

Minutes of the 32nd Meeting of National Committee on Dam Safety (NCDS) held on 27th December, 2013 at 1030 hrs.

32nd meeting of National Committee on Dam Safety (NCDS) was held on 27th December, 2013 in CWC Conference Hall, Sewa Bhawan, R.K. Puram, New Delhi under the Chairmanship of Shri A.B. Pandya, Chairman, CWC & Chairman of the National Committee on Dam Safety (NCDS), Shri L.A.V Nathan, Chief Engineer (DSO), CWC & Member Secretary of NCDS conducting the meeting List of Officers from different organizations, present in the meeting is enclosed at Annexure-I

At the outset, Chairman, NCDS welcomed Members of NCDS/Representatives and other officers present in the meeting. Chairman, NCDS focused about the greatest importance to be given to the assets i.e. dams created and ensuring that these remain in good health and their performance remains up to the mark to make them useful for the benefit of the country. He added that to achieve the aforesaid objective, Dam safety is a critical key area. He stated that subsequent to the last meeting good progress has been made in respect of Dam Safety Bill, and the matter has now been referred to the Ministry of Law and Justice for further action. The dam safety bill has codified the procedures to be adopted, defining the standard procedures and practices to be followed with their delegation both at administrative and technical levels, so that the dam safety discipline get established. The other dam safety initiative taken by CWC related to Dam Rehabilitation & Improvement Project (DRIP) is being implemented in four states, is an ambitious project building up on experiences of earlier dam safety project DSARP under World Bank funding. During the earlier projects the institutional mechanism and standard practices could not be well established as after completion of the project the system returned to its old ways. Considering this, a lot of emphasis has been laid down in DRIP on the institutional strengthening by way of quality and capability improvement of manpower, so that the institutional mechanism is well-established even after the projects get completed. Chairman, NCDS mentioned about Dams Safety Society and its role as a general forum at informal level for exchange of technical issues among the engineering community. Thereafter, Chairman, NCDS requested all the participants to introduce themselves.

After the brief introduction by participants, Chief Engineer (DSO) & Member-Secretary, NCDS took up the agenda items of the meeting.

32.1.0 Confirmation of the minutes of 31st meeting:

Minutes of the 31st meeting of NCDS were circulated vide letter No.3/19/NCDS/DSM/31st meeting /553-582 dated 1st August, 2012 and no comments were received from members except Tamil Nadu on the point related to dam safety bill. Chairman, NCDS stated that the comments of State Government of Tamil Nadu have been taken on record since these have been included in the agenda items. The Committee confirmed the minutes of the 31st meeting of the NCDS as circulated.

32.2.0 Dam Rehabilitation & Improvement Project (DRIP):

Member Secretary, NCDS informed the Committee that Dam Rehabilitation and Improvement Project (DRIP), is a World Bank funded scheme with an estimated cost of 2100 Crore, with the objectives of rehabilitation of 223 large dams in the four participating States namely Kerala, Madhya Pradesh, Orissa, and Tamil Nadu along with institutional

strengthening component. DRIP has become effective from 18th April 2012, and will be implemented over a period of six-years. Director (DSR), CWC stated that four more State/agencies, namely, Karnataka, Punjab, DVC & UJVNL are likely to be included under DRIP. Farakka Barrage Project is also in the process of being included under DRIP. He added that subsequent to finalization of the contract with Consultant recently, system would place for Institutional Strengthening which envisages training and development. Director (DSR), CWC informed that the consultant would also create website for dam safety and update the dam safety guidelines and introduce new dam safety guidelines and design guidelines. The Director (DSO), West Bengal desired to know regarding the non-inclusion of projects from West Bengal under DRIP. Director (DSR), CWC informed that original proposals were received from 13 states under DRIP, and 11 states participated in discussions by World Bank. Subsequently on the basis of institutional readiness, commitment and Government interest, DRIP was finalized by the World Bank for implementation in four states. The other 4 states that had earlier shown interest in the project indicated that they would be unlikely to join DRIP. The World Bank Mission considered that the proposals from Andhra Pradesh, Jharkhand, Uttarakhand and West Bengal were not sufficient for inclusion for reasons of small number of dams proposed or quality and readiness of documentation. Director (DSR), CWC stated that there is a possibility of interim review under DRIP for inclusion of some more state(s). Chairman, NCDS stated that the interested states having prerequisites in terms of infrastructure may prepare necessary proposals in consultation with Director, DSR for their inclusion.

