

EASTERN REGIONAL POWER COMMITTEE
14, GOLF CLUB ROAD, TOLLYGUNGE
KOLKATA-700033

**MINUTES OF THE 24th OCC MEETING HELD AT ERPC, KOLKATA
ON 17.03.2008 (MONDAY) AT 10:30 HRS**

List of participants is enclosed at Annexure-I.

At the outset, Member Secretary, ERPC welcomed the delegates in the 24th OCC meeting. He informed that 5th TCC and 6th ERPC meetings were held at Bhubaneswar on 18.02.08 and 19.02.08 respectively wherein a number of important decisions were taken pertaining to Eastern Region. He also highlighted some of the important events / issues during the month of February'08:

- **Frequency profile on the average in the integrated grid during the month of February'08 was observed to be around 82% of the time above 49.0Hz.**
- **Energy generation in ER during the month of February'08 has increased by 5.7% on per day average basis when compared to January'08.**
- **400kV Purulia PSP – Durgapur (Powergrid) line was charged and put into operation on 19.02.08.**
- **Single bus operation of the generating units at Upper Indravati in Orissa was found successful in regard to higher fault level / improved voltage profile. The frequent trippings of 400kV Indravati-Indravati (Powergrid) S/C line on high voltage would be minimized.**

He also hoped that BSEB would take up the commissioning of bus differential scheme at Biharshariff s/s with the help of M/s AREVA. in the month of March'08.

He then requested GM, ERLDC to give an overview on the grid operation during February'08.

GM, ERLDC, in his opening remarks, pointed out that ERPC provides an effective platform for the resolution of vital issues some of which are at times having conflicting interest among the stakeholders. With regard to system operation for the month of February'08, he informed that the central sector generation particularly NTPC maintained similar trend of performance as that of January'08. He then apprised the members some of the developments that had taken place during the last one month:

- **Allocation of power to ER beneficiaries from Teesta Stage-V (510MW) of NHPC came into effect from 00:00 hrs of 01.03.08**
- **Additional allocation of 60MW to Bihar state from the central sector generation in ER made effective from 01.03.08**
- **System contingency developed in NR due to fog resulting in simultaneous tripping of EHV transmission lines (30-40 lines at a time) on two occasions causing widespread load shedding**
- **A congestion charge (@ Rs. 3/- per unit on overdrawal/ underdrawal) was applied on the NR constituents on 31.01.08**
- **Long Term Open Access (LTOA) for 100MW of power on round the clock basis between DVC and MPTTC commenced from 29.02.08 at 19:00 Hrs**
- **Farakka STPS of NTPC has likely to face dry cycle of water inflow for 10 days from 11.03.08 as per the International Treaty between India and Bangladesh for water flow through river Ganges at Farakka.**
- **Kahalgaoon STPS unit# VI (500MW) of NTPC oil synchronized on 16.03.08**

Thereafter, Member Secretary, ERPC requested to take up the agenda points in seriatim.

ERPC, Kolkata

ITEM NO.:1 CONFIRMATION OF THE MINUTES OF THE 23RD OCC MEETING OF ERPC HELD AT ERPC, KOLKATA ON 07.02.2008

The minutes were circulated vide letter no. ERPC / SE (OPRN)/ OPERATION /2008/6597-6643 dated 15.02.2008.

No comments have been received from any of the constituents. The minutes of the above meeting may please be confirmed.

The minutes of the above meeting was confirmed without any modifications.

ITEM NO: 2 REVIEW OF THE GRID PERFORMANCE DURING FEBRUARY, 2008

2.1 POWER SUPPLY POSITION:

The power supply position of Eastern Region for the months of February'08 & Janaury'08 is indicated at Annexure-I.

- From comparison of the generation figures of February'08 with Janaury'08, it is observed that the net energy generation (MU) in Eastern Region (including contribution of Bhutan) has increased by 5.7 % on per day average basis.
- The net peak demand met has increased from 9956MW to 10174MW
- The demand met during February'08 has increased by 218MW, as compared to Janaury'08. The percentage of Peak shortage of ER has increased by 0.65 %

The above variations are considered normal.

Members may please note.

Deliberation in the meeting

Members noted the above.

2.2 FREQUENCY:

The frequency profile of ER for the month of February'08 and for the months of January' 08 & February'07 (for comparison) is tabulated below:

Month	% of time of the month frequency remained			
	<49.0 Hz	49.0-50.5 Hz	50.5-51 Hz	>51.0 Hz
January' 08	19.72	80.28	0.00	0.00
February' 08 *	17.17	82.83	0.00	0.00
February' 07	7.32	92.54	0.12	0.02

* Maximum (Inst.) Frequency : **50.27Hz** on 28.02.08 at 14:01 Hrs
Minimum (Inst.) Frequency : **48.67Hz** on 16.02.08 at 09:09 Hrs

From the above table following may be observed:

- The percentage of time frequency profile in the IEGC band (i.e 49.0 to 50.5 Hz.) during the month of February' 08 has marginally improved as compared to previous month i.e. January' 08. However, it has also shown considerable deterioration over the corresponding month of the previous year (i.e. February'07).
- The percentage of time frequency below 49.0 Hz in the month of February' 08, has shown little improvement as compared to the month of January'08.

The detailed daily frequency for the month of February' 08 is enclosed at Annexure-II.

ERLDC may please share their views on frequency profile observed during February' 08.

Members may please discuss.

2.3 ACTUAL DRAWAL VIS-À-VIS DRAWAL SCHEDULE

The constituent wise actual drawal as against the drawal schedule for the month of February'08 as received from ERLDC is given as under:

Constituent/ System	Drawal Schedule (MU)	Actual Drawal (MU)	Total over drawal (+) /Underdrawal (-) (MU)
BSEB	493	534	41
JSEB	178	207	29
GRIDCO	489	427	-62
DVC	-126	-170	-44
SIKKIM	26	25	-1
WEST BENGAL	111	70	-41
SR	-32	-30	2
NER	61	23	-38
WR	179	210	31
NR	662	831	169

All drawal schedules are arrived at considering bilateral export.

2.4 DETAILS OF POWER EXCHANGE WITH OTHER REGIONS

The detail of net energy exchange of ER with other regions for the month of February'08 as received from ERLDC is shown below:

MONTHLY AND CUMULATIVE EXPORT OF ENERGY FROM ER DURING FEBRUARY'08 (BASED ON SEM FIGURES)

Region To	Export in MU		Export in MU during the same period last year		% Growth w.r.t same period last year	
	During Feb'08	Cumulative 2007 - 2008 (upto Feb'08)	During Feb '07	Cumulative 2006 - 2007 (upto Feb'07)	During the month	Cumulative 2007-08 (upto Feb'08)
NR	831	11181	540	6529	53.9	71.2
WR	210	3802	500	6160	-58.0	-38.3
SR	-	365	190	1042	-	-65.0
NER	23	23	80	407	-	-
TOTAL	1064	15371	1310	14138	-18.8	8.7

**MONTHLY AND CUMULATIVE IMPORT OF ENERGY TO ER DURING FEBRUARY'08
(BASED ON SEM FIGURES)**

Region From	Import in MU		Import in MU during the same period last year		% Growth w.r.t same period last year	
	During Feb'08	Cumulative 2007-2008 (upto Feb'08)	During Feb'07	Cumulative 2006 - 2007 (upto Feb'07)	During the month	Cumulative 2007-08 (upto Feb'08)
NR	0	0	0	0	-	-
WR	0	0	0	0	-	-
SR	30	1734	0	0	-	-
NER	0	1240	0	381	-	-
TOTAL	30	2973	0	381	-	681.1
Net Export From ER	1034	12398	1310	13758	-21.1	-9.9

It may be observed from the above statement that during the month of February'08 the energy export to NR increased by 54% with respect to previous year. However, the export to WR reduced by 58 %. The net energy export from ER to other regions decreased by 21% only.

