, Er. Sharwan Kumar, Chief Engineer (CEA) stated that this is again well raised issue and appreciated that this issue was brought to the knowledge of SCDS-HP. He stated that these kind of matters may also be brought to the knowledge of CEA &

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CWC as well SDSO-HP was asked to submit a detail report on this in next SCDS meeting.

5. Sainj HEP:-

Er. Jasrotia stated that SDSO-HP time and again has raised the issue regarding non execution of Data interpretation of instruments in respect of Sainj HEP. As number of the instruments have been installed in the Sainj Barrage but their data interpretation is not taking place. On this, Chief Engineer (Design), HPPCL stated that HPPCL is working on this issue and data interpretation of the instrumentation will be ensured as soon as possible.

6. Sawra Kuddu HEP:

The Head SDSO apprised that the same issue of non execution of data interpretation of instruments is also there in respect of Sawra Kuddu HEP. He further apprised that there is another issue regarding minor dislocation observed between walls of Desilting Chamber I & II downstream of Dam body.

On this, Chief Engineer (Design), HPPCL, who is also technical member of the committee apprised the committee that the matter is well taken at the end of HPPCL and this settlement is stable & intact. Further it is under continuous observation and monitoring. He stated that no further settlement has been observed there since the dam started operation. He also apprised the committee members that data interpretation of instruments will soon be maintained.

7. Bajoli Holi HEP:

The Head SDSO apprised the committee that the SDSO has conducted Dam Safety inspection of Bajoli Holi HEP in June, 2022. At that time it was observed that HM works at the dam were incomplete and interpretation of instrumentation was pending. Further he apprised that a leakage/seepage of approx. 250-300 LPS from HRT has occurred from

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two locations. This leakage/seepage is being regularly monitored by the project authorities and preventive measures are being taken up to minimize leakage/seepage.

There were other general suggestions from members which are here as under:

The technical committee member on behalf of CEA stated that there is an issue of accessibility to various dam sites which is one of the important aspects. Hence, the roads & paths leading to the dam site be maintained properly by the Dam owners. He further stated that SDSO must take care of this aspect while inspecting the dams and necessary directions be imparted to the quarter concerned. He further asked whether it is the mandate of SCDS to monitor E-flow in respect of specified Dams.

At this Head SDSO apprised that the monitoring & reporting of e-flow is already taken up by all HEPs in the State. The e-flow monitoring devices have been set up by Himachal Pradesh State Pollution Control Board (HPSPCB) at all the Dam sites in the state and their regular online monitoring is done by HPSPCB. Further, they have shared the site link with the SDSO i.e. Directorate of Energy and it is available on website of HPSPCB and other stakeholders also. The online discharge observation is taken up and accordingly it is disclosed to all the quarter concerned. Hence this aspect is already covered and is being taken care of effectively in Himachal Pradesh. Er. Jasrotia further stated that the necessary direction regarding maintaining proper connectivity road/path to dam sites will be imparted to all dam authority again. Though it is at satisfactory level in most of the cases.

The committee member on behalf of adjoining state Uttarakhand requested to share the detail of projects already constructed and projects to be constructed on Pabbar River which is the tributary of Yamuna River and is an upstream catchment of Uttrakhand State. On this Head, SDSO stated that this information will be shared at the earliest.

At the end, Member Secretary, SCDS thanked all the participants for participating in the first meeting of State Committee on Dam Safety Himachal Pradesh and for providing their valuable suggestions.

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The meeting ended with vote of thanks to and from the chair.

Member Secretary,
State Committee on Dam Safety,
Himachal Pradesh.

No. HPDOE/ CE (Energy)/SCDS (Vol-I)/2022- 7856-72 **Dated:-** 05/12/2022

Copy to the following for kind information please:

1. The Special Secretary (Power), Govt. of Himachal Pradesh, Shimla-02.
2. The Chief Engineer, Hydro Project Appraisal Division, Central Electricity Authority, New Delhi.
3. The Chief Engineer (Generation), HPSEBL, Sundernagar, Distt. Mandi, HP
4. The General Manager (Civil) Chamera-I, NHPC Ltd., Chamba, Distt. Chamba, HP
5. The General Manager (Kol Dam), NTPC, P.O. Barmana, District Bilaspur, H.P.
6. The General Manager (CP),HPPCL, Himfed Building, BCS, New Shimla-09.
7. The Chief Engineer, BSL Project, BBMB Sundernagar, Distt. Mandi, H.P.
8. The Chief Engineer (Bhakra Water Service), Irrigation & Water Resources Department, Sinchai Bhawan, Sector-5, Panchkula, Haryana.
9. The Chief Engineer (Dam Safety), Department of Water Resource, Sector-18, Chandigarh, Punjab.
10. The Chief Engineer (I&FC), Irrigation and Flood Control, Jammu.
11. The Chief General Manager (Civil Design), SJVN Ltd., Shakti Sadan, Shanan, Shimla-06.
12. The General Manager (Civil Design), HPPCL, Sundernagar, Distt. Mandi, H.P.
13. The Chief Engineer (Shimla Zone), Jal Shakti Vibhag, Himachal Pradesh.
14. The Director, BCD (NW&S), Central Water Commission, New Delhi.
15. The Chief Engineer, Level-II, Irrigation Department, Uttrakhand, Dehradun.

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16. The Superintending Engineer (Co-ordination), O/o Chief Engineer, Indus Basin Organization (IBO), River Development & Ganga Rejuvenation, CWC, 617, Block IV, 6th Floor, Kendriya Sadan, Sector-9A, Chandigarh (UT).
17. Dy. Director, NDSA Secretariat, New Delhi.

DA: Meeting Snaps &
Kol Dam issue snaps

Member Secretary,
State Committee on Dam Safety,
Himachal Pradesh.

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Annexure-I

MEETING OF THE STATE COMMITTEE ON DAM SAFETY CONSTITUTED BY GOHP VIDE NOTIFICATION DATED 24.05.2022 IN PURSUANCE TO THE PROVISION OF DAM SAFETY ACT, 2021.

Date: 18.11.2023 at 2:30PM-04:30PM **Venue**- Conference Hall, Directorate of Energy, GoHP, Shimla-09

List of Committee Members present physically

1. The Chief Engineer (Energy) -cum- Chairman, SCDS, Directorate of Energy, Shimla.
2. The Chief Engineer (Shimla Zone), Member SCDS, Jal Shakti Vibhag, Himachal Pradesh.
3. The Chief General Manager (Civil Design), Member SCDS, SJVN Ltd., Shakti Sadan, Shanan, Shimla-06.
4. The General Manager (CP), Member SCDS, HPPCL, Himfed Building, BCS, New Shimla.
5. The General Manager (Civil Design), Member SCDS, HPPCL Sundernagar.
6. The Dy. Chief Engineer (Energy) -cum- Member Secretary, SCDS, Directorate of Energy, Shimla

List of Committee Members present virtually

1. The Chief Engineer (Generation) HPSEBL, Sundernagar, Distt. Mandi, HP
2. The General Manager (Civil) Chamera-I, NHPC Ltd., Chamba, Distt. Chamba, HP
3. The General Manager (Kol Dam), NTPC, P.O. Barmana, District Bilaspur, H.P.
4. The Chief Engineer, BSL Project, BBMB Sundernagar, Distt. Mandi, H.P.
5. The Chief Engineer (Bhakra Water Service), Irrigation & Water Resources Department, Sinchai Bhawan, Sector-5, Panchkula, Haryana.
6. The Chief Engineer (Dam Safety), Department of Water Resource, Sector-18, Chandigarh, Punjab.
7. The Chief Engineer (I&FC),Irrigation and Flood Control, Jammu.

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8. The Chief Engineer, Hydro Project Appraisal Division, Central Electricity Authority, New Delhi.
9. The Chief Engineer, Level-II, Irrigation Department, Uttrakhand, Dehradun.

Other participants present physically

1. The Sr. Executive Engineer, Directorate of Energy, Shimla-09.
2. Junior Engineer (Safety), Directorate of Energy, Shimla-09.
3. Junior Engineer (Dam Safety), Directorate of Energy, Shimla-09.
4. Data Entry Operator, Directorate of Energy, Shimla-09.

