Agenda

for

146th OCC Meeting

Date: 15.06.2018

Eastern Regional Power Committee

14, Golf Club Road, Tollygunge

Kolkata: 700 033

Eastern Regional Power Committee

Agenda for 146th OCC Meeting to be held on 15th June, 2018 at ERPC, Kolkata

Item no. 1: Confirmation of minutes of 145th OCC meeting of ERPC heldon 21.05.2018

The minutes of 145th OCC meeting were uploaded in ERPC website and circulated vide letter dated 05.06.2018to all the constituents.

Members may confirm the minutes.

PART A : ER GRID PERFORMANCE

Item no. A1: ER Grid performance during May, 2018

The average consumption of Eastern Region for May - 2018 was 422.7 Mu. Eastern Region achieved maximum energy consumption of 462 Mu on 30th May - 2018. Total Export schedule of Eastern region for May - 2018 was 2065 Mu, whereas actual export was 1926 Mu.

ERLDC may present the performance of Eastern Regional Grid covering the following:

1. **Frequency profile**
2. **Over drawal/under injection by ER Entities**
3. **Performance of Hydro Power Stations during peak hours**
4. **Performance of ISGS during RRAS**
5. **Reactive Power performance of Generators**
6. **Restricted Governor /Free Governor Mode Operation of generators in ER:**

The 145th OCC advised all the generators to ensure proper RGMO response of their units and submit the relevant data to ERLDC within seven days before the OCC, however, till date none of the generating stations/utility has submitted high resolution (1sec) data for the incidences discussed in last OCC. Further it was decided that power plant/Utilities will also present governor response as observed in their local station DCS/SCADA. Generating station/ utility may present for the following events:

1. On 23.04.2018 at 10:42 Hrs, Multiple tripping from Kotra PG due to DC earth fault reported in 765kV Kotra S/S, consequently Generation loss of 3090MW occurred. Leading to 0.3 Hz dip in frequency.
2. On 06.05.2018 at 16:51 Hrs, there was generation loss of 1100 MW on account of tripping of Lalitpur Unit-I ,II & III due to loss of evacuation path. Resulting in 0.055 Hz dip in frequency
3. On 10.05.2018 at 06:12 Hrs, there was generation loss of 900 MW on account of tripping of DSTPS unit I & II due to loss of evacuation path. Resulting in 0.054 Hz dip in frequency

Utilities/Generating plants may present

As per recent communication received from TUL they have informed that their units are capable in running in RGMO mode. However, at present automatic governor action is disabled at Teesta-III to avoid overloading of 400 kV Rangpo-Binaguri D/C in event of increase in generation on account of dip in frequency.

Vide email dated 31st May 2018 TUL seeks permission to run their units on RGMO mode one by one.

Members may discuss.

7. Low voltage at 400/220 kV Jeerat, Subhashgram, Pandiaballi and Mendhasal Substation

The issue of low voltage at 400/220 kV Jeerat, Subhashgram, Mendhasal and Pandiabalisubstations have been observed in the eastern region on a day-to-day basis. It has been observed that the voltages of 400kV, as well as 220 kV, are simultaneously low at these substations. Further, on analyzing the SCADA data for the 400/220 kV ICTs at these stations, it is was found that the VAR flow direction is from high voltage to low voltage indicating reactive power measures required at low voltage level like adequate availability of capacitor bank and their switching coordination. The voltage of 400 and 220 kV along with ICT MVAR flow has been below indicating the low voltage problem where it can be seen that it is also going below IEGC Operational limit on several occasions.

WBSETCL and GRIDCO may explain.

PART B: ITEMS FOR DISCUSSION

Item No. B.1: Status of projects funded under PSDF schemes

In the PSDF review meeting, it was advised to RPCs to monitor the status of all the projects funded by PSDF. Therefore, constituents are requested to update the status of projects which are being funded by PSDF in the desired format.

A. Projects approved:

SN	Name of Constituent	Name of Project	Date of approval from PSDF	Target Date of Completion	PSDF grant approved (in Rs.)	Amount drawn till date (inRs.)	Latest status
1	WBSETCL	Renovation & up-gradation of protection system of 220 kV & 400 kV Substations in W. Bengal	31-12-14	April 2018	108.6 Cr	18.26 Cr.	100 % Supply is Completed 100 % Erection is completed Claim is submitted for releasing of 22.27 Cr., the same is yet to be received.
2		Renovation & modernisation of transmission system for relieving congestion in Intra-State Transmission System.	22-05-17	25 months from date of release of 1st instalment	70.13	Nil	Order has been placed for 96.44 Cr. 1stinstalment is yet to be received.
3		Installation of switchable reactor at 400kV & shunt capacitors at 33kV	22-05-17	19 months from date of release of 1st instalment	43.37	Nil	Order has been placed for 12.53 Cr. 1st instalment is yet to be received.
4	WBPDCL	Implementation of Islanding scheme at Bandel Thermal Power Station	*10.04.17*	*March 2018*	1.39 Cr		*The implementation at Power station would be completed by May 2018. Implementation part at Substation for load segregation would be done by WBSETCL.* *WBSETCL agreed to send their plan within 7 days.*
5		Upgradation of Protection and SAS			23.48		Approved byMinistry of Power. Fresh tendering is in progress.
6	OPTCL	Renovation & Up-gradation of protection and control systems of Sub-stations in the State of Odisha in order to rectify protection related deficiencies.	10.05.15	30.11.18	162.5 Cr.	37.79 Cr	Total contract awarded for Rs. 51.35 Cr
7		Implementation of OPGW based reliable communication at 132kV and above substations	15.11.2017		25.61 Cr.		Agreement signed on 03.01.2018

8	OHPC	Renovation and up-gradation of protection and control system of 4 nos.OHPC substations.		*U.Kolab-March 19 Balimela-Feb 2019 U.Indravati-Jan 19 Burla-Nov 2018, Chiplima Dec 2018*	*22.35 Cr.*		Tendering under progress.
9	BSPTCL	Renovation and up-gradation of 220/132/33 KV GSS Biharshariff, Bodhgaya, Fatuha, Khagaul, Dehri -on-sone& 132/33 kV GSS Kataiya	11/5/2015	31.07.2018	64.02 crore	56.04 crore	85% of work has been completed. Contract awarded for Rs.71.37 Cr till date.
10		Installation of capacitor bank at different 35 nos. of GSS under BSPTCL	5/9/2016	12th March 2019	18.88 crore	Nil	Work awarded for all GSS.
11		Renovation & up-gradation of protection and control system of 12 nos. 132/33 KV GSS under BSPTCL.	02.01.17	31st March 2018	49.22 Cr.		75% work completed for seven no. GSS as part of R & M work. Revised DPR is to be submitted for rest 5 no. GSS.
12	JUSNL	Renovation and up-gradation of protection system	*September 2017*	*2 years*	*138.13 crores*		LOA issued to PRDC on 22nd March 2018 for monitoring the project. Tendering is in progress.
13	DVC	Renovation and upgradation of control & protection system and replacement of Substation Equipment of 220/132/33 kV Ramgarh Substation	02.01.17	01.06.2019	25.96 Cr	2.596 Crore on 01.06.2017	Work awarded for 28.07 Cr.
14		Renovation and upgradation of control & protection system including replacement of substation equipment at Parulia, Durgapur, Kalyaneshwari, Jamshedpur, Giridih, Barjora, Burnpur, Dhanbad and Burdwan Substation of DVC	27.11.17	24 Months from the date of release of fund.	140.5 Cr.	1st installment of 14.05 Cr. received on 21.12.2017	Work awarded for 6.45 Cr.
15	POWERGRID	Installation of STATCOM in ER		June 2018	*160.28 Cr*	*16.028 Cr*	Work is in progress, expected to complete by June 2018. STATCOM at Rourkela has been commissioned.
16	ERPC	Creation & Maintenance of web based protection database and desktop based protection calculation tool for Eastern Regional Grid	17.03.16	Project is alive from 30th October 2017	20 Cr.	4.94 Cr. + 9.88 Cr.	1) Protection Database Project has been declared 'Go live' w.e.f. 31.10.17. 2) Pending training on PDMS at Sikkim and 3rd training on PSCT has been also completed at ERPC Kolkata.
17a	ERPC	Training for Power System Engineers					The proposal was approved by Appraisal Committee. The proposal was sent to CERC. CERC has sought some queries from the Appraisal Committee. The matter shall be taken up by the Appraisal Committee during its next meeting.
17b		Training on Power market trading at NORD POOL Academy for Power System Engineers of Eastern Regional Constituents					

