

**Minutes of the Standing Committee meeting of Northern Region for Transmission
System Planning held on 25/01/02 at Udaipur**

List of the participants is given at Annex-I.

Welcoming the participants, Chief Engineer (SP&PA), CEA conveyed his special thanks to RVPNL for extending their hospitality for conducting the 12th Standing Committee meeting of Northern Region at Udaipur. He stated that this meeting was called to discuss many issues which were pending for the approval of the Northern Regional constituents. He asked Director (SP&PA), CEA to present the issues item-wise for deliberation by the members of the Committee.

Item: I LILO of Tanakpur- Bareilly 220 kV D/C line at the Kichcha 220/132 kV S/S.

Director (SP&PA) stated that Uttaranchal Power Corporation Ltd. (UPCL) which had recently been carved out of the U.P. State, had desired for direct touch point with the Northern Regional grid for drawal of their share of power from the central sector projects. With this view, UPCL had requestd for creation of 220 kV Haldwani S/S and to be fed from Tanakpur HEP of NHPC through 220 kV S/C line. He stated that the matter was referred to NHPC for confirming the availability of bay at Tanakpur 220 kV Switchyard. NHPC had intimated that since power to HMG Nepal was being fed from Tanakpur, so considering the importance of international transaction, the bay available at Tanakpur would be required for its future expansion. He further stated that the matter was discussed with UPCL and it was agreed that 132kV Kichcha S/S of UPCL might be upgraded to 220 kV level and one circuit of Tanakpur-Bareilly D/C line be LILOed at Kichcha 220 kV S/S. Director (SP&PA) stated that PSEB had indicated that as the proposal was meant for UPCL only so it should be done at their cost. He requested the members to present their views on the proposal.

General Manager, Uttar Pradesh Power Corporation Ltd. (UPPCL) stated that since the creation of 220 kV Kichcha S/S by LILO of Tanakpur-Bareilly line would benefit only UPCL so the cost of the work should be borne by UPCL.

Member Secretary, NREB stated that Tanakpur HEP was located in Uttaranchal so to transmit the share of the power to the State from Tanakpur HEP, a central sector touch point should be provided. He suggested that Uttaranchal being a newly created state, we should consider providing 220 kV S/S under central sector.

CE, HVPNL stated that HVPN would agree on the technical portion of the works but since the beneficiary of the Kichcha S/S would be only UPCL, so as a matter of principal, the cost for the same should not be burden on other states.

CE (SP&PA) stated that the 220 kV Tanakpur-Bareilly was a POWERGRID line. If the Kichcha S/S would be created under UPCL, there could be operational/control problems. Therefore, he suggested for creation of Kichcha S/S under central sector along with the LILO portion of one circuit of Tanakpur-Bareilly line at Kichcha S/S.

Member Secretary., NREB supplementing the proposal of CE (SP&PA) and stated that the 220 kV Kichcha S/S along with LILO of Tanakpur-Bareilly line at Kichcha should

be constructed by POWERGRID and the 132 kV side along with the 220/132kV ICT at Kichcha should be constructed by UPCL.

Director UPCL agreed with the proposal of M.S., NREB.

CE HVPN stated, considering UPCL being a new state, the proposal of M.S., NREB was agreeable to HVPN.

CE (SP&PA) concluded that 220 kV Kichcha S/S and LILO of Tanakpur-Bareilly S/C line at Kichcha would be covered under the scope of central sector scheme and the 132kV side along with the 220/132kV ICTs at Kichcha S/S would be constructed by UPCL.

Item II: LILO of 400 kV Dhauliganga – Bareilly D/C line (initially charged at 220 kV) at Pithoragarh.

Director (SP&PA) stated that presently Pithoragarh area was being supplied power through 132kV line. Considering the development of load in Pithoragarh, Almora and Haldwani area, UPCL had proposed for upgrading Pithoragarh 132kV S/S to 220 kV by LILO of 400 kV Dhauliganga-Bareilly D/C line (initially to be charged at 220 kV) at Pithoragarh. He stated that UPCL would further upgrade Almora and Haldwani 132kV substations at 220 kV and would connect these S/Ss with Pithoragarh so as to meet the load of these areas by drawing their share of power from Dhauliganga HEP. He informed that this arrangement would help in improving the reliability and quality of power supply to these area of Uttranchal. Director (SP&PA) stated that PSEB had informed that as the proposal was meant for UPPCL only so it should be done at their cost only. He asked members of the committee to deliberate and give their views on the proposal.

GM (UPPCL) stated that LILO of only one circuit of Dhauliganga-Bareilly line at Pithoragarh would be adequate.

CE (SP&PA), CEA stated Dhauliganga was expected by 2004-05 and Dhauliganga-Bareilly line to be constructed for 400 kV operation would initially be charged at 220 kV. However with the subsequent stages of Dhauliganga & Gauriganga, the Dhauliganga-Bareilly line would be charged at 400 kV. He informed that with the proposal of UPCL for LILO of Dhauliganga-Bareilly line at Pithoragarh, the line reactor would not be required thereby increasing the power transfer capability of the line. He stated that in the initial stage one ckt. might be LILOed at Pithoragarh.

Executive Director, POWERGRID enquired whether the proposed S/Ss around Pithoragarh would come matching with time frame of the proposed work.

CE (SP&PA) stated that UPCL had proposed for upgrading the 132kV Almora & 132kV Haldwani S/Ss to 220 kV and Kashipur S/S to 400 kV as part of Xth Plan transmission proposals. UPCL had to ensure the commissioning of these S/Ss matching with the time frame of proposed LILO of line at 220 kV Pithoragarh S/S so that share of power from Dhauliganga could be absorbed by Uttranchal

Director UPCL stated that with the formation of Uttranchal State, many industries were expected to be set up in the State in near future and in order to facilitate industrialization, his government proposed to provide adequate power supply. Further he

stated that as a matter of principal, his government had decided that Uttaranchal must be provided at least one touch point from every hydro generating station located in State.

