केन्द्रीय विद्युत प्राधिकरण
प्रणाली योजना एवं परियोजना मूल्यांकन प्रभाग
सेवा भवन, रामकृष्ण पुरम्,
नई दिल्ली **110 066**

सं0 / 66/9/99/प्र.यो.एवं प.मू./97-39

दिनांक 20.01.2005

1 मुख्य अभियन्ता(पारेषण)
बिहार राज्य विद्युत बोर्ड, विद्युत भवन
बेली रोड़, पटना-800001.

2. मुख्य अभियन्ता(पी.एस.आर.)
दामोदर घाटी निगम,डी.वी.सी.टावर,
वी.आई.पी. रोड़, कलकत्ता-700054

3. सदस्य सचिव,
पूर्वी क्षेत्रीय विद्युत बोर्ड,
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तोलीगुंज, कलकत्ता-700033

4. निदेशक(वाणिज्य)
ग्रिड कारपोरेश आफ उड़ीसा लि.
जनपथ, भुवनेवर, उड़ीसा.

5. मुख्य अभियन्ता(सी.पी एवं ई.डी),
पं.बं.रा.बि.बोड़, विद्युत भवन,-11
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6. प्रमुख मुख्य अभियन्ता सह सचिव
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गंगटोक, सिक्किम.

7. कार्यकारी निदेशक(इंजिनियरिंग),
पावर ग्रिड, बी-9 कुतुब इंस्टी.एरिया,
कटवारिया सराय. नई दिल्ली.

8. कार्यकारी निदेशक(इंजिनियरिंग)
एन.टी.पी.सी, इंजि.आफिस
परिसर, ए-8, क्षेत्र 24, नोएडा.

9. सदस्य(तकनीकी), जे.एस.ई.बी,
दोरन्डा, रांची-834002.

10. जेनेरल मैनेजर (डिजाइन बी.एंड.एम)
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11 निदेशक(परिचालन),पी.टी.सी,
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5, भिकाजी कामा पैलेस,
न.दिल्ली -66

12. कार्यकारी निदेशक (परिचालन)
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नया सचिवालय भवन
1, के.एस.राय रोड,
कोलकत्ता -700 001.

13. मुख्य प्रबंध निदेशक,
दुर्गापुर प्रोजेक्ट लिमिटेड,
1,शेक्सपियर सारणी,
कोलकत्ता -700 071.

p.shukey & others
shukeyal

विषयः पुरी,उड़ीसा में दिनांक 24/12/04 को की गई पूर्वी क्षेत्र की विद्युत प्रणाली आयोजना की स्थाई समिति की बैठक -अनुवर्ती कार्यवाही के संबन्ध में

महोदय,

पुरी,उड़ीसा में दिनांक 24/12/04 को की गई पूर्वी क्षेत्र की विद्युत प्रणाली आयोजना की स्थाई समिति की बैठक की कार्यवृत्ति की एक प्रति आवश्यक कार्यवाही हेतु संलग्न है.

कृपया पत्र की पावती दें.

संलग्नकः यथोपरि

(रमेश कुमार)
निदेशक

List of Address for Standing Committee Meetings of the Eastern Region.

1. Chief Engineer (Transmission) Bihar State Electricity Board Vidyut Bhavan, Baily Road, Patna-800001.	2. Chief Engineer (PSR) Damodar Valley Corporation DVC Towers, VIP Road, Calcutta-700054.
3. Member Secretary Eastern Regional Electricity Board 14, Golf Club Road Tollygnge, Calcutta-700033.	4. Director © Grid Corporation of Orissa Ltd. Janpath, Bhubaneshwar.
5. Chief Engineer (CP&ED) West Bengal State Electricity Board, Vidyut Bhavan Block-DJ, Sector-II Salt Lake, calcutta-700091.	6. Principal Chief Engineer cum Secretary Power Department Government of Sikkim Gangtok, Sikkim
7. Executive Director (Engineering) Power Grid Corporation of India "Saudamini" Plot No. 2, Sector-29' Gurgaon-122001	8. Executive Director (Eng.) NTPC Limited Engineering Office Complex, A-8, Sector 24 Noida
9. Member (Tech.) Jharkhand State Electricity Board In front of Main Secretariat, Doranda Ranchi-834002	10. General Manager (Design B&M) NHPC, NHPC Office complex, Sector 33, Faridabad-121003.
11. Director (Operation) Power Trading Corporation NBCC Towers 2nd floor, 13, Bhikaji Cama Place New Delhi-110066	12. Executive Director (Operation) West Bengal Power Dev. corporation, 6th floor, B-Block, New Secretary Building I, K.S. Road, Calcutta-700 001
13. CMD, Durgapur Projects Limited, 1, Shakespeare Sarani, Kolkatta-700 071.	

Minutes of the Standing Committee Meeting of the Eastern Region for the issues relating to Power System Planning held at Puri on 24.12.04

List of the participants is at Annex - I.

Shri N.N. Mishra, GM, NTPC welcomed the participants on behalf of NTPC.

Shri V. Ramakrishna, Member (PS), CEA thanked NTPC for arranging the meeting and welcomed the participants. Thereafter the agenda items were taken up for discussions.

1. **Confirmation of the minutes of Standing Committee Meeting held at Gangtok on 25.08.03.**

Sh. A.K. Asthana, CE I/C, CEA stated that minutes of the Standing Committee Meeting held at Gangtok on 25.08.03 were circulated vide CEA letter no. 66/9/99/SP&PA/688-99 dt. 19.09.2003. No comments had been received relating to recording of the minutes of the meeting. However, 400 kV Sagardighi - Kahalgaon S/C line which was proposed as regional system strengthening scheme was to be reviewed and discussion on the same was listed in the agenda for this meeting.

Sh. M.K. Mitra, SE, EREB pointed out that in the Minutes of the meeting, the heading " 4. Evacuation system for Teesta HEP St V" appeared to be a misprint as the discussions under para 4.1 related to Kalabadia 400/220 kV S/S. Thereafter the minutes were confirmed with following correction:-

The heading of para 4 corrected to read as " 4. Kalabadia 400/220 kV S/S"

2.0 System strengthening scheme of ER

2.1 Need for System Strengthening in ER

2.1.1 CE I/C, CEA stated that it was decided in the last meeting that in order to meet the requirements of transmission corresponding to programme of capacity addition in the ER and also taking care of requirements arising out of changes in the flow pattern on account of re-distribution of inter state power flows, suitable system strengthening scheme for ER would be taken up by Powergrid. In this context, based on inputs from Powergrid and some of the State Utilities, CEA had worked out proposal for strengthening of the transmission system in the ER. In formulating these proposals, scenarios of projected inter-regional power exchanges emerging from capacity growth in demand and the programme of generation capacity addition in the various regions was considered. He then gave presentation on the projected scenario of surplus power in the ER that was expected towards the end of 11th plan period. Copy of the presentation is at Annex - II.