32.3.0 Setting up Hydrology units and Design Floods Review

As the earlier design floods computation were based on limited data availability, these studies require to be updated with more data as now available, by carrying out hydrological studies based on state of art statistical methods. States/DSOs have repeatedly requested to take necessary steps for setting up the hydrological units and for review of Design floods. As per National Disaster Management Authority (NDMA) Guidelines on Management of Floods, 2008, State Govts./DSOs/Dam owners were requested to ensure Dam Safety Review for all large dams which if undertaken will involve review of design flood, spillway capacity, structural soundness of the dam, spillway and appurtenant works and taking up of remedial measures in the form of augmenting the capacity of spillway by appropriate works or constructing additional spillways, strengthening of the dam, spillway and appurtenant works and completing the same in a fixed time frame. Member Secretary, NCDS stated that under DRIP in case of dam coming under “Standard Design Flood”, states have to decide regarding the revised values of design flood. He then referred to the Workshop on Design Flood Issues organized by CWC in New Delhi from 19-20th November, 2013 and requested Director, Hydrology (South), CWC to deliberate on the outcome of the workshop. Director, Hydrology (South) informed that the workshop was attended by participants from various central organizations, states, academic institutions and experts from the fields etc. A wide range of issues on design flood aspects such as design storm, design flood synthesis, combination of Glacier Lake Outburst Flood(GLOF) with applicable design flood, incorporation of associated hazard in design flood, uncertainty analysis in flood assessment, likely impact of climate change on design flood and design flood criteria, flood management etc. were deliberated during the workshop. Director Hydrology(S), CWC further intimated that CWC is developing Hydrological Design Aids–Surface Water (HDA-SW) under Hydrology Project-II. Chairman, NCDS stated that the development of “Hydrological Design Aids (HDA)” aims at standardizing the design practices in form of design aids using state of art technology to the maximum extent

possible. This will help in preparing the hydrology portion of the detailed project report (DPR) of water resources projects in a standardized format and reducing the time required for carrying the hydrological studies. The HDA also includes the module on design flood also. Director (DSO), West Bengal desired to know regarding the training programmes. Director Hydrology(S), CWC intimated that a number of training programmes are being organized for the State Engineers on HDA. The details of training shall be available NWA, CWC website www.cwc.nic.in

Chairman, NCDS told that the design flood review study shall be quite easy and streamlined if input data is prepared through HDA. Freeware GIS software MAPWINDOW has been incorporated in HDA for geospatial analysis of catchment.

Director Hydrology(S), CWC also intimated that another ongoing project namely “Preparation of PMP Atlases” shall be extremely useful for the design flood assessment and design flood review of large number of projects in the country. The basin wise PMP atlases not only provide ready estimate of PMP values for small/medium projects but also provide all necessary information/data for carrying detailed storm analysis for any project. The work of PMP atlases is likely to be completed by March, 2014. Chief Engineer (DSO), Odisha informed that hydrology of 10 dams have been completed and got vetted from hydrology unit set up under Chief Engineer (Planning), Odisha. He mentioned of data related problems being faced in respect for Rengali project. Director, Hydrology (S), CWC informed that IMD can also provide assistance in this regard and once approved, the PMP atlases would be available on CWC website. Director (DSR), CWC stated that for training purposes, it is desirable to have a dedicated Hydrology unit in place at first instance for meaningful results and accordingly the states were requested to set up the hydrology units. Member-Secretary, NCDS requested all States to take necessary steps for review of Design floods, and for setting up the hydrological units and to regularly intimate NCDS Secretariat regarding the status in this regard.

It was decided that as under DRIP, that for review of design floods, projects coming under PMF category have to be got approved by CWC, whereas those under SPF and below category can be approved by state governments. Member-Secretary, NCDS informed that, as per available information, states like Chhatisgarh are not having hydrology unit for which Chief Engineer, Mahanadi Reservoir Project, Chhatisgarh informed that Chhatisgarh is in the process establishing a hydrology unit.