CE HVPN stated that this proposal could be agreed in the similar manner as agreed for creation of Kichcha 220 kV S/S and LILO of Tanakpur-Bareilly line at Kichcha.

After discussion, it was agreed that in the initial stage only one circuit of 220 kV Dhauliganga-Bareilly would be LILOed at Pithoragarh. The creation of Pithoragarh S/S and the LILO portion of Dhauliganga-Bareilly line at Pithoragarh would be covered under central sector work and the 132kV side of the S/S along with 220/132kV transformer(s) would be in the scope of UPCL. The LILO of the second circuit of 220 kV Dhauliganga-Bareilly line at Pithoragarh would be considered later on as per the requirement.

Item III: LILO of Tehri-Meerut 765 kV line (charged at 400 kV) at 400 kV Rishikesh S/S of Uttaranchal.

Director (SP&PA) stated that UPCL in their letter to CEA had mentioned that Uttaranchal did not have any direct touch point from any central sector projects as such UPCL had desired that one circuit of Tehri-Meerut 765kV line (initially to be operated at 400 kV) might be LILOed at Rishikesh 400 kV S/S of UPCL. He mentioned that studies conducted by CEA for 10th plan time frame indicated that under high hydro condition power flow was from Rishikesh to 400 kV Muzaffarnagar rather than going down to 220 kV level at Rishikesh. Even under high thermal condition, the power flow was still from Rishikesh to Muzaffarnagar. He pointed out that even at the end of 10th plan period, the load of Rishikesh and adjoining areas could be fully met without LILO of Tehri- Meerut line at Rishikesh. Director (SP&PA) stated that PSEB in their fax message on this agenda items of the meeting had informed that they fully agree with the observations of the agenda that the proposal was not necessary even at the end of 10th Plan time frame.

CE (SP&PA) stated that 765kV Tehri-Meerut D/C line was initially envisaged to be charged at 400 kV with Tehri St.I. With Koteshwar and Tehri St.II the line would be upgraded to 765kV from pooling point to Meerut 765kV S/S of POWERGRID. The power from Tehri St.I, II and Koteshwar would be generated and stepped up at 400 kV and fed to the pooling point and from the pooling point, the power would be stepped up at 765kV through 400/765 kV transformer.

CE, HVPN stated that 765kV Tehri-Meerut line was envisaged for bulk power transmission and should not be LILOed in between at Rishikesh.

M.S., NREB stated that with the load projected at the end of 10th plan period in Rishikesh area, the 765kV level was not justified. However, he suggested that one circuit of 765kV Tehri-Meerut line (initially to be charged at 400 kV) might be LILOed at Rishikesh 400 kV S/S of UPCL. Later on, when the line would be charged at 765kV level from the pooling point, the LILO portion of Tehri-Meerut line at Rishikesh could be opened from the line end and be connected to the 400 kV side of the pooling point through 400kV D/C line thereby giving direct touch point from the pooling point to Rishikesh 400kV S/S.

Director, UPCL stated that he agreed with the proposal of M.S., NREB. He further stated that with the formation of new State, the load of Dehradun, Roorkee and Rishikesh areas would increase and as such direct touch point from Tehri HEP would be of immense importance.

CE (SP&PA) stated that considering the emergent need for LILO of Tehri-Meerut line at Rishikesh 400kV S/S as indicated by Director, UPCL and the proposal suggested by M.S., NREB and also keeping in view the reservations of other States, this issue would be discussed in the next meeting after carrying out further studies.

Item IV: Construction of 400 kV Sasaram-Sarnath D/C line

Director (SP&PA) stated that Sasaram-Allahabad 400kV D/C line associated with HVDC back to back between E.R. and N.R. was temporarily terminated at Sarnath 400kV S/S of UPPCL and presently about 300 MW of surplus power from Eastern Region was being absorbed in eastern U.P. of Northern Region in radial mode through 400 kV Sasaram-Sarnath D/C line. With the commissioning of HVDC back to back module at Sasaram expected by October 2002, the line would be opened from Sarnath end and would be connected to Allahabad 400kV S/S so as to form 400 kV Sasaram-Allahabad D/C line. With these arrangement, Northern Region could draw only 500 MW from Eastern Region through HVDC back to back link, even through the surplus power availability in E.R. would be much more and Northern Region projected to be deficient of power. He suggested that the two number of 400 kV line bays vacated at Sarnath after the opening of Sasaram-Sarnath line from Sarnath end could be gainfully utilised for construction 400 kV Sasaram-Sarnath D/C line. This arrangement would augment the capacity of Northern Region to draw more power from Eastern Region. He stated that even with the commissioning of Tala system, this line would carry sufficient power. He mentioned that the transmission system proposed for evacuation of surplus power from ER/NER as well as Tala HEP was proposed to be taken up in the joint venture by POWERGRID. The original commissioning schedule for the system was 2004-05. Since the modalities of joint venture were yet to be finalized, so there would be possibility that the commissioning schedule might slip. This would further affect the power supply position of deficient NR due to transmission bottleneck in spite of the availability of peak as well as off peak surplus power in NR. Director (SP&PA) stated that PSEB was of the view that detailed studies needs to be carried out with the proposed link in connection with evacuation of system proposed from Tala HEP and import of surplus power from ER to NR. He requested the members to deliberate on the issue and present their views.

M.S., NREB stated that he strongly was in favour of the proposal. He mentioned that this proposal apart from providing adequate flexibility to N.R. would mitigate its peak shortage by importing surplus power available in E.R., and also enhance reliability of Northern Region system.

CE, HVPN and CE, BBMB also agreed and strongly supported the proposal.