2.1.2 The presentation highlighted that based on the programme of capacity addition in the ER and anticipated growth in demand, the ER would continue to remain in surplus condition and would be exporting increased quantum of power to Northern, Western and Southern Regions. For enabling the increased export,

transmission capacity of the order of 15,000 MW would be required by the end of 11th plan. The quantum of exportable power of the order of 15000 MW was based on total benefit from 11th Plan projects which were envisaged up to 2011-12. This included a few late 11th plan projects such as Kodarma (1000 MW) and Benarpal (1000 MW), clear programme of which was yet to emerge. It was seen that the projects, which were having positive indications as of now, were mostly scheduled up to 2009-10. Accordingly, 2009-10 had been taken as the base year of studies. Corresponding to this time frame transmission capacity to export around 11,000 MW out of ER was required.

2.1.3 CE, BSEB stated that Bihar was not having any surplus power and was not getting any benefit from the transmission system meant for export of power from ER. As such, Bihar should not be imposed upon to share the transmission charges for the transmission system that was being proposed for enabling increased export from ER. He further stated that the transmission charges should be paid by those beneficiaries whose power was transmitted by the system and as Bihar was not benefiting, they should not be asked to share the transmission charges.

2.1.4 SE (Commercial), WBSEB stated that decisions arrived at in the Standing Committee were taken as basis for commercial agreement which had implication for sharing of the transmission charges. As such, it was necessary to bring out the commercial issues also.

2.1.5 CE (I/C), CEA stated that the requirement of transmission system was on account of requirement of exporting the power from ER. The increased quantum of exportable power would be on account of addition in the generation capacity in the ER. The generation capacity addition in the ER included the following projects:-

Teesta V	Hydro	NHPC	3x170 MW
Purulia PSS	Hydro	NHPC	4x225 MW
Teesta LD III & IV	Hydro	NHPC	292 MW
Kahalgaon -II	Thermal	NTPC	3x500 MW
Barh	Thermal	NTPC	3x660 MW
Nabinagar	Thermal	NTPC	4x250 MW
Mezia U-5,6	Thermal	DVC	2x250 MW
Bokaro Extn	Thermal	DVC	2x500 MW
Maithon RB	Thermal	DVC	2x500 MW
Chandrapur U-7,8	Thermal	DVC	2x250 MW
Durgapur DPL	Thermal	DPL	300+660 MW
Tenughat	Thermal	TVNL	2x210 MW
Sagardighi	Thermal	WB	2x300 MW
Bakareshwar	Thermal	WB	420 MW
Ramam	Hydro	WB	36 MW
Dubri	Thermal	Orissa	2x250 MW
Ib-Ex	Thermal	Orissa	2x250 MW
Balimela -II, DPH	Hydro	Orissa	210 MW
Jojobera	Thermal	TATA	120 MW

2.1.6 The above generation capacity addition programme included projects in the Central Sector as well as State Sector and the exportable surplus was on account of the combined effect of all the above capacity addition. For evolving the transmission system optimally, it was necessary to consider a comprehensive scenario and studies done by CEA had been on that basis. Accordingly, the transmission system strengthening schemes to be discussed and finalised on technical considerations would benefit additional generation capacities irrespective of these being in the Central Sector or State Sector.

2.1.7 Member (PS), CEA stated that so far the sharing of transmission charges for the regional transmission system of Powergrid had been on the basis of capacity allocation to the beneficiaries from Central Sector projects. However with change in scenario, the regional transmission system was required to support evacuation of power not only from Central Sector stations corresponding to allocations within the region and also outside the region, but also facilitate inter-state trading of exportable power arising out of State Sector generation capacity. In view of this, it was necessary to review the methodology of apportioning the transmission charges amongst the beneficiaries. The State utilities actively participating in trading and requiring additional incremental regional transmission system for this purpose should not expect the non-participants to share the transmission charges for the incremental system in the same way as for the existing transmission system. One possible methodology could be to apportion the transmission charges for regional system in proporation to total generation capacity of each beneficiary from the Central sector stations plus its own generation capacity from thermal units. This issue was required to be discussed and decided in the commercial committee of EREB. However, agreement in regard to the proposed schemes were required so that Powergrid could take up the schemes for completion in the required time frame matching with the programme of the Central as well as State sector generation. This was required so that power from the proposed capacity addition irrespective of its being in the Central Sector or State Sector, was not bottled up.

2.1.8 ED, Engineering, Powergrid, stated that commercial commitment for the transmission charges were required before taking up the scheme as this was a pre-requisite for the investment approval by the Government of India.

2.1.9 After further discussions, it was decided that necessary proposal for strengthening of the Eastern regional transmission system would be decided based on technical justification and Powergrid would take up preparation of feasibility report and initiate the process for investment approval. Simultaneously, EREB would take up the issue of sharing of the transmission charges amongst the beneficiaries in the Commercial Committee/TCC. The Committee members from the State Utilities would also take-up with their management to facilitate early agreement on this issue.

2.1.10 Thereafter the specific proposals for system strengthening in the ER were discussed on the basis of load flow cases and justification as brought out in the agenda note.

2.2 400 kV Ranchi – Rourkela – Raipur D/C line (second 400 kV D/C line between Rourkela – Raipur) with TCSC on Rourkela – Raipur Section

2.2.1 Chief Engineer I/C, CEA stated that the above lines were required to enhance the power transfer capacity from ER to WR. ER would benefit through increased export and WR would benefit through increased import. He informed that this proposal was also discussed in the Standing Committee of WR .While the WR constituents had agreed to technical justification of this link, they had been insisting that Ranchi – Rourkela section of this link being totally in the ER, should be on account of the transmission charges of ER and the Rourkela – Raipur section be treated as inter regional link between ER and WR.

2.2.2 The members agreed to the technical justification for this link. However in regard to sharing the transmission charges, CE, BSEB reiterated their stand that Bihar was not having any surplus power and was not getting any benefit from the transmission system for export of power from ER and as such Bihar was not in a position to agree the sharing of transmission charges for this link. Sr.G.M, Gridco stated that Gridco was also not likely to take advantage of the increased export capacity through this link. Member, WBSEB stated that as this link will be used for uni-directional supply to WR, the beneficiaries of WR should pay the full transmission charges.

