Agenda note for 20th Standing Committee Meeting for planning of transmission system of Northern Region

1. Confirmation of the minutes of 19th meeting of the Standing Committee on Transmission system Planning held on 1.10.2005 at Amritsar, Punjab.

1.1 The minutes of the 19th meeting of Standing Committee on Power System Planning in Northern Region held 1.10.2005 at Amritsar, Punjab, were circulated vide CEA letter No. 1/9/2005-SP&PA/ **749-764** dated 7.11.2005. No Comments from any constituent states have been received.

Therefore the Minutes of 19th meeting as circulated may be taken as confirmed.

2. Transmission system for power evacuation from Subansiri Lower HEP, Inter-regional Transmission system for power export from NER to NR/WR and Transmission system for evacuation of power from Tripura Gas

2.1 Comprehensive transmission system has been evolved for power evacuation from generation projects in NER, Sikkim and Bhutan and schemes identified for development in a phased manner. Components of the transmission system associated with specific generation and transmission system from the pooling stations up to the depooling stations have been identified. As the transmission system would benefit the NER as well as the other regions which would avail NER power, the committeres who would have the long-term commitment for the transmission charges for each of these transmission systems have also been identified and allocation of transmission charges suggested.

The comprehensive transmission system for information of the members of NR standing committee. is given in Appendix- 2.1. The schemes on which deliberation and concurrence are sought in this meeting are following:

2.2 Recovery of Transmission Charges

2.2.1 For building the transmission system for power evacuation from hydro projects in NER, commitment for long-term transmission charges is needed for the component of generation specific transmission system within the NER as well as that for the export of power to outside NER.

2.2.2 The transmission system for export of power to outside NER is proposed to be recovered from the beneficiaries outside NER who would be actually utilizing the power.

2.2.3 Beneficiaries outside NER would also need to pay transmission charges for evacuation system within the NER as per their allocations from NER projects. The transmission charge sharing for the identified generation specific transmission system in NER is suggested as per following:

- Total charges of the particular generation specific transmission system in NER be allocated region-wise based on allocations from that hydro generation to the states within NER and also to the states in other region(s).
- Recovery of the component of transmission charges allocated to each region to be as a component of regional transmission system for that region.

Members may discuss and concur.

2.3 Transmission system for power evacuation from Subansiri Lower HEP (2000 MW) up to the pooling point in NER that is Bishwanath Chariyali

Subansiri Lower – Bishwanath Chariali 400kV 2x D/C lines with higher size conductors have been proposed for power evacuation from Subansiri Lower HEP (2000 MW) up to Bishwanath Chariyali, the pooling point in NER. The estimated cost of this system is Rs 600 crores. The lines would have additional capacity to cater to evacuation need of Siang Middle 1000 MW which is proposed to be brought to Subansiri Lower through a 400kV D/C line from Siang Middle and with that 1/3rd of the capacity as well as transmission charges of this system would be towards Siang Middle transmission system.

Member may discuss and concur the transmission proposal as well as sharing of transmission charges as per 2.2.3 above.

2.4 <u>The Schemes for Inter-regional Transmission system for power export from NER to NR/WR</u>

2.4.1 The scheme for HVDC link from Bishwanath Chariyali to Agra for import of NER power by NR/WR was discussed in the earlier Standing Committee meetings. The proposal has now been firmed-up in respect of details of the 800kV HVDC system and it is now proposed to have 800kV, 6000MW HVDC bi-pole line from Bishwanath Chariyali to Agra under the scheme 'Inter-regional Transmission system for power export from NER to NR/WR'. In this scheme, HVDC bi-poles terminals providing 3000 MW of power transfer capacity on a HVDC line of 6000 MW capacity would be provided. This would be programmed for commissioning by 2010-11 matching with Subansiri Lower HEP. The balance 3000 MW of line capacity would be utilized for providing 3000 MW HVDC capacity between Siliguri and Agra for transmission of hydro power of Sikkim and Bhutan pooled at Siliguri.

To provide better security of transmission line in the chicken-neck area, it is proposed that the two poles of the bi-pole line could be on separate towers in the chicken-neck are. Both the line should be of bi-pole specification and the second bi-pole could be strung at a later date when next 6000 MW corridor is developed.