CE, RVPNL stated the RVPNL agreed with the proposal, however he enquired about the back up transmission system for absorption of the surplus power from Eastern Region.

CE (SP&PA) stated that with the commissioning of HVDC back to back terminal at Sasaram, 500 MW of power could be drawn by N.R. from E.R. With the proposed 400 kV

Sasaram-Sarnath D/C line additional loads (300-500 MW) of Northern Region could be met from ER. The proposed AC line between NR and ER could be either in radial or parallel mode. This arrangement would facilitate to import about 1000 MW from ER to NR. He stated that being very small line the investment as well the time requirement for commissioning would be very small and the proposal could be cleared by POWERGRID Board within its own power.

He further stated that the works of A.C. interconnection between Eastern Region and Western Region was being undertaken by POWERGRID. The interconnection would be ready very soon, as such the outcome of the interconnection of a big region with a small region could be observed and the result of the same could be adopted for interconnection between Northern Region & Eastern Region. He said that in the case of AC interconnection between Northern Region to Eastern Region, the added advantage would be the presence of HVDC back to back link, which would help in modulating power transfer and damping out small oscillations passing from one region to other.

DGM, POWERGRID stated that the commissioning of the transmission system proposed at North Karanpura TPS, Barh TPS and Kahalgaon TPS were also expected in the same time frame as being envisaged for 400 kV Sasaram-Sarnath line. In view of this the need and usefulness of the proposed 400 kV Sasaram-Sarnath line was required to be studied.

CE (SP&PA) stated that CEA had carried out the study and observed that the Sasaram-Sarnath 400 kV D/C line would still be useful and enhance the security and stability of the interconnected network of ER and NR. However he pointed out that POWERGRID might examine the proposal by carrying out study considering the transmission system of North Karanpura, Barh and Kahalgaon along with 400 kV Sasaram-Sarnath D/C line to ascertain its usefulness. After discussions, it was decided that the proposal might be taken up immediately for execution on getting the views of POWERGRID.

CE, UPPCL stated that in case of construction of 400 kV Sasaram-Sarnath D/C line, the cost of the line bays at Sarnath to be used for termination of the 400 kV Sasaram-Sarnath D/C line had to be reimbursed to UPPCL.

CE, HVPN stated that since the Hirma Project was expected to be delayed and in that event the 400 kV Fetehabad S/S which had been associated with Hirma and was required by HVPN much before 400 kV Bahadurgarh S/S covered under import of surplus power from ER after commissioning of Tala HEP would also be delayed. He therefore requested Chairman of the standing committee to take a decision for associating Fetehabad S/S with Tala HEP instead of Hirma.

CE, SP&PA stated that the Transmission system for import of surplus power from ER was in PIB stage as such it would be difficult to change the configuration of system as it would again require fresh TEC clearance. CE, SP&PA asked ED, POWERGRID to comment on the request made by CE, HVPN.

ED, POWERGRID stated that Tala HEP was expected by 2004-05 and any change would mean further delay in implementation of associated transmission system, which POWERGRID could not afford at this stage.

Item V: Creation of 220 kV S/S at Swaimadhapur

Director (SP&PA) stated that RVPN have proposed for creation of 220/132 kV S/S at Swaimadhapur by LILO of one circuit of existing 220 kV Anta-Dausa D/C line of POWERGRID at Swaimadhapur . He mentioned that RVPN had indicated a load of about 60 MW to be incident on this S/S. Presently, areas around Swaimadhapur were being fed through 132 kV line resulting into low voltage as well as higher system loss in these areas. As such LILO of the central sector line to feed the load of this area at 220 kV would improve the voltage profile and the system parameters of Rajasthan as a whole. Director (SP&PA) pointed out that POWERGRID had also given their consent for the works and had also desired that as and when the load incident on the substation increases, the second circuit should also be LILOed at the 220 kV Swaimadhapur S/S. He farther stated that PSEB was of the view that as the proposal was meant only for RVPN, so it should be done at their cost only.

CE, HVPN stated that since these works would exclusively benefit Rajasthan so the complete cost of the S/S as well as the LILO of line had to be borne by the RVPN.

CE, RVPN agreed for the same.

MS, NREB stated that if LILO of the line was carried out by RVPN then there could be O&M problem of the 220 kV Anta-Dausa line of POWERGRID.

CE (SP&PA) stated that since RVPN had agreed for carrying out the works for the 220 kV S/S at Swaimadhapur and the LILO of one ckt. of Anta- Dausa line at Swaimadhapur at their own cost, so we could agree for the same. The O&M facility for the LILO portion of the line would however be decided between RVPN and POWERGRID.

Item VI: Interconnection to 220 kV Phulera GSS and 220 kV Sanganer GSS by opening one ckt. of 220 kV Bassi-Heerapura D/C line of PGCIL.

Director (SP&PA) stated that RVPN had indicated heavy loading on the existing line between Jaipur (Heerapura) and Phulera. In view of that RVPN had proposed to open one circuit of 220 kV at Bassi-Heerapura D/C line of POWERGRID near Sanganer GSS and extend the Bassi end of the line to Phulera and connect the Jaipur end to the 220 kV Sanganer S/S. With this arrangement, there would be one direct circuit between 220 kV Bassi to Phulera in addition to the existing 220 kV Heerapura-Phulera S/C line. Director (SP&PA) stated that PSEB had informed that as the proposal was meant to benefit RAVPN so it should be carried out at their cost only. He mentioned that since the works indicated requires breaking of central sector 220 kV Bassi-Heerapura D/C line so concurrence of Northern Region constituents was required.

CE (HVPN) stated that Haryana was agreed to proposal of RVPN but the cost for the works had to be borne by RVPN as was agreed for the proposal of 220 kV Swaimadhapur S/S. CE (RVPN) agreed for the same.

