

Minutes of the twenty sixth meeting of National Committee on Dam Safety (NCDS) held in CWC, New Delhi on 30.11.2004

The 26th meeting of the National Committee on Dam Safety (NCDS) was held on 30 November 2004 in Sewa Bhavan, R.K.Puram, New Delhi under the Chairmanship of Shri R.Jeyaseelan, Chairman, CWC & NCDS.

List of officers / representatives of various States / Organizations who attended the meeting is given at Annex I.

At the outset, the Chairman welcomed the members & all other representatives present and desired proper feed back relating to various issues of dam safety, as ensuring the safety of dams is a concern for all dam owners. He said that only 5% of the dams are instrumented and this is an area we should address. In this connection he mentioned about publication of CBI&P brought out on instrumentation of hydraulic structures. He further added that this meeting was very useful for interaction on various issues of dam safety. After touching briefly on the issues to be discussed, Chairman asked the Chief Engineer (DSO), Member Secretary of NCDS, to take up the agenda items.

26.1.0 Confirmation of the minutes

Chief Engineer (DSO) and Member Secretary, NCDS informed that the minutes of the 25th meeting were circulated to all members vide letter No.3/19/NCDS/DSM/2003/100-124 dated 3.2.2004. Comments on the same from some of the States/Organizations were received. They were in the form of follow-up action. It was requested by him for confirmation of the minutes as circulated, to which all members present agreed.

26.2.0 Issues relating to "Dam Safety Assurance, Rehabilitation and Disaster Management Project (DSARDMP)"

26.2.1 Member Secretary informed the Committee members that a proposal for DSARDMP has been forwarded to the World Bank in May 2003 by Ministry of Water Resources through Department of Economic Affairs after concurrence of the Planning Commission. The proposal costing about Rs.719 crore involves 11 dam owning States. During the last few months, the Bank has been considering the project seriously and deliberating on the issues relating to the project. The Bank has indicated certain suggestions and requested review of the proposals sent earlier, in view of the large time gap between submission of the proposal and response from the Bank. The participating States were requested to submit the revised proposals vide letter dated 1.6.2004. In response, so

far only 2 States, Bihar and Kerala (Irrigation) & (KSEB) have submitted the revised proposals. The candidate States were, therefore, requested to submit their revised proposals. It was also desired that in respect of Kerala a consolidated proposal clubbing both Irrigation and KSEB be to be prepared and submitted. The participating States were asked to send their revised proposals by 31 December 2004.

26.3.0 Review of National Scenario

It was requested that the members might present details of dams in distress in their respective States. The information given State-wise is as follows:

Bihar: In regard to the damage of Chandan dam in Bihar during the recent floods in the State, member from Bihar was requested to appraise the Committee about the details of damage and procedure adopted to rectify the damages. Representative from Bihar informed that a wing wall of the dam had collapsed. Member (D&R) suggested that a detailed report on the damages and proposed remedial measures might be sent.

Gujarat: Reports regarding temporary restoration work (Phase-I) of earthquake affected dams of Kachchh and Saurashtra region were received in respect of medium and minor dams only. Reports in respect of large dams are required to be given by Gujarat government. As there was no representative present from Gujarat Government, it was decided that DSO, CWC would write to the Water Resources Department, Government of Gujarat.

Madhya Pradesh: Regarding the breach in Jamunia dam, the member from Madhya Pradesh informed that the works have almost been completed. He assured the Committee to send a detailed report by the end of December 2004.

Uttar Pradesh: About the problems of Maudha dam, the member from Uttar Pradesh informed that field officers could not inspect the galleries of the dam because of heavy leakage.

Member (D&R) suggested that a detailed report on the leakage, after inspection, and some details regarding permeability, etc may be sent to CWC so that the problem could be assessed and remedial measures suggested.

26.3.1 Other issues related to safety of dams.

During the 25th meeting, the 4 participating States in DSARP-I were requested to send detailed note on the remedial measures to dams undertaken in the project, indicating salient features, actual cost incurred etc. The required information has been received only from Madhya Pradesh.

