

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

No.1/9/10-SP&PA/

Dated: 20.01.2011

-As per List enclosed-

Sub: Minutes of the 29th meeting of the Standing Committee on Transmission System Planning of Northern Region and Long Term Access meeting held on 29th December, 2010 at POWERGRID, Gurgaon.

Sir,

It is intimated that the minutes of the 29th meeting of the Standing Committee on Transmission System Planning of Northern Region and Long Term Access meeting held on 29th December, 2010 at **POWERGRID**, Gurgaon, have been uploaded on **CEA website (under [www.cea.nic.in/ PS wing/ standing committee meeting/NR](http://www.cea.nic.in/PS_wing/standing_committee_meeting/NR))**

This is for your kind information and further necessary action at your end please.

Yours faithfully

**(B. K. Sharma)
Director (SP&PA)**

-List of Addresses-

1. Member Secretary NREB, 18-A Shajeed Jeet Singh Sansanwal Marg, Katwaria Sarai, New Delhi - 110016	7. Director (Transmission) UPPCL, Shakti Bhawan Extn, 3rd floor, 14, Ashok Marg, Lucknow - 226 001	13. Development Commissioner (Power), J&K, Exhibition Ground, Near New Secretariat, Srinagar - 190 001
2. Director (Projects) NTPC, NTPC Bhawan, Core 7, Scope complex- 6, Institutional Area, Lodhi Road, New Delhi - 110003	8. Director (Transmission) Urja Bhawan, Kawali Road, Dehradun, Uttaranchal - 248 001	14. Member (Power) BBMB, Sectot-19 B Madya Marg, Chandigarh-160019
3. Director (Technical) NHPC Office Complex, Sector – 33, NHPC, Faridabad - 121 003	9. Director (operations) Delhi Transco Ltd. Shakti Sadan, Kotla Marg, New Delhi - 110 002	15. Chief Engineer (Transmission) NPCIL, 9- S-30 Vikram Sarabhai Bhawan, Anushakti Nagar, Mumbai - 400 094
4. Director (Projects) POWERGRID, Saudamini, Plot no. 2, Sector - 29, Gurgaon-122 001	10. Director(Technical) Punjab State Transmission corporation Ltd. (PSTCL), Head Office The Mall, Patiala - 147 001 Fax-0175-2304017	16. Chief Engineer (Operation) Ministry of Power, UT Secretariat, Sector-9 D Chandigarh - 161 009
5. Sr. Vice President, PTC Ltd, 2nd floor, 15 NBCC Tower, Bhikaji Cama Place, New Delhi - 110066	11. Director (Projects) HVPNL Shakti Bhawan, Sector -6 Panchkula - 134 109	17. Managing Director, HP PowerTransmission Corporation Ltd. Himfed Bhawan, Panjari, old MLA Quarters, SHIMLA-171004
6. Member (Transmission) HPSEB, Vidyut Bhawan, Shimla - 171 004	12. Director (Transmission) RVPNL, Vidyut Bhawan, Janpath, Jyoti Nagar, Jaipur, Rajasthan	

Minutes of 29th Standing Committee Meeting on power system planning of Northern Region held on 29th December 2010 at POWERGRID, New Delhi

List of participants is enclosed at Annexure.

Chief Engineer (SP&PA), CEA welcomed participants of the 29th Standing Committee meeting of the Northern Region of power system planning and thanked them for attending the meeting, despite inclement weather and problems in traveling due to road/air traffic disruptions.

The agenda item were thereafter taken up for discussion.

1. Confirmation of minutes of 28th Standing Committee Meeting held on 23.02.2010

Director (SP&PA), CEA stated that comments were received from PSEB and HVPN regarding the work of LILO of 400 kV Dehar-Bhiwani line at Rajpura and LILO of 400 kV Dehar-Panipat line at Panchkula. No other comment was received from members. He mentioned that this issue would be taken up for consideration later.

POWERGRID stated that they were facing problems in acquisition of a suitable land for establishment of 400/220 kV substation at Dehradun and stated that incase suitable land could not be arranged, POWERGRID might have to establish a GIS station at Dehradun. Members agreed for the same.

Director (RRVPN) stated that new 400 kV substations might be planned as GIS stations as it was becoming very difficult to get the land near the cities and land cost was very high. It was also suggested that techno-economic analysis of GIS v/s AIS should be carried out and based on the same the new substations might be planned as GIS stations.

As no other comment was received from members, **the Minutes of 27th meeting were confirmed.**

2. Augmentation of 400/220 kV transformation capacity at Dehar Generating Switchyard

POWERGRID intimated that overloading of existing 250 MVA, ICT at Dehar was experienced several times, particularly in low hydro period resulting in separation of 400 & 220 systems at Dehar. They proposed that a new 500 MVA ICT might be provided at Dehar by BBMB. In case of space constraint, it was suggested to replace existing 250 MVA, ICT by 500 MVA, ICT. BBMB representative confirmed that the feasibility of the proposed augmentation would be examined and they would revert to committee in the next meeting.

Members agreed for the same.

3. Status of Projects approved in the SCM/RPC

The status of various transmission projects under implementation by POWERGRID was uploaded on CEA website along with agenda for the information of the members.

4. Transmission works in western part of Uttar Pradesh

Director (SP&PA), CEA stated that the following transmission system was approved for western part of Uttar Pradesh in the 26th meeting of the Standing Committee for Power System Planning of Northern Region:-

1. 765 kV S/c Greater Noida – Hapur line
2. 400 kV D/c Quad Hapur-Dasna-Indrapuram-Ataur(Ghaziabad) line
3. 400 kV D/c Quad 765 Greater Noida –Noida Sector 137 line

UPPTCL had requested CEA to review the above system as they were facing ROW and land acquisition problems in the construction of 400 kV Hapur-Dasna-Indrapuram D/C line and non-availability of land for establishment of 400 kV Noida Sector -137 Substation. The issue was technically examined in CEA along with officers of UPPTCL and the above proposal was revised as follows:-

1. 765 kV S/c Greater Noida – Hapur line
2. 400 kV D/C Quad Hapur(765 kV) -Ataur(Ghaziabad) -Indrapuram line
3. 400 kV D/C Quad Gr.Noida (765 kV)-Noida (Sector -148) line
4. 400 kV D/c Quad Hapur(765 kV)-Dasna line

Member Secretary, NRPC inquired the time frame for completion of above works. UPPTCL informed that the above works are planned to be implemented under PPP mode and award was to be placed shortly. It was also informed that land for the new substations had already been acquired and the works were targeted for completion in 12th Plan period.

Members noted the same.