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Meeting Snaps

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Bottom Issue of Plunge Pool



Spillway & Plunge Pool Photograph during Construction



Settlement & Erosion took place in Left Bank of Downstream





Settlement and erosion of flip bucket and plunge pool area

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DIRECTORATE OF ENERGY
GOVERNMENT OF HIMACHAL PRADESH
SHANTI BHAWAN PHASE-III SECTOR-6 NEW SHIMLA-9
Phone/ Fax No: 0177-2673553, Email: dir.doehpu@nic.in, ceenergy09@gmail.com

No. HPDOE/ CE (Energy)/SCDS (Vol-I)/2023-306-303 Dated:- 05/07/2023

To

1. The Chief Engineer (Generation) HPSEDL,
Sundernagar, Distt. Mandi, HP
2. The General Manager (Civil) Chamera-I,
NHPC Ltd., Chamba,
Distt. Chamba, HP
3. The General Manager (Kol Dam)
NTPC, P.O. Barmana, District
Bilaspur, H.P.
4. The General Manager (CP),
HPPCL, Himfed Building, BCS,
New Shimla-09
5. The Chief Engineer,
BSL Project, BBMB Sundernagar,
Distt. Mandi, H.P.
6. The Chief Engineer (Bhakra Water Services),
Irrigation & Water Resources Department,
Sinchai Bhawan, Sector-5, Panchkula, Haryana.
7. The Chief Engineer (Dam Safety),
Department of Water Resource,
Sector-18, Chandigarh, Punjab.
8. The Chief Engineer (I&FC),
Irrigation and Flood Control,
Jammu.
9. The Chief General Manager (Civil Design),
SJVN Ltd., Shakti Sadan, Shanan,
Shimla-06.
10. The General Manager (Civil Design),
HPPCL, Sundernagar, Distt.Mandi, H.P.
11. The Chief Engineer (Shimla Zone),
Jal Shakti Vibhag, HimachalPradesh.
12. The Director, BCD (NW&S),
Central Water Commission, New Delhi.
13. The Chief Engineer,
Hydro Project Appraisal Division,
Central Electricity Authority, New Delhi
14. The Chief Engineer,
Level-II, Irrigation Department,
Uttrakhand, Dehradun.

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Subject :- **Minutes of 2nd Meeting of the State Committee on Dam Safety constituted by GoHP vide notification dated 24.05.2022 in pursuance to the provision of Dam Safety Act, 2021.**

Sir,

Please find enclosed herewith a copy of minutes of the second meeting of the State Committee on Dam Safety (SCDS) Himachal Pradesh held on 30th May, 2023 via hybrid mode i.e. virtual mode and physical mode for kind information please.

Yours faithfully,

D.A. as above:

Er. Deepak Jasrotia,
Member Secretary, SCDS
-cum- Dy. Chief Engineer,
Directorate of Energy, GoHP
Shimla-171009.

Copy to the following:

1. Member (Policy & Research), NDSA & Member Secretary NCDS, New Delhi for kind information please.
2. The Chief Engineer (PCA), HPSEBL, Vidyut Bhawan, Shimla-04 for kind information please.
3. The General Manager (Generation), HPPCL, Himfed Building, BCS, Shimla-09 for kind information please.
4. The Director, NDSA, Office of Director (P&R),4th Floor (South), Sewa Bhawan, R.K. Puram-66, New Delhi for kind information please.
5. The Director, NDSA Northern Region, Chandigarh & Superintending Engineer (Co-ordination), O/o CE, Indus Basin Organization (IBO) #617 Block IV, 6th Floor, Kendriya Sadan, Sector 9A, Chandigarh (UT) for kind information please.
6. Dy. Director, Dam Safety Design-II, Central Water Commission, 4th Floor Sewa Bhawan, R K Puram, New Delhi for kind information please.
7. All the HOPs/Owners of 23 Specified Dams (as per list attached) in Himachal Pradesh for kind information and necessary action please.

D.A. as above:

Er. Deepak Jasrotia,
Member Secretary, SCDS
-cum- Dy. Chief Engineer,
Directorate of Energy, GoHP
Shimla-171009.

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LIST OF COMMISSIONED SPECIFIED DAMS

Sr. No.	Project	Site Address
1	**Malana-I (86 MW)**	M/s Malana Power Company Ltd., Village Chowki, PO Jari, Distt Kullu-175105
2	**Baspa-II (300 MW)**	M/s JSW Hydro Energy Limited, Baspa-II H.E. Project, Sholtu Colony, P.O. Tapri, Distt. Kinnaur H.P.-172104
3	**Allain Duhangan (192 MW)**	M/s AD hydro Power Corporation Ltd. VPO Prini, Teh. Manali, Distt. Kullu-175143
4	**Karchham Wangtoo (1045 MW)**	M/s JSW Hydro Energy Limited, Karchham Wangtoo H.E. Project, Sholtu Colony, P.O Tapri Distt. Kinnaur H.P. -172104.
5	**Malana-II (100 MW)**	M/s Everest Power Pvt Ltd, Malana-II, HEP , First House, Bhumian Estate, Nav Bahar Bhumian Road, Chotta Shimla-171002
6	**Budhil (70 MW)**	M/s Greenko Budhil Hydro Pvt. Ltd. House No C-35, Sector -2,Phase- I , New Shimla , Distt Shimla, H.P. -171009 .
7	**Neogal (15 MW)**	M/s Om Hydropower Ltd., Neogal Hydro Electric Project, Vill. Bundla, PO Nachhir, Palampur, Distt. Kangra-176061
8	**Chanju-I (36 MW)**	M/s I A Hydro Energy Pvt. Ltd. D-17, Lane-I, Sec-I, New Shimla-171009
9	**Giri (60 MW)**	The Chief Engineer (Generation) HPSEB Ltd, Sunder Nagar, Distt. Mandi, HP-175019
10	**Larji (126 MW)**	The Chief Engineer(Generation) HPSEB Ltd, Sunder Nagar Distt. Mandi, Himachal Pradesh
11	**Sainj (100 MW)**	The General Manager, Sainj (HEP) HPPCL, Sarabai, Bhuntar Distt. Kullu (H.P.) 175125
12	**Bhakra Dam (1325 MW)**	The Chief Engineer, Bhakra Beas Management Board(IW) Nangal Township, District Ropnagar (PB) Pin-140124
13	**Pong Dam (396 MW)**	The Chief Engineer, Bhakra Beas Management Board(IW) Talwara, District Hoshiarpur(PB) Pin-144216

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14	**Pandoh(Beas Satluj Link) (990 MW)**	The Chief Engineer, Bhakra Beas Management Board(IW) Sunder-Nagar, District Mandi (H.P.)-175018
15	**Baira Suil (180 MW)**	The General Manager, NHPC Ltd., Baira Siul Power Station, P.O. Surangani, Tehsil Salooni. Distt. Chamba (HP), PIN-176317
16	**Chamera-I (540 MW)**	The General Manager, NHPC Ltd., Chamera Hydroelectric Project-I, Khairi, Chamba(H.P)-176325
17	**Chamera-II (300 MW)**	The General Manager, NHPC Ltd., Post Bag No.2, Karian Distt. Chamba (HP) PIN-176310
18	**Chamera-III (231 MW)**	The General Manager, NHPC Ltd., Village Dharwala, Post Bag-9, Distt. Chamba H.P.176310
19	**Parbati-III (520 MW)**	The General Manager, Parbati Stage-III,HEP,NHPC Ltd., Behali, P.O. Larji, Distt. Kullu (HP)-175122
20	**Nathpa Jhakri (1500 MW)**	The General Manager (P)/HOP, Nathpa Jhakri Hydro Power Station, Jhakri, Distt. Shimla, Himachal Pradesh-172201
21	**Koldam (800 MW)**	The General Manager, Kol Dam HEP, NTPC Ltd. P.O. – Barmana, District – Bilaspur, H.P.-174013
22	**Sawra Kuddu (111 MW)**	The General Manager, Sawra Kuddu(HEP) HPPCL, Hatkoti, Distt. Shimla (H.P.) 171206
23	**Bajoli Holi (180 MW)**	M/s GMR Bajoli Holi Hydropower Private Ltd., village Deol,Sub-Tehsil Holi, Tehsil Bharmour, Distt. Chamba, H.P. -176326

