Minutes of the Meeting of the 25th Standing Committee on power system planning of Northern Region held on 17th July 2008 at NRPC, New Delhi

1. List of the participants is annexed.

2. Member (PS), CEA welcome the participants to the 25th meeting for transmission system of Northern Region.

3. Confirmation of minutes of 23rd and 24th meeting

3.1 Minutes of 23rd meeting of the Standing Committee held on 16.2.2008 at Deharadun issued vide letter no. 1/9/2007-SP&PA/61-80 dated 19.03.08 and subsequent corrigendum were issued vide letter no. 1/9/2007-SP&PA/492-497 dated 3.06.08 for deletion of the work for LILO of Samaypur – G. Noida line at Faridabad(Nawada) from the scope of NRSSS –XIII. In response to the minutes, POWERGRID vide letter No. C/ENG/SEF/N/SCM dated 02/04/2008 have indicated the following with a request to amend the MOM, incorporating the changes.

i) There were severe ROW constraints for taking the line towards Gurgaon (Sector-71) substation and it would be difficult to get more than two line corridors for termination of the lines at Gurgaon. Considering the ROW problem, it was proposed that Multicircuit towers should be constructed for providing connectivity to Gurgaon (Sector-71) substation. The Multicircuit towers may accommodate LILO portion of Ballabhgarh – Bhiwadi and connectivity to Manesar by 400 kV D/c Quad line.

ii) As a part of the Minutes of long Term Open Access, Dadri SEZ may be replaced with Gurgaon SEZ

iii) Following para for Sikkim projects might be added:

The proposals to evacuate & transfer power from the various hydro projects located in Sikkim was discussed. The 21 nos. of hydro projects in Sikkim are being developed mainly along the Teesta river with 4225 MW capacity. Comprehensive transmission system for evacuation of power from all these

projects have been planned and was given in the Long Term Open Access agenda circulated by POWERGRID. It has been proposed that the power would be pooled at new substation in North Bengal area. From the new pooling station power may be transferred utilizing the ± 6000 MW HVDC bipole line planned under NER-NR interconnector-I for evacuation of 3000 MW power from NER generation projects. This line would be looped in looped out at the new pooling station, where a 3000 MW HVDC terminal would be provided for injecting additional power from Sikkim. The invertor end of the HVDC terminal would be connected at Agra from where power can be transferred to NR/WR.

CE (SP&PA) stated that the changes suggested by POWERGRID has been noted and would form a part of minutes.

3.2 CE (SP&PA), CEA stated that NHPC subsequent to the issue of the minutes of the meeting has indicated that the proposal agreed in the 23rd SCM for 220kV D/C line from Budhil to Chamera-III to be LILOed into one circuit of 220kV D/C line between Chamera-III and pooling station near Chamera-II is not acceptable to them and instead they would like the earlier proposal i.e 220 kV D/C line from Budhil to Chamera III to be bunched into one circuit and terminated to Chamera III switchyard (3rd bay) from the reliability consideration for power evacuation from Chamara III HEP. NHPC further stated that in respect of Kotlibhel evacuation system they did not concur to the proposal that NHPC should tie-up with PTCUL for evacuation system upto PTCUL pooling point. CE(SP&PA), CEA stated that the NHPC in the 23rd meeting had not objected to the proposal for evacuation of power from Chamera III and Budhil HEPs. The proposal of NHPC was noted and would be discussed as a part of 25th SCM agenda. Also, the recording with respect to Kotlibhel evacuation system was also as per discussions. As such, the minutes of the 23rd SCM is considered confirmed including the addendum suggested by POWERGRID in i), ii), iii) above.

Members of the committee except NHPC agreed for the same.

Minutes of the 24th meeting held jointly with WR on 10th June 2008 and as issued vide letter no.26/10/2008/SP&PA/CEA dated 12th June, 2008 were also confirmed.

4. Chief Engineer (SP&PA) stated that the agenda contents for this meeting had already been discussed in the earlier Standing Committee Meeting. The issues regarding sharing of the cost of Sasan - Mundra and North East - West interconnection were deliberated earlier in the NR meetings, since there is a problem in signing of BPTA the issue was taken to NRPC for concurrence of the States. However, the members at NRPC were not converging to a decision and with the result the Chairman of the NRPC took a view that the issue may be referred again to Standing Committee where the commercial aspect of these issues will be deliberated and then it would be referred to NRPC for concurrence. Thereby the agenda item were taken up be CE(SP&PA), CEA one by one

