Government of India
Central Electricity Authority
System Planning & Project Appraisal Division
Sewa Bhawan: R.K.Puram
New Delhi-110066

No.26/10/2002-SP&PA/

Dated 19th Oct. 2004

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**Subject: 22nd Standing Committee meeting on Power System Planning in Western region**

Sir,

Minutes of the 22nd Standing Committee meeting on Power System Planning in Western region held on 11th Oct. 2004 at Aurangabad are enclosed.

**Encl. As above**

(P. K. Pahwa)
Director (SP&PA)

**Minutes of the 22nd meeting of the Standing Committee on Power System Planning for Western Region held on 11th October 2004 at Aurangabad.**

1.0 The 22nd meeting of the Standing Committee on Power System Planning for Western Region was held on Monday, the 11th October 2004 at Aurangabad. The list of participants is enclosed at Annex-I.

1.1 Chief Engineer (SP&PA) welcomed the participants to the meeting and thanked POWERGRID for organizing the meeting and for making excellent arrangement for the participants. The agenda items were therefore taken up for discussion.

2.0 Confirmation of the minutes of the 21st meeting of the Standing Committee on Power System Planning for Western Region.

2.1 CE (SP&PA) stated that the minutes of the 21st meeting of the Standing Committee on Power System Planning for Western Region held on 5th July, 2004 at WREB, Mumbai were circulated vide CEA letter no.26/10/2002-SP&PA/678-690 dated 22.7.2004. No comments from any of the constituents had been received and requested the members to confirm the minutes.

2.2 Member Secretary (WREB) raised the issue of sharing of transmission charges on Ranchi-Rourkela-Raigarh-Raipur 400 kV D/C line. It was clarified that this issue was discussed in the 20th meeting, minutes of which were confirmed in the 21st meeting and there had been no further discussions on this during the 21st meeting. However, based on GEB's letter objecting to sharing of 100 % transmission charges by WR constituents, the issue was listed for discussions in this meeting. Thereafter, the minutes of the 21st Standing Committee meeting on Power System Planning were confirmed.

3. 0 Transmission system associated with Gandhar Stage-II (1300 MW) and Kawas Stage-II (1300 MW)

3.1 Chief Engineer (SP&PA) stated that as a follow up to the decisions taken in the last meeting, wherein transmission system associated with Gandhar-II and Kawas-II was deliberated, engineers from GEB and MSEB visited CEA to corroborate the data taken in respect of their system and witness the studies. Latest updated data in respect of MPSEB and CSEB was also received. Accordingly further studies were done based on updated data. The studies included cases with Torrent generation so that impact of this additional generation, which was being contemplated in the same time frame, could also be analyzed. The study results show that parallel operation of 400 kV and 220 kV would cause overloading on 220 kV network while 400 kV network still had margins. As such for optimum utilization of the network, it was necessary to plan de-paralleling of 400 kV and 220 kV network by suitable isolations. In this context CEA had carried out additional studies, which were circulated during meeting. The studies established

that with suitable de-paralleling of 400 kV and 220 kV network the overloading on 220 kV could be addressed.

3.2 Executive Engineer (GEB) stated that fault levels at 220 kV in respect of GEB network at 220 kV Haldarva and Valthan was near the critical level and any additional 220 kV lines in that area would further result in increase of the fault levels.

3.3 After discussions it was agreed not to have any additional 220 kV network in that area.

3.4 Director (SP&PA) made a presentation on the results of the various load flow cases carried out by CEA and stated that as per the results of the study the following evacuation network for Gandhar-II and Kawas-II would be required.

**400 kV network**

a) Gandhar (NTPC) – Rajkot (GEB) 400 kV D/C
b) Gandhar (NTPC) – Kawas 400 kV D/C
c) Kawas-II–Vapi (PG) 400 kV D/C Quad
d) Vapi (PG)–Navi Mumbai 400 kV D/C

**220 kV network**

a) Vapi (PG)- Magarwada (D&D) 220 kV D/C
b) Vapi (PG)–Kharadpada (DNH) 220 kV D/C
c) Vapi (PG)–Khadoli (DNH) 220 kV D/C.

**400/220 kV substation**

Establishment of 2x315 MVA, 400/220 kV Navi Mumbai by LILO of 400 kV Kalwa-Pune D/C line and LILO of both circuits of Apta-Kalwa 220 kV D/C and Kharghar-Kandalgaon 220 kV D/C at Navi Mumbai.

