

Agenda for 17th Meeting of the Standing Committee on Transmission System Planning in Northern Region

Item – I Confirmation of the minutes of 16th Standing Committee on Power System Planning in Northern Region held on 24.03.2004 at NREB, New Delhi.

1.1 The minutes of the 16th meeting of Standing Committee on Power System Planning in Northern Region held on 24.03.2004 at New Delhi, were circulated vide CEA letter No. 1/9/2004-SP&PA/ 346-61 dated 15.04.2004. POWERGRID, NHPC and NPCIL vide their letter had indicated certain omission/ Changes in the minutes of the meeting which were subsequently included in the minutes of the meeting and corrigendum vide our letter of even no. dated 14th May 2004 was issued. Comments from no other constituent state have been received.

1.2 The minutes of the meeting along with the corrigendum may please be confirmed.

Item – II 10th and 11th Plan transmission program of State Utilities in NR and schedule for completion of various transmission works.

2.1 In the 10th & 11th plan period, generation capacity additions are being planned under State / Private / Central sectors to meet future load growth of the State utilities in Northern Region. As per the Electricity Act 2003, the development of intra State Transmission network is the responsibility of concerned State Transmission Utility. Therefore, each State Transmission Utility has to prepare details of 400 kV, 220 kV, 132 kV and 66 kV transmission and transformation works in their state to be executed by them during the 10th and 11th plan periods and submit the same to CEA. CEA vide its letter number 236/4/04-SP&PA/250-265 dated 19-05-04 addressed to Member (Trans./Plg.) / Chief Engineer (Trans./Plg.) of various State Transmission Utility has requested them to furnish requisite information as per the enclosed Performa (copy enclosed for ready reference).

2.2 In this regard only HPSEB and RRVPNL have submitted the details of transmission works planned during X and XI plan program of their States. Information in this regard has not been received from any other constituents.

2.3 Members are requested to furnish the details of X and XI plan transmission program as per the Performa also indicating the schedule of commissioning for the transmission lines and substation and make a presentation on the program. Members are also requested to furnish latest sub-station wise load demand at the end of 10th and 11th plan as incident on 220 kV sub-station and also provide latest grid map.

Item –III Evacuation system from Lohari Nagpala HEP (4x150 MW)