4.1 Sharing of Charges for transmission system associated with Sasan and Mundra UMPPs

4.1.1 CE(SP&PA), CEA stated that this issue was deliberated in the joint meeting of Northern and Western region on 10th June 2008 at NRPC, Katwaria Sarai, New Delhi wherein MPEB were of the view that Bina-Gwalior 765 kV line which is under construction as a part of system strengthening scheme in WR would also be utilized for transmission of power from Susan UMPP to Northern Region, therefore the same might also be included as a part of generation specific scheme in Sasan UMPP. The matter was deliberated in detail and it was finally viewed that Bina - Gwalior 765 kV line would be included in the generation specific Sasan transmission system and the transmission charges for this would be

shared by the beneficiaries of the Sasan UMPP after commissioning of Sasan UMPP. Till Sasan UMPP was commissioned the transmission charges for the Bina- Gwalior 765 kV line would be shared by the WR constituents. He put up the issue for deliberation specially from commercial aspect.

4.1.2 Members from PTCUL informed that they do not have any comments on the above proposal. The Members from Punjab also agreed with the proposal. The members from Haryana gave their consent for the part of the transmission system associated with Mundra UMPP. However, they stated that they do not agree for sharing of the charges for Bina - Gwalior line which was being constructed as a part of WR system strengthening work. They apprehended that if this trend continues then the issue of many other inter regional lines would needed be reopened which would not be a healthy trend. Representatives from RRVPNL indicated that they agree in-principle with the system, but on the issue of sharing of transmission charges of 765 kV Bina - Gwalior and they also endorse the views of Haryana. They stated that with the commissioning of Tilaiyya UMPP and other projects in ER, where WR constituents also had share, the direction of power flow through this line might change from NR to WR and as such considering the line as a part of generation specific transmission system of Sasan UMPP was not acceptable to them. Representatives form Himachal Pradesh stated that they do not have any objection on the transmission system. However, they feel that since they do not have any share in this project they should not be loaded with additional transmission charges. Representatives form Delhi and U.PPCL indicated their agreement with the proposal.

4.1.3 Member (PS), CEA stated that it seems that members are generally in agreement with the technical as well as commercial aspect of Mundra UMPP transmission system. However there seems to be general objection of the members regarding sharing of transmission charges of Bina -

Gwalior line in Sasan transmission system. As such the same is noted and NRPC will be intimated accordingly.

The Members of the Committee were in agreement with this proposal and there was no objection to the proposal raised from any constituent states.

4.3 Evacuation of power from Jhajjar TPS (1500 MW)

There was no objection from any constituent states regarding the evacuation system from Jhajjar TPS basically on the connectivity of Daulatabad with Gurgaon (PGCIL). However, as intimated by POWERGRID the LILO line of Samaypur - Bhiwadi at Gurgaon(sector 72) and lines towards Manasher would be constructed on multicurcit towers.

Members concurred to the proposal.

4.4 Transmission system associated with Dadri II TPS (2x490 MW) - evacuatuion of UP's share of 10% by providing 220 kV line to Dadri 220 kV S/S of UPPCL from Hapur 400/220 kV S/S of PGCIL instead of from Dadri 220 kV S/Y as asked by UPPCL, and hence supply by displacement without involving wheeling charges or wheeling losses as a special case.

4.4.1 The above proposal was agreed by all the constituent states. However, HPSEB stated that the above relaxation given to U.P. on the wheeling charges might also be considered for other states also. CE (SP&PA) stated that this is a case specific issue and in future also views will be taken on case-to-case basis. He sated that since U.P. had a share of 10% from Dadri II and they were entitled to take their share of power directly from Dadri II. However, if a 220 kV line from Dadri TPS to U.P was provided, it would also get connected to other 220 kV system. As the reliability of 220 kV system was less and Dadri was an important grid station, from reliability of grid consideration, it would be better to plan 220 kV feed to Dadri/Hapur S/S of U.P for 400 kV Hapur S/S. Accordingly,

UPPCL had been requested to shift their point of drawal to other location ie, Hapur, for which they had agreed. Since by not drawing power directly from Dadri UPPCL was helping the grid for which they were entitled for drawal of power without involving wheeling charges or wheeling losses for their share of power from Dadri Extn.

Members agreed to the proposal.