32.4.0 Performance of Dams

(a) Dams of National Importance

(i) Bhakhra Dam (Punjab):

Director, Dam Safety, BBMB mentioned regarding the issues of deflection, instrumentation and revision of PMF. Chairman, NCDS suggested setting up FEM Model ‘Abaqus’ and simulating the behavior of dams under extreme stress conditions and also mentioned about the effect of the temperature and setting up FEM model with thermal gradients that would replicate the deflection actually occurring. He also advised the state governments/DSOs to set up such FEM model for all the major dams, which does not cost much and are very useful for assessment of the response under stress conditions. Chairman, NCDS stated that Director, Dam Safety, BBMB would enlist the various issues under

consideration and prepare the agenda for the meeting which may be held in January, 2014 to discuss all the issues related to Bhakra Dam, wherein the design units of CWC may also involve.

(ii) Idukki Dam (Kerala):

The representative from Kerala State Electricity Board was not available to brief the Committee. However, KSEB has intimated that the measurement of deflection based on pendulum reading with respect to consecutive rising and lowering of water level in the lake is under preparation in the field. In this season a level of 2401.7 feet was attained in the reservoir, which the maximum in the nearby past. The deflection study is a long term study and with Idukki being the only one arch dam in India, the dam is intended to undergo much elastic movement. So far, no alarming situations have been observed and the dam is under constant observations. The issue of deflection reported earlier was with respect to monthly data. Hence revised analysis based on the water level in the lakes are under preparation and then only the correct situation can be ascertained whether it is alarming or not and whether the dam is showing any misbehavior. Director (DSR), CWC suggested that since the dam is enlisted in the DRIP, necessary rehabilitative measures would be taken up in due course in consultation with the Engineers and Management Consultant.

(b) Other Dams

(iii) Garada Dam (Rajasthan):

Director (Canal), Rajasthan informed that the tenders for the work related to breached portion are under process and work will start soon. Director, CSMRS informed that CSMRS had visited Garada Dam three times, but, nothing could be materialized due to non settlement of issues related to drilling machines etc. which need to be sorted out and once all the arrangements are completed by the state government only then the Central Soil and Material Research Station (CSMRS) team can be requested for the field visit. Chairman, NCDS asked Director (Canal), Rajasthan to carry out thorough investigation of all the remaining portion of the dam before filling up of reservoir and to facilitate proper investigation by CSMRS.

(iv) Srisailem Dam (Andhra Pradesh):

Chief Engineer, Central Design Organisation, Andhra Pradesh informed that the protection work at the toe of the dam foundation opposite to the block 5th has been completed and protection works opposite to the block 6th & block 7th could not be taken up due to tail water. It was informed that an Expert committee has been constituted for increasing the spillway capacity. The Member Secretary, NCDS asked Chief Engineer, Central Design Organisation, Andhra Pradesh that the issues should be taken up on priority. Director, Hydrology (S), CWC requested Andhra Pradesh Govt. to take up revision of design flood on priority basis and approve the progress in this regard regularly to Hydrology (S), Directorate, CWC.

(v) Palemvagu Dam (Andhra Pradesh):

The representatives of the Andhra Pradesh informed the committee that 98.57% of earth work has been completed, 96.40% of concrete work has been completed and 91.28% financial progress pertaining to the above dam is quite satisfactory. Chairman, NCDS

requested Andhra Pradesh Govt. to ascertain the causes of failure of dam to see that relevant rehabilitation measures have been taken up and submit the technical details in this regard to CWC.

(vi) Nand Gavan Dam (Maharashtra):

The representatives of Maharashtra intimated that due to funds constraints, the work of restoration of the dam has not taken place. An estimate for taking up restoration is in progress which would be require administrative approval by the competent authority and work shall commence after funds allocation. Chairman, NCDS advised Superintending Engineer (DSO), Maharashtra to ascertain reasons of failure in a scientific manner before taking up the restoration works of the dam. Director, DSR, CWC stated that the matter is pending since long due to funds constrains and requested Superintending Engineer (DSO), Maharashtra to sort out the matter on top priority.