5. Transformation Capacity

POWERGRID informed that following augmentation of transformation capacities had been approved:-

- a) Nalagarh S/s- 1x315 MVA, 400/220 kV ICT approved in 17th NRPC Meeting
- b) Abdullapur S/s- 1x315 MVA, 400/220 kV ICT approved in 18th NRPC Meeting
- c) Amritsar S/s (PG)- 1x315 MVA, 400/220 kV ICT approved in 18th NRPC Meeting

POWERGRID also indicated the transformation capacity under execution/approved under regional system and stated that many utilities in addition to allocated power were availing power under Open Access. Considering the present and future loadings ICT augmentation and various new substations had been planned. It was stated that incase any state required

augmentation in transformation capacity, the same might be indicated. Members were of the opinion that CEA and CTU would carry out system studies for the integrated grid and based on the studies incase any additional requirement was felt the same might be brought out. Chief Engineer (SP&PA),CEA stated that the future requirement would be put to the Standing committee incase requirement was felt and STUs might also inform the requirement, if any.

Members agreed for the same.

6. 2 Nos. of 220 kV Bays to Railways

Director (SP&PA), CEA stated that the request of Railways to provide 2 nos. of 220 kV bays for at Allahabad POWERGRID substation was discussed during the 28th Standing Committee Meeting held on 23/02/2010 and it was decided that first of all railways must sign the TSA for common ISTS elements of NR to be built through private sector participation thereafter their request for access to regional transmission system would be considered. He further informed that Railways had signed the TSA on 07/05/2010 and in view of this, it was proposed that the two nos. of 220 kV bays at Allahabad 400/220 kV substation of POWERGRID might be allocated to Railways. It was also decided that the cost of the 2nos. of 220 kV bays would be borne by the Railways.

Members agreed for the same.

7. Bhiwani transformation Capacity

Director (SP&PA), CEA explained that a 765/400kV substation at Bhiwani was approved as a part of development of 765 kV ring around NCR and to facilitate dispersal of power from large generation complexes in Eastern region to the states of Northern Region. He further informed that HVPNL had desired provision of 2x315 MVA, 400/220kV ICTs at Bhiwani substation with six (6) numbers of 220kV line bays as recorded in earlier Standing Committee instead of 2x500 MVA ICTs as recorded in NRPC meeting. CEA agreed for the provision of 2x315 MVA ICTs at Bhiwani and POWERGRID was going ahead with implementation of the same.

Members noted the same.

8. Parbati System

POWERGRID explained that following system had been agreed for Parbati-II & III transmission system:

Parbati-II (800MW) transmission system

- i. Parbati-Koldam 400 kV 2 xS/c (Quad)

Parbati-III (520 MW) transmission system

- ii. LILO of both circuits of 400kV Parbati-II - Koldam at Parbati Pooling Point.
- iii. LILO of one circuit of Parbati-II-Parbati Pooling Point at Parbati-III.
- iv. Parbati Pooling Point - Amritsar 400 kV D/c.
- v. Establishment of 400kV Parbati- Pooling Station (GIS).

It was further stated that Parbati-III Transmission system was under execution by POWERGRID and expected to be commissioned by June '2011 whereas Parbati-II had been

delayed. Parbati-II transmission system was an IPTC project being implemented by PKTCL. The construction of Parbati-II transmission system was yet to start and as per PKTCL, it would match with commissioning of Parbati-II. To evacuate power from Parbati-III, a portion of the proposed Parbati-Koldam 400 kV S/c lines were needed to be matched with Parbati-III transmission system. The portion of Parbati-Koldam 400 kV S/c lines to be matched with Parbati-III would include from point of LILO of Parbati-II - Koldam for Parbati-III inter connection, to point of LILO of above lines at Parbati Pooling station(5-6 Kms). POWERGRID also informed that M/s Reliance had indicated that the award for the line section had already been placed and they would complete the line section required for evacuation of power from Parbati-III by June 2011 provided the pre-poning of this section was approved by the Standing Committee. It was proposed that the above section of 400 kV Parbati-II – Koldam lines, required for evacuation of Parbati-III be pre-poned and recovery of tariff of the pre-poned section as determined by CERC might be agreed.

The above proposal was deliberated and members agreed for the same.

9. Injection of Parichha TPS at Mainpuri (POWERGRID)

Director (SP&PA), CEA explained that for evacuation of power from various thermal projects, including Parichha, a composite transmission system was evolved. For immediate evacuation of power from Parichha TPS (2x250 MW), the following transmission lines were proposed:

Parichha-Orai 400kV D/c

Orai –Mainpuri (765/400kV) (UPPTCL) 400kV D/c.

Beyond Mainpuri 765/400kV substation, 765/400 kV system was envisaged including 400kV D/c interconnection with 400 kV,Mainpuri S/s (POWERGRID). In view of above, he further stated that UPPTCL had informed that there had been delay in implementation of 400 kV, Orai S/s and 765/400kV Mainpuri S/s and therefore they requested to terminate 400kV D/c line from Parichha TPS at Mainpuri S/s (POWERGRID), by utilizing the 400kV bays meant for Mainpuri (UPPTCL) – Mainpuri (POWERGRID) line, for temporary evacuation of Parichha TPS till the construction of Orai and Mainpuri Substations. UPPTCL also confirmed that Parichha-Mainpuri 400kV D/c line would be connected to these substations as envisaged earlier.

Chief Engineer (SP&PA) enquired about the status of the generation project as well as of the transmission system associated with the project. UPPTCL informed that generation project was expected by November 2011 and the transmission works were being implemented under PPP mode for which the award was to be placed shortly.

Director (RVPN) stated that in view of present status of transmission works, it appeared that the temporary arrangement would remain for about 3 years, which was very long period. UPPTCL stated that they would expedite the implementation of transmission works associated with Parichha TPS.

POWERGRID stated that at present Mainpuri(PG) was connected to Allahabad & Ballabgarh through 400 kV D/c lines alongwith 2x315 MVA ICTs at Mainpuri. At Mainpuri, power was received from Allahabad substation and evacuated through Mainpuri-Ballabgarh 400kV D/c line, in addition to 400/220kV transformers at Mainpuri. As per studies there was not adequate margin to transfer generation of Paricha TPS through Mainpuri – Ballabgarh 400 kV D/c line under contingency. Considering this, the evacuation of Parichha generation would be permitted to the extent as decided by NRLDC.

Chief Engineer (SP&PA) stated that UPRVUNL would be required to back down generation if instructed by NRLDC and they might have to install Special Protection Scheme (SPS) as specified by NRLDC.

POWERGRID also stated by as the line would be more than 260 km, the line reactors of 50 MVAR each at Mainpuri (PG) and Paricha generation switchyard would be needed to be provided. UPPTCL enquired whether one number of 125 MVAR bus reactor at Parichha switchyard would be adequate. It was clarified that one bus reactor of 125 MVAR at Parichha switchyard and two nos of 50 MVAR line reactors at Mainpuri (PG) end would be required for operation of the line. CEA stated that it would not be feasible to charge the line without these reactors. POWERGRID further stated that the work of providing 2 nos, 400 kV line bays at their Mainpuri substation would be taken up as deposit work of UPPTCL and 2x50MVAR line reactors to be installed at Mainpuri (PG) S/s would be provided by UPPTCL which would be taken back by UPPTCL when originally planned system gets implemented. UPPTCL agreed for the above proposal.

