EASTERN REGIONAL POWER COMMITTEE

MINUTES OF THE 5TH TCC MEETING OF ERPC

Time & Date: 11:00hrs. on 18.02.2008 (Monday)

Venue : Hotel Swosti Plaza, Bhubaneswar

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The list of participants is given in Annexure-A_1

Shri C. J. Venugopal, CMD, GRIDCO warmly welcomed the delegates in the 5th TCC meeting in the city of temple -- Bhubaneswar. He pointed out that there was a general mis-conception in the country about the Eastern Region being surplus in power. As far as Orissa is concerned, he observed that the demand for power has been increasing very rapidly due to setting up of many industries as well as the rural electrification programme undertaken in the State. He observed that, a state as a single entity could not maintain an isolated existence in the existing power scenario. For this, he emphasised on the development of proper inter-regional, inter-state and intra-state networks.

In his opening remarks, Member Secretary, ERPC expressed his sincere thanks to CMD, GRIDCO and his team of officers for their warm hospitality and excellent arrangements. He then touched upon the important events that had taken place in the intervening period from the last TCC meeting which was held in the month of September, 2007 in Gangtok. He mentioned that there was shortfall of power at present in this region. The States of Bihar and Jharkhand in particular, are reeling under severe power shortage. The outage of TVNL U # 2 has aggravated the problem. Another major problem faced by Eastern Region in this year is diversion of thermal power in lieu of Tala power. He hoped that Orissa, being the only surplus state in the region, would come to the rescue of neighbouring states.

In his welcome address, Shri G.N.S. Munda, Member (Tech), JSEB & Chairperson, TCC conveyed his heartfelt thanks to GRIDCO for making nice arrangements for the meetings. He felt privileged to Chair the meeting. He then underlined the unique feature of the Eastern Region as this region is connected to all other regions. He expressed his concern over the shortage of power in Jharkhand at present. He requested all the members to deliberate on this acute problem.

While expressing his gratitude to GRIDCO for making excellent arrangement, Shri M.G. Raoot, GM, ERLDC gave a brief overview over the grid performance. He mentioned that presently 60% of the day, frequency remained at around 49.0 Hz and power number was 1800-1900 MW per Hz. He expressed his concern over the grim power position prevailing in Bihar and Jharkhand at present. He also mentioned that there was significant shortage of power and many states

in ER had to impose load shedding to curtail demand. However, he hoped the situation would change with the addition of generation to the tune of 3000 MW in the near future.

Shri C.M.P. Sinha, Director (Comml), DVC highlighted the performance of DVC system having 2210 MW thermal generation and 144 hydro generation. He informed that the average PLF was about 78%. In general, DVC supplies 70% of their generation to Jharkhand and 30% to West Bengal. He added that during 11th Plan period about 6000 MW capacity addition was expected. At the end, he thanked GRIDCO officers for excellent arrangements for the meeting.

Shri D. Chowdhury, ED, ER-II, PGCIL expressed that this meeting was being held after a span of about four months and would be able to take some fruitful decisions for smooth operation of the grid. He expressed his thanks to the GRIDCO officers for the excellent arrangement.

Shri A.C. Mallick, Director (Comml), GRIDCO drew attention of the members to steep rise in demand that is taking place for the last few years. He opined that, to meet this rise in demand, this region must have enough generation as well as adequate transmission network so that power could be fed from surplus states to the deficit states.

Member Secretary, ERPC then took up the agenda for item wise discussions.

ITEM NO.1 CONFIRMATION OF THE MINUTES OF 4th TCC MEETING OF ERPC HELD ON 22.09.07 AT GANGTOK.

The minutes of 4th TCC meeting of ERPC were circulated vide this office letter no. ERPC/Committee/2007/4469-4516 dated 29.10.2007.

No comments on the above minutes have been received from any of the constituents.

TCC may please confirm the minutes.

Deliberation in the TCC meeting

Minutes of the 4th TCC meeting were confirmed without any modification.

ITEM NO.2 HIGHLIGHTS OF GRID PERFORMANCE FOR THE PERIOD AUGUST'07 TO DECEMBER'07

(A) FREQUENCY :

Frequency profile for the period August'07 to December'07 and the corresponding period of the previous year (i.e. August'06 to December'06) are shown below:

	% of time of the month frequency remained							
Month	**< 49.0 Hz**		**49.0--50.5 Hz**		**50.5—51.0 Hz**		**>51.0 Hz**	
Year	**2006**	**2007**	**2006**	**2007**	**2006**	**2007**	**2006**	**2007**
August	0.76	3.25	97.91	96.70	1.33	0.05	0.00	0.00
September	2.28	1.50	97.71	98.45	0.01	0.05	0.00	0.00
October	11.22	8.41	88.68	91.58	0.09	0.01	0.01	0.00
November	13.93	10.93	86.07	89.07	0.00	0.00	0.00	0.00
December	16.15	12.17	83.85	87.83	0.00	0.00	0.00	0.00

From the above table, it may be observed that :

- Frequency profile in the IEGC band, i.e. 49.0 to 50.5 Hz has shown a sign of decline from the month of October,2007 as it has slide down from 98.45 % to 87.83 % in the month of December, 2007. This was mainly because of low availability of hydel power particularly from Chukha, Tala HEP and Gridco system and occasional forced/planned outages of major thermal units.

  However, the trend of frequency profile has shown improvement in comparison with the same period last year.

- The percentage of time frequency remaining below 49.0 Hz. has shown deterioration from the month of October'07 onwards. However, the same for the corresponding months in the last year is found to be marginally higher.

- The frequency profile above 50.5 Hz during the above months was found to be insignificant.

(B) PERFORMANCE REVIEW

Description	**Average (MU)/Month**			**Dec'06**	**Dec'07**	**% Increase**
	Aug'06 to Dec'06	**Aug'07 to Dec'07**	**% Increase**			
Net Generation (MU)/Month	6802	7185	5.63	6958	6896	(-)0.89
Net Central Sector Thermal Generation (MU)/Month	1853	1882	1.56	2319	2166	(-)6.61
Import from CPPs in (MU/Month)	150	106	(-)28.93	166	91	(-)45.14
ER Consumption (MU/Month)	5502	5982	8.73	5335	5748	7.75
Net Export to Outside Region (MU/Month) including transmission loss	1397	1246	(-)10.81	1726	1189	(-)31.11

Description	Aug'06 to Dec'06	Aug'07 to Dec'07	% Increase	Dec'06	Dec'07	% Increase
Regional Peak Demand (MW) Met	10227	10699	4.62	9913	10391	**4.82**
Peak Export (MW)	3575	4307	20.48	3575	2658	**(-)25.65**

(C) EXPORT

MONTHLY AND CUMULATIVE EXPORT OF POWER FROM ER DURING DECEMBER, 2007 (BASED ON SEM FIGURES)