Members may please note.

Deliberation in the meeting

GM, ERLDC explained in details the system performance particularly the net energy generation, peak demand met, frequency regime and energy export / import from / to ER during the month of February'08. The low frequency (49.0Hz & below) operation took place 17.17% of the time as compared to 19.07% in the month of January'08. The quantum energy export to NR has registered an increase with the corresponding reduction of export to WR. Further, the cumulative net energy export from ER to other regions got reduced by 10% till February'08.

2.5 VOLTAGE PROFILE OF IMPORTANT SUB-STATIONS IN EASTERN REGION

Name of the sub-station	Maximum Voltage (kV)	Minimum Voltage (kV)
400 kV PURNEA	430	409
400 kV BINAGURI	429	406
400 kV BIHARSHARIFF	429	399
400 kV DURGAPUR	428	404
400 kV PATNA	437	406
400 kV JEERAT	412	381
400 kV ARAMBAG	415	388

It may be noted that during the month of February' 08, voltages at Patna, Purnea, Binaguri and Biharshariff s/s remained on higher side, whereas minimum voltage at Jeerat s/s was observed on lower side particularly during peak hours(18:00 Hrs).

It has also been observed by ERLDC that 400kV bus voltage at Durgapur (Powergrid) & FSTPS (NTPC) has increased with closing of 400kV Purulia PSP – Durgapur (Powergrid) line section. WBSETCL is requested to apprise any change of voltage profile of 400 & 220kV s/s in the adjoining areas of Durgapur s/s.

Members may please note and discuss.

Deliberation in the meeting

Members noted the maximum / minimum bus voltage of important sub-stations of ER during February'08. After closing of 400kV Purulia PSP-Durgapur (Powergrid) line, WBSETCL apprised that there was improvement of voltage profile by 3-5% for Bidhannagar 220kV s/s. However, high voltage (upto 428kV) was being experienced at Purulia PSP when there was no machine at bar and particularly during lean hours of the day. Member Secretary, ERPC requested WBSETCL to explore the possibility of diversion of one (63MVAR) un-utilized bus reactor of Kolaghat TPS of WBPDC and installation of the same for voltage control at Purulia PSP.

In this connection, ERLDC also proposed to utilize the 31.5MVAR tertiary reactor of the 400 / 220 /33kV ICT at Indravati HEP for controlling of persistent high voltage at there.

2.6 UFR OPERATION IN ER

As minimum frequency during the month of January' 08 did not touch 48.5 Hz, no UFR operation in ER was expected. BSEB, CESC, JSEB, OPTCL and WBSETCL have submitted “NIL” report for UFR operation during the month of February' 08. However, DVC reported tripping of UFR Stage-I at Belmuri s/s on 22.02.08 at 10:10 Hrs. DVC is requested to test the settings of the relay at the earliest.

The compliance report of testing of UFR Stage-I has been received from BSEB on 28.02.08. After testing of UFRs at Biharshariff s/s of Powergrid, those were installed at the feeders mentioned below:

Stage-I(48.5Hz)	Mithapur 132kV s/s	33kV PESU III Fdr	-15MW
	Gaighat 132kV s/s	33kV Meenabazar	-15MW
	Fatuah 132kV s/s	33kV Katar Fdr	-10MW
Stage-II (48.2Hz)	Gaighat 132kV s/s	33kV City Fdr	20MW
	Mithapur 132kV s/s	33kV PESU I&II Fdr	-12MW

In the 5th TCC meeting held at Bhubaneswar on 18.02.08, the TCC members principally agreed to raise the first stage UFR setting 48.6 Hz (Inst.) in ER, as per decision taken in the joint meeting among NR, WR & ER held at ERPC, Kolkata on 27.11.07. However, before implementing the same it had to be established that the load relief obtained in NR & WR UFR stage-I settings at 48.8Hz were in accordance with the recommended scheme. A copy (refer Annexure-III) of the actual load relief obtained in WR constituents and number of trippings occurred on daily basis during the month of January'08 as per the recommended load relief is enclosed for reference of OCC members.

Regarding introduction of df/dt relay in ER, TCC members in general opined that the feedback from NR & WR on effectiveness of existing df/dt relay was required before any final decision could be taken by ER in respect of the implementation of the same.

In this connection, it may please be noted that WRPC in its 6th meeting held on 11.01.08 advised WRLDC to discuss the matter with NRLDC and ERLDC for arriving at agreed df/dt setting. The existing df/dt stage-I & II settings in WR are 48.8Hz at 0.1Hz per second and 49.0Hz at 0.2Hz per second whereas, revised setting in the combined NEW grid as agreed in the meeting on 27.11.07 are:

Stage-I - 49.9Hz at 0.1Hz per second and,
Stage-II- 49.9Hz at 0.2Hz per second respectively.

WRPC opined that the initiating frequency of df/dt relay at 49.9Hz might result in rise in system frequency to unsafe levels. Member Secretary, NRPC vide its letter dated 28.02.08 requested WRLDC to resolve the issue for early implementation of the df/dt relays at revised settings in the combined grid operation.

Members may please discuss.

CE, CLD,DVC in a recent communication observed that even after hiking the UI rate to Rs.10 (below 49.0Hz), the drawal of UI power by some of the constituents even below 49.0Hz proved that higher UI rate does not act as a major deterrent against overdrawal. The difference between actual drawal (sometimes lesser by way of load shedding) and projected scheduled export of any constituent has opened up a lucrative avenue for profit making at such a low frequency.

So, the under frequency relay (UFR) installed to provide requisite load relief at 48.8Hz may not come to the rescue as a preventive measure when the system frequency going below 49.0Hz. Hence, stage wise UFR settings may be reviewed for implementing against the defaulting regions at comparatively higher level than the regions that are maintaining better UI.

DVC may please further elaborate.

Deliberation in the meeting

OCC members noted the UFR Stage-I operation of DVC at Belmuri s/s on 22.02.08 and concluded that the said UFR had mal-functioned. Members advised DVC to test the setting of the relay at an early date and to submit the compliance report.

Installation of UFRs in the feeders after testing by BSEB as mentioned above was appreciated.

Member Secretary, ERPC informed that the issue regarding raising of UFR settings from 48.5 Hz to 48.6Hz instantaneous and introduction of DF/DT relay in ER would be discussed with WRPC & in NRPC meeting to be held in the month of April'08. It was opined in the meeting that, if the question of implementation of DF/DT relays in ER arises at all, then West Bengal and Orissa having the facility of bulk shedding feeders, would be considered.

The view of DVC for hiking of UI rate vis-à-vis drawl of UI power by some of the constituents even below 49.0Hz was discussed. GM, ERLDC stated that even though system frequency reportedly

operated within normal zone (49.0Hz to 50.5Hz) for 82.5% of the time, most of the time the system frequency remained hovering around 49.0Hz. Further, adequate load relief by way of UFR operation at 48.8Hz in NR & WR as well through DF/DT relay operation was also not forthcoming.

OCC members expressed serious concern over alarming low frequency operation and suggested that a self-correcting mechanism should be evolved to tackle this situation.

ITEM NO: 3 IMPORTANT EVENTS

I. 400kV Purulia PSP - Durgapur (Powergrid) line was taken into service for the first time on 19.02.08.

II. 220kV Single bus operation at Upper Indravati HEP of OHPC was commenced w.e.f 26.02.08 after commissioning of SPS for inter-tripping of one unit(150MW) of UIHEP in the event of tripping of 400kV UIHEP-Indravati(Powergrid) line with all units are in operation.

Members may please intimate any other development/important events that took place during the month of February'08.

Members noted the above.

