Eastern Regional Power Committee
Kolkata-33

Salient Decisions taken in 87th OCC meeting held on 23.07.13

1. OCC decided to implement relief through operation of UFR in four stages with total load relief of 3320 MW as per CEA direction. The time schedule is one month.

2. The committee requested Powergrid to prepare a detail programme with complete list of sites where the tests for pollution mapping are to be carried out along with work-flow diagram. Powergrid agreed to place the details in next OCC for finalization of the procedure.

3. OCC advised to replace the existing 315 MVA ICTs at Jamshedpur and Sasaram with 2x500 MVA ICTs and 315 MVA ICTs may be kept as spare. OCC endorsed to TCC.

4. On over Loading of 315MVA ICTs at Jeypore and Muzaffarpur, OCC advised OPTCL to plan a SPS for backing down of their generation to fulfill the (N-1) criteria and also to provide over current settings of 220 kV Jaypore-Jaynagar D/C line. Till the implementation of SPS, OPTCL will go for proper load management in the affected area so that per circuit flow never goes beyond 160MW.

5. It was decided that all utilities will submit their Shutdown programme by 5th day of the month and ERLDC will compile and upload in ERLDC website on 8th day of the month. Beyond this no further requisition will be entertained unless there is emergency. Further, after approval of shutdown programme in the OCC the utility taking shutdown must intimate three (3) days in advance to ERLDC before taking the shutdown in real time.

6. OCC advised to update the status on observations of “Third Party Protection Audit” on every 15 days. OCC decided to carry out surprise visits by audit team on the status of observations from August, 2013 onwards.

7. OCC accepted the proposal of ERPC secretariat for building up its own logistics with inspection vehicle, test kits and other resources for carrying out inspection of U/F relays, Protection audits, relay coordination in some malfunctioning sub-stations etc.

Status of decisions taken in previous OCC meetings, not yet resolved

Sl. No.	Particulars	Present Status
1	It was agreed that as per ERPC direction, all SLDCs/STUs to take up the issue with their embedded captive plants for compliance to provide required help to Load Despatch Centres for restoration of the grid during any disturbance and confirm their status to ERPC Secretariat by 25 January, 2013.	All major captive power plants complied.
2	OCC requested to all constituents to take appropriate actions at their end to establish the existing communication system (SCADA) with ERLDC healthy by June 2013 without fail.	ERPC decision is being implemented in majority cases. But, in case of BSPHCL/JSEB, the restoration is far behind the schedule.
3	OCC requested all utilities to submit the information on GT and ICT tap coordination.	ERLDC compiled the data, the details are placed. Constituents were requested to update the details if any, before finalization.
4	OCC felt the need of identifying some radial feeders in each of the constituents system which can be disconnected at the direction of ERLDC to prevent overdrawal.	Most of the constituents placed the feeders detail except WBSETCL. WBSETCL informed that, they are unable to identify the dedicated feeders for distress load shedding. ERLDC also identified constituent wise radial feeders which can be disconnected during emergencies.
5	a) Testing and calibration of special energy meter in Eastern Region b) Automatic Meter Reading (AMR)	Powergrid informed that, Testing and calibration of SEMs have been completed in North Bengal area. The same is in progress in Sikkim area. Powergrid updated the status of progress on Automatic Meter Reading (AMR).

Minutes of 87th OCC Meeting held on 23rd July, 2013 at ERPC, Kolkata

List of participants is at **Annexure-A.**

Item no. A.1: Confirmation of minutes of 86th OCC meeting of ERPC held on 21.06.13

The minutes were circulated vide letter dated 09.07.13 to all the constituents and also uploaded in ERPC website. No comments were received till date.

Members may confirm the minutes.

Deliberation in the meeting

Members confirmed the minutes of 86th OCC.

PART B

Item no. B.1: Review of load relief under various stages of UFR

In 85th OCC members in line with decision taken by NPC in its 1st meeting, agreed to divide the UFR load relief into four stages without any changes in total amount of load relief.

In 86th OCC meeting held on 21.06.13 constituents agreed to implement the total load relief through operation of UFR in four stages as depicted below within a month.

Apportionment of UFR actuated load shedding into four stages as agreed by the constituents

Control Area	Stage -I (49.2 Hz) (MW)	Stage -II (49.0 Hz) (MW)	Stage-III (48.8Hz) (MW)	Stage-IV(48.6Hz) (MW)	Total Relief by Control Area
BSEB	55	55	82.5	82.5	275
JSEB	34	34	51	51	170
DVC	75	75	112.5	112.5	375
Odisha	101.6	101.6	152.4	152.4	508
WB & CESC	193.4	193.4	290.1	290.1	967
Total	**459**	**459**	**688.5**	**688.5**	**2295**

Constituents may update the status in respective control area.

Deliberation in the meeting

CEA vide letter dated 22.07.2013 informed that in 2nd NPC meeting held on 16.07.2013 it was decided that total load relief based on UFR load shedding of ER is 3320 MW. Accordingly, OCC divided the total load quantum as per present proportionate for ER constituents as given below:

Control Area	Stage -I (49.2 Hz) (MW)	Stage -II (49.0 Hz) (MW)	Stage-III (48.8Hz) (MW)	Stage-IV(48.6Hz) (MW)	Total Relief by Control Area
BSEB	98	99	99	101	397
JSEB	61	62	61	62	246
DVC	134	135.5	136	137	542.5
Odisha	181.5	183.5	184	186	735
WB & CESC	345.5	350	350	354	1399.5
Total	**820**	**830**	**830**	**840**	**3320**

It was decided to implement the revised scheme within a month. All constituents agreed to give the feeder wise details within a month by next OCC.

Item no. B.2: Grid disturbances in NEW grid on 30th and 31st July 2012- recommendation of ERPC (Item No. B2 of 81st OCC meeting)

In the 23rd ERPC meeting it was decided that:

i. All captive power plants in Eastern Region, which are connected to Eastern Grid, should provide required help to Load Dispatch Centres for restoration of the grid during any disturbance; otherwise, the Captive Plants will not be allowed to remain connected with Grid.

In 86th OCC on the issue, OCC advised DVC to have a separate meeting with DSP and outcome of the meeting should communicate to ERPC.

DVC may update.

Deliberation in the meeting

DVC informed that a meeting was held with DSP on 18th July, 2013 and DSP agreed to support in emergency.

ii. More islanding schemes should be planned in Eastern Region for ensuring adequate start up power during such large scale disturbance.

Islanding Scheme of FSTPP, NTPC

In 86th OCC, NTPC informed that, engineering drawing of the proposed scheme would be finalized within the month of June by their corporation office. OCC advised NTPC to share the approved engineering drawing details with JSEB with copies to ERPC and ERLDC for detailed study. JSEB was advised to study the details and chalk out their plan for installation of UFR and PLC panels etc at Lalmatia end for implementation of the scheme. It was agreed that a separate meeting would be convened by secretariat with ERLDC, NTPC and JSEB at ERPC Kolkata sometimes in the month of July wherein the following will be placed and discussed:

i) Engineering drawing details of the scheme along with cost estimation and Road map (Action: NTPC);
ii) Action plan for procurement and Installation of required no of UFR & PLC panels at Lalmatia end (Action: JSEB);

Accordingly, a separate meeting was convened on 22nd July, 2013 at ERPC, Kolkata.

Concerned members may update the status.

Deliberation in the meeting

OCC was informed that representative of JSEB was not available for discussion in separate meeting on islanding scheme of FSTPP held on 22.07.13. However OCC was appraised the outcome of the said special meeting ***(Annexure-B.2.ii)*** *and on approval OCC referred the same for TCC/ERPC for final concurrence.*

Islanding Scheme of Tata Power, Haldia

In 86th OCC, OCC agreed for Tata Power, Haldia islanding scheme and advised WBSETCL to place the road map for implementation by Next OCC so that the same could be placed before TCC/ERPC for final approval.

WBSETCL may present the road map for Tata Power, Haldia islanding scheme

Deliberation in the meeting

WBSETCL informed that vide letter dated 13.07.13 Tata Power communicated that the scheme will be completed by February, 2014. OCC advised WBSETCL to pursue the case with regular feedback to ERPC and referred the same to TCC/ERPC.

In 86th OCC meeting, DVC informed that, Islanding Scheme of DVC as a whole has been finalized from DVC end, but not yet authorized by DVC corporate office. The same would be done shortly.

DVC may update the status.

Deliberation in the meeting

DVC informed that the final Islanding Scheme had been submitted to their corporate office for approval.

iii. All concerned stakeholders should take immediate measures to ensure total SCADA data availability to ERLDC.

It was directed that all utilities should take appropriate actions at their end to establish the existing communication system (SCADA) with ERLDC healthy by June 2013 without fail.

In 86th OCC POWERGRID updated the following status of RTUs whose priority list was given:

List of RTU supplied under ULDC Project but data is faulty/ intermittent:

SL no	Name of Utility	kV	Name of station	Reason for not reporting	Status as on 21-06-2013
1	WBPDCL	400	Sagardighi TPS	RTU data is very intermittent Voltage data not available, MW and MVAR intermittent.	WBPDCL informed they are looking on the matter and will resolve the problem at the earliest possible.

1	DVC	220	220 KV CTPS – B (2 x 250 MW)	Except GT MW, line flow (MW/MVAR) no other data's are available.	RTU available. Data reporting in steps. DVC agreed to look into it.
2		400	DSTPS	GT data is not updating properly. Unit data not provided.	DVC informed that they have taken up the matter with Vendor and will resolve the problem by 30th June, 2013.
3		400	Mejia –B	Data reporting is intermittent .GT data is not updating properly. Unit data not provided.	DVC informed that they have taken up the matter with Vendor and will resolve the problem by 30th June, 2013.

List of additional elements/feeders whose data is not available - station under ULDC project:

SL no	Name of Utility	KV	Name of station	Reason for non reporting	Status as on 21-06-2013
1	NTPC	400	400 kV Kahalgaon STPS : (4X 210 + 3X 500 MW) primary (LV) side of GT is not available.	MW, MVAR oF primary (LV) side of All GT is not available.	NTPC informed that X-bus data is sufficient and the issue of providing LT side data is placed to CERC. No decision from CERC. ERLDC insisted to provide the LV side data. NTPC has reservation to provide LT side data.
		400	400 kV Farakka : (3x 200 + 2 x 500 MW)	MW,MVAR oF primary(LV) side of All GT is not available. GT -3 MVAR not available.	NTPC informed that GT-3 MVAR will be made available during opportunity shut down. However, NTPC Farakka not getting opportunity shutdown.
2	OPTCL	220	220 KV Vedanta (9 x 135 MW)	No status points are available.	OPTCL informed they are looking on the matter and will resolve the problem at the earliest possible.
3	WBSETCL	220	DPL	Unit -7 data never reported to SLDC.	WBSETCL informed they are looking on the matter. It is not possible to resolve the problem by 30th June, 2013.

Members may update the status.

<u>Deliberation in the meeting</u>

List of RTU supplied under ULDC Project but data is faulty/ intermittent:

SL no	Name of Utility	kV	Name of station	Reason for not reporting	Status as on 23-07-2013
1	WBPDCL	400	Sagardighi TPS	RTU data is very intermittent Voltage data not available, MW and MVAR intermittent.	WBPDCL informed ABB has been consulted and will be attending on 5-8th August, 2013. It will be completed by next OCC.
1	DVC	220	220 KV CTPS – B (2 x 250 MW)	Except bus kV & Isolator status other data's are available.	RTU available. DVC agreed to look into it and will give the updated status within a week.
2		400	DSTPS	GT data is not updating properly.	DVC agreed to look into it and will give the updated status within a week
3		400	Mejia –B	Unit data not provided. Fine tuning required.	DVC agreed to look into it and will give the updated status within a week

List of additional elements/feeders whose data is not available - station under ULDC project:

SL no	Name of Utility	KV	Name of station	Reason for non reporting	Status as on 23-07-2013
1	NTPC	400	400 kV Kahalgaon STPS : (4X 210 + 3X 500 MW) primary (LV) side of GT is not available.	MW, MVAR oF primary (LV) side of All GT is not available.	The issue pertains to CERC and therefore further discussion in lower forum was not opened.
		400	400 kV Farakka : (3x 200 + 2 x 500 MW)	MW,MVAR oF primary(LV) side of All GT is not available. GT -3 MVAR not available.	NTPC informed that GT-3 MVAR will be made available during opportunity shut down. However, NTPC Farakka not getting opportunity shutdown. On LV side data since the issue pertains to CERC and therefore further discussion in lower forum was not opened.
2	OPTCL	220	220 KV Vedanta (9 x 135 MW)	No status points are available.	OPTCL informed Vedanta has taken up the matter with ABB and will resolve the problem within 3 months.
3	WBSETCL	220	DPL	Unit -7 data never reported to SLDC.	WBSETCL informed they are looking on the matter. OCC advised WBSETCL/DPL to pursue the case urgently with a feedback before next OCC.

A. Non availability of Telemetry of BSEB Substation: -

In 86th OCC BSPHCL and Powergrid updated the station wise status as given below:

S/n	Name of RTU locations	BSPHCL action plan for RTU supplied during ULDC project and restoration by June 2013
1	Khagaul RTU	BSPHCL informed that, earlier it was expected that after getting OPGW link at Sirpara, BSPHCL could provide PLCC panel w.r.t. Khagaul GSS. But, plan did not finalize yet. So, BSPHCL is now planning for GPRS telemetry option.
2	Koshi	BSPHCL informed that, PGCIL is not in a position to provide OPGW on priority basis. Hence, PGCIL suggested resolving the issue with GPRS. BSPHCL requested PGCIL to submit the cost details which is awaited.
3	Purnea	BSPHCL informed that, PGCIL is not in a position to provide OPGW on priority basis. Hence, PGCIL suggested resolving the issue with GPRS. BSPHCL requested PGCIL to submit the cost details which is awaited.
4	Barauni TPS	BSPHCL required PDH MUX at BTPS from POWERGRID for RTU restoration. However, POWERGRID further informed that they don't have any spare PDH/MUX. BSPHCL is now working on shifting the PLCC panels of Pasauli(PG) to Gaya (PG) to make through the Dehri-Bodhgaya link. Expected to be completed by 30th June, 2013.
5	Dehri	BSPHCL required PDH MUX at BTPS from POWERGRID for RTU restoration. However, POWERGRID further informed that they don't have any spare PDH/MUX. BSPHCL is now working on shifting the PLCC panels of Pasauli(PG) to Gaya (PG) to make through the Dehri-Bodhgaya link. Expected to be completed by 30th June, 2013.
6	Kamarnasa	BSPHCL informed that, PGCIL is not in a position to provide OPGW on priority basis. Hence, PGCIL suggested resolving the issue with GPRS. BSPHCL requested PGCIL to submit the cost details which is awaited.
7	Sultanganj	RTU is reporting to SLDC.

BSPHCL and Powergrid may update the status.

<u>Deliberation in the meeting</u>

Updated Status was not placed in the meeting. Moreover reporting from Sultanganj was also intermittent. OCC advised BSPHCL to look into the matter and place the updated information within a week.

B. Non availability of Telemetry of JSEB Substation:

In 86th OCC JSEB and Powergrid updated the station wise status as given below:

S/n	Name of RTU Locations	JSEB action plan for RTU supplied during ULDC project and restoration.
1	Ramchadrapur RTU	JSEB informed that there is problem in PLCC link between Chandil – Ramchadrapur. AMC to M/s PUNCOM for PLCC link is under process. It would not be resolved by June 2013.
2	Jamtara RTU	JSEB informed that, RTU has been shifted to new control room and requested Powergrid to reintegrate the feeders in RTU as integration of additional feeder (new element) in the existing RTU. It will be commissioned by June 2013.
3	Deoghar RTU	JSEB informed that RTU will report after rectification of Deoghar –Jamtara PLCC link. AMC to M/s PUNCOM for PLCC link is under process. It would not be resolved by June 2013.

4	Garwarah RTU ,	JSEB informed that RTU may report after divertion of new PLCC link to Garwah- Daltanganj –Ranchi. No time schedule provided.
5	Patartu RTU	JSEB informed that, reporting of RTU is frequently interrupted because of frequent damages in UGFO. RTU will start reporting once link made healthy by POWERTEL.
6	Tenughat RTU	JSEB informed that RTU will start reporting after rectification of Tenughat – Patratu PLCC link. AMC to PUNCOM is under process. It would not be resolved by June 2013.

JSEB & Powergrid may update.

Deliberation in the meeting

The status remains same as there was no representative from JSEB.

In 86th OCC Sikkim and Powergrid updated the status as given below:

S/n	Name of RTU Locations	SIKKIM action plan for RTU supplied during ULDC project and restoration by June 2013.
1	Melli 132 KV	E & PD Sikkim informed that Survey with Powergrid and Alstom has been completed for old RTU shifting to 132 KV S/s. Powergrid was requested for providing estimate. Powergrid informed that estimate has already been sent to Sikkim.

Sikkim & Powergrid may update

Deliberation in the meeting

Sikkim and Powergrid updated the status as given below:

S/n	Name of RTU Locations	SIKKIM action plan for RTU supplied during ULDC project and restoration.
1	Melli 132 KV	E & PD Sikkim informed that new SCADA will be completed by October, 2013. 5 RTUs to be put under the upgradation scheme.

In 86th OCC OPTCL updated the status as given below:

S/n	Name of RTU Locations	OPTCL action plan for RTU supplied during ULDC project and restoration by June 2013.
1	Nalco	Work has been awarded and wiring is in progress. RTU will be commissioned by July 2013.
2	Machkund HPS	OPTCL informed that Machkund HPS RTU will be commissioned by June 2013.

OPTCL may update

Deliberation in the meeting

OPTCL updated the status as given below:

S/n	Name of RTU Locations	OPTCL action plan for RTU supplied during ULDC project and restoration by June 2013.
1	Nalco	Work has been awarded and wiring is in progress. RTU will be commissioned by August, 2013.
2	Machkund HPS	OPTCL informed that Machkund HPS RTU will be commissioned by 15th August, 2013.

