

**MINUTES**

**OF**

**THE 30<sup>TH</sup> MEETING OF THE**

**NATIONAL COMMITTEE ON DAM SAFETY**

**HELD ON**

**27<sup>TH</sup> AUGUST, 2010**

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**Minutes of 30<sup>th</sup> meeting of National Committee on Dam Safety (NCDS) held in CWC, New Delhi on 27.08.2010**

30<sup>th</sup> meeting of National Committee on Dam Safety (NCDS) was held on 27<sup>th</sup> August, 2010 in Conference Room of Central Water Commission (CWC), Sewa Bhavan, R. K. Puram, New Delhi under Chairmanship of Shri A.K. Bajaj, Chairman, CWC & NCDS.

List of officers/representatives of various states/organizations who attended the meeting is enclosed at **ANNEXURE-1**.

**30.0.0 Opening remarks**

**30.0.1** At the outset, Chairman welcomed members, their representatives and all officers present in the meeting. After brief introduction of participants, he requested Chief Engineer, Dam Safety Organisation (DSO), CWC & Member-Secretary, NCDS to take up agenda items for discussion.

**30.1.0 Confirmation of the minutes of 29<sup>th</sup> meeting held on 12<sup>th</sup> December, 2008**

Member-Secretary informed that minutes of 29<sup>th</sup> meeting were circulated to all members. No observations on minutes were received. Therefore, minutes could be taken as confirmed. This was agreed to by all members.

**30.2.0 Issues relating to Dam Rehabilitation & Improvement Project (DRIP)**

Director, Dam Safety Rehabilitation (DSR) Directorate, CWC gave a brief presentation on Dam Rehabilitation & Improvement Project (DRIP). DRIP envisages rehabilitation and improvement of about 223 large dams in four states of Madhya Pradesh, Orissa, Kerala and Tamil Nadu at a total cost of US\$ 437.5 Million (Rs. 2100.00 crore). 80% of the total cost will be financed by World Bank while balance 20% by respective state governments and Ministry of Water Resources (MoWR). It will be 6-year project, likely to commence in January 2011.

It was informed that Karnataka and Jharkhand have also shown interest for participation in DRIP. In this respect, these two states have been requested to submit their proposals indicating number of dams to be rehabilitated along with tentative cost. Other states, if interested can also be considered for inclusion in DRIP on fulfilling certain conditions.

It was clarified that existence of a State Dam Safety Organisation (SDSO) is one of the essential conditions for participation in DRIP. It was also clarified that in view of the proposed National level Dam Safety Bill, the necessity of having State level dam safety legislation is not being insisted upon. Representative of Tamil Nadu informed that State Project Management Unit (SPMU) in SDSO has been established and is waiting for state government's approval.

Representatives of Punjab, Uttarakhand and Uttar Pradesh expressed interest in getting benefits of DRIP; Chairman requested them to expedite submission of state level proposals to CWC for consideration.

### **30.3.0 Review of National Scenario**

#### **30.3.1 Uttar Pradesh**

Member-Secretary informed that through a reference dated May 2010 from Uttar Pradesh (UP), it was communicated to CWC that Obra and Nagwa dams were inspected in January 2010 and Maro Dam in November 2009. For removal of deficiencies observed during these inspections, funds allocation was awaited. Member-Secretary further requested the representative from UP to apprise the Committee about latest status of removal of deficiencies in these dams.

The representative informed that the work of stilling basin of Nagwa dam is presently under progress whereas funds for other projects are yet to be allocated. As regard Maudaha dam, representative informed that there is an excessive seepage in the inspection gallery which can be dewatered only after getting funds. Committee desired that the Project Authorities should submit a report on present status of rehabilitation of these projects to NCDS Secretariat.

#### **30.3.2 Rajasthan**

##### **Jaswant Sagar Dam**

No representative from Rajasthan attended the meeting; hence this issue was not taken up for discussion.