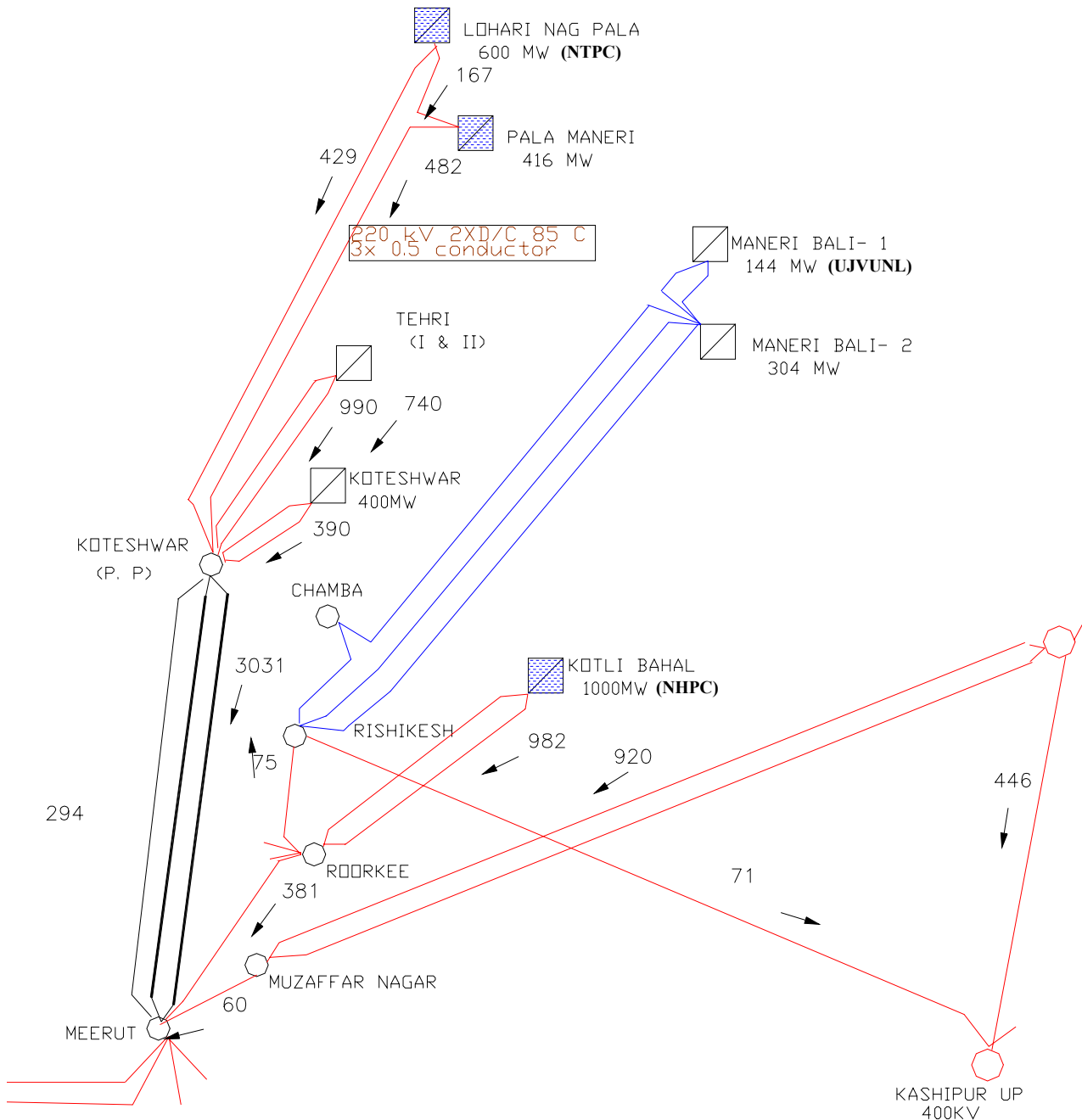
3.1 The Lohari Nagpala HEP would be located in Bhagarathi Basin in Uttarkashi district of Uttaranchal, with an installed capacity of 600 MW. The project is being executed by NTPC, who has approached CEA for accord of Techno-economic Clearance. The project is included in the 11th plan programme and as informed by NTPC is likely to benefit the constituents of Northern region. UPCL have also identified few perspective hydro generation potential in Uttaranchal and had requested CEA for carrying out studies for identifying evacuation system from the projects to the load centers in the Northern Grid. CEA had accordingly, carried out studies, the result of the studies is given in Exhibit I. Beside these hydro projects, other hydro generation potential were also identified in Uttaranchal under the 50,000 MW hydroelectric initiative of MoP. A detailed master plan indicating tentative evacuation proposal have been drawn out by CEA, the same is enclosed in Exhibit – II.

3.2 A hydro project envisaged in the close vicinity to Lohari Nagpala HEP is Pala Maneri HEP (416 MW) to be taken up by THDC. Many other hydro projects are also envisaged in the upstream of Lohari Nagpala. Considering the evacuation need from all these projects and severe R-O-W constraint in the Bhagarathi basin it was found prudent to evolve a consolidated system utilizing the redundancy available with Tehri – I HEP. As such, following system have been considered with Lohari Nagpala HEP :

- ❖ Generation of Lohari Nagpala HEP power at 400 kV level
- ❖ Lohari Nagpala HEP – Koteswar Pooling Point 400 kV D/C line

- ❖ Koteswar Pooling Point – Meerut 765 kV S/C line (considering the line from Koteswar pooling point – Meerut line charged at 765 kV)
- ❖ 765/400 kV, 3x333 MVA ICT at Koteswar Pooling Point and at 765/400 kV Meerut S/S

The result of the load flow study indicating the loading through the proposed evacuation system is given as under:



Members of the committee may discuss and concur on this issue.

Item – IV Evacuation system from Topovan Vishnugad HEP (4x130 MW).