B. Projects under process of approval:

SN	Name of Constituent	Name of Project	Date of Submission	Estimated cost (in Rs.)	Latest status
1	Sikkim	Renovation &Upgradation of Protection System of Energy and Power Department, Sikkim.	09-08-17	68.95 Cr	Scheme was examined by TSEG. Inputs sought from entity. Sikkim submitted the relevant

					information.
2		Drawing of optical ground wire (OPGW) cables on existing 132kV & 66kV transmission lines and integration of leftover substations with State Load Despatch Centre, Sikkim	09-08-17	25.36 Cr	Scheme was examined by TSEG. Inputs sought from entity. Sikkim submitted the relevant information.
3	JUSNL	Reliable Communication & Data Acquisition System upto 132kV Substations.	23-08-17	102.31 Cr	Scheme was examined by TSEG. Inputs sought from entity. Scheme has been revised as suggested by TSEG and it would be submitted within a week.
4	OPTCL	Installation of 125 MVAR Bus Reactor along with construction of associated bay each at 400kV Grid S/S of Mendhasal, Meramundali& New Duburi for VAR control &stabilisation of system voltage	28-08-17	31.94 Cr	Scheme was examined by TSEG. Inputs sought from entity. OPTCL submitted the relevant information.

C. Projects recently submitted:

SN	Name of Constituent	Name of Project	Date of Submission	Estimated cost (in Rs.)	Latest status
1	WBSETCL	Implementation of Integated system for Scheduling, Accounting, Metering and Settlement of Transactions (SAMAST) system in West Bengal	22-12-17	25.96 Cr	
2	OPTCL	Implementation of Automatic Demand Management System (ADMS) in SLDC, Odisha	22-12-17	3.26 Cr	
3	OPTCL	Protection upgradation and installation of SAS for seven numbers of 220/132/33kV Grid substations (Balasore, Bidanasi, Budhipadar, Katapalli, Narendrapur, New-Bolangir&Paradeep).	20.02.2018	41.1 Cr.	

Respective constituents may update the status.

Item No. B.2: Low-Frequency Oscillation (LFO) observed At Durgapur and nearby nodes on 05th APRIL 2018 from 14:21 hrs to 14:28 hrs.

Low-frequency oscillation of 0.1 Hz was observed in Durgapur and nearby nodes on 05th April 2018 from 14:21 hrs to 14:28 hrs. The oscillation was prominent in the Eastern region near Durgapur only based on the synchrophasor data analysis. Plot of Durgapur bus voltage based on PMU data is shown in the figure below where oscillation can be clearly observed. No significant oscillation was recorded by any other PMU during the said period, indicating some nearby local phenomenon or generator hunting. On further analysis of Eastern region SCADA data, large variations in the MW and MVAR of Sagardighi Unit 4 was noticed during the same time period.

In 144th OCC, ERLDC informed that similar incident was occurred earlier on 22nd July 2017 at 22:47 Hrs, Low Frequency Oscillations of frequency 0.083 Hz were observed in Sagardighi Unit 4 and WBPDCL has not submitted any report.

ERLDC added that oscillations in electrical parameters like voltage & frequency would impactnearbygeneratorsby increasing wear and tear. Therefore, ERLDC has requested for following actions:

- WBPDCL shouldsubmit a report.
- All Generating Unitsmust intimate the RLDC/SLDC immediately if any suchhunting/vibration is observed in Units (Cause/Effect).
- All Generating Units must Submit the one second or finer resolution data of MW/MVAr for all units to RLDC/SLDC

- PSS Tuning of all Generating Units above 100 MW must tune their PSS in Compliance to CERC Regulation and CEA grid Standard.

WBPDCL informed that oscillations were observed due to problem in Governor of Sagardhigi unit#4. WBPDCL added that the unit is under shutdown and they are investigating the root cause.

OCC advised WBPDCL to submit a report for both the incidences occurred on 05 April'18 and 22nd July 2017 along with the action taken.

WBPDCL vide letter dated 1stMay2018 informed that unwanted oscillations in Sagardighi unit-4 was observed due to suspected malfunctioning of the governing system of the machine, which in turn oscillated the EHC output. The issue has been brought to the notice of BHEL and WBPDCL maintenance department for immediate rectification of the problem. WBPDCL also informed that during the ongoing shutdown period of U#4 control valve's pilot cleaning, calibration and thorough operation checking w.r.t EHC output will be done to identify and resolve the issue.

In 145th OCC, WBDPCL informed that OEM would visit the site within 2 days to resolve the issue.

OCC advised WBPDCL to submit the outcome to ERPC and ERLDC.

WBPDCL may update.

Item No. B.3: Status of Implementation of islanding schemes in ER

1. Islanding scheme at Bandel TPS-WBPDCL

In 145th OCC, WBPDCL informed that the implementation at Power station would be completed by May 2018. Implementation part at Substation for load segregation would be done by WBSETCL.

WBSETCL agreed to send their plan within 7 days.

WBPDCL and WBSETCL may update.

2. Islanding scheme at IbTPS- OPGC

OPTCL has submitted the detail plan of IbTPS islanding scheme. Details are enclosed at **Annexure-B3.1**.

Members may discuss.

3. Islanding scheme at KantiTPS - KBUNL

ERLDC prepared thedraft islanding scheme.Details are enclosed at **Annexure-B3.2**.

Members may discuss.

Item No. B.4: Automatic Under Frequency Load Shedding (AUFLS) -NPC

In 2nd NPC meeting held on 16th July 2013 it was decided to implement the following load shedding scheme:

AUFLS	Frequency (Hz)	Load relief in MW					
		NR	WR	SR	ER	NER	Total
Stage-I	49.2	2160	2060	2350	820	100	7490
Stage-II	49.0	2170	2070	2360	830	100	7530
Stage-III	48.8	2190	2080	2390	830	100	7590
Stage-IV	48.6	2200	2100	2400	840	100	7640
	Total (MW)	8720	8310	9500	3320	400	30250

In 7th NPC held on 7th September 2017, it was agreed that there is need for review of the quantum of load shedding and introduction of additional slabs/stages of frequency.

NPC vide letter dated 30th May 2018 informed that considering the grid size and assuming Power Number of 7000, the following two options are proposed:

Option 1:

AUFLS scheme with 4 stages of frequency viz. 49.2, 49.0, 48.8 & 48.6 Hz

AUFLS	Frequency (Hz)	Load relief in MW					
		NR	WR	SR	ER	NER	Total
Stage-I	49.2	3920	3360	3170	1380	170	12000
Stage-II	49.0	3950	3380	3190	1380	170	12070
Stage-III	48.8	3970	3400	3210	1390	170	12140
Stage-IV	48.6	4000	3430	3230	1400	170	12230
	Total (MW)	15840	13570	12800	5550	680	48440

Option 2:

AUFLS scheme with 4 stages of frequency viz. 49.4, 49.2, 49.0 & 48.8 Hz

AUFLS	Frequency (Hz)	Load relief in MW					
		NR	WR	SR	ER	NER	Total
Stage-I	49.4	3900	3340	3150	1370	170	11930
Stage-II	49.2	3920	3360	3170	1380	170	12000
Stage-III	49.0	3950	3380	3190	1380	170	12070
Stage-IV	48.8	3970	3400	3210	1390	170	12140
	Total (MW)	15740	13480	12720	5520	680	48140

NPC sought the views of RPCs on the review of quantum of load shedding and stages of frequency.

Members may discuss.