#### **30.3.3 Kerala**

##### **(a) Idukki Dam**

During last meeting, the representative from Kerala had informed about unusual structural behaviour of the dam with regard to its deflection. In this regard, Member-Secretary asked the representative from Kerala about present status of the dam. The representative informed the Committee that the study is being conducted by a Consultant to advise remedial measures to tackle the problem. National Institute of Technology, Calicut has also been requested in this regard and

observations for uplift pressure, deflection etc. are being taken. He further added that FEM analysis is under progress and software is being procured for this purpose.

**(b) Idamalayar Dam**

Representative from Kerala informed that detailed mapping of downstream face of the dam and galleries have already been carried out. During inspection done by the Project Authorities in March 2010 on the upstream face of the dam, no cracks were noticed in the visible area. Epoxy painting has been suggested wherever minor hairline cracks were noticed in the galleries. Monitoring of seepage from the foundation drains is being continuously done.

Reply to letter of CMDD (NW&S) Directorate, CWC dated 10<sup>th</sup> March 2008 has been received from Kerala and copy of the same has been sent to CMDD (NW&S) Directorate, CWC for comments.

**30.3.4**

**Bihar**

**Kohira Dam**

Representative from Bihar informed that RCC lamina construction work as rehabilitative measure against leakage in Kohira Dam, located in district Kaimur, is presently under progress and is expected to be completed by March 2011. Committee desired the Project Authorities to submit completion report of rehabilitation work to NCDS Secretariat.

**30.3.5**

**Punjab**

**Ranjit Sagar Dam**

Member-Secretary requested Chief Engineer, Kandi Area Development, Punjab Irrigation to appraise the status of action taken in resolving seepage problem in foundation and further investigations carried out in the project. He replied that the Project Authorities will refer this issue to Board of Consultants (BOC), comprising Dr. M.R. Goyal, Shri D.S. Randhawa and Shri Y.P. Mathur. It was also appraised that funds are not made available by the state government for implementing recommendations of BOC.

Chairman expressed that this is going on for a very long time and more delay will only cause further deterioration of the situation. Member-Secretary asked to convey concern of NCDS to State Secretary or finance department about seriousness of the problem. He emphasized to take necessary measures urgently and in right earnest since MoWR, Government of India has also taken a very serious view of the matter.

**30.3.6****Andhra Pradesh**

Representative from Andhra Pradesh informed the Committee that by proper flood monitoring and regulating outflows the floods during Sept./Oct. 2009 passed safely at Priyadarshini Jurala Project, Neelam Sanjiva Reddy Sagar (NSRS) Srisaillam Project, Nagarjunsagar Project and Prakasham Barrage and no major damages were observed. Restoration works were taken up by the respective Project Authorities. However, in the case of Sunkesula Barrage, breached earthen portion has been restored to safe level. Since the Project Authorities reported that 9.80 lakh cusec of Maximum Flood Discharge (MFD) was observed against designed MFD of 5.24 lakh cusec, the hydrology is being reviewed by National Institute of Hydrology, Roorkee. Once it is completed, permanent restoration work shall be undertaken. The entire issue is being looked after by Dam Safety Review Panel (DSRP) headed by Dr. M.S. Reddy, former Secretary, MoWR, Government of India and former Chairman, CWC.

**a) Srisaillam Dam**

The Chief Engineer, Central Designs Organisation, Andhra Pradesh vide his letter dated 17.08.2010 informed that the protection works have been taken up as suggested by the State Level Expert Committee on Dam Safety for ensuring the safety of the foundations. The protection works at toe of the dam opposite to the block 5<sup>th</sup> has been completed and in respect of protection works opposite to the block 6<sup>th</sup> & block 7<sup>th</sup>, efforts are being made to start the work and to complete the balance work of repairs to old coffer dam at downstream. The dam deformation study report prepared by Survey of India has been received by the Project Authorities.

**b) Palemvagu Dam**

Representative from Andhra Pradesh informed that it is an ongoing irrigation project across Jellavagu near Mallapuram, district Khammam. Based on recommendations of Expert Committee further follow-up action has been taken by the project Engineer-in-Chief, which includes providing additional spillway in the gorge portion. The work is likely to be completed within a year.