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Dam Safety Act, 2021

State Committee on Dam Safety



Directorate of Energy,
GoHP, Shimla-09
Himachal Pradesh

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Dam Safety Act, 2021

State Committee on Dam Safety
Directorate of Energy, GoHP

2nd Meeting

30th May, 2023
Conference Hall, Directorate of Energy, GoHP

Minutes

List of Participants

S.No.	Designation and Affiliation	Shri/Ms.
Chairman		
1	*Chief Engineer (Energy)-cum-Chairman, SCDS, Directorate of Energy, Shimla*	D.P. Gupta
Members Present Physically		
2	*The General Manager (CP), HPPCL, Himfed Building, BCS, New Shimla*	Nitin Garg
3	*Dy. Chief Engineer (Energy)-cum- Member Secretary, SCDS, Directorate of Energy, Shimla*	Deepak Jasrotia
Special Invitees Present Physically		
4	*The Chief Engineer (PCA), HPSEBL, Vidyut Bhawan, Shimla-04*	Sanjeev Vohra
5	The General Manager (Generation), HPPCL, Himfed Building, BCS, New Shimla	Rohit Sharda
List of Committee Members present Virtually		
6	The Chief Engineer (Generation), HPSEBL, Sundernagar, Distt. Mandi, H.P.	Sanjay Kaushal
7	The General Manager (Civil), Chamera-I, NHPC Ltd., Chamba, Distt. Chamba, H.P	Bharti Gupta
8	The General Manager (Kol Dam), NTPC P.O. Barmana, Distt. Bilaspur, H.P.	Rajendera Prasad Ahirwar
9	The Chief Engineer, BSL Project, BBMB, Sundernagar, Distt. Mandi, H.P	--
10	The Chief Engineer (Bhakra Water Service), Irrigation & Water Resources Department, Sinchai Bhawan, Sector-5, Panchkula, Haryana.	Arvind Sharma

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11	The Chief Engineer (Dam Safety), Department of Water Resource, Sector-18, Chandigarh, Punjab.	Amarjeet Singh
12	The Chief Engineer (I&FC),Irrigation and Flood Control, Jammu.	Manoj Gupta
13	The Chief Engineer, Hydro Project Appraisal Division, Central Electricity Authority, New Delhi.	Sharvan Kumar
14	The Chief Engineer, Level-II, Irrigation Department, Uttrakhand, Dehradun.	S.K. Saha
15	The Chief Engineer (Shimla Zone), Jal Shakti Vibhag, Himachal Pradesh.	Anju Sharma
16	The Chief General Manager (Civil Design), SJVN Ltd., Shakti Sadan, Shanan, Shimla-06.	Sanjeev Gupta
17	The General Manager (Civil Design), HPPCL Sundernagar.	R.K. Kaundal
Assisting officers/officials present Physically		
18	*Sr. Executive Engineer (Dam Safety), Directorate of Energy, Shimla*	Ashit Kashyap
19	*Sr. Executive Engineer (C/M), Directorate of Energy, Shimla*	Dheeraj Verma
20	*Junior Engineer (Safety), Directorate of Energy, Shimla*	Charan Dass
21	*Junior Engineer (Dam Safety), Directorate of Energy, Shimla*	Harshveer Singh
Other participants present Virtually		
22	All the participants/representatives from 23 Specified dams in Himachal Pradesh were present virtually in the meeting.	

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Government of Himachal Pradesh
State Committee on Dam Safety- Himachal Pradesh

MINUTES OF 2nd MEETING OF THE STATE COMMITTEE ON DAM SAFETY CONSTITUTED BY GoHP VIDE NOTIFICATION DATED 24.05.2022 IN PURSUANCE TO THE PROVISION OF DAM SAFETY ACT, 2021.

Date: 30.05.2023 at 2:30 P.M.-05:00 P.M. **Venue**- Conference Hall, Directorate of Energy, GoHP, Shimla-09 and via virtual mode

Sr. No.	Item
1.0 Preface	
	The 2nd meeting of the State Committee on Dam Safety constituted by GoHP vide notification dated 24.05.2022 in pursuance to the provision of Dam Safety Act, 2021 was held under the chairmanship of the Chief Engineer (Energy) –cum-Chairman, State Committee on Dam Safety, Himachal Pradesh (SCDS-HP) on 30thMay, 2023 through hybrid mode i.e. virtual mode as well as physical mode in the office of Directorate of Energy to review of activities taken up Post Enactment of Dam Safety Act-2021. This was to review of compliances of first meeting of SCDS held on 18.11.2022, to have detailed review on various aspects as per agenda annexed as **Annexure-I**. The participants from the Shimla vicinity were physically present in the meeting. The special invitees and HoPs were also invited for the 2nd meeting of the State Committee on Dam Safety. The consolidated list of participants (Physically & Virtually present) is enclosed as **Annexure-II.**
2.0 Welcome	
	At the outset, Er. D.P. Gupta, Chief Engineer (Energy) –cum-Chairman of the State Committee on Dam Safety, Himachal Pradesh (SCDS) welcomed all the participants present physically & virtually in the meeting and briefly outlined the objective of 2nd meeting of the State Committee on Dam Safety constituted by GoHP. The Chairman of the Committee then requested Er. Deepak Jasrotia, Dy. Chief Engineer –cum- Head SDSO (H.P.) & Member Secretary SCDS (H.P.), Himachal Pradesh to give a detailed presentation on status of implementation of Dam Safety Act, 2021 in the State of Himachal Pradesh along with status review of individual Specified Dams in the State of Himachal Pradesh. Dy. Chief Engineer –cum- Head SDSO, Himachal Pradesh once again welcomed all the

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Directorate of Energy,
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	participants physically and virtually present in the meeting. He further apprised that Dam Safety aspect has always remained of utmost importance for state of Himachal Pradesh since the time Dam Safety Cell was constituted in the year 2013 and later when Himachal Pradesh became the member of erstwhile NCDS in the year 2015 and later after enactment of Dam Safety Act, 2021.
3.0 Agenda Discussion	
	Starting the presentation, Er. Jasrotia gave a brief overview on agenda of the meeting and apprised that two new members have been added in the State Committee on Dam Safety, Himachal Pradesh. He further briefed about the 23 commissioned specified dams & 6 under construction specified dams in the State and apprised about the various activities being performed by the SDSO Himachal Pradesh after the enactment of Dam Safety Act, 2021.
4.0 Compliances of Previous Meeting	
	As per agenda, Er. Jasrotia further apprised the committee about the compliances of the 1st meeting of the State Committee on Dam Safety held on 18.11.2022 wherein the status of Log Book system, instrumentation, Emergency Action Plan, Disaster Management Plan, Operation & Maintenance Manual, Hydro Meteorological Stations, Early Warning System, Seismological Station and Risk Assessment Studies in respect of 23 commissioned specified dams in the State was presented before the committee. The information of Dams for which SDSO itself has conducted Dam Safety Inspections i.e. for Bajoli Holi HEP, Koldam HEP, Sawra Kuddu HEP, Giri HEP, Chanju-I HEP, Sainj HEP and Larji HEP was shared with committee and it was ensured that for rest of Dams SDSO will complete the inspection in scheduled time.
5.0 New Initiatives	
	Er. Jasrotia stated that in collaboration with SDMA, a web portal has been developed wherein all daily dam safety parameters are uploaded by each Dam Authority 3 times a day and in case of any eventuality important information is shared immediately and apprised the Committee that this web portal has been awarded for its functioning and better monitoring. Further he added that a 24 hour working Whatsapp group has been formed wherein hourly dam operation parameters are shared by all dam authorities and through telephonic call and other media also dam authorities inform SDSO and other stakeholders regarding sudden release of water, Cloud Burst or any kind of eventuality. He stated that all the instructions as received from GoI, NDMA and SDMA are instantly shared and got implemented through Dam Authorities.

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6.0 Annual Report on Dam Safety	
	Er. Jasrotia further apprised the committee the annual report has been prepared for the FY 2022-23 and is in stage of final submission and for the year 2023-24 all the 23 Commissioned Specified Dam Owners in Himachal Pradesh have conducted the Pre – Monsoon Inspections and reports are being submitted to SDSO – H.P.
7.0 Individual Dam Review	
	Further the project wise critical observations came out of the Post Monsoon inspection reports for the year 2022 and from Dam Safety inspections conducted by SDSO were placed before the committee. The project wise shared detail is under:
7.1	**Bhakra Dam (1325 MW)**
	The issue with regard to minor cracks in the NOF section of the dam, some active landslides near left abutment & on the road on left bank of reservoir and increasing trend of deflection in Spillway was brought in front of the committee. On this, Chief Engineer (Dam Safety), BBMB stated that the cracks are just surface cracks and these are being monitored continuously. He further stated that they are going for treatment of active landslides soon. In respect of deflection of spillway, he added that BBMB authorities are going to conduct the FEM studies with the help of CWC. He also informed that CWC has also recommended Elasto Plastic Analysis for the Bhakra Dam as the permanent creep has formed since last 56 years.
7.2	**Koldam HEP (800 MW)**
	Head SDSO (H.P.) stated that there is a serious issue regarding settlement and erosion of rock mass beneath Flip Bucket and sinking of plunge pool area in respect of Koldam HEP which was even raised in the first meeting of the SCDS Himachal. Er. Jasrotia informed that he personally has visited the site in the month of December, 2022 and observed that situation is critical as the plunge pool area is sinking and Flip Bucket has been detached. A site video was shown to all committee members. Further for having the latest status he requested the Koldam authorities to apprise the latest status of the rectification work. Er. Surender Garg, DGM, NTPC Koldam apprised that NTPC authorities have requested BBMB authorities for lowering the reservoir level so that the rectification work of the plunge pool area can be started. The BBMB authorities lowered the level of Bhakra reservoir to the desired level in November, 2022 and subsequently the diversion dike has been constructed in January, 2023 simultaneously jet grouting has been done so that the water from the river side should not enter the plunge pool area. After this dewatering has been started and it has been observed during dewatering that there is seepage from upstream and downstream side. As of now dewatering has been completed and plunge