(vii) Maro and Maudha Dam (Uttar Pradesh):

The representative of Uttar Pradesh informed that the some rehabilitation measures in respect of Maro Dam have been completed and first filling of the dam has been made during Monsoon, 2013 and after checking the behavior of the rehabilitation works undertaken further restoration works would be taken up. He informed that no rehabilitation measures have been taken up for the Maudha Dam. Member Secretary, NCDS requested Executive Engineer, U.P that the matter may be taken seriously and urgent necessary action may be taken for the restoration of aforesaid two dams.

32.5.0 Preparation of Emergency Action Plan (EAP) and Risk Assessment studies:

Member Secretary, NCDS informed regarding the need to prepare the EAPs and further informed that as per the Report No.5 of 2013 C&AG on Performance Audit on Disaster Preparedness in India, one of the recommendations pertaining to Ministry of Water Resources is as under:

- “The Ministry of Water Resources should ensure preparation of Emergency Action plans of the states covering all the major dams”.

Member Secretary, NCDS asked the representative of Gujarat regarding the status of preparation of EAPs. Executive Engineer, DSO, Gujarat informed that Emergency Project Plan (EPP)/Standard Operating Procedure (SOP) have been prepared for 621 number of large dams and EAP for only Ukai dam has been started and for no other dam EAP has commenced. Director (DSR), CWC informed that SOP cannot be considered as EAP. Director (DSR), CWC explained that EAPs involves dam break analysis, examination of possible modes of failure& preparation of inundation map etc. and EAP is required to be prepared for all the large dams. Director (DSR), CWC requested Superintending Engineer (DSO), Maharashtra to furnish copy of the finalized EAPs which can be uploaded on the CWC website. The EAP prepared by BBMB was also appreciated, however BBMB is requested to develop inundation map for down stream areas in consultation with state governments of Punjab and Himachal Pradesh. In view of the importance of the matter Member Secretary, NCDS requested state governments/DSOs to make all out efforts for the

preparation of EAPs of all the large dams under their jurisdiction and to send the half yearly return as per Performa enclosed at Annexure-II.

32.6.0 Pre & Post Monsoon inspection of Dams:

Pre and Post monsoon inspection of each large dam is required to be carried out by the concerned State/DSOs and Annual Reports of such inspections are compiled by the respective Dam safety organization (DSO) and forwarded to Dam Safety Organization, CWC.

The inspection reports normally cover the observations of inspecting team, suggested remedial measures and action taken on suggested remedial measures. It has been observed that all the large dams under a particular State are not covered in the Health status reports of pre & post monsoon inspections. The details of action taken on suggested remedial measures are invariably not included in Health Status Reports.

Director (DSR), CWC stated that inspections are being carried out by some of the state governments regularly and specifically the efforts put in by Maharashtra in this regard need to be appreciated. As stressed by NDMA in the Guidelines on the management of floods (2008), the State Governments/ State Disaster Management Authority (SDMAs) /DSOs/Dam owners will ensure that Pre-monsoon and post-monsoon inspections of dams are carried out and subsequent recommendations are implemented and restoration/strengthening measures of vulnerable spots are carried out before the commencement of monsoon every year by Dam owners in a fixed time frame to ensure continued service and safety of dams. Further, State Governments/ State Disaster Management Authority (SDMAs) /DSOs/Dam owners will ensure that Dams will be regularly inspected during floods for identification of vulnerable spots and immediate measures to strengthen them will be implemented. In case of apprehension of any breach or overtopping, people living in the area will be warned of the danger and the civil administration, with the help of National Disaster Response Force (NDRF), State Disaster Response Force (SDRF) and/or the army will take steps for evacuation, rescue and relief. It was mentioned that the State Govts./DSOs/Dam owners may implement NDMA recommendations in coordination with State Disaster Management Authorities (SDMAs). In view of above, the State Govts./DSOs/Dam owners should monitor that Pre-monsoon and post-monsoon inspections of dams will be carried out regularly for all the large dams under a particular State /DSO and ensure that the remedial actions taken on the shortcomings noticed during the Pre-monsoon and post-monsoon inspections are completed. Further, state governments/DSOs are requested to submit the details of pre and post monsoon inspection as per performa enclosed at Annexure-III.