2.2.3 Member (PS), CEA stated that CEA had already been insisting WR constituents to commit 100% transmission charges for the inter-regional portion of link, but they had not been agreeing. If there was no agreement, Powergrid would not be taking up this link for execution and the transmission system would not be available. Consequently, while WR constituents would be deprived of the possible increase in the power supply through import, the ER beneficiaries would also loose opportunity to export their surplus power. Increase in surplus power was to be on account of capacity addition programme and the characteristics of ER load demand which had a predominant evening peak load but during other periods the demand was fairly low. If the transmission system for increased export was not available, the generation in ER would loose Load opportunity resulting in reduced PLFs and consequently, increased cost of power with in ER. As such it was also important for the beneficiaries of the ER, particularly those who would be active in exporting the power, that commitment for transmission charges for this line are facilitated and Powergrid could take up the project. He impressed upon DVC and WBSEB who were projected to be in surplus more or less on constant basis that they must come forward to make necessary commitment. He further stated that Gridco had also been exporting power and would continue to be an active player in trading. As such it would also be in their commercial interest that this commitment is facilitated.

2.2.4 On query regarding the transmission cost for this link, Powergrid stated that of the total length from Ranchi to Raipur, the Ranchi-Rourkela section would be

about one third. However, cost-wise, Ranchi-Rourkela section would be further less because the Rourkela-Raipur section would have additional cost towards TCSC. Tentatively, of the total cost of the scheme of order of Rs 550 crores, Rs 150 crores would be for Ranchi-Rourkela section and Rs 400 crores for Rourkela-Ranchi section. He further stated that the link would benefit ER constituents not only in increased transmission capacity for export of surplus power but also in improved system stability and reduced losses. The Ranchi-Rourkela section of the link would provide exclusive benefit to ER in reducing losses.

After discussions it was decided that CEA would take up with the constituents of WR to make them agree for 100% transmission charges for the Rourkela – Raipur section of the line and DVC, WBSEB and Gridco would take up with their management to commit for the transmission charges of the Ranchi-Rourkela section as ER Regional line. The methodology for sharing of transmission charges amongst the beneficiaries of ER would be re-visited in the commercial committee.

2.3 **400 kV Parulia - Jamshedpur - Baripada D/C line**
400kVBaripada-Bhubneshwar-Behrampur D/C line
400kV s/s at Berhampur
400kV Behrampur- Gajuwaka D/C line with 40% series compensation
- **Evacuation System for Sagardighi (2x300MW)**
- **Evacuation System for DPL Extn (1x300+1x660MW)**
Evacuation System for Mejia (U5,6) and Chandrapura (U7,U8)

2.3.1 Chief Engineer I/C, CEA stated that 400 kV Parulia - Jamshedpur - Baripada D/C line was required for evacuation of surplus power from the eastern part of eastern grid and injection into central areas from where it would get further transmitted was found justified. In light of this the Sagardighi - Kahalgaon 400 kV line may not be needed as the re-distribution of power flows on account of capacity addition at Kahalgaon-II, Barh, Nabinagar etc. would result in reduction in power flow from Farakka/Sagardighi towards Kahalgaon and increase towards Jamshedpur. In this context, the evacuation system for Sagardighi was also reviewed. Earlier it was proposed to LILO one circuit of Farakka - Jeerat/Subhashgram line at Sagardighi and provide Sagadighi - Kahalgaon 400 kV S/C line. In the revised proposal circulated with the agenda, it was suggested to LILO both circuit of 400 kV Farakka - Jeerut/Subhashgram lines at Sagardighi.

2.3.2 DGM (Engg), Powergrid stated that as per the studies done by them it was found that with dispensing the proposal of Sagardighi - Kahalgaon line and providing Parulia-Jamshedpur 400 kV D/C line, it would be better to provide 400 kV Sagardighi-Parulia S/C line and LILO only one ckt of 400 kV Farakka-Jeerut/Subhashgram D/C line at Sagardighi. Considering that the modification suggested by Powergrid would provide direct connectivity from Sagardighi to Powergrid s/s at Parulia from where inter-state trading could be facilitated through the proposed Parulia-Jamshedpur-Baripada line and utilising the existing and new transmission system from Jamshedpur and

Baripada onwards, and thus would provide alternate path for evacuation of power from Sagardighi, the system proposed by Powergrid was agreed.

2.3.3 For feeding power in to the grid from DPL Extn. Project of 1x300+1x660 MW, 200kV DPL-Bidhan Nagar D/C line and 400kV DPL-Parulia(PG) D/C line was agreed. It was also noted that 400kV Parulia-Jamshedpur-Baripada and also the regional transmission system beyond Jamshedpur/Baripada would be used in transmission of power that WBSEB would be trading on account of its increased availability of power that would include DPL power as well.

2.3.4 For feeding power in to the grid from Mejia (U5,6) and Chandrapura (U7,8), 220kV direct connection between Chandrapura and Maithon(PG) bypassing 220kV Kalyaneshwari s/s and Mejia-Durgapur(DVC) 220kV DC line were agreed. It was also noted that 400kV Maithon(PG)-Ranchi D/C line being provided as a part of Kahalgaon-II transmission system would also be used in transmission of power that DVC would be trading on account of its increased availability of power. E.D (Engg.), Powergrid stated that it would be in the interest of DVC to firm-up allocation of PPA for its power and preferably this could be done with beneficiaries in WR. If power from DVC projects was allocated to WR beneficiaries, the Ranchi-Rourkela-Raipur could be treated as associated transmission of DVC generation.

2.3.5 The proposal for 400 kV Baripara - Bhubaneswar - Behrampur - Gazuwaka D/C line with 40% series compensation on 400 kV Behrampur - Gazuwaka D/C line for providing required strengthening in the ER regional grid, so as to meet the increased regional transmission need on account of increased power coming to Baripada and to maintain power transfer capability of 1000 MW level upto Gazuwaka for which Gazwaka HVDC back to back link had been planned, was agreed. In regard to 400 kV S/S at Bhubaneswar it was discussed that the requirement of supplying power to Bhubaneswar corresponding to the 11th plan time frame would be satisfactorily met from the 400 kV Chandaka S/S of GRIDCO. As such, it was agreed that new 400 kV S/S of Powergrid at Bhubaneswar could be deferred for reconsideration at a later date and the proposed 400 kV line could connect directly to Chandka S/S. In regard to 400 kV S/S at Behrampur, WBSEB queried as to why a substation that would be serving to meet state specific requirement in GRIDCO system was proposed under regional scheme. Chief Engineer (I/C)(SP&PA) explained that 400 kV line from Bhubaneswar/Chandaka to Gazuwaka could not be taken directly, because of long distance and was required to be anchored at some point in-between. In this context, a cost effective solution of providing 400 kV S/S at Behrampur had been evolved. The studies indicated that off-take at this S/S was very little. However anchoring was required for providing reactive support. As such the proposed s/s at Behrampur was basically required for a regional system and the advantage to GRIDCO was incidental. In view of the above expansion, the proposal for 400 kV s/s at Behrampur as a regional scheme was agreed. In regard to choice between 400/220 kV vis-à-vis 400/132 kV at Behrampur it was decided that GRIDCO would examine this and intimate their findings to CEA and Powergrid and based on that the details of provision at 400 kV Behrampur S/S would be decided.