After above deliberations, members agreed to the above proposal.

10. 220kV line Bays at Lucknow (PG) for UPPCL

Director (SP&PA), CEA informed that UPPTCL had indicated vide its letter 20/07/2010 that a 220/132 kV, 2x100 MVA at Bakshi Ka Talab (periphery of Lucknow City) was being constructed. It was to be connected to 400kV S/s Lucknow (PG) by 220kV D/c line. UPPTCL had requested for approval of the same alongwith four (4) nos of 220 kV line bays at 400/220 kV S/s at Lucknow (PG). He further stated that under Northern region strengthening scheme- XXIII augmentation of transformation capacity at Lucknow (PG) by 1x500 MVA transformer and four (4) numbers of 220kV bays were being provided to UPPTCL which would be commissioned by December2011. UPPTCL stated that 4 nos. of 220 kV bays were adequate for their requirement. UPPTCL also informed that in place of 220/132 kV s/s at Bakshi Ka Talab (periphery of Lucknow City) now they would be developing the S/s at Kursi Road.

Members noted the same.

11. Transmission system associated with Meja TPS

Director (SP&PA), CEA stated that NTPC was developing a 1320 MW power plant as a JV project with UPRVUNL at Meja in UP. NTPC informed that from Meja about 900 MW was for UP and about 400 MW was for other NR constituents. The generation was expected to be commissioned by the end of 2014.

He further informed that CEA & UPPCL evolved a composite transmission scheme for evacuation of power from Karchana, Bara & Meja TPS. Subsequently, NTPC requested to evolve associated transmission system for transfer of power from Meja TPS to the Northern region beneficiaries other than Uttar Pradesh. The system was discussed in the 28th standing committee and following was proposed:

- Meja- Allahabad (PG) 400kV D/c quad line (to be constructed by PGCIL)

- Allahabad (PG) - Rewa Road (Allahabad) 400kV D/c quad line to be constructed by UPPCL in place of earlier approved 400 kV Meja-Rewa Road (Allahabad) quad line.

He also informed that the matter was taken up with UPPTCL and they had informed that Meja-Rewa Road line was included in Package of works to be taken up through PPP route in UPPTCL and no change could be done at this stage as the scope of works had already been approved.

POWERGRID stated that in view of the above and also to integrate the system being developed by the state with ISTS, following transmission system was proposed for transfer of power from Meja to other NR constituents:

- Meja-Allahabad (POWERGRID) - 400 kV D/c

Chief Engineer (SP&PA), CEA stated that it might be ensured by UPPTCL that the approved composite evacuation scheme of the above generation projects was implemented matching with the commissioning schedule of the generation projects.

Members agreed for the above proposal.

12. Transmission system development in Himachal Pradesh

Director (SP&PA), CEA informed that HPPTCL had submitted following proposals for development of transmission system in Himachal Pradesh:-

(i) Evacuation from Parbati Valley:

400kV Parbati Pooling Switching Station is being developed at Banala under Parbati-III HEP evacuation system. Several small hydel projects and medium/large projects are also at different stages of development in the Beas valley upstream of Banala and shall require evacuation through Banala due to limited availability of transmission corridors. HPPTCL proposed to evacuate power from various hydro projects via this pooling station (Banala).

The projects and requirement as indicated by HPPTCL were:

	Description	Requirement	Remarks
1	220kV bays for Naggar to Banala 220kV D/c line	2	2012-13
	220/400 kV 500 MVA ICT	1	2016-17*
2	220kV bays for terminating 220kV Ad Hydro-Nalagarh line at Banala	4	2010-11
	220/400 kV 500 MVA ICT	1	2010-11
3	220kV D/c line (Quad Moose) from Chenab basin	2	2019-20*
	220/400 kV 500 MVA ICT	2	2019-20*
4	220kV D/c line from Toshi Parvati (520 MW) HE project	2	2016-17*
	220/400 kV 315 MVA ICT	2	2016-17*

* These projects were tentative and subject to review after taking in to account the actual progress on the ground.

POWERGRID stated that transmission system under execution/planned, envisaged following connectivity to Banala:

- Parbati-II / Parbati-III – Banala 400kV 2 x S/c
- Banala- Amritsar 400kV D/c
- Banala-Koldam 400kV D/c

The total power injection at Banala would be 1420 MW (Parbati-II – 800 MW, Parbati-III– 520 MW & Sainj -100 MW). For evacuation of 1400 MW power, there would be only four (4) nos of lines. Presently, Banala pooling station is a switching station and no 220kV level was under execution. The space availability at Banala for future lines is:

- 400kV line bays: 1 nos.
- 400/220kV transformers: 2 nos.
- 220kV line bays: 4 nos.

POWERGRID suggested that considering the space constraints at Parbati pooling station, a new pooling station might be implemented by HPPTCL in the vicinity of Parbati which could be integrated with Parbati Pooling station through LILO of some high capacity quad line

Chief Engineer (SP&PA), CEA observed that considering the margin in existing system and physical space constraints for construction of lines in that corridor as stated by POWERGRID above, the injection of power at Parbati (Banala) pooling station as proposed by HPPTCL would not be possible. As such, HPPTCL would have to review the proposal. He advised HPPTCL to firm up the time schedule of expected generations and location of their pooling station and review the master plan in consultation with CEA and POWERGRID accordingly.

Members agreed for the above.

(ii) 220kV bays at Chamera Pooling station:

For evacuation of power from Ravi basin, a 220/400kV, 2x315 MVA pooling station near Chamera-II is under construction. In close vicinity of pooling station, HPPTCL is planning to implement 220/132/33kV S/s at Karian. HPPTCL requested for 2 nos of 220kV bays at Chamera Pooling station for connecting 220kV pooling station of HPPTCL at Karian.

Members agreed for the above.

(iii) Evacuation of Sainj Power

Director (SP&PA) stated that HPPCL was constructing 100 MW Sainj HEP close to the proposed power house of Parbati HEP. The project is targeted for 2013. During the 26th SCM it was discussed and agreed that the generation at Sainj HEP could be evacuated through 132 kV D/C to 132/400 kV sub-station which could be connected at 400 kV either to

400 kV LILO from Parbati-II– Parbati –III 400kV S/C line or to a 400 kV S/C line either to Parbati –II or to Parbati-III. It was decided that NHPC would review the availability of space for additional 400 kV bay at Parbati II as well as Parbati III and intimate the position to CEA as well as HPSEB. NHPC confirmed that space for 400kV bay was neither available at Switchyard of Parbati-II nor at Parbati-III. During CEA concurrence of the Sainj generation project, HPPTCL confirmed that they would implement the evacuation system of Sainj Power by creation of 132/400 kV substation (near Sainj village) where power from Sainj HEP would be pooled and construct LILO of one circuit of 400 kV Parbati-II – Parbati-III line (near Parbati-II) for injection of Sainj Power HEP in to ISTS system of POWERGRID. It was also ensured by HPPTCL that they would design switchyard of 132/400 kV Sainj pooling station capable of carrying power equivalent to Quad conductor. The above was agreed. It was decided that the cost of the substation and switchyard (of higher capacity rating for Quad line) shall be borne by HPPTCL.

