

# **EASTERN REGIONAL POWER COMMITTEE**

## **AGENDA FOR THE 12<sup>TH</sup> TCC MEETING**

**Date: 25.03.2010**

**Venue : Vedic Village, Kolkata**

---

### **ITEM NO.1 CONFIRMATION OF THE MINUTES OF 11<sup>th</sup> TCC MEETING OF ERPC HELD ON 03.12.2009 AT GANGTOK**

The minutes of 11<sup>th</sup> TCC meeting of ERPC were circulated vide letter no. ERPC/TCC&Committee/2010/2225-81 dated 21.01.2010.

No comment has been received from the constituent members on the minutes of the meeting.

**Members may please confirm the minutes of 11<sup>th</sup> TCC meeting.**

### **ITEM NO.2 FOLLOW UP ACTION ON THE DECISIONS OF PREVIOUS TCC/ERPC MEETINGS**

#### **ITEM NO.2.1 ISSUES PERTAINING TO ALLOCATION OF COAL VIS-À-VIS GENERATION FROM TALCHER STPS STAGE- I & II**

In the 12<sup>th</sup> ERPC meeting held on 04.12.09, constituent members had expressed their apprehensions that Talcher STPS stage II is being allocated more coal than stage-I and stage I coal is diverted by NTPC to stage-II with an intent to earn higher revenue. To remove their doubts, it was decided that a Committee will be constituted comprising of Member Secretary, ERPC, Director (Commercial), GRIDCO, Executive Director (TSTPS), NTPC and one officer of Talcher STPS.

As a follow up, ERPC constituted the Committee vide its letter dated 01.01.10. The first meeting of the committee was held on 4<sup>th</sup> March 2010 at Talcher STPS. NTPC, Talcher, made a presentation before the Committee, wherein the performance of Talcher Stage-I was compared with that of Stage-II. The same presentation was arranged in the 48<sup>th</sup> OCC meeting, and is also arranged for TCC and ERPC meeting.

Report of the committee is yet to be finalized.

During this visit to Talcher STPS by Member Secretary, ERPC, observed that:

- All facilities for Talcher Stage-I and Stage-II are common.
- Coal unloading, handling and storage systems are common
- Water Intake system is common
- Ash disposal system is common
- Infrastructure including township is common
- Output side, all transformers are parallel with the option of sending output to either SR or ER

Even then, the two stages are controlled separately, Stage I is controlled by ERLDC while Stage II by SRLDC. It makes lot of sense to make both of the stages only by ERLDC so as to optimise operational efficiency as and when need arises. This will make available the entire generation and sale data at one place for anyone's reference.

This new issue was also discussed in 48<sup>th</sup> OCC meeting, wherein ERPC cited 10% share of Orissa out of Talcher Stage-II (4x500 MW) capacity as additional reason for monitoring of both stages by ERLDC. Talcher, NTPC have no objection to this proposal. Members desired that the matter be taken up with Southern Regional counterparts.

**Members may please deliberate and discuss.**

## **ITEM NO.2.2 DEFINITION OF COAL SHORTAGE**

In the 12<sup>th</sup> ERPC meeting held on 04.12.09, definition of coal shortage was deliberated at length. In that meeting it was agreed to adopt same definition of 'Coal Shortage' as has been adopted by WBERC coal shortage definition of coal shortage as had been adopted by WBERC. NTPC were asked to go through the definition and revert back on its acceptance in the ensuing OCC meeting.

As a follow-up, ERPC Secretariat vide its letter dated 04.01.2010 forwarded to NTPC 'Coal shortage declaration' adopted by WBERC. NTPC comments (letter dated 03.02.2010) are reproduced below:

*"NTPC eastern region will operate under the coal shortage clause of CERC when usable coal stock shall be less than two days for the period from April to July & November to March and when usable coal stock shall be less than four days for the period from August to October. This is in line with WBERC."*

NTPC proposal was discussed in the 48<sup>th</sup> OCC meeting held on 10.03.2010, wherein GRIDCO representative pointed out as to who would who would verify the authenticity of coal shortage condition declared by NTPC.

Appreciating the concern of GRIDCO it was agreed to adopt the definition of coal shortage in line with the decision taken in the last RPC meeting. However, the verification aspect was agreed to be placed in the ensuing TCC meeting.

**Members may kindly deliberate.**

## **ITEM NO.2.3 SETTING UP OF 400 KV LAPANGA SUB-STATION NEAR JHARSUGUDA**

GRIDCO had proposed creation of a 400 kV S/s Lapanga near Jharsuguda with LILO of the existing 400 kV Rourkela-Raipur Interregional D/C line, as an intra-State transmission system. The issue was referred to CEA who had pointed out that long term transmission charges of 400 kV Rourkela-Raipur D/C line are pooled in WR system. Therefore by LILO of this line at Lapanga 400 kV S/s, GRIDCO would become the beneficiary of WR pool and liable to share the WR transmission charges as per CERC Tariff

regulation. If GRIDCO agrees to share WR pool transmission charges, the matter would be taken up by CEA with WR for their concurrence.

#### **DELIBERATION IN TCC MEETING**

It was suggested that GRIDCO should reply the letter of CEA with a copy to ERPC Secretariat for their agreement in this regard. GRIDCO agreed to take necessary action.

#### **DELIBERATION IN THE ERPC MEETING**

The agenda points and TCC deliberations thereof were noted.

**OPTCL/ GRIDCO may explain.**

### **ITEM NO. 3 FOLLOW UP ON THE ISSUES REFERRED TO ERPC BY THE STANDING COMMITTEE ON TRANSMISSION PLANNING IN EASTERN REGION**

The meeting of Standing Committee on Power System Planning in Eastern Region was held on 14.9.2009 at Bhubaneswar. The following transmission schemes were discussed and not accepted. Following is the present status:

- 3.1.0.** For immediate evacuation of power from Tilaiya UMPP(4000MW), 765kV Tilaiya UMPP–Sasaram S/C, Tilaiya UMPP– Gaya S/C, and Tilaiya UMPP – Balia S/C lines were earlier agreed. In view of space constraint at Sasaram, an additional 765kV Tilaiya UMPP– Balia S/C line instead of the 765kV Tilaiya – Sasaram line would be constructed forming two 765kV lines from Tilaiya UMPP to Balia. Thus, the revised system is,

- ✓ Tilaiya UMPP – Balia 765kV D/C line
- ✓ Tilaiya UMPP – Gaya 765kV S/C line

The modality of sharing Transmission charges for the above ATS shall remain the same as agreed earlier.

#### **DELIBERATION IN THE 12<sup>th</sup> ERPC MEETING**

BSEB opined that Tilaiya UMPP–Balia 765kV D/C line, in place of Tilaiya UMPP–Sasaram 765kV S/C line would increase the cost of ATS of Tilaiya UMPP, hence the beneficiaries of Tilaiya UMPP in ER would be additionally burdened for ever. Moreover, Eastern Region would be deprived of one 765kV connectivity, if not constructed at Sasaram.

**ERPC had suggested POWERGRID to explore the possibility to accommodate the Tilaiya UMPP–Sasaram 765kV S/C before finalisation of the above project.**

POWERGRID letter dated 18.03.2010 has informed that they have further explored the possibility to accommodate Tilaiyya – Sasaram 765 kV S/c line. There is no space for termination of the line at Sasaram sub-stations. Further, extension of the sub-station may also not be feasible due to inhabitation. Construction of a new 765 kV sub-station may not be cost effective. Therefore two circuits from Tilaiyya UMPP are proposed to be terminated at Balia.

However, share of power would be delivered to all the beneficiaries, as per planning criteria of CEA.

**Members may please discuss.**

**3.1.1** In view of change in the generation programme of IPPs in Orissa, the earlier agreed transmission system including pooling stations in Orissa had been revised/agreed as following.

- Establishment of 2x1500 MVA, 765/400kV Pooling Station at Jharsuguda
- Establishment of 4x1500MVA, 765/400kV Pooling Station at Angul
- Angul Pooling Station – Jharsuguda Pooling Station 765kV 2xS/c
- LILO of Rourkela – Raigarh 400kV D/c at Jharsuguda Pooling station
- \*LILO of Meramundali – Jeypore 400kV S/c line at Angul pooling station
- \*LILO of one ckt of Talcher - Meramundali 400kV D/c line at Angul pooling station

[ \* These LILO will be later disconnected when Angul pooling station is developed as 765kV as otherwise it would cause short circuit level problem.]

The transmission charges shall be borne initially by the generation developers. Once the generation developers identified the long term beneficiaries for their generation projects, the same shall be borne by the beneficiary state transmission utilities.

**DELIBERATION IN THE ERPC MEETING**

During the discussion, GRIDCO mentioned that the present scheme is appeared to be different from the original one. **After initial discussion, it was decided to take up this scheme in next ERPC meeting.**

**OPTCL/GRIDCO may please opine.**

**3.1.2 LILO OF 400kV MAITHON –JAMSHEDPUR D/C AT ADHUNIK TPS**

For immediate evacuation of power from Adhunik project (1005MW) in Jharkhand, it was decided in the standing committee that LILO of Maithon-Jamshedpur 400kV D/C at Adhunik will be the interim arrangement till the time 400kV Adhunik- Jamshedpur 400 kV system be established.