Item No. B.5: Frequentpower supply interruptions at various Railway traction sub stations underJUSNL. –South Eastern Railway

South Eastern Railway informed that there have been repeated simultaneous power supply failures at 04 nos traction sub stations(RajkharswanChakradharpur, Goilkera and Kendposi) for which train services have beenseriously disrupted. At present supply of these 4 TSSs is coming through Chandil/Grid,hence failure of ChandilGrid and its transmission line affects the power supply of all thefour Railway TSS.

One 132KV D/C transmission line has been recently commissioned by JUSNL fromChaibasa to Manoharpur. Hence, to improve reliability of power supply, it is proposed togive traction power supply in normal course at the 4nos Railway TSSs from Manoharpurto Goilkera and further to RajkbarswanChakradharpur, and Kendposi TSSs. Chandilsupply may be kept as alternate source of supply.

South Eastern Railway may explain. JUSNL may respond.

Item No. B.6: Restoration of 132 kV Sonenagar (BSPTCL) – Rihand(UPPCL) inter regional link

LILO of 132 KV Sonenagar(BSPTCL) – Rihand(UPPCL) was done at NPGC on 16/05/2017 to provide start up power from STU side to NPGC (Nabinagar Power Generating Co. Ltd.). NPGC was availing start up power through 132 kV Sonenagar – Nabinagar (NPGC) and 132 kV Nabinagar(NPGC)- – Rihand was kept anti-theft charge till Rihand S/S from Nabinagar end. Subsequently after commissioning of 400 kV Gaya - Nabinagar(NPGC), associated 400kV Bus, Bays and Station transformer(400/132 kV) at Nabingar(NPGC) followed by submission of documentations as per relevant procedure in respect to drawl of startup power from CTU side through 400 kV Gaya - Nabinagar(NPGC), ERLDC has allowed NPGC (Nabinagar Power Generating Co. Ltd.) to draw startup power of 55 MW subject disconnection of startup power supply from STU side through 132 kV Sonenagar – Nabinagar(NPGC). 132 KV Nabinagar(NPGC)-Sonenagar line at NPGC end was opened on 10/05/2018 at 13:41 hours. NPGC connected to ISTS through 400 kV Gaya – Nabinagar(NPGC) at 14:30 Hrs of 10/05/2018 and started drawing startup power in the tune of 5 to 10 Mva.

As per the procedure, start-up power cannot be facilitated to any generator from two sources. As NPGC availed start-up power from Gaya (CTU) SS side, so 132kV arrangement from STU (BSPTCL) through 132 kV Nabinagar(NPGC)-Sonenagar LILO need to be disconnected permanently and 132kV Rihand - Sonenagar inter-regional tie-line to be restored back to its original configuration.

BSPTCL may update status of restoration of 132 kV Sonenagar (BSPTCL) – Rihand(UPPCL) inter regional link.

Item No. B.7: Installation of PMU for observation of the dynamic performance of STATCOMs--ERLDC

Four STATCOMs (Rourkela, Jeypore, Kishenganj, New Ranchi) are being commissioned in the Eastern Region to improve the dynamic var compensation in the grid and for the improvement of the transient stability. STATCOM is a dynamic VAR compensation device and provides the fast reactive support to the grid during transient as well steady state operation. The steady-state response of STATCOM can be monitored through conventional SCADA data, however; the dynamic response, which comes within milliseconds, cannot be well captured through conventional SCADA system. In order to analyze the dynamic performance of STATCOM (STATCOM+ MSR /MSC) during day-to-day operation, it is desired to install PMU on the Coupling Transformer of the STATCOM as a part of the URTDSM project. This will help the operator in monitoring and analyze the STATCOM dynamic response in real time as well as offline mode.

Based on the above for better monitoring of the STATCOM devices, Powergrid may be advised for installation of PMU at all the four STATCOMs of Eastern region.

Members may discuss.

Item No. B.8: Expeditious commissioning of 400kV FSTPS – Baharampur (Twin HTLS) D/C line--ERLDC

The above line is part of ERSS-XV project and linked with transfer of 1000MW power from India to Bangladesh. In the 7th OCC meeting with Bangladesh held on 04-06-18, it was learnt that commissioning of the 2nd 500MW B-t-B HVDC converter station at Bheramara is in an advanced stage and by July 2018 Bangladesh would be ready to import 1000MW from India through the existing 400kV Baharampur-Bheramara 400kV D/C line, with suitable modification of their own defense mechanism.

Under the circumstances to meet the expectations of Bangladesh, it is absolutely essential to commission the 400kV FSTPS-Baharampur (Twin HTLS) D/C line under construction, at the earliest. As this activity involves shutdown of the existing 400kV FSTPS-Baharampur (Twin Moose) S/C line, WBSETCL is requested to extend necessary cooperation for facilitating timely completion of the Twin HTLS line, under construction.

Members may discuss.

Item No. B.9: Discrepancy in meter reading of reactive power –WBSETCL

WBSETCL informed that they observed large variation in meter reading of reactive power injection between the following parallel tie lines for the week:16.04.18-22.04.18:

i) 400kvBidhanNagar(WB)-Parulia(PG):Line#1 shares 3.47 times of line#2

ii) 400kvSgTPP(WB)-Parulia(PG):Line#2 shares1.6 times of line#1

iii) 400kvHEL(WB)-Subhasgram(PG): Line#2 shares1.37 times of line#1

iv) 220kvNJP(WB)-Binaguri(PG):Line#2shares1.18 times of line#l.

This pattern of discrepancies was observed in each weekly VAR Account of ERPC.

Members may discuss.

Item No. B.10: Audit of devices such as HVDC, TCSC and SVC and PSS Tuning

An audit of devices such as HVDC, TCSC, SVC and PSS should be done immediately to ensure that their stability features are enabled. Further, exercise of PSS tuning should be planned and implemented. Settings of these dynamic stabilizing devices should be reviewed at appropriate intervals.

In 2007 Based on a system study (Prof. Kulkarni) were proposed the following units to be equipped with PSS devices:

1. Kolaghat stage II 400 kV U#4.5.6.(201MW each)of WBPDCL;
2. Farakka U#4,5 (500MW each)of NTPC;
3. U.Kolab 4 units (80 MW each) of OHPC;
4. Budge Budge U# 1,2,(250 MW) of CESC Ltd.

Thereafter, PSS tuning of all units were carried out with the help of BHEL Service Manager, Shri K. ParthaSarathi in the presence of Prof. Kulkarni except Budge Budge units.PSS tuning of Budge-Budge unit 1&2 of CESC has been carried out on 28th&29th July, 2015.

142ndOCC opined that for identifying the generators for PSS tuning, a fresh study is needed to be done as per the existing network. OCC referred to TCC for further guidance.

Powergrid informed that they are planning to conduct audit for HVDC, TCSC and SVC in April 2018.

In 37th TCC, Members authorised Member Secretary, ERPC to contact different IITs including IISc for the study and advised to place a comprehensive proposal in next TCC Meeting.

In 143rd OCC, Powergrid informed that audit for TCSC Purnea, FSC Ranchi and HVDC Talcherhad been completed and the same for HVDC Alipurduar is planned in April 2018.

Powergrid submitted the audit report of TCSC and FSC installed in 400kV Muzaffarpur lines at Purnea.

Members may update.

Item No. B.11: Non-submission of Meter data by M/s Ind-Barath (IBEUL)-ERLDC

Six (6) nos of SEM are installed at Ind-Bharath end for energy accounting of IBEUL. As per IEGC, every Utility has to send SEM data to respective RLDC by Tuesday noon in every week. IBEUL is not sending the SEM data since April'17. Due to non-receipt of data, validation of data of other end i.e. Sundergarhis being affected. Several reminders through mail and phone were sent to the representatives of IBEUL but till date no data is received.

In 145thOCC, it was decided to convene a separate meeting with IBEUL to resolve the issues.

Accordingly, a special meeting was convened at ERPC, Kolkata on 01.06.2018 wherein IBEUL representative did not attend the meeting.