ITEM NO: 4 MAJOR TRANSMISSION LINES/ELEMENTS OUTAGES IN ER GRID

Sl. No	Description	Date of Outage	Reason	Remarks
Lines / Elements under outage				
1.	50 MVAR line reactor of 400 kV Kahalgaon – Patna line-I at Patna end	24.12.07	Tripped on operation of PRV & Buchholtz Relay	<i>Line reactor was restored and presently operated as bus reactor w.e.f 02.03.08. Powergrid intimated that at present the reactor has been taken into service of 400kV Kahalgaon-Patna line-I at Patna end on 11.03.08.</i>
2.	50 MVAR line reactor of 400 kV Kahalgaon – Patna line-II at Patna end	Sept'07	Sent to M/S BHEL Works for repair.	<i>Powergrid intimated that the repair work of the line reactor has been continuing at M/s BHEL works and is expected by March'08. Powergrid may please intimate the present status. Powergrid intimated that the line reactor is to reach at site by 20.03.08 and expected to be commissioned before 15.04.08.</i>
3.	150 MVA ICT-I at Bodhgaya	04.03.08	Fire hazard in Bodhgaya s/s	<i>BSEB may furnish target dates. BSEB informed that at present 2 nos. of auto transformer is available at Bodhgaya s/s and there is no constraint of power evacuation. Auto-transformer no. IV & II restored on 06.03.08 & 15.03.08 respectively.</i>
4.	220kV Talcher TPS-Joda line-II	26.08.07	CB bursting at Talcher TPS	<i>NTPC intimated earlier that the new CB is expected from M/s BHEL by March'08. NTPC may please intimate the present status. NTPC informed that since R & M works of the 220kV Talcher switchyard is under way, the replacement of CB of the said line would be delayed further.</i>
Prolonged Outage				

1.	220kV PTPS-Bodhgaya T/C	2005	Tower collapse and conductor theft	Powergrid intimated that the cost estimate for restoration of the lines has been taken up by the Corporate Engineering. In the 5 th TCC meeting Powergrid committed to submit the cost estimate positively by end of February'08. <i>Powergrid & JSEB may please intimate the present status.</i> Powergrid intimated that the cost estimate of the restoration work is under consideration of Corporate Engineering Department.
2.	220/132kV, 100MVA ICT-I at Dehri	31.10.2001	Problem in tap changer	<i>BSEB may please indicate the present position.</i> No definite time schedule intimated by BSEB.
3.	220/132kV, 100MVA ICT-I at Fatuah	22.04.2002	Problem in transformer winding	<i>BSEB may please indicate the present position.</i> <i>Sent to works for repair of winding and expected by 2/3 months.</i>
4.	220/132kV, 100MVA ICTs, one each at Chandil & Ramchandrapur			<i>JSEB & BSEB were requested to intimate the present status.</i> JSEB intimated that 100MVA ICT at Chandil s/s re-commissioned during Jan'08.

It was learnt that the fixed series compensation (FSC) of 400kV Meramundali - Jeypore S/C line at Jeypore s/s of Powergrid remained under switched off condition for quiet sometime. Powergrid was requested to give a status report of FSC at Jeypore s/s indicating date of commission, date of switched off and reasons thereof etc. to ERPC Secretariat at the earliest.

Members indicated the present status in respect of units / transmission elements under outage in the meeting. These are indicated in the above table.

ITEM NO:5 GRID INCIDENCES IN ER SYSTEM

- I. At 03:10 Hrs of 24.02.08, both 315MVA, 400/220kV ICTs at Jamshedpur s/s of Powergrid tripped in a staggered manner reportedly on differential protection operation.

POWERGRID / JSEB may please furnish the details of tripping incident.

Deliberation in the meeting

Powergrid submitted the report on tripping of 315MVA ICT I & II on 24.02.08 at Jamshedpur s/s in the meeting. It revealed that both the ICTs got tripped from 400kV side due to operation of differential protection but remained charged from 220kV side. After investigation it was found that the cable connecting 220kV CTs for differential protection and the cables used for inter-tripping commands for both the ICTs was cut in JSEB switchyard and stolen. This caused tripping of the ICTs from 400kV side and as the inter-tripping command cable was also cut, the ICTs remained charged from 220kV side.

The ICT -II was restored at 11:47 Hrs and the ICT-I was restored at 20:45 Hrs on 24.02.08.

ITEMNO:6 IMPLEMENTATION OF RECOMMENDATIONS OF PROTECTION COMMITTEE BY BSEB/JSEB

In the 23rd OCC meeting BSEB, JSEB and POWERGRID reported the following:

BSEB informed that LOI has been issued to M/s AREVA on 07.01.08 and order for procurement of new protective relays for Bodhgaya s/s would be placed shortly.

Regarding procurement of relays for Patratu TPS, JSEB representative intimated that the procurement order was placed on M/s ALSTOM in the last week of November'07. The delivery of the new relays is expected within three months i.e. March'08. Also, the CBs of PTPS have been sent to M/s ALSTOM for repair.

Powergrid representative informed that the requisite 220kV CTs (1200/1 Amp) for bus differential protection at Biharshariff s/s was commissioned on 21.12.07. The installation of bus differential protection including LBB protection at Biharshariff s/s would be taken up shortly with the help of M/s AREVA. BSEB was requested to expedite the commissioning of bus differential protection at Biharshariff with the help of M/s AREVA and Powergrid. No report has since been received in this regard.

BSEB / JSEB / PGCIL may please indicate the further development.

Deliberation in the meeting

BSEB representative intimated that an agreement for supplying new protective relays for Bodhgaya s/s from M/s AREVA would be signed on 17.03.08. Thereafter, the order for procurement of relays would be placed with the firm. BSEB was requested to expedite the procurement action. For this it was advised that BSEB representative should maintain constant contact with the regional office of the manufacturer.

JSEB reported that the delivery of new relays for Patratu TPS is still awaited.

BSEB was impressed upon to commission the bus differential protection relays at Biharshariff s/s including LBBs at an early date because the 220kV CTs (1200/1 Amp) at Biharshariff s/s of Powergrid was commissioned for this purpose in the month of December'07. BSEB agreed to take up with M/s AREVA for completion of the job within 10 days.

In this connection, WBSETCL was also requested to expedite the commissioning of bus differential protection at Bidhannagar 220kV s/s and to submit the present status report in this regard. It was opined that the tripping incident on 25.01.08 could have been partially overcome had the bus differential protection been in place at Bidhannagar s/s.

As decided in the 22nd OCC meeting held on 11.01.08 the working group comprising OHPC, OPTCL, Powergrid, ERLDC & ERPC officials visited the sites e.g. Jeypore, Indravati 400kV s/s and Indravati HEP and Jaynagar s/s in Orissa on 20.02.08 & 21.02.08. The closing of 220kV main bus coupler breaker at Indravati could not be attempted because of the following reason:

- i. The synchronizing facility at 400kV buses were not in working order.
- ii. There was no PLCC communication both for speech and protection between Indravati (OHPC) & Indravati (Powergrid).
- iii. CT ratio of the bus coupler is 600/1Amp which corresponds to 225MVA. In case of tripping of 400kV Indravati –Indravati S/C line, the bus coupler would have to carry about 300MW when all units are on bar.

The group then decided to make an attempt to bring all generating units on single bus mode of operation i.e. all generating units, transmission lines from UI HEP and ICTs were kept on one bus. Generation at UI HEP gradually raised to 600MW and generation of Balimela and Upper Kolab was varied to ascertain loading of important lines in Orissa was monitored under different despatch scenarios. The voltage fluctuation at UI HEP was found to be reduced considerably. OHPC was requested to provide a special protection scheme for tripping of one generating unit in case of tripping of 400kV Indravati-Indravati s/c line. Primary injection testing of CVTs has to be carried out in order to determine condition of CVT as well as healthiness of their readings.

The report of the committee is put up for deliberation.