**DELIBERATION IN THE ERPC MEETING**

**It was decided that the Committee is not agreeable for any interim arrangement at planning stage. The evacuation scheme should be firm with its COD matching with the generation scheme, so that lenders too monitor and ensure that generation and transmission schemes are implemented together.**

POWERGRID (letter dated 18.03.2010) has informed that the generation developer has indicated through an affidavit submitted to POWERGRID on the directive of CERC that the date of commissioning of the generation project is Jan-2012. POWERGRID on its part has taken up the matter with Chief Secretary, Govt. of Jharkhand for possession of encroached land of its

Jamshedpur sub-station. However, so far the land has not come into the possession of POWERGRID. Therefore, the possibility of construction of a 400 kV D/c line from Adhunik generation project to Jamshedpur sub-station may not be feasible. In view of this, the other option of LILO of Maithon – Jamshedpur 400 kV D/c is the only feasible solution and this will not be an interim arrangement but a permanent solution.

**Members may discuss .**

**3.1.3 LILO of ER transmission lines at IPP generation projects**

OPTCL vide their letter dated 15.02.2010 had requested POWERGRID to intimate the status / permission for LILO in some of the 400kV line (ER assets) have been given to IPPs in Orissa which are not approved in ERPC meetings and such type of LILO may affect Orissa system stability.

While referring to OPTCLs letter, Member Secretary, ERPC expressed his apprehensions regarding allowing loop-in & loop-out of ER transmission lines at IPP generation projects without being discussed in the ERPC and desired the details from POWERGRID in respect to LILOs extended to IPPs during last two years.

In this context, Powergrid vide letter 26.02.2010, has informed that the matter of allowing LILO of 400kV lines of POWERGRID, as an interim arrangement was discussed in the Standing Committee meeting as well as meeting with developers of IPPs in Orissa during September,2009.

It was also brought out in the meeting with IPPs that the implementation of the transmission system identified for evacuation of power from some generation projects was not feasible in the given time frame and therefore it was decided that the 400 kV lines may be looped in and looped out at those generation project which may be having an early schedule. Accordingly, immediate interim evacuation arrangements for the following generation projects were decided:

Sterlite	<ul style="list-style-type: none"> <li>LILO of one ckt of Rourkela-Raigarh 400kV D/c line</li> </ul>
Ind Bharat	<ul style="list-style-type: none"> <li>LILO of other ckt of Rourkela-Raigarh 400kV D/c line</li> </ul>
GMR	<ul style="list-style-type: none"> <li>LILO of one ckt of Talcher-Meramundali 400kV D/c line</li> </ul>
Jindal	<ul style="list-style-type: none"> <li>LILO of Meramundali-Jeypore 400kV S/c line</li> </ul>

It was also decided in the same meeting with IPPs that this shall be an interim arrangement and shall be withdrawn after the project-specific system is in place. Based on the above, POWERGRID has now gone ahead for Regulatory Approval of Investment on the same.

**Members may please discuss.**

**ITEM NO.4 HIGHLIGHTS OF GRID PERFORMANCE FOR THE PERIOD NOVEMBER'09 TO FEBRUARY'10**

**4.1 FREQUENCY :**

Frequency profile for the period November'09 to February'10 is shown below:

	<b>Frequency</b>	<b>Frequency</b>	<b>frequency</b>
	<b>&lt;49.2 Hz</b>	<b>49.2 to 50.3 Hz</b>	<b>&gt; 50.3 Hz</b>
<b>Months</b>	<b>(IEGC Band)</b>		
<b>November'09</b>	0.45	93.97	5.58
<b>December'09</b>	0.54	97.39	2.07
<b>January'10</b>	3.37	95.06	1.57
<b>February'10</b>	0.35	98.02	1.63

From the above table it may be observed that:

- Frequency profile in the IEGC band ( i.e. 49.2 to 50.3 Hz) showed variation in between 93.97 to 98.02 % of the time during the abovementioned four months. In the month of January, 2010, the percentage of time the integrated system frequency remained below IEGC band was only 3.37%.

**4.2 PERFORMANCE REVIEW**

<b>Description</b>	<b>Average (MU) / Month</b>			<b>February'09</b>	<b>February'10</b>	<b>% change</b>
	<b>November'08 to February'09</b>	<b>November'09 to February'10</b>	<b>% change</b>			
<b>Net Generation (MU)/Month</b>	7451	7170	-3.8	7201	<b>7140</b>	-0.8
<b>Net Central Sector Thermal Generation (MU)/Month</b>	2320	2399	3.4	2359	<b>2532</b>	7.4
<b>Import from CPPs in (MU/Month)</b>	219	422	92.3	225	<b>399</b>	77.6
<b>ER Consumption (MU/Month)</b>	6206	6601	6.4	6155	<b>6495</b>	<b>5.5</b>
<b>Net Export to Outside Region (MU/Month) including transmission loss</b>	1465	990	-32.4	1271	<b>1045</b>	(-)17.8
<b>Regional Peak Demand Met (MW)</b>	11229	11872	5.7	11229	<b>11872</b>	<b>5.7</b>
<b>Peak Export (MW)</b>	3582	3615	0.9	2968	<b>3269</b>	10.1

**Generation:** During the period under review, the net generation has declined by 3.8% as compared to previous year. In spite of commissioning of a number of new units [BkTPS U# 4 & 5 (210 MW each), STPS #5 (250 MW) of WBPDC, CTPS U# 7 of DVC & KhSTPP U#7 of NTPC, Balimela Ext. U#8 (75 MW) of OHPC etc.] since January'09, the thermal energy generation did not rise mainly because of reported shortage of coal supply to the power stations and associated problems.

The central sector thermal generation in particular has shown improvement from December'09 onwards and in the month of February'10, the increase in generation recorded around 7.4 %. Further, the generation from CPPs observed considerable improvement with the commissioning of new units in Orissa (e.g. Vedanta, Jindal, NBFA etc.).

**Demand:** During the period under review, the regional peak demand met was 11872 MW (on 10.02.2010 ), an increase of 5.7% as compared to corresponding period of last year. The monthly average regional energy consumption was 6601 MU, showing an increasing trend around 6.4 % (approx) over the same period of the last year. With the rapid increase in demand of ER as well as lesser generation from state sector during the above period under review, the quantum of net power export to other regions has reduced considerably.

#### 4.3 MONTHLY AND CUMULATIVE EXPORT OF POWER FROM ER (BASED ON SEM FIGURES)

**Table: 1 (A) EXPORT**

Region To	Export in MU		Export in MU		% Growth in Export *	
	During February'10	Cumulative (November'09 to February'10)	During February '09	Cumulative (November,08 to February'09)	During February'10	Cumulative (November'09 to February'10)
NR	914.87	5011.26	723.11	3505.54	26.5	43.0
WR	0	0	153.87	638.9	-100.0	-100.0
SR	346.98	347.81	282.27	1454.42	22.9	-76.1
NER	172.91	529.65	72.7	146.13	137.8	262.5
<b>TOTAL</b>	<b>1434.76</b>	<b>5888.72</b>	<b>1231.95</b>	<b>5744.99</b>	<b>16.5</b>	<b>2.5</b>

#### B) IMPORT

Region From	Import in MU		Import in MU		% Growth *	
	During February'10	Cumulative (November'09 to February'10)	During February'09	Cumulative (November'08 to February'09)	During February'10	Cumulative (November'09 to February'10)
NR	0	0	0	0	NA	NA
WR	472.48	1800.77	0	0	NA	NA
SR	0	305.49	0	0	NA	NA
NER	0	0	0	40.69	NA	-100.0
<b>TOTAL</b>	<b>472.48</b>	<b>2106.26</b>	<b>0</b>	<b>40.69</b>	<b>NA</b>	<b>5076.4</b>
<b>Net Export from ER</b>	<b>962.28</b>	<b>3782.46</b>	<b>1231.95</b>	<b>5704.3</b>	<b>-21.9</b>	<b>-33.7</b>

\* As compared to similar period of last year. NA – Not Applicable.

## EXPORT/IMPORT OF POWER FROM / TO ER VIS-À-VIS SCHEDULE

**Table : 2**

**All Figures in MU**

Month	NR		WR		SR		NER	
	Schedule	Actual	Schedule	Actual	Schedule	Actual	Schedule	Actual
November'09	-1213.36	-1290.75	-11.37	387.5	295.15	265.43	-62.03	-64.04
December'09	-1104.38	-1437.5	-159.2	384.68	92.35	40.06	-134.23	-117.76
January'10	-1062.02	-1368.14	-223.22	556.11	7.89	-0.83	-147.55	-174.94
February'10	-784.00	-914.87	-58.2	472.48	-189.21	-346.98	-148.66	-172.91
<b>Total</b>	<b>-4163.76</b>	<b>-5011.26</b>	<b>-451.99</b>	<b>1800.77</b>	<b>206.18</b>	<b>-42.32</b>	<b>492.47</b>	<b>529.65</b>

(-) = Export from ER

(+) = Import to ER

During the period under review i.e. November'09 to February'10, the net export from Eastern Region was 3782 MU compared to 5704 MU in the corresponding period of previous year, showing a decline of 21.9 %. During the period November'09 to February'10, NR drew 5011 MU against its schedule of 4163 MU, an overdrawal of 20.3 % where as, WR injected 1800 MU to ER against its schedule of 452 MU and SR started injection from February,10 onwards.