CE (SP&PA) stated that since there was no other comments/objections from the participants and RVPN agreed to bear the cost of these works so the proposal would be agreed

in the same terms and conditions as was agreed for LILO of one circuit of Anta-Dausa line at Swaimadhopur S/S.

Item VII Substationwise load demand of power utilities for transmission planning studies.

Director (SP&PA) stated that CEA had been carrying out transmission planning studies based on the load demand furnished by the constituents of Northern Region. In the present instant the study was conducted for 10th Plan condition based on the loads furnished by some of the states wherever the details were not available, the 9th plan load was projected for 10th plan condition. He emphasized that without proper input data regarding load and generation, the study result, which CEA was carrying out for the benefit of Northern Region, would not be perfect. He requested the participants of the standing committee to check the substationwise loads/generations of their states as given in the Agenda note and intimate for any change required.

All the constituents agreed to furnish the details of their respective state at the earliest.

Additional Items

Item I

CE (SP&PA) stated that Powergrid through their letter had informed that in the FR for Tala evacuation system, the 400/220 kV S/S at Delhi was considered near Badarpur by LILO of Dadri- Samaypur 400 kV D/C line. Since the land for the proposed 400 kV S/S could be made available by DVB in Maharani Bagh area so the location of the proposed 400 kV S/S would be shifted to Maharani Bagh from Sarita Vihar near Badarpur and the LILO portion of the line would pass through Yamuna submergence area where special type of foundation would also be required. He stated that Powergrid had mentioned that initially LILO of only one circuit of 400 kV Dadri-Samaypur D/C line instead of both the circuits at Maharani Bagh would be adequate and the space provision for the LILO of the second circuit would be kept in the proposed 400/220 kV Maharani Bagh S/S. CE (SP&PA) stated that Powergrid had sought concurrence of the Standing Committee for the same.

MS, NREB stated that the provision of shifting the substation from Sarita Vihar to Maharani Bagh would not be termed as change of scope of work so POWERGRID could proceed with the proposed work without the need for fresh TEC.

After deliberation, it was decided that no fresh TEC for the proposed change was required and Powergrid would initially proceed with LILO of one circuit of 400 kV Dadri – Samaypur D/C line at Maharani Bagh 400 kV S/S. The same would be adequate for drawing the full share of Delhi from Tala HEP. The need for 2nd circuit LILO could be taken depending upon its requirement.

Item II

DGM, POWERGRID stated that NTPC had proposed to instal the following generation projects in Eastern Region.

Projects	Capacity	Commissioning Date
Kahalgaon II	1320 MW (2x660)	December 2006 (1 st Unit)
Barh	1980 MW (3x660)	March 2007 (1 st Unit)
North Karanpura	1980 MW (3x660)	March 2007 (1 st Unit)

He stated that the proposed beneficiary of these generations as indicated by NTPC would be

N.R. about 2520 MW
W.R. about 1400 MW
E.R. about 770 MW

DGM, POWERGRID stated that the above allocation was expected to change in view of MSEB withdrawing from the beneficiary of these projects. The tentative transmission system proposed for Northern Region from these projects would be

- Barh – Pooling station 400kV 2*D/C (Quad)
- Biharshariff - Pooling station 400kV D/C
- North Karanpura to Pooling Station 765kV S/C
- Pooling Station – Sultanpur 765kV 2*S/C
- Sultanpur – Unnao 765kV 2*S/C
- Unnao-Moradabad-Meerut-Moga 765 kV 2*S/C
- Kahalgaon-Barh 400 kV D/C
- Unnao-Mainpuri-Bhiwadi 400 kV D/C

The system planned for W.R. and E.R. would be

- Barh –Patna 400 kV D/C
- North Karanpura-Sipat 765 kV S/C with 30% to 40% series compensation
- North Karanpura-Maithon 400 kV D/C line
- Maithon-Durgapur 400 kV D/C
- Hirma-Rourkela 400 kV D/C
- Vindhyachal-Korba 400 kV S/C
- Charging of Seoni-Bina line at 765 kV

The expected cost of the transmission system was about 7500 crores. CE (SP&PA) stated that detailed study for evacuation system from these project would be carried out by POWERGRID and the issue regarding the transmission system from Barh, Kahalgaon and North Karanpura would be discussed in the next Standing Committee likely to be held within a month.

SE, RVPN thanked the participants for taking part in the 12th standing Committee meeting at Jaipur so actively and making the meeting a success.

SPEED POST

**CENTRAL ELECTRICITY AUTHORITY
SYSTEM PLANING AND PROJECT APRAISAL DIVISION**

No.1/9/01-SP&PA/

Dated : 11 /01/02

-As per List enclosed-

Sub: Agenda note for the twelveth meeting of the Standing Committee on Power System Planning of Northern Region.

Sir,

Please find enclosed the agenda notice for the proposed 12th standing committee on Power System Planning of Northern Region . The venue,date& time of the meeting shall be intimated in due course.

Yours faithfully,

**(A.K.AGGARWAL)
DIRECTOR(SP&PA)**

Agenda Note For 12th Standing Committee Meeting of Northern Region

Item -1 LILO of Tanakpur- Bareilly 220 kV D/C line at the Kichcha 220/132 kV S/S.

Uttaranchal power corporation Ltd. (UPCL) had requested for direct 220 kV S/C link from 220 kV Tanakpur to Haldwani. The matter was referred to NHPC for confirming the availability of 220 kV bay at Tanakpur. NHPC intimated that they want to use the only 220 kV bay available at Tanakpur for future use and the supply of Kichcha could be made by LILOed of one ckt of Tanakpur-Bareilly D/C line at Kichcha. NHPC have confirmed that they had also discussed the matter with CMD, UPCL and he had agreed for the proposal. In this context, studies were carried out in CEA and it is seen that instead of 220 kV, Tanakpur - Haldwani direct circuit, if one circuit of existing 220 Tanakpur-Bareilly D/C line is LILOed at Kichcha (by upgrading Kichcha 132 kV to 220 kV), then the load at Kichcha can be met easily from 220 kV Kichcha S/S. The 220 kV Haldwani S/S can be interconnected with 220 kV Kichcha S/S for feeding power to Haldwani directly from Kichcha. The results of the study are given in **Exhibit- I** enclosed. The proposal is found to be in order.