2.3.6 In regard to Berhampur-Gazuwaka line, it was decided this proposal be first discussed in the Standing Committee of Southern Region with 100% sharing by SR.

2.3.7 Accordingly, the following proposals were agreed:

- Regional scheme to be done by Powergrid:
  - 400kV Parulia-Jamshedpur-Baripada D/C
  - 400kV Baripada-Chandaka-Berhampur D/C line
  - 400kV s/s at Berhampur
- Sagardighi (2x300MW) interconnections (to be done by WBSEB):
  - LILO of one circuit of Farakkha-Subashgram 400kV D/C line at Sagardighi.
  - 400kV Sagardighi-Parulia(PG) S/C line
- DPL Extn. (300+600MW) interconnection(to be done by DPL/WBSEB):
  - 220kV DPL-Bidhannagar D/C line
  - 400kV DPL-Parulia(PG) D/C line
- Mejia(U5,6) interconnection(to be done by DVC):
  - 220kV Mejia-Durgapur(DVC) D/C line
- Chandrapura(U7,8) interconnection(to be done by DVC):
  - 220kV Chandrapura-Maithon(PG) D/C line by passing 220kV Kalyaneshwari S/S.

2.4 Changing twin moose conductor of 400 kV Siliguri - Purnea to high temperature conductor

2.4.1 CE(I/C), CEA stated that changing twin moose conductor of 400 kV Siliguri-Purnea D/C line to high temperature conductor was proposed considering that the second 400 kV Siliguri-Purnea D/C line which was being provided under Tala Transmission System was with Quad conductor and further considering loading on this section and the need of providing transmission capacity so that outage of any circuit on any of the 2 lines could be met. The proposal was agreed.

3.0 Evacuation System for Nabinagar(4x250MW)

The proposal as brought out in the studies circulated with the agenda viz 400kV Nabinagar-Sasaram D/C line and 400kV Nabinagar-Balia D/C line, was noted by the members. However, it was decided to reconsider this when clearer position for Nabinagar generation was available.

4.0 Evacuation system for Bokaro Extension (2x500 MW)

The proposal as brought out in the studies circulated with the agenda viz. 400 kV Bokaro-Ranchi D/C line and 400 kV Bokaro-Sasaram D/C line of which one circuit proposed via Hazaribagh where 400 kV S/S could be provided, was

noted by the Members. However, it was decided to consider this when clearer position for Bokaro Ext generation was available.

5.0 Evacuation system for North Karanpura (3x660 MW)

CE (I/C) CEA stated that in the studies circulated with the agenda note separate set of studies had been included - one set in which North Karanpura generation was not considered and another set in which North Karanpura generation was considered. This was done with a view to identify the part of evacuation system for North Karanpura that would fall within the Eastern Region and that would be inter-regional between ER-NR and ER-WR. Though some power from North Karanpura was also allocated to the beneficiaries in the Eastern Region, most of the power have to be evacuated for export out the Eastern Region. The studies had indicated the following requirement.

- North Karanpura-Ranchi 400 kV DC
- North Karanpura-Balia-Unnao 765 kV S/C
- North Karanpura-Sipat/ Korba Belt Pooling Point*-Seoni 765 kV S/C

*Sipat/ Korba Belt Pooling Point is proposed in WR where power from other WR projects in the area (Lanco etc.)would be pooled.

The studies had also indicated requirement of further strengthening in NR/WR which was required to be firmed up after further studies with focus on NR/WR system.

The proposal in respect of evacuation system for North Karanpura falling in the Eastern Region and inter-regional between ER-NR and ER-WR as stated above was generally agreed by the Members. It was decided that CEA would firm up the total evacuation system for North Karanpura including the part of the system for NR/WR and thereafter it would be discussed in the Standing Committee of NR/WR. As the power from North Karanpura would be mostly exported, the proposed 765 kV evacuation line from North Karanpura to Balia/Unnao for the Northern Region and from North Karanpura to Sipat/ Korba Belt Pooling Point-Seoni in the Western Region should be borne 100% by the respective importing regions. Only the 400 kV North Karanpura-Ranchi D/C line would be in the Eastern Region for which ER would bear the 100% transmission charges.

6.0 Evacuation system for Subansiri HEP (2000 MW)

The issues relating to evacuation system for Subansiri HEP (2000 MW) as brought out in the agenda note was discussed. Power Grid gave a presentation which highlighted the need of direct HVDC link from pooling point in NER to NR/WR and adopting 600kV HVDC transmission voltage while keeping scope for future upgrading to 800kV HVDC transmission system when this technology could be available. It was decided that a proposal would be discussed further after finalisation of the allocation of power from Subansiri HEP in NR/WR/ER Standing Committees.

7.0 Transmission system for evacuation of power from Teesta LD Sstage III (132 MW) and Teesta LD Stage IV (160 MW)

CE(I/C), CEA intimated that transmission system for evacuation of power from Teesta LD Stage III and Teesta LD stage IV was earlier planned on the basis of the commitment given by WBSEB that entire power would be absorbed by WBSEB. However, in the annual review meeting held in CEA on 13.12.04 in connection with the progress of transmission works of WBSEB, it was informed by WBSEB that they were not intending to avail 100% power from these HEPs. He inquired the same from WBSEB. Representative of WBSEB reiterated their stand that they were not intending to avail 100% power from Teesta stage III and IV. WBSEB also intimated that transmission works were held up as there was no response from the private construction company to take up the works. Chief Engineer (I/C) CEA stated that in view of the change scenario, NHPC would need to identify alternate buyer for purchase of power from these generating stations and evacuation system would also need to be re-firmed up. As NHPC representative was not present in the meeting, it was decided that CEA would take-up this matter with NHPC.

Meeting ended with a note of thanks to the chair.

