

**Minutes of the third meeting of
National Committee on Dam Safety held on 27.12.1988**

- 1.0 The third meeting of the National Committee on Dam Safety was held on 27 December 1988 in Sewa Bhavan, New Delhi under the Chairmanship of Shri M.A.Chitale, Chairman, Central Water Commission.
- 1.1 The listing of officers who attended the meeting is given in Annex I.
- 1.2 Chairman welcomed the members of NCDS and other participants. He explained that since the last meeting many important developments have taken place in the country concerning dam safety and he desired to inform the members and participants of the same.

2.0 Important developments on dam safety.

- 2.1 Chairman informed the appreciation expressed by World Bank on the excellent quality of articles presented by Indian engineers in the seminar on "Hydrologic Safety of Dams" held at Nagpur in October 1988 which was jointly organized by CBIP and the State of Maharashtra. The papers were of international standard and it proves that we are capable of tackling our own dam safety problems.
- 2.2 Regarding World Bank assistance to the States, Chairman stressed the need for the States to have a proper organizational set up for dam safety activities and also put into effect dam safety procedures that would be acceptable to the World Bank. This is specially important in view of withdrawal of World Bank assistance to the tune of Rs.20 crore for Orissa Medium Irrigation Projects and the likelihood of similar projects in Madhya Pradesh suffering the same fate though not specifically on dam safety issues as in the case of Orissa.
- 2.3 Another important issue concerned the evaluation of Dam Safety Assurance Programme of Maharashtra jointly by Government of Maharashtra, CWC and the World Bank. Chairman was pleased to inform that the joint team evaluation has recognized the ability of that State to look after the safety of their dams.

3.0 Review of National Scenario (Unusual occurrences in Monsoon)

- 3.1 Chairman explained that the National Scenario during monsoon and its effect on the dams is an important issue that should be taken cognizance by the Committee, particularly with reference to the operation of dams during heavy downpours and floods and deficiencies, if any, in the structural and operational features revealed

during operation and post-monsoon inspection. This is required to be discussed in the Committee meetings as a normal feature and means of sharing our experiences for the benefit of all concerned. Members should prepare a brief note on the subject for presentation at every meeting.

(Action : all members)

- 3.2 Discussing operation of gates during monsoon, Shri K.Madhavan explained the successful automated operation of gates in Salal Project with the aid of microprocessors in passing a flood volume of 4.25 lakh ft.³/sec this monsoon. Chairman expressed the need for requesting NHPC to prepare a paper on this issue for circulation amongst all Committee members.

(Action: DSO – CWC)

- 3.3 While discussing Salal Dam, Commissioner (Indus), MOWR described the siltation problem of the dam on account of plugging of the low level sluices as per agreement with Pakistan. Chairman desired that a representative from NHPC should be requested to attend the next Committee meeting as a special invitee and that NHPC be requested to prepare a report on the siltation problem of Salal Reservoir.

(Action : DSO – CWC)

- 3.4 Chairman requested the representative from each State to describe the monsoon scenario in his State and its effect on the dams. Since representative from Gujarat was not present in the meeting, Chairman informed the Committee members of the washing out of Mitti dam in Gujarat during the last monsoon. Representative from Maharashtra intimated that there were no unusual floods during 1988 monsoon and there were no problems in gate operation. Representative from Uttar Pradesh informed that there was no heavy rainfall in his State. However, periodical inspections of dams were not taking place as required. The matter has been taken up with the Engineer-in-Chief of the state. Representative from Karnataka intimated that there were no unusual occurrences and the outflow from the reservoirs did not exceed the design capacity of the outlets. There was only one instance of overspilling of the gates of Tungabhadra dam which was an operational problem. Post-monsoon was lean in his State and post-monsoon inspection reports were not forthcoming. There was an earthquake which affected Kosi but there was no report about damages. Representative from Madhya Pradesh intimated that monsoon was good in general, but the Mahanadi reservoir did not fill up. Representative from Bhakra Beas Management Board intimated

that there was widespread rainfall in Punjab and Himachal Pradesh during September 1988, as a result of which 1.5 lakh ft.³/sec had to be released from Bhakra for a period of 4 to 5 days and similarly large releases to the tune of 2.25 lakh ft³/sec from Beas dam. Representative from Rajasthan intimated that rainfall was normal this monsoon. However, most of the dams in his State did not fill up to the full reservoir level.