Members from Rajasthan, Orissa & Tamil Nadu were requested to send required information.

Member from Maharashtra informed about the leakage problem in Koyna dam. The remedial measures suggested by Superintending Engineer, DSO, Nasik have been carried out and now the leakage is within the permissible limit. It was suggested by the Chairman that a note on the problem and the action taken may be sent to CWC, so that such measures could be considered by others in tackling similar problems.

Member from Kerala (KSEB) informed about the various problems encountered in the following dams.

1. **Idukki dam:** A change in the pattern of deflection of the Idukki arch dam is being noticed since last few years. A progressive deflection of the crest of the dam towards upstream is noticed. Also, uplift pressure upto 90% is noticed in some of the foundation drainage holes. Variation in average ambient temperature was also reported.
2. **Idamalayar & Sholayar dams:** A reddish slurry is coming out from the foundation drainage holes of Idamalayar and Sholayar dams of Kerala State Electricity Board. In Sholayar dam, blackish slurry is also observed from some of the foundation drainage holes. Director, Engineering Geology Division, Geological Survey of India, Chennai has been requested for an inspection of the dams to evaluate whether this is related to any specific problem in the dam foundation.

Wetness on the downstream face and sprouting from a few points inside the foundation gallery is also noticed in Sholayar dam. Total seepage is of the order of 300 lpm or more.

Member (D&R) suggested that a detailed report along with relevant drawings, geological map, photographs and a write up may be sent so that the same could be studied and suggestions for remedial measures made.

The Member further referred to the case of Anathoda dam under the institutional cooperation programme with CSMRS &

NGI. Special invitee, Shri M.K.Sinha, Director (FE & SA) informed that CSMRS is dealing with the case along with some more dams listed for the purpose of investigation / study. Details are to be obtained from CSMRS.

26.4.0 Progress of implementation of the recommendations of the "Report on Dam Safety Procedures."

- 26.4.1 CWC Publications on "Report on Dam Safety Procedures" (1986) and "Guidelines for Safety Inspection of Dams" (1987) are proposed to be revised/updated by incorporating the latest techniques & developments and the 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. Comments / Suggestions from Karnataka, Maharashtra and BBMB have been received.

It was requested by the Committee that all the members may send their comments by 31 March 2005 positively.

26.5.0 Dam Safety Legislation

- 26.5.1 The importance of Dam Safety Legislation was impressed upon and the Committee members were requested to appraise the latest position in their respective States.

Member from Kerala (KSEB) informed that the State has passed one act titled "The Kerala Irrigation and Water Conservation Act 2003."

Member (D&R), however, desired to know the status of rules of operation of "Dam Safety Authority" under the above Act. The member from Kerala informed that the rules were under preparation.

Representative from Maharashtra informed that the proposed legislation is under active consideration with the Government and is slated to be introduced in the Assembly session for passing.

Representative from Andhra Pradesh informed that consent to the act (as proposed by CWC) has already been given by the Government of Andhra Pradesh. Further action is being initiated.

Concerned authorities of Tamil Nadu have submitted their proposals to the Government.

Members from Bihar, Chhattisgarh and Uttar Pradesh informed that the Hindi version of the Act has already been received from CWC as desired by the Cabinet of these States. Hence the enactment of the Regulation can be expedited.

Member from Uttaranchal said that they have prepared a legislation in line with Uttar Pradesh.

Member from Tamil Nadu observed that in the draft act nothing has been mentioned about inter-State dams. He was requested to send the views of the Government.

Some members suggested that the legislation could be enacted by the Centre for the States to adopt. Member (D&R) mentioned that the Chief Secretaries of the State may be approached for an early action in the matter.

26.6.0 Emergency Action Plans & inundation maps for down stream areas

26.6.1 The members and the representatives present were informed of the importance of preparing Emergency Action Plans (EAP) and inundation maps, which has been emphasized time and again. In the last meeting also Member (D&R) stressed the importance and requested to speed up this work. No information regarding preparation of EAP has, however, been received from any of the States.