**30.3.7****Madhya Pradesh****a) Chandia Dam**

Chandia dam, a masonry arch dam, was constructed in 1926 across Chandia nalla in district Sagar for irrigation purposes. On account of seepage problem in the dam, work of rehabilitation had been going on for past several years on recommendations of DSRP headed by Dr. K.C. Thomas, former Chairman CWC. One of the recommendations was to cover upstream and downstream faces of

dam masonry by a jacket of M20 RCC and face to be made ogee shaped. This work was partially completed.

Meanwhile, eight panels of concrete from the spillway crest were washed away on 20<sup>th</sup> June 2008 due to heavy rain and unprecedented flood. Falling concrete panels caused some damage to the ongoing newly constructed jacket on downstream face of the dam.

Representative from Madhya Pradesh informed that 80% remedial measures have been completed. No funds are available this year for further work. The remedial measures taken so far have reduced the seepage through dam body to a considerable extent and added to the safety of structure.

#### **b) Piplai Dam**

Representative from Madhya Pradesh (MP) informed that remedial measures for restoration of breached portion have been completed.

Member-Secretary thereafter requested all the states/organizations to indicate if there were any failures of dams. In response, no failure was reported by the states.

### **30.3.8**

#### **Maharashtra**

##### **Nand Gavan Dam**

Member-Secretary mentioned that Nand Gavan Dam was discussed in the last NCDS meeting. In that meeting, since representative from Maharashtra had mentioned this dam as very small dam and design was yet to be finalized by Municipal Corporation (owner of the dam) this item was dropped from the agenda of the present meeting as only large dams come under purview of NCDS.

However, recently a representative from Nand Gavan Dam, who visited CWC, explained detailed features and status of damages to the dam bringing to the notice that the dam falls in the category of large dams. It has also been noticed that the dam is listed in "National Register of Large Dams (NRLD), 2009". Member-Secretary requested representative of Maharashtra to explain why such a situation has arisen. Representative of Maharashtra explained that Municipal Corporation does not have funds to repair the damaged dam. It was explained by Chairman that NCDS looks at the dams in the state as responsibility of state whether dam is being maintained by state government, Municipal Corporation or any other local body. The Chairman desired that the dam be rehabilitated at the earliest at state level and its report sent to NCDS Secretariat.

#### 30.4.0 Progress of implementation of the recommendations of the "Report on Dam Safety Procedures"

Member-Secretary explained that during last meeting, CWC's Publications on the "Report on Dam Safety Procedures, 1986" and "Guidelines for Safety Inspection of Dams, 1987" were proposed to be revised/updated by incorporating latest techniques & developments and experience gained over the years. Comments/suggestions based on further experiences in the field of dam safety have been sought from the dam owning states/organizations. In this context, some of the states have sent their suggestions for incorporation/amendments in the publications. Director, DSR, CWC mentioned that under DRIP there is provision of consultant and these guidelines will be taken up for updating. Subsequently some of the states requested for guidelines for inspection of hydro-mechanical parts of dams. The representative from Maharashtra was requested to submit their comments on both the publications, which were submitted earlier in 2002.

#### 30.5.0 Dam Safety Legislation

Chairman informed the Committee members that National level Dam Safety Bill (2010) has been approved by the Cabinet and placed before the Parliament during current session i.e. Monsoon Session 2010.

Stating that a national level legislation was long overdue, members expressed great appreciation for this development. Representative of Tamil Nadu was however of the view that the bill in its present form was not discussed with states. Clarifying to this, Director (DSR) stated that provisions contained in earlier circulated (Draft) Dam Safety Act have been retained, while minor modifications have been entailed on account of consultation process with Ministry of Law & Justice, Planning Commission, National Disaster Management Authority, Ministry of Power, Ministry of Finance, Ministry of Home Affairs etc. These modifications have lead to an overall improvement in the proposed institutional mechanism, especially in view of the recent trend for private ownership of dams.

It was further clarified that Central Dam Safety Act on its approval, will be initially applicable only to West Bengal and Andhra Pradesh, besides Union Territories, Central Undertakings and private companies. Representative of National Hydroelectric Power Corporation (NHPC) Limited raised concern over possibility of subordination of their organization owing to control of state dam safety organization over their dams. It was clarified that each owner having multiple dams will have their own dam safety set up, which will have the primary control of their dams in matters pertaining to dam safety.