32.7.0 Instrumentation of Dams:

Director (Instrumentation), CWC stated that States/DSO's may submit separate detailed report on performance of existing instruments installed in the dam body and foundation including analysis of data with permissible limits of Instruments to the Director, Instrumentation Directorate, CWC on yearly basis. However, such reports are being received only from the State Government of Maharashtra and BBMB. Chairmen, NCDS emphasized that the State Government/DSOs may regularly monitor the performance of the instruments and induct new and appropriate technological solutions in view of the non-

functioning of the instruments in the existing dams and for such dams where no instrument exists.

32.8.0 Comprehensive Dam Safety Review Panel (DSRP):

Member Secretary, NCDS informed that as per “Dam safety Procedures”, the States/DSOs shall arrange comprehensive safety review of all Large Dams by an independent panel of experts once in 10 years. The State/DSO’s shall develop their own mechanism for safety review of the balance dams in their state based on assessment of safety of dam, Hydrological, structural and seismological assessment. Regarding the frequency of the DSRPs inspection it was clarified by Director (DSR), CWC that once in ten years is the upper limit, however frequency of DSRP inspections to be carried out would depend on the condition of the dam and its hazard potential. The states of Chhatisgarh and Punjab informed of having constituted DSRPs. Member Secretary, NCDS requested the States to constitute the DSRPs wherever this has not been done and carry out the requisite Comprehensive dam safety review of large dams. In this regard the guideline for inspection of dams by DSRPs is enclosed at Annexure-IV for guidance of State Govts./DSOs/Dam owners.

32.9.0 Record of Dam failures:

The President of ISEG mentioned that, due importance may be paid to geological aspects for analyzing the failures related to foundations problems. Director (DSR), CWC stated that not many failures have been reported due to foundation problems or related to geology. He further informed that geologists are one of the members of the Dam Safety Review Panel. The president of ISEG mentioned that the exceptionally good records of performance of dams should also be compiled to generate awareness of good performance. The Member Secretary, NCDS intimated that the details of dam failures may be reported to NCDS Secretariat. It was further emphasized that causes of failure may be ascertained in such cases and a detailed report sent to NCDS Secretariat. The list of dam failures in the country as per information received from state governments/DSOs is enclosed at Annexure-V, which may be updated by State Govts./DSOs/Dam owners on regular basis and report on causes of failures sent to NCDS Secretariat.

32.10.0 Completion Reports, Data Book and O&M Manual:

Member Secretary, NCDS informed that the compilation of the completion reports of all important and major projects and data books on the 61 nos. dams classified as dams of National Importance (Dams with height 100 metre and above or gross storage capacity of 1 (one) billion cubic meters and above) appearing in National Register of Large Dams (NRLD) as already stressed during previous meetings of NCDS. It was informed that the project authorities should prepare the operation & maintenance (O&M) manuals for all the projects in their States on priority. The matter was discussed and it was decided that the project authorities should compile a complete set of designs and drawings with the salient features of the completed dams.

32.11.0 Monitoring of safety aspects of inter-state dams by Sub-Committees:

The National Committee in consultation with the concerned State Governments has set up Sub-Committees to monitor the safety aspects of selected inter-State dams. The Sub-Committees will submit its report to the National Committee.

(a) Mahanadi River System Sub-Committee (MRSS):

An inter-state Sub-Committee of NCDS for Mahanadi River System exists to monitor the safety aspects of inter-state dams in Mahanadi Basin comprising of States of Odisha & Chhattisgarh with Chief Engineer, Dam Safety, Odisha as Member Convener. Chief Engineer, Dam Safety, Odisha informed that Seventh Sub-Committee meeting was held on 17.07.2013 at Raipur and there is complete coordination between the member states for managing the dam safety aspects of inter-state dams. Member Secretary, NCDS stressed the need of having regular meetings of the sub-committee. It was decided that the next meeting of the sub-committee would be convened soon and Member Secretary, MRSS to submit a report on the monitoring of the safety aspects of the Inter-state of Mahanadi River System.