Item no. B.3: Simultaneous shutdown of unit #1 & 2 of MRBTPP due to unavailability of evacuation path-MPL

Total power failure experienced at Maithon RBTPP on 23.06.2013. This happened while Powrgrid was engaged in some emergency work on tower at location No.R 2 of 400 kV Maithon-Maithon RB D/C line taking shutdown of the said line on urgent basis w.e.f. 23.06.2013 to 28.06.2013.

Powergrid may give the details of sequence of events.

Deliberation in the meeting

Powergrid informed that they have taken shutdown of 400 kV Maithon-Maithon RB D/C line on emergency basis. During the period the other link for evacuation of Maithon RBTPP power, 220 kV D/C Maithon-Ranchi line tripped due to conductor snapping and the machines tripped.

MPL informed that because of this incidence it suffered a loss of 20 MU (approx) of generation with Rupees 7 Crores (approx) of revenue loss because of this incidence. Further schedules of MPL supply not revised immediately resulting in huge UI loss to the power station. Therefore, MPL requested for the following:

i. Declaration of the incident as a force Majeure event
ii. Appointment of independent committee for investigating the matter and devising adequate care during shutdowns to avoid recurrence of similar events in future.
iii. Cancellation of all schedules to all beneficiaries including IEX
iv. Waiver of entire UI implication from the moment of line tripping till the complete restoration of both the units of MPL.

Concerned Members may appraise the house for further decision.

Deliberation in the meeting

OCC informed that as per CERC regulations the UI implications have been taken care of and there will be no financial loss to MPL.

Item no. B.4: Pollution mapping for Eastern Region - Powergrid

24th ERPC meeting held on 27th April, 2013 concurred for the pollution mapping in Eastern Region and for onetime reimbursement of project cost (Rs. 3 Crores) to Powergrid from the beneficiaries. Accordingly, Powergrid is executing the project in association with CPRI and state utilities. The brief scope of the work is circulated in the meeting.

In order to ensure proper coordination and for executing the activities each state utility should nominate one main coordinator and an alternate coordinator.

Utilities may nominate the coordinator and Powergrid may update the status.

Deliberation in the meeting

Powergrid gave a presentation on road map for pollution mapping of Eastern Region; the copy of the presentation is enclosed at ***Annexure- B.4****. During the presentation they informed that two tests will be carried out for pollution mapping:*

a) ESDD/NSDD measurement- on 600 locations of ER
b) Layer conductance measurement- at 10 % of the site locations

For the above tests training will be provided to ER constituents and sets of equipments also will be provided to carry out the tests. Powergrid requested to nominate a nodal officer from each constituent to co-ordinate the above programme. The committee requested Powergrid to prepare a detail programme with complete list of sites where the tests are to be carried out along with work-flow diagram. Powergrid agreed to place the details in next OCC for finalization of the procedure.

Item no. B.5: Reliability of Auxiliary power supply in the stations of POWERGRID :

For the auxiliary power of the substations, power at 11kV is being taken from SEBs through dedicated feeder.

The reliability and availability of the auxiliary power in the following stations under BSPTCL & JSEB control area is very poor. The auxiliary power position wise is as under:

Sl. No.	Name of Station	%ge reliability of auxiliary supply	No. of trippings per day
01.	Biharshariff 400/220kV S/S	15%	5-6 times
02.	Patna 400/220kV S/S	20%	50-60 times
03.	Muzaffarpur 400/220kV S/S	70%	40-50 times
04.	Ara 220 /132kV S/S	80%	25 times
05.	Jamshedpur 400/ 220kV S/S	30%	4-5 times
06.	Ranchi 400/220kV S/S	80% (Quality of supply is very poor, voltage is low 380-390 V)	

The substations of POWERGRID are connected with high capacity inter- regional transmission lines in addition to the power fed to the beneficiaries through the inter- connecting transformers.

For reliable operation of the substation, availability / reliability of auxiliary supply is very much essential.

BSPTCL / JSEB may kindly look into the issue for reliability /availability of quality auxiliary power supply for maintaining grid effectively.

Deliberation in the meeting

BSPTCL informed that the matter has been taken up with MD, Discom to make available reliable power to Powergrid S/S. Powergrid informed that as per Gazette notification Part-III, section-IV dated 09/03/2007, availability of two (2) independent source of Auxiliary power supply is required for 220 kV and above S/S. In compliance with the same following is the status:

Single Aux. supply source is available at following Sub-stations:

a) *Silliguri*
b) *Malda*
c) *Birpara*
d) *Dalkhola*
e) *Rourkela*
f) *Keonjhar*
g) *Jharsuguda*
h) *Angul*

Concerned utilities/SEB may please provide second dedicated source of supply. Further, existing HT feeders which are feeding power to station are being tapped for the supply in nearby rural areas.

BSPTCL and OPTCL agreed to look into the matter. OCC advised Powergrid to interact further with BSPTCL, OPTCL & JSEB in line with above guidelines and revert back to ERPC.

Item no. B.6: Augmentation of DG set at Biharshariff sub-station:

The 400 /220kV Biharshariff sub-station was commissioned in the year 1991-92 for evacuation of power from Kahalgaon Power Station of NTPC and feeding power to BSEB through Biharshariff 220 /132kV sub-station (BSEB). At that time for auxiliary supply of Biharshariff sub-station, 250KVA DG set was supplied. During course of time Biharshariff substation has increased many fold and presently connected with Kahalgaon through 4 circuits. With Muzaffarpur through two (02) circuits, with Balia through two (02) circuits, with Sasaram through three (03) circuits, with Gaya with one (01) circuit, with Koderma through two (02) circuits and with Purnea through two (2) circuits. Further, there are three (03) nos. 400 / 220kV ICTs in Biharshariff sub-station for feeding power to BSEB and 8 nos. line / bus reactor for controlling of system voltage.

The reliability / availability of auxiliary supply is very critical for safe operation of Biharshariff sub-station. With the increase of auxiliary load, the existing 250KVA DG set is not able to cater the demand. As such the DG set is also very old, 22 years old. In view of that it is proposed to augment the capacity of the existing DG set at Biharshariff to 500KVA.

The cost involvement in augmentation of the existing DG set is around 30 lacs.

Members may kindly deliberate and decide on augmentation of the existing 250KVA DG set at Biharshariff 400/ 220kV sub-station with 500KVA DG set.

Deliberation in the meeting

The committee agreed and endorsed to TCC.

Item no. B.7: CT Replacement at Melli end of 132 kV Melli – Chuzachen feeder----ERLDC

In 86th OCC Powergrid informed that, CT of desired ratio is not available with Powergrid. Order has been placed to Areva for new CT and it would be replaced by August, 2013.

POWERGRID may update the status.

Deliberation in the meeting

Powergrid informed that in the existing CT, the ratio 300/1 option was selected in place 150/1 and the issue has been solved.

Item no. B.8: Heavy loading of 315MVA ICTs at Jamshedpur and Sasaram

It has been observed that 315MVA ICTs at Jamshedpur are loaded to the levels of 150MW or more per ICT, and while that at Sasaram touches 200MW or more. Thus n-1 compliancy is not there. Hence, it is felt that augmentation of ICTs at Jamshedpur and Sasaram may be carried out.

In 86th OCC, members felt that ICTs may be replaced with 2x500 MVA ICTs. However, OCC advised ERLDC to monitor the loading of ICT for one more month, do the load flow study and revert back in next OCC.

ERLDC may place the study result.

Deliberation in the meeting

OCC advised to replace the existing 315 MVA ICTs with 2x500 MVA ICTs and 315 MVA ICTs may be kept as spare. OCC endorsed to TCC.

Item no. B.9: (Item No. B1 of 84th OCC meeting)

a) **Testing and calibration of special energy meter in Eastern Region--Powergrid**

b) **Automatic Meter Reading (AMR) --Powergrid**

Powergrid may update the latest status of progress etc.

Deliberation in the meeting

*Powergrid placed the latest status of Automatic Meter Reading enclosed at **Annexure-B.9**.*

Item no. B.10: Evacuation arrangement of DSTPS and Mejia B - ERLDC

In 85th OCC DVC informed that, DSTPS-Ragunathpur line would be completed by June, 2013 and Ragunathpur-Ranchi line would be completed by Sep'13. Line progress status

In 86th OCC DVC informed that, DSTPS-Ragunathpur line would be in service by 30th June, 2013.

Powergrid and DVC may update the status.

Deliberation in the meeting

DVC informed that DSTPS-Ragunathpur line was synchronised from DSTPS end on 16th July, 2013 (at 19:20 Hrs).

Item no. B.11: Need for Bus strengthening at Malda and Birpara consequent to augmentation of transformation capacity at North Bengal – ERLDC
(Item No. B2 of 82nd OCC meeting)

In 86th OCC WBSETCL informed that, bus strengthening at Birpara has been completed and the same at Malda would be completed before Puja.

WBSETCL may update the latest status.

Deliberation in the meeting

WBSETCL informed that bus strengthening of Malda S/S will be completed after Puja.

Item no. B.12: Commissioning of 220 kV bus bar protection at Ramchandrapur & Chandil substations (JSEB) – (Item No. B13 of 22nd TCC meeting)

In 86th OCC JSEB informed that, LBB has been provided in Chandil GSS as per committee report. For Ramchandrapur GSS work has been delayed as CTs are not available and it is under procurement process in headquarter. As such completion date is not certain. OCC advised JSEB to come with concrete action plan and target date by next OCC.

JSEB may update the latest status.

Deliberation in the meeting

The status could not be updated as JSEB representatives were not present.

Item no. B.13: Procurement and installation of numerical relays by JSEB for Lalmatia substation - (Item No. B14 of 22nd TCC meeting)

In 86th OCC JSEB informed that although previous target date was 30th April, 2013 as given in 84th OCC, but till date there is no progress in the work. OCC insisted for concrete action plan and target date by next OCC.

JSEB may update the latest status.

Deliberation in the meeting

The status could not be updated as JSEB representatives were not present. However, Powergrid informed that the tripping incidences have been reduced.

Item no. B.14: Procurement of spare transformers by Powergrid

The procurement of following spare transformer and reactors by Powergrid as a part of disaster management plan in Eastern Region has been discussed and approved in various ERPC meetings (13th to 18th meeting):

- 4 number 400/220 kV, 315 MVA transformers
- 2 number 220/132 kV, 160 MVA transformers
- One 132/66 kV, 50 MVA transformer
- One 80 MVAR shunt reactor

In 86th OCC Powergrid updated the latest status a given below:

- 315 MVA spare transformers at Biharshariff and Jamshedpur were already installed, while the same at Durgapur and Rourkella were already reached the site.
- One 80 MVAR reactor at Rourkella was already commissioned.
- 1 number of 150/160 MVA, 220/132 kV ICTs of Baripada is being diverted to Purnea.
- 1 number of 160 MVA, 220/132 kV ICT at Siliguri was already commissioned.
- 1 number of 50 MVA, 132/66 kV ICT of Gangtok is at Siliguri. Unable to dispatch to Gangtok due to road clearance problem.

Powergrid may update the latest status.

Deliberation in the meeting

Powergrid informed the status is same.

Item no. B.15: Tripping of lines due to suspected PLCC problem

In the past tripping of 400kV Durgapur(PG)-Bidahnnagar(WB) was reported on several occasions, due to receipt of DT at Bidhannagar(WB) end from Durgapur(PG) end. Due to generation of spurious trip signals from Durgapur(PG) end, the line had to be taken into service without PLCC for a short duration and subsequently shutdown of the line was taken and the PLCC restored. WBSETCL may provide confirmation regarding above.

Similarly, repeated tripping of 400kV GMR-TSTPP has occurred due to suspected PLCC problem between TSTPP and GMR. On 08/07/13 and 09/07/13, as per report from GMR the line had tripped due to receipt of direct trip from TSTPP end. It has been reported that PLCC for the above section is maintained by OPTCL. TSTPP/GMR/OPTCL may intimate the reasons for repeated tripping of the line and the latest PLCC status.
It may be noted that both the above lines are important lines, tripping of which have the potential to cause grid disturbances.

Concerned members may elucidate.

Deliberation in the meeting

WBSETCL informed that the matter has been taken up and will be resolved by first week of August, 2013. OPTCL informed that matter will be taken up with GMR for rectification.

Item no. B.16: Heavy loading of 315MVA ICTs at Jeypore and 220KV Jaypore-Jaynagar D/C line & Over Loading of 315MVA ICT at Muzaffarpur

It has been observed that during June 13, the 400/220KV, 315MVA ICTs at Jeypore carried power to the extent of 150MW per ICT. With increase of generation from Balimela& U. Kolab hydro stations in Odisha in July, coupled with enhancement of export to SR through HVDC Gazuwaka, the loading of each of the ICTs is touching 200MW almost on daily basis. As (N-1) security criteria is being violated for there ICTs, it is felt that capacity augmentation of 400/220KV ICTs at Jeypore may be taken up by PGCIL, and the existing 220KV Jeypore-Jaynagar D/C line be strengthened by constructing a 2nd D/C line

It has been observed that 315MVA ICTs at Muzzafarpur are loaded to the levels of 200 MW or more per ICT, many a times it even touched 230 MW. Thus n-1 compliancy is not there. Hence, it is felt that augmentation of 400/220KV ICT capacity at Muzzafarpur ICT may please be expedited.

Members may please discuss.

Deliberation in the meeting

OPTCL informed that the construction of another220 kV D/C Jeypore-Jaynagar line is not possible at this stage and hence they may go for generation backing down in that area. The OCC advised OPTCL to plan a SPS for backing down of their generation to fulfill the (N-1) criteria and also to provide over current settings of above said line to ERLDC. Till the implementation of SPS, OPTCL will go for proper load management in the affected area so that per circuit flow never goes beyond 160MW.OPTCL agreed.

Powergrid informed that the DPR for augmentation of 400/220 kV ICT at Muzaffarpur is in approval stage.

Item no. B.17: Draft procedure for transmission element outage planning

Coordination for outages vide the RPC forum is an important function of RPCs and RLDCs. The above is done regularly in the OCC meetings and such coordination leads to availing of shutdowns/outages keeping the Grid security sacrosanct. However, considering the NEW grid running in synchronism and future formation of a PAN India grid it is essential that a well documented procedure for availing outages be developed as presently, shutdown taken in a remote corner of one region may affect the Grid/outages taken or proposed to be taken in another region.

Accordingly, a draft procedure for outage planning of transmission elements has been prepared and already uploaded in ERPC web site (www.eastrpc.org). All members are requested to go through the draft procedure and offer their views regarding the same. The procedure would be finalised after suitably incorporating the comments received from all the constituents.

In 84th OCC ERLDC gave the presentation and fruitful deliberations were held. During deliberation it was emphasized that procedure could be designed only within the provisions of IEGC. OCC requested all constituents to give their views at the earliest.

Till date comments have been received only from NTPC and WBSETCL.

In 86th OCC, members were requested to give their views on draft procedure for transmission element outage planning.

In this context GM, NLDC vide letter Dtd.05/07/13 suggested certain points to be put in RPC forum for discussion till a common consensus is arrived at regarding the procedure.

ERLDC may update.

Deliberation in the meeting

It was decided that all utilities will submit their Shutdown programme by 5th day of the month and ERLDC will compile and upload in ERLDC website on 8th day of the month. Beyond this no further requisition will be entertained unless there is emergency. Further, after approval of shutdown prorgamme in the OCC the utility taking shutdown must intimate three (3) days in advance to ERLDC before taking the shutdown in real time.

Item no. B.18: Procurement of Emergency Restoration System (ERS Towers) for Eastern Region constituents- Powergrid.

In 86th OCC members requested PGCIL to give a presentation in next OCC along with cost analysis.

Powergrid may give a presentation.

Deliberation in the meeting

*Powergrid gave a presentation for requirement of ERS with cost details; the presentation is enclosed at **Annexure-B.18.***

OPTCL informed that they have procured 32 no. of 132 kV ERS tower.
WBSETCL informed that they are also planning to procure ERS towers.

However, OCC felt that in the recent past incidences of tower failures has become an increasingly regular features in Eastern region and therefore in general pool Eastern Region should have adequate nos. of ERS towers for early restoration of snapped towers in case of emergency. OCC advised Powergrid to place the detail list of ERS available for ER under CTU control area and all constituents were requested to give their views in next OCC meeting.

Item no. B.19: Procurement of Circuit Breaker, CT, CVT, LA for Eastern Region as O&M spare- Powergrid.

In 86th OCC members requested PGCIL to give a presentation in next OCC along with cost analysis.

Powergrid may give a presentation.

Deliberation in the meeting

*Powergrid gave a presentation for requirement of O&M spare; the presentation is enclosed at **Annexure-B.19.** OCC felt that in general pool of ER there should be adequate O&M spare for*

early restoration. However Powergrid was advised for exploring the possibility of procuring these items through the O&M component of tariff. Members also asked for the population & failure detail of equipments. Powergrid agreed to update their positions along with all these details in next OCC meeting. OCC also advised all constituents to give their comments on the issue in next OCC meeting.

Item no. B.20: Preparation of crisis management plan for Cyber Security in Power Sector in line with CERT-IN.

The activity of the preparation of Crisis Management Plan for countering the cyber attacks and its implementation including the Mock Drills, audits etc. is being monitored by CEA regularly in line with crisis management plant of Ministry of Power. Power Utilities (including generation, transmission & distribution utilities) of eastern region are to furnish regularly the updated status to on the same to Chief Engineer, Distribution Planning & Development Division, CEA.

Members may note and comply.

Deliberation in the meeting

Members noted and OCC advised to comply.