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	pool area has been emptied. He further added that upper side works are already going on like grouting work and anchoring work and they are planning to complete the cable anchoring work and grouting work in the month of June, 2023. He apprised the committee that approx. 50% rectification works have been completed and rest of the work will be completed prior to next year peak season. The Chairman of the Committee asked the Koldam authorities whether there is any other issue in the dam structure and whether grouting& concreting is sufficient for the rectification work or any further study is required. At this, Er. Surender Garg, DGM, NTPC, Koldam apprised that the concreting& grouting is going simultaneously with the studies. Further immediate remedies which can be taken up immediately are in progress. Er. Jasrotia then asked Koldam authorities about the plugging of Luv diversion tunnel which is pending since long. At this, Er. Surender Garg, DGM, NTPC, Koldam apprised that the plugging of Luv diversion tunnel is in progress and will be completed by December, 2023. Er. Sanjeev Vohra,Chief Engineer (PCA), HPSEBL suggested NTPC authorities to seek possibility to install some instrumentation like differential transformers for monitoring the displacement of fresh concreting done during this season on priority. Er. Jasrotia requested the NTPC authorities to speed up the rectification work of the plunge pool area and ensure safety assurance during the peak season. At this, Er. Surender Garg, DGM, NTPC, Koldam apprised that NTPC authorities are making its full efforts for rectification work of plunge pool area. General Manager (Designs), SJVN, one of the SCDS members, suggested that a visit of the Koldam HEP can be planned by the Committee to know more about the present situation of the this critical issue. This was agreed upon by the committee.
7.3	**Pong Dam**
	Head SDSO, Himachal apprised the committee about the issue regarding excess/deficit material observed at certain places on downstream slope. At this, Chief Engineer (Dam Safety), BBMB apprised that in the year 2019 internal Dam Safety Review panel has observed the issue of excess/deficit material at certain places on downstream slope. For this, BBMB is going to conduct the Geophysical Investigation soon to know the internal health of the Dam. He further apprised that BBMB is also planning to conduct the survey of the downstream flow and this project is being taken under the DRIP.

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7.4	**Pandoh Dam**
	Er. Jasrotia apprised the committee about the issues regarding noticeable abrasion, cavitation and exposure of spillway glacis reinforcement at some places, standing pool which starts just ahead of the water bucket and extend upto 100 m seepage flow in gallery. At this, Chief Engineer (Dam Safety), BBMB apprise that BBMB is going to repair the spillway glacis exposed reinforcement area and will try to complete before monsoon. Regarding standing plunge pool ahead of the water bucket he stated that the concrete blocks of 1.5 m x 1.5m x 1.5m size have been put inside the pool so that the level of the water get raised & for this work is already in progress and will be completed before monsoon. About seepage in gallery, he stated that this seepage is normal and no abnormality has been observed. Head SDSO, Himachal apprised the committee about e-flow release issue and he apprised the committee that SDSO in co-ordination with the HP Pollution Control Board is trying to find solution for this issue. The Chairman of the committee asked the Dam authorities about the accumulation of silt in the reservoir. At this Dam authorities stated that the flushing is done to remove the sediments from the reservoir to increase the storage capacity of the reservoir however this is not proving fruitful to the desired level.
7.5	**Baira Dam**
	Head SDSO, Himachal apprised the committee about the issues regarding no approach to Gallery for inspection, submergence of upstream portion of Spillway& accessibility only after dewatering, minor leakage from bottom and side seal of both spillway gates, non-availability of Model studies, pending purchase of TRCM, silt accumulation in front of the Gate, leakage from bottom and corner locations of the gates at bay no. 2 &3 and non-working of few instruments. No officer from the Baira Siul Dam was present in the meeting so the observations stands pending for discussion. The committee took a strong view on this and decided to take up matter separately with Dam authorities.
7.6	**Chamera-I Dam**
	Er. Jasrotia apprised the committee about the issue regarding Hair line crack observed on breast wall D/s face at ± EL 757.5 m and NOF blocks, minor seepage in S8-L1 Joint, Max. total seepage to the tune of 36.17 LPS which includes seepage of entire dam body, non-availability of seepage data since first filling for comparison, accumulation of wooden logs in the reservoir reaches near to dam body in peak season, minor leakage from under sluices gate 2 & 3, non-availability of access for plunge pool and non-working of 1 No. Uplift device, 4 no. Peizometers, 33 no. Joint meters and 188 strain meters.

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	At this, Bharti Gupta, General Manager, Chamera-I apprised the committee that the Hair line cracks observed on breast wall D/s face at ± EL 757.5 m and NOF blocks are being monitored regularly and no development has been observed. Further she apprised that seepage of entire dam body is being monitored regularly and no increment has been observed. She also apprised that the wooden logs are being removed on daily basis. Head SDSO, Himachal further raised an issue of the downstream project i.e. Ranjit Sagar Dam with regard to flushing of silt from the Chamera-I HEP. He stated that this issue was also discussed in the SCDS Punjab committee meeting during their 1st SCDS meeting. In response to this, General Manager, Chamera-I stated that the project authorities of Ranjit Sagar Dam has not approached the Chamera-I authorities about this issue. At this, Er. Jasrotia apprised that the authorities of Ranjit Sagar Dam has approached SDSO Himachal regarding this issue and requested the Chamera-I authorities to share the information on this issue soon in co-ordination with the upstream dams so that the problem of Ranjit Sagar Dam can be resolved. Further, Chief Engineer (PCA), HPSEBL asked about the issue regarding non-working of most of the instruments in Dam Body as the number of non-working instruments is substantial. At this, General Manager, Chamera-I apprised the committee that these instruments are not working since the commissioning of the project & the authorities are planning to call the manufacturer company to repair these instruments soon. Chief Engineer (Energy) GoHP-cum-Chairman of the committee also raised the issue regarding the non-availability of access for plunge pool. He further added that access to the dam structures is necessarily to be provided from all sides. At this, General Manager, Chamera-I apprised the committee that it is difficult to provide access to the plunge pool area however possibility will be explored to provide access to the plunge pool area.
7.7	**Malana-I HEP**
	Dy. Chief Engineer-cum- Head SDSO apprised the committee about the issues regarding obstruction in access to spillway due to Boulders/ pebbles accumulation, damaged seal of under sluice gate no. 1, non-providing of gate at the intake of HRT. He also added that for the safety of the water conductor system keeping in view of the cloud burst incident already taken place during July 2018, and again in July, 2022 possibility be explored for the installation of a gate at this location on priority. He also apprised the committee about the Cloud Burst Incident Occurred on 6th July, 2022 due to which out of 4 desilting Chambers, 2 desilting chamber got chocked completely, and one was partially chocked. Though no serious damage took place and all the desilting chambers got restored within 36 hours as reported by the project authorities.