Deliberation in the meeting

Sri P.Mukherjee, DGM, ERLDC explained in details the single bus operation of the generating units of UI HEP during the visit of the working group from 20.01.08 to 21.01.08. With the above arrangement the high voltage excursion at 400kV UI HEP was found to be reduced and frequent tripping of 400kV UI HEP-Indravati S/C line on over voltage was also minimised. While testing of CVTs output by the working group, it was observed certain error at B- phase CVT which needed replacement. GM,ERLDC appreciated the endeavour made by the working group and necessary support extended to by the authority for the above purpose. He also hoped that the recommendations of the report would be implemented by OHPC in true spirit.

OHPC representative intimated that the following activities as mentioned in the report were carried out and completed:

- i. Primary injection of testing of CVTs at UI HEP end on 25.02.08.***
- ii. Provision of Special Protection Scheme (SPS) for tripping of one running generating unit in case of tripping of 400kV Indravati-Indravati S/C line.***
- iii. Activation of synchronization facility at 400kV buses at UI HEP.***

The single bus operation at UI HEP of OHPC appeared to be working satisfactorily since 26.02.06 without any tripping by improvement of voltage profile / fault level. Hence, in the opinion of OHPC, the closing of 220kV main bus coupler breaker is no more required and the same is to be used for transfer of bus as and when required.

OCC appreciated the result achieved by the working group to address the continued problems of high voltage experienced at UI HEP and minimizing the frequent tripping of the 400kV Indravati-Indravati S/C line.

ITEM NO:8 FREQUENT TRIPPING INCIDENCES OF 400kV INDRAVATI-INDRAVATI(POWERGRID) S/C LINE

The working group constituted by Member Secretary, ERPC also analysed the frequent tripping of 400kV Indravati-Indravati (Powergrid) s/c line particularly for the tripping incident on 16.01.08. The findings of the group are detailed below:

- i. CVTs output measurement both at switchyard and control panel at both ends of the line was carried out. It was observed that B phase CVT at IndravatiHPS showed higher values as compared to other CVTs.
- ii. P -10 relays provided at both ends as main-I protection sometimes mal-operated which is required to be replaced.
- iii. In order to contain high voltage at Indravati HPS 400kV bus, OHPC should explore possibility of absorbing VAR within limits as specified in the capability curve.
- iv. Tripping of 220kV Jeypore-Jaynagar D/C line might be due to transient fault instead of tripping on O /C & E/F relay operation. The relays at both the ends need to be tested.

OPTCL & OHPC may please deliberate.

Deliberation in the meeting

The report of the working group for single bus operation of all generating units at Upper Indravati HPS proved definite improvement in voltage profile. As such, the incident of frequent trippings of 400kV Upper Indravati HPS – Indravati (Powergrid) s/c line would reduce considerably.

However, OCC desired that OHPC should replace the faulty B- phase CVT and install numeric relays for Main-I protection at both ends of the line at the earliest as suggested in the report. OPTCL was also requested to carry out testing of O/C & E/F relay at Jaynagar s/s and report to ERPC/ERLDC.

ITEM NO:9 OPERATIONAL PLANNING

(A) REVIEW OF SHUTDOWN PROPOSALS, AS APPROVED IN LAST (23rd) OCC MEETING OF ERPC vis-à-vis ACTUAL SHUTDOWN/ NORMALISATION OF THE TRANSMISSION SYSTEM FOR FEBRUARY' 08

The actual shutdown as availed by the constituents on the basis of finalised programme during the month of February '08 as received from ERLDC is indicated at Annexure-IV A.

Members may please note and also furnish the additional / missing information, if any.

GM,OPTCL has intimated vide letter dated 19.02.08 that the annual maintenance programme of 400kV Baripada-Rengali line at Rengali end could not be availed during January'08 & February'08 owing to repeated cancellation / deferring of shutdown permission. This unscheduled last hour cancellation of shutdown permission caused unnecessary expenditure for mobilising manpower and materials.

In reply to above, ERLDC vide its letter dated 07.03.08 clarified that 400kV Rengali-Baripada and Rengali-Kolaghat S/C lines were cancelled on different dates due to shutdown of other important 400kV lines during January & February'08.

ERLDC requested OTPCL that in future shutdown of important 400kV lines for planned maintenance may be discussed in OCC and prior approval is required to be obtained for availing of shutdown of 400kV Kolaghat-Baripada and Baripada-Rengali section in time.

All the constituents, particularly OPTCL in this regard, may please note for availing shutdown of 400kV lines / elements in the respective system.

Deliberation in the meeting

Members noted the above.

(B) SHUTDOWN PROPOSAL OF TRANSMISSION LINES AND GENERATING UNITS FOR THE MONTH OF APRIL'08.

The shut down proposals which are received by ERPC for the month of April' 08 are given at Annexure – IV B. There is no proposal of planned shutdown of units of NTPC power stations during the month of April'08.

Powergrid ER-I proposed to avail shutdown for annual maintenance work of the following in the month of March'08:

- i. 400kV Pusauli – Allahabad line & line reactor on 18.03.08(ODB)
- ii. 400kV Pusauli –Sarnath line & its line reactor on 19.03.08(ODB)

It may please also be noted that Powergrid proposed to avail shutdown of a list of tie lines of the beneficiary systems for replacement of old SEM meters during the month of April'08. The list is enclosed for discussion and approval of OCC for the above purpose.

Members may please discuss and finalize the shutdown programme.

Deliberation in the meeting

The shutdown proposals of Powergrid for the month of March'08 of the transmission lines / line reactors were agreed to in the OCC meeting after detailed scrutiny and deliberation.

The shutdown proposal for the month of April'08 as depicted in Annexure-IVB was finalized after deliberation.

The proposal of shutdown of transmission lines by Powergrid for replacement of old ABT meters in the West Bengal and Orissa

system for three hours duration in the month of April'08 was discussed. In this connection, Powergrid was requested to approach to heads of the SLDCs of West Bengal & DVC and ERLDC in advance so that a coordinated planning could be chalked out before availing of the proposed shutdowns of transmission lines.

(C) LGBR FOR 2008-09 (COMING MONTHS)

i. Anticipated Peak Demand (MW) and Energy Requirement (MU) for the year 2008-09 (April'08-March'09)

The abstract of peak demand (MW) vis-à-vis availability and energy requirement vis-à-vis availability for the year 2008-09 has been prepared by ERPC Secretariat, keeping in view the units available for generation etc. The details are shown at Annexure-V.

Members may please note and indicate any discrepancy of the figures arrived at.

Deliberation in the meeting

Constituents were requested to offer their comments on the LGBR (for year 2008-09) prepared by ERPC on the requirement, availability and expected demand month-wise within ten days time. It was clarified that, if no comment/ feedback is received from any of the constituent within the stipulated time, the same would be treated as final and forwarded to CEA for consideration of LGBR of ER for the year 2008-09.

NTPC was requested to consider the proposed shutdown of the generating units as per the following schedule:

***Farakka STPS unit# V (500MW): 10.10.08 for 33 days
Talcher STPS unit# II (500MW): 15.07.08 for 24 days***

ITEM NO.10 BLACK START RESTORATION PROCEDURE WORKSHOP

As recommended by ERPC, the Black Start Restoration Procedure Workshops had been conducted at OPTCL, DVC & WBSETCL. Two more workshops need to be conducted at JSEB, and BSEB. ERLDC has already requested JSEB & BSEB seeking tentative dates for conducting the workshops at BSEB and at JSEB.

BSEB & JSEB may please indicate the programme schedule of the workshop.

Deliberation in the meeting

BSEB confirmed that the workshop on 'Black Start Restoration Procedure for ER grid' would be conducted for BSEB system on 19.04.08 at Patna. ERLDC agreed to organize the programme among BSEB, Powergrid-ER-I, NTPC (Kahalgaon and Barh STPS) and Railways, etc.