Annex-I

List of the participants to the Standing Committee Meeting on transmission planning in Eastern Region held in Puri on 24.12.04

S/Shri

Name	Designation/Organisation	Tel. Nos.
CEA		
V. Ramakrishna	Member (PS),	011-26102721
A.K. Asthana	CE (I/C)	011-26102045
POWERGRID		
R.N. Nayak	ED (Engg),	0124-2571801
Y.K. Sehgal	DGM	0124-2571815
B Sharma	AGM,(O&M)	
EREB		
M.K. Mitra	SE	033-24236005
B. Sarkherl	EE	033-24235967
A. Roy	AEE	- do -
DVC		
Asuthosh Chakrabarti	DCE SPM,	
R.K. Das Gupta	DCE, Const	
WBPDCL		
K. Samanta	DGM	
WBSEB		
M.K. Ray	Member,	
A.K. Chattopadhyay	CE (CPEB)	
P.C. Saha	SE (Coml)	
DPL		
S.P. Datta	MD,	
A.K. Chakraborty	DGM (POWER)	
GRIDCO		
B.K. Behera	Sr. G.M. Corporate Plg.	
N.C. Sahu	Sr. Gen. Manager	
C.B.K. Mohapatra	Manager	
BSEB		
R.N. Sharma	Chief Engineer	0612-2226722
Rakesh	Sr. Engg,	
NTPC		
N.N. Mishra	GM (PE)	
Pramod Kumar	DGM (PEE)	
S.S. Barpanda	Chief Manager(O)	

Government of India
Central Electricity Authority
SP&PA Division
Sewa Bhawan, R.K. Puram
New Delhi-110066

No.66/5/99-SP&PA/ Dated : 10-12-2004

Sub: Corrigendum for Standing Committee Meeting on Power System Planning in Eastern region to be held on 24th December 2004 at Puri, Orrisa.

Ref: No.66/5/99-SP&PA/ Dated : 10-12-2004

Sir,

Agenda for the subject meeting has been issued vide letter referred above. Corrigendum to the agenda as mentioned below may please be noted:-

S.No	Item/para	Original	Read as
1	Under item 2, after para 4, add		Jamshedpur-Baripada 400 kV D/C
2	Item 3, para1	400kV Nabinagar-Biharsarif D/C	400kV Nabinagar-Sasaram D/C
3	Item 8, para 8.1,2nd para 2nd line	Nabinagar	Bokaro TPS
4	Set-1, Scenario-1, para 4	400kVBaripada-Bhubneshwar-……	400kV Jamshedpur-Baripada-Bhubneshwar-…
5	Set-1, Scenario-2 series, para 3	400kV Nabinagar-Biharsarif…	400kV Nabinagar-Sasaram…
6	Set-2, export scenerios,5th line	Kemeng HEP	Ranganadi HEP

22/12/04

(Remesh Kumar)
Director(SP&PA)

Revised incorporating the corrigendum

Revised Minutes of the Standing Committee Meeting of the Eastern Region for the issues relating to Power System Planning held at Puri on 24.12.04
(Minutes of meeting issued vide CEA letter 66/9/99/SP&PA/ 20.1.05)
(Corrigendum issued vide CEA letter 66/9/99/SP&PA/ 24.5.05)

List of the participants is at Annex - I.

Shri N.N. Mishra, GM, NTPC welcomed the participants on behalf of NTPC.

Shri V. Ramakrishnan, Member (PS), CEA thanked NTPC for arranging the meeting and welcomed the participants. Thereafter the agenda items were taken up for discussions.

1. **Confirmation of the minutes of Standing Committee Meeting held at Gangtok on 25.08.03.**

Sh. A.K. Asthana, CE I/C, CEA stated that minutes of the Standing Committee Meeting held at Gangtok on 25.08.03 were circulated vide CEA letter no. 66/9/99/SP&PA/688-99 dt. 19.09.2003. No comments had been received relating to recording of the minutes of the meeting. However, 400 kV Sagardighi - Kahalgaon S/C line which was proposed as regional system strengthening scheme was to be reviewed and discussion on the same was listed in the agenda for this meeting.

Sh. M.K. Mitra, SE, ERES pointed out that in the Minutes of the meeting, the heading " 4. Evacuation system for Teesta HEP St V" appeared to be a misprint as the discussions under para 4.1 related to Kahalgaon 400/220 kV S/S. Thereafter the minutes were confirmed with following correction:-

The heading of para 4 corrected to read as " 4. Kahalgaon 400/220 kV S/S"

2.0 **System strengthening scheme of ER**

2.1 **Need for System Strengthening in ER**

2.1.1 CE I/C, CEA stated that it was decided in the last meeting that in order to meet the requirements of transmission corresponding to programme of capacity addition in the ER and also taking care of requirements arising out of changes in the flow pattern on account of re-distribution of inter state power flows, suitable system strengthening scheme for ER would be taken up by Powergrid. In this context, based on inputs from Powergrid and some of the State Utilities, CEA had worked out proposal for strengthening of the transmission system in the ER. In formulating these proposals, scenarios of projected inter-regional power exchanges emerging from capacity growth in demand and the programme of generation capacity addition in the various regions was considered. He then gave presentation on the projected scenario of surplus power in the ER that was expected towards the end of 11th plan period. Copy of the presentation is at Annex - II.

2.1.2 The presentation highlighted that based on the programme of capacity addition in the ER and anticipated growth in demand, the ER would continue to remain in surplus condition and would be exporting increased quantum of power to Northern, Western and Southern Regions. For enabling the increased export, transmission capacity of the order of 15,000 MW would be required by the end of 11th plan. The quantum of exportable power of the order of 15000 MW was based on total benefit from 11th Plan projects which were envisaged up to 2011-12. This included a few late 11th plan projects such as Kodarma (1000 MW) and Benarpal (1000 MW), clear programme of which was yet to emerge. It was seen that the projects, which were having positive indications as of now, were mostly scheduled up to 2009-10. Accordingly, 2009-10 had been taken as the base year of studies. Corresponding to this time frame transmission capacity to export around 11,000 MW out of ER was required.

2.1.3 CE, BSEB stated that Bihar was not having any surplus power and was not getting any benefit from the transmission system meant for export of power from ER. As such, Bihar should not be imposed upon to share the transmission charges for the transmission system that was being proposed for enabling increased export from ER. He further stated that the transmission charges should be paid by those beneficiaries whose power was transmitted by the system and as Bihar was not benefiting they should not be asked to share the transmission charges.

GRIDCO representative stated that except their shares in the Generating Units at Duburi TPS, IB TPS Extn. and Balimela-II ,Orissa did not have share in any of the capacity addition projects of the Central Sector and State Sector Projects . In view of that, submission of commitment for Transmission charges for the new transmission system was not agreeable by them. He opined that the transmission charges should be borne by the users/identified Long-Term customers. He requested for consideration of a new methodology for sharing of Transmission charges on use basis.

2.1.4 SE (Commercial), WBSEB stated that decisions arrived at in the Standing Committee were taken as basis for commercial agreement which had implication for sharing of the transmission charges. As such, it was necessary to bring out the commercial issues also.