Item no. B.21: Reactive Power performance of Generators

a) Review of reactive power generation/drawal of generators vis-à-vis 400kV station bus voltage of units

Maximum and minimum voltage observed (data taken from SCADA)
Generating stations have been monitored for sample dates in the month of June 13:

Power Plant	**Max and Min Voltage observed for June 13 (kV)**	Date for monitoring (June 2013)
Farakka STPS	426,408	1,6,15
Khalgaon STPS	421,410	--
Talcher STPS	413,398	--
Teesta	425,395 (Binaguri)	--
Bakreshwar TPS	409,385	--
Kolaghat TPS	422,388	--
Sagardighi TPS	426,408 (Farakka)	--
MPL	428,415 (Maithon)	15,25,27
Mejia-B	428,415 (Maithon)	15,25,27
DSTPS	432,416	1,8,15,24
Adhunik TPS	433,416	1,8,15,24
Sterlite	430,418	14,16,30

Performance analysis:

I. Farakka : Though there was absorption of reactive power in 500MW units, but absorption of reactive power in 200 MW units was not adequate.

II. Kahalgaon : Both 210MW & 500MW units at khSTPP, absorbed VAR or injected zero VAR into the Grid for most of the time and hence performance of the units was satisfactory.

III. Sagardighi: Reactive performance of sagardighi units was satisfactory.

IV. MPL: MPL absorbing VAR during High voltage condition and performance was satisfactory.

V. Reactive capability performance of DSTPS and Mejia'B' could not be monitored as voltage data of these power stations are not changing with respect to time.This problem is persisting for quite some time DVC may kindly ensure availability of complete data from Mejia-B & DSTPS.

VI. Adhunik TPS: Adhunik was not absorbing VAR during high voltage condition. Similar performance was observed in the month of April & May 13 also, Reactive power injection by Adhunik is contributing towards high voltage condition at Jamsedpur.

VII. Sterlite: The VAR absorption by SEL units during high voltage condition was not adequate.

Concerned members may explain their position in line with observation.

Deliberation in the meeting

ERLDC presented the performance of the generators and members noted. ERLDC informed that, due to GT tap position of generators at higher voltage level units are not being able to absorb adequate VAR during high voltage condition. ERLDC advised DSTPS, Mejia, Sterlite and Adhunik TPS to change their GT tap position to lower level. ERLDC also gave the revised GT tap position for these generators given in ***Annexure-B.21.*** *DVC, Sterlite and Adhunik agreed to change the GT tap position as per ERLDC direction.*

b) Schedule for reactive capability tests

In the 86th OCC, DVC had indicated that reactive capability test of Mejia TPS would be carried out in July, 2013. It has been observed that the area around Jamshedpur, Ranchi, Maithon are facing high voltage problem preliminarily due to a cluster of generators who are either operating in lagging mode or near unity pf throughout the day. Repeated tripping of 400kV Maithon-Ranchi line and other 400kV Lines from Ranchi have been observed. Accordingly, it is proposed to carry out reactive capability test of all units of the following generators on a priority basis:

a) Adhunik TPS
b) Mejia TPS
c) DSTPS
d) Koderma TPS
e) Maithon RB

Adhunik/DVC/Maithon RB may confirm the final dates. Before carrying out the tests ERLDC control room is to be intimated and the results need to be forwarded to ERLDC/ERPC along with the capability curves/manufacturer constraints for proper analysis.

Deliberation in the meeting

ERLDC asked for the details reactive capability curve and tentative date of testing by 31st July, 2013. Adhunik, DVC and Maithon RB agreed.

Item no. B.22: Revised congestion management procedure in Real Time System operation (Item No. B2 of 85th OCC meeting)

CERC has released the revised congestion management procedure for real time system operation which has been operationalized w.e.f 22/04/13.

In 85th OCC, ERLDC gave the presentation on the subject matter. Constituents requested to arrange a separate workshop on TTC and ATC. Members agreed. However ERLDC informed that, all constituents should implement "Revised Congestion Management Procedure" immediately as per CERC order.

In 86th OCC, OCC requested ERLDC to convene a separate workshop on ATC/TTC etc. in the month of July, 2013 for better understanding of the subject. OCC also advised all constituents to implement revised congestion management procedure and intimate the status to ERLDC.

Accordingly, a separate workshop was convened on 12th July, 2013 at ERLDC, Kolkata.

Members may update the status.

Deliberation in the meeting

ERLDC informed that, OPTCL, BSPTCL and Sikkim were not present in the workshop. WBSEDCL informed that, they have not been invited for the workshop. Constituents requested for another workshop on ATC/TTC calculation. ERLDC agreed to conduct one more workshop on ATC/TTC in the month of August, 2013.

Item no. B.23: Procedure for assessment of Frequency Response Characteristic (FRC) of Control Areas in Indian Power System (Item No. B3 of 85th OCC meeting)

OCC in its 86th meeting requested all SLDCs to calculate FRC for the given data and send the results to ERLDC.

ERLDC may update the status.

Deliberation in the meeting

ERLDC informed that, WBSETCL, DVC and OPTCL sent the results. ERLDC compiled the data and some corrections were indicated. OCC requested all other constituents to calculate FRC for given data in 86th OCC and send the results to ERLDC as early as possible.

Item no. B.24: Data regarding STU network including Grid substations loads and system constraints (Item No. B8 of 84th OCC meeting)

The above agenda was discussed in the 85th OCC meeting and constituents agreed to send the relevant information. Till date no data has been received from the constituents. Accordingly to start with it is felt that SLDCs should furnish at least the following:

a) On a weekly basis the list of lines upto 132kV level which are under outage/shutdown or kept open due to system constraints. The above list should include only the list of lines under outage/shutdowns/kept open as at the end of the previous week.
b) The list of new elements commissioned in the previous month should be positively forwarded by first working day of the current month to ERLDC.

c) SLDCs are also requested to forward to ERLDC details of system constraints faced by them in the previous month.

On receipt of the same from SLDC, ERLDC would put up an agenda regarding system constraint faced by SLDCs/RLDCs in the previous month in each OCC for discussion and charting methodologies to remove such system constraints. If the constraints are significant, the same could also be taken up further in TCC/ERPC meetings and further place before the Standing Committee for transmission planning. Feedback could be given to NLDC for incorporation in quarterly feedback to CTU and the same could also be referred to the standing committee.

The above may be forwarded vide mail to **erldc.cal@gmail.com** & **psdas_psd@yahoo.com**.

In 86th OCC, all members were requested for submitting the relevant information to ERLDC.

ERLDC may update. Members may please note and ensure compliance.

Deliberation in the meeting

All constituents requested to send the relevant information to ERLDC.

Item no. B.25: Status of "Third Party Protection Audit"

List of the observations along with compliances received from the constituents (updated) is placed in the meeting and also available in ERPC website (**www.eastrpc.org)**.

In 86th OCC members requested all constituents to update the latest status of compliance on observations every 15 days.

Since then WBPDCL has updated their status for their KTPP S/S.

Members may note and ensure compliance of observation.

Deliberation in the meeting

Most of the constituents updated the latest status in the meeting. OCC advised to update the status on every 15 days. OCC decided to carry out surprise visits by audit team on the status of observations from August, 2013 onwards. Moreover OCC accepted the proposal of ERPC secretariat for building up its own logistics with inspection vehicle, test kits and other resources for carrying out inspection of U/F relays, Protection audits, relay coordination in some malfunctioning S/Ss

Item no. B.26: Identification of feeders for distress load shedding - ERLDC
(Item No. B1 of 82nd OCC meeting)

In 85th OCC ERLDC informed that, DVC, BSEB and DPL have identified the feeders and given the relevant information. WBSETCL informed that, apart from UFR feeders it could not be possible to identify other feeders dedicated for distress load shedding for their system.
In the said meeting all defaulting constituents were again requested to submit the relevant information by next OCC.

The issue has been discussed in the Special meeting on 31.5.13 taken by chairman, CEA and it was deliberated that, CEO, POSOCO will also direct the RLDCs to identify appropriate EHV lines /

ICTs of the states, which could be got opened to check overdrawal by a state in violation of instructions of RLDC like the arrangement adopted in the Northern Region.

In 86th OCC, members were again requested to give feeders details to ERLDC.
Since then JSEB has identified the feeders.

ERLDC may please update the latest status.

Deliberation in the meeting

*Most of the constituents placed the feeders detail except WBSETCL. WBSETCL informed that, they are unable to identify the dedicated feeders for distress load shedding. ERLDC informed that, OPTCL has given the substation details instead of feeders and requested OPTCL to give feeder details. OPTCL agreed. ERLDC also identified constituent wise radial feeders which can be disconnected during emergencies. (Enclosed at **Annexure-B.26**)*

Item no. B.27: Collection of Daily Energy Data – ERLDC (Item No. B4 of 82nd OCC meeting)

Presently all constituents are giving data in the prescribed format except OPTCL, WBSETCL and Chuzachen. WBPDCL power plants viz. Santhaldih, Bakreswar, DPL, Kolaghat and CESC are submitting data in the prescribed format directly to ERLDC.

In 84th OCC JSEB was requested to take appropriate action for monitoring Tisco and Jusco and give feedback by next OCC.
In the 85th OCC JSEB mentioned that a letter had been written to TISCO/JUSCO in this regard.

In 86th OCC ERLDC informed that, OPTCL is not giving the daily energy data and WBSETCL is submitting individual plant data. OCC requested OPTCL and WBSETCL to provide the relevant information to ERLDC.

ERLDC may update the latest status.

Deliberation in the meeting

OCC requested OPTCL, WBSETCL and Chuzachen to provide the relevant information to ERLDC. OPTCL, WBSETCL and Chuzachen agreed.

Item no. B.28: Submission of Grid Incidence Report as per specified format - ERLDC
(Item No. B3 of 80th OCC meeting)

It has been observed that grid incidence reports though being submitted in the prescribed format are not furnished properly as they are not accompanied by relay indications or supported by proper analysis and are without DR/EL printouts. Also, in case of disturbance, ERLDC is issuing messages asking for DR/EL printouts with full relay indications, and such data are sometimes not received properly or are time delayed.

Accordingly, a list of disturbances starting from April, 2013 and correspondingly the status and delay in receipt of data from the constituents involved have been compiled and placed in 86th OCC.

OCC advised all constituents send the grid incidence report as per format within 24 hrs to comply with IEGC.

ERLDC may update the status.

Deliberation in the meeting

*ERLDC presented the status (enclosed at **Annexure-B.28**) and requested all constituents to submit the grid incidence report as per format within 24 hrs.*

Item no. B.29: GT and ICT Tap coordination throughout the Easter Region --- ERLDC

In 86th OCC ERLDC updated the status of GT and ICT details available with ERLDC. OCC requested all constituents to give the pending data. Constituents agreed to send the relevant information to ERLDC.

ERLDC may update the status.

Deliberation in the meeting

*ERLDC updated the latest status and members noted. The latest status of GT/ICT tap data is enclosed at **Annexure-B.29**.*

Item no. B.30: Auto Reclosure Facility at Tala end

In 86th OCC DGPC informed that, feeders would be put in service as soon as their management approves.

DGPC may update the latest status.

Deliberation in the meeting

DGPC informed that, feeders would be put in service as soon as their management approves.

Item no. B.31: Restricted Governor Mode of Operation --- ERLDC

The status of units of ER under RGMO is placed in 85th OCC meeting. Generators updated their latest status. Updated status as available in secretariat is circulated in the meeting. In the meeting DPL has confirmed implementation and operation of RGMO in DPL U#7 but ERLDC did not receive any letter regarding this from DPL.

DPL may confirm the above vide letter.

In 86th OCC ERLDC informed that, DPL data is not coming to ERLDC. DPL agreed to look into it.

Concerned generators may update their latest status.

Deliberation in the meeting

OHPC informed that, all hydro machines are in FGMO. WBSEDCL informed that, RGMO of Rammam is taken up for implementation.

In this context it may be noted that a petition had been filed by Maharashtra State Power Generation Company Limited for "Approval for granting exemption from operating 31 nos hydro stations unit in Restricted Governor Mode of Operation (RGMO) and for granting time extension for operating 10 nos LMW/8 nos KWU units in RGMO in the thermal power stations of Maharashtra State Power Generation Company Limited"

However CERC vide order dated 02.07.13 against petition no 150/MP/2012 is rejected the appeal of MSPGCL. Relevant extracts of CERC's order is reproduced below.

13. With regard to the petitioner`s other 10 units as mentioned in para 3 of this order, the representative of the petitioner submitted during the course of the hearing that all thermal units are operating on FGMO mode with manual intervention and shall continue to operate till RGMO is fully implemented in terms of Regulations 5.2 (f) (iii) of the Grid Code. We direct the petitioner to expedite and make all-out efforts for implementation of RGMO in the units of its thermal generating stations. We further direct the petitioner to ensure that the hydro generating units are put on FGMO with manual intervention with immediate effect.

All eligible generating stations in Eastern Region may therefore take necessary action to ensure that RGMO/FGMO with manual intervention is implemented without further delay.

Members may ensure necessary compliance.

Deliberation in the meeting

Members noted.

Item no. B.32: Mock Black start exercises in Eastern Region --- ERLDC

i) As per the schedule of black start exercises finalized in the 85thOCC the following black start exercises are due to be carried out:

   a) Upper-Kolab HEP: Last week of May,2013(Already due)
   b) Maithon HPS: 1st week of June,2013(Already due)
   c) Rengali HEP: 2nd week of June,2013(Already due)
   d) Upper Indravati HEP: 3rd week of June

DVC has intimated vide letter Dtd.29/06/13 that black start of Maithon HEP was successfully carried out on 12/06/13, by black starting Unit#3 with the help of Battery bank source and subsequently Unit#1 was synchronized with the auxiliary power from Unit#3.

In the 86th OCC, OHPC informed that, DG set of Upper Kolab HEP is not yet commissioned and it would be commissioned in the month of July, 2013. Accordingly, OHPC had proposed revised dates for black start exercises:

a) Upper-Kolab HEP: In the month of July, 2013.
b) Rengali HEP: Last week of June, 2013(already due)
c) Upper Indravati HEP: Last week of June, 2013(already due)

OHPC may inform the latest status.

Deliberation in the meeting

OHPC proposed revised dates for black start exercises:

a) Upper-Kolab HEP: In the month of October, 2013.
b) Rengali HEP: Done on 17th July, 2013; ERLDC advised to do it again with islanded load.
c) Upper Indravati HEP: 30th July, 2013

In 85th OCC it was decided that Chuzachen has to furnish details as required for preparation of their Black start procedure and furnish tentative dates for inclusion in the list of Black Start Schedule.

Chuzachen agreed to give the details to ERLDC for preparation of their Black start procedure.

ERLDC may update.

Deliberation in the meeting

Chuzachen informed that, at present they are not ready for black starting their units because of some problems in governor operation and for which rectification is in progress.

ii) Testing of DG sets meant for Blackstart

No reports on testing of DG sets have been received from the constituents. Report from Rangit HEP has only been received. All such test reports may be forwarded to **erldc.cal@gmail.com** & **psdas_psd@yahoo.com**. Otherwise in line with previous OCC decision it will be considered that respective members are ensuring the healthiness of the generators.

Members may note and ensure compliance.

Deliberation in the meeting

OCC advised to comply with OCC decision.

Item no. B.33: Schedule/generation restriction for Chuzachen HEP in view of repeated disturbances.

The issue has been discussed in special protection committee meeting held on 14th June, 2013, wherein besides aforesaid actions ERLDC proposed a Special Protection Scheme to tackle overloading of this network. PCC agreed. Gati-Infrastructure was requested to implement the SPS scheme in consultation with Powergrid and NHPC. Till then, Chuzachen generation/schedule has to be restricted to a maximum limit of 50 MW and in case of line shutdowns the same would be restricted further.

SPS scheme of ERLDC has been implemented. To oversee the effectiveness of the same a team comprising ERPC secretariat, ELRDC and Powergrid visited Chuzachen HPS on 10.07.13.

Concerned Members may further update the status.

Deliberation in the meeting

The house was informed that SPS scheme as designed by ERLDC and approved by PCC in its meeting dated 14th June, 2013 was implemented successfully by Chuzachen in interaction with Powergrid and NHPC. Further the same was reviewed at site by a team of ERPC comprising members from ERPC secretariat, PGCIL, ERLDC. The recommendation of this team was also successfully complied. OCC advised chuzachen to test the effectiveness of the scheme in presence of Powergrid and NHPC representatives stationed at Sikkim and give feedback in 16th PCC meeting scheduled to be held on 24th of July, 2013 for deciding on further course of action.

Item no. B.34: Revised operating procedure for Eastern Region

The revised operating procedure for Eastern Region has already been forwarded to all the constituents, for their comments and suggestions regarding any modifications/additions. The responses as received from constituents would be compiled and presented for further discussions.

In 86th OCC ERLDC gave a presentation on the changes made in operating procedure. OCC requested all constituents to look into it and give their views to ERLDC. Member's agreed.

Members may update.

Deliberation in the meeting

WBSETCL informed that, they had sent their views to ERLDC. OCC requested all other constituents to give their views.

Item no. B.35: Argumentation of Transformation capacity of 400/220 kV, 315 MVA ICT of Baripada Sub-station. (Item No. B1 of 85th OCC meeting)

At present, two nos of 400/220 kV, 315 MVA ICTs are available at Baripada S/s of Powergrid. It has been observed that the power flow through both the transformers exceeds more than 500 MW during peak hours on several occasions and it is clear that with the same transformation capacity of 630 MVA available at Baripada, and with the growing load pattern, it will be difficult to cater the load through this transformer and the full load of OPTCL cannot be met in near future. Further, due to non-availability of alternate source at Baripada, OPTCL has to resort load shedding in case of outage of any one of ICT. As such the augmentation of transformation capacity at Baripada S/s is required immediately to have sufficient margin to take care of load growth in future.

In view of such increasing loading pattern, it is proposed to augment the transformation capacity of Baripada by 1x500 MVA including GIS bay due to space constraint. Otherwise, there will be serious constraint in meeting the load requirement of OPTCL in case of outage/failure of one the ICT.