Members agreed for the above.

(iv) Evacuation of power from HEP in Chanderbhaga basin:

Director (SP&PA), CEA stated that CEA had finalized transmission system for evacuation of power of total quantum of about 2600MW from Chanderbhaga basin in consultation with HPSEB. To evacuate power from small HEP's in Kullu and Manali, HPPTCL proposed:

- 132/33kV pooling station at Palchan & 220kV D/c with S/c from pooling station to Allain.
- 220/132/33kV pooling station at Naggar and a 220kV D/c (Quad) D/c to Banala.

As per master plan, three corridors would be required between Palchan and Banala and four nos of corridors between Naggar and Banala. To reduce the requirement of number of corridors, HPPTCL had now proposed termination of one corridor from Khoksar pooling of Chenab basin at Palchan and augmentation of Palchan to Prini section to Quad Moose through ERS and extended to Naggar. From Chanderbagha basin, about 2600 MW need to be evacuated. Further, in this regard it was agreed by members that evacuation of Chanderbagha basin power via Parbati (Banala) pooling station would not be possible due to space constraints as mentioned at S. No.12(i) above.

Considering above, proposal of evacuation of power from Chanderbagha through Banala was not found feasible. It was discussed & agreed that the Master Plan developed earlier, would have to be reviewed.

Chief Engineer (SP&PA), CEA decided that a Special Task Force having representatives from HPPCL, HPPTCL, CEA and POWERGRID would be constituted to study and revise the master plan for Chandrabagha Basin. He also advised HPPCL to firm up realistic commissioning schedule for the expected generations in the basin and inform the same to the special task force enabling them to develop the master plan for the evacuation of Chandrabagha basin generation projects accordingly.

Members agreed for the above.

(v) Evacuation of power from HEP in Satluj Basin (Spiti valley):

Director (SP&PA), CEA stated that for evacuation of power from Spiti valley, a 220kV Pooling Station was planned near Yangthang where about 540 MW of power was planned to be pooled and evacuated by two nos of 220kV D/c having twin Moose conductor to Jhangi 400/220 kV S/s. Enroute additional 321 MW was expected to be injected into the lines

making the total quantum of power carried by the lines as about 860MW. Jhangi S/s was connected to Sherpa colony by 400kV lines having triple snow bird conductor. Enroute Sherpa colony S/s additional 960 MW power from Powai HEP was to be injected making total injection as 1820 MW.

Originally it was conceived that Jhangi would be connected to Sherpa colony by two (2) nos of 400kV D/c having triple snow bird conductor. In addition, LILO of 400 kV Baspa-Jhakri at Powai and Shongtong Karcham was planned. Hence, between Powai and Sherpa colony three 400kV corridors were planned, two from Jhangi to Sherpa colony and one due to LILO of Baspa-Jhakri at Powai.

HPPTCL stated that due to congestion in the valley only two numbers of corridors could be built and suggested to review the master plan accordingly.

Chief Engineer (SP&PA), CEA observed that HPPTCL were advised to interact with HPPCL and intimate the detailed phase-wise development of generation projects in the basin. He further mentioned that the Special Task force constituted for reviewing the master plan of evacuation of Chandrabhaga basin projects would also look into evacuation of Spiti Valley generation projects and develop a comprehensive master plan for generation projects expected in both, Chandrabhaga Basin & Spiti valley.

POWERGRID stated that HPPCL should prepare a realistic time schedule based on actual milestones achieved for various generation projects in Himachal Pradesh and then a meeting of Special task force could be held to finalise the master plan along with phasing of transmission system required for the evacuation of generation projects.

Chief Engineer (SP&PA), CEA also emphasized that in absence of the implementation of transmission works as envisaged in master plans under the scope of HPPTCL (STU), IPPs of Himachal Pradesh were facing lot of difficulties for injection of generation in ISTS system of CTU and LTA for the projects could not be granted. He advised HPPTCL to take up transmission works and develop STU network up to CTU injection points expeditiously to facilitate grant of LTA for generation projects of Himachal Pradesh.

Members agreed for the above.

13. Transmission system for Luhri HEP (775 MW)

POWERGRID informed that Satluj Jal Vidyut Nigam Limited (SJVNL) was developing a 775 MW HEP in Shimla/Mandi in Himachal Pradesh and the project was likely to be commissioned by the year 2018. The allocation of power from the generation to NR beneficiaries as indicated by SJVNL was as follows:

- Himachal Pradesh -447.64 Mw (57.76 % - including 1% of local area development), Haryana – 22.01 MW (2.24%) , Jammu and Kashmir 36.04 MW (4.65%), Punjab- 39.14 (5.05%), Rajasthan- 38.52 MW (4.97%), Uttar Pradesh- 75.87 MW (9.79%), Uttarakhand- 13.02 MW (1.68%), Chandigarh 2.7 MW (0.35%), Delhi 48.83 MW (6.3 %) and unallocated 51.23 MW(6.61 %)

POWERGRID intimated that CERC has notified regulations for “Grant of Connectivity, Long-term Access and Medium-term Open Access in Inter-State Transmission”, 2009 and approved detailed procedures of CTU (i.e. POWERGRID) for the

same. In accordance with above even Inter-State Generating Stations owned by the Central Government need to apply for Connectivity/Long Term Access as applicable. POWERGRID stated that they had already requested SJVNL vide letters dated 28/04/2010, 30/08/2010 & 03/12/2010 for applying connectivity and Long Term Access, however the applications was yet to be received.

However, POWERGRID indicated following tentative system after the preliminary system studies:

Associated transmission for Luhri generation:

- LILO of Rampur-Nallagarh 400kV line at Luhri
- Luhri-Mohali 400kV D/c (Triple Conductor)

System Strengthening:

- Mohali-Malerkotla 400kv D/c
- LILO of one circuit of Nallagarh - Patiala line at Mohali 400kV D/c
- Establishment of 2x315 MVA 400/220kV GIS substation at Mohali

Members decided that SJVNL should first apply for connectivity and LTA to the POWERGRID (CTU) and thereafter the transmission system for the project would be taken up for consideration of the committee.