Regarding the same programme for JSEB system, ERLDC requested JSEB to intimate the date of programme schedule during April'08.

ITEM NO.11 STATUS OF UNITS AT MUZZAFFARPUR TPS AND BARAUNI TPS

In the 23rd OCC meeting, BSEB agreed to furnish the modalities of operation of Muzaffarpur unit #II (commissioned on 29.01.08) and Barauni unit #VI (commissioned on December'07) after consultation with Vaishali Power Generating Corporation Ltd.

BSEB may please furnish the details.

Deliberation in the meeting

BSEB submitted the daily generation data of Muzaffarpur unit# II & Barauni unit# VI since commissioning. The performance of the generating units was found to be satisfactory. It was learnt that unit# I of Muzaffarpur TPS and unit# VII of Barauni TPS were unlikely to come into bar during the year 2008.

ITEM NO.12 ISSUE RAISED BY

ERLDC

EVACUATION CONSTRAINTS –SYSTEM AUGMENTATION

- a. During the real time operation, ERLDC faces some major system constraints while evacuating the power to other regions particularly during winter season with lean hydro condition. One of the major constraints is observed in 400kV Farakka-Malda D/C line through which evacuation of thermal generation in ER essentially takes place through this link when drawal by NR is higher. WBSETCL had suggested 400kV link between Gokarna-Binaguri/Purnea in the Standing Committee on power system planning in ER. From system operation point of view, ERLDC is of the opinion that such link would relieve such constraint to a large extent.
- b. The proposal of Orissa for creating a new 400kV s/s at Bolangir by making LILO of 400kV Meramundali-Jeypore line is under consideration by Standing Committee of transmission planning in ER. Since the 400kV Rengali-Indravati and Meramundali-Jeypore line pass nearby this proposed sub-station, the above two lines may be considered to be LILOed at Bolangir and further connection from Bolangir to Raipur in Western Region. Such arrangement would be of help for evacuating power from Orissa system, particularly, during monsoon. Further, in the event of any tripping of HVDC bi-pole, TSTPS stage-II /Hydro generation in Orissa is being backed down because of constraints faced in the Talcher-Rourkella 400kV D/C line. The new link from Bolangir to Raipur would also help in evacuating TSTPP power in the event of tripping of Talcher-Kolar HVDC link.
- c. In view of likely surplus availability in Southern Region and in order to evacuate power from TSTPP in case of outage of Talcher-Kolar HVDC link, a second 400kV D/C line from Talcher to Rourkella has been planned in the Standing Committee. Transmission charges for the line would be borne by SR constituents. It is understood that the line is proposed to be constructed in private sector and till now no agency has been identified. Hence, in order to expedite construction

of the line, it is proposed that the CTU may be entrusted with construction of this line.

ERLDC may please explain.

Deliberation in the meeting

ERLDC explained in detail the constraints in evacuation of power during winter season for exporting of power to NR when hydro sources of Chukha, Tala HPS and NER injections get reduced considerably. The proposal of WBSETCL in the Standing Committee of transmission planning to have a double circuit 400kV link between Gokarna-Binaguri/Purnea s/s was endorsed by ERLDC, as it would relieve the overloading problem in 400kV Farakka-Malda D/C line. Similarly, it was suggested that the proposed Bolangir s/s in Orissa, besides LILO of 400kV Meramundali-Jeypore line, should also have LILO of 400kV Rengali-Indravati line. Further, inter-connection from Bolangir to Raipur(WR) would help evacuation of TSTPS Stage-II and hydro generation in Orissa in case of any constraint arising out of overloading of 400kV Talcher-Rourkella D/C line. Further, the construction of 2nd 400kV Talcher-Rourkella D/C line could be expedited with the help of CTU to avoid overloading problem in the event of tripping of HVDC Talcher-Kolar bi-pole.

Member Secretary, ERPC requested ERLDC to forward the proposal to CEA for discussion in the Standing Committee of transmission planning in ER in its next meeting.

NHPC

In the 20th OCC meeting held at ERPC, Kolkata on 22.11.07, the UI adjustment for 28.08.07 and 11.09.07 was referred for discussion in the next OCC meeting subject to successful implementation of necessary changes in the zone-II & III time settings of distance protection relays of NHPC and other utilities. NHPC was required to submit a report in this regard.

No compliance report has been received from NHPC by ERPC Secretariat till date. NHPC has requested for UI adjustment of the above dates.

NHPC may please furnish the present status. Thereafter, members may please discuss and decide.

Deliberation in the meeting

NHPC requested to consider the revision of schedule for 28.08.07 and 11.09.07 as the closing of financial year (2007-08) is approaching. Regarding necessary implementation of Zone-II & III time settings of distance protection relays of the transmission lines between NHPC and other utilities at Rangit HPS, it was learnt that NHPC followed the time settings as 0.3 seconds and

1.0 seconds whereas WBSETCL and Powergrid followed 0.3 sec. & 0.6 sec. and 0.5 sec. & 1.5 sec. respectively.

OCC desired that such mismatch of time settings of distance protection relays would again result in un-coordinated trippings of lines from Rangit end and ERPC should take up with the concerned utilities for uniform implementation.

On insistence of NHPC to consider the revision of schedule of generation on the above dates, it was agreed by OCC to revise the scheduled generation to actual generation for the time blocks 22:45 Hrs and 23:00 Hrs on 28.08.07 and 21:15 Hrs to 21:45 Hrs on 11.09.07 for computation of UI power of the above dates.

BSEB

i. PLCC communication between Khagaul & Patna (Powergrid) s/s and unavailability of MW data of ICT-I

Since the power flow commenced from Patna (Powergrid) s/s through 220kV Patna - Khagaul line w.e.f 15.01.08, BSEB is facing problem in monitoring the management of the grid system in absence of the above. Powergrid was requested for early restoration of PLCC communication between the above s/s and obtaining of analog MW data of ICT-I.

Powergrid may please opine.

Deliberation in the meeting

Powergrid representative confirmed that the speech and data availability between Patna (Powergrid) and Khagaul (BSEB) s/s was restored.

ii. Mismatch of SEM readings at Barhi(DVC) and Biharshariff & Rajgir (BSEB) end

BSEB has reported difference in the SEM readings of both BSEB & DVC ends for the weeks 4th February to 17th February, 2008 in respect of 132kV Barhi-Biharshariff and 132kV Barhi-Rajgir s/c tie lines. In this connection it is informed that computation of energy exchanges through these tie lines is made by ERPC in accordance with the weekly discrepancy report received from ERLDC. The discrepancies of meter readings, if any, for power exchange between DVC and BSEB due to above mentioned lines need to be resolved.

ERLDC may please elaborate.

Deliberation in the meeting

ERLDC presented the mismatch of SEM readings for 132kV Barhi (DVC) – Biharshariff (BSEB) and Barhi-Rajgir (BSEB) ties for the month of February'08. The 15 minute SEM data was analysed w.r.t SCADA data available from Barhi as well as from Biharshariff/ Rajgir end. It was observed that the meter reading at Barhi end was showing discrepancy (lesser reading,

particularly when it is importing power of more than 40MW from Biharshariff). ERLDC also referred the MOM of commercial committee meeting held on 27.09.06 wherein DVC was requested to explore the feasibility of using two numbers of meters using CTs for Barhi –Rajgir and Barhi-Biharshariff lines instead of using summation CT and one meter at Barhi end. ERLDC suggested that DVC may test the summation CT, alternatively two numbers of meters one for Barhi-Rajgir and the other for Barhi-Biharshariff ties may be installed for computing energy exchange separately for each of the line.

It was decided that till such arrangements are made, the computation of energy exchange of these two lines shall be done as per SEM readings from BSEB end i.e. Biharshariff and Rajgir ends. If any modification in present configuration (e.g. T connection to feed Rajgir load from Biharshariff end) is made by BSEB, the same is to be informed to ERLDC immediately by BSEB.