### ITEM NO.5 IMPORTANT EVENTS :

a) LILO of 220 kV Joda-Jamshedpur at Jindal (Steel plant within Orissa system), near Lohanda was charged and synchronized for the first time at 20:27Hrs of 25/01/10. With this network reconfiguration, 220kV Jamshedpur-Jindal becomes the inter-state tie between DVC & Orissa systems.

b) LILO of 400 kV Maithon-Jamshedpur-I of Powergrid at Mejia (DVC) was charged and synchronized for the first time at 20:42 hrs of 29/01/10, thereby resulting in two ties namely, 400kV Maithon (PGCIL) - Mejia(DVC) and 400 kV Mejia(DVC)-Jamshedpur(PGCIL).

c) 400 kV Meramundali-Mendhasal-I of OPTCL was charged at 17:08 hrs of 31/01/10 for the first time. The 2X 315MVA 400/220KV ICTs at Mendhasal s/stn. in Orissa loaded upto 110MW at 18:56Hrs. to supply Chandaka load.

d) Budge-Budge Unit #3 (250 MW) of CESC has been declared under commercial operation w.e.f 28.02.10.

e) Trial operation of Free Governor Mode of Operation (FGMO) of generating units in ER was carried out by ERLDC on 16.02.2010.

f) KhSTPP U#7(500MW) of NTPC has been declared under commercial operation w.e.f 00:00 Hrs of 20.03.2010.

### ITEM NO.6 LOAD ABILITY TEST OF 400KV JEYPORE-GAZWAKA LINES WITH FSC AT JEYPORE

400kV Jeypore –Gazuwaka D/C line & 2 x 500MW HVDC module was constructed in two phases. In the first phase, 400kV D/C line and one module of 500MW B-t-B HVDC station have been commissioned. In order to reduce the transmission cost, only module of 500MW HVDC B-t-B added without any additional transmission lines in the second phase. Though as per CEA planning criteria (N -1) another transmission line was required.

In order to test whether the full capacity (1000MW) of the HVDC B-t-B converter station at Gajuwaka can be utilized even when one of the 400kV Jeypore-Gajuwaka circuits is under outage, the load testing of each of the circuits was carried out in Eastern Region.

- a. On 11.02.10, 400kV Jeypore-Gajuwaka circuit-II was tested for 975MW power flow (converter output 925MW) at around 17:30 Hrs.

The generation at Balimela and Indravati hydro stations in Orissa were enhanced to approximately 250MW and 340MW respectively to provide the requisite VAR support and better fault MVA, despite good system frequency and depleted hydro conditions in S. Orissa.

- b. On 22.02.10, the testing of Jeypore-Gajuwaka circuit –I was carried out, in which power flow was enhanced to around 900MW at around 16:54 Hrs.

Balimela provided around 105MW support while Indravati generation touched a maximum of 150MW.

It emerged that it may be possible to operate at much higher power transfer capacity provided matching VAR supply is available.

During both the operations, the respective line FSCs at Jeypore and all the filters at Gajuwaka (East) were kept in service. All this could be possible with active coordination of Eastern Region constituents particularly OHPC /OPTCL.

**This is for information please.**

## **ITEM NO:7 NETWORK CONSTRAINTS/ OPERATIONAL ISSUES**

### **ITEM NO:7.1 CONGESTION IN NORTHERN PART OF THE NETWORK(FARAKKA-MALDA 400KV D/C CORRIDOR)**

#### **Scenarios:**

- Winter ( period Dec to Mid Feb)
- Low Hydro Availability from Bhutan( Tala and Chukha), Teesta of NHPC, and NE Region during off-peak hours
- High winter Demand in Northern Region

The high demand in Northern Region as well NER during winter results in higher drawal from Eastern Grid as hydro availability in both the regions also gets depleted. The scarce Hydro availability within Bhutan, and Teesta causes thermal power from FSTPP to flow upwards along Farakka-Malda 400kV D/C corridor. Frequent congestion has been observed along this corridor as the power in Farakka-Malda 400kV D/C often exceeds 1000MW.

Although TCSC at Purnea provides desired stability margin along Tala associated Transmission system, yet during winter, the FSCs at Purnea is kept bypassed as the lower impedance across Purnea-Muzaffarpur section aggravate the congestion at 400kV Farakka – Malda D/C line.

An additional 400kV link from Gokarno to Binaguri or Gorkarno-Malda-Purnea will help to ease the congestion. The issue was deliberated during the TCC/ERPC meeting held at Gangtok, Sikkim on 3<sup>rd</sup> & 4<sup>th</sup> Dec'2009.

It was decided that Powergrid will carry out detail study on the proposal of ERLDC and submit it to next ERPC & Standing Committee meetings for approval.

**Powergrid may please opine.**

### **ITEM NO:7.2 CONGESTION IN SOUTHERN PART OF THE NETWORK**

#### **Scenarios:**

- Winter (Normally Dec to June) .
- Low Hydro Availability in Orissa/Southern Region
- Lower demand in WR and NR(particularly during March)

The following lines are observed to be heavily loaded:

- **400kV Kolaghat-Baripada S/C( when higher generation at Kolaghat)**
- **400 kV TSTPP-Rourkella D/c(towards Talcher)**
- **400 kV Meramundali-Jeypore S/c (towards Jeypore)**
- **400 kV Rengali-Indravati-Jeypore (towards Jeypore)**
- **220 kV Budhipadar-Tarkera D/c (towards Tarkera)**
- **Reduced Bus voltages at Jeypore and adjoining areas**

Under such conditions SR gets a heavy drawal schedule due to lack of hydro within SR. As a result NR/WR power is wheeled to SR via ER resulting in overloading of the above mentioned lines. During off-peak period due to lesser number of hydro machines are on bar in South Orissa, the system voltages at Jeypore and adjoining areas remains low.

Early Commissioning of 400kV Parulia – Jamshedpur – Baripada – Mendhasal will provide some relief.

**ERLDC may please opine.**

### **ITEM NO:7.3 CONGESTION IN DVC NETWORK**

Presently Mejia TPS is having a capacity of 1340MW (4x210MW + 2x250MW). Further Capacity addition programme within DVC is in progress and 2x250MW units will be generating at Chandrapura shortly. With an average DVC demand of around 1700 MW, DVC is in a position to export to the tune of 400-500MW. There has been Long Term allocations from DVC to Western region, Northern Region and West Bengal system to the tune of 450MW. In the event of higher generation at Mejia ( if 6 units are in operation), DVC may faces serious evacuation constraints. DVC has the major grid connectivity only at the following points:

- i) 220kV Maithon (PGCIL) –Kalyaneswari(DVC) D/C
- ii) 220kV Durgapur(PGCIL)- Parulia(DVC) D/C
- iii) 220kV Bidhannagar(W Bengal) -Waria D/C
- iv) 220kV Jindal (Orissa)-Jamshedpur S/c

There has been a significant load growth adjoining Kalyaneswari S/S of DVC in recent past. The export through Kalyaneswari, coupled with higher demand fed from Kalyaneswari, the 220kV Mejia -Kalyaneswari normally remains highly loaded. In case of tripping of any major unit within West DVC system ( i.e. Bokaro and CTPS) , the overloading occurs in 220kV CTPS-Mejia

sections. Any outage of 220kV D/C loops between CTPS, Mejia and Kalyaneswari poses at times serious threat within DVC system that might lead to isolation of Western and Eastern part of DVC. The generation from 2x250MW at CTPS is expected to further aggravate the problem. Although DVC has a programme of making LILO of CTPS-Mejia D/C at Kalyaneswari , unless a 400kV network is built up within DVC , the long term evacuation for beneficiaries outside DVC area would always a threat to security. It may be mentioned over here that both 2x250MW units at CTPS and 2x250MW at MTPS are essentially for the purpose of export to beneficiaries outside DVC valley area. Further, as per its master plan of transmission system augmentation, while LILO of one circuit of Maithon(PG)-Jamshedpur(PG) at MTPS “B” has already been completed, DVC may expedite construction of the other lines and the associated sub-stations, viz:

1. 400KV D/C Transmission Line from MTPS 'B' to Maithon (PGCIL)
2. LILO of one circuit of Durgapur (PGCIL) to Jamshedpur(PGCIL) D/C line at Durgapur Steel TPS (400 kV D/C LILO line)
3. LILO of one circuit of Maithon (PGCIL) to Ranchi (PGCIL) D/C line at Raghunathpur TPS (400 kV D/C LILO line)
- 4 . 400KV D/C Transmission Lines (a) from DSTPS to Raghunathpur TPS and (b) from Raghunathpur TPS to Ranchi ( PGCIL)

However, the Transmission systems which are under construction would provide relief in the short run:

Sl. No.	Transmission Line	Expected Date of Completion
1	LILO of 220KV CTPS-Kalyaneshwari at Dhanbad	Work in progress, March,2010
2	220KV CTPS-Pithakari(PG) (bypassing Kalyaneshwari)	To be commissioned matching with CTPS unit#7
3	LILO of 220KV CTPS-Mejia at Kalyaneshwari and extension to Pithakari(PG)	Completed and charged from DVC end.