(b) Parambikulam Aliyar Project Sub-Committee (PAPS):

At the outset, State Government of Tamil Nadu expressed strong resentment and requested for the disbandment of PAP sub-committee, whereas State Government of Kerala informed that regarding the issues related to dam safety of PAP projects could not be discussed either in the subsequent meeting of the Joint Water Regulation Board (JWRB) as per the decisions of the 31st meeting of NCDS or the PAP sub-committee which could not be convened. Director (DSR), CWC stated that a decision to discuss the dam safety issues of PAP in the next meeting of JWRB was taken during the 31st NCDS meeting as, the State Government of Tamil Nadu had informed that PAP sub-committee exists which can take care of dam safety aspects of PAP dams. It was decided that the State Government of Tamil Nadu should deliberate on the issues related to the dam safety aspects of the inter-State Dams of the PAP with the State Government of Kerala in the next meeting of the JWRB.

(c) Subarnarekha River System Sub-Committee (SRSS):

Director (DSO), Jharkhand requested that the State of Jharkhand may replace Bihar in the Subarnarekha River System Sub-Committee, which was agreed to by NCDS. He further requested that Jharkhand should be the Member Secretary of the aforesaid sub-committee being upper riparian state. Regarding holding the next meeting of the committee Chief Engineer, Dam Safety, Odisha informed that the response from the State Government of West Bengal is awaited for holding the next meeting of the sub-committee. It was decided that the State Government of West Bengal would intimate the details of holding the next meeting, wherein the matters related to frequency of the meetings of the sub-committee and Member Secretary ship would be resolved among the states along with the issues related to the safety of the inter-state dams. Accordingly, the State Government of West Bengal is requested for early facilitation for the next meeting of the sub-committee and thereafter a report on the monitoring of the safety aspects of inter-state dams of Subarnarekha River System may be submitted to NCDS Secretariat by Member Secretary of the sub-committee.

32.12.0 National Register of Large Dams:

The matter related to the definition of large dams for inclusion under NRLD was discussed. Chairman, NCDS stated that definition of large dam may be adopted as per the ICOLD definition of large dams i.e. considering “Height of the dam above lowest foundation”. It was also decided to include an additional column giving details of “**River Basin**” wherein the large dam lies in the performa for the NRLD.

The representatives of Tamil Nadu mentioned of the request made by State Government of Tamil Nadu to incorporate a foot note “MullaPeriyar (Periyar), Parambikulam, Thunakadavu and Peruvuripallam dams geographically located in Kerala are owned, operated and maintained by Tamil Nadu Public Works Department” in the NRLD table below “State – Tamil Nadu”

The matter was discussed and the request of Tamil Nadu for inclusion of aforesaid foot note in the Table below “State – Tamil Nadu” was accepted. However, in order to maintain uniformity, other states may send details for incorporation in NRLD about dams located out of their state but operated, owned and maintained by them for incorporation of similar foot notes in NRLD. In the meanwhile, a foot note “4 (four) dams, namely, MullaPeriyar (Periyar), Parambikulam, Thunakadavu and Peruvuripallam dams are located in Kerala state and are operated and maintained by Tamil Nadu PWD” has been incorporated in the NRLD under table “State – Tamil Nadu”, and word “owned” would be added in the foot note on receipt of requisite details from other states. Regarding the inclusion of above foot note on all related Tables as per the request of State Government of Tamil Nadu, the option would be examined without affecting clarity

As requested, correction of storage of MullaPeriyar Dam has been incorporated as $299306.24 \times 10^3 \text{m}^3$ (the earlier figure of $2993.1 \times 10^3 \text{m}^3$ was provided by the WRD of Kerala vide their letter dated 25.09.12) and the type of Dam for the Parambikulam Dam has now been shown as “Masonry cum Earth” (earlier shown as Gravity/Masonry as provided by the WRD of Kerala vide their letter dated 25.09.12).

The state governments/DSOs were requested to thoroughly checkup the data of large dams in NRLD available at CWC website www.cwc.nic.in and submit the corrected and completely duly filled up data in the enclosed performa at Annexure -VI showing the details of river basin within one month to NCDS Secretariat.