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	At this, the project authorities of Malana-I HEP stated that recently all the desilting chambers have been covered and a wall has been constructed around the desilting chambers to provide extra protection to the structure from incidents like floods, cloudbursts etc. For reservoir, a gate has been provided at approach to avoid any unwanted trash entry to the reservoir. Er. Jasrotia raised another issue with regard to gate providing at HRT intake. At this, Malana-I authorities stated that they had already discussed this with their designer and it has been suggested by the designer to provide a gate at reservoir entrance ramp and the same has already been provided. In addition to this, the desilting reservoir has been covered with the mesh which reduces the chances of trash entrance to the HRT completely. He requested the dam authorities of Malana-I HEP to share all information with SDSO Himachal via email or any other written document.
7.8	**Baspa-II HEP**
	Er. Jasrotia apprised the committee about the issue regarding silt accumulation in Baspa-II HEP reservoir. He stated that an inspection has already been carried on 19th May, 2023 by the SDSO and as per inspection the reservoir capacity has reduced drastically to 60%, out of 79.14 hect. Mtr. Live storage the available storage is only about 30 hect. Mtr. and the overall reservoir area is decreasing drastically though the project authorities are tackling the issue through excavation of accumulated silt. But the alternate measures needs to be devised/explored to overcome this issue on priority. At this, the HoP of Baspa-II HEP stated that with span of 20 years of commissioning of the project, silt has accumulated to this extent and they are trying to find out a practical way to tackle this problem. In response to submission of HoP- Baspa-II HEP & observation raised by Head SDSO Chairman suggested that as approaches are available on both the banks of the reservoir area so tower cranes can be installed/mounted at both the banks and further with the help of clamshell, silt can be lifted out and disposed of to the suitable dumping site. Further Er. Jasrotia added that project authorities should think about this serious issue and should find out a solution to resolve this issue. He also requested the project authorities to submit a proposal within a month so that this issue can be resolved as soon as possible. He stated that with regard to dumping issue project authorities must search suitable land in the nearby vicinity and accordingly after undertaking all necessary approval from different authorities should made the dumping site function.
7.9	**Chamera-II HEP**
	Dy. Chief Engineer-cum- Head SDSO apprised the committee about the issues regarding indication of landslide at the L/B of reservoir rim between RD 165 m to 400 m, seepage to the tune of 18.06 LPM combined from all sources of drainage gallery, minor leakage from

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	plugged Adit-2, replacement of Radial Gate 4rubber bottom seal and non-working of 1 no. Joint meter and 1no. burden gauge (uplift pressure pipe). At this, representative from Chamera-II HEP stated that at present left bank is stable & no further deformation has been observed and seepage to the tune of 18.06 LPM combined from all sources of drainage gallery & Minor leakage from plugged Adit-2 is intact and being monitored regularly. He further added that the rubber bottom seal of Radial gate no. 4 has been replaced and for working of 1 no. Joint meter and 1 no. burden gauge (uplift pressure pipe)possibility is being explored.
7.10	**Larji HEP**
	Er. Jasrotia apprised the committee about the latest observations of the inspection carried by SDSO. This was with regard to not having proper mechanism of e-flow which is being released through gate no. 1, leakage in gates, repair work required for the damaged seals and damaged glacis. Updation of status of instrumentation provided at barrage site and essential instrumentation to be provided, repair of damaged Fish ladder and installation of automatic early warning system. He further added that there were few other issues regarding installation of new TRCM and removal of stuck stop log. However during the SDSO inspection it has been observed that stuck stop log has been removed and installation of new TRCM is in progress. The Chief Engineer (Generation), HPSEBL state that provision of e-flow is not in built in DAM as it was not in design, however the e-flow is released by lifting the Gate. He further apprised the committee that the repair work of glacis and changing of damaged seals of the gates will be completed by this year. He further added that instrumentation done earlier at the time of commissioning is not working and for new instrumentation, HPSEBL is in process of taking up fresh instrumentation in the DAM. He also added that the issue of fish ladder is being taken up and rectification /modification measures are to be started soon.
7.11	**Nathpa Dam**
	Dy. Chief Engineer-cum- Head SDSO apprised the committee about the issues regarding minor leakage from gates of Chamber No. 1, Chamber No.2 & Chamber No.3, seepage /sweating on roof & side walls from transverse gallery extending below the bucket in block 5 and leakage from bottom corners due to loss of contact with seal. At this, representative from the Nathpa Dam apprised the committee that leakage from the gates of the Chamber No. 1, Chamber No. 2 & Chamber No.3 is due to metallic seals and the replacement of these metallic seals with rubber seals is in process. Further he added that for seepage and sweating, recently a scientist form CWPRS, Pune visited the site and suggested that the vertical porous drains provided in the dam body should be reamed, bored and cleaned time to time. He further stated that leakage from bottom corners is very

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	less and with the maintenance of safety gates it will be reduced to zero. At this, special invitee Chief Engineer (PCA), HPSEBL apprised that in Nathpa dam there is no lining provided in desilting chambers only SFRS has been provided which is quite rare in Himachal Pradesh and asked the project authorities whether there is any residual life assessment study conducted for this SFRS or not? At this, representative from the Nathpa Dam apprised that the residual life assessment study has been conducted for this SFRS & visual inspection of the desilting chambers is done in every 4 years. Chief Engineer (Energy) -cum-Chairman of the committee further requested the Dam authorities to share the visual inspection reports of the Desilting chambers so that these reports can be studied for the next meeting.
7.12	**Chamera-III HEP**
	Er. Jasrotia apprised the committee about the issues regarding exposed reinforcement in piers on d/s end, combined seepage in gallery to the tune of 1.7 LPS, non- availability of seepage data since the reservoir was first filled, non-working of damaged Trash Rack Cleaning Machine due to rock fall and non-working of 02 no's out of 3 Stand Pipe piezometers and 09 no's out of 18 Vibrating wire piezometers. Er. Jasrotia also apprised the committee that the project authorities of Chamera-II and Chamera-III HEPs generally do not respond on any calls of SDSO- HP due to which SDSO faces difficulty in sharing/ dissipating the important information further to concerned authorities. After taking a serious note, the Chairman of the committee asked to bring this before the highest authority and accordingly to take a note on this by dam authorities of Chamera-II and Chamera-III in this regard. On the aforesaid issues, representative from Chamera-III stated that the work has been awarded for rectification of exposed reinforcement in piers on d/s end and seepage data since the reservoir was first filled is constant and being monitored regularly. The protection work is going on for TRCM, after completion of protection TRCM will be repaired and will be made operational. About instrumentation, he further added that few piezometers have been repaired and for other, work will be awarded soon.
7.13	**Karcham Dam**
	Dy. Chief Engineer-cum- Head SDSO apprised the committee about the issue regarding leachate observed in Gallery wall and walkways, damage to dam oggies due to water abrasion in monsoon season 2021-22, repair of bottom section of dam basin with suitable concrete mixture, installation of captive Power Plant by utilisation of e-flow. The Head, SDSO stated that though the dam operation is going smoothly to the satisfactory level at this dam but there is a development which is proposed at this dam site which is "utilization of e-flow and to construct an another unit of 1 MW at the left bank on Downstream side of dam for captive use". Er. Jasrotia stated that since this matter comes under clause no. 26 of chapter VI of the Dam Safety Act, 2021 which states that

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	"Any construction or alteration of a specified dam shall be undertaken subject to investigation, design and construction being done by such agencies as may be accredited by the Authority or the State Government, as the case may be." So accordingly, the matter is to be brought to the knowledge of SCDS& CEA/CWC. Further he requested to Dam authorities to share the present status of the observations. At this, HoP Karcham Wangtoo HEP apprised that leachate data is being observed continuously to identify whether it is increasing or decreasing. The repair of dam oggies has been done with the help of epoxy concrete and repair of bottom section of dam basin has been done with high strength concrete. About captive Power Plant to be installed- by utilisation of e-flow, he added that the contract of hydro mechanical and electromechanical works have already been awarded. He further stated that the captive power plant is located on D/s left bank which is away from the main Dam body. He also stated that only 1 e-flow pipe discharge will be used for this plant. At this Chairman, SCDS requested the project authorities to share the work proposal with SCDS and CEA/CWC as per their last meeting direction and this should be done on priority basis.
7.14	**Malana-II Dam**
	Er Jasrotia stated that there is an issue in Malana-II dam which has already been discussed in 1st meeting of SCDS, it is about the overtopping. He apprised that an overtopping incident had occurred at this Dam in year 2013 due to sudden tripping of both the generating units and non-operation of the radial gates. After this incident, the panel of expert committee of Directorate of Energy inspected the Malana-II HEP and an additional spillway was recommended to prevent such incident in the future. As of now the project authorities have shared the work plan and it has been intimated that the work will be started in April, 2024. At this, Chief Engineer (PCA) HPSEBL requested to share the technical proposal of the work with the committee. Dy. Chief Engineer-cum- Head SDSO further requested the dam authorities to share latest work proposal with SCDS. As the proposal was approved way back by the DoE in 2017 which was before the enactment of the Dam Safety Act, 2021, he added that after the enactment of Dam Safety Act, 2021 any addition to the existing dam body should have to be brought to the knowledge of SCDS and SDSO. He further enquired about the cloud burst incident occurred in July, 2022 and present condition. At this, representative from Malana-II HEP apprised that everything is stable now and in control. About additional spillway work he ensured committee that work will be taken up as per schedule.