14. Transmission system for Singrauli-III TPS (500 MW)

Director (SP&PA), CEA informed that NTPC was implementing Singrauli STPP Stage-III (500 MW) in UP with Northern region beneficiaries. The project is likely to be commissioned in 2013-14. It was informed that the present available system would not be adequate to evacuate power from this project. He further informed that studies were carried out by POWERGRID & CEA and after analysing the same, following transmission scheme was proposed for evacuation of power from Singrauli-III TPS:

- Singrauli-Allahabad 400kV S/c
- Allahabad-Kanpur 400kV D/c

POWERGRID further mentioned that in existing Singrauli–Allahabad line, about 50 km section is S/c strung on D/c towers and in view of severe ROW constraint at Singrauli, the proposed Singrauli-Allahabad 400kV S/c would be strung on the above D/c towers wherever possible. Balance portion would be developed as S/c line. Allahabad – Kanpur 400 kV D/c line would be required for transfer of power beyond Allahabad.

POWERGRID also stated that NTPC had applied for connectivity, however it was advised that NTPC might apply for LTA, before the above works could be taken up for implementation.

Members agreed for the above.

15. Anta-Kota 400kV Line -Agenda by RVPN

RRVNL (Rajasthan) had proposed following system for connection of ISTS and their system:

- Anta(RRVNL)-Kota(PG) 400kV S/c line

Director (RRVPN) stated that large state thermal generation projects viz. Chhabra and Kalisindh were coming at 765/400 kV Anta/ Dahra S/s and in view of this it would be prudent to interconnect Anta substation with 400 kV Kota S/s (PG) for enhancing the reliability of operation.

POWERGRID stated that the above proposed line would facilitate interconnection between the two corridors and therefore increase system reliability. The cost of proposed 400kV S/c line and its bay at 400 kV Anta S/s would be borne by RRVPNL whereas **one no. 400kV line bay at Kota (PG) S/s would be developed under regional system strengthening scheme NRSS-XXVII.**

Members agreed for the above proposal.

16. Srinagar-Tehri Pooling Station 400 kV D/c (Quad) Line

Director (SP&PA), CEA stated that as a part of master plan for evacuation of power from generation projects in Utrakhand, a 400kV D/c had been proposed from Srinagar HEP (330MW) to Srinagar 400kV substation. Srinagar 400kV substation would further be connected to Kashipur substation of PTCUL. Further, it had also been proposed to pool the power of other regional projects like Tapovan Vishnugarh, Vishnugarh Pipalkoti etc. at Kashipur S/s.

POWERGRID stated that for system reliability and stability there was a need of inter valley inter-connection. They proposed a 400kV D/c Line from Tehri Pooling Station to Srinagar 400kV substation. Director (RRVPNL) suggested that in view of ROW constraints in hilly area, the proposed 400 kV line might be constructed with Quad conductor. The same was agreed by members.

POWERGRID further stated that PTCUL might inform the implementation schedule for Srinagar S/s and other associated lines within their scope. POWERGRID also stated that the implementation of proposed 400 kV D/c (Quad) line from Tehri Pooling Station to Srinagar 400kV substation (PTCUL) would be taken up after the awards for Srinagar S/s and associated lines at Srinagar were placed. PTCUL was requested to inform the progress of above works.

The issue was deliberated by members and it was agreed to take up 400kV D/c (Quad) Line from Tehri Pooling Station to Srinagar 400kV substation (PTCUL) as regional system strengthening scheme.

Members agreed for the above proposal.

17. Bus reactor at Rihand

POWERGRID stated that it was agreed to provide 1x125 MVAR bus reactor at Rihand in the 28th standing committee meeting held on 23.02.10. Subsequently NTPC indicated that presently 80 MVAR bus reactors were being procured by them under Rihand-III and Vindhyachal-IV projects. In view of this, NTPC requested to examine the possibility of installing 1x80 MVAR bus reactor for ease of procurement through the

power transformer packages under Rihand-III. Considering above, it was agreed to provide 1x80 MVAR bus reactor at Rihand.

Members agreed for the above proposal.

18. Transmission system for RAPP-7&8 (2x700 MW)

POWERGRID stated that M/s NPCIL was developing a 1400 MW (2x700 MW) Nuclear power plant in Rawatbhata, Chittorgarh in Rajasthan scheduled for commissioning by Jun-2016 and Dec-2016. The studies were carried out and following Transmission system was proposed for RAPP-7&8:

- RAPP – Jaipur (South) 400 kV D/c line of which one circuit to be LILOed at Kota
- RAPP – Shujalpur (WR) 400 kV D/C

POWERGRID also stated that NPCIL would had to provide 125 MVAR Bus Reactor at their generation switchyard. NPCIL informed about space constraint at switchyard.

Chief Engineer (SP&PA), CEA stated that the above bus reactor is necessary and NPCIL should accommodate the same by carrying out requisite re-orientation/modification in switchyard. He further stated that if required a joint survey by a team consisting of CEA, POWERGRID & RAPP engineers could be arranged for identifying space for installing proposed bus reactor in RAPP 7-8 switchyard.

POWERGRID requested NPCIL to submit the Long Term Access Application and stated that the above scheme would be taken up after the grant of LTA.

Members agreed for the above proposal.

19. Transmission strengthening scheme

POWERGRID stated that Rajasthan had planned generation addition of about 9000 MW and a large quantum of import would come from WR side. As such it was anticipated that a large quantum of power would required to be transferred out of the Rajasthan.

Considering this, POWERGRID proposed following strengthening works to be taken up as **NRSS-XXV**:-

- Jaipur (RVPN) -Bhiwani 765kV S/c (2nd)
- Bhiwani (PG)-Hisar 400kV D/c
- LILO of Moga-Bhiwadi 400kV D/c at Hissar

Members agreed to the above proposal.

20. LILO of 400 kV Dehar Bhiwani and Dehar-Panipat lines

Regarding this issue, Director (SP&PA), CEA mentioned that 400 kV Dehar Bhiwani line was to be LILOed at Rajpura S/s and 400 kV Dehar-Panipat line was to be LILOed at Panchkuls S/s. He also mentioned that both PSEB and HVPN were agreed for the works but both had requested that these works might be taken up under regional scheme as these works

would provide reliability to entire NR system and help in stable operation of NR Grid. Further as the length of the line would be reduced the load ability would also increase. After deliberations it was decided to take up the proposed work of **LILO of Dehar-Panipat line at Panchkula S/s and Dehar-Bhiwani line at Rajpura S/s by POWERGRID as regional strengthening scheme NRSS-XXVII**.

21. North Karanpura Transmission system

POWERGRID intimated that following transmission system had been agreed as part of evacuation system for North Karanpura:

- i. North Karanpura – Gaya 400kv D/c (Quad)
- ii. North Karanpura – Ranchi 400kv D/c (Quad)
- iii. Sipat/Korba (pooling)- Seoni 765kV S/c
- iv. Lucknow –Bareli 765 kV S/c**
- v. Bareli-Meerut 765 kV S/c**
- vi. Agra-Gurgaon (ITP)-Gurgaon(PG) 400kV D/c (Quad)**
- vii. 2x500MVA 400/220kV substation at Gurgaon (ITP)**

Further, as a part of transmission system for evacuation of DVC generation projects, Balia-Lucknow 765 kV S/c is under construction. Similarly 765kV system beyond Meerut i.e. Agra-Meerut 765kV and Meerut – Bhiwani 765kV lines are also under construction as a part of “765kV scheme under central part of Northern region”.

