Minutes of Xth Meeting of National Committee on Seismic Design Parameters (NCSDP) for River Valley Projects held in Central Water Commission on 15.9.2000

The tenth meeting of National Committee on Seismic Design Parameters (NCSDP) for River Valley Projects was held in the Committee Room of Central Water Commission, New Delhi under the Chairmanship of Dr. B.K. Mittal, Member (D&R), CWC. The list of the members of the Committee and the invitees who attended the meeting is given in Annexe I.

Item No. 10.1 : Welcome to N.C.S.D.P. members and invitees

Members and invitees were welcomed to the X meeting of NCSDP. A brief self-introduction was given by the officials present and the Member Secretary was requested to take up the agenda items thereafter.

Item No. 10.2 : Opening Remarks by Member-Secretary, NCSDP

The Member-Secretary briefly described the details of the agenda items of the meeting. Thereafter, the agenda was taken up for discussion.

Item No. 10.3 : Confirmation of the Minutes of IX Meeting of NCSDP

10.3.1 The minutes of IX meeting of National Committee on Seismic Design Parameters held on 12.1.2000 in Central Water Commission (CWC), New Delhi with minor deletion of the word 'effective' from item 9.4.1.2, were confirmed in the absence of any other comments.

Item No. 10.4 : Consideration of Seismic Design Parameters for River Valley Projects

10.4.1 Projects discussed earlier

10.4.1.1 Tungabhadra Dam, Karnataka

Dr. I.D. Gupta, Joint Director, CWPRS, Pune presented the results on design response spectra and accelerograms for MCE and DBE conditions for the focal depth modified to 10 km from 15 km, as suggested during the previous meeting. Prof. S. Basu from University of Roorkee commented that the values of peak ground acceleration

as 0.346 g for the MCE condition and 0.182 g for DBE condition appear to be very high. Dr. Gupta explained in detail the basis for high acceleration values and the shape of the response spectrum, but the matter could not be resolved. It was, therefore decided that the University of Roorkee and CWPRS, Pune being main institutions to evaluate the design seismic parameters should present the Approach Papers on state-of-the-art methodologies adopted by them so that NCSDP could propose the guidelines to have, in general, a uniform approach for such studies. A special meeting of NCSDP was suggested to be convened for this purpose. The seismic coefficient for the project may be decided after the special meeting.

10.4.1.2 Sriram Sagar and Lower Manair Projects, Andhra Pradesh

The project engineer presented the details of the seismic studies carried out by NGRI for the project. It was observed that the seismic intensity at Sriram Sagar (SRS) and Lower Maniar (LM) project site had been computed considering the Bhadrachalam earthquake situated at a distance of 270 and 185 km respectively from Sriram Sagar and Lower Manair dams whereas the Committee in its VII meeting had recommended that this should be done with the assumption that the epicentre of the Bhadrachalam earthquake lies within 10-15 km radius near Sriram Sagar / Lower Manair dams. Thus the study is not in conformity with the recommendations of the Committee. NCSDP reiterated its earlier recommendation to carry out the study with Bhadrachalam earthquake (5.7) plus one degree (+ 0.3) considering an epicentral distance of 10-15 km from SRS & LM dams. The projects may be referred to the Committee after the completion of above study.

10.4.1.3 Palemvagu Irrigation Project, Andhra Pradesh

The seismic details were presented by the project engineer. It was observed that no site specific seismic studies have been carried out for the project. The Committee decided that the site specific seismic studies with results presented as per the format given in Annex II be carried out and submitted for further consideration.

10.4.1.4 Tuirial HE Project, Mizoram

Deptt. of Earthquake Engg., University of Roorkee (DEQUOR) confirmed the presence of active lineament in the vicinity of the dam site after the study of micro

seismic data (1990-98) from Regional Research Laboratory, Jorhat . Consequently, the results of the site specific study by the DEQUOR recommending the multiplying factors as 0.36 for MCE and 0.18 for DBE for horizontal component and vertical component as $2/3^{rd}$ of horizontal component were accepted by the Committee.