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7.15	**Parbati-III Dam**
	The Head SDSO apprised about the issue regarding leakage from the HRT of Parbati-III HEP and stated that the leakage/seepage is around 6000 LPM from about 10 visible locations in HRT since 2014-2015 and it has been observed that this leakage is intact from the time of occurring. The project authority is continuously monitoring this leakage/seepage and taking remedial measures. No officer from the Parbati-III dam was present in the meeting. Chairman SCDS viewed it seriously as asked Head SDSO to take up the matter with Parbati-III authority for putting their stand on this.
7.16	**Allain Dam**
	Head SDSO apprised the committee about the issue regarding replacement of seals of cylinders of TRCM at Allain Barrage to prevent slipping of booms, desilting of balancing reservoir and setting up a discharge site of Allain Nalla. At this, HoP of Allain Duhangan HEP apprised that 1 Cylinder Piston kit of TRCM has been damaged which has been ordered and the same will be received at site within 2 months and further desilting of balancing reservoir is in progress. He further added that for setting up of discharge site of Allain nalla, recently a study has been conducted through BGRA Chandigarh and they have suggested a site 2km upstream of Allain barrage. Accordingly the work will be taken up.
7.17	**Budhil Dam**
	Head SDSO apprised the committee that there is no such big issue with the dam however there is an issue regarding frequently happening Cloud Burst and Land Slide in the upstream Area. He further asked HoP Budhil HEP to submit before committee on this. At this, HoP of Budhil HEP apprised the committee about Cloud Burst and Land Slide in the upstream area that the immediate action was taken and gates were opened which helped the flood to pass easily. As there is no project in upstream of Budhil HEP, an early warning system has been installed in upstream and project authority is connected with the local public and in case of uneven inflow, cloudburst or any other eventuality, they inform the project authorities and same information is also shared with Chamera-III, other d/s Dams & other stakeholders.
7.18	**Chanju-I Dam**
	Head SDSO apprised the committee that SDSO has conducted dam safety inspection of Chanju-I HEP in the month of April, 2023 and no major observation observed.
7.19	**Sainj Dam**
	Er. Jasrotia apprised the committee about the issues regarding obstructed waterway of Sainj river downstream of barrage by creating job facilities area during construction period, huge land slide about 400-500 m downstream of Barrage axis from the left bank which has obstructed waterway of Sainj River, considerable water leakage from Radial Gate No. 3 & 6, Non-working of TRCM & CCTV cameras installed at Barrage, automatic early warning system installation, non-availability of public address

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	system/Mobile van for issuing the warnings to the downstream habitants, no e-flow mechanism which is maintained through fish ladder presently but the same is also got chocked. At this, the representative from Sainj HEP stated that all the issues have been taken up and will be resolved within 10 to 15 days. Further he added that obstructed waterway of Sainj river down-stream by creating Job facilities area during construction period has now been returned to Forest Department. At this, General Manger (C), HPPCL assured the committee that HPPCL authorities will take care of the issues.
7.20	**Neogal Dam**
	Head SDSO apprised the committee that the intake structure in Neogal HEP is an Ogee type weir. He further apprised that the project authorities are requesting to inspect this structure w.r.t. its inclusion in the specified dam category. As such Er. Jasrotia requested the Committee to have the experts inspection conducted on this aspect so that the report will be placed before the SCDS in the next meeting for having the decision on it. Committee agreed to this & suggested to have a visit done prior to next meeting and place the facts reports before the committee in this regard.
7.21	**Jateon Dam**
	Head SDSO apprised the committee about the issues regarding erection/displacement/dislodgement of concrete Blocks d/s of sloping glacis of diversion barrage in various locations, Leakage of water in expansion joint between Piers 8-9, non functioning of Early warning system, No Installation of Notice Boards and Powerful hooters at vulnerable locations to warn people and replacement of damaged seals. He further added that upstream of barrage of Giri HEP, Renukaji dam is also going to be constructed on Giri river which is at design process now. As Renukaji dam has higher PMF value and spillway releases from this large dam will be of higher magnitude. These releases will be much higher than that of SPF of barrage structure of Giri HEP, therefore, the diversion structure has to cater to the higher spillway releases. Keeping in view of the apprehension of higher spillway releases from upstream large dam, flood routing studies upstream & downstream of barrage have to be reviewed with co-related studies required to be carried out by the Giri HEP and possible impact be conveyed to HPPCL authorities so that viability of the project do not get hampered. At this Chief Engineer (Generation) stated that the repair work of concrete blocks d/s of sloping glacis of diversion barrage in various locations will be carried out in lean season and leakage of water in expansion joint between Piers 8-9 is minor and will be rectified soon. He also added that replacement of damaged seals will be done in winter season.
7.22	**Sawra Dam**
	The Head SDSO apprised that the committee about the issues regarding minor dislocation of wall between desilting Chamber I & II, annual Stakeholder meeting along with mock drill exercise not conducted, Instrumentation work to be done. At this, representative from Sawra Kuddu HEP stated that settlement is stable & intact as of now. Further it is under continuous observation and monitoring. He also stated that 90% of instrumentation has been completed and interpretation is in process.

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7.23	Bajoli Dam
	Head SDSO apprised the committee about the issues regarding painting of gates & hoists to be done, leakage from the radial gates, seepage and sweating at some spots in the gallery, more active coordination with district administration to maintaining the proper safety upstream reservoir area and downstream during release of water, continuous healthy association with local administration, locals, PRIs and surrounding inhabitants, regular stakeholder consultation meeting/mock drills in order to ensure the preparedness during emergency to be conducted and HRT leakage status. At this, representative from Bajoli HEP stated that painting of all gates & hoists is going on. He further stated that leakage from radial gate no. 2 & 4 has been stopped and work is in progress in radial gate no. 1 and 3. He further added that seepage and sweating at some spots in the gallery has been controlled. He also added that leaking issue has been talked and it is under control/reduced. Er. Jasrotia requested the project authorities of Bajoli Holi HEP to share the levels of Dam Break Analysis with PWD Department as a bridge is under construction in downstream of Bajoli Holi dam

8.0 Inclusion of new Dams to specific Dam category

After discussing the Individual Dam's critical issues of the above mentioned specified dams, Head, SDSO apprised the committee that there is a power project called Bhaba HEP situated in district Kinnaur of Himachal Pradesh which is controlled and maintained by HPSEBL. The detailed inspection was conducted by SDSO recently with orders of higher authority wherein it was observed that the height of barrage is more than 15m and also having balancing reservoir of capacity 28.50 hectare meter so this can be added up to the specified Dam category. The committee discussed the matter and decided that after preparation of comprehensive report and collection the documents and drawings of the project and then after going through the details the matter may be brought in front of the committee again in next meeting so that the discussion be held and accordingly the suitable action can be taken in this regard by the committee.

The Chief engineer (PCA) HPSEBL requested the chairman SCDS to consider the Shanan HEP in Barrage to specified Dam category and to include under construction Sunni Dam also in specified dam category as it is under construction stage. At this, the committee members stated that they will study the data of suggested dams and after that will come up with the decision in next meeting.

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9.0 Inter-State Dam issue	
	The committee member on behalf of adjoining state Punjab requested to share the detail of discharge released from Chamera-I Dam with Ranjit Sagar Dam and to share the study of silt data coming with inflow if any conducted. At this Head, SDSO stated that this issue has been flagged out with Chamera-I Dam authorities. Further, GM Chamera-I Dam stated there is no measurement of silt data in the downstream area so it would be difficult to share the silt data to the downstream area. However regular out flow & discharge data shall be shared accordingly with d/s Dam authorities.
10.0 SDSO's staffing	
	Head, SDSO flagged an issue of scarcity of staff in front of SCDS and further stated that the matter is taken up with Govt. but SCDS may also notice this & submit recommendation to Govt. He requested all the dam authorities to share the information to SDSO in time so that same can be shared with the NDSA and other authorities in time. He also stated that few trainings have been planned to be conducted soon and a northern level Dam Safety Conference is also planned to be conducted after the monsoon season at Bilaspur/ Shimla. He further requested all the dam authorities to give training to the staff deployed at Dam/ Barrage sites so that prior action can be take in time. He further added that a working group of HoPs of all dams will be created for sharing of important information to the SDSO in time.
11.0 Directions of SCDS	
	Head, SDSO requested the Chairman of the committee to approve the aforesaid points. At this Chairman, SCDS stated that all the committee members are unanimous on these points. All these are general points but have great weightage and should definitely be considered.
12.0 Closing comments	
	At the end, Chairman, SCDS and Head SDSO thanked all the participants present in the 2nd meeting of State Committee on Dam Safety Himachal Pradesh and for providing valuable suggestions.