In 85th OCC, OPTCL informed that 400/220 kV, 315 MVA ICT-I & II at New Duburi were idle charged since 27/02/13 and 29/04/13 respectively from 220 kV side. 400 kV connectivity to New Duburi is expected soon. As such, argumentation of ICT capacity at Baripada may not be required. This needs to be reexamined considering commissioning of New Duburi 400 kV/220 kV sub-station.

After deliberation OCC decided that, OPTCL is to give the load profile and line configuration details to ERLDC. OCC requested ERLDC to study the load profile and give their views in 87th OCC.

ERLDC informed that, load profile has not been received from OPTCL. OCC advised OPTCL to give the load profile and line configuration details to ERLDC. OCC requested ERLDC to study the load profile and give their views in next OCC.

OPTCL and ERLDC may update the status.

Deliberation in the meeting

ERLDC informed that, load profile and line configuration details are yet to be received from OPTCL. OCC advised OPTCL to give the requisite information. OPTCL agreed.

Item no. B.36: Energy Generation data management from Renewable Energy Sources

As per Electricity Act, 2003, CEA has been entrusted with the task of collecting electricity generation data. CEA is monitoring all the existing generating stations with capacity more than 25 MW (Conventional sources only). In recent years there has been appreciable growth in generation from Renewable Energy Sources (RES).

In view of above it was decided to monitor all the generating stations under RES connected to the grid and also to bring out month wise, state wise and sector wise report on RES generation in MU including peak generation from RES.

CEA already requested to nominate Nodal officers at the level of SLDC for the above purpose. However, only few states have responded.

Those SLDCs who have not yet nominated the nodal officers for Energy Generation Data management from RES are requested to furnish the details at following email/Fax:

Email: ceaopmwind@gmail.com
with a copy to rishika.engineer@gmail.com and s.sewak@cea.nic.in

Nodal officers from CEA:

Mrs. Rishika Sharan, Director, CEA, 011-26732663 and 26102263(Fax), Mobile: 9868021299
Mrs. Sarita Sewak, Dy. Director, 011-26732656

SLDCs may note and nominate their Nodal officers as advised.

Deliberation in the meeting

Members noted and agreed to comply.

Item no. B.37: Frequent tripping of 220 kV D/C Birpara-CHPC and 220 kV S/C Birpara-Malbase line on Transient Earth Fault during monsoon - Powergrid.

In view of frequent tripping of 220 kV D/C Birpara-CHPC and 220 kV S/C Birpara-Malbase, Powergrid had already carried out the following measures in Indian Jurisdiction to avoid tripping:

i. PID scanning of Insulators and replacement of defective insulators based on PID
ii. Providing additional earthling
iii. Thermo vision scanning of jumpers of all tension type towers and its rectification.

However, considering no of tripping reported in Bhutan jurisdiction CHPC may please also carry out the above measures to avoid tripping of the said line to ensure smooth evacuation of CHPC power.

In 86th OCC DGPC informed that, remedy measures are being taken to minimize the tripping.

DGPC/Powergrid may please update.

Deliberation in the meeting

Powergrid informed that no tripping occurred in this month.

Item no. B.38: TTC calculation by states

Clause 4.1 of Detailed Procedure for Relieving Congestion in Real Time Operation of CERC states that all SLDCs have to calculate their respective inter-state TTCs. For familiarization of TTC calculation & congestion regulation a one day workshop was organized on 12/07/13 at ERLDC conference room, which was attended by participants from DVC, JSEB, WB and ERPC.

All SLDCs are therefore requested to estimate the import & export TTCs of their respective control areas and inform ERLDC in accordance with the congestion regulation. ERLDC will extend assistance for TTC calculation in case any SLDC needs help.

Members may please discuss.

Deliberation in the meeting

DVC gave the report. OCC advised all other constituents to calculate TTC of their respective control area and inform ERLDC.

Item no. B.39: Certification through BIS as per IS 18001:2007 to al generating/transmission units. (Item No. B9 of 84th OCC meeting)

In 84th OCC meeting all constituents were requested to interact with BIS with intimation to ERPC and get certified as per CEA direction.

OHPC vide their letter dated 03.05.13 informed that their six generators has already obtained certification of OHSAS.

In 85th OCC NTPC informed that, NTPC-Farakka has been certified with IS 18001. Other constituents including OHPC requested to interact with BIS with intimation to ERPC and get

certified as per CEA direction. The matter is getting reviewed by highest authorities with top priority.

Members may note and update the status.

Deliberation in the meeting

Members noted and agreed to comply.

PART C:: OPERATIONAL PLANNING

Item no. C.1: Prolonged outage of power system elements in Eastern Region

(i) Generating units:

STATION	UNIT NO	CAP(MW)	DATE	REASONS
MEJIA B	8	500	30.04.13	FIRE HAZARD IN GT
DSTPS	1	500	01.07.13	OVERHAULING
TENUGHAT	1	210	08.06.13	LOSS OF EVACUATION PATH
FARAKKA STPP	2	200	20.06.13	ANNUAL O/H
KAHALGAON STPP	1	210	01.07.13	ANNUAL O/H
BAKRESWAR	1	210	30.06.13	LOW DEMAND
IB THERMAL	2	210	5.07.13	ANNUAL O/H

(ii) Transmission elements

Transmission Element	Agency	Outage Date	REASON
220 KV TENUGHAT - BIHARSHARIFF	BSEB/JSEB	12.05.13	TOWER COLLAPSE AT LOC NO 424 A ,425 A, 426A
220 KV BIHARSHARIF - BODHGAYA D/C	BSEB	12.05.13	6 NOS TOWER COLLAPSE
132 KV BIHARSARIF - SHEIKHPURA	BSEB	12.05.13	4 NO. TOWER COLLAPSE
400 KV MAITHON - KODARMA – I	POWERGRID	13.05.13	COLLAPSE OF TWO TOWERS (103/1,103/2),3 TOWERS DAMAGED(102/3,103/0,104/0)

Concerned utilities may share the latest status.

Deliberation in the meeting

Members noted.

Item no. C.2: Information regarding commissioning of new transmission element – ERLDC

1. 80 MVAR L/R of 400 kV Binaguri – Bongaigaon – IV (Future) was first time taken in to service as B/R at Binagauri at 03:40 Hrs of 01/06/13.
2. 400 kV TISCO – Jamshedpur was synchronized with commencement of power flow, for the first time at 23:09 Hrs of 03/06/13.
3. 220kV Purnea-Madhepura-I bay at Purnea was charged for the first time at 18:50 Hrs of 04/06/13.

4. 220kV Dalkhola(PG)-Dalkhola(WB)-II was synchronized with commencement of power flow for the first time at 13:23 hrs of 15/06/13.
5. 220 kV EM(CESC) – Subhasgram – I & II were synchronized with commencement of power flow for the first time on 18/06/13, with power flow towards EM(CESC) in radial mode.
6. GMR Unit#3 GT back charged from 400kV side for the first time alongwith A.T/ S.Ts on 19/06/13.
7. 132kV Banka(PG)-Sabour(BSPTCL) was loaded for the first time on 25/06/13.
8. 400kV DSTPS-Raghunathpur- I & II were test charged upto loc. No.210(Near Raghunathpur) on 13/07/13.

All members are also requested to verify above and also intimate regarding details of any other new elements commissioned but not included in the above list.

All constituents are requested to intimate details of commissioning of new elements/generating units (if any) positively by the first working day of the current month for the previous month.

Members may note and comply.

Deliberation in the meeting

Members updated.

Latest status of commissioning of following generating station and transmission elements may please be furnished.

New generating units:

S.No.	Power Plant	Unit size	Expected date
1	GMR Unit#3	4x350MW	February'13
2	Koderma Unit#2	2x500MW	U#1 March'13
3	Corporate Power Unit#1	2x270MW	
4	Teesta-III Unit#1	1x200MW	
5	Raghunathpur Unit#1	2x600MW	Mar'13
6	TLDP-IV	1x40MW	

New transmission elements

SL No.	Transmission Line	Expected date
1	400 kV Maithon-Gaya D/C	
2	400 kV Gaya-Koderma D/C	
3	400kV Purnea-Biharshariff D/C	Important
4	LILO of 400kV Kahalgaon-Biharshariff 1& 2 at Lakhisarai	
5	400kV Sasaram-Daltonganj D/C &Daltonganj S/Stn	
6	400 kV DSTPS-Raghunathpur D/C	Test charged upto loc. No.210 (Near Raghunathpur) on 13/07/13.
7	400 kV Ranchi-Raghunathpur D/C	
8	400 kV Meramandali-Dubri D/C	
9	400 kV Corporate- Ranchi D/C	
10	400 kV IB-Meramandali D/C	

11	220 kV TLDP-IV – NJP ckt-2	
12	220 kV Kharagpur-Midhnapur D/C	
13	220 kV Jeerat-Rishra D/C	
14	220 kV Lathehar-Daltonganj D/C	
15	220 kV Lohardaga-Lathehar D/C	
16	220 kV Bidhansai-Cuttack D/C	
17	220 kV Girdih-Koderma D/C	
18	220 kV Purnea-Madehpura	June 13

Concerned utilities may update the likely date of synchronization and inform commissioning of other new generating station and transmission element which are not included in above said list.

Deliberation in the meeting

Members updated.

Item no. C.3: Anticipated power supply position during Aug'13

The abstract of peak demand (MW) vis-à-vis availability and energy requirement vis-à-vis availability (MU) for the month of Aug'13 were prepared by ERPC Secretariat on the basis of LGBR for 2013-14, keeping in view that the units are available for generation and expected load growth etc. The details are placed in the meeting for discussion**.**

Members may confirm.

Deliberation in the meeting

Modified anticipated power supply position for the month of June, 2013 after incorporating constituents' observations is given at **Annexure-C.3.**

Item no. C.4: Shutdown proposal of transmission lines and generating units for the month of Aug' 13

WBSETCL in its letter No SLDC/HOW/18/473 dated 11th July requested for threadbare deliberation on "Late return of Shut down by PGCIL as a regular phenomenon"

Members may finalize the Shutdown proposals of the generating stations and transmission lines for the month of Aug'13 as placed in the meeting. The shutdown programme of generating units as per LGBR is placed in the meeting at Members may finalize the shutdown proposals of transmission elements as placed for the month of August'13.

Members may finalize.

Deliberation in the meeting

Approved maintenance programme of generating stations and transmission elements during the month of June, 2013 is at **Annexure-C.4**.

It was decided that all utilities will submit their Shutdown programme by 5th day of the month and ERLDC will compile and upload in ERLDC website on 8th day of the month. Beyond this no

further requisition will be entertained unless there is emergency. Further, after approval of shutdown prorgamme in the OCC the utility taking shutdown must intimate three (3) days in advance to ERLDC before taking the shutdown in real time.

PART D:: OTHER ISSUES

Item no. D.1: UFR operation during the month of June'13

Since system frequency did not touch 48.8 Hz in June'13, UFR did not operate. Reports of UFR operation from constituents in case of disturbances and local islanding have not yet received.

Members may note.

Deliberation in the meeting

Members noted

Item no. D.2: Non-compliance of directions issued by SLDC --- ERLDC

Vide clause no 5.5.1.c)(h) of IEGC, non-compliance of SLDC direction by SEB/Distribution licenses/bulk consumers to curtail overdrawal is to be reported to ERLDC for incorporating the same in weekly report to be prepared and published by ERLDC.

All SLDCs are to inform ERLDC the instances of non –compliance of SLDC directions by SEB/Distribution licenses/bulk consumers to curtail overdrawal, within two days after the day of operation.

No report from any constituent received. Hence ERLDC consider 'Nil' report for all Constituent for June'13.

Members may note.

Deliberation in the meeting

Members noted

Item no. D.3: Grid incidences during the month of June'13

Sl No	Disturbance Place	Date & Time of occurrence	Generation loss (MW)	Load loss (MW)	Remark	Category
1	JSEB (Hatia, Patratu, Tenughat)	03.06.13 at 15:39hrs	210	270	Total Power failure occurred at Hatia, Patratu&Tenughat s/s in JSEB system due to tripping of 220kV Ranchi-Hatiackt on earthfault.All the 220kV & 132kV feeders tripped & traction supply inturepted in Hatia, Namkum&Kamdara	GD-1

2	Sikkim (Rangit, Chuzachen, Kureseong, Melli)	03.06.13 at 21:24hrs	190	225	Total power failure occurred in Sikkim system due to tripping of 132kV Rangit-Kureseong-Siliguriline.All the running units of Rangit&Chuzachen got tripped.	GD-1
3	Sikkim (Rangit, Chuzachen, Kureseong, Melli)	04.06.13 at 02:28hrs	185	220	Total power failure occurred in Sikkim system due to tripping of 132kV Rangit-Kurseong-Siliguriline.All the running units of Rangit&Chuzachen got tripped.	GD-1
4	Sikkim (Rangit, Chuzachen, Kureseong, Melli)	04.06.13 at 05:28hrs	180	200	Total power failure occurred in Sikkim system due to tripping of 132kV Rangit-Kurseong-Siliguriline.All the running units of Rangit&Chuzachen got tripped.	GD-1
5	JSEB (Hatia, Patratu, Tenughat)	05.06.13 at 14:38hrs	235	160	Total Power failure occurred at Hatia, Patratu&Tenughat s/s in JSEB system due to tripping of 220kV Ranchi-Hatiackt on earthfault.All the 220kV & 132kV feeders tripped & traction supply inturepted in Hatia, Namkum&Kamdara.	GD-1
6	JSEB (Hatia)	06.06.13 at 23:25hrs	0	200	At the time of switching on operation of 132kV Hatia-Kamdara, all the 132kV lines and ICTs of 132kV Hatia s/s in JSEB system tripped on SOTF.	GD-1
7	JSEB (Hatia, Patratu, Tenughat)	08.06.13 at 17:15hrs	480	100	Fire hazard occurred at Tenughat s/s in JESB system due to bursting of two nos of CT of 220kV Tenughat-Patratu line. All the running units of Tenughat&Patratu tripped.	GD-1
8	Sikkim (Rangit, Chuzachen, Kureseong, Melli)	10.06.13 at 03:01hrs	136	40	Total power failure occurred in Sikkim system due to tripping of 132kV Rangit-Kureseong-Siliguri line. All the running units of Rangit & Chuzachen got tripped.	
9	JSEB (Hatia, Patratu, Tenughat)	10.06.13 at 18:08hrs	200	219	Various 220kV & 132kV lines connected with Patratu&Hatia tripped due to thunder storm & lightening. Patratu&Tenughat units also tripped	GD-1
10	JSEB (Hatia, Patratu, Tenughat)	16.06.13 at 18:05hrs	304	200	Various 220kV & 132kV lines connected with Hatia, Patratu&Tenughat tripped due to conductor snapping of 132 kV Hatia - Sikidri - III inside Hatia S/S	GD-1
11	JSEB (Hatia, Chandil)	16.06.13 at 23:09hrs	0	180	Various 220kV & 132kV lines connected with Chandil tripped due to tripping of 220 kV Chandil – Ranchi & 132 kV Chandil– Hatia (Both on same tower) on RYB fault.	GD-1

12	JSEB (Chandil)	18.06.13 at 13:10hrs	0	150	Various 220kV & 132kV lines connected with Chandil tripped due to tripping of 220 kV Chandil – Ranchi on R-N fault(71.7 Km from Ranchi) and subsequent LBB operation at Chandil s/s	GD-1
13	WBSETCL (Dalkhola)	18.06.13 at 10:21hrs	0	115	Total power failure occurred in Dalkhola(WB) area due to tripping of 220kV Dalkhola(PG)-Dalkhola(WB)-D/C & 220kV Dalkhola(PG)-Paurnea-I	GD-1
14	WBSETCL (Dalkhola)	19.06.13 at 08:02hrs	0	115	Total power failure occurred in Dalkhola(WB) area due to tripping of 220kV Dalkhola(PG)-Dalkhola (WB)-D/C & 220kV Dalkhola(PG)-Paurnea-II	GD-1
15	JSEB (Hatia, Patratu, Tenughat)	20.06.13 at 03:25hrs	86	170	Various 220kV & 132kV lines connected with Hatia, Patratu&Tenughat tripped due to tripping of 220 kV Hatia - Patratu in E/F.	GD-1
16	JSEB (Hatia, Patratu, Tenughat)	22.06.13 at 14:22hrs	214	0	Varous 220kV & 132kV lines connected with Patratu&Hatia tripped due to thunder storm & lightening. Patratu&Tenughat units also tripped	GD-1
17	BSPHCL (Fatuha,Biharsariff)	25.06.13 at 12:13hrs	0	240	All three 315MVA ICTs at Biharsariff(PG) tripped due to fault in 220kV Patna-Fatuha line.	GD-1
1	JSEB (Hatia, Patratu, Tenughat)	03.06.13 at 15:39hrs	210	270	Total Power failure occurred at Hatia, Patratu&Tenughat s/s in JSEB system due to tripping of 220kV Ranchi-Hatiackt on earthfault.All the 220kV & 132kV feeders tripped & traction supply inturepted in Hatia, Namkum&Kamdara	GD-1
2	Sikkim (Rangit, Chuzachen, Kureseong, Melli)	03.06.13 at 21:24hrs	190	225	Total power failure occurred in Sikkim system due to tripping of 132kV Rangit-Kureseong-Siliguriline.All the running units of Rangit&Chuzachen got tripped.	GD-1

Members may note.

<u>Deliberation in the meeting</u>

Members noted

Item no. D.4: Eastern Region grid performance during the month of June'13

In the month of June'13, though the percentage of time frequency was below 49.7 Hz increased to 1.61 % as compared to 0.99 % in the previous month viz. May'13, the percentage of time frequency was above 50.2Hz increased to 17.55% as compared to 11.99% in the previous. The minimum frequency touched 49.05Hz while the maximum frequency touched 50.77Hz. It is necessary that all ER constituents ensure no over-drawal/under-generation below 49.7Hz and no

under-drawal/over-generation above 50.2 Hz. However, in case of system constraints/ congestion, constituents should strictly follow ERLDC instructions irrespective of frequency. A presentation on ER grid performance for the month of June'13 would be given by ERLDC, and the details of constituents who failed to comply with ERLDC instructions would also be stated.