Region To	Export in MU (during 2007-08)		Export in MU (during 2006-07)		% Growth *	
	During Dec'07	Cumulative 2007-2008 (Apr'07 to Dec'07)	During Dec'06	Cumulative 2006-2007 (Apr'06 to Dec'06)	During Dec'07	Cumulative 2007-2008 (Apr'07 to Dec'07)
NR	928	9319	933	5048	-0.6	84.6
WR	295	3335	520	5346	-43.3	-37.6
SR	-	365	163	712	-	-48.7
NER	-	0	110	223	-	-
TOTAL	**1223**	**13020**	**1726**	**11329**	**-29.1**	**14.9**

***** As compared to similar period during 2006-07.

MONTHLY AND CUMULATIVE IMPORT OF POWER BY ER DURING DEC'2007 (BASED ON SEM FIGURES)

Region From	Import in MU (during 2007-08)		Import in MU (during 2006-07)		% Growth *	
	During Dec'07	Cumulative 2007-2008 (Apr'07 to Dec'07)	During Dec'06	Cumulative 2006-2007 (Apr'06 to Dec'06)	During Dec'07	Cumulative 2007-2008 (Apr'07 to Dec'07)
NR	-	-	-	-	-	-
WR	-	-	-	-	-	-
SR	22	1495	-	0	-	-
NER	12	1240	0.0	381	0.0	225.7
TOTAL	**34**	**2734**	**0.0**	**381**	**0.0**	**618.3**
Net Export from ER	**1189**	**10285**	**1726**	**10949**	**-31.1**	**-6.1**

***** As compared to similar period during 2006-07.

- In the month of December,2007 the export of energy to NR has almost remained same as compared to December,2006 However, the same to WR has reduced by 43.3%.

- The net energy export from ER to other regions during December, 2007 has decreased by 31.1% as compared to the same period last year.

- The net energy export (Cumulative) during the period April'07 to December'07 has also decreased by 6.1% as compared to the same period of 2006-07.

Deliberation in the TCC meeting

GM, ERLDC explained in details the frequency profile, performance review and export/import from ER during the period from August'07 to December'07. On the query of import of power from NER, it was pointed out that both NER & SR wheeled a part of their shares to NR through ER utilising the provision of Short Term Open Access (STOA) during this period. Accordingly, the import registered a significant increase. However, the losses were accounted for, for such transactions. Generation in Central Sector Generating Stations during the month of December'07 when compared to the corresponding month of the last year, got reduced marginally partly because of inadequate supply of coal to power stations particularly at KhSTPS and partly due to planned shutdown of one unit (500 MW) of TSTPS.

(D) IMPORTANT EVENTS

- 1 x 80 MVAR 400 kV bus reactor at Ranchi S/S of Powergrid was charged for the first time at 18.02 hrs of 10.08.07.
- 400 kV Biharshariff-Balia Line I & II inter-regional link was synchronised on 31.08.07 & 30.10.07 respectively. This has become one more inter-regional AC link between ER and NR.
- 2 x 150 MVA 220/132 kV Hatia-II S/S commissioned on 27.08.07 with D/C 220 kV Patratu-Hatia-II line and LILO of Hatia-II–Chandil 220 kV line at 400/220 kV Ranchi S/s of Powergrid.
- 220 kV Indravati-Theruvalli line-III was taken into service on 05.09.07 by OPTCL.
- 1 x 160 MVA, 220/132 kV ICT commissioned and loaded on 12.09.07 in place of existing 100 MVA ICT at Budhipadar 220 kV S/S of OPTCL.
- 220/132 kV, 1x160 MVA ICT at Baripada S/S of Powergrid put into service after repair and 100 MVA ICT of OPTCL was replaced.

- 220 kV Baripada-Balasore Line-I was charged and loaded radially on 03.10.07 and thereafter synchronised with 220 kV Duburi line of OPTCL.
- 315 MVA, 400/220 kV ICT-I & ICT-II at Patna S/s of Powergrid was charged on 14.10.07 & 05.12.07 respectively on no load.
- MoP's order regarding allocation of power from all the six units of Tala HEP (170 MW each) was implemented in totality with effect from 00.00 hrs of 23.10.07.
- Santaldih TPS Unit # 5 (300 MW) of WBPDCL – Oil synchronised on 15.10.07.
- Purulia PSP U # 4, U # 3, U # 2 and U # 1 were synchronised on 13.07.07, 15.08.07, 09.11.07 and 17.12.07 respectively.
- DPL Unit # 7 (300 MW) was test synchronised on 24.11.07.
- Mejia TPS Unit # 6 (250 MW) of DVC – Coal synchronised on 25.11.07.
- Mejia Unit # 5 (250 MW) of DVC synchronised on 14.12.07 at 11.30 hrs and 220 kV Mejia TPS-Muchipara line was commissioned on 19.11.07.
- 80 MVAR line reactor of 400 kV Ranchi-Sipat Line-II was charged as bus reactor at Ranchi 400 kV S/s on 19.12.07.
- Test synchronisation on oil of Sagardighi TPS Unit # 1 (300 MW) was carried out on 21.12.07.
- 400 kV Rourkela-Raipur D/C was made LILO at Raigarh 400 kV S/S on 31.12.07.
- Kahalgaon STPS Unit # 5 (500 MW) of NTPC test synchronised on 02.02.2008.
- 1st unit (170 MW) of Teesta Stage-V HEP was synchronised on 06.02.2008.

TCC may please note.

Deliberation in the TCC meeting

Members noted the above.

WBSETCL informed that intra-state ABT was introduced in the State of West Bengal with effect from 01-01-2008. As a result ATC loss has come down significantly to 18%. He further informed that it was the first of such intra-state ABT in the whole country.

ITEM NO. 3 PATRATU-BODHGAYA 220 KV CKT-I, II & III BETWEEN BSEB & JSEB.

In the previous (4th) TCC meeting Powergrid informed that the cost estimate for restoration of the above line would be submitted to JSEB by 15.10.07 with a copy to ERPC.

However, Powergrid in the 22nd meeting of OCC held in the month of December, 2007 informed that the cost estimation was under process by the Corporate Engineering, Powergrid, New Delhi and was expected by January, 2008.

The representative from Powergrid may please intimate the latest position.

Deliberation in the TCC meeting

Member Secretary, ERPC expressed serious concern over delay in submission of cost estimate by Powergrid to JSEB for the restoration of 220 kV Patratu- Bodhgaya T/C.

However, Powergrid committed in the meeting to submit the cost estimate of the same positively by end of February, 2008.

ITEM NO.4 REVISION OF UFR STAGE-I SETTINGS AND INTRODUCTION OF Df / Dt RELAY IN ER AND ITS RECOMMENDE SETTINGS

A meeting was held among the representatives of NRPC, NRLDC, WRPC, ERLDC and ERPC on 27.11.07 at ERPC, Kolkata regarding the issues concerning finalisation of Df /Dt relay settings for the combined NEW grid (NER-NR-ER-WR). The gist of decision taken in the meeting was as follows :

a) <u>Revised UFR settings for ER</u>

Stage-I UFR settings in ER is to be raised from existing level 48.5 Hz, instantaneous to 48.6 Hz, instantaneous. [Stage-II and Stage-II relay settings will remain unaltered. Quantum of the load relief for all the stages will continue to be same i.e. 300 MW, 300 MW and 410 MW respectively].

b) **<u>Df/Dt relay settings for ER</u>**

Stage-I Df / Dt relay would be introduced in ER and is to be set at 0.125 Hz per second at 49.9 Hz – load relief of 800 MW. (600 MW for ER + 200 MW for SR).

c) **<u>System Protection Scheme (SPS)</u>**

Backing down of generation in ER to arrest sudden rise in frequency in ER in case of separation of WR or NR from NEW grid. The details decisions taken in the meeting are enclosed at Annexure – I.