- 3.5 Regarding the issue of flood plain zoning leading to demarcation of flood areas downstream of the dam, Members agreed that a lot of work need to be done. Apart from the technical issues involved, this problem involves administrative issues and the public in general. Representative from Uttar Pradesh recounted his experience of the flood zoning done in 1979 for Ramganga and how on account of lack of awareness and supervision, the pillar markings, etc., were destroyed. Chairman requested the member from Uttar Pradesh to prepare a detailed note on the flood zoning done at Ramganga project. This would be discussed separately at some other forum. Representative from Maharashtra and Karnataka explained the reservation that exists in the mind of the public which can be dispelled by spreading awareness through civil authorities.
- 3.6 Shri B.S.Mathur, Professor, Hydrology, University of Roorkee stated that there had been unprecedented rains in isolated locations this monsoon. He stressed the need for carrying out proper hydrological observations coupled with the need for a complete hydrological reappraisal for all dams in the country. Representative from IMD reported excessive rainfall in Punjab this monsoon. He also intimated that IMD was observing and maintaining records of historic storms in the country, but these were not basin-wise.
- 3.7 Chairman observed that the hydro meteorological aspects of dam safety had not received much attention and requested Member-Secretary, CBIP to hold a workshop on "Unusual storms and their relevance to dam safety" before the monsoon of 1989. The tentative programme drawn up was to include this subject in various CBIP workshops scheduled to be held in four zones of the country in April and May 1989, which would be a joint venture of CBIP, Institute of Hydrology and IMD. After these workshops are conducted, the National Committee can take a view on the common important issue.

(Action : CBIP)

- 3.8 Preparation of flood zoning maps, being a very involved issue, Chairman, CWC may write to the Chief Secretaries of the States for setting up inter-disciplinary committees for undertaking this job.

4.0 Minutes of the second meeting of the NCDS were confirmed.

5.0 Dam Safety Organization in Bihar & Rajasthan

The Dam Safety Organization in Bihar has not yet been created and Rajasthan also does not have an identified organization for this purpose. The representatives of Bihar and Rajasthan intimated that posts for the State Dam Safety Cells have yet to be sanctioned. Chairman may write to the Chief Secretaries for expediting this issue.

(Action : DSO – CWC)

6.0 Compilation of National Register of Large Dams

The Committee reviewed the position on supply of information by the States. It was decided that information received till the end of January 1989 will be incorporated in the present report and published. In future, projects under construction will be shown under two categories. Those on which the physical activity had commenced will be shown as dams under construction and those which were administratively approved would be shown as dams under planning.

(Action : all members)

7.0 Implementation of the recommendations of the "Report on Dam Safety Procedures" (Action Points)

- 7.1 Members indicated the action taken by their States in implementation of the recommendations of action points of "Report on Dam Safety Procedures." Chairman desired that apart from this, members should also intimate any achievements by their Dam Safety Cells / Organizations in future.

(Action : all members)

- 7.2 Representative from Madhya Pradesh intimated that a directorate for gates has been created in the Irrigation Department. Representative from Bihar informed that a hydrology cell has been opened. Representative from Uttar Pradesh informed that they had brought out an operation & maintenance manual for the Yamuna Hydro Electric Project which was shown to the Committee members. This was a priced publication and members were told that the same could be obtained on payment.

- 7.3 Chairman desired that in future members / States should prepare a gist of the points on which action had been taken, to facilitate understanding of progress made.

(Action : all members / States)

8.0 Setting up of hydrological unit in the State

- 8.1 The States of Bihar, Gujarat, Karnataka, Madhya Pradesh and BBMB intimated that a hydrological unit was functioning in their States. Chairman desired to know the position of this subject in other States. Representative from Bihar informed that though a cell on hydrology exists, no work had been taken up for hydrological review. Representative from Maharashtra informed that action is being taken for establishing a hydrological unit in the State. Rajasthan's representative intimated that their Irrigation Department had a Dy. Director for hydrology, but no review had been conducted for the hydrological safety of dams in the State. Representative from Uttar Pradesh mentioned that hydrology unit in his State dealt with new dams and review of hydrological aspects of existing dams was not conducted.
- 8.2 Chairman stated that since the hydrological review of existing dams was imperative from the point of view of safety of dams, it was necessary to write to the Irrigation Ministers of States for establishing an independent hydrological unit in each State, and also to train a large number of engineers from the States on hydrology.

(Action : DSO – CWC)

9.0 Setting up of a geological unit in the States

- 9.1 Discussing this issue, representative from Maharashtra intimated that the State had an independent geology unit, which looked after on-going dams and dams under distress. For existing dams, there was no adequate backup. Tail channel erosion was a problem on which the State needs advice from GSI. Representative from Uttar Pradesh intimated that services of GSI were available for on-going projects and there was a sanctioned post of Geologist which has not been filled. They would need the assistance of GSI for reservoir rim stability for projects located in the Himalayas. For Karnataka State, there was a senior Geologist for projects under construction, but there was none for complete projects. Representative from Madhya Pradesh intimated that the State Government had not accepted the proposal. Representative from Bihar intimated that a proposal had been made out to have a Geologist in the State Dam Safety Cell, and the

representative from Rajasthan informed that the proposal for Geologist in the Irrigation Department had been approved.