JSEB

132kV Maithon(DVC) – Jamtara (JSEB) line failed at 22:13 Hrs of 11.03.08. As such, JSEB requested BSEB to allow 35MW power through 132kV Sultangunj –Deoghar line to meet essential loads of Deoghar & Jamtara including traction supply etc. till power supply is restored from Maithon(DVC) end.

BSEB may please opine.

Deliberation in the meeting

BSEB confirmed that 25MW assistance was already extended to JSEB through 132kV Sultangunj –Deoghar s/c line to meet their loads.

ITEM NO.13 MISCELLANEOUS

A. ALLOCATION OF POWER FROM TEETA-V HEP (3x 170MW) OF NHPC

The first unit of Teesta –V HEP of NHPC in Sikkim was commissioned on 06.02.08. MOP, GOI vide its letter dated 28.02.08 allocated Teesta-V HEP power to the beneficiaries of Eastern Region as under:

State /System	Total Share in installed capacity (%)	Equivalent quantum in installed capacity (MW)
DVC	8.64	44
BIHAR	10.76	55
ORISSA **	20.59	105
JHARKHAND	7.84	40
WEST BENGAL	23.98	122
SIKKIM *	13.19	67
Unallocated	15.00	77
Total	100.00	510

* Inclusive of 12% free power

** Allocation of Orissa would be subject to Orissa entering into a firm PPA with NHPC and complying with payment security conditions within one month from date of issue of the order.

Accordingly, Member Secretary, ERPC advised ERLDC to implement the above allocation order w.e.f 00:00 Hrs of 01.03.08. The 15% unallocated power was re-distributed in the ratio of firm allocation to the existing beneficiaries and implemented allocation would be as under:

State /System	Total Share in installed capacity (%)
DVC	10.42
BIHAR	12.97
ORISSA	24.82
JHARKHAND	9.45
WEST BENGAL	28.91
SIKKIM	13.43
Unallocated	Nil
Total	100.00

Members noted the above.

B. REGISTRATION OF SEM DATA AT JAMTARA (JSEB) END FOR 132kV JAMTARA-MAITHON (DVC) TIE LINE

At present SEM readings for 132kV Jamtara(JSEB)-Maithon (DVC) tie line is obtained from DVC end only. For the calculation of UI, both ends meter reading is required and, in case of outage of one end reading, the other end may be considered for settlement. Because of improper installation of SEM at Jamtara end (bus coupler bay) JSEB end readings is not available. JSEB was requested several times to set right the circuitry so as to obtain the meter readings from Jamtara end.

Further, the issue was discussed in the 18th OCC meeting and subsequently JSEB was requested to do the needful. In spite of losses incurred by JSEB for considering the DVC end readings for transaction of power through 132kV Maithon-Jamtara line, no tangible action in this regard has since been taken by JSEB.

JSEB may please intimate the present status.

Deliberation in the meeting

JSEB agreed to install the SEM at Main bus side in place of presently installed Tri-vector meters at Jamtara end or may change the existing CT, PT connection of SEM installed at Jamtara end by 15.04.08. DVC also agreed to extend necessary assistance in this regard.

ITEM NO.14 ADDITIONAL AGENDA POINT

Existing warranty of SCADA/EMS package is expiring on 15th June, 2008. An optional paid warranty can be availed by the constituents at the same terms and condition for another year starting from 16th June, 2008 as per the scope of the present contract. This is a comprehensive maintenance contract for the SCADA/EMS equipment supplied under ULDC project. The vendor shall provide similar support as they are providing for SCADA/EMS till date.

All the other regions has availed the opportunity of extended paid warranty due to very low offered price.

It is proposed to avail the opportunity for ER system also. The total cost involved for different constituents are given below:

BSEB	:	Rs.158782/-
JSEB	:	Rs.136143/-
DVC	:	Rs.235955/-
GRIDCO	:	Rs.2359406/-
WBSEB	:	Rs.1769555/-
SIKKIM	:	Rs.58985/-
RSCC & CPCC	:	Rs.1179703/-

Powergrid has agreed to co-ordinate the maintenance as done in other region with its normal service charge of 16% on the net payment to the vendor. It is proposed that the payments may be made by the constituents by 30th April, 2008 so that necessary processing may be done for extending the warranty period for another year.

Members may deliberate and confirm.

Deliberation in the meeting

In order to maintain reliable and efficient SCADA system by M/s AREVA, GM, ERLDC impressed upon renewal of contracts for the SCADA/EMS system in control centres for 1 year. The present warranty period would expire on 15.06.08. The constituent-wise cost involvements for the charges payable to M/s AREVA were listed above. Powergrid has principally agreed to coordinate the maintenance job. For this, they would charge additional 16% as departmental charges to be paid by the constituents. The beneficiary OCC members were requested to take up with higher authority and to expedite the payment for AMC by 30.04.08 enabling further processing by Powergrid in this regard.

The issue has also been included in the 3rd meeting of O & M committee for SCADA to be held on 28.03.08 at DVC, Kolkata for finalisation.

ITEM NO.15 DATE AND VENUE OF THE NEXT (25th) OCC MEETING OF ERPC

It was decided that NTPC would host the next (25th) OCC meeting at Farakka STPS tentatively on 23.04.08 (Wednesday).

LIST OF PARTICIPANTS IN THE 24th OCC MEETING HELD AT ERPC, KOLKATA ON 17.03.2008

Sl. No.	ORGANISATION	NAME	DESIGNATION
1.	BSEB	Shri G.K.CHOUBEY	EEE /SLDC
		Shri S.K.SENGUPTA	EEE
2.	JSEB	Shri A.K.CHATTERJEE	CE
		Shri S.P.SINGH	EEE
3.	DVC	Shri D.MUKHERJEE	CE (E) /CLD
4.	WBSETCL	Shri A.BISWAS	SE (E)
5.	WBSEDCL	Shri P.MUKHOPADHYAY	ADDL.CE, /ALDC
6	WBPDC	Shri P.K.SIKDER	DGM(O)
		Shri GOPINATH MAJI	SR.MGR(E)
		Shri L.AGARWAL	AGM(OS)
		Shri R.KUMAR	DGM(OS)
7.	NTPC	Shri A.R.BHUNIA	SR.MGR(OS)
		Shri D. ROY	SR.MGR
		Shri P.BISWAS	SR.MGR
		Shri B.N.MAHAPATRA	GM/SLDC
8	SAIL	Shri N.DASH	SR GM (PS)
		Shri B.C.PADHI	SR GM (E)
9.	OPTCL	Shri S.K.SARKAR	G.S (T& D and LM)
		Shri D. WANGMO	SR.SUPERVISOR
10	OHPC	Shri SHERUB	ENGINEER
		Shri T.DORJI	ENGINEER
		Shri M.PRASAD	MANAGER
11.	DPSC Ltd.	Shri S.K.MISHRA	DY.MGR(E)
		Shri K.MAULIK	CE (O&M)
12.	BPC/GELEPU	Shri S.K.PRAMANIK	DGM(OS)
		Shri S.K.SINGH	CH.MGR(OS)
		Shri KUMAR NIKHIL	SR.ENGINEER
		Shri G.P.SINGH	
13.	DGPC/CHP/CHUKHA	Shri M.G.RAOT	GM
		Shri P.MUKHOPADHYAY	DGM
		Shri S.S.BARPANDA	CHIEF MANAGER
		Shri G.CHAKRABORTY	CHIEF MANAGER
		Shri S.KONAR	DY.MGR
14.	NHPC	Shri P.S.DAS	MGR
		Shri R.K.GROVER	Member Secretary-In Chair
		Shri J.BANERJEE	SE (COMML)
		Shri S.N.KAYAL	SE (MON)
		Shri B.SARKHEL	EE(O)
		Shri S.K.GHOSH	EE
		Shri A.ROY	EE
		Shri S.S.GHOSH	EE
		Shri D.K.MITRA	EE
		Shri S.P.DATTA	DGM (NTPC)/ ERPC
		Shri S.M.JHA	EE
15.	POWERGRID	Shri P.N.SARKAR	AD-I
		Shri S.ROY	AD-II