**DVC may please comment.**

#### **ITEM NO: 7.4 CONGESTION IN BSEB NETWORK**

At present Bodhgaya, Khagaul, Dehri and Arrah 220kV S/stns. of BSEB are generally being supplied from Biharshariff, Patna (PGCIL) and Sasaram(PGCIL) respectively. 220kV Bodhgaya-Dehri D/C is generally kept open to avoid overloading of 220kV Sasaram-Dehri which is present a single circuit. 220kV Arrah-Khagaul is also kept open to avoid low voltage at Khagaul and Khagaul load is supplied from Patna (PGCIL). Further, while one of the circuits of Fatuah-Khagaul line has been charged at 220kV and made LILO at Patna (PG). 220kV Fatuah-Patna S/C line section is not operational since long. The 220kV loop in BSEB can be completed for better reliability of supply only after both the circuits of Fatuah-Khagaul are made LILO at Patna and operated at 220kV and one more 220kV circuit of Sasaram-Dehri is constructed.

**BSEB may therefore take necessary action as above, at the earliest.**

## **ITEM NO.8 PROGRESS OF CONSTRUCTION OF TRANSMISSION LINES AND GENERATING UNITS**

The Statement showing the present status of ongoing transmission scheme & generating units (indicating the constraints etc.) as per the information available to ERPC Secretariat (as on 31.01.2010) is enclosed at **Annexure – A & B.**

The constituents are requested to furnish the revised target dates and related information in respect of the transmission lines & generating units in their respective systems.

### **COMMERCIAL MATTERS**

## **ITEM NO. 9 PAYMENT OF UI -- PRESENT STATUS**

The status of UI payment as received from ERLDC as on 26.02.2010 is enclosed at **Annexure-I.**

The current principle outstanding (2009-10) UI dues of BSEB as on 26.02.10 is **Rs.7934.56177 lakhs** considering bill up to 07.02.2010. In addition to this BSEB is required to pay an interest amount of **Rs.385.36974 lakhs** for the year 2009-10 due to delayed payment of UI charge calculated as on 28.02.2010. Thus the total payable amount by BSEB is **Rs.8319.93151 lakhs.** BSEB may confirm the programme for payment of outstanding UI dues for (2009-10) as well as interest amount for the year 2009-10. JSEB and GRIDCO have also an outstanding amount of **Rs.2237.48036 lakhs** and **Rs.6798.83864 lakhs** respectively considering bill up to 07.02.2010 as submitted by ERLDC. JSEB & GRIDCO may also confirm the programme of payment of outstanding UI dues. Letters have also been issued by ERLDC to BSEB, JSEB and GRIDCO for early liquidation of the outstanding dues. Moreover, GRIDCO has to pay an amount of **Rs.36.79430 lakhs** as interest amount due to delayed payment of UI charges calculated as on 28.02.2010.

### **Deliberations in the 12<sup>th</sup> Commercial Sub-Committee meeting**

*BSEB representative was not present in the meeting. It was requested in the meeting that BSEB, JSEB and GRIDCO should take immediate action for liquidation of outstanding UI including interest thereon as early as possible.*

Further, as submitted by ERLDC, the status of UI payment as on **12.03.2010** is enclosed at **Annexure-II.**

### **For BSEB :**

- i) Principal outstanding (UI): **Rs.89, 06, 25,756.**
- ii) Interest amount due : **Rs.3, 85, 36,974**
- iii) Total amount payable : **Rs.92, 91, 62,700**

### **For GRIDCO :**

- i) Principal outstanding (UI) : **Rs.62,57,03,012**
- ii) Interest amount due : **Rs.36,79,430**
- iii) Total amount payable : **Rs. 62,93,82,442**

**For JSEB :**

i) Principal outstanding (UI) : **Rs.24,78,28,286**

**BSEB, JSEB and GRIDCO may confirm their programme for payment of above outstanding dues.**

**B) REACTIVE ENERGY POOL ACCOUNT -- STATUS AS ON 03.03.2010**

The updated position of Receipt/Payment of Reactive Energy Charges in the pool as on 03.03.2010 considering bill upto 14.02.2010 as received from ERLDC is indicated at **Annexure-III**.

**Members may please note.**

**C) 'IRE POOL' ACCOUNT OF ER WITH SR – PRESENT STATUS**

As informed by ERLDC, the statement of IRE between ER and SR has been sent for reconciliation from week No. 1 to 38, i.e., upto 20.12.2009 and the net amount receivable from SR is **Rs.2535.15796 lakhs**. SR has already confirmed the amount but the same is yet to be received.

**This is for information to the members.**

**D) POOL BALANCE DUE TO CAPPING OF NTPC STATIONS IN ER / ADDITIONAL UI CHARGE**

As received from ERLDC, an amount of **Rs.1789.36706 lakhs** and **Rs.3092.45482 lakhs** are available as capping amount and additional UI charge respectively for the year 2009-10. Moreover, an amount of **Rs.5005.8795 lakhs** and **Rs.12153.10284 lakhs** are also available as capped amount for the year 2007-08 and 2008-09 respectively. Thus total amount of **Rs.18948.35 lakhs** is available as capped amount as on date.

**This is for information to the members.**

**E) RECONCILIATION OF UI POOL ACCOUNT**

The statement of reconciliation of UI account for the period from April'09 to September'09 sent to all constituents on 06.10.2009 by ERLDC for checking at their end and confirmation. No confirmation has yet been received from BSEB and Sikkim. Reminders have also been issued to BSEB and Sikkim for confirmation of the same.

Similarly, the statement of reconciliation of UI account for the financial year 2007-08 and 2008-2009 had also been sent by ERLDC to all constituents and confirmation received from all the constituents except BSEB and Sikkim.

As per decision of 11<sup>th</sup> Commercial Committee meeting held on 16.11.2009 at ERPC, Kolkata :

**Quote**

After detailed deliberation, it was decided that if no confirmations are given by the concerned constituents within 15.12.2009, it would be presumed that the statement of reconciliation of UI account for the financial year 2007-08 and 2008-09 sent to the constituents by ERLDC deemed to be in order.

**Unquote**

In view of the above the reconciliation of UI Account for the financial year 2007-08 and 2008-09 gets settled.

Deliberations in the 12<sup>th</sup> Commercial Sub-Committee meeting

*As per the decisions of the 11<sup>th</sup> Commercial Sub-Committee meeting held on 16.11.2009 and subsequent non-receipt of confirmation from BSEB and Sikkim within 15.12.2009, it was decided that the statements of reconciliation of UI account as furnished by ERLDC got settled for the year 2007-08 and 2008-09. For the period from April'09 to September'09, BSEB and Sikkim were requested to settle it as early as possible so that the same could be placed before the ensuing TCC meeting scheduled to be held on 25.03.2010. GM, ERLDC suggested that the reconciliation of UI account should be done more frequently, preferably on weekly or at least on monthly basis.*

**BSEB & Sikkim may please submit the latest status**

**Members may please discuss.**

**ITEM NO. 10: DEEMED GENERATION OF TEESTA STAGE-V**

Teesta Stage-V Power Station had to be completely shutdown for 44 days in 2008-09 due to high siltation. In addition to the loss of generation suffered by NHPC, the Eastern Regional constituents also suffered due to non-availability of cheap hydro power from Teesta Stage-V Hydro Power Station. In the 7<sup>th</sup> meeting of ERPC held at Ranchi on 26.07.2008, in the course of discussions on deemed generation of Rangit HPS, it was decided that "Member Secretary, ERPC would convene a meeting at Teesta Stage-V in which, besides ERPC, ERLDC & NHPC, experts from all beneficiary constituents would also participate and to take stock of the situation and submit a report to Chairperson, ERPC. In future, while deciding the claim of deemed generation etc of Teesta Stage-V, if any, the findings and recommendations would also be considered".

Accordingly, ERPC Secretariat held a meeting on 29<sup>th</sup> August 2008 at Teesta Stage-V, Baltur East Sikkim in which besides the representatives of NHPC, representatives from GRIDCO, OHPC, WBSEDCL, Government of Sikkim, ERLDC and ERPC were present. The members also made an on-the-spot visit of the dam site of Teesta Stage-V.

In the meeting at Teesta Stage-V, Shri D. Chattopadhyay, Chief Engineer (I/C), Teesta (Stage-V) PS gave a detailed presentation covering every aspect related to the problem. He also gave a video presentation which captured aerial view of the upstream Teesta River to pin point the problem areas. After the detailed presentation, the following points emerged :-

- 1.a) On 17<sup>th</sup> May 2008, it was observed that silt content surpassed 11995 PPM and powerhouse was shutdown on 17<sup>th</sup> May 2008 for 3 days upto 19<sup>th</sup> May 2008 when the silt content came down to around 5000 PPM.
- b) Again, on 4<sup>th</sup> June 2008, the silt content rose to beyond 9000 PPM & powerhouse was shutdown on 4<sup>th</sup> June 2008 and power generation resumed on 5<sup>th</sup> June 2008.