In view of above, the proposed Lucknow-Bareli-Meerut 765kV link (mentioned at (iv) & (v) above) would be the missing link connecting the two systems at 765kV level. Hence, even in case of delay in North Karanpura generation project these lines would help in transfer of power from generations in Eastern region to Northern region. Similarly proposed Agra-Gurgaon (ITP)-Gurgaon (PG) 400kV D/c along with proposed Gurgaon (ITP) substation would help in meeting the growing power demand of the NCR area.

POWERGRID stated that though the North Karanpura generation project of NTPC was delayed, however the elements (iv) to (vii) would help in providing a strong interconnection between Eastern and Northern region and therefore implementation of these elements might be delinked to the commissioning of North Karanpura generation project. It was also informed that the above transmission elements were being implemented as a private sector project.

Members agreed to the above proposal.

22. Patiala-Ludhiana 400kV D/c and LILO of Patiala –Hissar 400kV at Katihal

POWERGRID stated that following transmission scheme was approved for evacuation of power from Rampur HEP (412 MW):

- i. LILO of Nathpa Jhakri – Nalagarh 400 kV D/c line at Rampur
- ii. Patiala – Ludhiana 400 kV D/c
- iii. LILO of Patiala –Hissar 400kV line at Kaithal

POWERGRD further stated that item (i)- LILO of Nathpa Jhakri – Nalagarh 400 kV D/c line at Rampur, was for immediate evacuation of power from the project. Item (ii) and

Item (iii) in addition to facilitating evacuation of power from the project would also help in strengthening the Grid. In this regard it might be mentioned that studies had shown overloading on Ludhiana - Malerkotla section, which required to be strengthened. After further analysis of the study cases, it was observed that 400 kV line between Patiala and Ludhiana would provide the required strengthening optimally and LILO of Patiala – Hissar line at Kaithal, would ensure balanced loading on Patiala-Kaithal-Hissar 400kV Corridor.

In view of above, it was proposed that item (i) would be commissioned matching with the Rampur generation while item (ii) and item (iii) might be commissioned at the earliest by delinking them with the commissioning of Rampur HEP.

After deliberations, members agreed for the above proposal.

23. Transmission system for evacuation of power from IPP projects in Jharkhand & West Bengal and Phasing of works -A &B (agenda item 23)

POWERGRID stated that following transmission scheme had been agreed for evacuation of power from 3300 MW IPP generation coming up in phase-I in Jharkhand & West Bengal:

System strengthening in NR

- New 2x1500MVA, 765/400 kV substation at Varanasi and Kanpur
- Gaya – Varanasi 765 kV S/c
- LILO of Gaya – Balia 765 kV S/c at Varanasi
- Varanasi – Kanpur 765 kV D/c
- Kanpur – Jhatikra 765 kV S/c
- 400kV connectivity for new 765/400kV S/s at Varanasi & Kanpur
 - Varanasi-Sarnath(UPPTCL) 400kV D/c (Quad)
 - LILO of Sasaram-Allahabad 400kV line at Varanasi
 - Kanpur (765/400kV) – Kanpur Existing 400kV D/c (Quad)

POWERGRID further stated that there was no space available for additional bays at Sarnath (UPPTCL) S/s for termination of above mentioned Varanasi-Sarnath (UPPTCL) 400kV D/c (Quad)line. In view of above, it was proposed that orientation of Sasaram-Sarnath (UPPTCL)-Allahabad might be reverted to original arrangement of Sasaram-Allahabad direct line and the bays vacated at Sarnath (UPPTCL) might be used for termination of Varnasi (765/400kV)-Sarnath (UPPTCL) 400kV D/c line. The remaining system would remain same as agreed earlier.

In addition, it was mentioned that POWERGRID was also implementing DVC/Sasan scheme which included following works at Sasaram:

- ◆ Gaya-Sasaram 765kV S/c
- ◆ Sasaram-Fatehpur 765kV 2*S/c(one with DVC & other with Sasan)
- ◆ 2*1500 MVA, 765/400kV ICT

POWERGRID informed that there were space constraints for establishment of 765kV switchyard at Sasaram and in the available space only following could be accommodated:

- ◆ 1 no.765kV line bay

- ◆ 1*1500 MVA 765/400kV ICT with bays

In view of above following is proposed:

- ◆ Implement one circuit of Gaya-Sasaram-Fatehpur as Gaya-Fatehpur
- ◆ Provision of only 1*1500 MVA, 765/400 kV, ICT at Sasaram.
- ◆ There will be only one circuit between Sasaram and Fatehpur.

Further it was mentioned that 6 nos. of 400kV circuits (4 from Biharshariff & 2 from Nabinagar) were existing / under implementation for injection of power at Sasaram. There was limitation in transfer of power from Sasaram due to availability of 400 kV lines as well as one no. of 400/765 kV ICT. it was also mentioned that Varanasi 765/400kV Substation was being implemented under Jharkhand Scheme.

The above constraints were discussed during the meeting and following system around Sasaram was finalized:

- a) Extend one 400 kV D/c (Quad) Biharshariff-Sasaram line to Varanasi, Bypassing Sasaram.
- b) LILO of Gaya-Fatehpur 765kV S/c at Varanasi
- c) Sasaram-Sarnath 400kV S/c may be through HVDC back to back.
- d) Sasaram-Allahabad circuit may be from ER bus.
- e) The opening of LILO of one circuit of Sasaram-Allahabad line at Sarnath, implementation of Varanasi-Sarnath 400kV D/c(quad) and LILO of Allahabad – Sasaram at Varanasi might be taken up afterwards alongwith the time frame of Varanasi-Kanpur 765kV lines (These works would be taken up as part of Jharkhand & West Bengal scheme).

POWERGRID proposed to take up the works from (a) to (d) as regional system strengthening scheme **NRSS-XXVIII**.

Members agreed to the proposal.