Programme of Maintenance Of Transmission Lines And Generating Units as approved for the Month Of April, 2008

Organization	Name of the Element	From		To		Remarks	
		Date Time		Date	Time		
FSTPS,NTPC	400kV Farakka-Durgapur line#1	08.4.08 (ODB)	0930	08.04.08	1630	Approved Relay Testing	
TSTPS, NTPC	400kV TSTPS-Rourkella line#2	02.04.08 (ODB)	0800	04.04.08	1600	Approved Annual Maintenance	
	400kV TSTPS-Meramundali line#1	15.04.08	0800	15.04.08	1600	-Do-	
	400kV TSTPS-Meramundali line#2	22.04.08	0800	22.04.08	1600	-Do-	
TTPS,NTPC	Unit# IV	20 days				Approved Boiler license renewal	
CHPC	Unit# 1	01.04.08 (OCB)	0000	15.04.08	1830	Approved Annual Maintenance	
	Unit# 3	14.04.08	0830	14.04.08	1830	Periodic Maintenance	
	Total shutdown of all units	In between 2 nd & 3 rd week of April'08				Charging of De-silting chamber-1	
POWERGRID	Included in separate sheet						
DVC CTPS	Unit# I (130MW)	25.04.08		04.06.08		Approved Capital O/H for 40 days	
OHPC Balimela	Unit # IV (60MW)	10.03.08		09.04.08		Approved Annual Maintenance	
	Burla	Unit# VII	20.03.08	21.04.08		-Do-	
	Rengali	Unit# V	24.03.08	05.05.08		Annual Maint. & TXR O/H	
	Upper Kolab	Unit# III	17.03.08	16.04.08		Annual Maintenance	
	Upper Indravati	Unit# II	21.04.08		21.05.08		-Do-
		Unit# IV	02.04.08		30.04.08		Annual Maintenance
NHPC Rangit HPS	Unit# 1 (20MW)	04.03.08		24.04.08		Approved Annual Maintenance	
PROLONGED SHUTDOWN OF UNITS IN THE CONSTITUENT SYSTEMS							
OHPC Chiplima	Unit- III	04.11.06		TO CONTINUE		Approved Abnormal Sound in turbine	
JSEB PTPS	Unit-III	01.08.03		TO CONTINUE		Approved Boiler renovation Boiler renovation & Turbine O/H Boiler renovation Capital Maintenance	
	Unit -IV	17.09.05		TO CONTINUE			
	Unit- V Unit -VIII,IX,X	23.05.04 17.10.05		TO CONTINUE TO CONTINUE			
Tenughat TPS	Unit-I (210MW)	1 3.06.07		No definite programme		Approved Capital Maintenance	

ODB: On daily basis , OCB: On continuous basis

ERPC, KOLKATA

Shut down of Powergrid lines for replacement of ABT meters

LOCATION	CUSTOMER	PLACE OF INSTALLATION	Date/Month	Time	Reason
WEST BENGAL					
K'NESWARI (DVC)	DVC	220KV K' NESWARI (DVC) -MAITHAN (PG) 1 & 2	April'08	3 Hrs	For replacement of old ABT meters
MAITHON	DVC	132KV MAITHON (DVC) - JAMTARA (JSEB)			
BARHI	DVC	132KV BARHI (DVC) - RAJGIR (BSEB)			
MANIQUE	DVC	132KV MANIQUE (DVC) - CHANDIL (JSEB)			
PARULIA	DVC	220KV PARULIA (DVC) - PARULIA (PG)-1 & 2			
PURULIA	DVC	132KV PURULIA (DVC) - PURILIA (WBSEB).			
WARIA	DVC	132KV WARIA (DVC) - DPL (WBSEB) -1 & 2 (SUM)			
	DVC	220KV WARIA (DVC) - BIDHANNAGAR (WBSEB) -1			
DPL	DVC	220KV WARIA (DVC) - BIDHANNAGAR (WBSEB) -2			
	WBSEB	132KV DPL (WBSEB) -WARIA (DVC) - 1 & 2 (SUM)			
KOLAGHAT	DVC	132KV KOLAGHAT (DVC)- KOLAGHAT (WBSEB)			
	WBSEB	400KV KOLAGHAT (WBSEB) - BARIPADA (PG)			
KHARAGPUR	DVC	132KV KHARAGPUR (DVC) - KHARAGPUR (WBSEB)			
BIRPARA	WBSEB	132KV BIRPARA (WBSEB) - BIRPARA (PG)-1			
KALIMPONG	WBSEB	66KV KALIMPONG (WBSEB) - MELLI (SIKKIM)			
NBU	WBSEB	132KV NBU (WBSEB) - MOINAGURI (WBSEB)			
	WBSEB	132KV NBU (WBSEB) - NJP (PG)			
MALDA	WBSEB	132KV MALDA (WBSEB) -MALDA (PG) -1			
	WBSEB	132KV MALDA (WBSEB) -MALDA (PG) -2			
DALKHOLA	WBSEB	132KV DALKHOLA (WBSEB) - PURNEA (PG)			
JEERAT	WBSEB	400KV JEERAT (WBSEB) - FARAKKA (NTPC)			
	WBSEB	400KV JEERAT (WBSEB) - SUBHASGRAM (PG)			
BIDHANNAGAR	WBSEB	220KV BIDHANNAGAR (WBSEB) -PARULIA (PG)			
	WBSEB	220KV BIDHANNAGAR (WBSEB) -WARIA (DVC)-2			
	WBSEB	220KV BIDHANNAGAR (WBSEB) -WARIA (DVC)-1			
RAMMAM	WBSEB	132KV RAMMAM (WBSEB)- RANGIT (NHPC)			
SANTALDIH	WBSEB	220KV SANTALDIH (WBSEB) - CHANDIL (JSEB)			
DURGAPUR	PGCIL	220 KV DURGAPUR (PG) - PARULIA (DVC) -1			
	PGCIL	220 KV DURGAPUR (PG) - PARULIA (DVC) -2			
	PGCIL	220 KV DURGAPUR (PG) - BIDHANNAGAR (WBSEB)			
	PGCIL	400 KV DURGAPUR (PG) - JAMSHEDPUR (PG)			
	PGCIL	400 KV SIDE OF DURGAPUR 400/220 KV ICT -1			
	PGCIL	400 KV SIDE OF DURGAPUR 400/220 KV ICT -2			
MAITHON	PGCIL	400 KV DURGAPUR(PG) - PURULIA PPS			
	PGCIL	220 KV MAITHON (PG) - KALYANESWARI (DVC) -1			
	PGCIL	220 KV MAITHON (PG) - KALYANESWARI (DVC) -2			
	PGCIL	400 KV MAITHON (PG) - JAMSHEDPUR (PG) -1			
MALDA	PGCIL	400 KV MAITHON (PG) - JAMSHEDPUR (PG) -2			
	PGCIL	400 KV SIDE OF MAITHON (PG) 400/220 KV ICT -1			
	PGCIL	400 KV SIDE OF MAITHON (PG) 400/220 KV ICT -2			
	PGCIL	132 KV MALDA (PG) - MALDA (WBSEB) -1			
MALDA	PGCIL	132 KV MALDA (PG) - MALDA (WBSEB) -2			
	PGCIL	220 KV MALDA (PG) - DALKHOLA (PG) -1			
	PGCIL	220 KV MALDA (PG) - DALKHOLA (PG) -2			
	PGCIL	400 KV MALDA (PG) - PURNEA (PG)			
BIRPARA	PGCIL	220 KV BIRPARA (PG) - CHUKHA (CHPC) -1			
	PGCIL	220 KV BIRPARA (PG) - CHUKHA (CHPC) -2			
	PGCIL	220 KV BIRPARA (PG) - MALBASE			
	PGCIL	220 KV BIRPARA (PG) - SALAKATI (PG) -1			
	PGCIL	220 KV BIRPARA (PG) - SALAKATI (PG) -2			
	PGCIL	132 KV BIRPARA (PG) - BIRPARA (WBSEB) -1			
SILIGURI	PGCIL	220 KV BIRPARA (PG) - SILIGURI (PG) -1			
	PGCIL	220 KV BIRPARA (PG) - SILIGURI (PG) -2			
	PGCIL	220 KV SILIGURI (PG) - DALKHOLA (PG) -1			
	PGCIL	220 KV SILIGURI (PG) - DALKHOLA (PG) -2			
	PGCIL	132 KV SILIGURI (PG) - NBU (WBSEB) -2			
	PGCIL	132 KV SILIGURI (PG) - NBU (WBSEB) -1			
GANGTOK	PGCIL	132 KV SILIGURI (PG) - RANGIT (NHPC)-1&2			
	PGCIL	132 KV SILIGURI (PG) - MELLI (SIKKIM)			
	PGCIL	220 KV SIDE OF SILIGURI (PG) 220/132 KV ICT -1			
	PGCIL	132 KV GANGTOK(PG) - MELLI (SIKKIM)			
	PGCIL	132 KV GANGTOK(PG) - RANGIT (NHPC)			
	PGCIL	132 KV SIDE OF GANGTOK 132/66 KV ICT-1			
SIKKIM-MELLI	PGCIL	66 KV SIDE OF GANGTOK 132/66 KV ICT-1			
	PGCIL	132 KV SIDE OF GANGTOK 132/66 KV ICT-2			
	PGCIL	66 KV SIDE OF GANGTOK 132/66 KV ICT-2			
	SM-01	66 KV MELLI (SIKKIM) - RANGIT (NHPC)			
GELEPHU	SM-02	132 KV MELLI (SIKKIM) - SILIGURI			
	SM-03	132 KV MELLI (SIKKIM) - GANGTOK (PG)			
	SM-04	132 KV MELLI (SIKKIM) - RANGIT (NHPC)			
	SM-51	66 KV MELLI (SIKKIM) - KALIMPONG (WBSEB)			
CHUKHA CHPC	NE84	132 KV GELEPHU (BHUTAN) - SALAKATI (PG)			
	CU-01	220 KV CHUKHA (CHPC) - BIRPARA (PG) -1			
	CU-02	220 KV CHUKHA (CHPC) - BIRPARA (PG) -2			
	CU-03	220 KV CHUKHA (CHPC) - MALBASE (CHPC)			
	CU-04	220 KV MALBASE (CHPC) - BIRPARA (PG)			
	CU-05	CHUKHA (CHPC) GENERATOR -I			
	CU-06	CHUKHA (CHPC) GENERATOR -II			
	CU-07	CHUKHA (CHPC) GENERATOR -III			
CU-08	CHUKHA (CHPC) GENERATOR -IV				