The various individual elements of the above-proposed network were thereafter taken up for deliberation.

3.5 Gandhar-Rajkot 400 kV D/C

All the constituents were in agreement to the proposal of this line. However, Executive Engineer (GEB) stated that GEB would need to carry out further study and examine the various pros and cons prior to giving their consent.

3.6 Gandhar-Kawas 400 kV D/C

Director (SP&PA) stated that during the last meeting GEB had requested for interconnection between 400 kV Gandhar and Kawas. Based on their request, Gandhar-Kawas 400 kV D/C line had been included. All the constituents were in agreement to the proposal of this line. However, Executive Engineer (GEB) stated that GEB would need to carry out further study and examine the various pros and cons prior to giving their consent. Regarding the time frame in which GEB would

firm up their views, Executive Engineer indicated a period of about two weeks from the date of this meeting.

3.7 Kawas – Vapi (PG) 400 kV D/C Quad

Director (SP&PA) informed that studies indicate that flow on Kawas-Vapi would be of the order of 1200 MW hence 400 kV Quad line had been proposed. After discussions all the participants were in agreement to the proposal of this line.

3.8 Vapi-Navi Mumbai 400 kV D/C line.

All the participants were in agreement to the proposal of this line.

3.9 Vapi-Magarwada 220 kV D/C and Vapi- Kharadpada 220 kV D/C

Chief Engineer (SP&PA) stated that presently UTs of DNH and Daman & Diu were not having any direct interconnection from central sector transmission. Both the UTs were however sharing central sector transmission charges. At present both the UTs were drawing feed from the GEB network at Bhilad through Bhilad-Magarwada (D&D) and Bhilad-Kharadpada (DNH) 220 kV D/C lines. He suggested that a multi circuit 2xD/C line could be constructed between Vapi (PG) and line alignment of the above 220 kV line from Bhilad, thereby creating Vapi (PG)–Magarwada 220 kV D/C and Vapi (PG)–Kharadpada 220 kV D/C line by bypassing both the lines at Bhilad. He stated that with the above 220 kV proposed lines the stress on GEB network in southern part of Gujarat would be reduced. He suggested that since line length involved was small the UTs could take up with POWERGRID for expediting the construction of this section, ahead of Gandhar-II and Kawas-II.

3.10 Member Secretary, WREB stated that since the UTs were already sharing the central sector transmission charges, these lines should be part of regional pool from the date of their commissioning. GEB representative stated that they had no objection to these lines as regional project from the date of their commissioning. All the other representatives agreed to the proposal of these lines and also agreed with Member Secretary, WREB that transmission charges for these lines would form part of regional pool from the date of their commissioning.

3.11 Vapi-Khadoli 220 kV D/C

All the constituents agreed to this line. It was clarified that 220 kV Khadoli substation would be built by DNH.

3.12 Establishment of 400/220 kV Navi Mumbai by LILO of 400 kV Kalwa-Pune D/C line and LILO of both circuits of Apta-Kalwa 220 kV D/C and Kharghar-Kandalgaon 220 kV D/C at Navi Mumbai.

Executive Director (PGCIL) intimated that they had carried out survey to identify the location of proposed substation at Navi Mumbai and area near Panvel had been identified. However, availability of land was likely to be less than 20 acres hence a 400 kV GIS substation would need be constructed. Technical Director, MSEB suggested that PGCIL may interact with them and they would render any

assistance for identifying and procurement of land for S/S. All the members agreed to the proposal of GIS substation if adequate land was not available.

3.13 Technical Director, MSEB stated that instead of LILO of proposed Kalwa-Pune 400 kV D/C line at Navi Mumbai, construction of new 400 kV line from Navi Mumbai to Pune be considered.

3.14 Chief Engineer (SP&PA) stated this proposal of MSEB would not yield full benefit from establishment of proposed 400 kV substations at Navi Mumbai. Studies indicated that flow would be from Navi Mumbai towards Kalwa and also towards Pune hence proposal of MSEB would not be optimal. After further discussions MSEB and all other constituents agreed to LILO of Kalwa-Pune line at 400 kV Navi Mumbai. The proposal of LILO of 220 kV Apta-Kalwa 220 kV D/C and 220 kV Kharghar-Kandalgaon 220 kV D/C at Navi Mumbai was also agreed.