Members may note.

Item No. B.12: DATA FOR GEOSPATIAL ENERGY PORTAL OF NEETI AAYOG--CEA

NITI Aayog is developing a user friendly GIS based Energy Map of India, which would provide true locations of all energy resources in India including power plants, coal and oil reserves, transmission lines etc.

CEA sought the information of name, voltage level, capacity, longitude and latitude of 33kV and 66 kV substations and lines.

The information may be shared with CEA vide email: cedpd-cea@gov.in.

Members may note and comply.

PART C: ITEMS FOR UPDATE

Item no. C.1: Status of UFRs healthiness installed in Eastern Region

UFR Healthiness Certification for the month of May, 2018 has been received from CESC, WBSETCL, DVC and JUSNL.

BSPTCL and OPTCL may submit.

Item no. C.2: Status of Islanding Schemes healthiness installed in Eastern Region

At present, the following islanding schemes are in service:

1. CESC as a whole Islanding Scheme, CESC
2. BkTPS Islanding Scheme, WBPDCL
3. Tata Power Islanding Scheme, Haldia
4. Chandrapura TPS Islanding Scheme, DVC
5. Farakka Islanding Scheme, NTPC

In 108th OCC meeting, respective constituents agreed to certify that the islanding schemes under their control area are in service on monthly basis.

In 134thOCC, JUSNL was advised to submit the healthiness certificate of the UFR and PLCC system related to Farakka islanding scheme at their end.

The healthiness certificate for Islanding Scheme for May, 2018 has been received from CTPS, DVC, West Bengal, JUSNL and CESC.

NTPC and WBPDCL may submit.

Item no. C.3: Healthiness of SPS existing in Eastern Region

The Status of healthiness certificate for May, 2018 is given below:

Sl. No.	Name of the SPS	Healthiness certificate received from	Healthiness certificate not received from
1.	*Talcher HVDC*	*GMR, Powergrid & JITPL*	*NTPC*
2.	*Rangpo*	*Chuzachen*	*Powergrid, Dikchu, Teesta-III, Dansenergy*
3.	SPS of 132 kV Muzaffarpur-Dhalkebar D/C	*Nil*	*Powergrid*
4.	SPS in CESC system	*CESC*	*Nil*
5.	SPS for Power Export to Bangladesh	*Nil*	*Powergrid*
6.	SPS at Chuzachen	*Chuzachen*	*Nil*

In 145th OCC,ERLDC informed that generation relief provided by the generators was not sufficient during SPS Operation on HVDC Talcher-Kolar Pole 1 tripping on 16-05-2018 15:34 Hrs. ERLDC elaborated the event with detailed presentation.

OCC advised Powergrid to submit a report on frequent tripping of only pole 1.

OCC opined that a Committee was already formed to study the SPS issues related to HVDC Talcher-Kolar. OCC advised the Committee to analyze this event and place the report in OCC Meeting.

Members may update.

Item no. C.4: Implementation of Automatic Demand Management Scheme (ADMS)-ERLDC

The latest status along with proposed logic as follows:

Sl No	State/Utility	Logic for ADMS operation	Implementation status/target	Proposed logic (if different from under implementation logic)
1	West Bengal	F <49.7 AND deviation > 12 % or 150 MW	Implemented on 25.11.16	F <49.9 AND deviation > 12 % or 150 MW
2	DVC	F <49.7 AND deviation > 12 % or 150 MW	Implemented on 17.06.2016	
3	Bihar	F <49.7 AND deviation > 12 % or 150 MW	3 months Feeders identified. Implemented by June 2018	F <49.9 AND deviation > 12 % or 150 MW
4	Jharkhand	1. System Frequency < 49.9 Hz AND deviation > 12 % or 25 MW 2. System Frequency < 49.9 Hz AND deviation > 12 % or 50 MW 3. System Frequency < 49.9 Hz AND deviation > 12 % or 75 MW	9 Months RTU installation is in progress. Implemented by May 2018	Condition 1: Block I feeders will be selected for load shedding Condition 2: Block I & II feeders will be selected for load shedding Condition 3: Block I, II & III feeders will be selected for load shedding
5	Odisha	1. System Frequency < 49.9 Hz 2. Odisha over-drawl > 150 MW 3. DISCOM over-drawl > (40 MW)	10 Months Sent for PSDF approval.	Logic 2 and 3 is AND or OR, in case it is AND then ADMS may not operated when discom are in schedule but GRIDCO is overdrawing due to less generation at state embedded generators
6.	Sikkim			Sikkim informed that they have submitted a proposal to PSDF Committee for installation of OPGW cables which is under approval stage. Sikkim added that ADMS scheme would be implemented after installation of OPGW.

In 142ndOCC, it was opined that uniform logic should be implemented for all the states. OCC decided to review the logic of ADMS after implementation of the scheme by all the states.

ERLDC informed that in the month of May 2018 frequency dipped below 49.7 Hz on few occasions. Further as per information submitted ADMS facility is already in service in West Bengal and DVC from 25th -November-2016 and 17th June 2016 respectively. Instances which are satisfying logic for ADMS operation are enclosed at **Annexure-C4**. The data is 2minutes average value as available in ERLDC SCADA.It is not clear from the actual drawl data, whether ADMS has been operated or not. DVC and West Bengal were also not reported any such operation to ERLDC for above instances.

Members may update. WBSETCL and DVC may explain.

Item no. C.5: Unreliable operation at Motihari (DMTCL) SS

400/132kV Motihari S/Stn is of critical importance as the two high capacity inter-regional lines (400kVBarh-Gorakhpur Qd. Moose D/C) link E. Region with N. Region at this S/Stn. The Barh-Motihari D/C Qd. Moose line is essential for reliable power evacuation from Barh STPS of 2X660MW capacity. Motihari S/Stn is also responsible for meeting about 200MW load, considering Bihar and Nepal together.

As on date main CB of 125MVAR bus reactor-1, line isolator of 400kV Gorakhpur-2 line along with main and tie CBs of this line are out of service due to problem in gas duct. 400 kV Motihari – Gorakhpur – II was out of service due to unavailability of both bays at Motihari S/S.

In 144th OCC, it was decided to pursue the issue with DMTCL and decided to discuss the issue in 66th PCC Meeting scheduled to be held on 25th April 2018.

In 145th OCC, DMTCL informed that 400kV Motihar-Gorakhpur D/C line is under outage due to non-availability of GIS spares.

DMTCL added that the line would be restored within a month.

OCC advised DMTCL to expedite the work to restore the line at the earliest.

Members may discuss.

Item no. C.6: Restoration of MPL-Ranchi line-1-MPL

At around 5:21 hrs on 10th May 2018, both 400kV MPL-MRBL line-1 and 2 tripped on line to earth and phase to phase fault. Later upon physical inspection from MPL end, it was found that 3 towers namely 63, 64 and 65 have collapsed at 2 kms from MPL periphery. Being a double circuit tower both MRBL-1 and 2 are not available henceforth.
MPL requested to take urgent action for restoration of MPL-Ranchi line-1 on high priority and confirm the tentative time of line restoration.

In 145th OCC, Powergrid informed that restoration of 400kV MPL-MRBL line-1 and 2 using ERS towers is not possible as the damaged tower was at river crossing and the line would be restored only by 15th July 2018.

MPL and Powergrid may update.

Item no. C.7: LILO arrangement at 132/33 KV GSS Baisi in 132 KV Kishanganj(old)-Dalkola(WBESTCL)

BSPTCL vide mail dated 13th April 2018 informed that 132/33 KV GSS Baisi is being constructed by M/S GE T&D India Ltd. under state plan which is ready for charging through 132 KV Kishanganj(old) – Dalkola(WBESTCL) transmission line (which is ISTS line) through LILO arrangement.

i. Erection and commissioning of Remote Terminal Unit (RTU) is being under progress.
ii. Shifting of ABT meter installed at Kishanganj (old) end in Dalkola feeder to Baisi end of Dalkola feeder also under process.