- c) On 10<sup>th</sup> June 2008, the PPM was observed to be above 10000 and powerhouse has shutdown for 12 hours.
  - d) On 12<sup>th</sup> June 2008, the PPM content was observed to be above 18000 PPM and powerhouse was shutdown. The PPM rose to above 100000 and remained continuously high leading to prolonged shutdown upto 23<sup>rd</sup> July 2008. The reservoir was flushed during this period and then filled up. The generation was resumed on 25<sup>th</sup> July 2008.
  - e) NHPC tried to locate source of silt. Landslides were reported in a tributary called Tolunmchu. Aerial surveys were carried out to assess the extent of damage.
2. The siltation problem faced in the year 2008 was unprecedented as was evident from the following table presented during deliberation by NHPC :

Period (Year/ Month)	Unit	April (Max/Min)		May		June		July (Max/Min)	
		Max	Min	Max	Min	Max	Min	Max	Min
Year-2000	PPM	329	72	1767	267	2214	419	2405	1292
Year-2001	PPM	543	154	3520	536	5778	1751	1918	1615
Year-2002	PPM	3369	389	1228	1226	4053	1298	4130	3258
Year-2003	PPM	1373	1301	1338	1251	3092	1275	10338	2565
Year-2004	PPM	853	834	1463	804	3100	1280	2900	2575
Year-2005	PPM	4756	108	2048	80	1747	169	2983	260
Year-2006	PPM	260	110	1021	270	1367	570	1309	669
Year-2007	PPM	172	147	479	170	3306	320	2258	907
Year-2008	PPM	<b>9398</b>	<b>133</b>	<b>21580</b>	<b>780</b>	<b>100050</b>	<b>2070</b>	<b>33391</b>	<b>2125</b>

It was stressed by NHPC during presentation that the siltation problem was unique and NHPC had no clue before hand for such a natural calamity and its origin.

It emerged from the presentation that on the upstream side there are a number of major tributaries of river Teesta. One of such tributaries is Tolungchu. There was heavy landslide and consequent siltation on both sides of Tolungchu as was captured pictorially during aerials survey.

It was clarified by Shri P. Wangchen, Secretary (Power), Government of Sikkim that the area adjoining the tributary Tolungchu is quite inaccessible. There was no road to approach the tributary. In fact, he informed that because of inaccessibility of the entire upstream course of Teesta, it was not possible to immediately find out the source of siltation. He thanked NHPC for making sincere efforts in locating the source of siltation problem. He assured that Government of Sikkim in co-ordination with NHPC would take necessary action to reduce the siltation problem in future.

3. The origin of the siltation problem lies in Tolungchu tributary on both sides of which are having dense reserved forest. Therefore, the involvement of Government of Sikkim particularly the Deptt. of Environment & Forest is required.

After a thorough deliberation, the followings were decided unanimously :

- a) As per the data furnished by NHPC, the siltation problem faced by Teesta (Stage-V) in 2008 was un-expected and was beyond the control of NHPC.
- b) Teesta (Stage-V) PS remained under shutdown as the siltation level reached much higher than the permissible limit of 5000 PPM. In fact, the highest PPM recorded was of the order of 1,00,000.
- c) On suggestion of Member Secretary, ERPC, NHPC agreed to undertake the catchment area treatment. Shri P. Wangchen, Secretary (Power), Government of Sikkim agreed to extend necessary assistance to NHPC to undertake the work.
- d) NHPC will be monitoring the catchment area through remote sensing studies in future.

In the Commercial Sub-Committee held on 11.11.2008 and in the TCC meeting of ERPC held on 21.11.2008, members noted the reporting of visit by ERPC team to NHPC Teesta Stage-V.

Subsequently, ERPC has received a letter no. NH/COMM/F/2009/422-24 dated 06.05.2009 from NHPC in which they have indicated that as the deemed generation is permissible only up to the level of design energy during a year, the maximum permissible deemed generation is 685.95 MU after accounting for the actual generation of the power station, whereas the deemed generation as per calculation is worked out 534.78 MU (as given in the Annexure-IV). Invoking the Clause 41 of CERC Regulation dated 26.03.2004, NHPC has submitted that the present case fulfills all the following criteria for qualifying the deemed generation :

- a) Energy generated should be less than the Design Energy during the year.
- b) Loss of generation should be beyond the control of the generator.
- c) There should be spillage of water.

In view of above, NHPC requested that the deemed generation of 534.78 MU for Teesta Stage-V Power Station for the year 2008-09 may please be certified.

*Deliberations in the 10<sup>th</sup> Commercial Sub-Committee meeting*

*Chief (Finance), NHPC described in details the reasons for shut down of Teesta Stage-V Power Station for 44 days in 2008-09 due to high siltation. He highlighted the decisions taken in the meeting on 29.08.2008 at Teesta Stage-V during the visit of ERPC team. He informed that, in accordance with the Clause 41 of CERC Regulations dated 26.03.2004, deemed generation to the extent of 534.78 MU is payable by the beneficiaries of Teesta Stage-V. He requested the beneficiaries of Teesta present in the meeting to accord approval for the payment of the above deemed generation.*

*Beneficiary constituents of Teesta Stage-V present in the meeting requested NHPC to indicate the actual financial implications involved in admitting the above deemed generation. NHPC representative informed that since the*

*present tariff of Teesta Stage-V is provisional and the proposal for finalization of tariff is pending before CERC, the exact financial implications would be known after the tariff is finalized. The beneficiary constituents of Teesta Stage-V requested NHPC to submit afresh the proposal of deemed generation of Teesta Stage-V, indicating therein the financial implication for each beneficiary, once the tariff of Teesta Stage-V is approved by CERC.*

In the meanwhile, ERPC Secretariat has received a letter dated 04.03.2010 from NHPC in which NHPC has indicated that consequent upon the finalization of tariff order of Teesta Stage-V by CERC vide Petition No. 132/2009 dated 05.01.2010, the financial implication of the said deemed generation has been worked out to the tune of Rs.1.83 crores. Copy of the letter received from NHPC is given in **Annexure- IV**.

*Deliberations in the 12<sup>th</sup> Commercial Sub-Committee meeting*

*The beneficiary constituents of Teesta Stage-V present in the meeting unanimously decided that they have no objection in admitting the deemed generation claim to the extent of Rs.1.83 crores, if it is in accordance with the relevant CERC regulations.*

*JSEB suggested that some mechanism should also be in place in the regulation so that the Distribution Companies can recover this payment from the consumers from retrospective effect.*

*The matter is referred to TCC for approval.*

**Members may please discuss and approve.**

**ITEM NO.11 PROCUREMENT OF 2 NOS. 315 MVA, 400/220 KV AUTO TRANSFORMER AND 1 NO. 50 MVAR SHUNT REACTOR AS O&M SPARE -- PROPOSAL RAISED BY PGCIL**

In the 41<sup>st</sup> OCC meeting held on 18.08.2009, Powergrid gave the following proposal :-

Powergrid Eastern Region Transmission System is about 20 years old and the failure rate of equipment is increasing. Although EHV class equipment is meant for expected life span of about 25 years, it has been felt on the basis of operating experience that some of the equipment are failing prematurely resulting in losses to the power utility. Presently, Powergrid Eastern Region is maintaining about 35 nos. of 315 MVA, 400/220 kV ICTs and 22nos. of 50 MVAR shunt reactor. Along with ageing the ICTs and shunt reactors are having problems of gases. As per our experience, in case of failure of ICT, the time consumed in repair / supply of new transformer takes minimum one year time which severely affects the downstream power supply Considering the vulnerability of transformer and geographical approach, two number of 315 MVA, 400 / 220 KV Auto Transformer, one at Biharshariff and another at Durgapur S/s and one no. 50 MVAR shunt reactor at Rourkela as O&M spare will ensure quick restoration in case of failure of ICT and Reactor.

In view of above, it was proposed by PGCIL to procure two number of 315 MVA, 400 / 220 KV Autotransformer and one no. 50 MVAR shunt reactor at strategic location as mentioned above so that in case of any failure fast restoration is assured.

In the above meeting beneficiary States in-principle agreed for the requirement of 2 nos. of spare Autotransformer and one reactor. However, as the matter involves additional capital expenditure and may have commercial implications on transmission availability calculation, members decided that PGCIL might refer the matter to CERC.

Subsequently, Powergrid resubmitted the above proposal in **46<sup>th</sup> OCC meeting held on 12.01.2010**. In this meeting Powergrid informed that NRPC constituents had already agreed for similar type of proposal of Powergrid in the 13<sup>th</sup> TCC and 14<sup>th</sup> NRPC meeting held on 18<sup>th</sup> and 19<sup>th</sup> September 2009 wherein sharing of cost has been pooled in Regional Transmission Charges of NR. In view of this, Powergrid requested the ERPC constituents for agreeing for procurement of spare auto transformer and reactor.