**30.6.0 Risk Assessment Studies and preparation of Emergency Action Plan**

**30.6.1** Member-Secretary explained that in the last meeting it has been discussed that Emergency Action Plan (EAP) shall be mandatory exercise for facing any eventuality of a dam failure. In this context views expressed by various representatives are as follows.

**30.6.2 Andhra Pradesh**

Representative from Andhra Pradesh mentioned that they do not have expertise/resources for conducting risk assessment studies and is presently under process of hiring consultant to do this work. The committee asked the representative to submit already prepared EAPs of projects to NCDS Secretariat.

**30.6.3 Bihar**

Bihar informed that EAP for dams of Kharagpur, Jalkund, Anjan, Belharna, Kailash Ghati, Job, Amrity, Shrikhandi, Morway, Nagi, Kol Mahadeo, Kohira, Orni, Nakti, Badua, Phulwaria, Bilasi and Baskund in Bihar have already been sent to DSO, CWC.

Member-Secretary explained that it is essential to monitor/update the information related to EAP and whenever there is any change in basic information/data, EAP should be updated.

**30.6.4 Bhakra Beas Management Board**

Representative from Bhakra Beas Management Board (BBMB) informed that EAP of Bhakra Dam has already been submitted to CWC. Member-Secretary asked representative of Punjab to submit EAPs for Nangal and Beas dams also. However, since Pandoh Dam falls in the jurisdiction of Himachal Pradesh, which is not a member of NCDS, the issue of preparation of its EAP shall be taken up separately by DSO, CWC.

**30.6.5 Gujarat**

Representative from Gujarat said that a physical model of Ukai project is being prepared by Gujarat Engineering Research Institute. EAP for the project has been prepared and is under process of approval by the State Disaster Management Authority. The same shall be submitted within 2-3 months.

**30.6.6 Kerala**

Representative from Kerala State Electricity Board (KSEB) mentioned that EAPs of projects under KSEB are envisaged to be prepared during implementation of DRIP.

**30.6.7 Orissa**

Representative from Orissa mentioned that EAP for Balimela Dam has been completed but was not sure of the status of EAP for Jalaput Dam. EAPs of other projects are envisaged to be prepared during implementation of DRIP. Member-Secretary asked the representative to send a copy of EAP of Balimela Dam to CWC.

**30.6.8 Madhya Pradesh**

Representative from Madhya Pradesh informed that EAPs of seven projects have been prepared and are presently under scrutiny in the state government. These will be sent to CWC within two months time. Subsequently on a query from Madhya Pradesh regarding guidelines on Risk Assessment Studies, Chairman mentioned that presently ICOLD guidelines can be followed in this regard since no CWC guidelines are presently available for the purpose.

Member-Secretary indicated that in future, environment clearance of a project shall be granted only after formulation of its EAP. This aspect has been covered in details in DRIP.

**30.7.0 Completion Reports, Data Book and O & M Manual**

Member-Secretary informed Committee that in the 28<sup>th</sup> NCDS meeting it was decided that completion report of all important and major projects and Data Book on the dams classified as "Dams of National Importance" should be compiled by state governments on priority basis and it was also decided that the Project Authorities should prepare Operation & Maintenance (O & M) Manuals for all the projects in their state.

Since not much progress has been reported on this account, it was requested that all states shall give information about present status of Completion Reports, Data Book and O & M Manual etc. to NCDS Secretariat. Representatives of following States promised to submit the Reports/Data book as per details given below:

<u>State</u>	<u>Details</u>
Madhya Pradesh	- Data books of 3 dams
Maharashtra	- Completion Report of 1 dam - Data books of 5 dams
Orissa	- Completion Report of 4 dams - Data books of 93 dams

Representative of NHPC indicated that preparation of Completion Report is a very difficult exercise to which Chairman suggested to consult his management to address the issue.