All Constituents may kindly ensure strict compliance in the interest of system security/reliability.

Deliberation in the meeting

Members noted

Item no. D.5: Any other point

1. **Technical minimum generation level for Talcher Stage-I units –NTPC**

The declared technical minimum gross generation for TSTPS Stage-I (2x500 MW) is 350 MW (Ex-Bus 327 MW), i.e. when the unit can be run without oil support. However, due to wet coal, generation level below 400 MW is causing flame instability and tripping the units on flame failure protection. In last year the stage-I units had tripped on several occasions due to operation of flame failure protection and this year also Unit-2 of Talcher stage–I got tripped on 16.06.2013 on similar reason. Lower generation in stage-I units is maintained either with oil support for flame stabilization or we are constrained to generate beyond schedule, so that flame stability is maintained. Both the situations are not desirable and needs to be avoided. It is to be noted that, Talcher stage-I units are of different design (Drum less tower type boilers with boiler height of 92 mtrs.).

It is proposed to consider the technical minimum generation level for Talcher Stage-I units as 400 MW (Ex-bus 374 MW) for such time the problem of wet coal is over, i.e. for the monsoon period till Oct'2013.

Members may deliberate.

Deliberation in the meeting

The issue was discussed in 86th OCC meeting wherein members requested NTPC to share the capacity curve along with manufacturers' details and on going through the same it could be considered. NTPC agreed to give the details if it is relevant and necessary.

NTPC once again elaborated the issue. Members asked for capacity curve along with manufacturers' details. OCC advised NTPC to interact with beneficiary constituents along with all details as per their requirements.

Meeting ended with vote of thanks to the chair

****

Annexure-A

Participants in 87th OCC Meeting

Venue: ERPC Conference Room, Kolkata Time: 11:00 hrs Date: 23.07.13 (Tuesday)

Sl No	Name	Designation	Organization	Contact Number	Email	Signature
1	A.K. Bandyopadhyay	MS I/c	ERPC	9432068533	mserpc-power@nic.in	
2	U.K. Verma	~~ER~~ CM	ERLDC	08902496220	vijaykumar.verma@gmail.com	
3	श्री के. श्रीवास्तव	मु.प्र.प्र.	पू.क्षे.भा.प्र.से.म.	9433041802	dkshrivastava55@yahoo.co.in	
4	P.S. Das	Ch. Mgr	ERLDC	9433041837	psdas_psd@yahoo.com	
5	S. Banerjee	Ch. Manager	ERLDC	9433041823	suvojit_b@gmail.com	
6	S K PAL	SDE	DVC	9433987299	pal_swapan@yahoo.com	
7	CV ANAND	GM (O&M)	NTPC-TALCHER STPS	9437043900	cvanand@ntpc.co.in	
8	RAKESH KUMAR	AGM(OS)	NTPC-ER-I HQ. PATNA	9431011344	rakesh kumar12@ntpc.co.in	
9	PURUSHOTTAM CHAUDHARY	DY. MANAGER(E)	NHPC - Rangit Power Station	9800936869	chaudhary_dulhasth@rediffmail.com	
10	NAMGYAL TASHI	ASST. ENGINEER	EPPD, SIKKIM	9475993343	namgyaltashi@gmail.com	
11	D. Kharel	SE SLDC	EPP. SIKKIM	93320 80874	dkharel64@gmail.com	
12	ASHISH GATTANI	DY. G.M.	APNRL	90074 77762	ashish.gattani@adhunikgroup.co.in	
13	Sudipta CHOWDHURY	ASSO. MANAGER	SEL	9937299338	sudipta.chowdhury@vedanta.co.in	
14	A.K. Nayak	Manager	MPL	9204958570	nayakak@tatapower.com	
15	H.S. Bhatta	Sr. Head	MPL	9204853168	himadri.bhatta@tatapower.com	
16	T.R. Mohapatra	Dy. Mgr.	ERLDC	9433041873		
17	Saurav Sahay	Engineer	ERLDC	9432013173	Sahay.Saurav@gmail.com	
18	S.K. Chandrakar	Mgr	ERLDC	9433041860	sanjeev.chandrakar@gmail.com	
19	A. SEN GUPTA	Mgr	CESC	98318 02682	arunava.gupta@rp-sg.in	
20	RANJAN BISWAS	SM/ALDC	DPL	9434735985	ranjanbiswas1@gmail.com	

"Coming together is a beginning, staying together is progress, and working together is success." –Henry Ford

Participants in 87th OCC Meeting

Venue: ERPC Conference Room, Kolkata Time: 11:00 hrs Date: 23.07.13 (Tuesday)

Sl No	Name	Designation	Organization	Contact Number	Email	Signature
21	H.P. Mahapatra	Manager	OHPC	9861164943	hpm.ohpc@gmail.com	23/7
22	R.P. Maurya	Dy. Mgr	GRIDCO	9437115770	rutupurna@gmail.com	23/7
23	Santosh Kumar Das	Consultant SLDC	SLDC Bhubaneswar	9437000261	Santosh.das@yahoo.com	23/7/2013
24	P.K. Dash	Sr GM(PC) OPTCL	SLDC Bhubaneswar	9438907400	pkdash_pashenta@yahoo.co.in	
25	VINEET GUPTA	Dy CEE E-RLY.	E-RLY.	9002020312	vineetguptavineet@gmail.com	विनीत गुप्ता
26	T. K. DE	Addl. C.E SLDC	WBSEDCL	9433870748	kumartapande@gmail.com	
27	P. Sahu	CE, CPD WBSETCL	WBSETCL	9434910919		
28	A. Raichaudhuri	A.C.E / SLDC WBSETCL	WBSETCL	9433910075	raichaudhuri2017@gmail.com	
29	Jayanta Banerjee	GM, WBPDCL	WBPDCL	9433021080	jbanerjee@wbpdcl.co.in	
30	Gautam Kr Choubey	ESE; SLDC;	BSPHCL	9470001750	gkc_1959@rediffmail.com	gkchoubey
31	S. N. Ghosh, CM-ULDC	CM	PGCIL	9434714116	dxgtox-11@yahoo.co.in	
32	N. NALLARASAN	DGM.	NLDC, POSOCO.	8527077022	nalla201148@gmail.com	
33	D. K. Bauri	EE	ERPC	9883617236	dinesh_iise@hotmail.com	
34	B. SARKHEL	SE(PS)	ERPC	9433065724	buddha_sarkhel@yahoo.co.in	23/7
35	J. Bandyopadhyay	SE	"			
36	Mohit Joshi	Sr. Engineer	NLDC	9650598189	mohitjoshi@outlook.com	
37	Swapan Kumar Pal	~~[illegible]~~ CM(O)	BRLDC	9433041529	Ralswapankumar@gmail.com	
38	Jiten Das	CM(PS)	POWERGRID, ER-I	9431815708	jitendas@powergrid.co.in	
39	R. P. Singh	DGM (OS)	NTPC ER-I HQ, Patna	9431011366	rpsingh01@ntpc.com	
40	S NAYAK	AGM (OS)	NTPC, ER-2 Bhubaneswar	9437041581	snayak@ntpc.co.in	

"Coming together is a beginning, staying together is progress, and working together is success." –Henry Ford

Participants in 87th OCC Meeting

Venue: ERPC Conference Room, Kolkata Time: 11:00 hrs Date: 23.07.13 (Tuesday)

Sl No	Name	Designation	Organization	Contact Number	Email	Signature
41	MANISH RAJ	Dy. Mgr.	NHPC Ltd, Teesta-V P.S.	9800003548	manisraj@gmail.com	23.07.2013
42	N. Mandal	AGM (E)	Gati Infra Structure Ltd	8016082297	niladrimandal@gatiinfra.com	23/7/13
43	Virendra Kr.	Mgr (OS)	PGCIL, ER-II	9434748239	virendrakumar@powergridindia.com	23/7/13
44	S. Wangdi	AE/OS	THP/DGPC	+975-17702051	sazangdy@hotmail.com	
45	Rinzin Chophel	AE/OD	THP/DGPC	+975-17358899	rinzinchophel.dgpc@gmail.com	
46	C. Gyeltshen	AE & MK	CHP/DGPC		c.dendup@yahoo.com	
47	Tenzin Dorji	SE/OP	"		t.dorji295@gmail.com	
48	B. R. Rao	CM (TD)	POWERGRID	9971399088	sbrao@powergridindia.com	
49	S. R. Singh	CM(OS)	POWERGRID ER-II	9434740009	srsingh@ps@yahoo.co.in	
50	D. DE	DGM	CESC LTD	9163312742	debasish.de@rp-sg.in	
51	Suresh Sunwar	AE (E)	KHP/DGPC	+9754744182	suresh.dgpc@gmail.com	
52	Bhimraj Sagar	SO(E)	KHP/DGPC	+9754744482	bhimdogi@gmail.com	
53	Aloke R Bhunia	Addl. G.M (OS)	NTPC/Kol	9433027333	alokebhunia@rediffmail.com	
54	P. K. BASU	D GM (Oprn)	KTPS/WBPDCL	9432013369	pkbose@wbpdcl.co.in	
55	P. K. Kundu	SE (E)	SLDC/WBSETCL	9433086494	pkundu_1961@yahoo.in	
56	R. Venkateshan	GM (Elec)	JITPL/Angul	9583040751	electrical orissa@jitpl.com	
57	S. K. SAHA	SSE	E. RAILWAY	9002025315	sanjay.saha39@gmail.com	
58	V. Kalyan	EE	ERPC	24233115	—	
59	Ganesam Rao	AEE	ERPC			
60	S. M. Jha	E.E	NERPC			

"Coming together is a beginning, staying together is progress, and working together is success." –Henry Ford

Participants in 87th OCC Meeting

Venue: ERPC Conference Room, Kolkata Time: 11:00 hrs Date: 23.07.13 (Tuesday)

Sl No	Name	Designation	Organization	Contact Number	Email	Signature
61	N. Saha	SM (PS)	WBPDCL	9432015315	ngsaha@wbpdcl.co.in	
62	D. KAR	AGM	NTPC	9437009350	debabrata.kar@ntpc.com	
63						
64						
65						
66						
67						
68						
69						
70						
71						
72						
73						
74						
75						
76						
77						
78						
79						
80						

"Coming together is a beginning, staying together is progress, and working together is success." –Henry Ford

Annexure-B.2.ii

Minutes of Special Meeting on "NTPC Farakka islanding Scheme" held on 22.07.13 at ERPC, Kolkata

List of participants is at **Annexure-A1.** Member Secretary I/c, ERPC welcome the participants to this meeting. In the meeting deliberations were held on islanding scheme of FSTPS, NTPC as agreed upon by 24th ERPC/TCC. To initiate implementation decisions on following specific issues were made:

1. Tripping of 200 MW units of FSTPS is at 47.5 Hz with 5 sec delay. One of the pre selected 200 MW unit of FSTPS will get islanded with Dumka local load (25 MW), Sahebganj (25 MW) and Lalmatia local & ECL load (35 MW) at 47.7 Hz without any time delay.

2. Islanding and radialization of load have been envisaged both through trip command from FSTPS for Lalmatia & from Lalmatia for Dumka end as well as through UFR operation at local.

3. Further the following requirements need to be ensured:

   i. Transmission of trip signal through PLCC for isolating Dumka-Pakur 132 kV line, Dumka-Deoghar 132 kV D/C line at Dumka S/s and Lalmatia-Kahalgaon(BSEB), Lalmatia-Kahalgaon(NTPC) at Lalmatia S/s
      - PLCC of Farakka-Lalmatia 220kV line (Action: ECL)
      - PLCC of Lalmatia-Dumka 132kV D/C line (Action: JSEB)

   ii. 5 nos UFR relays with setting at 47.8 Hz (instantaneous) to ensure availability of radial load prior to the islanding of one of the pre selected 200 MW units of FSTPS.
      - 3 nos UFR relays at 132 kV Dumka for Dumka-Pakur 132 kV S/C line and Dumka-Deoghar 132 kV D/C line (Action: JSEB)
      - 2 nos UFR relays at 132 kV Lalmatia for 132 kV Lalmatia-Kahalgaon(BSEB) and 132 kV Lalmatia-Kahalgaon(NTPC) (Action: JSEB)

   iii. Trip relay (MVAJ 51 or RXMV) requirement to ensure availability of radial load
      - 2 nos trip relays at 132 KV Lalmatia for 132 kV Lalmatia-Kahalgaon(BSEB) and 132 kV Lalmatia-Kahalgaon(NTPC) at Lalmatia S/s (Action: JSEB)
      - 3 nos trip relays at 132KV Dumka for Dumka-Pakur 132 kV S/C line and Dumka-Deoghar 132 kV D/C line at Dumka S/s (Action: JSEB)

   iv. Interfacing of trip signal at Lalmatia (JSEB) from Farakka and at Dumka from Lalmatia. (Action: JSEB)

4. It was decided to implement the islanding scheme tentatively by 31st December, 2013.

5. NTPC informed that the estimated cost for implementation of the islanding scheme would be Rs.38.66 Lakh at FSTPP end.

6. JSEB is to ensure the installation/commissioning/restoration of UFRs & PLCCs in their control area in line with deliberations held in 24th TCC/ERPC.

7. The matter will be finally placed before 25th TCC/ERPC.

****

Annexure-A1

Participants in Special meeting on Islanding Scheme of Farakka, NTPC

Venue: ERPC Conference Room, Kolkata Time: 11:00 hrs Date: 22.07.13 (Monday)

Sl No	Name	Designation	Organization	Contact Number	Email	Signature
1	A.K. Bandyopadhyay	MS&/e	ERPC	9433068533	mserpc-power@nic.in	
2	U.K. Verma	~~GM~~ GM	ERLDC	08902496220	[illegible]	
3	D.K. Shrivastava	AGM	ERLDC	9433041842	dkshrivastava55@yahoo.co.in	
4	PS Dao	CM	— do —	9433041837	psdao_psd@yahoo.com	
5	S. Banerjee	CM	ERLDC	9433041823		
6	RAKESH KUMAR	AGM(OS)	NTPC-ER-I HQ. PATNA	9431011366	rakesh kumar12@ntpc.co.in	
7	B. SARKHEL	SE(PS)	ERPC	9433065724	buddha_sandul@yahoo.co.in	22/7/13
8	Ganeswara Rao	AEE	ERPC	9547891353		
9	D.K. Bauri	EE	ERPC	9883617236	direct_jisc@hotmail.com	
10	R.P. Singh	DGM	NTPC Patna	9431011366	rpsingh01@ntpc.co.in	
11	B. MUKHERJEE	Supdt.	NTPC Farakka	9434751481	bhaswatimukherjee@ntpc.co.in	
12	S. K. Sahay	Engineer.	ERLDC	9432013173	sahay.sanjay@gmail.com	Sahay
13	M.K. Thakur	Sr. Engineer	ERLDC	9432381832		
14						
15						
16						
17						
18						
19						
20						

"Coming together is a beginning, staying together is progress, and working together is success." –Henry Ford

Annexure-B.4

Pollution Mapping for Eastern Region

OCC Meeting at Kolkata
23rd July 2013

Agenda

Pollution mapping for Eastern region

- Pollution mapping program is proposed for Eastern Region using methodology similar to mapping program of Northern region
- Pollution Mapping shall be carried out through CPRI – A proposal has been sought from CPRI
- The mechanism/methodology which shall be adopted for present project is as shown in subsequent slides
- Two Measurements shall be carried out

(1) ESDD (ii) NSDD

Measurements to be done

(2) Layer Conductance Measurement (to be carried out at 10% of sites)

Training

- Training (including hands on) shall be provided to the associated engineers of PGCIL and State Transmission Utilities by CPRI
- The training shall be carried out at approx.10 Nos. of locations
- Locations shall be decided in consultation with ERPC
- Trained persons to carry out the pollution measurements

Instruments for the Measurement

- Instruments required for the measurement shall be procured and distributed by CPRI
- There shall be two sets of instruments one for ESDD/NSDD and another for Layer conductance measurement
- 1 set of instrument each is required for approx.
  - 10 Nos. of sites for the ESDD/NSDD measurement
  - 3 Nos. of sites for the Layer conductance measurement (to be carried out at only 10% of sites)
- The final number of instruments required and the list of addresses where the instruments have to be dispatched shall be finalized in consultation with the STU/CTU

Action Points

- **Nomination of Coordinators** and an alternate coordinator, from each state utility, ERPC and PGCIL (Name, Correspondence address, e-mail, mobile no./Tel no., fax)
- **Identification of sites** to install the dummy insulators for the measurements has to be done by POWERGRID and State Transmission Utilities.
- A grid of 25km × 25 km is marked on the map then at least one location is identified which falls inside each grid (Grid coordinates to be distributed).
- For the locations which fall in the coastal region or have high pollution, instead of a single location in each grid, two locations in each grid are to be identified.

Action Points

Contd…

- Selection of site for Layer conductance Measurement:
  - Electricity supply is required at these locations (under the tower where the dummy insulator shall be installed)
  - These sites have to be finalized by the site on the basis of operational easiness.
- On identification of locations, the distributed format has to be filled and sent to CPRI, Bengaluru alongwith a copy to POWERGRID, TD Department so that the locations are finalized after scrutiny

Action Points

Contd…

- **Installation of dummy insulators**
  - PGCIL and the State Utility shall arrange dummy insulators for their respective line
  - 2 strings per location where both ESDD/NSDD and Layer conductance measurement has to be done
  - 1 string per location for ESDD/NSDD measurement
  - Each string shall contain 10 discs
  - Dummy insulators shall be hanged below the cross arm so that no shut down is required for measurement
  - Insulators shall be installed by PGCIL and STU's on their respective line

Action Points

Contd…

- The **surface area of the insulator** to be installed has to be determined. For that following is suggested:
  - As far as possible same type of insulators should be installed throughout the region
  - If possible, the surface area (top surface and bottom surface) may be enquired from the manufacturer itself
  - Otherwise, during the conduction of training program at various locations, one sample of each type of insulator to be installed may be brought for surface area measurement by CPRI officials.