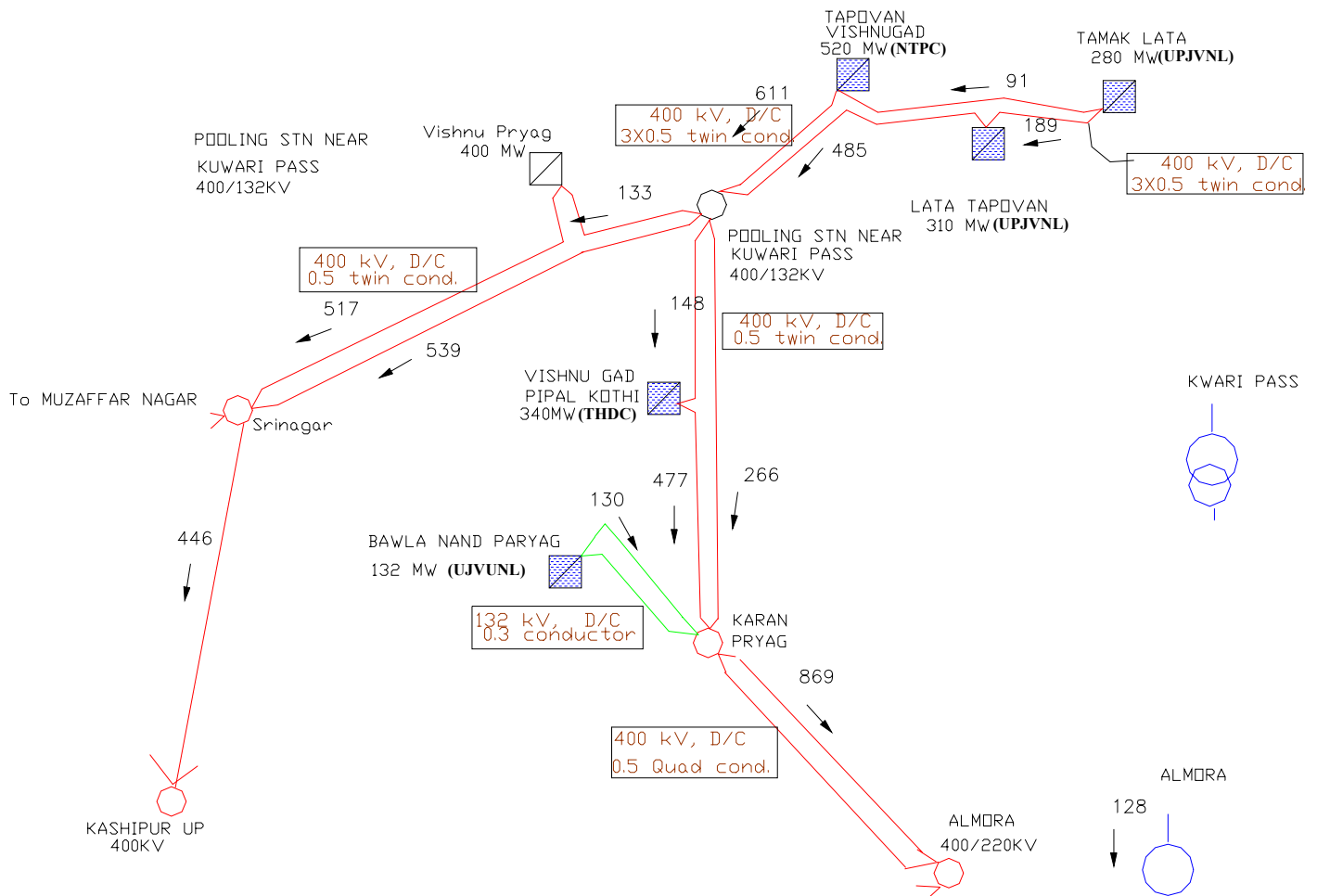
4.1 The Topovan Vishnugad HEP (4x130 MW) would be located in Alaknanda Basin in Chamoli district of Uttaranchal, with an installed capacity of 520 MW. The project is being executed by NTPC, who have approached CEA for accord of Techno-economic clearance. The project is included in the 11th plan programme of CEA and as informed by NTPC, the project is likely to benefit the constituents of Northern region. On the request from Uttaranchal power Corporation Ltd. (UPCL), CEA carried out studies for identifying evacuation system from the projects to the load centers in the Northern Grid. The result of the studies is given in Exhibit I. Beside these hydro projects, other hydro generation potentials were also identified in Uttaranchal under 50,000 MW hydroelectric initiative of MoP. A detailed master plan indicating tentative evacuation proposal have been drawn out by CEA, the same is enclosed in Exhibit – II.

4.2 The hydro project envisaged in the close vicinity to Topovan Vishnugad HEP is Vishnu Pryag HEP (400 MW) being undertaken up by Jaypee Industries. Vishnupryag HEP is under construction. Following evacuation system has been approved as a part of Vishnupryag HEP and is under construction by UPPCL and UPCL

- Vishnupryag HEP – Muzaffarnagar 400 kV D/C line
- LILO of 400 kV Rishikesh – Muradnagar 400 kV S/C line at 400/220 kV Kashipur S/S
- Creation of 400/220 kV Kashipur S/S

Considering the evacuation need from all the projects and severe R-O-W constraint in the Bhagarathi basin it was found prudent to evolve a consolidated system utilizing the redundancy available with Vishnupryag system. As such, following system have been considered with Topovan Vishnugad HEP :

- ❖ Generation of Topovan Vishnugad HEP power at 400 kV level
- ❖ Creation of 400/132 kV S/S at/near Kuwari Pass
- ❖ Tapovan Vishnupryag HEP – Kuwari Pass 400 kV D/C line (with 3x0.5 conductor)
- ❖ LILo of one circuit of Vishnupryag – Muzaffarnagar D/C line at 400/220 kV Kuwari Pass S/S



Members of the committee may discuss and concur on this issue.