BSPTCL requested for charging of 132/33 KV Baisi GSS through LILO in 132 KV Kishanganj(old) – Dalkola(WBESTCL) transmission line.

In 144th OCC, BSPTCL informed that the construction of 132/33 KV GSS Baisi S/s is almost at completion stage. They are planning to LILO 132 KV Kishanganj(old) – Dalkola(WBESTCL) transmission line at 132/33 KV GSS Baisi S/s. After LILO, 132kV Baisi – Dalkola(WBESTCL) would become an interstate tie line.

In 145th OCC, BSPTCL informed that 132 KV Kishanganj(old) – Dalkola(WBESTCL) transmission line LILO at 132/33 KV GSS Baisi S/s on 1st May 2018. SEMs were shifted from Kishanganj and installed at Baisi S/s.

BSPTCL may update.

Item no. C.8: Flexible jumpering arrangement for bypassing substations, prone to inundation during monsoon, for ensuring continuity of important corridors and power evacuation from power stations—ERLDC

In 136th OCC, ERLDC explained that the flexible jumpering arrangement may be done for 400 kV Binaguri-Kisheenganj-N.Purnea D/C and 400kV Binaguri-Alipurduar-Bongaigaon D/C lines for bypassing the LILO points i.e. 400kV Kishanganj(PG) and Alipurduar(PG) S/s so that the same lines may be directly connected during the emergencies like flood situations at LILO points. The possibility may be explored as these elements are very important in terms of hydro power evacuation and long outages of these elements may endanger the grid security. The other such elements (LILOed at Dalkhola, Motihari (DMTCL) etc) may also be explored which are under threat during flood and other emergencies.

In 145th OCC, Powergrid informed that the necessary jumpering arrangement at Alipurduar, Kishanganj and Dalkhola SS would be completed by June 2018.

PGCIL may update. DMTCL may update the actions taken for Motihari S/S.

Item no. C.9: Repeated tripping of 220kV Chuka-Birpara D/c line

In 60th PCC, meeting Powergridexplained that the line is in lightning prone area. The line is getting tripped due to Insulator failures. Powergrid added that line insulators of part of the line which is belongs to Powergrid have been replaced with polymer insulators. The insulator failures during lightning have been reduced. However, the line is getting tripped due to failure of porcelain insulators in 39.8 km stretch which is belongs to Bhutan.

BPC vide mail submitted the details of replacement of porcelain insulators with glass insulators in the 220kV Chhukha-Birpara D/C line (Bhutan section). Out of 97 towers, porcelain insulators have been completely replaced with glass insulators in 31 locations, while at 20 locations only some insulator strings have been replaced. The remaining insulators would be replaced in a phase wise manner during preventive and break down maintenance.

BPC/DGPC and POWERGRID may update.

Item no. C.10: Repair/Rectification of tower at location 79 of 132kV Rangpo-Melli D/c line and Chuzachen(Rangpo)-Gangtok transmission lines - Powergrid

Powergrid informed that their patrolling team has observed bent in part of tower no. 79 of 132kV Rangpo-Melli D/c line and Chuzachen(Rangpo)-Gangtok transmission lines which may further degrade the condition of tower.

In 141st OCC, Sikkim informed that rectification of the tower has been taken up with Gati. The work would be completed by 2nd week of February 2018.

In 37th TCC, it was decided that Sikkim would give a comprehensive proposal to PGCIL within one week regarding handing over of the relevant segments of the line to PGCIL. Thereafter, PGCIL and Sikkim would sit together and sort out the issues involved therein.

In 145th OCC, Sikkim informed that the proposal had been sent to State Govt. for approval.

Powergrid and Sikkim may update.

Item no. C.11: Status of Installation of STATCOM in Eastern Region

In the 15th meeting of SCM it was agreed to install STATCOM in combination with mechanically switched Reactors (MSR) and Capacitors (MSC) and co-ordinated control mechanism of MSCs and MSRs at Ranchi, Rourkela, Jeypore and Kishanganj substations in Eastern Region.

The matter was again discussed in the 28th ERPC/TCC meeting held on 12th -13th September, 2014 at Goa, wherein, it was decided that POWERGRID may go ahead with implementation of the STATCOM project in Eastern Region with debt – equity ratio of 70:30 funding. The debt part should be refunded through PSDF and Equity Component (30%) to be funded by POWERGRID to be recovered through regulated tariff mechanism. CTU should initiate the process of availing fund from PSDF.

Powergrid updated the latest status as follows:

Sl No	Location /Sub-Station of POWERGRID in ER	STATCOM - Dynamic Shunt Controller (MVAr)	Mechanically Switched Compensation Sl. (MVAr)		Latest status
			Reactor (MSR)	Capacitor (MSC)	
1	Rourkela	±300	2x125		*In service from March 2018.*
2	Kishanganj	±200	2x125		*70% civil work completed. 30% switchyard equipment supplied. Expected to complete by December 2018*
3	Ranchi(New)	±300	2x125		*80% civil work completed. All switchyard equipment, reactors and 3 transformers supplied. Expected to complete by June 2018*
4	Jeypore	±200	2x125	2x125	*Expected to complete by June 2018*

Powergrid may update.

Item no. C.12: 220 kV inter-connecting lines of OPTCL with 400/220 kV Bolangir (PG), Keonjhar&Pandiabil S/s

PGCIL has already commissioned the 2x315MVA 400/220kV Bolangir S/s by LILOing of 400kV Meramandali-Jeypore S/C line and 400/220 kV Keonjhar S/s with an objective of supplying power from ER grid to its adjoining areas in Odisha.

In lastOCC, OPTCL updated the completion schedule of inter-connecting system as follows:

Sl. No.	Name of the transmission line	Completion schedule
1.	**2x315MVA 400/220kV Bolangir S/s**	
a.	LILO of one circuit of Sadeipalli-Kesinga220 kV D/C line at Bolangir S/S	*Only 7 towers left (Severe ROW problem).**By June, 2018.***
2.	**400/220kV Pandiabil Grid S/s:**	
a.	Pratapsasan(OPTCL)-Pandiabil(PG) 220 kV D/C line	By Dec, 2018.
3.	**400/220 kV Keonjhar S/S**	
a.	Keonjhar (PG)-Keonjhar (OPTCL) 220 kV D/C line	By May, 2018.
b.	Keonjhar (PG)-Turumunga(OPTCL) 220kV D/C line	By 2019. The work is yet to be started.

OPTCL may update.

Item no. C.13: 220 kV inter-connecting lines of JUSNL with 2x315 MVA, 400/220 kV sub-stations at Chaibasa, Daltonganj&Dhanbad

In lastOCC, JUSNL updated the latest status as follows:

Sl. No.	Name of the transmission line	Completion schedule
1.	**Daltonganj 400/220/132kV S/s:**	
a.	Daltonganj(POWERGRID)–Latehar220kVD/c	By April, 2019.
b.	Daltonganj (POWERGRID) – Garhwa 220kV D/c	The line expected to be completed by May, 2018 but – Garhwa 220kV is expected to be completed by Dec 2018.
C	Daltonganj (POWERGRID) – Daltonganj (JUSNL) 132kV D/c	The line would be charged as per original configuration by July 2018. At present,Daltonganj (PG) has been connected to Daltonganj (JUSNL) at 132kV through existing 220 kV Latehar-Daltonganj line as stop gap arrangement till completion of the line.
D	Daltonganj (POWERGRID) – Chatarpur/Lesliganj 132kV D/c	Tendering is in progress. Expected to be completed by October 2019
2	**Chaibasa400/220kVS/s**	
A	Chaibasa(POWERGRID)–Noamundi220kVD/c	Not yet started
3	**Dhanbad400/220kVS/s**	
A	LILO of Govindpur–Jainamore/TTPS 220kVD/c at Dhanbad	ROW issues.Target date November 2018.

JUSNL may update.