Sub.: Shut down proposal in GRIDCO System for the month of April, 2008.

LOCATION	CUSTOMER	PLACE OF INSTALLATION	Date/Month	Time	Reason
ORISSA					
M' MUNDALI	GRIDCO	400 KV M' MUNDALI (GRIDCO) - TSTPP(NTPC)-1	April,08	3Hrs	Replacement of old ABT meters
	GRIDCO	400 KV M' MUNDALI (GRIDCO) - TSTPP(NTPC)-2			
	GRIDCO	220 KV M' MUNDALI (GRIDCO) - TSTPP(NTPC)-1			
	GRIDCO	220 KV M' MUNDALI (GRIDCO) - TSTPP(NTPC)-2			
	GRIDCO	400 KV M' MUNDALI (GRIDCO) - JEYPORE(PG)			
TTPS	GRIDCO	220KV TTPS (GRIDCO) - TSTPP (NTPC)			
ROURKELA	PGCIL	220KV ROURKELA (PG) - TARKERA (GRIDCO)-1			
	PGCIL	220KV ROURKELA (PG) - TARKERA (GRIDCO)-2			
	PGCIL	400KV ROURKELA (PG) - JAMSHEDPUR (PG)-1			
	PGCIL	400KV ROURKELA (PG) - JAMSHEDPUR (PG)-2			
	GRIDCO	132KV ROURKELA (GRIDCO) - GOELKERA			
	PGCIL	400KV SIDE OF ROURKELA (PG) 400/220KV ICT-1			
	PGCIL	400KV SIDE OF ROURKELA (PG) 400/220KV ICT-2			
	PGCIL	400KV ROURKELA (PG) - RAIPUR -I			
	PGCIL	400KV ROURKELA (PG) - RAIPUR -II			
BHUDHIPADAR	GRIDCO	220KV BUDHIPADAR (GRIDCO) - RAIGARH (MPEB)-1			
	GRIDCO	220KV BUDHIPADAR (GRIDCO) - KORBA (MPEB)-2			
	GRIDCO	220KV BUDHIPADAR (GRIDCO) - KORBA (MPEB)-3			
RENGALI	GRIDCO	220 KV RENGALI (GRIDCO) - RENGALI (PG) -1			
	GRIDCO	220 KV RENGALI (GRIDCO) - RENGALI (PG) -2			
	GRIDCO	220 KV RENGALI (GRIDCO) - TSTPP(NTPC)			
	PGCIL	400KV RENGALI (PG) -BARIPADA (PG)			
	PGCIL	400KV RENGALI (PG) -INDRAVATI (PG)			
	PGCIL	220KV RENGALI (PG) -RENGALI (GRIDCO)-1			
	PGCIL	220KV RENGALI (PG) -RENGALI (GRIDCO)-2			
	PGCIL	400KV SIDE OF 400/220KV ICT -1			
	PGCIL	400KV SIDE OF 400/220KV ICT -2			
JEYPORE	GRIDCO	200 KV JEYNAGAR (GRIDCO) - JEYPORE (PG)-1			
	GRIDCO	200 KV JEYNAGAR (GRIDCO) - JEYPORE (PG)-2			
	PGCIL	220KV JEYPORE (PG) - JEYNAGAR (GRIDCO)-1			
	PGCIL	220KV JEYPORE (PG) - JEYNAGAR (GRIDCO)-2			
	PGCIL	400KV JEYPORE (PG) - INDRAVATI (PG)			
	PGCIL	400KV JEYPORE (PG) - M' MUNDALI (GRIDCO)			
	PGCIL	400KV SIDE OF JEYPORE (PG) 400/220KV ICT -1			
	PGCIL	400KV SIDE OF JEYPORE (PG) 400/220KV ICT -2			
	PGCIL	400KV JEYPORE (PG) - GAJUWAKA (PG) -1			
	PGCIL	400KV JEYPORE (PG) - GAJUWAKA (PG) -2			
INDRAVATI	GRIDCO	400KV INDRAVATI P/H (GRIDCO) - INDRAVATI (PG)			
	PGCIL	400KV INDRAVATI P/H (PG) - INDRAVATI (P/H)			
JODA	GRIDCO	132KV JODA (GRIDCO) - KENDPOST (JSEB)			
	GRIDCO	220KV JODA (GRIDCO) - RAMCHANDRAPUR (JSEB)			
	GRIDCO	220KV JODA (GRIDCO) - JAMSHEDPUR (JSEB)			
	GRIDCO	220KV JODA BUS COUPLER			