Further, following phasing of Jharkhand & West Bengal scheme was proposed as part of agenda item 23:

I. Common system strengthening for transfer of power from Phase-I generation projects in Jharkhand and West Bengal - Part-A

- Ranchi – Gaya 400 kV (Quad) line via pooling station proposed near Essar / Corporate generation projects
- Ranchi New (765/400kV S/s) - Dharamjaygarh / near Korba 765kV S/c
- Establishment of 400kV Pooling Station (Jharkhand Pool) near Essar and Corporate generation projects. This will be a switching station without ICTs
- New 2x1500 MVA, 765/400 kV substation at Varanasi
- Gaya – Varanasi 765 kV S/c
- LILO of Gaya - Balia 765 kV S/c line at Varanasi

II. Common system strengthening for transfer of power from Phase-I generation projects in Jharkhand and West Bengal - Part-B

- New 2x1500 MVA, 765/400 kV substation at Kanpur
- Varanasi – Kanpur 765 kV D/c
- Kanpur – Jhatikra 765 kV S/c
- Kanpur (765/400kV) - Kanpur (Existing) 400kV D/C (Quad)
- 400kV connectivity for new 765/400kV S/s at Varanasi
 - ✓ *Varanasi - Sarnath (UPPCL) 400kV D/c (quad)*
 - ✓ *LILO of Sasaram - Allahabad 400kV line at Varanasi*
 - ✓ *Opening of LILO of one ckt of Sasaram - Allahabad 400kV D/c line at Sarnath*

III.Private Sector line: *In addition to the above work to be undertaken by PGCIL, Dharamjaygarh – Jabalpur 765kV D/C line (2nd line) would be under the scope of private sector. Associated 765kV line bays at Dharamjaygarh and Jabalpur sub-station would be under the scope of POWERGRID.*

The above was agreed by the constituents.

24. Evacuation of Power from Rosa generation project in Uttar Pradesh – Agenda by UPPTCL:

(a) Director (SP&PA), CEA stated that following transmission system was under operation for evacuation of power from Rosa TPS-Stage I (2x300 MW), which was in principally agreed in the 26th SCM held on 13/08/2010:

- Rosa – Shahjahanpur 220 kV D/c
- Rosa – Hardoi 220 kV D/c
- Rosa – Badaun 220 kV D/c

UPPTCL intimated that as per load distribution/ projection in that area they desired to revise the transmission system for Rosa Stage –I as follows:

- Rosa – Shahjahanpur 220 kV D/c
- Rosa – Badaun 220 kV D/c
- Rosa – Some Place near CBganj and Dohana line, then breaking it in to 2 Single circuit lines with one circuit to CBganj and second to Dohana (expected by Nov. 2011)

Chief Engineer (SP&PA), CEA stated that above transmission system comes under the purview of the UPPTCL (STU) CEA has no objection for the above change proposed by UPPTCL.

Members noted the same.

(b) POWERGRID informed that M/s Rosa Power Supply Company Limited had applied seeking Long Term Open Access for transfer of 300 MW power from Stage-II (2x300 MW) of Rosa Power Project located at Shahjahanpur, U.P. Out of 600 MW power, 300 MW power was allocated to Uttar Pradesh and balance 300 MW was to be transferred to Delhi (150MW) and Haryana (150 MW). The application was discussed in the Long Term Open Access

Meeting held on 30/05/2009 at Nainital alongwith 27th Standing Committee Meeting of Northern Region. During the meeting, it was decided that Long-term Open Access could be granted subject to following:

Long Term Open Access to Rosa Power Company shall be granted after the commissioning of following strengthening scheme:

- Bareilly – Meerut 765 kV S/c
- One ckt of Lucknow – Bareilly 765 kV line
- Bareilly-Kashipur–Roorkee–Saharanpur 400 kV D/c (Quad conductor)

For connectivity of Rosa Power Plant with the grid, the following was agreed:

- Rosa- Shahjahanpur 400 kV D/c

POWERGRID further informed that Shahjahanpur (PG) S/s was expected to be commissioned by Nov.'12 whereas the first unit of Rosa Stage-II was to be commissioned by September '2011 and second unit by December'2011.

UPPTCL proposed to LILO one circuit of Unnao – Bareilly 400 kV D/c line at Rosa TPS alongwith bypassing of Series compensation of Unnao.

POWERGRID proposed that in view of the early commissioning schedule of the generation, Rosa generation might be connected to the grid by connecting the proposed Rosa-Shahjahanpur line to one circuit of Lucknow –Bareilly 400kV line i.e., LILO of Lucknow-Bareilly line at Rosa generation till the commissioning of Shahjahanpur S/s. Thereafter the system as envisaged originally would be restored.

POWERGRID would construct one D/c line (LILO portion upto proposed site of Shahjahanpur substation) and M/s Rosa would also bring their line upto proposed site of Shahjahanpur substation and both lines would be joined so as to make Rosa – Lucknow and Rosa –Bareilly 400 kV S/c lines. This would avoid any additional expenditure and avoid bypassing of the series compensation. It was assured by POWERGRID that they would implement the proposed arrangement matching with Rosa Stage-II first unit commissioning.

UPPTCL stated that while granting LTOA for Rosa stage-II, it was mentioned that M/s Rosa would provide adequate 400/220 kV ICT for delivery of 300 MW of UP share from the project. They requested that the capacity of 400/220 kV ICT to be provided at Rosa stage-II switchyard might be specified as 2x315 MVA.

Members agreed to the above proposal

Regarding request of UPPTCL for providing space for 2 nos., 400 KV line bays at Rosa switchyard for their future use, Chief Engineer (SP&PA), CEA advised UPPTCL to take up the matter with M/s Rosa Power Supply Company.

25. Kishenpur – New Wanpoh 400kV D/c:

Director (SP&PA), CEA stated that during the 23rd Standing Committee Meeting of NR Transmission Planning, establishment of New Wanpoh 400/220kV substation alongwith Kishenpur – New Wanpoh 400 kV D/c was agreed as a System Strengthening Scheme. While carrying out the route survey for Kishenpur-New Wanpoh 400kV D/c line, it was observed that there is serious Right of Way Problem for crossing the 7-8km Pir Panjal mountain range. During the 28th SCM of Northern Region held on 23/02/2010, the issue of ROW constraints

for proposed Kishenpur – New Wanpoh 400 kV D/c while crossing Pir Panjal mountain range and utilization of Pampore – Wanpoh – Ramban – Batote – Udhampur 132 kV D/c, a 7-8 km corridor stretch, for Kishenpur – New Wanpoh 400 kV D/c was discussed and PDD, J&K agreed in principle to provide the 132kV line corridor for crossing Pir Panjal mountain range for which the 132 kV line section (about 7-8km) would be dismantled. It was decided that the decision about providing 400 kV D/c line or Multicircuit line for crossing Pir Panjal would be taken after interaction of CEA with J&K officials. The matter was taken up by CEA with J&K and J&K had intimated that they would agree to the proposal of providing Multicircuit line in Pir Panjal area with a provision of 2 nos. of 220 kV circuits for J&K and two 400 kV circuits as planned by POWERGRID for crossing Pir Panjal mountain range of about 8 km. POWERGRID stated that they were going ahead accordingly.

Chief Engineer (J&K) informed that Govt. Of J&K had agreed in-principle for the proposal of providing Multicircuit line in Pir Panjal area with a provision of 2 nos. of 220 kV circuits for J&K and the approval of the Govt. Of J&K for the above would be given after POWERGRID convey their acceptance for the same.