Item no. C.14: 220 kV inter-connecting lines of WBSETCL with 400/220 kV, 2x315 MVAAlipurduar& 2x500 MVA Rajarhatsub-stations

In lastOCC, *WBSETCL updated the latest status as follows:*

Sl. No.	Name of the transmission line	Completion schedule
1.	**2x315MVA, 400/220kV Alipurduar sub-station**	
a.	Alipurduar (POWERGRID) – Alipurduar (WBSETCL) 220kV D/c (***Twin moose***)	*The work has been completed and the wouldbe charged by this week.*
2.	**2x500MVA, 400/220kV Rajarhat---**	
a.	Rajarhat-N. Town-3 (WBSETCL) 220 kV D/C line	Matching, ROW problem
b.	Rajarhat-N. Town-2 (WBSETCL) 220 kV D/C line	June, 2018,ROW problem
c.	Rajarhat- Barasat (WBSETCL) 220 kV D/C line	June, 2018,ROW problem
3	**Subashgram400/220kVS/s**	
a	Subashgram–Baraipur220kVD/cline	Feb 2019, 50% of work has been completed.

WBSETCL may update.

Item no. C.15: 220 kV inter-connecting lines of BSPTCL

In 145thOCC, BSPTCL updated the status as follows:

1. Darbhanga (ISTS) –Darbhanga (BSPTCL) 220kV D/c by July 2018
2. Darbhanga(ISTS)–Laukhi (earlier Supaul New) 220kVD/c by May2018

BSPTCL may update.

Item no. C.16: Update on status of telemetry

CERC vide order dated 28.02.2016 on Petition No. 007/SN/2014 directed NLDC and respective RLDCs to update the status of telemetry every month at their respective websites and take up the issue of persistent non-availability of data from Generating Stations/substations at RPC meetings for appropriate action.

ERLDC may present. Members may update.

Item no. C.17: Failure of Real time telemetry

a) In geographically located area of North Bengal and Sikkim to ERLDC:

In 142nd OCC, M/s East North Interconnection Company Limited (ENICL) informed that OPGW is already available in the line but laying of approach cable inside the POWERGRID sub-stations & termination at both end to communication Mux is pending. ENICL added that the same is under discussion at their end for early implementation of the same.

In 143rd OCC, ENCIL updated that termination of OPGW would be completed by end of June 2018.

Powergrid informed that the link would be in service by end of July 2018 subjected to termination of OPGW link.

ENCIL &POWERGRID may update

b) Farakka STPS to ERLDC:

Real time SCADA data from Farakka STPS stage #3 SAS is not available at ERLDC since 10:32 Hrs of 09/09/2017. Real time SCADA data failure has been intimated to NTPC Farakka Generating station on number of occasions; verbally over phone & through but the same is yet to be rectified.

In 144th OCC, NTPC informed that they are in the process of replacing the SAS which would be completed by end of May 2018.

NTPC may update

Item no. C.18: Transfer capability determination by the states

In order to ensure, safe and secure operation of the grid, the states should carry out the power system study for operational planning and power transfer capability through their respective transmission links with the rest of the grid.

It was decided in the NPC meeting that to begin with, power system study for assessment of operational limits / power transfer capability for each state will be done by the concerned RLDC in association with concerned SLDC. Monthly TTC /ATC will be uploaded by the SLDCs at their respective websites and also communicated to concerned RLDC & NLDC subsequently.

ATC/TTC declared by states for the month of September-2018 is given below:

Sl No	State/Utility	TTC import(MW)		RM(MW)		ATC (Import) MW		Remark
		Import	Export	Import	Export	Import	Export	
1	BSPTCL	--	--	--	--	--	--	Last available for Jan-18
2	JUSNL	997	--	30	--	920	--	
3	DVC	1220	3104	62	49	1158	3055	

4	OPTCL	1858	--	85	--	1773	--	
5	WBSETCL	3630	--	300	--	3330	--	
6	Sikkim	--	--	--	--	--	--	

BSPTCL has neither declared TTC nor has provided updated base case in last six months.

BSPTCL and Sikkim may update the status.

Item no. C.19: Time correction of SEMs in Eastern Region – Replacement of heavily drifted SEMs

The issue was discussed in 35th TCC/ERPC meetings and it was felt that the meters with severe drift greater than 10 min need to be replaced first and if replacement is done with Genus then readings are to be collected manually using Laptop till interfacing with AMR is completed. 35th ERPC advised Powergrid to replace the 10% of the heavily drifted SEMs with new Genus make meters in Phase-I. Subsequently drifted meter replacement work of Phase –I for 24 meters have been completed.

As per decision taken in 134th OCC meeting, another 10% heavily drifted meter list was prepared by ERLDC and given to Powergrid for replacement. In 140thOCC it was informed that all the Phase-II meters have been replaced except Kharagpur. Since issue of integration of Genus meter is already resolved, It was also decided that list of meters to be replaced in next phase may be prepared.

Accordingly List of drifted meters to be replaced in Phase-III is placed below:

List of drifted meters to be replaced in Phase-III

SNO	LOCATION	METER SNO	FEEDER NAME	Region
1	JEERAT(WB)	NP-6445-A	400 KV JEERAT (WBSETCL) - BERHAMPORE(PG)	ER-II
2	JEERAT(WB)	NP-6446-A	400 KV JEERAT (WBSETCL) - SUBHASGRAM	ER-II
3	RANCHI(PG)	NP-7853-A	400 KV RAGHUNATHPUR 1	ER-I
4	RANCHI(PG)	NP-7871-A	400 KV RAGHUNATHPUR 2	ER-I
5	ALIPURDUAR(PG)	NR-3716-A	400 KV POLE-3 MAIN BAY-AGRA(NR)	ER-II
6	ALIPURDUAR(PG)	NR-3718-A	400 KV POLE-3 TIE BAY AGRA(NR)	ER-II
7	NEW MELLI(PG)	NR-4620-A	220 KV JORETHANG(JLHEP)-1	ER-II
8	NEW MELLI(PG)	NR-4621-A	220 KV JORETHANG(JLHEP)-2	ER-II
9	TEESTA-III	NR-3714-A	400 KV SIDE OF TEEST-III HEP GT-1	ER-II
10	TEESTA-III	NR-3715-A	400 KV SIDE OF TEEST-III HEP GT-2	ER-II
11	TEESTA-III	NR-4450-A	400 KV SIDE OF TEEST-III HEP GT-3	ER-II
12	TEESTA-III	NR-3720-A	400 KV SIDE OF TEEST-III HEP GT-4	ER-II
13	TEESTA-III	NR-4623-A	400 KV SIDE OF TEEST-III HEP GT-5	ER-II
14	TEESTA-III	NR-3719-A	400 KV SIDE OF TEEST-III HEP GT-6	ER-II
15	TEESTA-III	NR-4456-A	400 KV TEESTA-III - DICKCHU (MAIN)	ER-II
16	TEESTA-III	NR-4618-A	400 KV TEESTA-III - DICKCHU (CHECK)	ER-II
17	TEESTA-III	NR-4454-A	400 KV TEESTA-III - RANGPO (MAIN)	ER-II
18	TEESTA-III	NR-4453-A	400 KV TEESTA-III - RANGPO (CHECK)	ER-II
19	JINDAL (GRIDCO)	NP-6502-A	220KV JAMSHEDPUR (DVC)	ODHISA PROJECT
20	JAMSHEDPUR (DVC)	NP-6010-B	220 KV JINDAL	ER-I
21	GANGTOK(PG)	NP-6026-A	132KV CHUZACHEN(GATI)	ER-II
22	RANGPO(PG)	NP-7958-A	132 KV CHUZACHEN (GATI)	ER-II

In 144th OCC, Powergrid updated that new SEMs have been received and acceptance tests are in progress. Acceptance tests would complete by end of April 2018.

Powergrid added that time correction has been done at Ranchi.

Powergrid may update.

Item no. C.20: Accounting of state drawl from Substation of PGCIL/ISTS Licensee in ER

As per Clause 7(1) (C) of CEA (Installation and Operation of Meters) Regulations, 2006 &its subsequent amendments, Main Meters for drawl computation through ICT should be installed on HV side of ICT and meters installed on LV side of ICT should be considered as Standby meters .