In the 21st OCC meeting a detailed deliberations on the issue took place wherein ER constituents in general opined that a proposal of revision of

UFR settings and installation of Df / Dt relays in ER should be put to TCC for approval before implementation.

TCC may please deliberate.

Deliberation in the TCC meeting

Member Secretary, ERPC apprised the TCC members regarding the decision taken in the joint meeting held at ERPC on 27.11.2007. In the meeting it had been decided to raise the existing First Stage UFR setting of ER from existing 48.5 Hz instantaneous to 48.6 Hz instantaneous.

The TCC members noted with concern that adequate load relief were not forthcoming from the Stage-I (48.8 Hz) UFR settings of NR and WR.

TCC members principally agreed to raise the First Stage UFR settings to 48.6 Hz instantaneous in ER. However, before implementing the same, it had to be established that the load relief obtained in NR and WR were in accordance with the agreed scheme.

ERLDC opined that quantum of load relief by this defence mechanism should be ensured from system operator's point of view.

CEA representative mentioned that one of the reasons for the inadequate load relief at low frequency might be due to the fact the feeders installed with UFRs were already subjected to manual load shedding.

ERLDC was requested to regularly assess the quantum of load relief achieved in case the frequency dropped to 48.8 Hz or below.

Regarding introduction of Df / Dt relay in ER, members, in general, opined that the feedback from NR and WR on the effectiveness of existing setting of Df / Dt relay was required before any final decision could be taken by ER.

Further, it was pointed out by CE(GM), CEA that WR desired to have a detailed study before implementing revised df/dt Scheme.

On the issue of Special Protection Scheme (SPS), ERLDC explained that a number of scenarios were to be constructed for different contingencies and corresponding schemes for generation backing down from identified power stations were to be drawn. Moreover, the Free Governor Mode of Operations in hydro power stations in ER are to be fully explored as a part of Special Protection Scheme for controlling Inter Regional Tie flow in case of high frequency under system separation.

Based on the above deliberations, TCC decided not to implement immediately any of the decisions taken in the meeting on 27.11.2007. The issues would be scrutinised afresh in the next TCC meeting.

ITEM NO.5 PSS TUNING FOR GENERATING UNITS IN ER

The PSS (SIEMENS make) tuning exercise was successfully carried out by M/s. BHEL on U # 4 and 5 (500MW each) at Farakka STPS of NTPC on 29.01.08 and 30.01.08 in the presence of Dr. A.M.Kulkarni, Prof. IIT, Bombay and NTPC officers of KhSTPS, ER HQ., ERLDC and ERPC. This was the first attempt of tuning of 500MW thermal units in our country. The performance of PSS for U # 4&5 were found to be satisfactory.

In the first phase of PSS tuning for Kolaghat U #5&6 (210MW) of WBPDCL, Upper Kolab HPS U # 1,2,3 & 4 (80MW each) of OHPC and FSTPS U # 4&5 (500MW each) of NTPC has been completed as was recommended by IIT, Bombay on the basis their analytical studies.

This is for kind information of the TCC.

Deliberation in the TCC meeting

Members expressed satisfaction over successful completion of First Phase of PSS Tuning in ER with the tuning of Farakka STPS Unit nos. 4 & 5 (500 MW each).

Member Secretary, ERPC informed that tuning of 500 MW U # 4 and U # 5 at FSTPS was first of its kind in the country. He requested the constituents to avail this opportunity to get their generating units properly tuned with PSS if they had not been tuned during the commissioning period.

ITEM NO.6 ISSUES DISCUSSED IN THE STANDING COMMITTEE MEETING ON POWER SYSTEM PLANNING IN EASTERN REGION HELD ON 05.11.2007 AT RANCHI

A meeting of the Standing Committee on Power System Planning was held on 05.11.2007 at Ranchi wherein a number of proposals for transmission projects in Sikkim to NR/WR, transmission system from new generation capacity planned by DVC, viz, Kodarma TPS (2 x 500 MW), Bokaro TPS Extension (1 x 500 MW), Mejia 'B' TPS (2 x 500 MW) and Maithon RB (1000 MW), associated transmission system for Navinagar TPP (4 x 250 MW), joint venture of NTPC & Railways, transmission system for Farakka III (500 MW) of NTPC and various transmission proposals of WBSETCL during 11^{th} Plan period were discussed. The list of the proposed transmission system are indicated below for discussions / concurrence of members of TCC.

I. Transmission System for Export of Power from Different Generation Projects in Sikkim to NR/WR

It was learnt that about 21 nos. of hydro projects having total capacity of 4225 MW are proposed to be developed along the river Teesta. Out of 21 projects, 14 nos of project had already applied for Long Term Open Access (LTOA), the remaining projects are also expected to apply for the same shortly.

The status of the projects as informed by the different generation developers are given in Annexure – IIA.

The transmission system for the various hydro projects in Sikkim as finalised after discussions in the above meeting is depicted in Exhibit –I and corresponding transmission systems are shown in Annexure - IIB.

Further the time schedule of implementation of various transmission systems of the comprehensive transmission scheme was also discussed and Powergrid would prepare a phased time schedule of the transmission system matching with the generation projects as proposed in Sikkim. The following were also agreed to :

i) The dedicated transmission system, i.e. from the generation switchyard to the pooling point in Sikkim would be under the scope of respective generator developers / open access applicants and the same shall be built, owned and operated by them.

ii) The common transmission system including development of Pooling Station in Sikkim and transmission corridor to Kishanganj Pooling Station in Northern part of West Bengal / Bihar is to be developed by Powergrid.

iii) The transmission system for development of Pooling Stations at Kishanganj in Northern part of West Bengal / Bihar and transfer of power from Kishanganj to NR/WR would also be developed by Powergrid.

iv) The transmission charges as mentioned in (ii) & (iii) above would be borne by either the beneficiaries or generation developers in Sikkim in proportion to their generation capacity. The generation developers / open access applicants would require to inform within one month about their agreement to bear the transmission charges and signing of BPTA as mentioned above.

