Minutes of the XIVth meeting of the National Committee on Seismic Design Parameters (NCSDP) for River Valley Projects held on 29.04.2004 at Omkareshwar Project Site, M.P.

---------- x ----------

The XIVth meeting of the National Committee on Seismic Design Parameters (NCSDP) for River Valley Projects was held on 29.04.2004 at Omkareshwar Project Site, Distt. East Nimar (M.P.) under the chairmanship of Shri S. K. Das, Member (D&R), CWC and Chairman, NCSDP. The list of NCSDP members, project representatives and invitees, who attended the meeting, is given in Annex-I.

Item No. 14.1 Welcome by Chairman, NCSDP

The Chairman, NCSDP welcomed all participants to the XIVth meeting. He specially welcomed Dr. I.D. Gupta, Jt. Director, CWPRS who has been inducted as official Member of NCSDP Committee by Ministry of Water Resources vide Order No. 29/1/98-P.I. dated 11.02.2004. This was followed by a brief self-introduction by the officials present. Thereafter, the agenda was taken up for discussion.

Item No. 14.2 Confirmation of the minutes of the last meeting

The minutes of the XIIIth meeting of NCSDP held on 18.12.2003 at CWC Headquarter, New Delhi were circulated to all members vide letter No. CWC/FE&SA/2/2/2003/11-37 dated January 5, 2003. The observation of IIT Roorkee on the minutes was considered and agreed to. Accordingly, the minutes of the XIIIth meeting was confirmed with following amendments;

Item No. 13.8 - Read, "The magnitude of the detachment shall be considered 8.0 and on MBT, it is 7.5", in place of, "magnitude of 7.5 MBT, the earthquake magnitude of 8.0 may be assigned to the detachment surface".

Item No. 14.3 Follow up actions of minutes of last meeting

Item No. 14.3.1 Guidelines for site specific seismic studies for river valley projects

The member-secretary briefed the committee members about the letter from Dr. A.S. Arya, Prof. Emeritus, IIT Roorkee and Chairman of the Sub-committee on preparation of guidelines for site specific seismic studies for river valley projects. The committee emphasized on the need for preparation of the guidelines and accepted the offer by Dr. I.D. Gupta, Jt. Director, CWPRS for preparation of draft guidelines.

Item No. 14.3.2 Site specific seismic study for river valley projects

The Committee asked the Member-Secretary to issue reminders to all project authorities concerned for expediting the site specific seismic studies in respect of following projects;

1. Brutang Irrigation Project, Orissa
2. Upper Beda Medium Project, Madhya Pradesh
3. Lower Goi Project, Madhya Pradesh
4. Shahpurkandi Dam Project, Punjab
5. Kutni Feeder Project, Madhya Pradesh
6. IB Irrigation Project, Orissa
7. Thotapalli Barrage Project, Andhra Pradesh
8. Mankulam H.E. Project, Kerala

Item No. 14.3.3 Lower Subansiri H.E. Project (Arunachal Pradesh)

The Committee in the XIII[rh] meeting had suggested to revise the site specific seismic study report by considering earthquake magnitude of 8.0 at the detachment and 0.75 at MBT. The project authority have submitted necessary revision in the report. The committee approved seismic design parameters with the revisions. The committee recommended that a peak ground acceleration of 0.38g for Maximum Credible Earthquake (MCE) and 0.19g for Design Basis Earthquake (DBE) along with response spectra given in Fig. 4 and Table-IV of the revised site specific seismic report (No. EQ 2001-14 Project No. P-2001-01 of December 2001 read with letter no. DEQ / NHPC / LOWERSUB/238 dated April 16, 2004 of Department of Earthquake Engineering, IIT Roorkee) may be adopted for seismic design of the project.