Item – V Evacuation system from Kishenganga HEP in J&K.

5.1 Kishenganga HEP is envisaged in Jhelum basin in the Baramulla district of J&K. The project is to be constructed by NHPC. The power from the machines at Kishenganga would be stepped up from 11 kV to 220 kV. A provision of 4 nos. (four) line bays has been made in the generation switchyard.

5.2 For evacuation of power following system has been envisaged as a part of Kishenganga evacuation system.

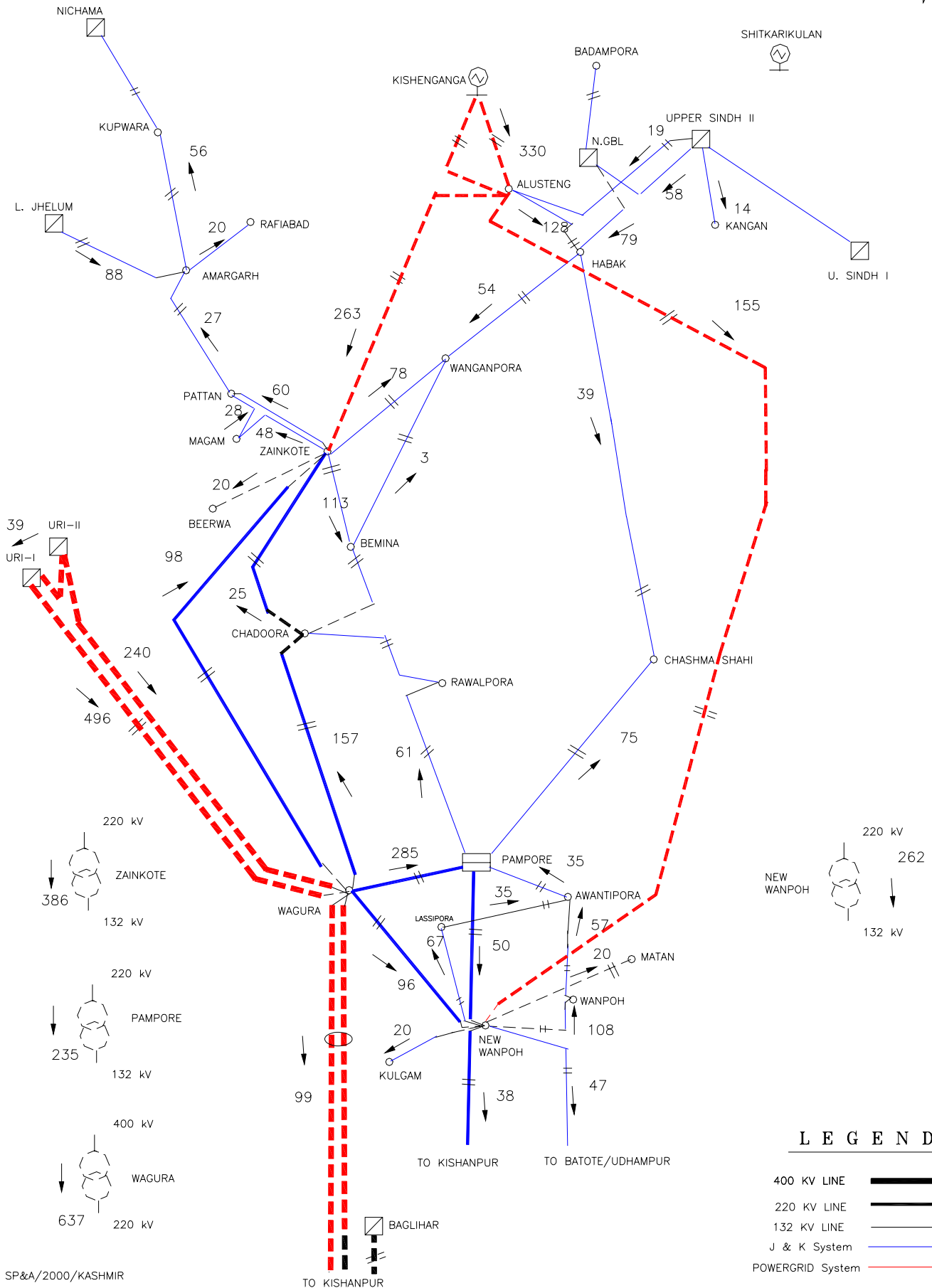
- i) 220 kV Kishenganga – New Wanpoh D/C line
- ii) 220 kV Kishenganga – Zainkote D/C line