This is for information of members

II. Transmission System from New Generation Capacity Planned by DVC, viz, Kodarma TPS (2 x 500 MW), Bokaro TPS Extension (1 x 500 MW), Mejia 'B' TPS (2 x 500 MW) and Maithon RB (1000 MW)

The transmission system for evacuation of power from new generation capacity of DVC (including Maithon RB JV rojects) was finalised in the Standing Committee meeting held at Puri on 05.05.2007 which are as follows :

- Maithon-Gaya 400 kV quad D/C line
- Gaya-Balia-Lucknow 765 kV S/C
- Gaya-Sasaram-Fatehpur-Agra 765 kV S/C
- Ranchi-Sipat (Pooling) 765 kV 2 x S/C
- Maithon RB-Ranchi 400 kV D/C line
- Maithon RB-Maithon 400 kV D/C line

The generation projects are scheduled for commissioning between December, 2009 and November,2010. MoP had directed Powergrid to take up the above transmission scheme and match the same with the generation projects.

This is for information of the members.

III Associated transmission system for Nabinagar TPP (4 x 250 MW), joint venture of NTPC & Railways

- 74% Equity from NTPC and 26% Equity approved under JV Company Limited
- 90% power for Railways and 10% power for the States of Bihar & Jharkhand (50 MW allocation to Bihar and 42 MW for Jharkhand)
- Dedicated transmission system for the project as identified :
    - 400 kV Navinagar TPP-Sasaram D/C line;
    - To tie up the connectivity and also the transmission system beyond Sasaram, NTPC/Navinagar JV Company would need to apply for open access to CTU;

NTPC's view on sharing of transmission charges in the ER regional pool for 400 Navinagar-Sasaram D/C line were not agreed to.

NTPC would take necessary action regarding open access application as well as tying up of the execution of the said line.

This is for information of the members.

IV Transmission System for Farakka III (500 MW MPP) of NTPC

- The proposed transmission system as identified is : 2nd 400 kV Farakka-Kahalgaon D/C line
- Proposed allocation of power from Farakka III ER - 50 MW, WR - 205 MW and NR - 245 MW
- NTPC agreed to bear ER transmission charges corresponding to full 500 MW capacity of Farakka III (if ER constituents do not agree) and Powergrid was requested to expedite the implementation of the works.

In addition to above, it was decided to place before ERPC for consideration of the proposal of pooling the transmission charges of the following schemes :

i) 400 kV Parulia-Jamshedpur-Baripada-Mendashal D/C line with 40% of 2920 MW (1925 MW of WBSETCL and 1000 MW of DVC)
ii) Bolangir 400 kV S/s with ER share in North Karanpura.

Members may please opine.

V Transfer of power to the various beneficiaries from Generation Projects of Chitrapur (480 MW) of Jharkhand to NR/WR and KVK Nilachal (560 MW) of Orissa to ER/NR/WR/SR.

- Proposal of M/s PTC to transfer 480 MW of power from September'09 through LTOA.
- Transmission system from Chitrapur generation switchyard to Ranchi 400 kV D/C line.
- Proposal of M/s KVK Nilachal power from December'09 through LTOA.
- Transmission system by making LILO of one circuit of Baripada-Mendashal D/C line at generation switchyard envisaged.

Members may please discuss and opine.

VI Transmission Proposal of WBSETCL during 11th Plan period

i) 220 kV D/C line from Dalkhola (PG) to proposed 220/132 kV Dalkhola S/s of WBSETCL.

- The proposal was agreed subject to confirmation by Powergrid regarding availability of space for bays and WBSETCL bearing cost of the bays at Dalkhola (PG).

ii) 400 kV Subhasgram(PG)-Jagatballavpur D/C line

- Powergrid confirmed availability of space for 2 nos. of 400 kV bays at Subhasgram S/s for termination of the line on cost basis for connecting WBSETCL line from Jagatballavpur S/s.

iii) LILO of one circuit of 400 kV Maithon-Ranchi D/C line at Purulia Pumped Storage Project (PPSP)

- WBSETCL would need to apply for open access for firming up because this involves injection of power in the regional grid system.

iv) 400 kV Guptomani-Jamshedpur D/C line

- WBSETCL would need to apply for open access indicating the quantum and likely beneficiaries for firming up the proposal as well as necessary strengthening beyond Jamshedpur.

v) 400 kV Gokarna-Binaguri (PG) /Purnea(PG) D/C line

- The proposal of WBSETCL for North-South Bengal system connectivity need to carry out study under various scenarios for its justification.

vi) 132 kV connectivity with Melli(Sikkim) to WBSETCL system at Kalimpong

- Due to ROW constraints WBSETCL was requested to consider 132 kV D/C line between Chalsa and Kalimpong.

This is for information of the members.

VII Establishment of 400/220 kV S/S Bolangir by LILO of 400 kV Meramundali-Jeypore S/C line.

- The proposal for firming up as a regional scheme is to be discussed in the ERPC meeting.

Members may please discuss.

Deliberation in the TCC meeting

Member Secretary, ERPC requested Powergrid to enlighten the TCC members on the technical requirements of the transmission elements detailed in the agenda for better understanding by the constituent members. Shri Pagvi, AGM, Powergrid (Corporate Engineering), New Delhi presented the detailed transmission plan for new

generating stations of DVC, viz. Mejia, Bokaro TPS, Raghunathpur, Durgapur & Maithon RB, associated transmission system for Nabinagar TPS, Farakka – III (500 MW) of NTPC and a number of generation projects in Sikkim. Since there were a number of transmission proposals required to be discussed and approved for cost sharing, TCC desired to discuss the issue in details in a separate meeting specially convened at ERPC, Kolkata for this purpose among the beneficiaries of ER constituents, CEA and Powergrid

Member Secretary, ERPC agreed to convene a Special meeting at ERPC as desired by TCC.

Regarding the transmission proposals of WBSETCL during 11th Plan period, Director (System), WBSETCL informed that 220 KV D/C connectivity between Dalkhola (Powergrid) to 220/132 kV Dalkhola S/s and bay availability at Subhasgram S/s for 400 kV Subhasgram (PG)-Jagatballavpur D/C line was discussed with Powergrid and finalised. The cost involvement of the above would be borne by WBSETCL only.

The proposal of LILO of one circuit of 400 kV Maithon-Ranchi D/C line and 400 kV Guptomani-Jamshedpur D/C line had also been finalised with Powergrid after fulfilling the requisite requirements. The same would be discussed with CEA for firming up. The 400 kV Gokarna-Binaguri / Purnea (PG) D/C line is also required for system operation point of view in case of low hydro scenario to overcome the problem of over loading of 400 kV Farakka-Malda D/C line. While endorsing the views of WBSETCL, ERLDC proposed for 400 kV inter – connection between South and North Bengal System through 400kV Sagardighi – Purnea/Binaguri for system strengthening purpose. WBSETCL also proposed for 132kV connectivity between Kalingpong and Melli for bilateral power exchanges between Sikkim and West Bengal System.

It was decided that all the above proposals along with establishment of 400/220 kV Bolangir S/S by LILO of 400 kV Meramundali-Jeypore S/C line would be taken up in the next Standing Committee Meeting of ER.

COMMERCIAL MATTERS

ITEM NO. 7 A) PAYMENT OF UI -- PRESENT STATUS

Summary of UI Receipt / Payment status for bills up to 20.01.2008 (Week 42 of 2007-08) as received from ERLDC is indicated at Annexure-III.