10.4.1.5 Tala Hydro Electric Project, Bhutan

Dr. I.D.Gupta, Jt. Director, CWPRS - consultant for the project, presented the site specific study carried out on the basis of specific direction given in the previous meeting. The study was appreciated by the Committee. The presentation was followed by the discussions on various aspects of the study. Finally, the results of the CWPRS study for the project were accepted by the Committee. The design basis accelerograms and response spectra as given in Figs 9 (a) and 9(b) of the CWPRS report No. 3690 of March , 2000 are recommended to be used for the dynamic analysis of Tala dam. The design basis response spectral amplitudes for damping ratios of 5% at the fundamental period of the dam, scaled down by a factor of 2.0, may be used as the site specific design seismic coefficient for the conventional (pseudo-static) stability analysis as per IS:1893-1984 Code.

10.4.1.6 Middle Vaitarana Dam – IV Mumbai Water Supply Project, Maharashtra

Department of Earthquake Engg., University of Roorkee - the consultant for the project, presented the site specific study carried out by them. The study was accepted in principle. Some of the Committee members felt that the environment of this dam is similar to Koyna Dam for which detailed studies of actual earthquakes had been carried out and the results are available at CWPRS, Pune. The Committed desired that the Deptt. of Earthquake Engg., University of Roorkee may carry out a comparative study of the Middle Vaitarna Dam and Koyna Dam. After the availability of the above comparative study the Committee would take a final decision. However, as requested by project authorities the Committee, meanwhile allowed them to go ahead with their work of securing the funding for the project from concerned agencies.

10.4.2 New projects under consideration

10.4.2.1 Upper Tunga Project, Karnataka

10.4.2.1.1 The project falls in Zone I on seismic zoning map of India, which is being converted to Zone II as per the revised draft of IS Code 1893-1984 under finalisation. The Committee decided that the project can be designed as per the IS Code procedure considering the project to be in Zone II of the present Code.

10.4.2.2 Myntdu (Leshka) HE Project, Meghalaya

The Superintending Engineer of the Myntdu Project presented the details of the project which lies in Zone V of seismic zoning map of India. It was observed that the site specific studies for the project have not been carried out. The project engineer informed that these studies have been given to Deptt. of Earthquake Engineering, University of Roorkee. The Committee advised that the project may be submitted to it after the completion of site specific studies. The results of the study may be given as per the format in Annex II.

10.4.2.3 Chamera HE Project Stage-II, Himachal Pradesh

Prof. L.S. Srivastava – consultant for the project, presented the site specific seismic studies carried out by him. Some of the Committee members were not in agreement with some models used for the computation of MCE and DBE for the project. Mainly the objection was to the use of model of Boore et,al. The Committee decided that Prof. Srivastava should not consider the Boore model in his studies. Consequently he may revise the studies and submit his report within two months to NCSDP for further consideration. However, based on the request of project engineer the Committee agreed that the project authorities may go ahead with the works related to the tendering and seeking of financial assistance etc., pending a final decision.

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

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Annexe - I

X Meeting of National Committee on Seismic Design Parameters (NCSDP)
For River Valley Projects held on 15.09.2000
List of the Committee Members, Invitees and other participants who attended the meeting

S.No.	Name	Designation	Department / Organisation	Member / Invitee / Representative - Project
Committee Members				
1.	Dr. B.K. Mittal	Chairman, NCSDP & Member (D&R)	Central Water Commission New Delhi	Chairman
2.	Dr. A.S. Arya	Ex.Pro Vice Chancellor	University of Roorkee, Roorkee	Member
3.	Dr. D.K. Paul	Professor & Head	Deptt. of Earthquake Engg. University Of Roorkee, Roorkee	Member
4..	Sh.B.M.Upadhyay	Chief Engineer (DSO)	Central Water Commission, New Delhi	Member
5	Sh. Sujit Das Gupta	Geologist (Sr.)	GSI, Calcutta	Member
6.	Sh. Vinai Kumar	Director	T.C. Division, GSI Northern Region, Lucknow	Member
7.	Sh. S.C. Bhatia	Scientist 'G'	NGRI, Uppal Road, Hyderabad - 500007	Member
8.	Sh. J.L. Chugh	Dy. Secretary (Projects)	Ministry of Water Resources New Delhi	Member, Representing Commisioner (Projects)
9.	Sh. S.Masood Husain	Director	FE&SA Dte., CWC, New Delhi	Member-Secretary
B. Invitees / Representatives				
10.	Dr. Susanta Basu	Professor	Deptt. of Earthquake Engg. University Of Roorkee, Roorkee	
11.	Dr. B.C. Mathur	Professor	-do-	
12.	Dr. M.L.Sharma	-	-do-	
13.	Dr. I.D.Gupta	Jt. Director	Central Water & Power Research Station, Pune-24.	