2.4.2 The benefit of this link would be derived by the States of Northern Region and Western Region would be receiving the much needed power. The tentative estimated cost of Phase-1 of this scheme is Rs 7440 crores (Rs 2400 crores for the HVDC terminals and Rs 5040 crores for the transmission line). In Phase-2, when 3000MW modules are added, the additional cost would be towards the HVDC modules only. As already discussed and agreed in earlier meetings of NR as well as WR, it is proposed that the transmission charges for this system are

shared by NR and WR and power allocation from projects in NER also made to states of NE and WR. CEA has suggested that 70% of power from Subansiri Lower HEP (2000MW) could be allocated between NR and WR – 35% to each of NR and WR and accordingly, the sharing of transmission charges could be in 50:50 ratio, that is 50% as pooled charges for Northern Region and 50% as pooled charges for Western Region. In regard to power allocation, Chairperson, CEA has written a letter to Secretary, Ministry of Power in this context. A copy of that letter is enclosed at Appendix-2.2.

Members may take note of the revised proposal and concur.

2.5 Transmission system for power evacuation from Tripura Gas, 1100 MW

2.5.1 Tripura gas generation project, which was earlier proposed with 700 MW capacity, is now proposed to have 1100 MW installed capacity (1050 MW ex-bus capacity). The commissioning schedule of Tripura gas project is reported to be early 2009 and as such the transmission system for this project needs to be planned independent of the proposed NER-NR/WR HVDC system envisaged with Subansiri HEP.

2.5.2 For better viability of transmission and sale of power, it is proposed to sell Tripura gas power not at ex-generation bus but at delivery points in Tripura and Silcher for the NER beneficiaries and at delivery point of Siliguri for NR beneficiaries. The proposed transmission system for this delivery of power from Tripura gas is:

- Tripura gas-Silcher-Bongaigaon-Siliguri 400kV D/C with higher size twin conductors
- 400/132kV at Tripura gas generation switchyard and 132kV lines to grid s/s
- 400/132kV substation at Silcher and 132kV lines connecting to grid s/s

NOTE: ILFS has proposed to construct transmission system upto Bongaigaon only, but as this would not bring power to out-side NER and strengthening of Bongaigaon-Siliguri would be needed, it has been suggested that ILFS construct the transmission system upto Siliguri.

The above transmission system is estimated to cost Rs 2350 crores and is proposed to be built by ILFS Transmission Ltd, a shell company of Tripura gas generator, and the tariff would be built with in the delivered cost of generation at the delivery points in Tripura and Silcher for NER beneficiaries and Siliguri 400kV for the NR beneficiaries.

2.5.3 For onwards delivery to NR beneficiaries, the Eastern Regional grid would need to be strengthened by providing adding a 400kV D/C quad line between Purnea and Biharsharif. Estimated cost of this is Rs 450 crores. As the power delivery to NR would require wheeling through ER system, it is proposed that transmission charges for Purnea-Biharsharif 400kV D/C quad line be pooled within the regional transmission system of ER and NR beneficiaries may seek long-term open access (LTOA) through ER for the capacity equal to their allocation from Tripura gas. However, if the ER constituents are not agreeable to be committeres for the Purnea-Biharsharif 400kV D/C quad line, this line could be built based on commitment of NR beneficiaries of Tripura gas and they could seek short-term open access (STOA) through ER for using part of ER system.

Members may discuss and concur.

3. Creation of 400/220 kV S/S at Loni Road

Creation of 400/220 kV S/S at Loni Road was included in the agenda for 19th Standing Committee Meeting of NR. However due to absence of participants from DTL the matter was postponed for discussion in the subsequent Standing Committee Meeting.

It may be informed that Mandola S/S is presently having 4 nos. of 400/220 kV transformers through which Delhi draws power. Studies have shown that by 2011-12 time frame the loading on the transformers at Mandola would be very critical **(Exhibit-I)** and outage of any transformer would crate overloading on the other transformers. As such, there is a need for creation of another 400/220 kV

substation between Mandola and Dadri to feed the increasing load requirement of North Eastern and Eastern part of Delhi in a reliable manner. The studies show transformer flow of 425 MW (472MVA) at Loni Road and also relieving the loading on Mandaula 400/220 kV transformer by about 230 MVA **(Exhibit-II).** Accordingly, DTL has proposed to create 400/220 kV S/S at Loni Road by looping in looping out of the existing 400 kV POWERGRID line between Mandola and Dadri at Loni Road S/S. DTL have proposed to establish this S/S as a part of their transmission works and it would be totally at their cost. Since the work involves LILO of Center Sector transmission lines, the issue is put up to the Standing Committee.The off take at Loni Road S/S can be increased by appropriate bus splitting at South of Wazirabad 220 KV S/S or/and by additional 220 KV line to Patparganj and DTL would need to plan the 220 KV system accordingly.