4.5 Transmission system associated with Bawana CCGT - connectivity of the Bawana CCGT with grid.

4.5.1 DTL stated that as per new proposal 10% of power from Bawana would go to Punjab and IPGCL would sell 10% in open market and about 20% would be given to Haryana. As such 60% of Bawana generation would be available for consumption of Delhi which was around 900 MW. The same could be utilized by Delhi at Bawana and at North of Delhi itself. PGCIL stated that from the new proposal sent by IPGCL, it appeared that there would not be any split bus operation at Bawana as envisaged earlier. DTL clarified that new Bawana generation S/Y would be constructed by IPGCL and the same would be kept isolated from Delhi ring and the 400 kV lines from Bhadurgarh would be transferred to Bawana CCGT bus. DTL and IPGCL requested for early termination of 400 kV line from Bhadurgarh to Bawana at Bawana CCGT bus so that when operational the share of Punjab and Haryana from Bawana CCGT could be transmitted. PGCIL informed that 400 kV lines coming from Bahadurgarh would be transferred to Bawana CCGT bus only after completion of the line between Sonepat to Bahadurgarh. HPSEB apprehended that since Abdullapur to Sonepat is a part of Karcham-Wangtoo system so with the completion of the line between Sonepat to Bahadurgarh they might require to pay the transmission charges, for which they were not agreeable.

4.5.2 POWERGRID stated that the 400kV lines from Bawana 400kV S/S to Bhadurgarh/ Hissar should be shifted to Bawana Generation switchyard side only after completion of the 400kV D/C Abdullapur – Sonepat – Bhadurgarh line. The 400kV D/C Abdullapur – Sonepat line was covered under Karchem Wangtoo scheme and the 400kV D/C Sonepat – Bhadurgarh line was covered under NRSS-XII. In order to shift the lines at Bawana at an early date, both these lines would have to be preponed and the transmission charges payable by the regional constituents from the date of its early commissioning.

Members concurred with the proposal.

4.6 Evacuation system from Kotlibhel IA (195 MW), Kotlibhel 1B (320 MW) and Kotlbhel -2(530 MW) HEPs in Uttaranchal

4.6.1 NHPC stated that as per the agreed evacuation system power from Kotlibhel would be wheeled through PTCUL system through Dehradun S/S of PGCIL and as such they feel that as per the Electricity act 2003, they had a mandate upto generation switchyard and as such the wheeling charges for the line between Kotlibhel to Dehradun should be realised by PTCUL directly from beneficiaries of the project. Member (PS) stated that since it is a bilateral issue between NHPC and PTCIL the same should be discussed and solved mutually by the two organizations and as such the issue could not be discussed in the Standing Committee forum. However, Member (PS) stated that until the commercial issue between NHPC and Uttarakhand is resolved, it would be difficult to proceed on the evacuation system of the project and as such the proposal would be taken up further only after confirmation is received from the NHPC regarding resolution of their issue with Uttarakhand/PTCUL.

4.7 Evacaution system from Chamera III (230 MW) and Budhil HEP

4.7.1 Representative of NHPC stated that they were not agreed with system proposed in the 23rd Standing Committee Meeting where one cirucuit of the 220 kV D/C line from Chamera III to Chamera pooling station was proposed to be LILOed through a 220 kV D/C line to Budhil. He stated that in the event of contingency outage of one circuit the reliability of evacuation of Chamera III power would be affected and opined that the earlier proposed arrangement for evacuation of power from Budhil HEP i.e. 220 kV D/C line from Budhil to Chamera III to be bunched into one circuit and terminated at Chamera III 3rd bay was acceptable to them. However, on a query from Member (PS) as to how it would affect the reliability, he could not substantiate his concerns on the reliability. CE (SP&PA), CEA stated that utilization of available transmission capacities through LILO arrangement was a standard practice and the same was proposed to be adopted for Budhil so as to optimize the system. GM, PGCIL endorsed the views of Member (PS).

4.7.2 The members of the Committee were of the view that the system adopted for evacuation of power from Chamera III and Budhil power was generally being adopted for evacuation of power from other projects where the line has a spare capacity. Member (PS), CEA stated that since this was a line of PGCIL so as per Electricity Act 2003 POWERGRID was mandated to agree for open access of the power from other projects through their line as long as there was transmission capacity available. NHPC stated that in the event, the evacuation system as agreed in the 23rd SCM was agreed it should be ensured, that in the during contingency outage of direct circuit from Chamera III to Chamera II PS, the evacuation of full power from Chamera III should be maintained. It was clarified that with only one 220 kV D/C line, in the event of a single circuit contingencies and with generation availability being more than transmission capacity of the remaining circuit, all the generations would have equal priority for evacuation and there would be a need for pro-rate reduction of generation

in the event of transmission constraint in real time operation. However, in subsequent development when the second/third 220 kV D/C line would be added along with future projects, single circuit contingency would be fully met without the need of any backing-down but even then with double or high order contingency backing down might be needed and with equal priority for evacuation from all generation capacities having long term open access, pro-rate reduction of generation would be required. It was decided that the proposal as agreed in the 23rd Standing Committee for evacuation of power from Chamera II and Budhil HEPs was technically in order and acceptable. Accordingly, it was reconfirmed to adopt the system as agreed in the 23rd meeting.