Members may please note.

Deliberation in the TCC meeting

Members noted the current UI Receipt/Payment status. Members expressed concern over the non payment of UI charges by BSEB and delay in payment by NR. It was informed by Member Secretary, ERPC that ERPC Secretariat had already taken up the issue with NRPC Secretariat. BSEB representative informed that they had already taken up the matter with the Govt. of Bihar for liquidation of dues.

It was brought to the attention of the TCC members by WBSETCL that intra-state ABT mechanism has been implemented in West Bengal with effect from 01.01.2008. In case of non-receipt of payment from ER UI pool, there would be cash flow problem in the intra-State ABT mechanism of West Bengal.

B) REACTIVE ENERGY CHARGES -- PRESENT STATUS

The updated position of Receipt / Payment in the Pool as on 01.02.2008 as received from ERLDC on account of Reactive Energy Charges as per published account up to 20.01.2008 is given in Annexure-IV.

Members may please note and deliberate.

In this connection, it is informed that an amount of Rs.1,20,000/- has been spent by ERLDC for the Workshop on **"Black Start Operation Procedure"** conducted for OPTCL/GRIDCO, DVC and WBSEDCL/ WBSETCL engineers on 25.08.07, 05.10.07 and 08.02.08 respectively.

Further, it is informed that, in accordance with the decision taken in the erstwhile EREB forum, capacitor banks were proposed to be installed in erstwhile WBSEB system as part of system strengthening scheme, utilizing the fund available in the reactive pool account. However, the capacitor banks have not been installed. In the 6th Commercial Sub-Committee meeting held on 16.01.08, it has been decided that, in view of the revised regulation of CERC, stipulating the utilization of fund available in the reactive energy pool account for training purposes, therefore, WBSEDCL has been advised not to proceed further for installation of capacitor banks utililsing the reactive pool fund.

Members may please deliberate.

Deliberation in the TCC meeting

Members noted the present status of Reactive Pool A/c and TCC members approved the expenditure of Rs.1,20,000/ spent by ERLDC for the Workshop on "Black Start Operation Procedure" conducted for OPTCL/GRIDCO, DVC and WBSEDCL / WBSETCL engineers. TCC members also approved the abandonment of installation of capacitor bank in erstwhile WBSEB system utilising the Reactive Energy charges from the pool as per the revised regulation of CERC.

C) I.R.E. POOL ACCOUNT OF ER WITH OTHER REGIONS.

The status of settlement of IRE account amongst ER, SR & NR as on 01.02.2008 as received from ERLDC are indicated below :

ER-SR

- IRE account reconciled and settled with SRLDC upto the week 35, i.e. upto 02.12.2007 for the year 2007-08.

ER-NR

- As per calculation net IRE amount receivable from NR upto 27.08.2006 is **Rs. 11264.63780 lakhs** out of which an amount of **Rs. 9642.74403 lakhs** is still pending.

Members may please deliberate**.**

Deliberation in the TCC meeting

Members noted the reconciliation and settlement of IRE Pool account of ER with SR. Regarding outstanding IRE amount of NR, it was informed by Member Secretary, ERPC that the issue had already been taken up with NRPC Secretariat.

ITEM NO. 8 DEEMED GENERATION OF RANGIT HPS DURING THE PERIOD OF FLOOD AND RESTORATION THEREOF

It has been reported by NHPC that on 11.07.2006 at 00:30 hrs, a flash flood was observed at the Dam site of the Rangit Power Station with a discharge of 1405 Cumecs. The flash flood carried lot of wooden logs, silt and mud. The reported silt content was 51451 PPM. All the three machines were in operation at full load at that time. Due to unprecedented floods carrying huge silt, trash, etc., all the three machines had to be desynchronised and shut down at 01:30 hrs.

NHPC further reported that, as the silt removal process continued on 13.07.2006, the power station got flooded through a cooling water pipe which is tapped from the penstock. The Power Station upto EL 501 M i.e. service bay level was submerged, thus flooding various equipment such as turbines, generators, excitation panels, drainage/de-watering panels, motors etc. All the three units were synchronised after restoration as given below :

i)	Unit-I :	01/10/2006
ii)	Unit-II :	18/10/2006
iii)	Unit-III:	13/10/2006

NHPC had claimed deemed generation to the extent of 137.51 mU for the year 2006-07 for Rangit Station for the period of shutdown in

accordance with Clause 41 of CERC regulation. The issue came up for discussions in the 4th TCC meeting held on 21.09.2007 at Gangtok. The issue was referred by the TCC members to the Commercial Sub-Committee for detailed deliberations.

In the 6th Commercial Sub-Committee meeting held on 16.01.08 the issue was deliberated at length.

Chief Engineer, WBSEDCL stressed that (i) there was no provision in PPA for the deemed generation; (ii) there was no scope for passing on this burden to the consumers by WBSEDCL as the accounting period was over, and closed and the accounts had also been audited. Therefore, Chief Engineer, WBSEDCL suggested that NHPC should include this amount as additional expenditure while making the tariff petition in CERC in the next tariff period.

BSEB. JSEB, GRIDCO and DVC endorsed the views of WBSEDCL. However, JSEB clarified that deemed generation is on account of reduction of generation for reason beyond the control of the generating station when the units are otherwise ready for generation. He claimed that the units at Rangit were not ready for generation during the period of restoration.

Member Secretary, ERPC observed that, when a hydro power station is conceived, it bears some hydrological as well as geological risks. The beneficiaries of the hydro generating stations have to live with this risk. The hydrological risk is covered by concept of deemed generation which developer would get. However, this is a case of force majure where machines were not available so capacity charges would be nil. Member Secretary, ERPC was of the opinion that energy charges may be shared on 50 : 50 basis by NHPC and constituents.

As no consensus could be arrived at in the meeting, the proposal of Member Secretary, ERPC of holding a separate meeting between NHPC and its beneficiaries was accepted by the members of the Commercial Sub-Committee.

A Special Commercial Sub-Committee meeting of ERPC was held on 06.02.2008 at NHPC office, Kolkata among the beneficiary constituents of Rangit, NHPC, ERPC and Powergrid. In this meeting also there was no consensus regarding the payment to NHPC on account of deemed generation to the extent of 137.51 MU for the year 2006-07. It was, however, decided that NHPC would submit a detailed statement of payments received from different beneficiaries of Rangit for the year 2006-07 on account of capacity charges and energy charges. The same would be scrutinised by the beneficiary constituents as well as ERPC. Thereafter, another meeting would be convened by ERPC for the settlement of the issue.

Put up to the members for information and further advice.

Deliberation in the TCC meeting

Member Secretary, ERPC apprised the TCC members regarding the initiative taken by ERPC Secretariat for the settlement of the issue by convening a Special Commercial Sub-Committee meeting held at NHPC office, Kolkata on 06.02.2008. In the meanwhile, as desired by the beneficiary constituents of Rangit HPS, NHPC had submitted the details of the payments received from the beneficiaries in the year 2006-07. After scrutinising the same, ERPC would convene another Special Commercial Sub-Committee meeting.