Members may discuss and concur on the proposal.

4. Creation of 400/220 kV S/S near New Wangpoh

Presently the 400/220 kV S/S at Wangpoh in Kashmir Valley is having a capacity 3x315 MVA and the 4th 315 MVA ICT have also been agreed in 18th SCM. With this 1260 MVA capacity would be available at Kashmir valley for drawal of their share of power from the regional grid. The load demand of Kashmir valley has been projected to grow to 1500-1600 MW by 2011-12. During the winter months, the Kashmir valley is totally dependent upon import of power from Northern grid as its own source of power become very less and its load increases to maximum. The gap in the load and availability of power could be bridged by creation of another S/S near New Wangpoh which would help Kashmir valley for drawal of its additional share of power from Sawalkot(1200 MW), Pakaldul(1000 MW), Berser (1020) HEP which are proposed during 11th plan time frame.

Members of the committee may discuss and concur on the proposal.

5. Utilisation of transformation capacity created under Central Sector

It has been observed that matching transmission system at 220 kV level for some of the 400kV S/S created or under construction in the Central Sector schemes for Regional grid have not been provided. The places where planning/development of under lying 220kV system of states has not kept pace with regional grid substations are Nalagarh, Mainpuri, New Lucknow and Gorakhpur. As such, when the 400 kV S/S is completed, non-availability of the required transmission lines at 220 kV by the State agency would hinder utilization of the 400 kV S/S and also lack of anchoring causing operational problem. States are therefore requested to expedite their necessary interlinking transmission schemes. Further, to address this problem at a policy level, the committee may consider the following suggestion:

- In future schemes, wherever anchoring of the 400 kV S/S is needed from system consideration, LILO of existing 220 kV lines of the States' could be done by POWERGRID as a regional scheme. However, this would not include feed to new 220 kV S/S of States.
- The provision for utilizing the existing bays should be transferred to the other desiring state in case the 220 kV bays at the central sector station remain unutilized for more then 2 years after completion of the 400 kV S/S, wherever such feasibility exists.

Members of the committee may discuss and decide.

6. Drawal of HP's share from Central Sector Projects

6.1 A 400/220 kV S/S at Nalagarh was established as a part of Nathpa Jhakri transmission system and two 400 kV bays were earmarked for enabling HPSEB for taking out 400 kV D/C outlet to Kunihar for drawal of their share of power from Central Sector projects. The above 400 kV line has not been constructed by HPSEB so far. The subject was discussed in the 19th meeting of Standing Committee of Northern Region, wherein HPSEB informed that they do not plan construction of the above line in an immediate time frame and their 2 nos. of bays at Nalagarh could be utilized by for terminating 400 kV lines from Parbati II/

Koldam HEP. POWERGRID would provide two bays to HPSEB whenever they require the same for terminating their own lines and for that HPSEB have to inform POWERGRID at least two year in advance.

6.2 HPSEB have now forwarded certain new transmission proposals/ modification to be covered under Central Sector for drawal of their share of power from Central Sector projects like Koldam, Parbati II, Parbati III, Rampur and Luhri. The letter of HPSEB are enclosed at Appendix 6.1.

In this context it is to inform that the transmission system for Koldam, Parbati St II and Parbati St III have already been approved by PIB. As such, instead of change the scope of these transmission schemes, it is proposed to construct two 220 kV bays at Nalagarh 400 kV S/S as a Regional system strengthening scheme in Northern Region for enabling HPSEB to draw its share of power from these projects. Utilization of 220 KV bays allocated to Chandigarh,U.T. and Punjab also needs to be reviewed. In a meeting taken by CE(SP&PA), CEA with utility from POWERGRID, HPSEB, UT of Chandigarh and PSEB in November, 2005, it was discussed that PSEB and UT of Chandigarh should programme to complete construction of their transmission lines from Nalagarh by March 2006 and if the progress on construction of the line was not upto the mark, the allocation of the bays would be reviewed. PSEB & UT of Chandigarh may intimate the status in this context.