In view of the above it is proposed that Sate drawl from PGCIL/ISTS Licensee S/S may be computed by using the meter installed on HV side of ICTs in line with CEA regulation.

In order to enable ERLDC compute the state drawl through ICTs of PGCIL & other ISTS Licensees in ER as per CEA Regulations, PGCIL is requested to install meters at HV and LV side of ICTs at the stations enclosed at **Annexure-C20**.

In 144th OCC, Powergrid informed that SEMs are already available at some stations.

OCC advised Powergrid to check the healthiness & time synchronization of the installed SEMs and install new SEMs wherever it is required.

In 145th OCC, Powergrid informed that they will install the new SEMs by 2nd week of June 2018.

Powergrid may update.

Item no. C.21: Meter related issues

1. **Replacement of SEM meters/time drift correction of SEMs installed in 400kV Derang-Phoolpada(PG) D/C line.**

JITPL vide letter dated 5th February 2018 informed that there was time drift in SEMs installed in 400kV Derang-Phoolpada(PG) D/C line.

JITPL requested to resolve the long pending issue for which they are incurring loss in billing and DSM.

In 143rdOCC, Powergrid informed that SEM at one end has been replaced, the other end would be replaced after receiving the SEMs.

ERLDC, JITPL and PGCIL may update.

2. **Less recording by BidhanagarWBSETCL end meter**

Meter No NP-6485-A installed at Bidhanagar end of 220 Waria (DVC) Line-2 is recording almost negligible data compared to Waria end meter since 11:15 Hrs of 16.03.2018. Subsequently ERLDC vide mail dated 28.03.18 and 03.04.18 (with a copy to PGCIL) requested WBSETCL to check CT/PT connection and Value measuredbythe said meter. However the problem is still persisting and WBSETCL energy accounting is done with Waria DVC end meter.

In 144th OCC, WBSETCL was advised to resolve the issues at the earliest.

In 145th OCC, it was informed that the issue would be resolved by 23rd June 2018.

WBSETCL/PGCIL may please further update.

3. **High error between Main and Check Energy Meters of 220kV CB Feeder No.II at Birpara end.**

The difference between main and check energy of 220kV ChhukhaBirpara Feeder II at Birpara end is showing high error of 1.08% and 1.00% for February and March 2018 respectively. The error is more than the allowable limit of 0.6%.

The Check Energy Meter which belong to Bhutan has been tested during January, 2018 and found to be within permissible limit. The main energy meter at Birpara end for 220kV CB Feeder No. II & III pertaining to PTC/POWERGRID was replaced with Genus make energy meter on April 20, 2017.

Therefore, PTC/POWERGRID is requested to test the Main Energy Meter at Birpara end.

In 144th OCC, Powergrid informed the meters have been tested and matched with other end meters.

Bhutan representative was requested to hand over all the relevant data to ERLDC for thorough scrutiny. The result of the scrutiny would be placed by ERLDC in the next OCC meeting.

In 145th OCC, ERLDC has placed the difference in SEM data between Main and Check Meters. Details are enclosed at ***Annexure-C21.***

ERLDC may update.

4. High error between Main and Check Energy Meters of 400kV Malbase – Siliguri Feeder – III (Siliguri end)

The percentage error observed for Main Energy Meter of 400kV Siliguri-Malbase Feeder – III(Siliguri end) is beyond permissible limit for the Month of February & March 2018. As per Power Purchase Agreement (PPA) the percentage error should not exceed 0.6%. The Check Energy Meter which belong to Bhutan has been tested on 19th January, 2018 and found to be within permissible limit.

Therefore, PTC/POWERGRID is requested to test the Main Energy Meter at Siliguri End.

In 144th OCC, Powergrid informed the meters have been tested and matched with other end meters.

It was informed that ERLDC would study and place the outcome in next OCC Meeting.

In 145th OCC, ERLDC has placed the difference in SEM data between Main and Check Meters. Details are enclosed at ***Annexure-C21.***

ERLDC may update.

Item no. C.22: Mock Black start exercises in Eastern Region – ERLDC

Tentative Schedule for mock black start exercise for FY 2018-19 is given below:

Sl no	Name of Hydro Station	Schedule	Tentative Date	Schedule	Tentative Date
		Test-I		Test-II	
1	U.Kolab	Last week of May, 2018		Last Week of January2019	
2	Maithon	1stweek of June 2018		1stWeek of February2019	
3	Rengali	2ndweek of June 2018		Last week of November 2018	
4	U. Indarvati	3rdweek ofJune 2018		2ndweek of February2019	
5	Subarnarekha	1stweek of October 2018		1stweek of January2019	

6	Balimela	3rdweek of October 2018		1stweek of March 2019	
7	Teesta-V	2ndweek of Nov 2018	Done on 3rd May 2018	Last week of February2019	
8	Chuzachen	Last Week of May2018	In May 2018	2nd week of January2019	
9	Burla	Last Week of June 2018		Last week of February2019	
10	TLDP-III	1st Week of June 2018	After Monsoon	2ndWeek of January2019	
11	TLDP-IV	Last Week of June 2018	After Monsoon	1st Week of February2019	
12	Teesta-III	Last week of Oct 2018		First Week of March 2019	
13	Jorthang	First Week of May 2018		First Week of Feb 2019	
14	Tasheding	2nd Week of May 2018		2nd Week of Feb 2019	
15	Dikchu	3rd Week of May 2018		3rd Week of Feb 2019	

Members may update.

Item no. C.23: Schedule for reactive capability tests

In last OCC, Members updated the status and informed the schedule as follows:

- AdhunikTPS(both units) – Unit #1 done on 27.10.2016 and submitted the testing report of unit #1. Unit #2 would be in service from April 2018.
- JITPL(both units) – done testing of unit#1 and agreed to send the report. After the emergent inspection of OEM(BHEL). Unit #2 testing would be done in June 2018
- Barh TPS – Vibration problems will be attended during overhauling. The testing would be done after overhauling in December 2019.
- Raghunathpur – Next week
- GMR (Three units) – *Reactive Capability test for Unit 1 & 2 was done on 18th May 2018.*

Members may update.

Item no. C.24: Installation of PMUs in Eastern Region under URTDSM project

LOA for installation of PMUs in Eastern Region under URTDSM project was awarded to M/s Alstom on 15th January 2014. The contract has to be completed in all respect within 24 months from the award. The status of implementation may be informed since PMU data is very much important to real time shift operator for analyzing the security of the grid. The updated status as furnished in 142ndOCC by Powergridis given at **Annexure-C.24**.

POWERGRID informed that air-conditioning and lighting arrangement in PDC control room at SLDC-Howrah was not yet provided by WBSETCL for PDC installation. The requirement of air-conditioning and lighting in PDC control room at SLDC-Howrah was intimated to WBSETCL during survey on November-2014 but the same is not yet provided. The matter has also been discussed in 20th SCADA O&M meeting held on 15th December 2018 wherein WBSETCL intimated that the same would be done on priority.

OCC advised WBSETCL to provide the air-conditioning and lighting in PDC control room at SLDC-Howrah at the earliest.

Regarding Patratu, it was decided that NTPC and JUSNL would sit together and sort out the issue by March, 2018.

In 143rd OCC, WBSETCL informed that the air-conditioning and lighting in PDC control room at SLDC-Howrah by July 2018.

Regarding Patratu, NTPC and JUSNL informed that they would settle the issues in April, 2018.

POWERGRID may update the status.

Item no. C.25: Flexible Operation of thermal power stations- Identification of pilot projects--CEA

Central Electricity Authority vide letter dated 16th February 2018 informed that a special Task Force was constituted under IGEF Sub-Group-I for enhancing the flexible operation of existing coal-fired power plants. The committee has recommendd for implementation of measures for 50%, 40% and 25% minimum load in thermal power stations. The measures for 50% minimum load operation requires no investment or minimal investment. (Report is available on CEA website under TRM division)

Subsequently, a meeting was held under the chairmanship of Member (Thermal) on 8th February 2018 where in it was decided that 55% minimum load operation would be implemented nationwide in first phase. Furher, Six units, including two units of NTPC and one unit each from DVC, GSECL, APGENCO, MSPGCL, would be taken up for 55% minimum load operation on pilot basis as 55% minimum load operation in line with the CERC notification dated 6th April 2016 and 5th May 2017 (IEGC 4th Amendment).