It was informed by the member from Bihar that EAP has been prepared for Badua & Kohira Dams.

It was further informed that CWC had conducted one workshop during the month of February 2004 on preparation of emergency action plan and inundation maps. Representatives from Orissa, Uttaranchal & NHPC only participated in the workshop. It was suggested that whenever such workshops are conducted, officers from States / Organizations are supposed to participate.

Keeping in view the importance of the matter and the comments/suggestions of the dam owning States / Organizations on the guidelines circulated for developing EAP, Member (D&R) indicated that a workshop is under consideration to be conducted sometime in the month of March or April 2005.

26.6.2 As desired by the members and dam owning States, "Guidelines for developing and implementing emergency action plan (EAP) for dams" has been prepared by CWC and a

draft copy has been circulated to the member States / Organizations. All the members were requested to study the document and send their views/suggestions by 28 February 2005 positively.

26.7.0 Preparation of Data Book, Completion Reports, Operation & Maintenance Manual

26.7.1 Since the last meeting not much progress has been reported by States/dam owning Organizations on these. Present status is as follows.

SI No	State	No. of NI Dams	Name of NI Dam	Status regarding preparation of		
				Data Book	Comp. Rep.	O & M Manual
1	Andhra Pradesh	4	Nagarjunasagar	Available	Under preparation	Under preparation
			Sriramsagar	-do-	-do-	-do-
			Srisaillam HE Project	-do-	-do-	-do-
			Somasila	In progress	-do-	-do-
2	Chhattisgarh	1	Manimata (Hasdeo Bango)	Not available	Not available	Not available
3	Gujarat	2	Ukai	Available	Under preparation	Under preparation
			Kadana	Available	-do-	-do-
4	Jharkhand	3	Maithon	Not available	Not available	Available
			Panchet Hill	-do-	-do-	Available
			Tenughat	-do-	-do-	Not available
5	Karnataka	12	Krishnarajasagar	Available	Not available	-do-
			Tungabhadra	-do-	Completed	-do-
			Bhadra	-do-	Completed	-do-
			Linganamakki	-do-	Not available	-do-
			Malaprabha	-do-	Completed	-do-
			Hidkal	-do-	Completed	-do-
			Narayanpur	-do-	Not available	-do-
			Hemavathy Project	-do-	-do-	-do-
			Supa	-do-	Completed	-do-
			Mani	-do-	Completed	-do-
			Lakhya	Not available	Not available	-do-
			Almatti	-do-	-do-	-do-
6	Kerala	5	Kakki (KSEB)	Available	Available	Available
			Idukki (KSEB)	-do-	Not available	-do-
			Cheruthoni (KSEB)	Not available	-do-	Not available
			Kulamavu (KSEB)	-do-	-do-	-do-

			Idamalayar (KSEB)	Available	-do-	Available
7	Madhya Pradesh	3	Gandhisagar	Not available	Under preparation	Under preparation
			Tawa	Available	Under preparation	Available
			Bargi (R. A. B. S. Project)	Available	Under preparation	Under preparation
8	Maharashtra	5	Koyna	Available	Not available	Not available
			Paithan (Jayakwadi)	-do-	-do-	Available
			Ujjain	-do-	-do-	Not available
			Isapur	-do-	-do-	Available
			Totladi (Pench Hydel)	-do-	Available	-do-
9	Orissa	4	Hirakud	Available	Completed	Prepared but approval awaited
			Balimela	Available	Not available	Not available
			Rengali	-do-	Completed	-do-
			Upper Kolab	-do-	Completed	-do-
10	Punjab	1	Thein (Ranjit Sagar)	Not available	Not available	-do-
11	Rajasthan	2	Rana Pratap Sagar	Available	-do-	-do-
			Mahi Bajaj Sagar	Not available	-do-	Available
12	Tamil Nadu	2	Mettur	-do-	-do-	-do-
			Sholayar	-do-	-do-	-do-
13	Uttaranchal	1	Ramganga	Information not available		
14	Uttar Pradesh	4	Rihand	Available	Available	Available
			Matatila	-do-	-do-	-do-
			Rajghat	-do-	-do-	-do-
			Jamrani	-do-	-do-	-do-
15	West Bengal	1	Kangsabati	Information not available		
16	BBMB	4	Bhakra (H.P)	Not available	Available	Available
			Pong (H.P)	-do-	Not available	Not available
			Chamera (H.P)	Available	-do-	Available
			Salal (J & K)	-do-	Available	-do-