Measurement/Analysis

- Measurements have to be carried out for three (03) times representing three seasons per year and shall repeat the same for next year also. (i.e. total 6 samples for two years)
- CPRI shall analyze the measurement results and determine the pollution levels
- Pollution map shall be produced on Survey of India geographical map of suitable scale

Sample Pollution map of Italy

IEC guideline for selection of insulators for different pollution Zones

Min. Nominal Specific creepage distance	Pollution level	Artificial pollution test severity withstand values at the phase to earth voltage		
		Salt-fog method (kg/m3)	Solid layer method	
			SDD (mg/cm2)	Layer Conductivity (µS)
> 16	Very light			
16	Light	5 to 14	0.03 to 0.06	15 to 20
20	Medium	14 to 40	0.1 to 0.2	24 to 35
25	Heavy	40 to 112	0.3 to 0.6	36
31	Very heavy	> 160	> 0.6	-

2 Status of Deliverables

2.1 Data Centre Software LOD

Sl No	Component	Qty	Status	Remarks
1	Data Acquisition (MOVICON 11 SCADA Pro Unlimited Bytes. Options SMS/Alarm Statistics)	2	Delivered	To be installed after hardware set-up
2	Development Station(MOVICON 11Editor)	1	Delivered	To be installed after hardware set-up
3	Data Acquisition (Redundancy Option)	2	Delivered	To be installed after hardware set-up
4	Web client (MOVICON Web Client (5 concurrent user)	2	Delivered	To be installed after hardware set-up
5	RDBMS (SQL Server Enterprise Edition)	1	Delivered	To be installed after hardware set-up
6	MS office (MS office Suite 2010)	1	Delivered	To be installed after hardware set-up
7	Ant-Virus	3	Delivered	To be installed after hardware set-up

2.2 Data Centre Hardware LOD

Sl No	Component	Qty	Status	Remarks
1	Data Acquisition Cum Data Base Server with Redundancy	2	Procured	Waiting for PGCIL personnel to accompany us to the address of delivery.
2	Development/Engg Station	1	Ordered	Target date of procurement 31-Jul-13
3	M2M Secure Gateways (Network Management Server)	2	Procured	Waiting for PGCIL personnel to accompany us to the address of delivery.
4	GSM Modem	2	Procured	Waiting for PGCIL personnel to accompany us to the address of delivery.
5	SIM Card	2	Being Surveyed	Report to be submitted after survey
6	Router with Firewall	1	Ordered	Waiting for PGCIL personnel to accompany us to the address of delivery.
7	Ethernet Switch	1	Ordered	Target date of procurement 15-Jul-13
8	Rack	1	Ordered	Target date of procurement 15-Jul-13

9	KVM Switch with Monitor	1	Procured	Waiting for PGCIL personnel to accompany us to the address of delivery.
10	LAN Cabling	Lot	Procured	Cables are being used in site
11	External HDD	1	Procured	Waiting for PGCIL personnel to accompany us to the address of delivery.

2.3 Individual Substation Hardware LOD

Sl No	Component	Qty	Status	Remarks
1	RS 232-485 Data converter Unit (Optical to RS 485 with additional Optical Port)	27	Not ordered	Not required for project
2	Converter Interface cables (Optical to RS232 cables)	27	Not ordered	Not required for project
3	Data Concentrator Unit (GPRS Based)	1	Not ordered	To be ordered after sizeable survey is complete
4	External Antenna	1	Not ordered	To be ordered if required
5	Cables (RS 485, 4 Wire)	Lot	Ordered	Being used in cabling of substation

3 Survey and Cabling Status

Activity	Nos completed (% completed)
Substation Total	98
Substation Attempted	69 (70%)
Survey completed	63 (64%)
Substation Ready for DCU Installation	59 (60%)
Survey approved	60 (61%)
ISP identified	62 (63%)

Emergency restoration system

- Already available
  - 2 sets – one at Durgapur & Rourkela each.
  - Alomost 22 years old: Procured in 1991
- Major Usages
- Used during various natural calamities and other emergency situation in region like
- Super Cyclone in Odisha
- Nor'westor in West Bengal
- Earthquake in sikkim
- Hill sinking and Land slide in Sikkim
- Railway Diversion
- River Erosion etc.

Emergency restoration system

- Used by many utilities apart from POWERGRID.
  - Electricity Boards
    - BSEB – Dumraon-Ara line
    - GRIDCO – Kendrapara – Paradip Line
    - GRIDCO – Badanasi – Kalinga Line
    - GRIDCO – Jagatsighpur – Cuttak line
    - GRIDCO – Bhanjnagar – Chandaka line
    - GRIDCO – Paradip – PPL line
  - NHPC – Rangit Line
  - Sikkim – 66Kv line of DOP Sikkim
  - Indian Railway – Dalkhola – Malda railway crossing
  - There are many more

Emergency restoration system

- PROPOSAL
    - ERS set for each state – i.e Bihar, Jharkhand, West Bengal & Odisha
    - To be procured – 4 sets.
    - Estimated cost : 32 Crore (INR).

Annexure-B.19

Switchyard Equipment Spare

- Switchyard Equipment fails due to
  - Stress due to abnormal system condition i.e operation under consistent high voltage.
  - Stress on equipment during fault.
  - Normal aging affect.
- Equipment more likely to fail
  - Circuit Breaker (CB)
  - Current Transformer (CT)
  - Capacitive Voltage Transformer (CVT)
  - Lightening Arrestors (LA)

Circuit Breaker

- Part failure – in such a scenario, CB can be restored with replacement/repair of failed component: may require OEM intervention.
  - Lead time for Repair: 2-3 months (if required spares are available)
  - Lead time for Repair: 4-6 months (if required spares are not available)
- Complete Failure – in such a case complete CB requires to be replaced.
  - Lead time for Replacement: 1 year (requires procurement)
- Probability of complete replacement has increased as number of CBs have become old and getting spares for some of them has become difficult.

Current Transformers

- CTs generally fails with bursting and causes consequential damages.
- Complete CT is required to be replaced in case of any failure.
- Lead time for CT delivery is generally is 6 months apart from Time required for processing procurement.
- As a preventive measure POWERGRID is doing DGA analysis of CT apart from other conventional diagnostic testing.
- As per DGA analysis violation of various gases like C2H2, H2 etc. are being observed as per IEC standards for instrument transformer.
- DGA violating CTs are always at risk and chances of violent failure increases in such CT.
  - **To mitigate this POWERGRID is replacing the CT based on DGA violation.**
- 26 Nos. of CT have been replaced in 2012-13 in ER-II based on various diagnostic tests.

CVT

- CVT requires replacement mainly due to
  - Drift in secondary voltage
    - Incorrect operation of protection.
    - Incorrect metering.
    - CVT requires to be replaced.
  - Failure
    - Violent failure may lead to consequential damages.
    - Needs replacement based on diagnostic testing.
- Lead time for Supply – 6 months (time for processing procurement extra.)
- 7 CVTs replaced in Year 2012-13 in ER-II

Lightening Arrestors

- LA needs special attention especially in Lightening Prone Area, as it generally results in violent failure with consequential damage.
    - Replacement based on diagnostic test
    - Requires replacement based on leakage current measurement.
    - It is observed in lightening prone area leakage current may increase suddenly especially after experiencing lightening.
    - All the old LAs has been replaced with new gapless type LA still failures has been observed.

PROPOSAL

- Procurement : As Regional Pool
- Circuit Breaker
    - 400KV Level – 10 sets
    - 220KV level – 10 sets
- Current Transformer
    - 400KV Level – 10 sets
    - 220KV level – 10 sets
- Capacitive Voltage Transformer
    - 400KV Level – 10 sets
    - 220KV level – 10 sets
- Lightening Arrestors
    - 400KV Level – 25 sets
    - 220KV level – 25 sets

Annexure-B.21

GT tap Position of DSTPS and Mejia-B

DSTPS 400 kV GT (U # 1, 3 X 200 MVA)			
TAP	PRI	SEC	PU
1	21	462.00	1.100
2	21	451.50	1.075
3	21	441.00	1.050
4	21	430.50	1.025
5	21	420.00	1.000
6	21	409.50	0.975
7	21	399.00	0.950
8	21	388.50	0.925
9	21	378.00	0.900

Mejia Phase -II 400 kV GT (U # 1 & 2, 3 X 200 MVA)			
TAP	PRI	SEC	PU
1	21	462.00	1.100
2	21	451.50	1.075
3	21	441.00	1.050
4	21	430.50	1.025
5	21	420.00	1.000
6	21	409.50	0.975
7	21	399.00	0.950
8	21	388.50	0.925
9	21	378.00	0.900

Yellow:- Current Tap **Green :- Proposed Tap**

GT Tap position of Adhunik

	Ahunik GT -1		
SL.NO	**ON LOAD TAP CHANGER SWITCH**	**HV Voltage**	**LV Voltage**
1	TAP POSITION-1 (MAX. TAP)	453.81 KV	16.5 KV
2	TAP POSITION-2	448.98 KV	16.5 KV
3	TAP POSITION-3	444.15 KV	16.5 KV
4	TAP POSITION-4	439.32 KV	16.5 KV
5	TAP POSITION-5	434.49 KV	16.5 KV
6	TAP POSITION-6	429.66 KV	16.5 KV
7	TAP POSITION-7	424.83 KV	16.5 KV
8	TAP POSITION-8 (NORMAL TAP)	420.00 KV	16.5 KV
9	TAP POSITION-9	415.17 KV	16.5 KV
10	TAP POSITION-10	410.34 KV	16.5 KV
11	TAP POSITION-11	405.51 KV	16.5 KV
12	TAP POSITION-12	400.68 KV	16.5 KV
13	TAP POSITION-13	395.85 KV	16.5 KV
14	TAP POSITION-14	391.02 KV	16.5 KV
15	TAP POSITION-15	386.19 KV	16.5 KV
16	TAP POSITION-16	381.36 KV	16.5 KV
17	TAP POSITION-17	376.53 KV	16.5 KV
18	TAP POSITION-18	371.70 KV	16.5 KV
19	TAP POSITION-19	366.87 KV	16.5 KV

Yellow:- Current Tap **Green :- Proposed Tap**

Annexure-B.26

Priority wise list of Feeders/ ICTs identified to be disconnected in case of over drawl at 49.7Hz or below

Bihar

Priority	Feeders/ ICTs	Point of Disconnection	Expected Load Relief(MW)
1.	132kV Arrah(PG)-Jagdishpur	220/132KV Arrah(PG) S/S	9
2.	132kV KhSTPP(NTPC)-Kahalgaon(BSEB)	400/132kV KhSTPP(NTPC) S/S	22
3.	132kV KhSTPP(NTPC)-Sabour	400/132kV KhSTPP(NTPC) S/S	65
4.	132kV Purnea(PG)-Kishangunj	220/132KV Purnea(PG) S/S	40
5.	132KV Arrah (PG) – Arrah (BSEB)	220/132KV Arrah(PG) S/S	25-30
6.	132KV Purnea(PG)-Purnea (BSEB)	220/132KV Purnea(PG) S/S	180-210

JSEB

Priority	Feeders/ ICTs	Point of Disconnection	Expected Load Relief(MW)
1.	132Kv Dumka-Deogarh	Dumka(JSEB) S/S	30-45
2.	132kV Dumka-Pakur	Dumka(JSEB) S/S	15-20
3.	One 400/220KV 315MVA ICT at Jamshedpur	400/220KV Jamshedpur(PG) S/S	###
4.	220KV Ranchi (PG)- Chandil (JSEB)	400/220KV Ranchi(PG) S/S	###

DVC

Priority	Feeders/ ICTs	Point of Disconnection	Expected Load Relief(MW)
1.	33kV WBSEDCL feeder	Belmuri(DVC) S/S	24
2.	33kV Jaina(JSEB) feeder	CTPS(A)(DVC) S/S	24
3.	33kV Huppu(JSEB)	Gola S/S(DVC) S/S	20
4.	33kVKonar Banaso(JSEB)	Konar S/s(DVC) S/S	21
5.	33kV Kumardubi(JSEB)	Kumardubi(DVC) S/S	6
6.	33kV Dendua(WBSEDCL)	Maithon L/B(DVC) S/S	8
7.	33kV DumriBanaso(JSEB)	Nimighat(DVC) S/S	18
8.	33kV Digwadi(JSEB)	Patherdih(DVC) S/S	13
9.	33kV Jamadoba(JSEB)	Putki S/s(DVC) S/S	12
10.	33kV Kuju(JSEB)	Ramgarh(DVC) S/S	15
11.	33kV Sindri(JSEB)	Sindri(DVC) S/S	7
12.	220KV Maithon (PG)-Kalyaneshwari (DVC)- one ckt	400/220KV Maithon(PG) S/S	###
13.	220KV Parulia (PG) – Parulia (DVC)- one ckt	220KV Parulia(PG) S/S	###
14.	220KV Maithon (PG)-Dhanbad (DVC)- one ckt	220KV Maithon(PG) S/S	###

Odisha

Priority	Feeders/ ICTs	Point of Disconnection	Expected Load Relief(MW)
1	220KV Rengali (PG)-Rengali (Odisha)- one ckt	400/220KV Rengali(PG) S/S	###
2	220/132 KV Baripada 160MVA ICT- one ckt	400/220KV Baripada(PG) S/S	###
3	220KV Baripada (PG)-Balsore (Odisha)- one ckt	400/220KV Baripada(PG) S/S	###

W.Bengal

Priority	Feeders/ ICTs	Point of Disconnection	Expected Load Relief(MW)
1.	220kV Dalkhola(PG)-Dalkhola(WB) I/II	220kV Dalkhola(PG) S/S	150-180
2.	132 KV Malda (PG)- Malda (WB)-I/II	400/220KV Malda(PG) S/S	130-150
3.	132kV Birpara(PG)-Birpara-I/II	220kV Birpara(PG) S/S	120-130

###The feeders/ICTs selected are not in radial mode but opening of the same is proposed as a deterrent against over-drawal by the respective control area. The quantum of load relief on disconnection of the feeder/ICT would depend upon system conditions prevailing at that time and corrective actions taken by the concerned SLDC/CLD.Quantum of load relief indicated is for peak load conditions.

Status of Disturbance Reporting- June 2013

Sl no	Disturbance	Date	Time	Agencies involved	Report in format		DR/EL/Tripping analysis		Remarks
					Y/N	DATE	Y/N	DATE	
1	Total Power failure occurred at Hatia, Patratu & Tenughat s/s in JSEB system due to tripping of 220kV Ranchi-Hatia ckt on earthfault.All the 220kV & 132kV feeders tripped & traction supply inturepted in Hatia, Namkum & Kamdara	03.06.13	15:39	JSEB	N	04.06.13	N		JSEB-Only message regarding lines tripped received with some relay indications.
				ER-I	N		N		
2	Total power failure occurred in Sikkim system due to tripping of 132kV Rangit-Kureseong-Siliguri line.All the running units of Rangit & Chuzachen got tripped.	03.06.13	21:24	Rangit	N	04.06.13	N		Tripping analysis received from Rangit on 04/06/13
				Sikkim	N		N		
				ER-II	N		N		
				Chuzachen	N		N		
				WBSETCL	N		N		
3	Total power failure occurred in Sikkim system due to tripping of 132kV Rangit-Kurseong-Siliguri line.All the running units of Rangit & Chuzachen got tripped.	04.06.13	2:28	Rangit	N	04.06.13	N		Tripping analysis received from Rangit/ER-II, DR of 132kV Melli-Gangtok received from ER-II on 04/06/13
				Sikkim	N		N		
				ER-II	N	04.-6.13	N		
				Chuzachen	N		N		
				WBSETCL	N		N		
4	Total power failure occurred in Sikkim system due to tripping of 132kV Rangit-Kurseong-Siliguri line.All the running units of Rangit & Chuzachen got tripped.	04.06.13	5:28	Rangit	N	04.06.13	N		Tripping analysis received from Rangit /ER-II on 04/06/13
				Sikkim	N		N		
				ER-II	N	04.06.13	N		
				Chuzachen	N		N		
				WBSETCL	N		N		
5	Total Power failure occurred at Hatia, Patratu & Tenughat s/s in JSEB system due to tripping of 220kV Ranchi-Hatia ckt on earthfault.All the 220kV & 132kV feeders tripped & traction supply inturepted in Hatia, Namkum & Kamdara	05.06.13	14:38	JSEB	N	06.06.13	N		Only sequence of events received from JSEB on 06/06/13
				ER-I	N		N		
6	At the time of switching on operation of 132kV Hatia-Kamdara, all the 132kV lines and ICTs of 132kV Hatia s/s in JSEB system tripped on SOTF.	06.06.13	23:25	JSEB	N	07.06.13	N		JSEB-Only message regarding lines tripped received with some relay indications on 07/06/13.
				ER-I	N		N		
7	Total power failure occurred in Sikkim system due to tripping of 132kV Rangit-Kureseong-Siliguri line. All the running units of Rangit & Chuzachen got tripped.	10.06.13	3:01	Rangit	N	10.06.13	N		Tripping analysis received from Rangit & ER-II & DR of siliguri end for Siliguri-Melli recvd on 10/06/13.
				Sikkim	N		N		
				ER-II	N	10.06.13	N		
				Chuzachen	N		N		
				WBSETCL	N		N		
8	Fire hazard occurred at Tenughat s/s in JESB system due to bursting of two nos of CT of 220kV Tenughat-Patratu line. All the running units of Tenughat & Patratu tripped.	08.06.13	17:15	JSEB	N	08.06.13	N		JSEB-Only message regarding lines tripped received with some relay indications on 08/06/13.
				ER-I	N		N		
9	Varous 220kV & 132kV lines connected with Patratu & Hatia tripped due to thunder storm & lightening. Patratu & Tenughat units also tripped	10.06.13	18:08	JSEB	N	10.06.13	N		JSEB-Only message regarding lines tripped received with some relay indications 10/06/13.
				ER-I	N		N		
10	Various 220kV & 132kV lines connected with Hatia, Patratu & Tenughat tripped due to conductor snapping of 132 kV Hatia - Sikidri - III inside Hatia S/S	16.06.13	18:05	JSEB	N	16.06.13	N		JSEB-Only message regarding lines tripped received with some relay indications on 16/06/13.
				ER-I	N		N		
11	Various 220kV & 132kV lines connected with Chandil tripped due to tripping of 220 kV Chandil – Ranchi & 132 kV Chandil– Hatia (Both on same tower) on RYB fault	16.06.13	23:09	JSEB	N	17.06.13	N		JSEB-Only message regarding lines tripped received with some relay indications on 17/06/13.
				ER-I	N		N		
12	Various 220kV & 132kV lines connected with Chandil tripped due to tripping of 220 kV Chandil – Ranchi on R-N fault (71.7 Km from Ranchi) and subsequent LBB operation at Chandil s/s	18.06.13	13:10	JSEB	N	19.06.13	N		JSEB-Only message regarding lines tripped received with some relay indications on 19/06/13.
				ER-I	N		N		
13	Total power failure occurred in Dalkhola(WB) area due to tripping of 220kV Dalkhola(PG)-Dalkhola(WB)-D/C & 220kV Dalkhola(PG)-Paurnea-I	18.06.13	10:21	ER-I	N	19.06.13	N		Tripping report received from ER-I & WBSETCL-Only message regarding lines tripped received with some relay indications on 19/06/13.
				ER-II	N		N		
				WBSETCL	N	19.06.13	N		
14	Total power failure occurred in Dalkhola(WB) area due to tripping of 220kV Dalkhola(PG)-Dalkhola(WB)-D/C & 220kV Dalkhola(PG)-Paurnea-II	19.06.13	8:02	ER-I	N	20.06.13	N		Message regarding lines tripped received with some relay indications from ER-I & WBSETCL on 20/06/13.
				ER-II	N		N		
				WBSETCL	N	20.06.13	N		
15	Various 220kV & 132kV lines connected with Hatia, Patratu & Tenughat tripped due to tripping of 220 kV Hatia - Patratu in E/F	20.06.13	3:25	JSEB	N	20.06.13	N		JSEB-Only message regarding lines tripped received with some relay indications on 20/06/13.
				ER-I	N		N		
16	Varous 220kV & 132kV lines connected with Patratu & Hatia tripped due to thunder storm & lightening. Patratu & Tenughat units also tripped	22.06.13	14:22	JSEB	N	22.06.13	N		JSEB-Only message regarding lines tripped received with some relay indications on 22/06/13.
17	All three 315MVA ICTs at Biharsariff(PG) tripped due to fault in 220kV Patna-Fatuha line.	25.06.13	12:13	BSPHCL	N	26.06.13	N		BSPHCL message regarding lines tripped received on 26//06/13.
				ER-I	Y	6/25/2013	Y	6/25/2013	DR/EL/Tripping analysis received from ER-I