14.	Sh.P.Padmanabhan	Secretary	Tungabhadra Board, Tungabhadra Dam, Karnataka State	Tungabhadra Dam (Karnataka)
15.	Sh. R.L.Raja Kumar	I/C Executive Engineer	C/o Chief Engineer, Ist Floor of HB Complex, Sriram Sagar Project, M.J.Road, Hydrabad – 500001.	Sriram Sagar & Lower Manair Dam (A.P.)
16.	Sh.T.Srinivasa Rao	Executive Engineer	Irrigation Deptt., M.P.Division No. I, S.N. Puram, Khammam (A.P.)	Palemvagu Irrigation Project (A.P.)
17.	Sh. U.Bora	Dy.General Manager (Design)	NEEPCO Ltd. Bhikaji Cama Place New Delhi.	Tuirial H.E. Project, Mizoram
18.	Sh. V.C. Bhowmik	Manager, Civil	-do-	-do-
19.	Sh. T.Suresh Kr. Singh	-	-do-	-do-
20.	Sh. S.M. Dhiman	Chief Engineer	THPA, Gedu, Bhutan	Tala Hydroelectric Project, Bhutan
21.	Sh. A.K.M. Govil	Addl.chief Engineer	213, Ansal Chamber, Bhikaji Cama Place, New Delhi	-do-
22.	Sh. A.P. Chowdhury	Addl.chief Engineer	WAPCOS (I) Ltd., 223 Ansal Chamber, New Delhi-110063.	-do-
23.	Sh. A.K. Choudhry	Resident Geologist	THPA, Gedu, Bhutan	-do-
24.	Sh. V.A.Shringarpure	Chief Engineer	Water Supply Projects Deptt., Brihan Mumbai Municipal Corporation (Maharashtra)	Middle Vaitarna Dam
25.	Sh.B.Ramachandran	Addl. Chief Engineer	-do-	-do-
26	Sh. S.S. Korlekar		-do-	-do-
27.	Sh. G.G. Lakule	Consultant	Tata Consulting Engineers, Mumbai	-do-
28.	Sh. S.C. Pathak	Director	Engg. Geology Division, Central Region, Nagpur	-do-
29.	Sh. M.Mahesh Babu	Geologist (Sr)	-do-	-do-
30.	Sh. Y.V. Narayan	Chief Engineer	Upper Tunga Project (Karnataka)	Upper Tunga Project
31.	Sh. C.Narayana Shetty	Executive Engineer	PWD & irrigation Deptt.,, Govt. of Karnataka, Shimoga-577201	-do-
32.	Sh. S..Baruah	OSD (P)	Meghalaya State Electricity Board, Shillong	Myntdu (Leska) H.E. Project (Meghalaya)

33.	Sh. R.Pakma	Executive Engineer	MeSEB, Lumjing Shai, Shillong (Meghalaya)	-do-
34.	Sh. G.K.Kaistha	Director	Geological Survey of India, Arbutnot Road, Shillong (Meghalaya)	-do-
35.	Sh. Anil Mehrotra	Sr. Geologist	-do-	-do-
36.	Prof. L.S. Srivastava	Consultant	NHPC/Jai Prakash Industries Ltd., New Delhi	Chamera H.E. Project (H.P.)
37.	Sh. R.K.Garg	Consultant	-do-	-do-
38.	Sh. B.Prabhakaran	Sr. Manager	NHPC Ltd, NHPC Office Complex, Sector-33, Faridabad.	-do-
39.	Sh. S.L. Kapil	Manager	-do-	-do-
40.	Sh. Brij Mohan	Deputy Manager (C)	-do-	-do-
C. C.W.C. Officers				
41.	Sh. N.C. Chakrabarty	Director	CMDD (E&NE), Central Water Commission, New Delhi	Tala H.E. Project
42.	Sh. Y.N. Rao	Deputy Director	CMDD (E&NE), CWC, New Delhi	-do-
43.	Sh. S.C. Talukdar	Deputy Director	FE&SA Dte., Central Water Commission, New Delhi.	-
44.	Sh. H.S. Sengar	Deputy Director	DSR Dte., CWC, New Delhi	Tungabhadra Project
45.	Sh. Rajesh Gupta	Extra Assistant Director	CMDD (E&NE) Dte., CWC, New Delhi	
46.	Sh. Niranjan Bar	Assistant Director	DSR, CWC, New Delhi	