Sl No	State	Name of NI Dam	Status regarding preparation of		
			Data Book	Comp. Rep.	O & M Manual
1	Andhra Pradesh (4)	Nagarjunasagar	Under Preparation	Under preparation	Under Preparation
		Sriramsagar	-do-	-do-	-do-
		Srisailem HE Project	-do-	-do-	-do-

		Somasila	-do-	-do-	-do-
2	Chhattisgarh (1)	Manimat (Hasdeo Bango)	Available	Not available	Not available
3	Gujarat (2)	Ukai	Available	Under Preparation	Under Preparation
		Kadana	Available	-do-	-do-
4	Jharkhand (3)	Maithon	Not available	Not available	Available
		Panchet Hill	-do-	-do-	Available
		Tenughat	-do-	-do-	Not available
5	Karnataka (12)	Krishnarajasagar	Available	Not available	-do-
		Tungabhadra	-do-	Completed	-do-
		Bhadra	-do-	Completed	-do-
		Linganamakki	-do-	Not available	-do-
		Malaprabha	-do-	Completed	-do-
		Hidkal	-do-	Completed	-do-
		Narayanpur	-do-	Not available	-do-
		Hemavathy Project	-do-	-do-	-do-
		Supa	-do-	Completed	-do-
		Mani	-do-	Completed	-do-
		Lakhya	Not available	Not available	-do-
		Almatti	-do-	-do-	-do-
6	Kerala (5)	Kakki(KSEB)	Available	Available	Available
		Idukki (KSEB)	-do-	Not available	-do-
		Cheruthoni (KSEB)	Available	-do-	Not available
		Kulamavu (KSEB)	-do-	-do-	-do-
		Idamalayar (KSEB)	Available	-do-	Available
7	Madhya Pradesh (3)	Gandhisagar	Available	Under Preparation	Under Preparation
		Tawa	Available	Under Preparation	Available
		Bargi(RABS Project)	Available	Under Preparation	Under Preparation
8	Maharashtra	Koyna	Available	Available	Available

	(5)				
		Paithan(Jayakwa di)	-do-	Not available	Available
		Ujjain	-do-	-do-	Available
		Isapur	-do-	-do-	Available
		Totladoh (Pench Hydel)	-do-	Available	-do-
9	Orissa (4)	Hirakud	Available	Completed	Prepared but approval awaited
		Balimela	Available	Not available	Not available
		Rengali	-do-	Completed	-do-
		Upper Kolab	-do-	Completed	-do-
10	Punjab (1)	Thein (Ranjit Sagar)	Not available	Not available	-do-
11	Rajasthan (2)	Rana Pratap Sagar	Available	-do-	-do-
		Mahi Bajaj Sagar	Not available	-do-	Available

12	Tamil Nadu (2)	Mettur	-do-	-do-	-do-
		Sholayar	-do-	-do-	-do-
13	Uttaranchal (1)	Ramganga	Information not available		
14	Uttar Pradesh (4)	Rihand	Available	Available	Available
		Matatila	-do-	-do-	-do-
		Rajghat	-do-	-do-	-do-
		Jamrani	-do-	-do-	-do-
15	West Bengal (1)	Kangsabati	Information not available		
16	BBMB (2)	Bhakra (H.P)	Available	Available	Available
		Pong (H.P)	-do-	-do-	-do-
17	NHPC (2)	Chamera (H.P)	Under Preparation.		
		Salal (J & K)	Available	Available	Available
18	DVC (2)	Maithon (Jharkand)	Information	not	available
		Panchet Hill (Jhark)	Information	not	available

Members were requested to verify the status given above and inform discrepancies, if any, for necessary modification.