**30.8.0 Dam safety activities and inspection of dams**

Member-Secretary apprised Committee about the inspection reports received from the various states and also informed that some Project Authorities are sending inspection reports directly to CWC. He advised that reports should first be sent to respective state DSO who should compile them and then send to DSO, CWC. It was also requested that Inspection Reports/Health Status Reports of dams should be in uniform pattern which has already been circulated in 2002. All the members were requested to conduct regular inspections of dams and send Health Status Reports in time.

**30.9.0 Safety review of large dams**

**30.9.1** The states and dam owning organizations have to review safety aspects of all the large dams once in 10 years by independent review panels. As per the information available, Andhra Pradesh, Bihar, Chattisgarh, Kerala, Madhya Pradesh, Maharashtra, Orissa, Tamil Nadu and BBMB have formed DSRPs. Similarly, if other states/organizations have formed/are in process of forming DSRP, the status may be appraised. It was already intimated to state governments that if any state wants to be a part of the DRIP, then independent DSRPs must be constituted, otherwise it will not qualify to get the World Bank assistance.

Representatives of Orissa, Andhra Pradesh and Madhya Pradesh gave a brief account of progress in this regard in their states and NHPC indicated progress about dams owned by them. Member-Secretary asked these representatives to submit details of reviews to the NCDS Secretariat.

**30.10.0 Monitoring of safety reports of inter-state dams by Sub-Committees**

**30.10.1** Member-Secretary informed that NCDS has constituted three Sub-Committees to monitor and review the safety aspects of inter-state dams. Present status of activities of these Sub-Committees is as follows.

**(a) Mahanadi River System Sub-Committee**

Representative of Orissa informed that next meeting will be held tentatively on 6<sup>th</sup> October 2010.

**(b) Parambikulam Aliyar Project Sub-Committee**

The two states of Kerala and Tamil Nadu are having different views regarding continuation of Sub-Committee. Tamil Nadu informed NCDS that there is no need to conduct any meeting of the Sub-Committee as

dams are in good condition and they even suggested disbanding Sub-Committee. Representative from Kerala said that the consideration is not only related to safety issue but also to sharing of water. Chairman said that in such a situation no action can be taken since states do not agree to hold meetings of Sub-Committee.

**(c) Subarnarekha River System Sub-Committee**

Representative of Orissa and Jharkhand informed that they will have a discussion and inform about holding of next meeting of Sub-Committee.

**30.11.0 Setting up of hydrological units in the States**

Member-Secretary requested members to appraise the status of setting up of hydrological units in their states. Representative from Andhra Pradesh informed that hydrological unit has been working since 2006 and review of one project has been completed; Member-Secretary requested him to send the report to NCDS Secretariat. Representative from UP informed that there is only one post of Hydrologist in the state, which is presently lying vacant. Representatives of Tamil Nadu mentioned that separate unit is yet to be created whereas Orissa informed that the unit is being established under Chief Engineer, Dam Safety and its approval may be available within two months. Representative of MP informed that hydrological unit is presently working in the state and flood review in respect of two projects is under process. Member-Secretary requested the members present to send the current status in this regard.

Chairman informed that trainings on Hydrology are regularly being conducted at National Water Academy (NWA), Pune and CWC headquarters at New Delhi. He offered that the same can also be conducted on specific requests by the state governments at places of their choices. Member (D & R), CWC also elaborated on this issue. He informed that the training programmes are being listed on CWC website. Director, Hydrology (South), CWC presented schedule of training on Hydrology.

**30.12.0 Instrumentation of dams**

Member-Secretary informed that detailed report on the status of instrumentation of dams was requested from the dam owning authorities but none have submitted. Member-Secretary asked members to identify defunct/erroneous instruments installed in dams to avoid transmission of misleading information about their behaviour. Director, Instrumentation, CWC informed the Committee that instrumentation drawings for new dams on specific request are being provided by CWC to the Project Authorities at various stages of project construction.