Since the 220 kV Tanakpur-Bareilly D/C is a central sector line. the proposal for LILO of one circuit of 220 Tanakpur-Bareilly D/C line at Kichcha is put up to the standing committee for discussion and concurrence.

Item II: LILO of 400 kV Dhauliganga – Bareilly D/C line (initially charged at 220 kV) at Pithoragarh.

The load as indicated by UPCL for 10th plan time frame at Pithoragarh, Almora and Haldwani would be around 92 MW. Presently this area is being fed from Tanakpur at 132 kV. UPCL have proposed to upgrade these S/Ss to 220 kV and desired that Dhauliganga – Bareilly 400 kV D/C line (initially to be charged at 220 kV) to be LILOed at Pithoragarh. From the system study conducted it has been observed that if Dhauliganga – Bareilly D/C line is LILOed at Pithoragarh then the load of Pithoragarh, Almora and Haldwani areas could be met with improved reliability and quality of power supply. **Exhibits (II-V)**

Since the Dhauliganga-Bareilly D/C line is a central sector line, so the matter is put up in the standing committee for obtaining the concurrence of the constituent members of the Northern Region.

Item III: LILO of Tehri-Meerut 765 kV line (charged at 400 kV) at 400 kV Rishikesh S/S of Uttaranchal.

CMD, Uttaranchal Power Corporation Ltd.(UPCL), in his letter dated 16th July2001, has desired that the one circuit of the 400 kV Tehri–Meerut 765 kV line may be LILOed at 400 kV Rishikesh S/S. It was stated that the newly formed Uttaranchal state does not have any direct link with the National grid, so this arrangement would help the state to get supply directly from central sector project. In this context it may be informed that the Tehri–Meerut D/C line has been planned as 765 kV line and would initially be charged at 400 kV with the

first stage of Tehri HEP. However with the second stage of Tehri, this line is proposed to be charged at 765 kV from the pooling point to Meerut 765 kV S/S of POWERGRID. **Since the matter involves LILO of a major 765 kV line already cleared technically by CEA and Govt. of India so it is decided to take views of the standing committee in this matter.** Further Studies were carried out to determine the technical feasibility of the proposed work. The result of the study is given in **Exhibits (II-V)**. Considering the other major S/Ss at 400 kV as well as 220 kV agreed by CEA for 10th plan time frame in Uttaranchal, studies were carried out with and without the proposed LILO of one circuit of Tehri – Meerut 765 kV line (initially to be charged at 400 kV). It was found that with the agreed additional 400 kV and 220 kV Transmission system in Uttaranchal, UPCL would be able to meet the power requirement of Uttaranchal State. The LILO of 765 kV Tehri-Meerut line at 400 kV, Rishikesh S/S serves very little purpose as most of the power from Rishikesh flows towards Muzaffarnagar during high hydro condition instead of going down to the 220 kV system. Even during high thermal condition, power still flows from Rishikesh to Muzaffarnagar , with LILO of Tehri-Meerut 765 kV line at Rishikesh, 400 kV S/S. This shows that the load of Rishikesh area can be fully met even if the LILO work is not carried out. As such the proposal is not necessary even at the end of 10th plan time frame. The issue of interlinking of 400 kV Rishikesh S/S with Tehri System may be considered at a later time frame on need basis, depending upon the load incident at Rishikesh S/S.

Members of the committee may like to deliberate on the proposal.

Item IV: Construction of 400 kV Sasaram-Sarnath D/C line

For interconnection of Northern Region (NORTHERN REGION) with Eastern Region (ER) and import of surplus power of ER, Biharshariff-Sasaram- Allahabad 400 kV D/C line associated with HVDC Back to Back between ER and NORTHERN REGION was envisaged. The line was completed by POWERGRID and is now temporarily terminated at Sarnath 400 kV S/S of UPPCL. The line is in operation as 400 kV Sasaram - Sarnath line. This line is feeding about 300 MW load of UPPCL in radial mode from Eastern Region. With the commissioning of 500 MW HVDC module at Sasaram, expected somewhere by October 2002, the Eastern Region will get connected to Northern region through asynchronous link and the 400 kV Sasaram would directly be connected to Allahabad S/S of POWERGRID bypassing Sarnath S/S to form Sasaram-Allahabad D/C line. With this arrangement the drawal of power from Eastern region could increase to about 500 MW. However, the net import from Eastern region would be restricted by the capacity of the back to back HVDC module at Sasaram, whereas the peak power surplus in Eastern Region would be about 3100 MW by 2006-07 A.D. The off peak surplus power as projected would be around 4000 MW by 2006-07 MW.

The power from Tala HEP has been allocated to ER, thereby increasing the surplus power availability in Eastern Region. The transmission system proposed for evacuation of surplus power from ER/ NER as well as Tala HEP is proposed to be taken up in the joint venture by POWERGRID. The original commissioning schedule for construction of the transmission system for import of surplus power from ER/ NER as well as virtual surplus power of Tala HEP to NORTHERN REGION was 2004-05. As the modalities of Joint Venture are yet to be finalised, there are possibilities that the schedule may slip. This would further effect the power supply position of deficient Northern Region, as such in spite of the

availability of peak as well as off peak surplus power in Eastern Region, Northern Region would not be able to take the benefit of the same due to transmission bottleneck.