In the above OCC meeting PGCIL was advised to submit detailed report justifying the need for such transformers on the basis of their operational experience, failure rate of existing transformers, the number of transformer envisaged, the cost of such transformer and how it would yield benefits. It might also consider to include the requirement of constituents also within the same proposal.

It was decided that PGCIL might get a copy of this report sent to the constituents for their perusal, so that they are fully aware of the usefulness. Thereafter, the issue could be taken up in the next OCC meeting.

The issue was further raised in the **47<sup>th</sup> OCC meeting held on 11.02.2010**. Deliberation in the OCC meeting is as follows :

“PGCIL had circulated a report on the above issue to all the constituent states vide its letter dated 08.02.10 and copy of the same was also circulated among the beneficiary States during the meeting. Representative from BSEB, WBSETCL and OPTCL intimated that they would communicate their views in due course. Representative from OPTCL suggested that the above mentioned spare 3-phase Auto-transformers be allowed to be used by constituent states on commercially agreeable terms and conditions. Representative from PGCIL did not agree to his proposal. M S, ERPC advised that it not a stage to disagree.

It was decided that a meeting with representative from transmission licensees of constituent states would be held separately before the next OCC so that issues / clarifications, if any, from the constituents may be deliberated and a final decision may be taken in the next OCC meeting.”

Subsequently, ERPC has received a proposal from Powergrid vide letter dated 04.03.2010 for procurement of above transformers. The proposal is enclosed at **Annexure-V**.

*Deliberations in the 12<sup>th</sup> Commercial Sub-Committee meeting*

*It was informed in the meeting that the proposal of Powergrid for procurement of two numbers of 315 MVA, 400 / 220 KV Autotransformer and one number 50 MVAR shunt reactor as O&M spare had been accepted by the constituents in the 48<sup>th</sup> OCC meeting held on 10.03.2010 for operational purposes. During the deliberation, it was informed by Powergrid that the additional annual transmission charges on account of the above procurement would be around Rs. 5 crores. It was informed by ERPC that the existing monthly transmission*

charges is around Rs.61 crores. To this, additional amount to the extent of Rs.0.4 crore per month would be added to the transmission charges. After detailed deliberation, members decided the following :

- i) To increase the operational reliability of the grid, two numbers of 315 MVA, 400 / 220 KV Autotransformer and one number 50 MVAR shunt reactor should be procured as O&M spare. One transformer would be kept at Biharshariff, another at Durgapur S/s of Powergrid and one number shunt reactor should be kept at Rourkela.
- ii) These would be treated exclusively as regional elements. The transmission charges would be borne by the beneficiaries of the Eastern Region.
- iii) Spare transformers and reactor should be used for the CTU network of the Eastern Region only.
- iv) Before utilizing the spare transformer and or reactor, the matter is to be discussed in appropriate forum of ERPC.

It was decided to place the above in the TCC meeting for approval.

**Members may please discuss and approve.**

#### **ITEM NO.12 LILO OF 220 KV JODA (OPTCL)-JAMSHEDPUR (DVC) LINE AT 220 KV STATION AT JINDAL END**

A meeting was first held on 30.12.2009 at ERPC, Kolkata between DVC, OPTCL, ERLDC and ERPC to discuss the above issue.

The operationalisation of the above LILO was discussed in the 46<sup>th</sup> OCC meeting held on 12.01.2010 and also in the 47<sup>th</sup> OCC meeting held on 11.02.2010.

Accordingly, PGCIL installed a ABT compliance meter at Jindal end at 220 kV Jindal line segment on 09.01.2010. Finally LILO of 220 kV Joda-Jamshedpur line at Jindal was charged and synchronized for the first time at 20.27 hrs on 25.01.2010.

ERPC subsequently received a letter dated 08.02.2010 from ERLDC in this respect.

#### *Deliberations in the 12<sup>th</sup> Commercial Sub-Committee meeting*

*Members noted. ERPC Secretariat informed that in place of 220 KV Joda (OPTCL)-Jamshedpur (DVC) tie line, the new tie line would be Jindal (OPTCL)-Jamshedpur (DVC) for the purpose of all computations of power flow between DVC and OPTCL.*

**This is for information of the members.**

**ITEM NO.13 ISSUES RAISED BY ERLDC**

**A) INSTALLATION OF SEM**

132 KV Garwa-Sonenagar line has been made LILO at Japla. SEM has to be installed at Japla S/S for accounting purpose.

*Deliberations in the 12<sup>th</sup> Commercial Sub-Committee meeting*

*ERLDC requested JSEB to shift the SEM meter from Garwa to Japla S/s immediately. JSEB assured to take necessary action in this regard. Therefore, instead of the existing 132 KV Garwa-Sonenagar line, the new tie line would be 132 KV Japla-Sonenagar line.*

**This is for information of the members.**

**B) TRAINING ON SCADA / EMS**

ERLDC has already placed an award on M/s AREVA for Comprehensive Software and Hardware maintenance service for the equipment installed in the Control Centres under ULDC-ER scheme for 3 years extendable up to 5 years.

The vendors has provided detail cost of training which they can provide on demand basis to the constituents of Eastern Region. The cost details are given as below :-

<b>Sl.No.</b>	<b>Description</b>	<b>Minimum Batch Size</b>	<b>Unit Rate</b>
01.	SCADA Training (5 days in each batch of max. 10 trainees)	1	Rs.3,10,000
02.	EMS Application Training (10 days in each batch of max 10 trainees)	1	Rs.6,82,400
03.	SCADA Database & Display Training (10 days in each batch of max 10 trainees)	1	Rs.6,20,400
04.	Maintenance Training (10 days in each batch of max 10 trainees)	1	Rs.6,20,400
05.	Despatcher's Training (3 days in each batch of max 10 trainees)	1	Rs.2,05,000

The above costs are exclusive of incidental expenses such as stationeries, etc.

Similar training has been provided by M/s AREVA in NER which was funded from Reactive Pool Account after approval by NERPC Board.

Members may discuss regarding the requirement of such training in Eastern Region and funding the same from Reactive Pool Account. The exact requirement may be finalized in case such training is felt necessary so that the same may be put to ERPC Board for approval for funding from Reactive Pool Account.

Deliberations in the 12<sup>th</sup> Commercial Sub-Committee meeting

All members present in the meeting unanimously endorsed that SLDC personnel of the Eastern Region must avail the training as outlined by M/s AREVA. This would equip them for better management of the grid. After deliberation, it was decided that the following training programme may be got arranged from M/s AREVA :

Sl. No.	Description	Minimum Batch Size	No. of Batch required	Unit Rate (Rs.)	Total Cost (Rs.)
1.	EMS Application Training (10 days in each batch of max 10 trainees)	1	2	6,82,400	13,64,800
2.	SCADA Database & Display Training (10 days in each batch of max 10 trainees)	1	3	6,20,400	18,61,200
3.	Despatcher's Training (3 days in each batch of max 10 trainees)	1	2	2,05,000	4,10,000
<b>Total :</b>					<b>Rs. 36,36,000</b>

The total expenditure involved, excluding incidental expenses, is around Rs.36,36,000.00.

Members recommended that in line with the training availed by NER from M/s AREVA from Reactive Pool Account, the above training may be funded from the Reactive Pool Account of Eastern Region.

Further, it was decided in the meeting that ERPC shall arrange, on priority basis, Workshop / Seminar on the following emerging issues :

- a) Transmission cost pricing
- b) Power Exchange
- c) FGMO

Commercial Committee recommended that an amount of Rs.20 lakhs shall be kept aside for Workshop and Seminar including the above subjects for 2010-11.

It was decided that approval of TCC would be taken for Rs.36,36,000.00 for training by M/s AREVA and Rs.20 lakhs for Workshop / Seminar.

**Members may please discuss the issue and approve an amount of Rs.36,36,000/- for training by M/s AREVA and an amount of Rs.20 lakhs for Workshop / Seminar.**

**C) APPROVAL OF COST ESTIMATE FOR ICCP UPGRADATION AT ERLDC.**

The following control centres are under various stages of implementation which are required to be integrated with ERLDC :

1. Bhutan NLDC (Main & Back-up) : Engineering under progress
2. Jharkhand SLDC (New CC) : Tender evaluation in progress

3. OPTCL (Main & Back-up SLDC) : Under tendering stage
4. DVC under final stage of discussion : MOU expected shortly.

These control centres, which are proposed in recent times, were not envisaged at the time of designing the present system. Accordingly, hardware and software of the present ICCP (Inter Controlcentre Communication Protocol) server needs to be upgraded. The expenditure required for the remote end shall be borne by the respective control centre.

It is estimated that 1.5 crore are required for the proposed upgradation at ERLDC. It is proposed that the estimate may be approved so that the same could be put up to TCC and ERPC Board for final approval.