**30.13.0 National Register of Large Dams**

Member-Secretary informed that "National Register of Large Dams (NRLD) 2009" has been uploaded on CWC web-site [www.cwc.gov.in](http://www.cwc.gov.in) and requested members to intimate any corrections required immediately. He emphasized its importance since a lot of parliament questions on dams are being referred to DSO, CWC which need to be answered correctly and timely. On a query from representative of Tamil Nadu, Chairman clarified that for classification of dams, International Commission on Large Dams (ICOLD) classification may be adopted.

**30.14.0 Dam Health and Rehabilitation Monitoring Application (DHARMA)**

The Committee was informed about completion of two modules (i.e. 'Basic Features' and 'Project Portfolio') of DHARMA and Version 1.2 of software was distributed to member states. Necessary Project Identification Code (PIC) using DHARMA has already been created for all the states and respective data files have also been made available. However no feedback has been received from any of the states. It was informed that development of balance modules of DHARMA will be included in the scope of Engineering and Management Consultancy for DRIP.

**30.15.0 Safety issues of century old dams**

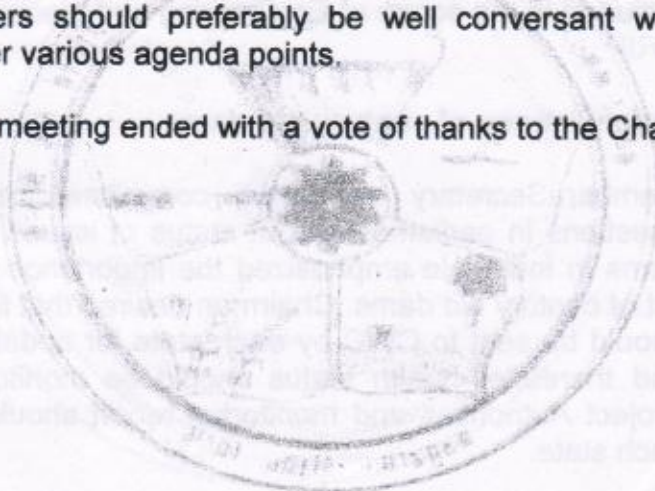
Member-Secretary appraised committee that there have been questions in parliament about status of issues related to century old dams in India. He emphasized the importance of regular updating of list of century old dams. Chairman desired that list of century old dams should be sent to CWC by each state for updating in the 1<sup>st</sup> instance and thereafter health status should be monitored yearly by all the Project Authorities and monitoring report should be sent to CWC by each state.

Member-Secretary appraised the Committee that as per records available in CWC, there are 114 dams which are more than century old. Representatives of Andhra Pradesh, MP and UP informed that there is no serious problem in any of the century old dams in their states. They further informed that no special inspection is done for all these dams to which the Chairman suggested that the same should be conducted yearly in future. Representative of Maharashtra promised to carry out special inspection in all the 28 century old dams in the state. Representative of Gujarat informed that comprehensive dam safety review of 20 century old dams was carried out after earthquake of 2002. They were requested to carry out the regular yearly inspections also, preferably after monsoons. Representatives of Karnataka and Orissa informed that rehabilitation under DSRP is presently under progress in respect of all the 17 and 2 century old dams in the respective states. Representative of Tamil Nadu informed that all the century old dams in the state are in good condition and special inspection of these is carried out once in five years.

**30.16.0 Any other item with the permission of the chair**

At the end of the meeting discussion was held on various issues viz. limiting the amount of leakages through the dam body and foundation, security of dams, issue of inclusion of canals in NCDS, legislation regarding manpower requirements for all dam safety related activities etc. Chairman while concluding the discussions requested all the Project Authorities to regularly monitor data related to EAP and update it as and when required so that same can be implemented. He reiterated that safety of all dams within the state is the primary responsibility of state government irrespective of whether the dam is under any Municipal Council/Corporation or any other local body. If any dam is in distress, it is not only the responsibility of Council/Corporation but the state government is equally responsible for its remedial measures; thus necessary support should be provided by the state government to mitigate/address the distress in the dam. Chairman mentioned that it is desirable that members nominated on NCDS themselves attend the meeting instead of deputing their representatives. Nevertheless, if it becomes unavoidable, deputed officers should preferably be well conversant with subject domain under various agenda points.