- 9.2 Chairman desired that Maharashtra should list out dams with tail channel erosion problems and Uttar Pradesh should identify cases of reservoir rim stability problems. Other States should also identify areas in which they would need the advice of GSI. This would facilitate in assessing the job volume required from GSI.

(Action : all members / States)

- 9.3 Note prepared by the representative from GSI was circulated amongst the members for their information. He explained that merely having a Geologist in an organization may serve the purpose of doing routine work but for complicated problems assistance from GSI will be necessary.
- 9.4 Chairman desired that the post of Geologist may be renamed as Engineering Geologist. He observed that there was absence of trained manpower in engineering geology. To tackle this issue, it would be necessary to appoint a small consultant group to identify curricula for engineering geology education. This would be done keeping in view the requirement of a core of engineering Geologists for geophysical investigation of large dams. On the issue of earthquake related to dams, it was essential to begin with a national dialogue involving, IWRS, Society of Engineering Geology, GSI and NVDA, before the National Committee takes a view on this subject.

10.0 Inter-State dams

- 10.1 During the second meeting of NCDS, the representative from Rajasthan was requested to give views of his State on Mahi case. He intimated that the views of his State will be made available by the end of February 1989.

(Action : Rajasthan)

- 10.2 Discussing the inter-State dams, Chairman explained that for many inter-State dams, there are inter-State organizations and the Committee should identify only those dams that do not have inter-State organization. Chairman desired that the States in the downstream reaches should identify those dams located in the neighbouring States, in the upstream reaches which could affect them.

(Action : Members / States)

11.0 Report on dam safety activities in the States including status report showing health of dams.

- 11.1 Director, Dam Safety explained to the members of the Committee the importance of including health status report of dams by each State and requested all members to include such information in their status report.
- 11.2 A draft compilation titled "National Report on Safety of Dams" was circulated to the members of the Committee during the meeting. This is essentially a compilation prepared by the DSO of CWC, based on information supplied by the States. Members desired that this report should be adopted by the Committee and at the time of its publication should be titled as "Report on Dam Safety Activities in India." Members agreed to examine the report and supplement further information by February 1989 so that the report could be finalized and released in April 1989, preferably on Water Resources Day. It was also decided that a list of dams of National Importance will be included in the report.
- 11.3 The issue concerning categorization of major deficiencies was discussed. A long list of categorized deficiencies duly prepared by the DSO of CWC was circulated in the agenda note of the third meeting of NCDS. Chairman desired that members may study the same and suggest between 6 and 10 items only so that a decision can be taken in the next meeting on the categorization of major deficiencies.

(Action : all members)

12.0 Preparation of completion report of large dams

- 12.1 Chairman desired to know from the members, the State-wise position, on the availability of completion reports for dams. Members agreed that it would be difficult to compile such reports for completed projects as of now since it would involve searching out old records. However, the Committee felt that for on-going projects this item may be made compulsory. Members were requested to communicate the State Government's administrative proposals for getting the completion reports done.
- 12.2 Chairman suggested that since serving officers in the department are not finding sufficient time for writing completion reports of projects in their State, it would be worthwhile to consider enrolling the assistance of retired personnel of the department and consultants for this job.

(Action : all members)

Members were requested to examine this issue and send their comments.

(Action : all members)

13.0 Dam Safety Legislation

13.1 Discussing on Legislation, Chairman desired to know the views of the States on this issue. Representative from Maharashtra intimated that this matter is under consideration of the State Government. Representative from Karnataka informed that the State Government did not appear to be interested in legislation. A decision is yet awaited. Bihar representative informed that this matter has been referred to their Engineer-in-Chief. Representative from Rajasthan informed that the issue had been referred to their zonal Chief Engineers for comments.

13.2 Members observed that even without enactment of legislation, most of the procedures suggested in the report on "Dam Safety Procedures" are being followed. Chairman requested the members to pursue the matter with their respective State Governments and intimate to the Committee the views of State Governments on this issue.

(Action : all members)

14.0 Other issues

14.1 Chairman opined that involvement of private institutions and academicians is essential for carrying out dam safety activities in the country. Since the safety of dams involves the public and government organizations, government departments should not try to do everything by themselves. By involving private organizations and educational institutions, experience on dam safety can be shared profitably.

14.2 It was decided that the key findings and recommendations of the joint mission for review of Maharashtra Dam Safety Assurance Programme would be circulated to all members of the National Committee. The next meeting of the National Committee would be held at Nasik (Maharashtra) during February 1989, wherein Maharashtra will make a presentation of its existing Dam Safety Assurance Programme. Suitable dates for this meeting would be intimated by the Government of Maharashtra.

(Action : members / Maharashtra)

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