3.15 SE (MPSEB) stated that establishment of Shujalpur substation by LILO of Bina-Nagda 400 kV D/C line be considered.

3.16 Chief Engineer (SP&PA) stated that as per his information Shujalpur was getting feed from Bhopal and provision of a third 315 MVA, 400/220 kV transformers at Bhopal had also been made. Establishment of new substation at Shujalpur would result in reduced drawal at Bhopal and hence the need for third transformer may need a review. He agreed that CEA would further study this proposal.

3.17 GM, NTPC stated that step up voltage and line bay requirements at Gandhar-II and Kawas-II needs to be finalised so that NTPC can proceed ahead and firm up the switchyard at Gandhar-II and Kawas-II.

3.18 All the participants agreed to a step up voltage of 400 kV and it was decided that at Gandhar-II, 4 no. 400 kV line bays with provision for space for 2 no. 400 kV line bays and for Kawas-II, provision of 4 no. 400 kV line bays was needed. Bay requirement at 220 kV level was not considered necessary.

4.0 **Other Items**

4.1 To a query from Member Secretary WREB regarding agency responsible for LILO of Korba-Damoh-Bhopal 400 kV D/C line at Birsinghpur it was clarified that the line would be routed via Birsinghpur and LILO works at Birsinghpur would be carried by MPSEB / MP Generation Co. at their cost.

4.2 Member Secretary stated that Limbdi-Ranchhodpura 400 kV D/C line was agreed during the 20th meeting. The name of 400 kV substation of GEB was Chorania instead of Limbdi. Hence, this line should be Chorania-Ranchhodpura 400 kV D/C. Similarly LILO of Gandhar-Dehgam 400 kV D/C line at Karamsad was agreed. The name of the 400 KV substation of GEB was Kasor instead of Karamsad. Hence this should be LILO of Limbdi-Ranchhodpura 400 kV D/C line at Kasor.

.3 This was agreed and noted.

5.0 X Plan / XI Plan transmission programme of State utilities in WR and schedule for completion of various transmission works.

5.1 Chief Engineer (SP&PA) informed that based on information received from utilities the status of X Plan 220 kV and 132 kV programmes of state utilities along with their requirements were assessed and presentation was made to MoP. MoP had desired the following: -

Reassessment of X Plan 220 kV, 132 kV and also 66 kV requirement considering detail of

a) Existing 220-kV/132 kV/66 kV network.
b) Deficiencies in the existing network.
c) Programme for X Plan and XI Plan for overcoming the difficulties in the existing network and additional network to meet the transmission requirements corresponding to additional generation capacities and increase in load demand.
d) Financial requirement for 220-kV/132 kV/66 kV works and how these are proposed to be funded. MoP has suggested that loan funds for expansion projects may also be sourced from PFC/REC. After discussions it was agreed that the states would furnish the above information to CEA by end of October 2004.

6.0 Sharing of Cost of Ranchi-Rourkela-Raigarh-Raipur 400 kV D/C line with fixed series compensation and TCSC.

6.1 Member Secretary, WREB stated that during the WREB Board meeting the constituents were not in favour of bearing full transmission charges and felt that sharing of cost on interregional link Ranchi-Rourkela-Raigarh-Raipur should be on 50: 50 basis between WR and ER. This issue needs to be addressed.

6.2 Chief Engineer (SP&PA) stated that based on projected load-generation scenario for 2008-09 and 2011-12, Western Region was likely to be deficit by about of 4000-6000 MW and Eastern Region would continue to remain surplus. This line had been planned not for transfer of operational surpluses but for meeting the long-term transmission requirements of Western Region. Hence, it was felt that transmission charges for this link should be borne 100% by WR constituents. He stated that under similar cases viz 220 kV Auraiya-Malanpur D/C line, the transmission charges were borne fully by WR. Similarly for Talcher-Kolar HVDC link the transmission charges were borne fully by SR constituents. He informed that ER constituents were not willing to share the cost of this line and the constituents of Western Region had to decide whether they would like to have this line.

6.3 Executive Engineer (GEB) stated that GEB was not agreeable to share full transmission charges by WR constituents. He stated that ER system beyond Rourkela was getting strengthened.