Item No. 14.3.4 Kol Dam H.E. Project (Himachal Pradesh)

The Committee in its XIII[th] meeting had suggested that in order to reconcile the different approaches adopted in site specific seismic study reports by IIT Roorkee and EDF France, the project authorities should forward site specific seismic study report of EDF France to IIT Roorkee for their views. NTPC has forwarded EDF France's report to the Head, Deptt. of Earthquake Engineering, IIT Roorkee vide their letter No. CC:HEG:5501:901:Dam/03 dated 22.03.2004. The Committee requested Dr. M.L. Sharma representing Head, Deptt. of Earthquake Engineering, IIT Roorkee to expedite the same.

Item No. 14.4 New Projects

The Committee members expressed their critical observations on the site specific seismic study reports submitted by project authorities. It was emphasized that the site specific seismic study reports should necessarily include following information:

1. Explanation regarding various parameters viz., epicentral distance, distance to tip of rupture, magnitude & source of faults, etc.
2. Explanation for the selection of the attenuation relationship used. The reports do refer to ICOLD Bulletin No. 72 (1989) but do not follow recommended procedure for adopting weighted average of values provided by several of the most expected and reliable equations.
3. Explanation / derivation of the acceleration response spectra adopted.
4. Separate calculation for the vertical acceleration.
5. Compatibility of time history with prescribed spectra.
6. Updated Seismo-tectonic map with the list of recent earthquake occurrences, obtained from IMD.

The committee further observed that the terminology of MCE as Maximum Considered Earthquake has yet not been universally accepted. Hence the present expanded terms, i.e. Maximum Credible Earthquake may continue to be used till new terminology gets universal acceptance.

The committee directed the Member Secretary to return back the site specific seismic study reports without above details/information.

With the above observations, the committee discussed site specific seismic study report of new projects as under:

Item No. 14.4.01 Omkareshwar Project, Madhya Pradesh

The salient features along with the geological / geotectonic set up of the project was briefly presented by the project representatives. The Omkareshwar Project is a multipurpose project under construction on Narmada river in East Nimar (Khandwa) district of Madhya Pradesh. The project comprises a 949m long and 62 m high concrete gravity dam. The project site is located in Zone-III of seismic zone map of India as per IS-1893 (Part-I)-2002.

The Committee observed that the site specific seismic study submitted by the project authorities need to be augmented with the information specified under para 14.4 above. The project authorities were, accordingly, directed to get the report augmented and submit before the committee. However, in order that the project progress does not get affected, the committee recommended that a peak ground acceleration of 0.20g for Maximum Credible Earthquake (MCE) and 0.10g for Design Basis Earthquake (DBE) along with response spectra given in Fig. 3 and Table-II of the revised site specific seismic report (No. EQ 2003-20 Project No. P-2003-08 of December 2003 of Department of Earthquake Engineering, IIT Roorkee) be adopted for seismic design of the project.

Item No. 14.4.02 Siang Middle (Siyom) Project, Arunachal Pradesh

The salient features along with the geological / geotectonic set up of the project were briefly presented by the project representatives. The Siang Middle (Siyom) project envisages a concrete face rockfill dam of height 188 m across the Siyom river, a tributary of Siang river in West Siang District of Arunachal Pradesh. The project site is located in zone V of seismic zones map of India as per IS-1893 (Part-I)-2002.

The Committee felt that in absence of the information specified under para 14.4 above, the site specific seismic study report cannot be considered and seismic design parameters recommended. The project authorities were, accordingly, directed to get the report augmented and submit before the committee.

Item No. 14.4.03 URI-II H.E. Project (J&K)

The salient features along with the geological / geotectonic set up of the project were briefly presented by the project representatives. The URI-II, H.E. Project is a run-of-the-river scheme located in Baramulla district of J&K. The project comprises of a 52m high concrete gravity dam across river Jhelum, an intake channel, one desilting basin, 4.27km long HRT & 3.775 km long TRT

with a surge shaft & underground Power House. The project is located in Zone IV of the seismic zoning map of India as per IS 1893 (part-I) 2002.