32.13.0 Dam Safety Bill:

Director (DSR), CWC informed that Ministry of Water Resources formulated a Dam Safety Bill 2010, which was introduced in the Parliament on 30th August 2010, and was subsequently referred to the Parliamentary Standing Committee on Water Resources for

examination. The Parliamentary Standing Committee submitted the recommendations vide its Seventh Report on Dam Safety Bill, 2010 in the Parliament in August, 2011, and subject to its recommendations and observations, the Standing Committee has recommended passing of the Bill by the Parliament. The observation and recommendations of the Parliamentary Standing Committee on Water Resources were examined by Ministry of Water Resources for necessary compliance. The matter has now been referred to the Ministry of Law and Justice for further action. Chief Engineer, PWD, Tamil Nadu raised the objections of the Government of Tamil Nadu, which will be detrimental to the interest of State and the Committee observed that these issues have already come in the records of NCDS and also considered by the Parliamentary Standing Committee.

32.14.0 Setting up/Strengthening of Dam Safety Organization (DSO):

States/Dam owners were requested to take necessary steps for formation of Dam safety organizations/Cell wherever they do not exist, and Dam safety organizations/Cell need to be strengthened to discharge the requisite functions. In this regard, the accepted action points on “Report on Dam Safety Procedures is enclosed at Annexure-VII which also includes the functions and responsibilities of the dam safety Cell to be constituted at the state level for compliance by State Govts./DSOs/Dam owners. Dam owners will perform aforesaid dam safety functions in case no Dam Safety Organization/Cell exist. On the request made by Director (DSO), WRD, Jharkhand regarding guidance on preparation of various reports, Superintending Engineer, DSO, Maharashtra agreed to provide desired assistance in this regard.

The meeting ended with a vote of thanks to Chair.

The major decisions taken during the 32nd meeting of NCDS are summarized below:-

- 32.1 The minutes of the 31st meeting of the NCDS were confirmed as circulated.
- 32.2 There is a possibility of interim review under DRIP for inclusion of some more states having necessary infrastructure.
(Action: States DSO's /Dam owners/DSR Dte.)
- 32.3 It was decided that, for review of design floods, the PMF level projects have to be got approved by CWC, whereas the SPF and below projects are to be approved by state governments. States/DSO may get input/storm data from IMD and/or PMP Atlas in generating the necessary values. All States DSO's/Dam owners to take necessary steps for review of Design floods, and set up the hydrological units and to regularly intimate NCDS Secretariat regarding the status in this regard.
(Action: States DSO's /Dam owners/HSO, CWC)
- 32.4 a) Dam owners may thoroughly examine the reasons of failures of the dams before undertaking the rehabilitation measures. NCDS Secretariat may be kept informed regarding the reasons of failures, status of mitigation/rehabilitation measures being undertaken for dams and other issues as discussed under Para 32.4.
(Action: BBMB, State Govt's of Kerala, Rajasthan, Andhra Pradesh, Maharashtra, Uttar Pradesh)

b) BBMB would enlist the various issues under consideration and prepare the agenda for the meeting which may be held in January, 2014 to discuss all the issues related to Bhakra Dam, wherein the design units of CWC may also involved.

(Action: BBMB & DSR Dte., CWC)

- 32.5 a) All the Dam owners to take immediate necessary steps for preparation of EAPs and to submit the report to NCDS Secretariat as well as the numbers /details of Dams for which EAP's have been prepared in the prescribed format half yearly(Annexure-II) enclosed, along with the target dates for preparation of EAPs for their remaining Dams.

(Action: States/ DSO's /Dam owners)

b) BBMB is requested to develop inundation map for down steam areas in consultation with state governments of Punjab and Himachal Pradesh.

(Action: BBMB)

- 32.6 State Govts./DSOs/Dam owners to ensure that Pre-monsoon and post-monsoon inspections of dams are carried out regularly for all the large dams under a particular State /DSO as also stressed by NDMA and ensure that the remedial actions are carried out in time on the shortcomings noticed during the Pre-monsoon and post-monsoon inspections. Further, state governments/DSOs are requested to submit the details of pre and post monsoon inspections along with remedial action taken as per performa enclosed at Annexure-III.

(Action: States DSO's /Dam owners).

- 32.7 State Government/DSOs may regularly monitor the performance of instruments of the projects. It was emphasized that in view of the non-functioning of the instruments in the existing dams, and for such dams where no instrument exists, the state government/DSO may induct appropriate technology for observation of important parameters and DRIP may provide guidance/assistance in this regard.