As reported by members from BBMB & NHPC, preparation of Data Books, Completion Reports and O&M Manuals are available for the dams under their respective jurisdiction. They were requested to send to CWC copies of above.

Bihar has prepared O & M Manual for Phulwaria dam.

26.8.0 Dam safety activities and Inspection of Dams

It was stressed by the Chief Engineer (DSO), CWC that as per the "Report on Dam Safety Procedure", all the large dams must be inspected twice in a year during pre- and post monsoon periods. State-wise / organization-wise annual consolidated report about the inspection of dams is required to be submitted to Dam Safety Monitoring Directorate, CWC. The report should highlight the deficiencies noticed during the last inspection. On the basis of deficiencies, dams may be classified as

Category –1 (Dams with major deficiency which may lead to dam failure)

Category–2 (Dams with rectifiable deficiency needing immediate attention)

Category–3 (Dams with minor or no deficiency)

In the inspection report the category number may be given in the remarks column. In the successive reports, an "Action Taken Report" on the dams of category 1 & 2 of the preceding report may also be given.

It was informed by Director (DSM), CWC that Health Status reports are still being received dam wise from some States. The States/Organizations should submit consolidated reports only. Consolidated reports for the year 2003 - 04 are still awaited. Even the reports for 2002-03 have not been received from some States. Following is the status of consolidated reports.

SI No	State/Organization & number of dams	Whether report for 2003-04 is received or not	Remarks
1	Andhra Pradesh (161)	-	Received for 2002-03
2	Bihar (24)	Received partly	
3	Chhattisgarh (247)	-do-	
4	Gujarat (470)	-	Received for 2002-03
5	Jharkhand (46)	No information is available	
6	Karnataka (203)	-	Received for 2002
7	Kerala (KSEB) (33)	-	Received for 2001-02
8	Kerala (Irrg. Dept) (21)	No information is available	
9	Madhya Pradesh (793)	Partly received for 156 dams	
10	Maharashtra (1453)	-	Received for 2002-03
11	Orissa (143)	-	Received for 2002-03
12	Punjab (11)	No information is available	
13	Rajasthan (180)	Received	
14	Tamil Nadu (92)	Received	
15	Uttaranchal (11)	No information is available	
16	Uttar Pradesh (113)	Partly received for 27 dams	
17	West Bengal (22)	No information is available	
18	BBMB (2)	-	Prepared for 2000-01
19	NHPC (10)	-	Received for 2002-03
20	DVC (2)	No information is available	

The above status is required to be verified and information furnished to CWC immediately.

Member (D&R) emphasized the importance of periodic inspection and requested all the members to be regular in conducting pre- & post monsoon inspections. He desired that pre- & post monsoon inspections for this year should be completed by December and the consolidated report sent by March 2005.

Representative from Punjab expressed inability of the Government to make provision of funds for such an important work for the last four years. The Chairman was surprised to know this and suggested that States should not go ahead with construction of any more dams if safety issues are not given due importance. It was proposed to write to Chief Secretary, Government of Punjab to look into this matter and to make necessary provisions in the Budget for dam safety activities in the State.

26.9.0 Safety review of large dams

It was emphasized to the Committee members and dam owning organizations that the safety aspects of all the large dams under their respective jurisdiction are required to be reviewed once in 10 years by carrying out comprehensive dam safety review by independent review panels.

Only the Member from Bihar informed that they have conducted the safety review of Kohira dam and submitted the reports.

States / Organizations were advised to constitute DSR Panels for this purpose without further delay. As per the information available, Madhya Pradesh, Orissa, Rajasthan, Tamil Nadu and BBMB have formed the Dam Safety Review Panels.