The meeting ended with a vote of thanks to the Chair.



**List of officers who attended the 30th meeting of NCDS**

1. Shri A.K. Bajaj, Chairman, CWC, New Delhi
2. Shri A.K. Ganju, Member (D&R), CWC, New Delhi
3. Shri G.S. Purba, Chief Engineer (DSO), CWC
4. Dr. Naresh Kumar, Director (DSM), CWC
5. Dr. B.R.K. Pillai, Director (DSR), CWC
6. Shri S.S. Bakshi, Director (FE & SA), CWC
7. Shri Saibal Gosh, Director (Instrumentation), CWC
8. Shri Bhopal Singh, Director (Hydrology-S), CWC
9. Shri V.C. Gupta, Deputy Director (DSM), CWC
10. Shri Yoki Vijay, Deputy Director (DSR), CWC
11. Shri Manoj Kumar, Assistant Director (DSR), CWC
12. Shri I.S.N. Raju, Chief Engineer, Central Design Organisation, Hyderabad, Andhra Pradesh
13. Shri S. Venkateswara, Executive Engineer (SDSO), Andhra Pradesh
14. Shri Bir Bahadur Singh, Dam Safety Cell, Water Resources Department, Patna, Bihar
15. Shri. K.L. Dave, Joint Director, GERI, Vadodara, Gujarat
16. Shri Binod Kumar, Executive Engineer, Master Planning, Investigation and Hydrology Division-1, Jharkhand
17. Shri Basavaraj Koti, Director, KERS, Krishnarajasagara, Karnataka
18. Shri Karappankutty K.K., Chief Engineer (Dam Safety), KSEB, Thiruvananthapuram, Kerala
19. Shri R.W. Nikum, Superintending Engineer (DSO), Nashik, Maharashtra
20. Shri V.R. Sonawane, Executive Engineer (DSO), Nashik, Maharashtra
21. Shri H.P. Tiwari, Director (Dam Safety), WRD, Tulsi Nagar, Bhopal. Madhya Pradesh

22. Shri Manoj Kumar Misra, Director, Support Services & Dam Safety, WRD, Secha Sadan, Bhubaneswar, Orissa
23. Shri Hussan Lal, Chief Engineer, Kandi Area Development, Punjab Irrigation, Chandigarh, Punjab
24. Shri K.C. Bhagat, Executive Engineer, Ranjit Sagar Dam Project, 5PK Township, Punjab
25. Shri Balbir Singh, Senior Design Engineer, Ranjit Sagar Dam Design Organisation, Chandigarh, Punjab
26. Shri S.R. Rengan, Chief Engineer (O&M), WRD, Chennai, Tamil Nadu
27. Shri R. Selvam, Superintending Engineer & Director, Dam Safety Directorate, Chepauk, Chennai Tamil Nadu
28. Shri Deep Chandra Pande, Superintending Engineer, Irrigation Work Circle, Haldwani, Uttarakhand
29. Shri Prashant Vishnoi, Executive Engineer, Irrigation Division, Kashipur, Uttarakhand
30. Shri S.N. Singh, Assistant Engineer, Irrigation Division, Kashipur, Uttarakhand,
31. Shri R.M. Gupta, Executive Engineer, Dam Safety Cell, Unit-I, Yojna Nagar, Irrigation Department, Lucknow, Uttar Pradesh
32. Shri D. Shukla, Executive Engineer, Dam Safety Cell, Unit-II, Yojna Nagar, Irrigation Department, Lucknow, Uttar Pradesh
33. Shri R.K. Chowdhry, Director (Dam Safety), BBMB, Nangal Township (Ropar), Punjab
34. Shri Rajeev Baboota, Chief Engineer (Design), Design Division, NHPC Limited, Faridabad
35. Shri H.V. Shiva Rudrappa, Sr. Manager (Civil), Design Division, NHPC Limited, Faridabad
36. Shri N.C. Sharma, Director, Engg. Geology Division, Uttarakhand Unit, GSI, Dehradun
37. Shri N.Y. Apte, Director, IMD, Lodhi Road, New Delhi