Annexure-B.29

Status of GT and ICT data received

17-May-2013

Bihar

- Data received for following power station/ substaion

Sl Number	ICT and GT
1	MTPS GT 1 140 MVA, 230/11 KV GT
2	MTPS 2X100 MVA 220/132 KV
3	BTPS GT 6 & 7, 125 MVA, 139/11 KV
4	FATUAH 100 MVA 220/132 KV ATR 2, 3 and 4
5	DARBHANGA 2X100 MVA 220/132 KV ATR
6	BODHGAYA 220/132 KV 3x150 MVA ATR MAKE: ITELK & CROMPTION
7	Begusarai 100 MVA 220/132 KV ATR
8	KHAGAUL 3X100 MVA 220/132 KV ATR
9	GOPALGANJ 2X100 MVA 220/132 KV ATR
10	B SHARIFF 3X150 MVA 220/132 KV ATR, MAKE: CROMPTON
11	DEHRI 3X100 MVA 220/132 KV ATR
12	DEHRI 1X50 MVA 220/132 KV ATR

Bihar

- Incomplete Data :-
  - 2 x 150 MVA 220/132 kV ICT at Sipara
    - Data missing Total number of Tap and voltage variation in each tap
- Data missing
  - ICT at 220/132 kV Hazipur
  - ICT at 220/132 kV Madhupur

Jharkhand

- Data Received
  - Nil
- Data missing
  - All GT and ICT data missing

DVC

- Data received
  - Mejia B TPS GT- 1 & 2
  - DSTPS GT- 1 & 2
  - Koderma TPS- 1 & 2
  - Raghunathpur TPS (no GT and ICT)
  - 400/132 kV ICT at TISCO
  - 400/220 kV ICT at Koderma
- Data Received (but current Tap position missing)
  - 220/132 kV ICT at Ramgarh
  - 220/132 kV ICT at Jamsedpur
  - 220/132 kV ICT at Bokaro-B
  - Bokaro-B TPS GT – 1,2 and 3
  - Mejia TPS GT- 1 to 6
  - 220/132 kV ICT at Kalyaneswari

DVC

- Data Missing
  - GT tap details at
    - Chandrapura TPS-A
    - Chandrapura TPS-B
    - Waria TPS
  - ICT tap details at
    - 220 kV Chandrapura
    - 220 kV Waria
    - 220 kV Koderma
    - 220 kV Dhanbad
    - 220 kV Girhidi

Odisha

- Data Received from OHPC (But Voltage change per Tap is missing)
  - UHIP GT and ICT (Voltage Ratio is also missing)
  - Chiplima HEP GT
  - Hirakund HEP GT
  - Rengali HEP
  - U.Kolab HEP
  - Balimela HEP
- Data missing
  - GT data of IBTPS and TTPS

Odisha

- Data Received from OPTCL
  - Jaynagar
  - Theruvali
  - Bahnajanagr
  - Narendrapur
  - Dubri
  - Balsore
  - Chandaka
  - Budhipadar
  - Katapali
  - Bidhanasi
  - Tarkera
  - Bolangir
  - Meramandali
  - Mendasal
  - Bhadrak
  - TTPS
  - Joda
  - Paradeep

West Bengal

- Data received
  - Bidhannagar 1x315 MVA 400/220 kV
  - Jeerat 3x315 MVA 440/220 kV
  - Khragpur 2x315 MVA 400/220 kV
  - Kolaghat 2 x315 MVA 400/220 kV
  - Arambag 3x315 MVA 400/220 kV ICT
  - DPL ICT 1x100 +2 x 160 MVA
  - DPL GT 3-7
  - Bandel TPS GT 1-5
  - KTPS GT 1-6
  - Santhaldih TPS GT 4-5
  - TCF HP GT 1-3
  - Jhaldhaka HPS GT
  - Rammam HPS GT

West Bengal

- Data missing
  - GT
    - Bakreswar TPS
    - Purulia PSP
    - Santhaldih TPS GT 1-3
    - Sagardighi TPS GT 1-2
  - ICT
    - 400 kV Bakreswar
    - 400 kV Sagardighi
    - 220 kV Howrah
    - 220 kV Jeerat
    - 220 kV Rishra
    - 220 kV Dhrama
    - 220 kV Domjur
    - 220 kV Krishnanagr
    - 220 kV Asansol
    - 220 kV Arambag
    - 220 kV Gokarno
    - 220 kV Dhalkhola
    - 220 kV Satgachia
    - 220 kV Laxmikantpur
    - 220 kV NJP
    - 220 kV Bidhannagr
    - 220 kV Kasba

CESC

- Data received
  - Budge-Budge 220/132 kV ICT
  - Budge-Budge GT 1-3
  - Titagrah GT 1-4
  - Southern GT
- Data Missing
  - 220 kV EM bypass

Power Grid

- Data missing
  - Birpara 220/132 kV ICT
  - Malda 400/220 kV ICT
  - Malda 220/132 kV ICT
  - Banka 400/132 kV ICT

ISGS

- Data received
  - Farraka GT 1-6
  - Khalgaon GT 1-7
  - TSTPP st-I GT 1-3
  - Teesta HPS GT 1-3
  - Rangit HPS GT- 1-3
  - 400 /220 kV ICT at Farraka
  - 400/220 kV ICT at Talcher
  - 400/132 kv ICT at Khalgaon
- Data missing
  - 400/132 kV ICT at Barh

IPP

- Data received
  - Adhunik PNRL GT 1-2
- Data Missing
  - SEL GT 1-4
  - MPL GT 1-2
  - 400/220 kV ICT at SEL

Annexure-C.3

Anticipated Power Supply Position for the month of
Aug-13

SL.NO		PARTICULARS	PEAK DEMAND MW	ENERGY MU
1		**BIHAR**		
	i)	NET MAX DEMAND	2650	1275
	ii)	NET POWER AVAILABILITY- Own Source	186	125
		- Central Sector	2030	985
	iii)	SURPLUS(+)/DEFICIT(-)	-434	-164
2		**JHARKHAND**		
	i)	NET MAX DEMAND	1130	700
	ii)	NET POWER AVAILABILITY- Own Source	688	355
		- Central Sector	706	422
	iii)	SURPLUS(+)/DEFICIT(-)	265	77
3		**DVC**		
	i)	NET MAX DEMAND (OWN)	2655	1645
	ii)	NET POWER AVAILABILITY- Own Source	4480	2808
		- Central Sector	405	290
		Long term Bi-lateral (Export)	1400	1041
	iii)	SURPLUS(+)/DEFICIT(-)	831	413
4		**ORISSA**		
	i)	NET MAX DEMAND	3650	2260
	ii)	NET POWER AVAILABILITY- Own Source	3097	1849
		- Central Sector	1077	662
	iii)	SURPLUS(+)/DEFICIT(-)	524	251
5		**WEST BENGAL**		
5.1		**WBSEDCL**		
	i)	NET MAX DEMAND (OWN)	5230	3325
	ii)	CESC's DRAWAL	682	243
	iii)	TOTAL WBSEDCL's DEMAND	5912	3568
	iv)	NET POWER AVAILABILITY- Own Source	3673	1992
		- Import from DPL	0	25
		- Central Sector	2772	2062
	v)	SURPLUS(+)/DEFICIT(-)	533	511
5.2		**DPL**		
	i)	NET MAX DEMAND	300	197
	ii)	NET POWER AVAILABILITY	300	222
	iii)	SURPLUS(+)/DEFICIT(-)	0	25
5.3		**CESC**		
	i)	NET MAX DEMAND	1752	956
	ii)	NET POWER AVAILABILITY - OWN SOURCE	1070	713
		FROM WBSEDCL	682	243
	iii)	TOTAL AVAILABILITY	1752	956
	iv)	SURPLUS(+)/DEFICIT(-)	0	0
6		**WEST BENGAL (WBSEDCL+DPL+CESC)**		
		(excluding DVC's supply to WBSEDCL's command area)		
	i)	NET MAX DEMAND	7282	4478
	ii)	NET POWER AVAILABILITY- Own Source	5043	2927
		- Central Sector	2772	2062
	iii)	SURPLUS(+)/DEFICIT(-)	533	511
7		**SIKKIM**		
	i)	NET MAX DEMAND	90	37
	ii)	NET POWER AVAILABILITY- Own Source	16	2
		- Central Sector	142	91
	iii)	SURPLUS(+)/DEFICIT(-)	68	55
8		**EASTERN REGION**		
		At 1.03 AS DIVERSITY FACTOR		
	i)	**NET MAX DEMAND**	16949	10395
		Long term Bi-lateral	1400	1041
	ii)	**NET TOTAL POWER AVAILABILITY OF ER (INCLUDING C/S ALLOCATION)**	18683	11538
	iii)	**PEAK SURPLUS(+)/DEFICIT(-) OF ER (ii)-(i)**	1734	1143

Annexure C.4

Tentative Maintenance Programme of Generating units for August, 2013

Agency	STATION	Unit NO.	Capacity (MW)	Proposed Programme (As per LGBR)	Reason of Shutdown	Remarks
JSEB	TVNL	Unit No 1	210	15.07.2013 to 31.08.2013	Annual Overhauling	
DVC	Mejia TPS	Unit No 3	210	06.08.2013 to 05.09.2013	Annual Overhauling, LP,IP	
WBPDCL	KTPS	Unit No 2	210	01.08.2013 to 04.09.2013	BTG	
WBPDCL	BKTPP	Unit No 4	210	07.08.2013 to 10.09.2013	BTG Maint.	25.07.2013 to 29.08.2013
WBPDCL	SgTPP	Unit No 2	300	10.08.2013 to 14.09.2013	Boiler+Gen. Maint.	12.06.13 to 26.07.2013
NTPC	TTPS	Unit No 2	60	17.08.2013 to 15.09.2013	Boiler+Turbine Overhaul	
OPGC	IB TPS	Unit No 1	210	02.08.2013 to 30.09.2013	ESP Upgradation	
NTPC	FSTPS	Unit No 4	200	01.08.2013 to 25.08.2013	Boiler Maint.	
NTPC	KhSTPP Stg-II	Unit No 6	500	20.08.2013 to 14.09.2013	Boiler+LPT	
NTPC	TSTPP Stg-II	Unit No 4	500	01.08.2013 to 25.08.2013	Boiler Maint.	

EASTERN REGIONAL LOAD DESPATCH CENTRE
KOLKATA

TRANSMISSION ELEMENTS OTAGE APPROVED IN 87TH OCC MEETING OF ERPC

	S/D APPROVED IN OCC								
Sr. No	**NAME OF THE ELEMENTS**	**DATE**	**TIME**	**DATE**	**TIME**	**REMARKS**	**S/D availed BY**	**Reason**	**SUBJECT TO CONSENT FROM AGENCY**
1	315MVA ICT-II at Maithon	7/24/2013	9:00	7/24/2013	17:00	ODB	ER-II	Numerical relay retrofitting related job	
2	400 KV Durgapur - Jamshedpur	7/24/2013	10:00	7/24/2013	18:00	ODB	ER-II	Numerical relay retrofitting	
3	315MVA ICT-I at Maithon	7/25/2013	9:00	7/25/2013	17:00	ODB	ER-II	Numerical relay retrofitting related job	
4	315 MVA ICT#1 at Durgapur	7/25/2013	10:00	7/25/2013	13:00	ODB	ER-II	Tandelta measurement of bushing (245 & 33 KV Bushing under observation)	
5	400KV Angul - Bolangir	7/25/2013	8:00	7/31/2013	18:00	OCB	ER-II	For makinng LILO of the at JITPL	NLDC
6	315 MVA ICT - 1 AT RNC	7/25/2013	9:00	7/25/2013	13:00	**ODB**	ER-I	FOR TAN DELTA & OIL SAMPLING OF BUSHING	JSEB
7	125 MVAR BR - II AT SASARAM	7/25/2013	8:00	7/26/2013	18:00	ODB	ER-I	BAY COnstruction work related to Dalautganj line	
8	400 KV MTN- KODERMA - 2	7/26/2013	8:00	7/28/2013	18:00	OCB	ER-I	FOR STRINGING OF B/D PORTION OF 400KV KOD-MTN-D/C AND TO TAKE THE CKT-2 FROM ERS TOWERS TO ORIGINAL TOWERS .	
9	400 KV Durgapur - Bidhannagar	7/26/2013	10:00	7/26/2013	18:00	ODB	ER-II	Numerical relay retrofitting	WBSETCL
10	400KV BUS - 2 ALONG WITH 125MVAR BUS REACTOR -2 AT PATNA	7/26/2013	8:00	7/27/2013	18:00	ODB	ER-I	FOR ERECTION OF BAY EQUIPMENTS OF 125MVAR BUS REACTOR -I AT BAY	
11	400 KV RANCHI - MAITHON	7/26/2013	7:00	8/31/2013	18:00	**ODB**	ER-I	OPGW STRINGING UNDER ULDC PROJECT	SHUTDOWN TO BE CLEARED FOR 7 DAYS AND FURTHER CLEARANCE WOULD BE ISSUED WEEKLY BASIS
12	400 KV PATNA - BARH - III	7/26/2013	7:00	8/31/2013	18:00	**ODB**	ER-I	OPGW STRINGING UNDER ULDC PROJECT	SHUTDOWN TO BE CLEARED FOR 7 DAYS AND FURTHER CLEARANCE WOULD BE ISSUED WEEKLY BASIS/NLDC
13	765/400KV ICT (500 MVA) AT SSRM	7/26/2013	8:00	7/26/2013	12:00	ODB	ER-I	FOR TESTING OF SPARE ICT AT SSRM	NLDC
14	765 KV SSRM - FATEHPUR	7/26/2013	8:00	7/26/2013	18:00	ODB	ER-I	FOR JUMPERING & AUXILLARY BUS COMMISSIONING OF 765KV SPARE REACTOR(110 MVAR ZTR MAKE) AT SSRM.	NLDC
15	400 KV Durgapur-Maithon -2	7/27/2013	10:00	7/27/2013	14:00	ODB	ER-II	Bay Construction work	
16	L/R OF 400 kV MEJIA-I at Maithon	7/28/2013	9:00	7/28/2013	17:00	ODB	ER-II	Numerical relay retrofitting related job	
17	400 KV, 125 MVAR Bus Reactor-1 & 2 at JAHRSUGUDA	7/28/2013	9:00	7/28/2013	17:00	ODB	ER-II	For Concreting work of FIRE WALL	NLDC
18	L/R OF 400 kV MAITHON-KAHALGAON-I at Maithon	7/29/2013	9:00	7/29/2013	17:00	ODB	ER-II	Numerical relay retrofitting related job	
19	400 KV, 125 MVAR Bus Reactor-1 & 2 at JAHRSUGUDA	7/30/2013	8:00	7/31/2013	18:00	OCB	ER-II	For erection of FIRE WALL	NLDC
20	400 KV MTN- KODERMA - 1	8/1/2013	8:00	8/3/2013	18:00	ODB	ER-I	FOR STRINGING OF B/D PORTION OF 400KV KOD-MTN-D/C AND TO TAKE THE CKT-2 FROM ERS TOWERS TO ORIGINAL TOWERS .	
21	80MVAR L/R OF 400KV RNC-SIPAT-1 AT RNC	8/1/2013	9:00	8/1/2013	13:00	**ODB**	ER-I	FOR TAN DELTA & OIL SAMPLING OF BUSHING. OUTAGE OF 400 KV RNC - SIPAT REQUIRED FOR 10 MTS EACH TIME FOR TAKING AND RETURNING S/D	NLDC/line outage req. for 10 mnt for switching off
22	400KV Malda Farakka-I	8/1/2013	9:00	8/1/2013	17:00	ODB	ER-II	New ABB (PLCC) panel along with LMU repalcement at both end under ADDCAP	NLDC
23	315MVA ICT-1 AT MUZ	8/1/2013	10:00	8/1/2013	13:00	ODB	ER-I	For measurement of bushing tan delta and collecting bushing oil for DGA.	
24	50MVAR L/R OF 400KV RNC-MTN(RB)-1 AT RNC	8/2/2013	9:00	8/2/2013	13:00	**ODB**	ER-I	FOR TAN DELTA & OIL SAMPLING OF BUSHING	
25	400KV Malda Farakka-I	8/2/2013	9:00	8/2/2013	17:00	ODB	ER-II	New ABB (PLCC) panel along with LMU repalcement at both end under ADDCAP	NLDC
26	MAIN BAY OF 315 MVA ICT - 2 AT BSF	8/2/2013	9:00	8/2/2013	17:00	ODB	ER-I	FOR REPLACEMENT OF ABB MAKE 400KV R - PH CT WITH ALSTOM MAKE LIVE TANK CT,REPLACEMENT OF ABOVE CT REQUIRE MODIFICATION OF STRUCTURES.	
27	315 MVA ICT - 2 AT BSF	8/2/2013	10:00	8/2/2013	11:00	ODB	ER-I	FOR DISMANTLING OF R - PH MAIN BAY CT AT BSF	
28	315 MVA ICT - 2 AT BSF	8/2/2013	15:00	8/2/2013	16:00	ODB	ER-I	FOR ERECTION OF R - PH CT (ALSTOM MAKE LIVE TANK CT) IN ITS MAIN BAY	
29	315MVA ICT-2 AT MUZ	8/2/2013	10:00	8/2/2013	13:00	ODB	ER-I	For measurement of bushing tan delta and collecting bushing oil for DGA.	
30	50MVAR L/R OF 400KV RNC-MTN(RB)-2 AT RNC	8/3/2013	9:00	8/3/2013	13:00	**ODB**	ER-I	FOR TAN DELTA & OIL SAMPLING OF BUSHING	
31	315 MVA ICT - II AT DURGAPUR	8/3/2013	7:00	8/3/2013	16:00	ODB	WBSETCL	MAINTENANCE WORK	
32	MAIN BAY OF 400 KV BSF - KHG - 2 AT BSF	8/3/2013	9:00	8/4/2013	19:00	OCB	ER-I	FOR REPLACEMENT OF 02NOS OF CT (Y,B-PH) IN MAIN BAY	NLDC