The Sarnath- Sasaram 400 kV A.C line would be a short line. The construction of this line could be completed in a short period. As such, with the commissioning of HVDC back to back link at Sasaram the present 400 kV Sasaram-Sarnath D/C link would become 400 kV Sasaram-Allahabad D/C line thereby vacating two number of line bay at Sarnath. These two bays can be gainfully utilised by linking Sarnath S/S with Sasaram through 400 kV D/C line. It would therefore be prudent to construct 400 kV D/C link between Sasaram - Sarnath in addition to the HVDC link. This would provide adequate flexibility to Northern Region to mitigate its peak shortage by importing the surplus power available in Eastern Region.

The 400 kV Sasaram-Sarnath D/C line could be operated in radial mode for import of power from ER or it could be run in synchronous mode parallel with HVDC back to back. Even with the commissioning of transmission system associated Tala HEP and import of surplus power from ER/NER, the 400 kV Sasaram - Sarnath D/C line would still be utilised. This line would improve the security/reliability of the Northern Regional network, beside providing added parallel path for importing surplus power that would be available in the Eastern Regional grid.

The matter is put up to the standing committee for obtaining the views of the constituent members of the Northern Region.

Item V: Creation of 220/132 kV S/S at Sawaimadhopur.

RRVPN (erstwhile RSEB) vide their letter dated 16th July 2001 had requested CEA for creation of 220/132 kV sub-station at Sawaimadhopur by LILO of one of the existing 220 Anta-Dausa D/C line of POWERGRID. RRVPN had indicated that about 60 MVA load would be fed from this S/S. Since 220 kV Anta-Dausa is a POWERGRID line, so RRVPN had also written to POWERGRID in this matter and sought their no objection for LILO of one of the 220 Anta-Dausa D/C line of POWERGRID at 220 kV Sawaimadhopur S/S to be built by RRVPN. POWERGRID vide their letter dated 28/09/01 to RRVPN had conveyed their no objection for this proposal and had also indicated that as and when the load incident at Sawaimadhopur increases, the second 220 kV Anta – Dausa line may also be LILOed at Sawaimadhopur. The proposal was also studied in CEA and was found to be in order. The result of the load flow studies carried out by CEA for Xth plan condition without and with LILO of one circuit of 220 kV, Anta-Dausa D/C line at Sawaimadhopur are given in Exhibits (VI & VII)

Since the 220 kV Anta-Dausa D/C line is a central sector line, so it is decided to put up the matter in the standing committee meeting for obtaining the concurrence of the constituent members of the Northern Region.

Item VI: Interconnection to 220 kV Phulera GSS and 220 kV Sanganer GSS by opening one ckt. of 220 kV Bassi-Heerapura D/C line of PGCIL.

RRVPN has intimated that the loading condition of 220 kV Heerapura-Phulera line has been recorded as high as 250 MW under typical condition, which has however been

contained by operating the system in partial radial mode. Where as the power flow in the 220 kV Bassi- Heerapura D/C line is well below the permissible line loading limit. Thus in order to reduce the over loading on the existing 220 kV Heerapura- Phulera line, RRVPN has suggested the following.

- One circuit of 220 kV Bassi-Heerapura D/C line may be opened near 220 kV Sanganer S/S and from Bassi end, the line should be extended to Phulera. A 220 kV S/C line should also be laid from Heerapura to Sanganer.
- The 2nd circuit will remain between Bassi and Heerapura.

RRVPN has informed that the above arrangement would make the supply to Phulera and Sanganer reliable and better utilization of the transformation capacity at Bassi.

Studies have also been carried out in CEA without and with the above proposed work. The results of the study are shown in **Exhibits (VI&VIII)** respectively. From the result of the study it is found that with the rearrangement proposed by RRVPN, the reliability of 220 kV Heerapura-Phulera line improves. However it may be mentioned that an additional 220 kV Heerapura-Phulera line, was agreed as a part of Dholpur ATS. Since the commissioning of Dholpur S/S is uncertain so the proposal for Heerapura to Phulera line may be delinked from Dholpur ATS and the extension of the 220 kV line from Bassi to Phulera may be considered.

As regards additional 220 kV S/C line from Heerapura to Sanganer proposed by RRVPN, it is mentioned that the proposed line remains lightly loaded. As such, the additional line from Heerapur to Sanganer is not justified.

Members of the standing committee may like to discuss and concur to the proposal.

Item VII: Sub-stationwise Load demand of Power Utilities for Transmission Planning Studies.

Sub-station wise load demand of each power utilities assumed in the studies carried out by CEA have been updated based on the data supplied by the states for Xth Plan (Year 2006-07) condition. Wherever the load for 2006-07 was not available, the IX plan load has been projected for X plan condition considering the load growth for that particular state as indicated in the 16th EPS. The details of the generation and load considered in the study are given in Annex I & II.

Members of the constituent states are requested to check the loads/ generations of their states given in Annex-I & II and intimate for any change if required, otherwise it would be assumed that the sub-stationwise load considered by end of Xth Plan for planning of transmission system have been concurred by the states. It is also requested to furnish the proposals for additional transmission line, new sub-station and augmentation of existing sub-station capacity during Xth Plan Period.