As regards, the proposal of HPSEB for 220 kV D/C line from Panarsa to Kangoo, the proposal need to be examined considering the loads to be met and generation in the area itself. HPSEB may present their proposal with necessary details/studies. As regards 220 kV bays at Panarsa for interfacing with Sainj HEP (100 MW) of HPSEB, long-term open access would need to be tied-up alongwith agreement on transmission charges for Regional system to be payable for wheeling of Sainj power.

In respect of transmission system for Rampur HEP, HPSEB has proposed 220 kV D/C line from Abdullapur to proposed 220kV Moginund (Kala Amb) s/s of HPSEB, to be covered under Central Sector. As the proposed system, though at 220kV, involves inter-state line, and HPSEB has share in Rampur HEP, their proposal could be considered. However, the 220kV s/s at Kala Amb should be constructed by HESEB under the State plan and only the inter-connecting 220kV lines along with bays at both ends could be covered in the Regional transmission scheme.

As regards, the proposal of HPSEB for transmission system/drawal of their share of power from Luhri HEP, this would be considered while developing transmission system for evacuation of power from Luhri HEP.

Members of the committee may discuss and decide.

Appendix-2.1

Note on transmission system for evacuation of power from major generation projects in the North-eastern Region along with power from projects coming up in Sikkim and Bhutan during the 11th Plan and early 12th Plan period.

1. Following generation projects have been envisaged in the NER, Sikkim and Bhutan in 11th Plan and early 12th Plan:

Tripura Gas, Tripura	1100 MW	2008-09
Bongaigaon Thermal, NTPC, Assam	500 MW	2010-11
Kameng HEP, Arunachal Pradesh	600 MW	2009-10
Subansiri HEP, Arunachal Pradesh	2000 MW	2010-11
Siang Middle HEP, Arunachal Pradesh	1000 MW	2012-14
Tipaimukh HEP, Manipur	1500 MW	2012-14
Teesta- I, II, III, IV & VI HEPs, Sikkim	2700 MW	2011-14
Phunatsangchu-I, II and Mangdechu , Bhutan	2600 MW	2011-14

Most of the generation from the above projects would be exported to the power deficit regions that is the Northern Region and the Western Region. In order to optimally utilise the transmission corridor keeping in view the chicken neck constraints, it is necessary to plan the evacuation system for the major projects in NER, Sikkim and Bhutan in a comprehensive manner.
Accordingly, a comprehensive transmission system has been evolved.

2. The chicken-neck issue

2.1 The composite transmission system from the pooling stations to the de-pooling stations needs to be planned keeping in view RoW constraint in the 'chicken neck'. The 'chicken-neck' refers to the area between Siliguri and Bidhan Nagar in West Bengal.

2.2 The requirement of power evacuation through the chicken neck has been estimated corresponding to the capacity of hydro projects which may be feasible to develop say in the next 20-25 years. This generation is estimated to be about 35000 MW in NER, about 8000 MW in Sikkim and about 15000 MW in Bhutan. Taking local development at accelerated pace resulting in demand within the NER, Sikkim and Bhutan to be in the range of 10000 – 12000 MW (presently it is about 1500 MW), the transmission requirement through the chicken neck works out to be of the order of 45000 MW. With 800kV HVDC, each bi-pole line of 6000 MW capacity could be planned. The 400kV AC lines in the hybrid system would be each of 1500 MW transmission capacity and multi-circuit of 3000 MW transmission capacity in chichen-neck area.. The total requirement including additional circuits for meeting the contingencies and reliability needs, would work out to 7 or 8 numbers of HVDC bi-pole lines and 4 or 5 numbers of 400kV double circuit lines – a total of 12 numbers of high capacity transmission corridors passing through the chicken neck. For this, RoW requirement would be about 800 m and considering minimum distance between adjacent towers to be such that fall of any tower does not affect the adjoining line, a width of about 1.5 kms would be needed. POWERGRID have carried out a preliminary survey for identifying the possible corridors and the issue was discussed in a meeting taken by Secretary, Ministry of Power on 22nd February 2006, and was also sensitized in a meeting with Chief Secretary, Govt. of West Bengal held on 9.1.06 in Kolkata.