2.1.5 CE (I/C), CEA stated that the requirement of transmission system was on account of requirement of exporting the power from ER. The increased quantum of exportable power would be on account of addition in the generation capacity in the ER. The generation capacity addition in the ER included the following projects:

Teesta V	Hydro	NHPC	3x170 MW
Purulia PSS	Hydro	NHPC	4x225 MW
Teesta LD III & IV	Hydro	NHPC	292 MW
Kahalgaon -II	Thermal	NTPC	3x500 MW
Barh	Thermal	NTPC	3x660 MW
Nabinagar	Thermal	NTPC/Railways JV Company	4x250 MW
Mezia II-5,6	Thermal	DVC	2x250 MW

Bokaro Extn	Thermal	DVC	2x500 MW
Maithon RB	Thermal	DVC	2x500 MW
Chandrapur U-7,8	Thermal	DVC	2x250 MW
Durgapur DPL	Thermal	DPL	300+660 MW
Tenughat	Thermal	TVNL	2x210 MW
Sagardighi	Thermal	WB	2x300 MW
Bakareshwar	Thermal	WB	420 MW
Ramam	Hydro	WB	36 MW
Dubri	Thermal	Orissa	2x250 MW
Ib-Ex	Thermal	Orissa	2x250 MW
Balimela -II, DPH	Hydro	Orissa	210 MW
Jojobera	Thermal	TATA	120 MW

2.1.6 The above generation capacity addition programme included projects in the Central Sector as well as State Sector and the exportable surplus was on account of the combined effect of all the above capacity addition. For evolving the transmission system optimally, it was necessary to consider a comprehensive scenario and studies done by CEA had been on that basis. Accordingly, the transmission system strengthening schemes to be discussed and finalised on technical considerations would benefit additional generation capacities irrespective of these being in the Central Sector or State Sector.

2.1.7 Member (PS), CEA stated that so far the sharing of transmission charges for the regional transmission system of Powergrid had been on the basis of capacity allocation to the beneficiaries from Central Sector projects. However with change in scenario, the regional transmission system was required to support evacuation of power not only from Central Sector stations corresponding to allocations within the region and also outside the region, but also facilitate inter-state trading of exportable power arising out of State Sector generation capacity. In view of this, it was necessary to review the methodology of apportioning the transmission charges amongst the beneficiaries. The State utilities actively participating in trading and requiring additional incremental regional transmission system for this purpose should not expect the non-participants to share the transmission charges for the incremental system in the same way as for the existing transmission system. One possible methodology could be to apportion the transmission charges for regional system in proporation to total generation capacity of each beneficiary from the Central sector stations plus its own generation capacity from thermal units. This issue was required to be discussed and decided in the commercial committee of EREB. However, agreement in regard to the proposed schemes were required so that Powergrid could take up the schemes for completion in the required time frame matching with the programme of the Central as well as State sector generation. This was required so that power from the proposed capacity addition irrespective of its being in the Central Sector or State Sector, was not bottled up.

2.1.8 ED, Engineering, Powergrid, stated that commercial commitment for the transmission charges were required before taking up the scheme as this was a pre-requisite for the investment approval by the Government of India.

2.1.9 After further discussions, it was decided that necessary proposal for strengthening of the Eastern regional transmission system would be decided based on technical justification and Powergrid would take up preparation of feasibility report and initiate the process for investment approval. Simultaneously, EREB would take up the issue of sharing of the transmission charges amongst the beneficiaries in the Commercial Committee/TCC. The Committee members from the State Utilities would also take-up with their management to facilitate early agreement on this issue.

It was also decided that while preparing the transmission proposals and seeking their investment approvals ,Powergrid may prioritise the transmission schemes so that the schemes associated with the generation schemes slated to come earlier are not delayed. Accordingly Purulia-Jamshedpur-Baripada 400kV D/C line needs to be taken up in first phase.

2.1.10 Thereafter the specific proposals for system strengthening in the ER were discussed on the basis of load flow cases and justification as brought out in the agenda note.

2.2 400 kV Ranchi – Rourkela – Raipur D/C line (second 400 kV D/C line between Rourkela – Raipur) with TCSC on Rourkela – Raipur Section

2.2.1 Chief Engineer I/C, CEA stated that the above lines were required to enhance the power transfer capacity from ER to WR. ER would benefit through increased export and WR would benefit through increased import. He informed that this proposal was also discussed in the Standing Committee of WR .While the WR constituents had agreed to technical justification of this link, they had been insisting that Ranchi – Rourkela section of this link being totally in the ER, should be on account of the transmission charges of ER and the Rourkela – Raipur section be treated as inter regional link between ER and WR.

2.2.2 The members agreed to the technical justification for this link. However in regard to sharing the transmission charges, CE, BSEB reiterated their stand that Bihar was not having any surplus power and was not getting any benefit from the transmission system for export of power from ER and as such Bihar was not in a position to agree the sharing of transmission charges for this link. Sr. G.M (PS), GRIDCO stated that GRIDCO was also not likely to take advantage of the increased export capacity through that link and was not able to commit for sharing of Transmission charges. Member, WBSEB stated that as this link will be used for uni-directional supply to WR, the beneficiaries of WR should pay the full transmission charges.

2.2.3 Member (PS), CEA stated that CEA had already been insisting WR constituents to commit 100% transmission charges for the inter-regional portion of link, but they had not been agreeing. If there was no agreement, Powergrid would not be taking up this link for execution and the transmission system would not be available. Consequently, while WR constituents would be deprived of the possible increase in the power supply through import, the ER beneficiaries would also loose opportunity to export their surplus power. Increase in surplus power was to be on account of capacity addition programme and the characteristics of ER load demand which had a

predominant evening peak load but during other periods the demand was fairly low. If the transmission system for increased export was not available, the generation in ER would loose Load opportunity resulting in reduced PLF's and consequently, increased cost of power with in ER. As such it was also important for the beneficiaries of the ER, particularly those who would be active in exporting the power, that commitment for transmission charges for this line are facilitated and Powergrid could take up the project. He impressed upon DVC and WBSEB who were projected to be in surplus more or less on constant basis that they must come forward to make necessary commitment. He further stated that Gridco had also been exporting power and would continue to be an active player in trading. As such it would also be in their commercial interest that this commitment is facilitated.

2.2.4 On query regarding the transmission cost for this link, Powergrid stated that of the total length from Ranchi to Raipur, the Ranchi-Rourkela section would be about one third. However, cost-wise, Ranchi-Rourkela section would be further less because the Rourkela-Raipur section would have additional cost towards TCSC. Tentatively, of the total cost of the scheme of order of Rs 550 crores, Rs 150 crores would be for Ranchi-Rourkela section and Rs 400 crores for Rourkela-Ranchi section. He further stated that the link would benefit ER constituents not only in increased transmission capacity for export of surplus power but also in improved system stability and reduced losses. The Ranchi-Rourkela section of the link would provide exclusive benefit to ER in reducing losses.