It was informed by the representative from Maharashtra that out of 5 NI dams in the State, safety review of 3 dams (viz. Koyna, Ujjani, Isapur) has been completed by Central Design Organization, Nasik. Of the other dams, Maharashtra has planned for inspecting 160 dams this year. He also mentioned that a proposal for constituting DSRP with experts in the required fields has been submitted to the State Government, which is under active consideration. He requested that the Central Government must impress upon the State about this matter and write to the Secretary, Government of Maharashtra.

Representatives from NHPC & BBMB appraised the Committee about the activities of their respective Dam Safety Review Panels (DSRP).

Most of the members informed that necessary proposal for DSRP has been sent to their respective Governments for consideration and approval. Member (D&R) requested for expediting the constitution of DSRPs and their activities reported timely.

26.10.0 Monitoring of safety aspects of inter-State dams by Sub-Committees

- 26.10.1 The Status of monitoring the safety of inter-State dams by three Sub-committees constituted by NCDS was reviewed during the meeting.

(a) Mahanadi River System: Member from Chhattisgarh informed that the Government of Chhattisgarh has nominated one representative for the sub committee with necessary communication to Orissa Government.

It was desired by the NCDS that the sub committee may conduct the meeting at an early date.

(b) Parambikulam Aliyar Project: Representative from Kerala opined that the three dams in Parambikulam group are situated inside Kerala territory. Hence, safety aspects of the upstream dams of PAP system are required to be monitored jointly by Kerala & Tamil Nadu and as such the sub-committee for PAP should be continued. Tamil Nadu Member, on the other hand opined that as the owner of the dams, they are conducting periodical inspections as per laid down procedures and as such, this sub-committee be disbanded. The Committee decided to continue with the sub-committee.

(c) Subarnarekha River System: From Orissa & Jharkhand no representatives were present. As per information available in CWC, no progress has been made, since Jharkhand is yet to respond and nominate a representative for the sub committee. The Jharkhand authorities may, therefore, be approached to respond.

26.11.0 Setting up of hydrological units in the States

- 26.11.1 As already informed during the last meeting, CWC does not have the manpower to take up Hydrological Review of a large number of existing dams. It was, therefore, suggested that

the States may address this issue themselves. The present status of setting up of hydrology units in various States, as informed by the respective members, is as follows.

Sl. No.	State / Organisation	Position of Hydrology Unit	Remarks
1	Andhra Pradesh	Yet to be established	
2	Bihar	Separate unit under CDO is functioning	
3	Chhattisgarh	Yet to be established	
4	Gujarat	Separate unit under CDO is functioning	
5	Jharkhand	Yet to be established	
6	Karnataka	Separate Hyd. Unit attached to E-in-Chief(WRDO) is functioning	
7	Kerala (KSEB)	No separate unit available	Hydrology review entrusted to dam safety monitoring unit.
8	Kerala (Irrg.Dept)	Separate unit under CE (IDRB) is functioning.	
9	Madhya Pradesh	Established under CE (BODHI)	
10	Maharashtra	Separate unit established under CDO.	
11	Orissa	Separate unit is functioning.	
12	Punjab	Separate unit established under CDO.	
13	Rajasthan	Separate unit established.	
14	Tamil Nadu	Separate unit not available. But for 2 projects, cells have been established.	
15	Uttaranchal	Yet to be established.	
16	Uttar Pradesh	Establishment of Hydrology Unit in Dam Safety Cell under process.	CWC is doing the review works of Rihand & Matatila dams.
17	West Bengal	Information not available.	
18	BBMB	Yes, separate unit available.	
19	DVC	Yes, separate unit available.	
20	NHPC	Yes, separate unit available.	

However, members were again requested to verify the status and inform about the latest position of their respective States/ Organizations so that the record can be updated and progress achieved.

The Chief Engineer (DSO), CWC explained the importance of hydrologic safety of the dams. To start with the review of dams of National Importance, Hydrology Unit is required to be set up immediately to carryout hydrology review of these dams. He requested the members to get the units established without further delay, so that long pending studies could be carried out early.