3. The transmission system options

3.1 The option of 765kV transmission system has not found favor that besides a wider RoW, we have to take into account nature of hydro generation. While the system would need to be planned for full generation capacity, in winter months, when the generation would be much less and restricted to just peak hours, the lines can't be kept energized due to reactive power management and resulting high voltage problem. This would require frequent switching of the lines resulting in loss of reliability and also reduced life of equipment. Therefore 765kV bulk transmission would not be recommended choice in this case.

3.2 The option of hybrid network of HVDC, and high capacity 400kV line has been found to be most suitable from cost, corridor, operational and phased development consideration. As the transmission distance from NER upto NR/WR is quite long – 2000 – 2500 kms, the requirement of keeping losses within reasonable and cost effective limits, suggests strongly in favor of adopting as high a HVDC transmission voltage as possible. At present the HVDC voltage for bi-pole transmission in India is 500kV. The highest HVDC system in world is at 600kV at Itaipu, Brazil, which is in operation since 1987. The next higher voltage of 800kV HVDC is under final stages of development. If adopted in this case, India, alongwith China would be the pioneers in the world to have introduced/adopted 800kV HVDC. Cost benefit analysis strongly supports adopting 800kV HVDC for this transmission in India. Comparative evaluation has also been done for the following options:

Option-1 800kV HVDC and 400kV hybrid
Option-2 600kV HVDC and 400kV hybrid
Option-3 500kV HVDC and 400kV hybrid
Option-4 765kV AC and 400kV AC (though 765kV is not recommended as stated in earlier para, this option has been studied for comparison cost economics only)
Option-5 All 400kV AC

Analysis of the above options has been done for transmission capacity of 12000 MW and transmission distance of 2100 kms. The analysis shows that option-1 evaluates the best and the next best option-2 evaluates costlier by 12%. RoW requirement would also be least in Option-1. Salient features of the comparison are given in the following table:

Option	System	Corridor requirement in meters	Energy loss %	Comparison cost (capital + loss)	Compared cost as % of Opt-1
		meters	%	Rs crores	%
Opt-1	2 x 6000MW, 800kV HVDC bi-pole + 1x 400kV quad D/C	165	4.0	28078	100
Opt-2	3 x 4500MW, 600kV HVDC bi-pole + 1x 400kV quad D/C	210	4.8	31422	112
Opt-3	4 x 3000MW, 500kV HVDC bi-pole + 1x 400kV quad D/C	245	7.5	31850	113
Opt-4	3 x 765kV D/C + 1x 400kV quad D/C	330	6.0	32482	116
Opt-5	9 x 400kV quad D/C	405	7.8	46673	166

3.3 The first 800kV HVDC bi-pole line has been planned from a pooling substation at Bishwanath Chariyali in North-eastern Region to Agra in Northern region. This is being programmed for commissioning matching with Subansiri Lower HEP in 2011-12. The transmission line would be for 6000 MW capacity and HVDC terminal capacity would be 3000 MW between Bishwanath Chariyali and Agra. In the second phase, for transmission of power from hydro projects at Sikkim and Bhutan pooled at Siliguri, another 3000 MW terminal modules would be added between Siliguri and Agra.

3.4 It is envisaged to take-up the proposed 800kV, 6000MW HVDC bi-pole line from Bishwanath Chariyali to Agra under a scheme titled **"Inter-regional Transmission system for power export from NER to NR/WR".**

4. The Transmission Schemes

Comprehensive transmission system has been evolved for development in a phased manner and components of the transmission system associated with specific generation and transmission system from the pooling stations up to the depooling stations have been identified. The schemes are:

- **Tripura Gas (1100MW) Transmission Scheme**
  - Tripura gas-Silcher-Bongaigaon-Siliguri 400kV D/C with higher size twin conductors
  - 400/132kV at Tripura gas generation switchyard and 132kV lines to grid s/s
  - 400/132kV substation at Silcher and 132kV lines connecting to grid s/s
  - Purnea-Biharsharif 400kV D/C quad line

- **Kameng HEP, NEEPCO, 600 MW**
  - Kameng – Bishwanath Chariali 400kV D/C and Bishwanath Chariyali 400kV s/s by LILO of both circuits of Ranganadi-Balipara 400kV D/C line
  - NER System strengthening with Kameng

- **Subansiri Lower HEP, NHPC, 2000 MW**
  - Subansiri Lower – Bishwanath Chariali 400kV 2x D/C lines with higher size conductors
  - NER System strengthening with Subansiri

- **Inter-regional Transmission system for power export from NER to NR/WR :**
  - ± 800kV HVDC Bishwanath Chariyali – Siliguri – Agra bi-pole line of 6000 MW transmission capacity with 3000 MW HVDC module capacity between Bishwanath Chariyali and Agra in Phase-1 and 3000 MW HVDC module capacity between Siliguri and Agra in Phase-2.