ITEM NO. 9 PROCEDURE FOR DISBURSEMENT OF UI CHARGES TO OTHER REGIONS – PROPOSAL OF NRPC

As per the existing procedure of disbursement of UI, the inter-regional constituents are accorded highest priority than the regional constituents. In a recent letter, NRPC Secretariat had detailed the problems being faced by them due to inadequate receipt in UI pool and the subsequent payment to the inter-regional constituents on first charge basis.

NRPC Secretariat had submitted three proposals for disbursement of UI charges. These proposals were deliberated at length in the 6th Commercial Sub-Committee meeting held on 16.01.08 wherein the constituents of the Eastern Region observed that, as per the existing regulations of CERC, payment to the UI pool is to be accorded highest priority. The genesis of the problems of NR lies in the continued default by some constituents in NR which has to be settled by NR itself. Therefore, the constituents of ER unanimously endorsed that the existing method of giving highest priority to the neighbouring region in the matter of disbursement of UI charges should be continued. Further it was felt by the constituent that, with the introduction of differential UI mechanism and the subsequent directive of CERC for utilization of the balance remaining in the pool, the problem being faced by NR at present with regard to payment of UI charges would be considerably lessened.

The views of ER constituents have been conveyed to NRPC Secretariat by ERPC.

Put up to TCC for information.

Deliberation in the TCC meeting

Member Secretary, ERPC briefed the TCC members regarding the proposals received from NRPC Secretariat. He further informed that the issue had already been deliberated in the 6th Commercial Sub-Committee meeting held on 16.01.2008. The constituents of ER had unanimously endorsed that the existing method of giving highest priority to the neighbouring region in the matter of disbursement of UI charges should be continued.

TCC members endorsed the decision of the Commercial Sub-Committee meeting and decided to place it in the ERPC meeting for final approval.

ITEM NO. 10 COMMENCEMENT OF LONG TERM OPEN ACCESS (LTOA) POWER TRANSACTION BETWEEN DVC AND DTL (BRPL, BYPL & NDPL) AND RELATED ISSUES

The long term open access to the extent of 230 MW has been granted to DTL by Powergrid for bi-lateral sale of power by DVC to DTL. The scheduling has commenced with effect from 11.12.2007. Since DTL has become a long term customer, transmission charges corresponding to the long term open access of 230 MW has been booked against DTL from the month of December 2007. However, Powergrid has intimated that NDPL, BRPL and BYPL – three distribution companies of DTL have subsequently entered into a separate agreement with Powergrid for above transaction.

This is for information of the members.

Deliberation in the TCC meeting

Members noted.

ITEM NO. 11 COMMENCEMENT OF GENERATION FROM TEESTA STAGE - V AND SHARE ALLOCATION

In a recent communication, NHPC has intimated that Teesta Stage-V H.E. Project is under advance stage of construction and 1st unit of the project is expected to be commissioned in January' 2008. For this, NHPC had already entered into Power Purchase Agreement on 09.09.2002 with respective entities of the states of Bihar, Jharkhand, West Bengal, Sikkim and with DVC.

In the 6th Commercial Sub-Committee meeting held on 16.01.08, it was further informed by NHPC that CEA had already recommended to MoP, GoI regarding allocation of power from Teesta Stage-V. The order from the Ministry is awaited.

Further, in the Commercial Sub-Committee meeting, it was emphasized that

i) the modalities of testing of lines and commercial arrangement thereof for charging of Teesta-Binaguri circuits should be finalized beforehand and intimated to ERPC / ERLDC for accounting of energy;

ii) the final metering arrangement, both at Binaguri as well as Teesta end including meter number, type, etc should be intimated to ERPC/ERLDC; and

iii) the modalities of collection of meter readings on weekly and monthly basis and transmittal of the same to ERLDC/ERPC for UI and REA purposes should be finalized.

NHPC may please indicate the latest status.

As per the request of NHPC vide letter dated 25.01.2008, it is informed that a Special Commercial Sub-Committee meeting of ERPC was held on 06.02.2008 at NHPC office, Kolkata regarding provisional tariff of Teesta Stage V HEP (3 x 170 MW) executed by NHPC in the central sector. Besides NHPC, the beneficiaries of Rangit HPS, ERPC and Powergrid attended the meeting.

All the beneficiary constituents present in the meeting unanimously accepted the provisional tariff of Rs.1.62 per unit (composite) as proposed by NHPC, subject to approval by CERC as per the petition filed by NHPC in this regard with CERC on 22.01.2008.

This is for the kind information of TCC members.

Deliberation in the TCC meeting

Member Secretary, ERPC informed that the U # 2 of Teesta Stage-V had been test synchronised on 05.02.2008. He observed that generation in Teesta Stage V units would bring much needed relief to the Eastern Region, particularly to JSEB and BSEB, who are reeling under severe power shortage.

TCC members congratulated NHPC for the synchronisation of Unit# 2 of Teesta Stage-V H.E. Project.

Regarding share allocation from Teesta Stage V, MoP is yet to issue necessary order. In this connection, it was submitted by GRIDCO that GRIDCO had placed a requisition of 150 MW from Teesta Stage V H.E. Project.

Member Secretary, ERPC also informed the TCC members that, in the Special Commercial Sub-Committee meeting held on 06.02.2008 at NHPC office, Kolkata, the beneficiary constituents present in the meeting unanimously accepted the provisional tariff of Rs.1.62 per unit (composite) as proposed by NHPC, subject to approval of CERC.

TCC members approved the provisional tariff of Rs.1.62 per unit for Teesta Stage V as recommended by the Special Commercial Sub-Committee and decided to place it to ERPC for acceptance of decision of TCC.

ITEM NO. 12 INCENTIVE ENERGY STATEMENT FOR NTPC STATIONS IN EASTERN REGION FOR THE PERIOD APRIL, 2007 TO SEPTEMBER, 2007.

The provisional quarterly incentive energy statements on cumulative basis for the period from April'07 to September'07 in respect of NTPC stations in Eastern Region have been finalized and issued by ERPC Secretariat. The stationwise statement is given in Annexure-V.

Members may please note.

Deliberation in the TCC meeting

Members noted.

ITEM NO. 13 CERTIFICATION OF TRANSMISSION AVAILABILITY

The Availability of POWERLINK lines associated with Tala Transmission system for the year 2006-07 has been issued by ERPC, which was 99.78 % for the year 2006-07.

Members of the Commercial Sub-Committee noted the above certification.

Put up for information of the TCC members.

Deliberation in the TCC meeting

Members noted.