*Deliberations in the 12<sup>th</sup> Commercial Sub-Committee meeting*

*After deliberation, it was decided that Powergrid and ERLDC would make a presentation in the TCC covering the various aspects of the above.*

**Powergrid /ERLDC may elaborate and members may please discuss.**

**D) DE-REGISTERING OF TIE-LINES**

In the 12<sup>th</sup> Commercial Sub-Committee meeting, ERLDC intimated that the following existing tie line between DVC and WBSEDCL are de-registered with effect from 00.00 hrs of 29<sup>th</sup> March, 2010. Hence, these may be appropriately taken into account while making the UI computation :

- a) 132 kV Purulia-Purulia
- b) 132 kV Kharagpur (Hizli)-Kharagpur.

**This is for information of the members.**

**ITEM NO.14 COMMERCIAL DECLARATION OF REGIONAL ASSETS OF POWERGRID PERTAINING TO EASTERN REGION.**

DOCO of :

- (a) LILO of one circuit (Ckt-I) of 400 KV D/C Maithon-Jamshedpur transmission line at Mejia "B" TPS.
- (b) PLCC equipment (excluding wave trap) for LILO of one circuit (Ckt-I) of 400 KV D/C Maithon-Jamshedpur transmission line at Mejia "B" TPS.

Powergrid vide letter no. E/PT/CL/14/929 dated 08.03.2010 intimated that the above two nos. assets are part of transmission system for start-up power supply to DVC and a part of Mejia "B" transmission system. Both the assets have been declared commercial with effect from 01.02.2010.

Both assets had been discussed in Standing Committee meeting of ER on 05.05.2007 held at Puri and on 05.11.2007 held at Ranchi.

The assets had also been discussed in the 6<sup>th</sup> Special TCC meeting held at Kolkata on 11.06.2008.

Investment approval by Powergrid Board of Director have been accorded for Rs.290.49 Crores on 29.04.2008, for transmission system pertaining to Mejia “B”, Koderma and Maithon-RB, having completion schedule of 24 (twenty four) months.

Amount pertaining to above assets is Rs.55.66 Crores, which is likely to be revised.

*Deliberations in the 12<sup>th</sup> Commercial Sub-Committee meeting*

*Members in the Commercial Committee recommended the commercial declaration of the above elements. It was decided to put it up to TCC.*

**Members may please discuss and agree.**

**ITEM NO.15 ISSUANCE OF REVISED SHARE ALLOCATION FROM CEA / MoP ASSOCIATED WITH COMMERCIAL OPERATION OF UNIT # 7 OF KAHALGAON STPS STAGE-II OF NTPC**

The Unit # 7 of Kahalgaon STPS Stage-II of NTPC has been declared under commercial operation with effect from 00:00 Hrs of 20.03.2010. Share allocation for Unit #7 of Kahalgaon Stage-II has been issued and is being implemented from 00:00 Hrs of 20.03.2010.

**Members may like to discuss.**

**ITEM NO.16 ANY OTHER ITEM WITH THE PERMISSION OF CHAIR**

ANNEXURE-A

**PROGRESS OF CONSTRUCTION OF TRANSMISSION LINES AND GENERATING UNITS**

**A. STATUS OF IMPORTANT TRANSMISSION LINES UNDER CONSTRUCTION**

(As on 31.01.10)

Sl. No.	Name of the Trans. Line	Length (CKM)	Completion Target		Remarks/ Constraints	Revised target date
			Schedule	Ant. / Act.		
<b>1.3</b>	<b>Transmission System associated with Barh Gen. Proj. (3x660 MW)</b>	2465	Sep'09	March'10	Generation project delayed (now anticipated in Oct'12) which shall lead to idleness of evacuation lines for a prolonged period. Works slowed down to the extent possible.	
<b>1.3.1</b>	$\pm$ 500 MW Balia(PG) – Bhiwadi(PG) HVDC Bipole line(2500 MW)	1580	Sep'09	March'10		

1.3.2	400KV D/C Barh (PG)- Baliala(PG) (Quad) line	488	Sep'09	March' 10		
1.3.3	765 KV S/C Seoni (PG)- Bina(PG) line (to be charged at 400KV)	293	Sep'09	March' 10		
1.3.4	LILO of 400KV D/C Kahalgaoon(PG) –Patna(PG) (Quad) line at Barh	104	Sep'09	Oct'09	Line commissioned on 14.10.09.	
1.4	<b>East West Transmission Corridor Strengthening Scheme –I</b>	1168	Jun - 09	March' 10		
1.4.1	400 kV D/C Ranchi - Rourkela	288	Jun - 09	March' 10	ROW problem being faced due to extremist in Jharkhand. Clarification regarding elephant corridor mitigation plan from forest Deptt. Awaited.	
1.4.2	400 kV D/C Rourkela - Raigarh	440	Jun -09	June' 10	In principal forest clearance accorded in Oct'09( 100KM stretch involved). Final clearance being expedited is likely to be critical.	
1.4.3	400 kV D/C Raigarh - Raipur	440	Jun -09	April' 10		
2.0 EASTERN REGION						
2.2	<b>Tran. System Associated with Mejia Unit 5 &amp; 6 ( 2x 250 MW)</b>					
2.2.1	220 kV Mejia-Ramgarh via Gola D/C	406	Dec-08	June -10		
2.3	<b>Tran. System Associated with Chandrapura TPS Unit 7 &amp; 8 ( 2x 250 MW)</b>					
2.3.1	LILO of Kalyaneshwari CTPS D/C at Dhanbad	8	March-09		Work started on 18/04/08	
2.3.2	220 kV Dhanbad-Giridih D/C	86	Sept-09	March-10	Check Survey in progress	
2.3.3	220 kV Giridih – Koderma D/C	200	Feb-10		LOA placed on 23/06/08, Forest clearance awaited.	
2.3.4	220 kV CTPS- Pithakari(PG) bypassing Kalyaneswari	0.5	Nov-07		Work completed &will be commissioned matching with commissioning of CTPS#7	
2.3.5	220 kV D/C Kalyaneswari - Pithakiari	15.6	Nov- 08	Nov - 09	Completed, charged from DVC, Kalyaneswari end on 19-11-09 .	
2.4	<b>Tran. System Associated with Sagardighi TPP Unit 1 &amp; 2 ( 2x 300 MW)</b>				Work awarded by WBPDCCL to PGCIL & is under progress.	
2.4.1	400 kV Sagardighi TPP- Subhasgram S/C	245	Nov-07	March-08/ Extended	Stringing completed.	

2.4.2	400 kV Sagardighi-Purulia D/C	60	Dec-08	Dec-08/ Extended	Forest clearance awaited	
2.4.3	LILO of Farakka-Subhasgram S/C at Sagardighi	26	Dec-08	-	Forest clearance awaited	
2.5	<b>Tran. System Associated with Santaldih TPP Unit 5 ( 1x 250 MW)</b>					
2.5.1	220 kV Santaldih – Bishnupur D/C	139	Sept-07	Oct-08/ Extended	Forest clearance awaited	
2.6	<b>Tran. System Associated with Teesta Low Dam III ( 4x33 MW )</b>					
2.6.1	220 kV Teesta LD III – New Jalpaiguri S/C	50	Mar-07	Dec-09		
2.7	<b>Tran. System Associated with Teesta Low Dam IV ( 4x40 MW )</b>					
2.7.1	220 kV Teesta LD IV – New Jalpaiguri D/C	120	Mar-07	Mar-08/ Extended		
2.7.2	220 kV Teesta LD III – Teesta LD IV S/C	10	Mar-07	Mar-08/ Extended		
2.8	<b>Eastern Region Strengthening Scheme – I</b>					
2.8.1	400 kV D/C Durgapur – Jamshedpur	374	Oct-09	June-10	Implementation affected due to diversion of line for upcoming Airport at Durgapur.	
2.8.2	400 kV Jamshedpur – Baripada	270	Oct-09	March-10	Severe ROW problem being faced in Jharkhand	
2.8.3	400 kV Baripada - Mendhasal	554	Oct-09	June -10	Severe ROW problem being faced.	
3.0	<b>Eastern Region Strengthening Scheme - II</b>					
3.1	400 KV Durgapur – Maithon line	146	June- 10	June - 10	Efforts being made to complete the line by Mar' 10.	
3.2	LILO of Durgapur- Jamshedpur(PG) at Durgapur STPS	7	Aug-09	Dec-09	Check survey in progress. Tower drg released.	
3.3	400KV Durgapur STPS- Raghunathpur	138	May-10		Check survey in progress. Tower drg. Released.	
3.4	LILO of Maithon- Ranchi(PG) at Raghunathpur	7	May-09	Dec-09	Check survey in progress. Tower drg.released.	
3.5	400 KV D/C Raghunathpur TPS- Ranchi (PG)	301	August-10		Route Profile has been approved &released for Check survey.	

<b>4.0</b>	<b>System Strengthening of Eastern Region (220KV)</b>					
<b>4.1</b>	Begusarai – Purnea (BSEB)	346	Sept -03	Janu-10	Fresh work to be started. Tenders awarded	
<b>4.2</b>	Muzzafarpur- Begusarai(BSEB)	256	Dec- 03	July-09		
<b>4.3</b>	Patna- Sipara(BSEB)	10		Janu-10	Work yet to start	
<b>4.4</b>	Budhipadar- Bolangir(OPTCL)	358		Dec-08/ Extended		
<b>4.5</b>	Mendhasal- Bidanasi(OPTCL)	62	May-08	June-09	Part line commissioned and Work held up due to ROW problem.	

