

No. CWC / FE & SA / 2 / 2 / 97 /  
Govt. Of India  
Central Water Commission  
Foundation Engg. & Special Analysis Directorate  
.....

712 , Sewa Bhawan,  
R. K. Puram  
New Delhi - 110066.

DL. Oct. 97.

To

Sub: Summary Record of Discussions of the "Seventh Meeting of the  
National Committee on Seismic Design Parameters (NCSDP)"  
held on 23.9.97 in New Delhi.

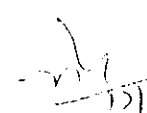
Sir,

Please find enclosed herewith the Summary Record of Discussions of the  
Seventh Meeting of the National Committee on Seismic Design Parameters for  
River Valley Project held on 23rd Sept. '97 at Sewa Bhawan,  
New Delhi.

Yours faithfully,

Encl: As above

O/c.

  
(Harinder Kumar)  
Director (FECSA)  
Member Secretary (NCSDP)

**Summary Record of Discussions for the VII Meeting of the National Committee on Seismic Design Parameters (NCSDP) held on 23rd Sept., 1997, New Delhi.**

**Opening Remarks**

The VII Meeting of the National Committee on Seismic Design Parameters (NCSDP) was held on 23rd Sept., 1997 in the CWC Committee Room No. 307 at Sewa Bhavan, R. K. Puram, New Delhi. The meeting was held under the chairmanship of Sh. Ramesh Chandra, Chairman, CWC. List of the participants is at Annex. I. The agenda items as circulated was taken up for discussion by the Committee. The outcome is as follows:-

**Confirmation of the minutes of the VI Meeting of NCSDP.**

The Minutes of the VI meeting of NCSDP as circulated vide CWC letter No. CWC/FED/2/2/94 dated 17.10.1996 were confirmed.

**Item No. I.**

**Bombay IV Water Supply Project - Middle Vaitarna Dam.**

The Project features, geology and tectonic features of the area under consideration were presented to the Committee Members by Sh. M.R. Sohoni, Chief Engineer (WSP) and Sh. G.G. Lakule, Consultant, Tata Consultancy Engineers. It was informed that after the Latur earthquake, Govt. of Maharashtra constituted a Committee of Experts to decide Design Standards and strengthening measures for dams and other structures for 27 Dams. The extracts from the reports of experts as submitted by the Project Authority were circulated to the Committee Members vide

CWC Letter No. 2/2/97/457 dated 5.9.1997. Based upon the report, which includes Upper Vaitarna Dam, strengthening of its non over flow section was recommended.

Sh. Narula, Deputy Director General GSI, Faridabad and Sh. S.C. Bhatia, Scientist, NGRI stressed the need for site specific studies based upon tectonic features in the project area. On enquiring by the Chairman of the Committee, the Project Authorities informed that these studies are available with Govt. of Maharashtra. Prof. Basu, informed that the studies done by University of Roorkee are very old and at that time geological and tectonic features were not considered. The Committee Members stressed the need for dynamic studies considering the height of the dam, which is more than 100 m. Sh. S.C. Pathak, Director, GSI, Nagpur explained some of the geological features. Chairman requested the project authorities to submit the complete information to University of Roorkee for carrying out detailed studies and submitting to Committee for consideration to enable recommendation of Seismic Parameters. The Project Authorities agreed to submit the reports within six months to DEQUOR for completing requisite studies. For the time being the value of seismic coefficient used for Upper Vaitarna may be considered for clearance of Middle Vaitarna Dam only for funding purpose by the World Bank.

Any final recommendation regarding Middle Vaitarna Dam will be subject to strengthening of Upper Vaitarna Dam, observed the Chairman.

## **Item No. II**

### **Tipaimukh Dam Project Manipur/Mizoram**

The project was discussed in VI Meeting of NCSDP held on 20.9.95. The project is located in high seismic region i.e. zone V. As follow-up action of the VI Meeting, the report on increase of micro observatory recorder stations from existing four stations to 8 or more for closed network of micro earthquake studies as desired by NCSDP has not been submitted. A further review report on seismic design parameters as per earlier consultancy studies along with additional MEQ network information has also not been received. Sh. S.K. Chakrabarty, General Manager, Brahmaputra Board vide his letter BB/CE(P&D)/515/95(Project/2906 dated 20th Sept., 1997 informed the Member-Secretary that data collection work of the MEQ stations was in progress. Data to be collected are proposed to be sent to CWPRS for analysis and interpretation. As data collection and subsequent analysis work may take some more time he requested that the agenda Item No. 3.2<sup>be</sup> deferred for the next meeting. Hence, the discussion could not take place.