It was requested by the members of the Committee that CWC may consider conducting a workshop on the subject. CWC has been organizing such workshops. Member from Kerala came forward to make necessary arrangement for the

workshop in Thiruvananthapuram. Member (D&R) desired that a proposal may be framed and sent to CWC.

Detailed discussions were held on the hydrology review, particularly about the Matatila dam. Chairman desired to know whether data of Rajghat dam and its operation have been properly considered while reviewing design flood of the existing Matatila dam which lies downstream. Director, FE&SA, CWC who is looking after the dam break studies gave a brief of the studies made.

26.12.0 Instrumentation of dams.

26.12.1 Member (D&R), CWC informed the members that an Instrumentation Manual is under preparation in CWC and a draft copy will be circulated before finalization. CWC was implementing a scheme for instrumentation of dams where site specific trainings are proposed. An Instrumentation Museum is also being established in CWC premises. He requested the members to nominate officers for the proposed training programmes, as and when circulated.

26.12.2 Representative from Kerala gave a brief on the failure of a number of instruments installed in the dams. Most of the instruments like stress meters, strain meters, etc., are embedded in concrete during construction. Idukki Arch dam, Cheruthoni dam and Idamalayar dam of KSEB are fully instrumented. It comprises of electronic, mechanical, optical and geodetic types. However, most of the embedded instruments are either not reliable or not working now. In Idamalayar dam even though observations on the embedded instruments are being taken, the actual stresses being developed could not be worked out, as the relation between the resistance being measured and actual stress developed is not available. When contacted, the original suppliers have informed that the instruments are obsolete and details are not available.

In this connection Member (D&R) suggested to enquire about the people who were present during the period of installation. He advised that it would be worthwhile to contact such persons and obtain information from them. Meanwhile, readings from instruments that are working may be analyzed and a structural behaviour report be prepared and submitted to CWC for review.

A number of members expressed their concern and informed that either the dams were not properly instrumented or the instruments are not functioning properly. It was suggested

that the dam owning authorities may send a detailed report on the position of the instrumentation in the dams in their States for study and suggestions as may be necessary.

26.13.0 National Register of Large Dams.

The Chief Engineer (DSO), CWC informed that the National Register of Large Dams 2002 has been published and circulated to all the members during the last meeting. He requested all the members to intimate discrepancies, if any, so that they could be rectified. Some of the States informed about some discrepancies. It was requested that the information may be sent in writing for incorporating and revising the Register. The information from the States is important since so many dams which were shown as 'under construction' would have been completed. Even in some cases, the number of large dams shown in the State Register of Large Dams differ from that recorded in the National Register of Large Dams.

26.14.0 Discussions on other important issues.

Member from Andhra Pradesh suggested some modification in the definition of Large Dam on the basis of reservoir capacity. Responding to this, Member (D&R) told that the definition of large dam is as per ICOLD and is beyond the purview of NCDS.

Director (DSM), CWC informed the Committee members regarding proposed Management Information System (MIS) to be established in CWC for all large dams in India under the Plan scheme. For this, various information were sought from the State Governments. Most of the States have not yet responded in this regard. Members were, therefore, requested to look into the matter personally and arrange to supply the desired information.

Finally, the Member (D&R), CWC expressed his concern that during the last 25 years progress has not been made upto the level required and further added that timely preparation of data books, completion reports and O&M Manual, Inspection Report, etc., are not proceeding as per requirement. He particularly impressed upon the importance of hydrological review, which has been neglected. He also brought to the notice of members that important happenings are not being passed on to the Centre on time by the State DSOs regarding distress signals from the dams, and surprisingly no replies from the concerned State DSOs are received in time when queried by the CWC DSO on the subject. He stressed upon

the need for the DSO of the States to inform the Centre on the distress condition of dams as and when they occur. It was requested that members should furnish information on issues relating to their State as per agenda items circulated in the event of their inability to attend the meeting for any reason. On a hopeful note Chairman requested the Committee members and all those present for necessary cooperation in furthering the activities concerning safety of dams. He was happy to note that an awareness about dam safety has been created in the entire country.

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