LIST OF ADDRESSES

Shri S K Gupta,
Chief Engg. (Plg.),
Haryana Vidyut Prasaran Nigam Ltd.,
Shakti Bhawan, Sector-6,
Panchkula-134109, Haryana,
(Fax No.0172-565746)

Shri V K Bansal, GM
U.P. Power Corporation Ltd.,
Shakti Bhawan Extn. (3rd Floor)
14, Ashok Marg, Lucknow-226001
(Fax. No.0522-287867)

Shri K.L.Vyas,
Chief Engineer(PP&M),
Rajasthan Rajya Vidyut Prasaran Nigam Ltd
Vidyut Bhawan,Jyoti Nagar,Janpath,
JAIPUR,
(Fax No.0141-740794)

Shri R K Sud
The Chief Engineer (Transmission),
Bhakra Beas Management Board
Madhya Marg, Sector19-B,
Chandigarh-160019
(Fax No.0172-654590)

Shri Anand Mohan,
Executive Director (Engg.)
POWERGRID Corpn. of India Ltd,
B-9, Institutional Area, Katwaria Sarai,
New Delhi 110016.**(Fax No.6213390)**

Sh.Chandan Roy,
Executive Director(Engg.),
NTPC, Corporate Centre,Engineering Office Complex,
Plot No.A-8
4, Sector 24, Post Box No.13,
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Sh.W A Dharme,
Associate Director (Electrical Design.),
Nuclear Power Corporation Of India Ltd.
11th floor, South wing , V S Bhawan
Anushakti Nagar, Mumbi- 400094
(Fax No. 022-5557278)

Shri SPS Raghav,
Director (O), UPCLtd.
Kulagarh Power House
F R I Campus, Dehradun, Uttaranchal
(FAX No. 0135-752880)

Shri P.K.Sarwal,
Chief Engineer (Plg.)
Punjab State Electricity Board,
Mall Road, Patiala,-147001, Punjab.
(Fax No.0175-215897)
e-mail pksarwal@yahoo.com

Shri J.N.Sachdeva,
The Superintending Engineer,
Electricity Operation Circle
U.T. Chandigarh,
(Fax.No.0172-775733, 742733)

The Development commissioner (Power)
Power.Development Deptt.,
Govt. of J&K,
New Sectt., Building,
JAMMU-180001,
(Fax No.0191-542809)

Shri S.P.Gupta,
Chief Engineer(Plg.),
Delhi Vidyut Board, Shakti Deep Building,
Anarkai Market, DDA Complex,
Jhandewalan Extension, New Delhi-
110055. **(Fax No.3552070)**

Shri M.C.Pandey,
Chief Engineer(SP),
H.P.State electricity Board,
Vidyut Bhawan, Shimla-171004.
(Fax No.01772-58984)

Shri Santosh Kumar, Member Secy.,
NORTHERN REGIONE.B., 18-A, Shaheed Jit Singh
Sansanwal Marg, Katwaria Sarai, New
Delhi-110016**(Fax No.6868528)**

Shri Raj Kumar,
Chief Engineer,
NHPC, NHPC office complex
Sector-33, Faridabad-121003
(Fax No.-91-5256571)

Fax Message

**CENTRAL ELECTRICITY AUTHORITY
SYSTEM PLANING AND PROJECT APRAISAL DIVISION**

No.1/9/01-SP&PA/

Dated : 17 /01/02

-As per List enclosed-

**Sub: The 12th meeting of the Standing Committee on Power System
Planning of Northern Region.**

Sir,

In continuation to our letter No. 1/9/01-SP&PA/ 56-71 dated 11/01/02 it is to intimate that the 12th meeting of the standing committee has been fixed **on 25th of January 2002 at 1400 Hrs. in Udaipur, Rajasthan at Hotel Anand Bhawan.**

It is requested that the name of the officer(s) participating the meeting from your organisation and the details of their inward/outward journey to and from Udaipur may kindly be confirmed to **Er. D K Gupta, SE (TCC-VII), RVPN, Udaipur through phone (O) 0294-584622, (R) 0294-411812 and Fax No. -0294-584083.**

Confirmation regarding your participation may also be sent to CEA in **Fax No. 011-6102045** or in E-mail address **krishna1950in@yahoo.com**

Yours faithfully,

**(A.K.AGGARWAL)
DIRECTOR(SP&PA)**

NR/SCMEETING

Fax Massage-0294-584083

**CENTRAL ELECTRICITY AUTHORITY
SYSTEM PLANING AND PROJECT APRAISAL DIVISION**

No.1/9/01-SP&PA/

Dated : 17 /01/02

**Er. D K Gupta,
SE (TCC-VII), RVPN,
Udaipur**

**Sub: The 12th meeting of the Standing Committee on Power System
Planning of Northern Region.**

Sir,

With reference to (C.E Plg.) RVPN Fax massage on the Following officers In continuation to our letter No. 1/9/01-SP&PA/ 56-71 dated 11/01/02 it is to intimate that the 12th meeting of the standing committee has been fixed **on 25th of January 2002 at 1400 Hrs. in Udaipur, Rajasthan at Hotel Anand Bhawan.**

It is requested that the name of the officer(s) participating the meeting from your organisation and the details of their inward/outward journey to and from Udaipur may kindly be confirmed to **Er. D K Gupta, SE (TCC-VII), RVPN, Udaipur through phone (O) 0294-584622, (R) 0294-411812 and Fax No. -0294-584083.**

Confirmation regarding your participation may also be sent to CEA in **Fax No. 011-6102045** or in E-mail address **krishna1950in@yahoo.com**

Yours faithfully,

**(A.K.AGGARWAL)
DIRECTOR(SP&PA)**

NR/SCMEETING

FAX MESSAGE

**CENTRAL ELECTRICITY AUTHORITY
SYSTEM PLANING AND PROJECT APRAISAL DIVISION**

No.1/9/01-SP&PA/

Dated : 18 /01/02

-As per List enclosed-

Sub: The 12th meeting of the Standing Committee on Power System Planning of Northern Region.

Sir,

Further to our Fax Message dated 17th January, 2002, it is intimated that the time of the above mentioned meeting has been fixed at **1200 hours instead of 1400 hrs. on 25th of January 2002 in Udaipur, Rajasthan at Hotel Anand Bhawan.**

As requested earlier kindly intimate the name of the officer participating in the meeting from your organisation and the details of their journey to and fro from Udaipur to **Er. D K Gupta, SE (TCC-VII), RVPN, Udaipur through phone (O) 0294-584622, (R) 0294-411812 and Fax No. -0294-584083.**

Kindly confirm your participation also to CEA in **Fax No. 011-6102045** or in E-mail address krishna1950in@yahoo.com

Inconvenience caused due to change of time is regretted.