31/1/25

Public Information Officer
Chief Executive Engineer,
Directorate of Energy,
H.P., Shimla-171005

Er. Deepak Jasrotia,
Member Secretary,
State Committee on Dam Safety - HP,
Directorate of Energy, GoHP, Shimla-09.

Information Supplied to an Sumit Makar 3/3
Under RTI Act, 2005.

Annexure-I

2nd MEETING OF THE STATE COMMITTEE ON DAM SAFETY CONSTITUTED BY GOHP VIDE NOTIFICATION DATED 24.05.2022 IN PURSUANCE TO THE PROVISION OF DAM SAFETY ACT, 2021.

Date: 30.05.2023 at 2:30 PM-05:00 PM **Venue-** Directorate of Energy, GoHP, Shimla-09

AGENDA ITEMS

1. Review of activities Post Enactment of Dam Safety Act-2021
2. Review of compliances of first meeting of SCDS held on 18.11.2022.
3. Essential Parameters Review.
4. Status review of Individual Specified Dam
5. Inclusion of New Dam/Barrage/Weir into Specified Dam list.
6. Deliberation on the observations/suggestions/comments of members from the D/s States of Himachal Pradesh.
7. Deliberation on the observations/suggestions/comments of Technical members and the members from CEA& CWC.
8. Strengthening of SDSO
9. Any other point with permission of Chair.

31/1/25

Public Information Officer
Sunil Sr. Executive Engineer
Directorate of Energy,
H.P., Shimla-171005

Information Supplied to on Sunil Thakur
Under RTI Act, 2005.

3/1

Annexure-II

List of Participants

S.No.	Designation and Affiliation	Shri/Ms.
Chairman		
1	*Chief Engineer (Energy)-cum-Chairman, SCDS, Directorate of Energy, Shimla*	D.P. Gupta
Members Present Physically		
2	*The General Manager (CP), HPPCL, Himfed Building, BCS, New Shimla*	Nitin Garg
3	*Dy. Chief Engineer (Energy)-cum- Member Secretary, SCDS, Directorate of Energy, Shimla*	Deepak Jasrotia
Special Invitees Present Physically		
4	*The Chief Engineer (PCA), HPSEBL, Vidyut Bhawan, Shimla-04*	Sanjeev Vohra
5	The General Manager (Generation), HPPCL, Himfed Building, BCS, New Shimla	Rohit Sharda
List of Committee Members present Virtually		
6	The Chief Engineer (Generation), HPSEBL, Sundernagar, Distt. Mandi, H.P.	Sanjay Kaushal
7	The General Manager (Civil), Chamera-I, NHPC Ltd., Chamba, Distt. Chamba, H.P.	Bharti Gupta
8	The General Manager (Koi Dam), NTPC, P.O. Barmana, Distt. Bilaspur, H.P.	Rajendera Prasad Ahirwar
9	The Chief Engineer, BSL Project, BBMB, Sundernagar, Distt. Mandi, H.P.	--
10	The Chief Engineer (Bhakra Water Service), Irrigation & Water Resources Department, Sinchai Bhawan, Sector-5, Panchkula, Haryana.	Arvind Sharma
11	The Chief Engineer (Dam Safety), Department of Water Resource, Sector-18, Chandigarh, Punjab.	Amarjeet Singh
12	The Chief Engineer (I&FC),Irrigation and Flood Control, Jammu.	Manoj Gupta
13	The Chief Engineer, Hydro Project Appraisal Division, Central Electricity Authority, New Delhi.	Sharvan Kumar
14	The Chief Engineer, Level-II, Irrigation Department, Uttrakhand, Dehradun.	S.K. Saha

31/12/25

Public Information Officer
-cum- Sr. Executive Engineer,
Directorate of Energy,
H.P., Shimla-171005

Information Supplied to Sh. Sumit Dhakar
Under RTI Act, 2005.

15	The Chief Engineer (Shimla Zone), Jal Shakti Vibhag, Himachal Pradesh.	Anju Sharma
16	The Chief General Manager (Civil Design), SJVN Ltd., Shakti Sadan, Shanan, Shimla-06.	Sanjeev Gupta
17	The General Manager (Civil Design), HPPCL Sundernagar.	R.K. Kaundal
Assisting officers/officials present Physically		
18	*Sr. Executive Engineer (Dam Safety), Directorate of Energy, Shimla*	Ashit Kashyap
19	*Sr. Executive Engineer (CIM), Directorate of Energy, Shimla*	Dheeraj Verma
20	*Junior Engineer (Safety), Directorate of Energy, Shimla*	Charan Dass
21	*Junior Engineer (Dam Safety), Directorate of Energy, Shimla*	Harshveer Singh
Other participants present Virtually		
22	All the participants/representatives from 23 Specified dams in Himachal Pradesh were present virtually in the meeting.	

31/1/25

Public Information Officer
-cum- Sr. Executive Engineer
Directorate of Energy,
H.P., Shimla-171005

Information Supplied to an Sumit Thakur
Under RTI Act, 2005.

File No. MPP-A(8)-1/2024
Government of Himachal Pradesh
Department of MPP& Power

From

The Chief Secretary (Power) to the
Government of Himachal Pradesh

To

The Director Energy,
Multi Storey Parking, 2nd Floor
Tutikandi Shimla-5

Directorate of Energy Shimla - 171005
Diary No. 09247
Date 03/04/24

Dated Shimla-2, the 3/4/2024

Subject: - Site inspection report of Pong Dam, Pandoh Dam, Parbati-III and Malana-II Dam.

Sir,

I am directed to refer to your letter No. HPDoE/CE (Energy)/SDSO-HP/2024-298 dated 20.04.2024 on the subject cited above and to say that the matter was taken up with the Law Department for its opinion.

The Law Department has observed that Section 41(b) of Dam Safety Act, 2021 are explicit and require no further elucidation. As per aforesaid provisions, if the Dam Authorities have refused to comply with the directions, if any, given by or on behalf of Central/State Government or the National Committee or the Authority or the State Government or the State Dam Safety Organization, in that event, as per the requirement of section 44 of the Act, a complaint is required be filed in the Court of Law for taking cognizance of offence punishable under the Act. It is the Ld. Trial Court which will take a call qua the punishment to be awarded against the authorities who have not complied with the directives, if any, issued by the State Government or Instrumentality of the State Government. The Department may take further decision in the matter accordingly.

You are, therefore, requested to take necessary action in the matter as per advice of Law Department.

Yours faithfully,

(Arindam Chaudhary)
Special Secretary (Power) to the
Government of Himachal Pradesh

for further n/a pl.
02/07/2024

DyCE (Tech-I)
31/1/25

S. Exp-I & Sr. Exp-II

Public Information Officer
Sr. Executive Engineer,
Directorate of Energy,
H.P., Shimla-171005

Information Supplied to Sh. Sumit Mahar
Under RTI Act, 2005.

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DIRECTORATE OF ENERGY
GOVERNMENT OF HIMACHAL PRADESH
MC PARKING BUILDING, 2ND FLOOR, TUTIKANDI CROSSING, SHIMLA-5
Email id: dir.doehp@nic.in, ceenergy09@gmail.com Ph. No. 0177-2673976

No. HPDoE/CE (Energy)/SDSO-HP/2024- 2633-37 Dated:- 16/07/2024

From

Director (Energy),
GoHP, Shimla-5

To

The Special Secretary (Power),
Govt. of H.P., Shimla-02

Subject: Site Inspection Report of Pong, Pandoh, Parbati-III and Malana-II Dam.

Sir,

This has reference to your office letter No. MPP-A(8)-1/2024 Dated Shimla, the 03-07-2024 vide which it has been informed that the Law Department has observed that Section 41(b) of Dam Safety Act, 2021 are explicit and require no further elucidation. As per provisions in the Dam Safety Act, 2021, if the Dam authorities have refused to comply with any direction given by or on behalf of the Central Government or the State Government or the National Committee or the Authority or the State Committee or the State Dam Safety Organisation, in that event, as per requirement of section 44 of the Act, a complaint is required to be filed in the Court of JMFC for taking cognizance of the offence punishable under the Act. Further this office has been requested to take necessary action as per advice of Law Department.

In this regard, it is submitted that four Dams i.e. Pong Dam falls in the district court jurisdiction of District Kangra, Pandoh & Parbati-III in District Mandi and Malana-II in District Kullu.

In view of the above it is submitted that necessary directions may kindly be imparted to the concerned District Attorneys of three Districts Kangra, Mandi and Kullu for vetting & filing the case in the appropriate courts through Home Department. It is also submitted that appropriate level officer not bellow the rank of Sr. Executive Engineer of Dam safety Cell shall be authorized to register a case in the Court of Law on behalf of GoHP please.