After discussions it was decided that CEA would take up with the constituents of WR to make them agree for 100% transmission charges for the Rourkela – Raipur section of the line and DVC, WBSEB and Gridco would take up with their management to commit for the transmission charges of the Ranchi-Rourkela section as ER Regional line. The methodology for sharing of transmission charges amongst the beneficiaries of ER would be re-visited in the commercial committee.

2.3 **400 kV Parulia - Jamshedpur - Baripada D/C line**
400kV Baripada-Bhubneshwar-Behrampur D/C line
400kV s/s at Berhampur
400kV Behrampur- Gajuwaka D/C line with 40% series compensation
Evacuation System for Sagardighi (2x300MW)
Evacuation System for DPL Extn (1x300+1x660MW)
Evacuation System for Mejia (U5,6) and Chandrapura (U7,U8)

2.3.1 Chief Engineer I/C, CEA stated that 400 kV Parulia - Jamshedpur - Baripada D/C line was required for evacuation of surplus power from the eastern part of eastern grid and injection into central areas from where it would get further transmitted was found justified. In light of this the Sagardighi - Kahalgaon 400 kV line may not be needed as the re-distribution of power flows on account of capacity addition at Kahalgaon-II, Barh, Nabinagar etc. would result in reduction in power flow from Farakka/Sagardighi towards Kahalgaon and increase towards Jamshedpur. In this context, the evacuation

system for Sagardighi was also reviewed. Earlier it was proposed to LILO one circuit of Farakka - Jeerat/Subhashgram line at Sagardighi and provide Sagadighi - Kahalgaon 400 kV S/C line. In the revised proposal circulated with the agenda, it was suggested to LILO both circuit of 400 kV Farakka - Jeerat/Subhashgram lines at Sagardighi.

2.3.2 DGM (Engg). Powergrid stated that as per the studies done by them it was found that with dispensing the proposal of Sagardighi - Kahalgaon line and providing Parulia-Jamshedpur 400 kV D/C line, it would be better to provide 400 kV Sagardighi-Parulia S/C line and LILO only one ckt of 400 kV Farakka-Jeerat/Subhashgram D/C line at Sagardighi. Considering that the modification suggested by Powergrid would provide direct connectivity from Sagardighi to Powergrid s/s at Parulia from where inter-state trading could be facilitated through the proposed Parulia-Jamshedpur-Baripada line and utilising the existing and new transmission system from Jamshedpur and Baripada onwards, and thus would provide alternate path for evacuation of power from Sagardighi, the system proposed by Powergrid was agreed.

2.3.3 For feeding power in to the grid from DPL Extn. Project of 1x300+ x660 MW, 200kV DPL-Bidhan Nagar D/C line and 400kV DPL-Parulia(PG) D/C line was agreed. It was also noted that 400kV Parulia-Jamshedpur-Baripada and also the regional transmission system beyond Jamshedpur/Baripada would be used in transmission of power that WBSEB would be trading on account of its increased availability of power that would include DPL power as well.

2.3.4 For feeding power in to the grid from Mejia (U5,6) and Chandrapura (U7,8), 220kV direct connection between Chandrapura and Maithon(PG) bypassing 220kV Kalyaneshwari s/s and Mejia-Durgapur(DVC) 220kV DC line were agreed. It was also noted that 400kV Maithon(PG)-Ranchi D/C line being provided as a part of Kahalgaon-II transmission system would also be used in transmission of power that DVC would be trading on account of its increased availability of power. ED (Engg.), Powergrid stated that it would be in the interest of DVC to firm-up allocation of PPA for its power and preferably this could be done with beneficiaries in WR. If power from DVC projects was allocated to WR beneficiaries, the Ranchi-Rourkela-Raipur could be treated as associated transmission of DVC generation.

2.3.5 The proposal for 400 kV Baripara - Bhubaneswar - Behrampur - Gazuwaka D/C line with 40% series compensation on 400 kV Behrampur - Gazuwaka D/C line for providing required strengthening in the ER regional grid, so as to meet the increased regional transmission need on account of increased power coming to Baripada and to maintain power transfer capability of 1000 MW level upto Gazuwaka for which Gazwaka HVDC back to back link had been planned, was agreed. In regard to 400 kV S/S at Bhubaneswar it was discussed that the requirement of supplying power to Bhubaneswar corresponding to the 11th plan time frame would be satisfactorily met from the 400 kV Chandaka S/S of GRIDCO. As such, it was agreed that new 400 kV S/S of Powergrid at Bhubaneswar could be deferred for reconsideration at a later date and the proposed 400 kV line could connect directly to Chandaka S/S. GRIDCO shall intimate the availability of land required for

connectivity of PGCIL 400 KV line by way of 400KV bay extension at Mendhasal. In regard to 400 KV S/S at Berhampur, WBSEB queried as to why a substation that would be serving to meet state specific requirement in GRIDCO system was proposed under regional scheme. Chief Engineer (I/C)(SP&PA) explained that 400 kV line from Bhubaneswar/Chandaka to Gazuwaka could not be taken directly, because of long distance and was required to be anchored at some point in-between. In this context, a cost effective solution of providing 400 kV S/S at Behrampur had been evolved. The studies indicated that off-take at this S/S was very little. However anchoring was required for providing reactive support. As such the proposed s/s at Behrampur was basically required for a regional system and the advantage to GRIDCO was incidental. In view of the above expansion, the proposal for 400 kV s/s at Behrampur as a regional scheme was agreed. In regard to choice between 400/220 kV vis-à-vis 400/132 kV at Behrampur it was decided that GRIDCO would examine this and intimate their findings to CEA and Powergrid and based on that the details of provision at 400 kV Behrampur S/S would be decided.

2.3.6 In regard to Berhampur-Gazuwaka line, it was decided this proposal be first discussed in the Standing Committee of Southern Region with 100% sharing by SR.

2.3.7 Accordingly, the following proposals were agreed:

- Regional scheme to be done by Powergrid:
  - 400kV Parulia-Jamshedpur-Baripada D/C
  - 400kV Baripada-Chandaka-Berhampur D/C line
  - 400kV s/s at Berhampur
- Sagardighi (2x300MW) interconnections (to be done by WBSEB):
  - LILO of one circuit of Farakkha-Subashgram 400kV D/C line at Sagardighi.
  - 400kV Sagardighi-Parulia(PG) S/C line
- DPL Extn. (300+600MW) interconnection(to be done by DPL/WBSEB):
  - 220kV DPL-Bidhannagar D/C line
  - 400kV DPL-Parulia(PG) D/C line
- Mejia(U5,6) interconnection(to be done by DVC):
  - 220kV Mejia-Durgapur(DVC) D/C line
- Chandrapura(U7,8) interconnection(to be done by DVC):
  - 220kV Chandrapura-Maithon(PG) D/C line by passing 220kV Kalyaneshwari S/S.