## **Item No. III**

### **Sriram Sagar Project (A.P.)**

The Project is an old project and it was discussed in the 3rd meeting of NCSDP held on 11.11.92. In this meeting it was decided that since the dam is close to the epicentre of Bhadrachalam earthquake, the dam structure would have to be checked for stability based upon the intensity of this earthquake.

In the Meeting, Shri Narula enquired about the status of the already recommended studies. The Committee had desired to check the dam structure considering the intensity of Bhadrachalam earthquake (5.7) plus one degree (0.3)

more with the assumption that epicentre of earthquake lies within the 10-15 km radius near Sriram Sagar Dam. Based upon this study, it was agreed that the Committee will decide seismic parameters for the project.

#### **Item No. IV**

##### **Lower Manair Project (A.P.)**

The project is an old project and it was discussed in the VIII Meeting of Standing Committee, CWC held on 31.12.1973. A seismic coefficient of 0.05g was recommended for the masonry dam. During the 3rd Meeting of NCSDP held on 11.11.92, Committee recommended that Sriram Sagar Dam would have to be checked for stability based upon the intensity of Bhadrachalam earthquake.

In the light of above, the committee recommended the same studies to be conducted as recommended for Sriram Sagar Dam (Item-III).

#### **Item No. V**

##### **Nagarjuna Sagar Dam (A.P.)**

As the Project Authorities for the Nagarjuna Sagar Dam did not attend the Meeting, the Committee decided to defer the item.

#### **Item No. VI**

##### **Srisaillam H.E. Project (A.P.)**

Srisaillam H.E. Project (6 x 150 MW) is an old project, located upstream of Nagarjuna Sagar Dam in Krishna river basin. The project lies in Zone I of Seismic Zoning Map of India (IS 1893-1984).

The project was earlier discussed in the second meeting of Standing Committee, CWC held on 6.4.1970. The Committee recommended no special provisions for earthquake.

The project was referred again to the Committee for review of the earlier recommendations. The project was discussed during 5th Meeting of NCSDP wherein it was opined that seismic data observed as per present scenario must be utilised to consider a response spectra for dynamic analysis. The Project authorities submitted a technical report No. 3211 dated Jan. 1995 of CWPRS (an evaluation of site - specific input accelerogram for dynamic response analysis of Srisaillam Dam). The report was circulated to the Committee Members vide letter No. CWC/FE&SA/2/2/94/275-299 dated 28.8.95 for review.

The Committee desired to know from the project authorities if geological features have been considered or not. The Committee recommended that the report be examined by GSI first and based upon its comments CWPRS has to submit recommendations for considerations by the Committee.

#### **Item No. VII**

#### **Chaukiya Water Resources Project (Gujarat)**

Chaukiya Water Resources Project comprises a masonry Dam and is located at latitude 20°44'43" N and longitude 73°46'10"E. The proposed dam is having 273m length and 45.58m height from the deepest foundation level. The area falls in Zone III of seismic Map of India (IS-1893-1984). The project features were presented by Sh. Pancholi. It was informed that there was no major fault in the project area. The Committee desired to know the details of projects association with GSI/State Geologists and the details of geological/seismo tectonic features in the project area.

The Committee opined that specific site studies need to be carried out. The project authorities can provide necessary input data to University of Roorkee for detailed studies. The Committee would consider further, after the report becomes available from DEQUOR.

**Item No. VIII**

**Tarakaramathirtha Sagaram Reservoir Scheme (A.P.)**

The Project authorities were not present in the meeting to present their case to the Committee. Therefore, the discussions over the project were deferred for the next meeting.

**Item No. IX**

**Palemvaqu Irrigation Project (A.P.)**

The project authorities were not present in the meeting to present their case to the Committee. Therefore, the discussions over the project were deferred for the next meeting.

**Item No. X**

**Greater Shillong Water Supply Scheme (Meghalaya)**

The dam site of Greater Shillong Water Supply Scheme is located at a distance of 2 km from village Mawaphlang in the district of East Khasi Hills across river Umiew. The dam site is located at latitude 25° 26' 42" N and longitude 91° 46' 15"E and it lies in Zone V (IS 1893-1984).

Shri P.S.Mandal, E.E., CWC described the salient features of the project and informed that the construction of the project is to begin shortly. Sh.Paul, Sr.

Geologist, GSI, NE Region described the geology and tectonic features of the project area. He informed that the project area is relatively a stable zone. The Committee, however, opined that the area can't be treated as stable since it lies in high seismic zone. Shri Narula informed that the codal provisions (BIS 1893-1984) are being enhanced and are likely to be available soon. A seismic coefficient as per enhanced codal provisions could be 0.36g for the site under consideration.