Chief Engineer, J&K asked POWERGRID to send a formal communication regarding acceptance of erection Multicircuit line in Pir Panjal portion to Govt. of J&K. POWERGRID agreed for the same.

Members agreed to the above proposal.

26. Transmission system associated with Orissa UMPP (4000MW)

POWERGRID stated that Orissa Ultra Mega Power Project (4000 MW) was proposed to be set up near Bhedabahal village in Sundergarh district of Orissa by Orissa Integrated Power Ltd. (OIPL). Beneficiaries & Allocation of the power to following states from the Orissa UMPP (4000MW) was as under:

S. No.	Beneficiary	Allocation(MW)
Eastern Region(1300MW)		
1	Orissa	1300
Northern Region (1800MW)		
2	Uttar Pradesh	300
3	Uttarakhand	200
4	Punjab	500
5	Rajasthan	400
6	Haryana	400
Western Region (600MW)		
7	Madhya Pradesh	400
8	Chhattisgarh	200
Southern Region (300MW)		

9	Tamilnadu	300
	Total	4000

The unit wise commissioning schedule as indicated by generation developer is as given below:

Sl. No.	Unit	Commissioning Schedule
1	1st Unit (800 MW)	Mar - 2016
2	2nd Unit (800 MW)	Sep - 2017
3	3rd unit (800 MW)	Mar - 2017
4	4th unit (800 MW)	Sep - 2017
5	5th unit (800 MW)	Mar - 2018

Transmission system has been evolved for UMPP generation project as well as IPP generation project coming up under phase-II in Orissa as part of LTA. The list of Phase-II IPP projects is enclosed in Appendix: I

Following manor transmission system is proposed as a part of Orissa UMPP:

1. Transmission System for Orissa UMPP

- \pm 800 kV, 6000 MW HVDC Bi-Pole line from Angul to Bulandshahar (*shared with Orissa-II IPPs*)
 - 3000 MW HVDC Terminal each at Angul & Bulandshahar
 - Orissa UMPP - Jharsuguda 765kV D/c line
 - Split Bus arrangement at Jharsuguda 765 kV level.
 - Disconnection of Rourkela-Raigarh LILO arrangement at Jharsuguda
 - Arrangement for Power Supply to Orissa (radial mode through isolation of two units of UMPP)

2. Transmission System for Orissa-II

- \pm 800 kV, 6000 MW HVDC Bi-Pole line from Angul to Bulandshahar (*shared with Orissa UMPP*)
 - 3000 MW HVDC Terminal each at Angul & Bulandshahar
 - New 4x1500MVA, 765/400kV substation at Dhenkanal
 - LILO of Angul – Jharsuguda 765kV 2xS/c at Dhenkanal
 - Angul-Jharsuguda-Dharamjaygargh 765 kV D/c line (*shared with IPPs*)

**Transmission charges of Orissa UMPP (with 3000MW HVDC terminal) were to be shared by beneficiaries of Orissa UMPP. However for \pm 800 kV HVDC line 6000MW would be shared by Orissa UMPP beneficiaries & Orissa – II IPPs.

POWERGRID stated following tentative Strengthening in Northern Region for dispersal of power from Bulandshahar onwards:

- Bulandshahar – Location near border of Haryana/Punjab near Ambala 765 kV D/c line
- Location near boarder of Haryana/Punjab near Ambala – Malerkotla 400 kV D/c line
- Bulandshahar – Neemrana 400 kV D/c line
- LILO of Meerut – Moga 765 kV S/c line at Bulandshahar
- Establishment of 2x1500 MVA, 765/400 kV substation at Location near border of Haryana/Punjab near Ambala (GIS)
- Establishment of 2x1500 MVA, 765/400 kV substation at Bulandshahar*

** In case of space constraints, Bulandshahar substation shall be taken up as GIS*

HVPN stated that the proposed 765 kV station near Ambala would be about 40 km from Kurushetra. POWERGRID explained that the above dispersal scheme was tentative and would be firmed up depending upon the generation addition, load requirement and network development.

POWERGRID further stated that Meerut – Moga 765 kV S/c line was agreed in 27th Standing Committee and NRPC as system strengthening in Northern Region for Tillaiya, Barh-II and Nabinagar, however considering the requirement of power flow from Western UP towards Haryana/Punjab/J&K, it was proposed that this line might be taken up on priority & be commissioned at the earliest. Balia – Lucknow 765 kV 2nd S/c line, which was also agreed as system strengthening in Northern Region for Tillaiya, Barh-II and Nabinagar would be taken up later. It was proposed that **implementation of Meerut – Moga 765 kV S/c line alongwith bays & reactors may be taken up as NRSS-XXVI**.

After detailed deliberations, the members agreed for the above proposal.

The Meeting ended with a vote of thanks to chair.

Annexure**List of participants for the 29th Standing Committee meeting on Power System Planning in Northern Region, held on 29.12.2010 at POWERGRID, Gurgaon (Haryana)**

Name	Designation
CEA	
1. Sh. Ravinder	Chief Engineer (SP&PA) - in chair
2. Sh. B.K. Sharma	Director (SP&PA)
3. Sh. Rajiv Kumar	Deputy Director (SP&PA)
J&K PDD	
1. Sh. F.R Kirmani	Chief Engineer (P & D)
RRVNL	
1. Sh. Y.K Raizada	Director (Technical)
2. Sh. L.N Nimavat	S.E (Planning)
DTL	
1. Sh. V.K Gupta	Dy. GM (Planning)
HVPNL	
1. Sh. R.K Goel	S.E (Planning)
2. Sh. C.D Sangwah	Executive Engineer
UPPCL	
1. Sh. Y. Sharma	CE (T.S)
2. Sh. V.P Tewari	S.E (Planning)
3. Sh. M.Z Khan	EE (Tr. Planning)
BBMB	
1. Sh. Kush Gupta	Chief Engr. (System Operation)
2. Sh. R.S Lamba	Director (Power Regulation)
HPPTCL/ HPPCL	
1. Sh. V.K Kaprate	Director (P & C)
2. Sh. A.C Sharma	Director (E)
3. Sh. Sandeep K Sharma	Sr. Manager (Planning)
4. Sh. Jitender Dogra	Asstt. Engr. (Electrical)
NPCIL	
1. Sh. K.P Singh	ACE (Transmission)
2. Sh. K. Murdia	Dy. Chief Engineer
PTCUL	
1. Sh. S. Bhatnagar	DGM (Engg.)
NTPC	
1. Sh. A. Basu Roy	AGM (Comml.)
2. Sh. Abhijit Sen	AGM (PE-E)
3. Sh. S S Mishra	DGM (PE-E)
PGCIL	
1. Sh. Y.K Sehgal	ED (SEF, CE, & IT)
2. Sh. U.K Tyagi	GM-(Comml.)
3. Sh. Mukesh Khanna	DGM (SEF)
4. Sh. S.S Raju	DGM