2.3.8 Representative of the BSEB stated any discussion and decision arrived in the standing committee meeting should not be made basis for signing of the Agreement (BPTA) and filling petition before Hon'ble CERC. He added that this was due to the fact that standing committee mainly discussed the technical viability of the scheme .The scheme should take shape only after its commercial viability was agreed to and after signing of the BPTA by the each constituent of the Region. He stated that BSEB agreed on technical requirementsw of the above stated transmission system, however regarding sharing of the transmission charges he stated that the same should be borne by the user only.

2.4 Changing twin moose conductor of 400 kV Siliguri - Purnea to high temperature conductor

2.4.1 CE(I/C), CEA stated that changing twin moose conductor of 400 kV Siliguri-Purnea D/C line to high temperature conductor was proposed considering that the second 400 kV Siliguri-Purnea D/C line which was being provided under Tala Transmission System was with Quad conductor and further considering loading on this section and the need of providing transmission capacity so that outage of any circuit on any of the 2 lines could be met. The proposal was agreed.

3.0 Evacuation System for Nabinagar(4x250MW)

The proposal as brought out in the studies circulated with the agenda viz 400kV Nabinagar-Sasaram D/C line and 400kV Nabinagar-Balia D/C line, was noted by the members. However, it was decided to reconsider this when clearer position for Nabinagar generation was available.

4.0 Evacuation system for Bokaro Extension (2x500 MW)

The proposal as brought out in the studies circulated with the agenda viz. 400 kV Bokaro-Ranchi D/C line and 400 kV Bokaro-Sasaram D/C line of which one circuit proposed via Hazaribagh where 400 kV S/S could be provided, was noted by the Members. However, it was decided to consider this when clearer position for Bokaro Ext generation was available.

5.0 Evacuation system for North Karanpura (3x660 MW)

CE (I/C) CEA stated that in the studies circulated with the agenda note separate set of studies had been included - one set in which North Karanpura generation was not considered and another set in which North Karanpura generation was considered. This was done with a view to identify the part of evacuation system for North Karanpura that would fall within the Eastern Region and that would be inter-regional between ER-NR and ER-WR. Though some power from North Karanpura was also allocated to the beneficiaries in the Eastern Region, most of the power have to be evacuated for export out the Eastern Region. The studies had indicated the following requirement.

- North Karanpura-Ranchi 400 kV DC
- North Karanpura-Balia-Unnao 765 kV S/C
- North Karanpura-Sipat/ Korba Belt Pooling Point*-Seoni 765 kV S/C

*Sipat/ Korba Belt Pooling Point is proposed in WR where power from other WR projects in the area (Lanco etc.)would be pooled.

The studies had also indicated requirement of further strengthening in NR/WR which was required to be firmed up after further studies with focus on NR/WR system.

The proposal in respect of evacuation system for North Karanpura falling in the Eastern Region and inter-regional between ER-NR and ER-WR as stated above was generally agreed by the Members. It was decided that CEA would firm up the total evacuation system for North Karanpura including the part of the system for NR/WR and thereafter it would be discussed in the Standing Committee of NR/WR. As the power from North Karanpura would be mostly exported, the proposed 765 kV evacuation line from North Karanpura to Balia/Unnao for the Northern Region and from North Karanpura to Sipat/ Korba Belt Pooling Point-Seoni in the Western Region should be borne 100% by the respective importing regions. Only the 400 kV North Karanpura-Ranchi D/C line would be in the Eastern Region for which ER would bear the 100% transmission charges.
WBSEB representative submitted that regarding bearing the 100% transmission charges for 400 kV North Karanpura-Ranchi D/C falling in the Eastern Region ,WBSEB would not share the transmission charges for this line as WBSEB did not have any share in the North Karanpura STPS(3x660MW).

6.0 Evacuation system for Subansiri HEP (2000 MW)

The issues relating to evacuation system for Subansiri HEP (2000 MW) as brought out in the agenda note was discussed. Power Grid gave a presentation which highlighted the need of direct HVDC link from pooling point in NER to NR/WR and adopting 600kV HVDC transmission voltage while keeping scope for future upgrading to 800kV HVDC transmission system when this technology could be available. It was decided that a proposal would be discussed further after finalisation of the allocation of power from Subansiri HEP in NR/WR/ER Standing Committees.

7.0 Transmission system for evacuation of power from Teesta LD Sstage III (132 MW) and Teesta LD Stage IV (160 MW)

CE (I/C), CEA intimated that transmission system for evacuation of power from Teesta LD Stage III and Teesta LD stage IV was earlier planned on the basis of the commitment given by WBSEB that entire power would be absorbed by WBSEB. However, in the annual review meeting held in CEA on 13.12.04 in connection with the monitoring of the progress of transmission works of WBSEB, it was informed by WBSEB that they were not intending to avail 100% power from these HEPs. He inquired the same from WBSEB. Representative of WBSEB intimated that transmission works were held up as there was no response from the private Construction Company to take up the works. Chief Engineer (I/C), CEA stated that in case WBSEB was not intending to avail 100% power from these HEPs NHPC would need to identify alternate buyer for purchase of power from these generating stations and evacuation system would also need to be re-firmed up. As NHPC

representative was not present in the meeting, it was decided that CEA would take up this matter with NHPC.

8.0 Representative of WBSEB submitted that LILO of Rangit-Gangtok-Siliguri 132 KV D/C line of POWERGRID at 132 KV proposed Kurseong substat on was earlier discussed in EREB forum and subsequently in the EREB meet.ng held on 25.11.04,where it was opined by Powergrid that the matter might be taken up in the Standing Committtee metting of the Eastern Region. Representative of WBSEB expressed their difficulties in drawing EHV line in the unstable hilly terrain of North Bengal. He stated that possibility of LILO of Exiting NBU-Rammam 132 KV line at Kurseong substation or providing direct feed from NJP S/S of WBSEB were not possible due to hilly terrain. Since Rangit-Gangtok-Siliguri 132 KV D/C line of POWERGRID was passing close to Kurseong substation it was proposed to LILO Rangit-Gangtok-Siliguri 132 KV D/C line of POWERGRID at 132 KV Kurseong substation . POWERGRID agreed to the proposal of WBSEB."

Meeting ended with a note of thanks to the chair.