However, the Chairman of the Committee observed that site specific studies be carried out for the project and provided to University of Roorkee for detailed studies. The project would be considered after the DEQUOR report becomes available.



## ANNEX I

### List of the Participants in VII Meeting of the National Committee on Seismic Design Parameters (NCSDP) held on 23rd September, 1997 at New Delhi.

Sl.No. -----	Name & Designation -----	Position in NCSDP Committee -----
1.	Sh. Ramesh Chandra Chairman, CWC Sewa Bhavan, R.K. Puram, New Delhi-110066	Chairman
2.(a)	Sh. N.B.G. Tilak Director, Engineering Geology Division, G.S.I., Bandlaguda Complex HYDERABAD - 500068.	Member
(b)	Sh. C. Paul Senior Geologist G.S.I., N.F. Region, Samar Villa Arbutnot Road Shillong - 793011	Member
(c)	Sh. S.C. Pathak Director Engg. Geology Division, G.S.I., Nagpur - 440006.	Member
3.(a)	Prof. Susanta Basu Professor & Head Deptt. of Earthquake Engg. University of Roorkee Roorkee-247667.	Member
(b)	Prof.B.C. Mathur Deptt. of Earthquake Engg. University of Roorkee Roorkee-247667.	Member
4.	Sh. S.C. Bhatia Scientist 'F' National Geophysical Research Institute, Hyderabad - 500007	Member
5.	Brig. B.S. Rajal	Member

Director  
Geodetic & Research Branch,  
Survey of India,  
17 EC, RD,  
DEHRADUN.

- |     |   |                  |
|-----|---|------------------|
| 6.  | Sh. Satish Verma<br>Chief Engineer (DSO)<br>Central Water Commission<br>New Delhi-110066.   | Member           |
| 7.  | Sh. Narender Kumar<br>Director,<br>F.E. & S.A. Dte.,<br>Central Water Commission,<br>New Delhi - 110066   | Member-Secretary |
| 8.  | Sh. P.L. Narula,<br>Dy. Director General,<br>Geological Survey of India<br>NH 5P, NIT<br>Faridabad.   |                  |
| 9.  | Sh. K.V. Subba Rao<br>Chief Engineer, NSRS Project<br>Srisaillam Project<br>Floor 6, Gaganvihar,<br>M.J. Road,<br>Hyderabad - 500001.                                 |                  |
| 10. | Sh. K. Padma Rao,<br>Ex. Engineer Designs,<br>Block No. 4 & 5,<br>Gruhakalpa Complex,<br>M.J. Road,<br>Hyderabad - 500001.  |                  |
| 11. | Sh. M.R. Sohoni,<br>Chief Engineer (WSP) I/C<br>Brihan Mumbai Municipal Corporation<br>BMC Office, Mahapalika Marg,<br>Ext. Bldg. III Floor,<br>Fort Mumbai - 400001. |                  |
| 12. | Sh. S.J. Desai,<br>Dy. C.E. (WSP) L.R.P.  |                  |

BMC Office, Mahapalika Marg,  
Ext. Bldg. III Floor,  
Fort, Mumbai - 400001.

13. Sh. G.G. Lakule,  
Consultant, Tata Consulting Engineers,  
Carnae, Mumbai - 400009.

14. Sh. M. Mallainer,  
S.E./D&I, Srisaillam Project (West)  
Hyderabad.  
A.P.

15. Sh. D.M. Pancholi,  
S.E. (Geology)  
Central Designs Organisation,  
9, Dr. Jivraj Mehta Bhavan,  
Gandhi Nagar - 382019.

16. Sh. A.R. Jaini,  
Ex. Engineer,  
C.D.O.,  
9, Dr. Jivraj Mehta Bhavan,  
Gandhi Nagar - 382019.

17. Sh. S. Mahato,  
S.E., NEIC, CWC  
'JAMIR MANSION'  
Nong Shillong  
Shillong - 793014

18. Sh. P.S. Mandal,  
E.E. NEID-I, CWC  
CWC - Complex,  
Rongpur  
Silchar - 788009.

19. Sh. D. Bheemiah,  
Dy. Chief Engineer,  
NSR Sagar Project,  
Gandhi Vihar,  
Hyderabad - 500001.

20. Sh. Ramesh Grover,  
Director,  
Embankment (E&NE), CWC.

21. Sh. K.S. Khandpur,  
Director (DSM), CWC
22. Dr. D.V. Thareja,  
Director, CMDD (E&NE),  
C.W.C.
23. Sh. V.K. Talwar,  
Dy. Director,  
F.E.&S.A. Dte.,  
C.W.C.