## ANNEXURE-B

### B. COMMISSIONING SCHEDULE OF NEW GENERATING STATIONS

(As on 31 .01 .10)

Sl. No.	AGENCY	NAME OF POWER STATION	STATE	TYPE	UNIT NO.	CAPACITY ( MW)	LATEST COMMISSIONING SCHEDULE	REVISED DATE OF TARGET
<b><u>CENTRAL SECTOR</u></b>								
1	NTPC	Kahalgaoon STPS-II ( Ph – I)	Bihar	THERMAL	7	500	Oil Synchronisation on 31/03/09	<b>Commercial declare on 20.03.2010</b>
2	DVC	Chanderpura TPS	Jharkhand	THERMAL	7	250	Oil synchronisation on 06/01/09	

			Jharkhand	THERMAL	8	250	March - 09	
<b><u>STATE SECTOR</u></b>								
1	WBPDCCL	Santaldih TPP	West Bengal	THERMAL	5	250	Commerci ally operated on 01.04.09	
2	WBPDCCL	Bakreshwar TPS-II	West Bengal	THERMAL	4	210	Commerci ally operated on 06.03.09	
		Bakreswar TPS- II	West Bengal	THERMAL	5	210	Commerci ally operated on 26/6/09	
3	CESC	Budge- Budge TPP	West Bengal	THERMAL	3	250	Oil test synchroniz ation on 12/07/09	<b>Commercial declare on 28.02.2010</b>

## Annexure - I

## SUMMARY OF UI RECEIPT AND PAYMENT STATUS

BILL UPTO 07.02.2010 (Week - 45 of 2009 - 10 )  
Last Payment Disbursement Date - 26.02.10

CONSTITUENTS	Receivable	Received	Payable	Paid	Outstanding
WR	0.00000	0.00000	147618.35702	128297.21038	-19321.14664
SR	11067.51663	10834.01649	6742.09562	6742.09562	233.50014
NER	2593.37941	719.07428	13616.93377	13061.67466	1319.04602
NR	131534.23948	128627.85687	35.62383	35.62383	2906.38261
BSEB	13179.14636	4630.45440	3420.60075	2806.47056	7934.56177
JSEB	5460.29200	3222.81164	10946.91987	10946.91987	2237.48036
DVC	46001.14153	46001.11445	2002.01781	2002.01781	0.02708
GRIDCO	32410.22119	25220.75883	6075.38487	5684.76115	6798.83864
WBSETCL	2220.53562	2220.38138	27718.93814	26866.88321	-851.90069
SIKKIM	617.89699	419.37495	4414.33580	4412.89213	197.07837
NTPC	0.00000	0.00000	11202.28104	10670.87965	-531.40139
NHPC	0.00000	0.00000	1888.27304	1718.35333	-169.91971
Pool Balance	0.00000	0.00000	<b>1788.86918</b>	1788.86918	0.00000
Additional UI charge	3806.18605	3092.45482	733.85307	0	713.73123
Transfer to IRE	0.00000	0.00000	5110.28769	3737.69661	-1372.59108
<b>TOTAL</b>	<b>245084.36921</b>	<b>221895.84329</b>	<b>243314.77150</b>	<b>218772.34799</b>	

## % Realization

90.54

## As on 26.02.10

Receivable:

Receivable by ER POOL

Payable

Payable by ER POOL

Received

Received by ER POOL

Paid

Paid by ER POOL

"- ve" Payable by ER pool

"+ ve" Receivable by ER pool

## SUMMARY OF UI RECEIPT AND PAYMENT STATUS

BILL UPTO 21.02.2010 (Week - 47 of 2009 - 10 )

Last Payment Disbursement Date - 12.03.10

CONSTITUENTS	Receivable	Received	Payable	Paid	Outstanding
WR	0.00000	0.00000	154354.95928	136369.10497	-17985.85431
SR	13335.95380	12317.20538	6742.09562	6742.09562	1018.74842
NER	2813.96790	719.07428	13616.93377	13061.67466	1539.63451
NR	133635.31593	132397.23798	35.62383	35.62383	1238.07795
BSEB	14150.84215	4630.45440	3420.60075	2806.47056	8906.25756
JSEB	5701.09450	3222.81164	10946.91987	10946.91987	2478.28286
DVC	48909.27100	48909.24392	2002.01781	2002.01781	0.02708
GRIDCO	32410.22119	25220.75883	6617.19339	5684.76115	6257.03012
WBSETCL	2220.53562	2220.38138	28916.91249	26866.88321	-2049.87504
SIKKIM	629.14022	534.37298	4414.33580	4412.89213	93.32357
NTPC	0.00000	0.00000	11400.88392	10812.03760	-588.84632
NHPC	0.00000	0.00000	1931.25311	1776.88605	-154.36706
Pool Balance	0.00000	0.00000	<b>1792.98142</b>	1792.98142	0.00000
Additional UI charge	3806.18605	3092.45482	733.85307	0	713.73123
Transfer to IRE	0.00000	0.00000	5110.18047	3737.69661	-1372.48386
<b>TOTAL</b>	<b>253806.34231</b>	<b>230171.54079</b>	<b>252036.74460</b>	<b>227048.04549</b>	

% Realization

90.69

As on 12.03.10

Receivable:

Receivable by ER POOL

Payable

Payable by ER POOL

Received

Received by ER POOL

Paid

Paid by ER POOL

"- ve" Payable by ER pool

"+ ve" Receivable by ER pool

**STATUS OF REACTIVE CHARGES**

Figures in Rs

RECEIVABLE IN ER POOL AS PER PUBLISHED A/C UPTO 21.02.10 (2009-10)  
AS ON 03.03.10

CONSTITUENT	AMOUNT RECEIVABLE IN THE POOL (Rs.)	AMOUNT RECEIVED IN THE POOL (Rs.)	OUTSTANDING (Rs.)
WBSETCL	3320742	3320742	0
<b>TOTAL</b>	<b>3320742</b>	<b>3320742</b>	<b>0</b>

Amount available in Reactive A/C as on 03.03.10 :

**13848171**

**POWER GRID CORPORATION OF INDIA LIMITED**

**EASTERN REGION TRANSMISSION SYSTEM - II**

**AGENDA POINT FOR Commercial Sub Committee Meeting dt 11/03/10**

As repair of transformers/Reactors is taking a very long time in the present scenario, situations causing shortfall in transformation capacity may arise anytime. This is a situation which is neither envisaged nor met from the regular O&M expenses of POWERGRID as per norm. This is a new development where preparedness is required to cope up with a probable long outage of a transformer or a reactor. The requirement has been appreciated by all the constituents which has been discussed at length in previous OCC meetings.

The constituents had already agreed in principle for above requirement in 41<sup>st</sup> OCC. However, since the proposal involved additional capital expenditure, the issue was further discussed in 46<sup>th</sup> & 47<sup>th</sup> OCC meeting with inputs from NRPC. In accordance to 46<sup>th</sup> OCC, POWERGRID has also circulated a report citing justification and the advantages of maintaining the above spare. The OCC members however were non-committal on cost sharing by constituents and opined that POWERGRID may meet the same from the O&M charges of the existing elements.

A specific meeting was called by MS-ERPC on 25/02/10 to form an opinion before its due consideration in appropriate forums of Commercial Sub-Committee, TCC & ERPC meetings. The issue was deliberated as under :

POWERGRID stated that the proposed provision of spare transformer is a necessity as repair of transformers & reactors now a days takes up to 2 years and there is no mechanism of quick restoration of failed transformer in which case there may be situations of limitation of transformation capacity. WBSETCL, once again appreciated and reconfirmed their in principle agreement of the requirement but was again non-committal on cost sharing by constituents and commented that POWERGRID may meet the expenses from O&M charges of existing elements.

In a bid to address the general opinion of the constituents on meeting the cost through O&M charges of tariff, POWERGRID submitted that the proposal is a special requirement as a disaster management measure and not linked to routine O&M of existing elements. Further the expenditure is capital intensive and meeting it through routine O&M expenditure of other elements is inappropriate. **POWERGRID categorically stated that the proposal is to enhance the reliability & security of the grid in the face of unforeseen failure & long repair time and can only be undertaken if the cost is borne by the constituents.**

It was also reiterated that the constituents had already agreed in principle for above requirement in 41<sup>st</sup> OCC. ERPC also opined that the provision of spare transformers is an approach of disaster management to cope up with transformer failures which do not have any back up arrangement of quick restoration and is highly desirable.

***But, OCC forum being an operational forum, with participation only from grid operators, it was felt that the discussion on commercial aspect of bearing the cost by the constituents can only be deliberated in Commercial Sub-committee on which further discussion can be held in TCC & a decision can be taken in ERPC meeting.***

**Hence it is proposed that the issue may be discussed in light of deliberation in 48<sup>th</sup> OCC for futher deliberation and a decision in next TCC & ERPC meeting.**