ITEM NO. 14 COMMERCIAL OPERATION OF TRANSMISSION ASSETS

The following transmission elements associated with the Kahalgaon Stage-II (Extension Phase I) have been declared under commercial operation by Powergrid and was subsequently accepted in the 6th Commercial Sub-Committee meeting held on 16.01.08 :

Sl. No.	Name of the Element	Date of Commercial Operation	Remarks
1.	400 kV D/C Biharshariff-Balia line (Circuit I)	**01.09.2007**	Accepted in the meeting.
2.	Bus Reactor 80 MVAR along with associated bay at Ranchi S/s	**01.09.2007**	- do -
3.	400 kV D/C Biharshariff-Balia line (Circuit II)	**01.11.2007**	- do -
4.	315 MVA ICT I at Patna S/s	**01.11.2007**	- do -
5.	2 nos. 220 kV bay at Patna	**01.12.2007**	- do -
6.	315 MVA, 400/220 kV ICT I at Ranchi S/s	**01.12.2007**	- do -
7.	315 MVA, 440/220 kV ICT II and associated bays at Patna S/s	**01.01.2008**	- do -

Members may please approve.

Deliberation in the TCC meeting

Member Secretary, ERPC requested the members to note the date of commercial operation of the different transmission elements associated with Kahalgaon Stage-II (Extension Phase-I) as mentioned in the agenda.

TCC members noted the transmission elements associated with Kahalgaon Stage-II (Extension Phase-I) declared under Commercial Operation by Powergrid and subsequently accepted in the 6th Commercial Sub-Committee meeting held on 16.01.2008.

But, BSEB representative emphasized that 400 kV D/C Biharshariff-Balia and 400 kV D/C Patna-Balia lines along with the associated bays are part of the Kahalgaon Stage-II. Further, the aforesaid assets do not form a part of the Bulk Power Transmission Services Agreement signed by BSEB with PGCIL. Therefore, ERPC was not the appropriate forum for acceptance of commercial declaration of these assets. So, BSEB clarified that the question of sharing of cost of the aforesaid transmission assets by BSEB did not arise.

After detailed deliberation on this issue, TCC members decided to place it before ERPC for advice in this regard. However, TCC members recommended acceptance of commercial operation of transmission elements under Sl. No. 2, 4 to 7 as mentioned in the agenda.

ITEM NO. 15 400 KV ROURKELA-RAIPUR D/C LINE MADE LILO AT RAIGARH

The existing 400 kV Rourkela-Raipur D/C line has been made LILO at Raigarh S/S of WR. SEMs have also been installed at Raigarh end.

In the 6th Commercial Sub-Committee meeting held on 16.01.08 the members noted the above change and observed that 400 kV Rourkela-Raigarh D/C line would now become the inter-regional line instead of 400 kV Rourkela-Raipur D/C line. As such, the transmission charges for the portion from Raigarh to Raipur should be fully borne by WR constituents as the regional element of WR and the transmission charges of 400 kV Rourkela-Raigarh D/C line are to be borne by ER and WR in line with the existing norms.

In reply, Powergrid representative informed that they would discuss the issue with their counter part of WR and revert back.

Powergrid is requested to indicate the latest status in this regard.

Put up to TCC for further deliberation and advice.

Deliberation in the TCC meeting

Member Secretary, ERPC apprised the members present regarding the LILO of 400 kV Rourkela-Raipur D/C line at Raigarh. The issue of treating the Rourkela-Raigarh line as inter-regional line between ER and WR in place of original Rourkela-Raipur line and the sharing of cost therein was deliberated in details in the 6th Commercial Sub-Committee meeting where utility constituents of Eastern Region firmly held the view that WR would bear 100% transmission charges for the line between Raigarh and Raipur, being the integral part of WR regional network and the transmission charges for the remaining Rourkela—Raigarh line, being the inter-regional line, would be shared by ER & WR in accordance with the existing regulation of CERC.

TCC members unanimously endorsed the decision of the 6th Commercial Sub-Committee meeting of ERPC.

Powergrid representative present in the meeting that they would file petition with CERC in this regard.

TCC referred the issue to ERPC for information.

ITEM NO. 16 REPLACEMENT OF ABB MADE PLCC PANELS OF 400kV FARAKKA -- DURGAPUR LINE 1 & 2 AND 400 kV FARAKKA-JEERAT LINE 1 & 2 (BOTH NTPC AND POWERGRID ENDS)

Powergrid representative informed that the existing PLCC panels protection coupler (ABB make – Model: (NSD-40 and NSD-60) used for 400 kV Farakka-Durgapur line 1 & 2, 400 kV Farakka-Jeerat line 1 & 2 at Durgapur, Jeerat and Farakka end are old, obsolete in design and their spares are not available. These are to be replaced with new ones (17 nos. protection coupler panel) otherwise it will affect the availability, reliability and security of the system. The tentative cost for these 17 numbers Panels at Durgapur, Jeerat and Farakka end will be Rs.34 lakhs. Powergrid desired constituents to agree to above proposal.

Members in the Commercial Sub-Committee meeting approved the proposal for replacement of ABB make Model : NSD-40 and NSD-60 at a cost of Rs.34 lakhs.

TCC may please approve.

Deliberation in the TCC meeting

TCC approved the proposal of Powergrid for replacement of ABB made PLCC panels of 400 kV Farakka-Durgapur Line 1 & 2 and 400 kV Farakka-Jeerat Line 1 & 2 at a cost of Rs.34 lakhs, as recommended by Commercial Sub-Committee of ERPC.

TCC referred the proposal to ERPC for final approval.

ITEM NO.17 3000 MW DIBANG MULTIPURPOSE PROJECT IN ARUNACHAL PRADESH – CONSENT FOR PURCHASE REGARDING

NHPC has been entrusted with the construction of 3000 MW Dibang Multipurpose Project in Arunachal Pradesh for execution. NHPC in their letter dated 25.01.08 addressed to BSEB, JSEB, GRIDCO, DVC, Deptt. of Power, Government of Sikkim and WBSEDCL intimated that Memorandum of Agreement for the above project between NHPC and Govt. of Arunachal Pradesh has been signed on 24.06.07 and techno-economic clearance has been accorded by CEA on 23.01.08. The salient features of the project as intimated by NHPC are as under :

a) The design energy of the project is 90% dependable year as worked out to be 11330 MUs.

b) The estimated project cost at November 2007 price level to be Rs.16425.65 Crs. including IDC of Rs.2527.59 Crs.

c) Schedule of completion of the project is about 9 years after approval from CCEA. The firm cost of the project will be known after CCEA approval.

NHPC requested constituent members to furnish their consent for the quantum of power for the above project at the rate which will be worked out by CERC based on guidelines prevailing at the time of commissioning of the project. The exact quantum of power to be allocated to each will be decided by MoP.

Members may please discuss and opine.

Deliberation in the TCC meeting

Member Secretary, ERPC informed that 3000 MW Dibang Multipurpose Project in Arunachal Pradesh would be executed by NHPC and was scheduled to be completed about nine years after CCEA approval. He requested the constituent members to indicate their requirements from this project in writing.

In the meeting, it was informed by BSEB that they would require 750 MW whereas WBSEDCL indicated that they would require 500 MW from the project. GRIDCO indicated that they were in process of working out the requirement and thereafter, they would take up with NHPC.

In conclusion, Member Secretary, ERPC requested all the constituents willing to avail power from the project, to furnish their requirement to NHPC in writing immediately with a copy to ERPC.