The Committee observed that the site specific seismic study submitted by the project authorities needs to be augmented with the information specified under para 14.4 above. The project authorities were, accordingly, directed to get the report augmented and submit before the committee. However, in order that the project progress does not get affected, the committee recommended that a peak ground acceleration of 0.39g for Maximum Credible Earthquake (MCE) and 0.20g for Design Basis Earthquake (DBE) along with response spectra given in Fig. 3 and Table-IV of the site specific seismic report (No. EQ 2004-01 Project No. P-2003-02 of January 2004 of Department of Earthquake Engineering, IIT Roorkee) be adopted for seismic design of the project.

Item No. 14.4.4 Nimoo Bazgo H.E. Project (J&K)

The salient features along with the geological / geotectonic set up of the project were briefly presented by the project representatives. The project envisages construction of 57 m high concrete gravity dam across river Indus in Leh District of Jammu & Kashmir (J&K). The project is located in Zone IV as per the seismic zone map of India as per IS 1893(Part-I)-2002.

The Committee felt that in absence of the information specified under para 14.4 above, the site specific seismic study report cannot be considered and seismic design parameters recommended. The project authorities were, accordingly, directed to get the report augmented and submit before the committee.

Item No. 14.5 Any other item with the permission of Chairman

No other matter was discussed.

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

XIV Meeting of National Committee on Seismic Design Parameters on River Valley Projects

Attendance

Sl.No.	Name & Address	Designation	Deptt./ Org.	Status/ Representative
I. Committee Members				
1.	Sh. S.K. Das	Member (D&R)	CWC, New Delhi	Chairman, NCSDP
2.	Sh. A.K. Bajaj	Chief Engineer (DSO)	CWC, New Delhi	Member
3.	Sh. I.D. Gupta	Joint Director,	CWPRS	Member
4.	Sh. P. Padmanabhan	Sr. Jt. Commissioner (PR)	MoWR	Member
5.	Sh. Sujit Das Gupta	Director,	GSI, Kolkata	Member
6.	Sh. M.L. Sharma	Asstt. Professor	DEQ, IIT Roorkee, Roorkee	Representing Head DEQ IIT Roorkee
7.	Sh. M.K. Sinha	Director, FE&SA	CWC, New Delhi	Member-Secy. NCSDP
II. Project Representatives and Consultants				
8.	Sh. K.K. Aggarwal,	President	Jaiprakash Associates Ltd.	Omkareshwar Project
9.	Sh. Parveen Kumar Singh	Vice President	Jaiprakash Associates Ltd.	Omkareshwar Project
10.	Sh. R.K. Garg	Consultant	Jaiprakash Associates Ltd.	Omkareshwar Project
11.	Sh. O.N. Bajpai	Consultant	Jaiprakash Associates Ltd.	Omkareshwar Project
12.	Sh. S.K. Yadav	Consultant	Jaiprakash Associates Ltd.	Omkareshwar Project
13.	Sh. Mohd-I-Ahmed	Addl. GM (Geology)	J.P Industries Ltd.	Omkareshwar Project
14.	Sh. Arvind Garg	Chief Engineer	NHDC	Omkareshwar Project
15.	Sh. V.K. Parich	Chief Engineer, Lower Narmada Project	NVDA	Govt. of M.P.
16.	Sh. D.C. Tripathi	Chief (Geology)	NHDC	Omkareshwar Project
17.	Sh. I.S. Gour	Superintending Engineer	NVDA, N.D. Circle No.11,	Govt. of M.P.
18.	Sh. S. Bhatnagar	Chief (Geology)	NHPC	Siang Middle (Siyom) Project, URI-II HE Project, Nimoo Bazgo H.E. Project
19.	Sh. D.K. Joshi	S.M. (Geology)	NHPC	Siang Middle (Siyom) Project, URI-II HE Project, Nimoo Bazgo H.E. Project