Yours faithfully,

**(A.K.AGGARWAL)
DIRECTOR(SP&PA)**

NR/SCMEETING

Fax Message

**CENTRAL ELECTRICITY AUTHORITY
SYSTEM PLANING AND PROJECT APRAISAL DIVISION**

No.1/9/01-SP&PA/

Dated : 18 /01/02

To

**Shri D.K. Gupta,
Suptg. Engineer ((TCC-VII), RVPN,
Udaipur (Rajasthan).**

Fax No. 0294 – 584083.

Sub: The 12th meeting of the Standing Committee on Power System Planning of Northern Region.

Sir,

With reference to Chief Engineer (PP&M), RVPN, Jaipur letter No. it is intimated that following officers of CEA will be participating in the 12th Standing Committee Meeting to be held at Udaipur on 25.1.2002:

<u>Name of the Officer</u>	<u>Date of Arrival</u>	<u>Date of Departure</u>
Sh. V. Ramakrishna Chief Engineer (SP&PA)	25 . 01.2002 / By Road	26.01.2002 / By flight
Sh. A.K. Aggarwal Director (SP&PA)	25 . 01.2002 / By Road	26.01.2002 / By flight
Sh. Goutam Roy Dy. Director (SP&PA)	25 . 01.2002 /By Train (Chetak Express)	26.01.2002 / By Train (Chetak Express)
Sh. Naveen Seth Dy. Director (SP&PA)	25 . 01.2002 /By Train (Chetak Express)	26.01.2002 / By Train (Chetak Express)

It is requested that arrangement for stay of the above officers at Udaipur and provision for Vehicle for Pickup/dropping at Airport/Railway station may kindly be made.

Yours faithfully,

**(A.K.AGGARWAL)
DIRECTOR(SP&PA)
NR/SCMEETING**

**CENTRAL ELECTRICITY AUTHORITY
SYSTEM PLANING AND PROJECT APRAISAL DIVISION**

No.1/9/02-SP&PA/

Dated : /01/02

-As per List enclosed-

Sub: Summary Records of the meeting for the 12th meeting of the Standing Committee on Transmission System Planning of Northern Region.

Sir,

Please find enclosed the minutes of the meeting of the 12th standing committee on Transmission System Planning of Northern Region held on 25/01/02 at Udaipur, Rajasthan for information and further necessary action at your end.

Yours faithfully,

**(A.K.AGGARWAL)
DIRECTOR (SP&PA)**

ANNEX

List of the Participants of the 12th Standing Committee meeting held at Udaipur on 25/01/01

Sl. No.	Name	Designation	TL.No.	Fax. No.	E-mail
CEA					
1	Shri V Ramakrishna	Chief Engineer			
2	Shri A K Aggarwal	Director			
3	Shri Goutam Roy	Dy. Director			
4	Shri Naveen Seth	Dy. Director			
NREB					
1	Shri Santosh Kumar	Member Secretary			
2	Shri P K Kumar	Suptg. Engineer (op.)			
NTPC					
	Shri A K Gupta	DGM	0120-4410429	0121-4410203	akgntpc@hotmail.com
POWERGRID					
1	Shri Anand Mohan	Ex. Director (Engg.)			
2	Shri Y K Sehgal	DGM (Engg.)	6611191	6564758	
HVPN					
	Shri S K Gupta	Chief Engineer (plg.)	0172-560547		Sudershan-Gupta@Yahoo.com
BBMB					
	Shri R K Sud	Er. In Chief	0172-654590	0172-654590	
UPPCL					
	Shri V K Bansal	General Manager	0522-287867	0522-287867	
UPCL					
	Shri S P S Raghav	Director(O)	0135-750115	0135-752201	
Chandigarh					
	Shri J N Sachdeva	Suptg. Engineer	0172-743710	0172-742733	
RRVPLtd.					
1	Shri K L Vyas	Chief Engineer (plg.)	0141-740827	0141-740794	ppmrvpn@Sancharnet.in
2	Shri D K Gupta	Suptg. Engineer			
3	Shri L N Nimawat	XEN(PSS)			
4	Smt. Sona Sisodia	AEN(PSS)			

List of the Participants of the 12th Standing Committee meeting on transmission system planning in Northern Region held at Udaipur on 25/01/02

<u>Sl. No.</u>	<u>Name</u>	<u>Designation</u>
<u>CEA</u>		
1	Shri V Ramakrishna	Chief Engineer
2	Shri A K Aggarwal	Director
3	Shri Goutam Roy	Dy. Director
4	Shri Naveen Seth	Dy. Director
<u>NREB</u>		
1	Shri Santosh Kumar	Member Secretary
2	Shri P K Kumar	Suptg. Engineer (Operation)
<u>NTPC</u>		
	Shri A K Gupta	Dy. General Manager
<u>POWERGRID</u>		
1	Shri Anand Mohan	Ex. Director (Engg.)
2	Shri Y K Sehgal	Dy. General Manager(Engg.)
<u>HVPN</u>		
	Shri S K Gupta	Chief Engineer (plg.)
<u>BBMB</u>		
	Shri R K Sud	Engg. In Chief
<u>UPPCL</u>		
	Shri V K Bansal	General Manager
<u>UPCL</u>		
	Shri S P S Raghav	Director(O)
<u>Electricity Deptt.Chandigarh</u>		
	Shri J N Sachdeva	Suptg. Engineer
<u>RRVNLtd.</u>		
1	Shri K L Vyas	Chief Engineer (plg.)
2	Shri D K Gupta	Suptg. Engineer
3	Shri L N Nimawat	Ex. Engineer (PSS)
4	Ms. Sona Sisodia	Asstt. Engineer (PSS)