Yours faithfully,

Chief Engineer (Energy),
Directorate of Energy,
GoHP, Shimla-05.

Copy to

1. The Senior P.S to Chief Secretary (Power), to the Government of Himachal Pradesh, Shimla for kind information of Worthy Chief Secretary please.
2. The District Attorney, Distt. Kangra, Distt.Mandi, Distt.Kullu for information please

31.1.25

Public Information Officer
-cum- Sr. Executive Engineer,
Directorate of Energy,
H.P., Shimla-171005

Chief Engineer (Energy),
Directorate of Energy,
GoHP, Shimla-05.

Information Supplied to Sh Sumit Maker
Under RTI Act, 2005.

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DIRECTORATE OF ENERGY
GOVERNMENT OF HIMACHAL PRADESH
MC Parking Building, 2nd Floor, Near Tuttikandi Crossing Shimla HP 171004
Phone/ Fax No: 0177-2673553, Email: dir.doehp@nic.in, ceenergy09@gmail.com

HPDoE/CE (Energy)/ SDSO/2024/ 3289-36 **Dated:** - 09 /08 /2024

To

All the Under Construction Specified Dam Owners
(As per list enclosed)
In the state of Himachal Pradesh.

Subject: - Installation of Early Warning System in the under construction Specified Dams.

Sir,

As per clause no. 35 (1) (a) to (f) of Dam Safety Act, 2021 and CWC guidelines 2015, every dam owner of specified dam has to install inflow forecasting system and hydro-meteorological network and flood forecasting system for probable flood affected areas downstream of the dam.

In view of above, it is requested to install the Early Warning System (EWS) in your respective Specified Dam (under construction) at the earliest and status be shared with this office as per format enclosed.

Please treat it as most urgent

Yours faithfully,

DA: As Above

Head, SDSO-cum
Dy. Chief Engineer (Dam Safety)
Directorate of Energy, Shimla-04.

Copy to- Director, Policy & Research, NDSA, Sewa Bhawan R.K. Puram-1, New Delhi-110066 for information please.

Head, SDSO-cum
Dy. Chief Engineer (Dam Safety)
Directorate of Energy, Shimla-04.

31/1/25
Public Information Officer
-cum- Sr. Executive Engineer,
Directorate of Energy,
H.P., Shimla-171005

Information Supplied to Sh. Sumit Mahar
Under RTI Act, 2005.

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3/9

No. Home (G) E (5)-4/2021
Government of Himachal Pradesh
Department of Home (Prosecution)

From

The Addl. Chief Secretary (Home) to the
Government of Himachal Pradesh

To

The Special Secretary (Power) to the
Government of Himachal Pradesh, Shimla-2

Dated Shimla-171002, the

Subject:- Site inspection report of Pong, Pandoh, Parbati-III and Malana-II Dam.

Sir,

I am directed to refer to your letter No. MPP-A(8)-1/2024 dated 04.09.2024 on the subject cited above and to say that the necessary directions have been issued to the concerned District Attorneys for vetting & filing the cases in the appropriate courts by the Joint Director, Prosecution vide letter No. Dpr-misc./2024-5618-20 dated 04.09.2024. The copy of the same is also enclosed herewith for ready reference.

Yours faithfully,

(Ritu Raj Verma)
Addl. Secretary (Home) to the
Government of Himachal Pradesh

31/1/25

Public Information Officer
cum-Sr. Executive Engineer
Directorate of Energy
H.P., Shimla-171005

Information Supplied to Sh. Sumit mahajan
Under RTI Act, 2005.

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No. DPr- Misc. /2024- 5418-20
Directorate of Prosecution,
Himachal Pradesh, Shimla-9

From:

The Director (Prosecution),
Himachal Pradesh, Shimla.

To

The District Attorneys,
Kangra at Dharamshala, Kullu and Mandi, HP

Dated Shimla-9, the 4/11/2024.

Sub: - **Site Inspection report of Pong, Pandoh, Parbati-III and Malana-II Dam.**

Sir,

Reference to letter No. HPDCB/CE (Energy)/SDSO-HP/2024/2633-37 dated 16.7.2024 of Directorate of Energy, Govt. of HP on the subject cited above. (Copy enclosed for ready reference).

In this regard, you are, hereby directed to conduct the cases filed by the competent Authority on behalf of the State as mentioned in the above referred letter.

Encls:-As Above.

Yours faithfully,

Joint Director-Prosecution,
Himachal Pradesh, Shimla-9
Dated:-

Endst.No. As above.
Copy for information to:-
The Additional Chief Secretary (Home) to the Govt. of Himachal Pradesh, Shimla w.r.t. letter No. Home-C-(E) (5) /-/2021 dated 24.8.2024.

Joint Director Prosecution,
Himachal Pradesh, Shimla-9

3/1/25
Public Information Officer
-cum- Sr. Executive Engineer,
Directorate of Energy,
H.P., Shimla-171005

Information copy, add to Sh. Sumit Mahajan
Under RTI Act, 2005.

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DIRECTORATE OF ENERGY
GOVERNMENT OF HIMACHAL PRADESH
MC PARKING BUILDING, 2ND FLOOR, TUTIKANDI CROSSING, SHIMLA-05
Tel No: 0177-2673552, Email: dir.doehp@nic.in, crauthoritydoeea gmail.com

HPDoE/CE (Energy)/ SDSO/2024/ -4026-29 Dated: 31/12/2024

From

Director (Energy),
GoHP, Shimla-171005.

To

The Special Secretary (Power) to the
Government of Himachal Pradesh.

Subject: **Regarding Registration of Cases against erring Dam Authorities in appropriate court.**

Sir,

In reference to your office letter no. MPP-A (8)-1/2024 dated 30.09.2024 the matter regarding filling the case against erring Dam Authorities of Pong Dam, Pandoh Dam, Parbati-III Dam and Malana-II Dam was taken up with the concerned District Attorneys and DoE Teams visited the District Attorneys of Kangra at Dharamshala, Mandi and Kullu District for assiting them in filling the case against the erring dam authorities namely Pong Dam, Pandoh Dam, Malana-II Dam and Parbati –III Dam.

As per your good office earlier approval any officer not bellow the rank of Sr. Executive Engineer has been authorised to file the case but now the concerned District Attorneys stated that a notification is required w.r.t. officer who will be filling cases in appropriate court against aforesaid erring Dam Authorities on behalf of the Govt. through Secretary (MPP & Power). As such the notification may kindly be issued that Sr. Executive Engineer (Dam Safety), Directorate of Energy, GoHP is authorised to file the case against the erring Dam Authorities in appropriate Court.

Furthermore, the District Attorneys have stated that for pursuing legal action against the erring dam authorities namely Pong Dam, Pandoh Dam, Malana-II Dam and Parbati -III Dam as per the provision of Clause No. 41 of Dam Safety Act, 2021, the following information is required from District Administration of Kangra at Dharamshala, Mandi and Kullu District:-.

A. **A detail of families/ individuals who suffered losses during the flooding along with damage reports and supporting evidence vetted by concerned department and detail of compensation paid to the affected families/individual by Government/ Project Authorities.**

31/12/25

Public Information Officer
-cum- Sr. Executive Engineer,
Directorate of Energy,
H.P., Shimla-171005

Information Supplied to on Sumit Prabhakar
Under RTI Act, 2005.

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In this regard, I am directed to kindly request you to issue a notification regarding above stated officers to file cases in appropriate court against aforesaid erring Dam Authorities on behalf of the GoHP and also the concerned District Administration of Distt. Kullu, Mandi & Kangra may be directed to submit the information under **Sr. No. A.** above for registering/filling cases in appropriate court please.

Yours sincerely,

Chief Engineer (Energy),
Directorate of Energy,
Shimla-05.

Copy to :-

1. The Deputy Commissioner Kullu, Distt. Kullu (H.P.) for information and with request to mange to provide the information pertaining to Distt. Kullu please.
2. The Deputy Commissioner Mandi, Distt. Mandi (H.P.) for information and with request to mange to provide the information pertaining to Distt. Mandi please.
3. The Deputy Commissioner Kangra at Dharmshala, Distt. Kangra (H.P.) for information and with request to mange to provide the information pertaining to Distt. Kangra please.

Chief Engineer (Energy),
Directorate of Energy,
Shimla-05.

31/1/25

Public Information Officer
-cum- Sr. Executive Engineer,
Directorate of Energy,
H.P., Shimla-171005

Information Supplied to Sh. Sumit Mahajan
Under RTI Act, 2005.

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