5.3 These lines would be constructed by POWERGRID and in future both the lines would be LILOed at 220 kV Alistang S/S as and when the S/S would be constructed by PDD J&K. Since the power from Kishenganga would pass thorough J&K system, the power from the Kishenganga project would mostly be absorbed in the valley and the share of the other constituents would be passed on to the grid by displacement as such the evacuation of power from Kishenganga at 220 kV was found most suitable. Further, with the construction of system proposed at 220 kV from Kishenganga HEP the 220 kV ring around Kashmir valley would be complete and power could be fed to the valley from two different directions, which would be more reliable to take care of any eventuality. During summer season when the load in the valley reduces the power from Kishenganga could be transmitted to the grid through Wagoora – Kishenpur 400 kV D/C line of POWERGRID and also through New Wanpow – Kishenpur 220 kV D/C line of J&K. The result of the load flow studies indicating the loading on the proposed evacuation system is as under.

POWER SYSTEM STUDIES OF KASHMIR VALLEY

MAX. HYD. CASE

XI PLAN CONDITION



LEGEND

- 400 KV LINE
- 220 KV LINE
- 132 KV LINE
- J & K System
- POWERGRID System

As such with the above arrangement there would not be any constraint for evacuation of power from Kishenganga HEP.

Members of the committee may discuss and concur on this issue.

Item - VI Power evacuation system from Uri II HEP

In the 16th SCM of Northern Region POWERGRID had suggested for another 400 kV outlet from Uri for meeting contingency tower outage condition. GM, NHPC intimated that it would be very difficult to obtain any additional space at Uri II. However, he agreed to check the availability of space provision at Uri I and if available one additional S/C line at 400 kV would be taken from Uri I to Wagoora. It was decided that the proposed system by LILO of one circuit of Uri I – Wagoora at Uri II could be agreed, however, for exploring the possibility for construction of an alternate line from Uri a team from NHPC, POWERGRID and CEA could visit the Uri site. Subsequently, GM NHPC vide his letter No. NH/DEM/SS/12 dated 19/4/04 confirmed the space availability at Uri I switchyard for construction of one additional 400 kV line bay.

As such following works may be agreed as a part of Uri II system

- i) 400 kV S/C line from Uri I – Wagoora
- ii) LILO of one line of Uri I – Wagoora 400 kV D/C line at Uri II switchyard (provision already agreed in the 16th SCM of Northern Region)
- iii) 1x315 MVA ICT with 2 nos. of 220 kV line bay at 400 kV Wagoora S/S of POWERGRID.

Members of the committee may discuss and concur on this issue.

Item – VII Transmission system associated with Unchahar III TPS

7.1 Requirement of evacuation system for Unchahar TPS Stage III (1x250) was discussed in the 13th Standing Committee Meeting of Northern Region held at Dehradun. It was observed that the existing system would be sufficient to meet the evacuation requirement for Stage-III also under normal conditions but the loadings were critical in the event of outage of one circuit of Unchahar-Lucknow 220kV D/C line. To address this, a 220kV S/C line from Unchahar to the proposed S/S of UPSEB at Raibareilly was planned. However, as per the information available in CEA, the

construction of 220 kV Raibareilly S/S has not yet been taken-up by UPPCL and their plans in this regard are dependent on load growth in Raibareilly area. As NTPC has already started necessary exercise for executing the Unchahar III switchyard, the criticality of outage of one circuit of Unchahar-Lucknow 220kV D/C line needs a revisit. As the time frame of UPPCL's programme of Raibareilly s/s may not match with Unchahar-III, there are two options. One option is to take-up a new 220kV S/C line from Unchahar to Lucknow(PG) under the Regional scheme and leave Raibareilly s/s to be developed by UPPCL as and when programmed by them. The second option is to take-up the Raibareilly S/S and the associated LILO and Unchahar-Raibareilly S/C line at this stage itself, all as part of Regional scheme. The cost economics would favor the second option.

7.2 Discussion on the above proposal was deferred for the 17th SCM of Northern Region as no representative from UPPCL was present in the 16th SCM of Northern Region nor any letters was sent by UPPCL indicating their views on the above matter. As such the issue is put up again for discussion.

Members of the committee may discuss and decide.