- **Siang Middle HEP 1000 MW, and**
  - Siang Middle – Subansiri Lower 400kV D/C
  - 1/3rd of Subansiri transmission system up to Biswanath Chariyali
  - NER System strengthening with Siang Middle

- **Tipaimukh HEP 1500 MW**
  - 400/220kV at Tipaimukh generation switchyard
  - Tipaimukh – Silcher – Misa 400kV D/C quad

- Misa – Bishwanath Chariyali 400kV D/C
- Misa – Bongaigaon 400kV D/C (this line could be considered for advancing to match with Kameng HEP in case of delay in Bongaigaon TPS)
- Tipaimukh – Imphal – Dimapur 220kV D/C
- NER System strengthening with Tipaimukh
- In addition Misa-Balipara-BiswanathChariali 400kV D/C and Dimapur-Misa 220kV D/C of existing NER system would also becomes included as part of Tipaimukh transmission system

➢ **Transmission System for Hydro Projects in Sikkim and Bhutan**

- Power from hydro projects in Teesta basin of Sikkim is proposed to be pooled at two locations. The new hydro projects in Sikkim plus Teesta-V which is under construction, would give an exportable power of the order of 3000 MW from Sikkim. From the pooling stations, the power would be brought to Siliguri through three numbers of 400kV D/C lines of which one with twin conductor is already under construction with Teesta-V and the other two would be with quad conductors. One line would to be taken to Siliguri and one line to Bidhan Nagar.
- Power from Phunatsangchu-I (1000MW), Mangdechu (600MW) and Phunatsangchu-II (1000MW) HEPs in Bhutan is also proposed to be brought to Siliguri/ Bidhan Nagar through 400kV quad D/C lines – one line Siliguri and one line to Bidhan Nagar.
- Considering the ROW issue, it is proposed that in the chicken-neck area, the 400kV D/C quad line from Sikkim/ Bhutan to Bidhannagar be constructed with multi-circuit towers with four quad circuits.
- Onwards transmission of power from the Teesta basin of Sikkim and Phunatsangchu-I & II and Mangdechu of Bhutan pooled at Siliguri and Bidhan Nagar is proposed through 800kV HVDC system from Siliguri to Agra and 400kV AC system from Bidhan Nagar to Sasaram. For this, the 3000MW capacity of the Bishwanath Chariyali – Agra 800kV HVDC line would used by providing 3000MW rectifier module at Siliguri together with 3000 MW inverter module at Agra and adding a 400kV quad D/C line with series compensation and TCSC from Bidhan Nagar to Sasaram via a new 400kV s/s at Begusarai.

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

No.1/9/06-SP&PA/ Dated : /04/06

-As per List enclosed-

Sub: The 20th meeting of the Standing Committee on Power System Planning of Northern Region.

Sir,

In continuation to this office letter 1/9/SP&PA-06/198-213 dated 30 /03/06, enclosing the agenda note, it is to inform that the 20th meeting of the Standing Committee on Power System Planning of Northern Region would be held on **22nd April, 2006 at 1000 Hrs. at Vikram Vintage Inn, Mallital, Nainital-263001, Uttaranchal.** The name and address of coordinating officers for the meeting are as under

Name:	**Shri D N Joshi** Dy. General Manager 220 kV S/S,Kmaluagarja, Nainital, Haldwani	Phone No.	**05946-238654(O),** **05946-238667(R)** **09412093221 (M)**
Name:	**Shri R K Sharma** SDO(Transmission) 400 kV S/S,Kashipur, Uttaranchal	Phone No.	**05947-274946(O),** **05942-236537(R)** **09412092176 (M)**

It is requested that the name of the officer(s) participating in the meeting from your organization and the details of their inward/outward journey to and from Nainital may kindly be confirmed to the above officers of PTCUL, on above nos. Confirmation regarding your participation may please be sent to CEA in **Fax No. 011-26102045** or in E-mail address **ceasppa@yahoo.co.in.** Kindly make it convenient to attend the meeting

Yours faithfully,

(S K Thakral)

Director (SP&PA)