Utility constituents present in the meeting agreed with the suggestion of Member Secretary, ERPC.

ITEM NO.18 ANY OTHER POINT WITH PERMISSION OF THE CHAIR

ISSUES RAISED BY GRIDCO

In the meeting GRIDCO submitted the following agenda for discussion in the TCC meeting which are depicted below :

I. 400 KV PARULIA-JAMSHEDPUR-BARIPADA(KALABADIA)-MENDASHAL-NARENDRAPUR-JEYPORE-GAZUWAKA LINE

II. TRANSMISSION PLANNING FOR NEW CAPACITY ADDITION WITH 13 NOS. OF IPPS WITH 16000 MW

III. NEW 400 KV LINE & SUB-STATION IN ORISSA ON PGCIL SYSTEM AT KEONJHAR AND JHARSUGUDA

Deliberation in the TCC meeting

In the meeting GRIDCO representative explained the above schemes and after brief deliberation, it was decided that GRIDCO would place these issues in the agenda of next meeting of the Standing Committee on Transmission Planning in Eastern Region for further discussions.

Page Break

ANNEXURE – A_1

LIST OF PARTICIPANTS
5th TCC MEETING

Date :18th February, 2008

Venue : ***Hotel Swosti Plaza, Bhubaneswar***

Name of Constituent /Organisation	Sl. No.	Name of the Officer	Designation
JHARKHAND **A) JSEB**	**1.**	**Shri G.N.S.Munda**	**Member (Tech)**
	2.	Shri G.Shukla	GM-cum-CE
	3.	Shri A.K.Chatterjee	CE-cum-Secy.to Chmn.
	4.	Shri R.N.Tiwary	ESE (T-C)
	5.	Shri S.C.Mishra	ESE(Coml.)
	6.	Smt.Anita Prasad	AEE(Coml.)
	7.	Smt. Anjana Shukla Das	AEE(Coml.)
BIHAR **A) BSEB**	**8.**	Shri S.K.Ghosh	ESE(IS)
	9.	Shri Rakesh	EEE(IS)
ORISSA **A) OPTCL**	**10.**	**Shri C.J.Venugopal**	**CMD**
	11.	Shri K.K.Nath	Dir.(Eng.)
	12.	Shri U.K.Panda	Dir.(F&CA)
	13.	Shri A.C.Nath	Chief GM(O&M)
	14.	Shri G.B.Mishra	CGM(Const.)
	15.	Shri N.Dash	Sr.GM(PS)
	16.	Shri B.N.Mahapatra	GM (SLDC)
	17.	Shri S.K.Panigrahi	Manager (El.) (O&M)
	18.	Shri S.K.Das	Dy. Manager (El.)
	19.	Shri Harapriya Behera	A.M (El.) (R&T)
	20.	Smt. Usharani Sahoo	A.M(El.)
B) OHPC	**21.**	**Shri J.Padhi**	**Dir.(Oprn.)**
	22.	Shri B.C.Padhi	Sr.GM(El.)
	23.	Shri D.N.Patra	Manager(El.)
	24.	Shri A.K.Jagadev	Dy. Manager(EL.)
	25.	Shri B.R.Gantazelf	Dy. Manager(EL.)
C) OPGC	**26.**	Shri K.C.Samantray	Dy. Manager
WEST BENGAL **A) WBPDCL**	**27.**	**Shri P.K. Chakraborty**	**ED (Corporate)**
B) WBSETCL	**28.**	**Shri P.Gupta**	**Dir.(Sys. Opn.)**
	29.	Shri A. Karmakar	SE(E)
C) WBSEDCL	**30.**	**Shri M.K.Ray**	**Director (Coml)**
	31.	Shri M.Majumder	CE(Coml.)
D) CESC	**32.**	Shri B.B.Chakrabarty	Vice President (SO)
	33.	Shri R.Chakravarty	Manager(System)
Govt. of Sikkim	**34.**	Shri H.B.Pradhan	Executive Engineer (EHV)

CEA	**35.**	**Shri T. Chatterjee**	**C E (GM)**
DVC	**36.**	**Shri C.M.P.Sinha**	**Director(Coml.)**
	37.	Shri T.K.Paul	C E (Coml.)
	38.	Shri D.Mukherjee	C E (CLD)
	39.	Shri C.Karmakar	SE(Elec.)
NTPC	**40.**	Shri Lalji Agrawal	AGM(OS)
	41.	Shri K.K.Sinha	DGM(Coml.)
	42.	Shri Vivake Kumar	DGM (Coml.)
	43.	Shri K.Pal	DGM (Coml.)
	44.	Shri S.K.Kar	DGM (Coml.)
NHPC	**45.**	Shri R.N.Misra	ED (Coml.)
	46.	Shri Kamal Kapoor	ED (O&M)
	47.	Shri D.Chakraborty	Chief (Finance)
POWERGRID	**48.**	**Shri D.Chowdhury**	**ED,ER-II**
	49.	**Shri J.P.Singh**	**GMI/C, ER-I**
	50.	Shri B.S.Pandey	GM (OS),ER-II
	51.	Shri Dr. L.Hari	GM (O&M), ER-II
	52.	Shri S.Prasad	AGM (Coml.), ER-II
	53.	Shri A.M.Pavgi	AGM(Engg)
	54.	Shri S.K.Singh	CM(OS), ER-II
	55.	Shri J.Das	Manager (OS), ER-I
	56.	Shri P.K.Gupta	DGM
ERLDC	**57.**	**Shri M.G.Raoot**	**GM**
	58.	Shri P.Mukhopadhyay	DGM
	59.	Shri S.S.Barpanda	CM
	60.	Shri S.K.Hazra	CM
	61.	Shri S.Konar	DM
GRIDCO	**62.**	**Shri A.C. Mallick**	**Dir. (Coml)**
	63.	Shri Mohan Kumar Misra	Sr. GM(PP)
	64.	Shri B.P.Mahapatra	DGM (F) PP
	65.	Shri U.Sahu	Manager
	66.	Smt. Sasmita Patjoshi	EA to DC
	67.	Shri N.Khan	L.O
	68.	Shri Madhu Sudan Sahoo	DM(EBC)
	69.	Shri Dalip Kr. Sahoo	AM(TC) PP
	70.	Smt.Dipti Satapathy	AM(F) PP
	71.	Smt. Madhumita Mishra	AM(El) PP
	72.	Shri P.C.Sahoo	DM (PP)
Tala HEP	**73.**	Shri B.K.Misra	Director (Tech)
ERPC	**74.**	**Shri R.K.Grover**	**MS**
	75.	Shri J.Bandyopadhyay	SE
	76.	Shri S.N.Kayal	SE
	77.	Shri B. Sarkhel	EE

	78.	Shri S.K.Ghosh	EE
	79.	Shri A. Roy	EE
	80.	Shri D.K.Mitra	EE
	81.	Shri S.M.Jha	EE
	82.	Shri S. P. Datta	DGM, NTPC
	83.	Shri P..Sengupta	Stenographer