(Action: Director (DSR), CWC & Director, (Instrumentation), CWC & States DSO's /Dam owners)

- 32.8 It was decided to constitute Dam Safety Review Panels wherever not yet constituted. All the States/ Dam owners to inform the status of constitution of DSRP's, along with the details of comprehensive dam safety reviews undertaken by the DSRPs on regular basis to NCDS Secretariat. In this regard the guidelines for inspection of dams by DSRPs are enclosed (Annexure-IV).

(Action: States DSO's /Dam owners)

- 32.9 The Member Secretary, NCDS intimated that the details of dam failures may be reported to NCDS Secretariat. It was further emphasized that causes of failure may be ascertained in such cases and a detailed report sent to NCDS Secretariat. The list of dam failures in the country as per information received from state Govts./DSOs is enclosed at Annexure-V which may be updated by State Govts./DSOs/Dam owners on regular basis and report on causes of failures sent to NCDS Secretariat.

(Action: States DSO's /Dam owners)

- 32.10 All States DSO's /Dam owners to compile a complete set of designs and drawings with the salient features of the completed dams, Data Book (for dams of national importance) and O&M Manual of their large dams and furnish the status of aforesaid compilations completed to NCDS Secretariat.

(Action: States DSO's /Dam owners)

- 32.11 a) It was decided that the next meeting of the Mahanadi River System Sub-committee would be convened soon and Member Secretary, MRSS to submit a report on the monitoring of the safety aspects of the Inter-state of Mahanadi River System to the NCDS Secretariat.

(Action : Chief Engineer, DSO, Odisha & Member Secretary, Mahanadi River System Sub-Committee)

- b) The States of Kerala and Tamil Nadu to deliberate on the issues related to the dam safety aspects of inter-State Dams in Parambikulam Aliyar Project in the next meeting of the Joint Water Resolution Board, and Member Secretary, PAPS to submit a Report on the outcome of aforesaid discussions and on dam safety aspects of inter-state dams under PAP to the NCDS Secretariat.

(Action: State Govt's of Kerala & Tamil Nadu)

- c) The State Government of West Bengal is requested for early facilitation for the next meeting of the Subarnarekha River System Sub-Committee (SRSS) wherein the matters related to frequency of the meetings of the sub-committee and Member Secretary ship would be resolved among the states and thereafter a report on the monitoring of the safety aspects of inter-state dams of Subarnarekha River System may be submitted to NCDS Secretariat by Member Secretary of the sub-committee.

(Action: Director (DSO), West Bengal and Chief Engineer, Odisha Member Secretary of the Subarnarekha River System Sub-Committee)

- 32.12 a) The state governments/DSOs were requested to thoroughly check up the data of large dams as provided in NRLD available at CWC website www.cwc.nic.in and submit the corrected and completely duly filled in data in the enclosed proforma (Annexure-VI) also having the details of river basin within one month to NCDS Secretariat by mail at damsindia2003@yahoo.co.in , and as well by hard copy.

(Action: States DSO's /Dam owners)

- b) A foot note "4 (four) dams, namely, MullaPeriyar (Periyar), Parambikulam, Thunakadavu and Peruvaripallam dams are located in Kerala state and are operated and maintained by Tamil Nadu PWD" has been incorporated in the NRLD under table "State – Tamil Nadu". States may send details for incorporation in NRLD about dams located out of their state but operated, owned and maintained by them for incorporation of similar foot notes in NRLD.

(Action: State Governments of U.P., Uttaranchal, Bihar, Jharkhand and other States DSO's /Dam owners as applicable)

32.13 On the request for modification by Tamil Nadu on the Dam safety Bill, it is reported that the matter has already been considered by Standing Committee.

(Action: States DSO's /Dam owners)

32.14 State Govts./DSOs/Dam owners to take necessary steps for constitution/ strengthening of Dam safety organizations/Cell as per Para 32.14 and perform functions as per Annexure-VII, VII(A). All States to convey to the NCDS Secretariat the updated status in this regard and details of Address, Telephone No., Mobile No., e-mail address & Fax etc. for the existing Dam Safety Organizations, and for newly formed organizations.

(Action: States DSO's /Dam owners)

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