6.4 Chief Engineer (SP&PA) clarified that Ranchi was strongly connected in ER and Rourkela was an anchor point due to the long length of transmission line.

6.5 Director (SP&PA) stated that in case the constituents do not want to undertake the construction of this line it would need review of the intra regional system strengthening planned for import of power by WR.

6.6 Members desired that sharing of cost be again taken up with the ER constituents. It was agreed that this item would be put up to ER constituents in the SCM on Power System Planning of ER.

7.0 **Long term open access for interstate transmission system.**

7.1 Long-term open access of interstate transmission pertaining to request of Reliance Energy Ltd for 175 MW and M/S Bhilai Electric Supply Company Ltd for 360 MW was discussed. Detailed minutes in respect of these would be issued by POWERGRID.

7.2 In case of Reliance Energy Ltd no decisions were taken because Reliance had yet to furnish information in respect of injection at Goa.

7.3 In respect of Bhilai Electric Supply Company open access for 360 MW was agreed subject to BESCL giving an undertaking that under no condition they would inject more than 360 MW and in case of loss of local load or tripping of the feeder feeding their local load they would trip/back down through automated mechanism so that there was no burden on the grid.

8.0 Chief Engineer (SP&PA) thanked the participants for attending the meeting and POWERGRID for organizing the meeting. He stated that next meeting for final decision on Gandhar-II and Kawas-II network could be held after GEB carried out their study and finalizes its views. It was tentatively agreed that the next meeting be held on 5th November 2004 at Vadodra.

Annexure-I

## List of Participants

The following officers participated in the **22nd Standing Committee Meeting** on Power System Planning held on 11th October 2004 at Aurangabad.

| S. No | Name | Designation | Tel. / Mobile / Fax No. |
|---|---|---|---|
| | CEA (SP&PA) | | |
| 1. | V. Ramakrishna | Chief Engineer. | |
| 2. | A. K. Asthana | Director. | |
| 3. | P. K. Pahwa | Director. | |
| | WREB | | |
| 4. | S. Sivan | Member Secretary | |
| 5. | Manjit Singh | Suptd. Engineer (op.) | 022-28209506 / 28321386 |
| 6. | S. Satyanarayan | EE (OS) | 022-28320756, 9819064944<br>022-28370193 (fax) |
| | MSEB | | |
| 7. | A.D. Palamwar | Tech. Director | |
| 8. | N. J. Katekar | Suptd. Engineer (Tr. Plg) | 9819218824 |
| | CSEB | | |
| 9. | Vimal Awasthi | Addl. CE. | 0771-5066363<br>09425206810 |
| | MPSEB | | |
| 10. | Dr. R.P. Bhatele | Supdt. Engineer (PSP) | 0761-2702148 / 9425152817 |
| | GEB | | |
| 11. | M.H. Kshatrya | Ex. Engineer (System) | 0265-2483065 |
| | Elec. Dept. of GOA | | |
| 12. | S. A. Mandrekar | SE (Com) | 0832-2227009, 9422444333<br>0832-2222354 (fax) |
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| 13. | Anil Damania | J.E. | 0260-225474 |
| | D.N.H. Elec. Deptt. | | |
| 14. | P.S. Dave | Ex. Engg. (Prg.) | 09824461367 |
| 15. | H.C. Surma | J.E. | 0260-2650857 |
| | NTPC | | |
| 16. | N. N. Misra | General Manager (P.E.) | 0120-2410228 |
| | PTC | | |
| 17. | S.K. Dube | Director (O) | 011-51659503 |
| | POWERGRID | | |
| 18. | R.N. Nayak | Exe. Director (Engg.) | 0124-2571801, 9811422111 |
| 19. | A.K. Datta | Exe. Director (WR.) | 0712-2641470 |
| 20. | Y.N. Sehgal | DGM (ENGG) | 0124-2571815, 9811227885 |
| 21. | D.K. Valecha | AGM (WRTS) | 0712-2641472 |
| | RIL Mumbai | | |
| 22. | Dr. K. Rajamani | AVP. | |
| 23. | P.D. Deshpande | Sr. Manager | 022-34249908 |

| | BESCL | | |
|---|---|---|---|
| 24. | Vinod Sharma | GM | 011-24364387 |
| 25. | Sudip Dutta | Sr. Manager | 9891390705 |