33	400 KV Biharsariff - Kahalgaon - 2	8/3/2013	10:00	8/3/2013	12:00	ODB	ER-I	FOR DISMANTLING OF 02 NOS OF CT, 18CT(Y,B-PH) OF MAIN BAY OF 400KV BSF - KHG - 2 AT BSF	NLDC
34	132 KV Chuzachen - Melli	8/3/2013	8:00	8/3/2013	14:00	ODB	SIKKIM	TREE CUTTING WORK	
35	80MVAR BUS REACTOR AT RNC	8/4/2013	9:00	8/4/2013	13:00	**ODB**	ER-I	FOR TAN DELTA & OIL SAMPLING OF BUSHING	
36	315 MVA ICT - IV AT JERAT	8/4/2013	7:00	8/4/2013	16:00	ODB	WBSETCL	MAINTENANCE WORK	
37	400 KV ARAMBAG - DURGAPUR	8/4/2013	7:00	8/4/2013	16:00	ODB	WBSETCL	MAINTENANCE WORK	
38	400 KV Biharsariff - Kahalgaon - 2	8/4/2013	10:00	8/4/2013	12:00	ODB	ER-I	FOR ERECTION OF 02 NOS OF CT, 18CT(Y,B-PH) OF MAIN BAY OF 400KV BSF - KHG - 2 AT BSF	NLDC
39	125 MVAR BUS REACTOR AT RNC	8/5/2013	9:00	8/11/2013	18:00	ODB	ER-I	FOR ERECTION OF LIGHTNING MAST	
40	400 kV Farakka-Jeerat	8/5/2013	9:00	8/6/2013	17:00	ODB	ER-II	For jumpering and other works in connection with charging of Berhampore s/s.	WBSETCL
41	400 KV BUS - 1 AT RNC	8/5/2013	9:00	8/5/2013	18:00	ODB	ER-I	FOR JUMPERING OF LINE EQUIPMENT OF 400KV RNC - RAGHUNATHPUR BAYS TO BUS - 1 AT RNC . S/D OF 400 KV BUS - I AT RNC INVOLVES NO POWER INTERRUPTION.	
42	160 MVA ICT at Birpara	8/5/2013	9:00	8/5/2013	11:00	ODB	ER-II	Balance work of ERSS-IV Pkg	WBSETCL
43	400 kV Indravati-Rengali	8/5/2013	9:00	8/5/2013	17:00	ODB	ER-II	Retrofittng of Numerical Relay	
44	400kv Kahalgaon - Barh -1	8/5/2013	9:30	8/5/2013	17:30	ODB	NTPC	PM & Relay Testing	NLDC
45	400KV SAGARDIGHI - SUBHASGRAM	8/6/2013	6:00	8/6/2013	12:00	ODB	ER-II	Replacement of Insulator strings damaged by miscreants	WBSETCL
46	220KV Birpara-New Siliguri Ckt-II	8/6/2013	9:00	8/6/2013	17:00	ODB	ER-II	Replacement of Insulator strings damaged by miscreants	
47	315MVA ICT-2 AT PTN	8/6/2013	10:00	8/6/2013	15:00	ODB	ER-I	For measurement of bushing tan delta and collecting bushing oil for DGA.	
48	50MVAR L/R OF 400KV PTN-BARH-1 AT PTN	8/6/2013	10:00	8/6/2013	15:00	ODB	ER-I	For measurement of bushing tan delta and collecting bushing oil for DGA.(OUTAGE REQUIRED FOR 10MINUTE EACH TIME FOR TAKING & RETURNING S/D)	NLDC/line outage req. for 10 mnt for switching off
49	400KV Ranchi - Maithon-1	8/6/2013	9:00	8/6/2013	17:30	ODB	ER-I	REPLACEMENT OF R PH CVT	
50	110*3 MVAR LINE REACTOR OF 765 KV SASARAM - FATEHPUR LINE AT SSRM	8/6/2013	8:00	8/8/2013	18:00	ODB	ER-I	FOR FIRE FIGHTING WORKS	
51	400 KV SUBHASHGRAM - JERAT	8/7/2013	7:00	8/21/2013	17:00	ODB	ER-II	OPGW STRINGING WORK	WBSETCL
52	315 MVA ICT - II AT ARAMBAG	8/7/2013	7:00	8/7/2013	16:00	ODB	WBSETCL	MAINTENANCE WORK	
53	220KV Birpara-Salakati Ckt-I	8/7/2013	9:00	8/7/2013	17:00	ODB	ER-II	Replacement of Insulator strings damaged by miscreants	NLDC
54	50MVAR L/R OF 400KV PTN-BARH-2 AT PTN	8/7/2013	10:00	8/7/2013	15:00	ODB	ER-I	For measurement of bushing tan delta and collecting bushing oil for DGA.(OUTAGE REQUIRED FOR 10MINUTE EACH TIME FOR TAKING & RETURNING S/D)	NLDC/line outage req. for 10 mnt for switching off
55	315 MVA ICT - 2 AT RNC	8/7/2013	10:00	8/7/2013	14:00	**ODB**	ER-I	FOR OIL TOP UP & TESTING OF REMOTE TAP CHANGER	
56	315 MVA ICT - I AT ARAMBAG	8/8/2013	7:00	8/8/2013	16:00	ODB	WBSETCL	MAINTENANCE WORK	
57	220KV Birpara-Salakati Ckt-II	8/8/2013	9:00	8/8/2013	17:00	ODB	ER-II	Replacement of Insulator strings damaged by miscreants	NLDC
58	400 KV Biharsariff - BANKA - I	8/8/2013	10:00	8/8/2013	16:00	ODB	ER-I	FOR FIXING OF BIRD GUARD TO AVOID TRIPPING DUE TO BIRDS	NLDC
59	315 MVA ICT#1 at Subhasgram	8/9/2013	8:00	8/9/2013	16:00	ODB	ER-II	OTI adaptation work under NTAMC project	
60	220 KV Malbase-Birpara TL	8/9/2013	9:00	8/9/2013	17:00	ODB	ER-II	Replacement of Insulator strings damaged by miscreants	NLDC/BHUTAN
61	400KV Malda Farakka-II	8/10/2013	9:00	8/10/2013	17:00	ODB	ER-II	AMP	NLDC
62	400 KV ARAMBAG - PPSP	8/10/2013	7:00	8/10/2013	16:00	ODB	WBSETCL	MAINTENANCE WORK	
63	220 KV Chukha-Birpara-I	8/10/2013	9:00	8/10/2013	17:00	ODB	ER-II	Replacement of Insulator strings damaged by miscreants	NLDC/BHUTAN
64	220 KV Subhasgram - Subhasgram - II	8/11/2013	7:00	8/11/2013	14:00	ODB	ER-II	HOT SPOT RECTIFICATION	WBSETCL
65	315 MVA ICT - I AT JERAT	8/11/2013	7:00	8/11/2013	16:00	ODB	WBSETCL	MAINTENANCE WORK	
66	315 MVA ICT - III AT JERAT	8/12/2013	7:00	8/12/2013	16:00	ODB	WBSETCL	MAINTENANCE WORK	
67	400 KV B/R AT ARAMBAG	8/12/2013	7:00	8/12/2013	16:00	ODB	WBSETCL	MAINTENANCE WORK	
68	400 KV BUS COUPLER BREAKER AT KOLAGHAT	8/12/2013	7:00	8/13/2013	16:00	ODB	WBSETCL	MAINTENANCE WORK	
69	220 KV Chukha-Birpara-II	8/12/2013	9:00	8/12/2013	17:00	ODB	ER-II	Replacement of Insulator strings damaged by miscreants	NLDC/BHUTAN
70	400 KV Rourkela-Sundargarh -Raigarh Ckt-1	8/12/2013	8:00	8/13/2013	18:00	OCB	ER-II	For checking operation & mechanical interlock of 789B,1089B Isolator, Erection of Earth wire over tie bay	NLDC
71	400kv Farakka-Durgapur -2	8/13/2013	9:30	8/13/2013	16:30	ODB	NTPC	PM & Relay Testing	
72	400kv Kahalgaon-Barh -2	8/13/2013	9:30	8/13/2013	17:30	ODB	NTPC	PM & Relay Testing	NLDC
73	400kv Barh-Patna -1	8/13/2013	9:00	8/15/2013	17:00	OCB	NTPC	CT replacement	NLDC
74	400 KV DURGAPUR - PPSP - I	8/13/2013	7:00	8/13/2013	16:00	ODB	WBSETCL	MAINTENANCE WORK	
75	315 MVA ICT#2 at Subhasgram	8/13/2013	8:00	8/13/2013	16:00	ODB	ER-II	OTI adaptation work under NTAMC project	WBSETCL
76	160 MVA ICT-II at Siliguri	8/13/2013	9:00	8/13/2013	17:00	ODB	ER-II	Completion of balance construction work under ERSS-IV	WBSETCL

77	400 KV DURGAPUR - PPSP - II	8/14/2013	7:00	8/14/2013	16:00	ODB	WBSETCL	MAINTENANCE WORK	
78	100 MVA ICT-I at Siliguri	8/14/2013	9:00	8/14/2013	17:00	ODB	ER-II	Bushing Tan delta & Capacitance measurement at different temp	WBSETCL
79	125 MVAR Bus Reactor-1 & 2 AT JAHRSUGUDA	8/16/2013	8:00	8/17/2013	18:00	OCB	ER-II	For erection of FIRE WALL	NLDC
80	400 KV ARAMBAG - KTPP	8/16/2013	7:00	8/16/2013	16:00	ODB	WBSETCL	MAINTENANCE WORK	
81	220KV Birpara-New Siliguri Ckt-II	8/16/2013	9:00	16/08/123	17:00	ODB	ER-II	Replacement of Insulator strings damaged by miscreants	
82	220 KV Birpara-N.Siliguri Ckt-I	8/17/2013	9:00	8/17/2013	17:00	ODB	ER-II	Replacement of Insulator strings damaged by miscreants	
83	220 KV SILIGURI - DALKHOLA-1	8/18/2013	9:00	8/18/2013	17:00	ODB	ER-II	CVT REPLACEMENT under ADDCAP	
84	315 MVA ICT - II AT JERAT	8/18/2013	7:00	8/18/2013	16:00	ODB	WBSETCL	MAINTENANCE WORK	
85	160 MVA ICT-I at Malda	8/19/2013	9:00	8/19/2013	18:00	ODB	ER-II	Completion of balance construction work under ERSS-IV	WBSETCL
86	400 KV Binaguri- Bongaigaon-I	8/19/2013	9:00	8/19/2013	17:00	ODB	ER-II	Replacement of Insulator strings damaged by miscreants	NLDC
87	401 KV Rourkela-Sundargarh -Raigarh Ckt-2	8/19/2013	8:00	8/20/2013	18	OCB	ER-II	For checking operation & mechanical interlock of 189B,489B Isolator, Erection of Earth wire over tie bay	NLDC
88	400 kV Rourkela-Jamshedpur I	8/20/2013	9:00	8/20/2013	17:00	ODB	ER-II	AMP	
89	400kv ICT-1 at Barh	8/20/2013	9:00	8/20/2013	17:00	ODB	NTPC	PM job of Transformer & its related bays equiptments.	
90	220 KV SILIGURI - DALKHOLA-II	8/20/2013	9:00	8/20/2013	17:00	ODB	ER-II	CVT REPLACEMENT under ADDCAP	
91	400 KV ARAMBAG - PPSP - II	8/21/2013	7:00	8/21/2013	16:00	ODB	WBSETCL	MAINTENANCE WORK	
92	315 MVA ICT - IV AT ARAMBAG	8/21/2013	7:00	8/21/2013	16:00	ODB	WBSETCL	MAINTENANCE WORK	
93	160 MVA ICT-II at Malda	8/21/2013	9:00	8/21/2013	18:00	ODB	ER-II	Completion of balance construction work under ERSS-IV	WBSETCL
94	400 KV Binaguri- Bongaigaon-II	8/21/2013	9:00	8/21/2013	17:00	ODB	ER-II	Replacement of Insulator strings damaged by miscreants	NLDC
95	400kv Farakka - Kahalgaon -3	8/22/2013	9:30	8/22/2013	16:30	ODB	NTPC	PM & Relay Testing	NLDC
96	220 KV SILIGURI - NEW SILIGURI	8/22/2013	9:00	8/22/2013	17:00	ODB	ER-II	CVT REPLACEMENT under ADDCAP	
97	400 KV Biharsariff - Kahalgaon - 1	8/22/2013	9:00	8/22/2013	16:00	ODB	ER-I	FOR DISMANTLING & ERECTION OF 19LCT(R-PH) i.e. BAY CT OF 400KV BSF - KHG - 1 AT BSF	NLDC
98	315 MVA ICT - III AT ARAMBAG	8/23/2013	7:00	8/23/2013	16:00	ODB	WBSETCL	MAINTENANCE WORK	
99	315 MVA ICT-III at Malda	8/23/2013	9:00	8/23/2013	17:00	ODB	ER-II	AMP of ICT alongwith bushing oil collection for DGA.	WBSETCL
100	220 KV SILIGURI - NEW SILIGURI	8/24/2013	9:00	8/24/2013	17:00	ODB	ER-II	CVT REPLACEMENT under ADDCAP	
101	400 KV KOLAGHAT - JERAT	8/25/2013	7:00	8/25/2013	16:00	ODB	WBSETCL	MAINTENANCE WORK	
102	220 KV GAYA(PG) - BODHGAYA(BSEB) -D/C	8/25/2013	8:00	8/26/2013	18:00	ODB	ER-I	FOR STRINGING OF 400KV KOD-GAYA-D/C LINE BETWEEN TOWER NO 18/0 & 19/0.	
103	220 KV GAYA(PG) - DEHRI(BSEB)-D/C	8/25/2013	8:00	8/26/2013	15:00	ODB	ER-I	FOR STRINGING OF 400KV KOD-GAYA-D/C LINE BETWEEN TOWER NO 18/0 & 19/0.	
104	400kv Kahalgaon - Barh -1	8/26/2013	8:00	8/26/2013	18:00	**ODB**	ER-I	FOR MAINTENANCE WORK	NLDC
105	132kv Kh-Lalmatia	8/27/2013	9:30	8/27/2013		ODB	NTPC	PM & Relay Testing	JSEB
106	400 KV RNC - MTN (RB) - 1	8/27/2013	8:00	8/28/2013	18:00	ODB	ER-I	FOR ATTENDING HOT SPOTS AT DIFFERENT LOCATIONS	
107	400 KV RNC - MTN (RB) - 2	8/29/2013	8:00	8/30/2013	18:00	ODB	ER-I	FOR ATTENDING HOT SPOTS AT DIFFERENT LOCATIONS	
108	400 KV ARAMBAG - BAKRESWAR	8/30/2013	7:00	8/30/2013	16:00	ODB	WBSETCL	MAINTENANCE WORK	