4.8. Narendra - Kohlapur HVDC back-to-back scheme : NR constituents generally agreed for the proposal of sharing 25% of the transmission charges subject to approval by NRPC

4.8.1 Constituent members were not agreeable to the proposal of sharing transmission charges for SR-WR HVDC link . PGCIL stated that incase HVDC b-t-b was not shifted from Sasaram, the same shall continue to operate and there will be need for establishment of a new 765 kV S/S at a new site for terminating 765 kV lines from Gaya/Fethapur proposed as a part of DVC.

4.8.2 It was further discussed that the 500 MW HVDC back-to-back module would become redundant with the bypassing of the HVDC station. Possibility of keeping the equipment in store till such time that this could be gainfully utilized by locating it in some other location could be examined and PGCIL may review the need of land in view this suggestion.

4.9. 765 kV ring around Delhi

4.9.1 POWERGRID stated that 765 kV Agra-Delhi line should not be deferred, as otherwise there could be constraint for evacuation of DVC power.

4.9.2 DTL was apprehensive that with the commissioning of generation at Bawana and availability of 750 MW from Jhajjar and power from Dadri II to be injected to Bamnoli, there would be little scope available for Delhi to further absorb power from the 765 kV Jhatikra S/S proposed by Powergrid and as such the same may not be constructed at this instance and the line from Agra - Meerut might be taken directly bypassing Jhatika. CEA/POWERGRID agreed to examine the issue and further discussions could be held in the next meeting.

4.2 North East – Northern /Western Interconnection –I - Interregional transmission system

CE(SP&PA), CEA stated that the transmission system associated with Lower Subansiri and Kameng and interregional transmission of power from NER to NR/WR was discussed and broadly agreed by the Northern Regional constituents in its 20th meeting held at Nainital in 22nd April 2006 and subsequently in the 23rd SCM and was also discussed in the 8th and 9th NRPC meeting. The 9th NRPC opined for again taking it to Standing committee for Northern region for discussion and concurrence on the commercial aspect. CE(SP&PA), CEA stated that the following allocation of power from Lower Subansiri and Kameng HEPs were agreed:

- **35% of the power from these projects to be allocated to NER**
- **15% of the allocated power to be reserved for NE states**
- **50% of the power could be allocated to Northern/Western Region**

HPSEB stated that they were in general in agreement with the associated transmission system, however, they intimated that HPSEB had not been

allocated any share from the NER projects and they would like to flag issue. CE(SP&PA), CEA stated that since request from HPSEB for the share of power from NER was not received so allocation was not made to them, However, if HPSEB desired they can now send their request for allocation, and the same would be forwarded to MOP for consideration. The transmission system from Lower Subansiri and Kameng HEPs was generally agreed by the members. The specific transmission elements **(Annex-I).**

Annexure-I

Scope of work of "NER-NR/WR Interconnector-I"

Part-A: North East -Northern / Western Interconnector -I

Transmission lines

(i) Biswanath Chariyali –Agra 800 kV, 6000 MW HVDC bi-pole line -1815 Km
(ii) Balipara -Bishwanath Chariyali 400kV D/C line -73 Km
(iii) LILo of Ranganadi -Balipara 400kV D/C line at Biswanath Chariyali (Pooling Point) -52 Km
(iv) LILa of Depota -Gohpur 132kV SIC line at Biswanath Chariyali -22 Km

Substations

(i) Establishment of 400/132 kV Pooling Station at Biswanath Chariyali with 2x200MVA, 400/132/33 kV transformers alongwith associated bays.
(ii) HVDC rectifier module of 3,000 MWat Biswanath Chariyali and inverter module of 3,000 MW capacity at Agra.
(iii) Augmentation of 400 kV Agra substation by 4x167.5 MVA, 400/220/33 kV transformer alongwith associated bays
(iv) Extension of 400 kV line bays at Balipara substation.

Part-B : Transmission System for immediate evacuation of power from

Kameng HEP

Transmission lines

(i) Kameng -Balipara 400kV D/C line -65 Km

(ii) Balipara -Bongaigaon 400kV D/C line (quad conductor) with 30% Fixed Series Compensation at Balipara end -300 Km

Substations

(i) 2nd 315 MVA, 400/220kV ICT at Misa

(ii) Extension of 400 kV line bays at Bongaigaon and Balipara substations

Part-C: Transmission System for immediate evacuation of power from Lower Subansiri HEP

Transmission lines

(i) Lower Subansiri -Biswanath Chariyali (Pooling Point) 400 kV 2*D/C line with twin lapwing conductor -2 x 175 Km

Substations

(i) Extension of 400 kV line bays at Biswanath Chariyali Pooling Substation