In 142nd OCC, NTPC informed all the units of NTPC were capable of 55% minimum load operation. DVC informed that they were planning to implement at DSTPS.

In 37th TCC, DVC informed that they would demonstrate the capability of 55% minimum load operation for one unit of DSTPS by March 2018.

In 144th OCC, DVC informed that an exercise to test 55% minimum load operationhad been conducted at DSTPS recently. The details of the test results, as and when received,would be shared with OCC members.

DVC may update.

Item no. C.26: Installation of new PWC made STOA software at ERLDC

ERLDC is in the process of installation of new STOA software developed by PWC.The new software is likely to be operationalised from 01.06.2018.A training programme will be arranged on the functioning of new STOA softwareon 24thMay,2018 at ERLDC.

The training program was held at ERPC Conference Hall on 24th May 2018.

Members may note.

Item no. C.27: Operationalizing black start facility at Purulia Pump Storage Project (PPSP) of WBSEDCL--ERLDC

The issue was discussed in last several OCC meetings. However, till date, no fruitful conclusion has arrived. As orders for operationalization of black start facility at PPSP is already passed by honorable CERC and APTEL. Thus, under this condition, only two choices remain, that is either to perform mock black start test or to obtain an exemption from CERC/APTEL, a state in between these two, (unfortunately which is the present scenario) is not acceptable.

WBSEDCL may update.

Item no. C.28: Segregation of ISGS station wise Bundle Coal power & Non Bundle coal power in ERLDC schedule to maintain proper merit order dispatch.

As per present practice of ISGS scheduling, both Bundle (Coal) & Non Bundle power in respect of any beneficiary are scheduled in clubbed manner. But as a matter of fact the Bundle (Coal) power is costlier than non bundle power of same ISGS station due to additional trading margin @7paisa per unit payable to NVVNL as Nodal Agency of JNSM Bundle power scheme. So due to this prevailing practice proper merit order dispatch is not being maintained during Backing down & URS allocation. Hence, head wise segregation of ISGS schedule is required to explore immediately with a view to honour the spirit of merit order dispatch principle in compliance with National Tariff Policy.

In 144th OCC, Member Secretary, ERPC suggested that ERPC in co-ordination with ERLDC and WBSEDCL would study the issue and revert back to OCC.

Subsequently, a meeting was held at ERPC among ERPC, ERLDC and WBSEDCL. Different aspects of segregation are being studied. Once the methodology is finalised, the same would be put in the OCC meeting**.**

Members may note.

Item no. C.29: Issuance of TOC for DSTPS-RTPS OPGW link by DVC

In 19th SCADA O & M meeting held on 7th April 2017 at ERLDC, Kolkata, POWERGRID had informed that they were not able to complete the OPGW work in DSTPS – RTPS in DVC Sector under Microwave Replacement Package due to severe ROW issue. POWERGRID further informed that they had mobilized the team several times but work could not be completed due to heavy ROW / compensation issues related to TL construction resulting non-completion of 2 nos. OPGW drum (approx. 9 Km) out of total 69.182 Km. POWERGRID again informed that this issue was discussed in various forums but the solution could not be provided by DVC. DVC informed that they are not able to resolve the issue as this was an old ROW / compensation issue related to TL construction. OPGW work in this link could not be completed due to ROW/Compensation issues since September-2013.

In 36th ERPC meeting, matter was deliberated and DVC informed that they would try to resolve ROW issues by 31st October-2017. Otherwise they would provide the necessary certificate.

In 20th SCADA O&M meeting held on 15th December-2017, POWERGRID informed that DVC had not yet issued TOC for this link. DVC confirmed that they will issue TOC and request for a letter from POWERGRID. POWERGRID issued the request letter on 20.12.2017. However, ToC is yet to be issued by DVC.

In 37th TCC, DVC informed that the ROW issue would likely to be resolved after the Panchayat Election of West Bengal.

DVC may update.

Item no. C.30: Bus Splitting of Kahalgaon STPS Stage I&II, NTPC

In 24th ERPC meeting held on 27.04.2013, ERPC advised NTPC to go ahead with the bus-splitting scheme as it is a technical requirement for safe, secure operation of the grid.

In 32nd TCC, NTPC informed that they are going ahead with the implementation of Bus Splitting of Kahalgaon STPS Stage I&II and the implementation is expected to be completed by December, 2018.

In 126th OCC, NTPC has given the present status as follows:

- 400/132kV Switchyard package - bid opened on 14.03.16. Awarded on 04.05.2016.
- Site levelling – Site levelling work has been completed.
- Transformer package and Shunt reactor– have been awarded.

In 35th TCC, NTPC informed that the work is in progress as per the schedule and the bus splitting will be completed by December, 2018.

In 140th OCC, NTPC informed that Bus reactor is at site and Banka line I & II would be shifted by March 2018. Bus splitting would be implemented by December, 2018.

NTPC may update.

Item no. C.31: Status of commissioning of new bus reactors in ER

In 37th TCC, Powergrid informed that

1	Additional bus-reactor of 125 MVAR capacity at Beharampur.	*Commissioning expected by April'18.*
2.	125 MVAR Bus reactor of Subashgram	*LOA placed.*

Powergrid vide mail dated 8 June 2018 informed that advancement of commissioning of Bus Reactor at Baripada, Bolangir and Keonjhar as per the following against investment approval schedule of Nov'18:

Sl No	Substation	Name of element	Expected Date of commissioning
1	Baripada	125MVAR Bus Reactor	30.07.2018
2	Bolangir	125MVAR Bus Reactor	30.08.2018
3	Keonjhar	125MVAR Bus Reactor	30.09.2018

Powergrid may update.

Item no. C.32: Methodology for Submitting the Status of New Transmission Elements/ Generating Units to be Commissioned within the State

The above matter was deliberated in various OCC meetings and data submission format was also circulated. All states and transmission licensees agreed to submit the list of transmissions elements synchronized for the first time during last month within 7th day of the current month to ERLDC through mail:

- *erldcam@gmail.com*
- *ftcer@posoco.in*
- *mserpc-power@nic.in*

For the Month of May-2018, Odisha and West Bengal only submit list of transmissions elements synchronized for the first time during last month. Other states and transmission licensees did not submit both List of Transmission element and generators synchronised in the previous Month and List of Transmission element and generators expected to be synchronised during next Month.

Members may please note.

Item no. C.33: Augmentation of 400/220kV ICT capacity at Patna, Sasaram

S. No.	Name of the Substation		Status
1	Patna	Argumentation of 315 MVA ICT with 500 MVA ICT	The 2nd 500 MVA ICT was installed in place of 3rd ICT.
		New 500 MVA 3rd ICT	
2	Sasaram	Argumentation of 315 MVA ICT with 500 MVA ICT	will be done in 1stquarter of 2018-19.

Powergrid informed that the shutdown of 315MVA ICT-2 of Patna was approved from 01.06.2018 to 30.06.2018 oncontinuous basis in 145thOCC of ERPC for augmentation work. After S/D of 315MVA ICT-2 at Patna,two nos. 500 MVA ICTs will remain in service and demand can be met accordingly. As the newtransformer along with all accessories will be available at Patna by 20.06.2018, the shutdown of315MVA ICT-2 of Patna may kindly be allowed from 01.07.2018 to 30.07.2018 on continuousbasis.

The shutdown of 315MVA ICT-2 of Pusauli SS was approved from 04.06.2018 to 09.07.2018 on continuous basis in 145thOCC of ERPC for augmentation work, but t he same has not been allowedby BSPHCL due to load constraints. After S/D of 315MVA ICT-2 at Pusauli, one no. 500 MVA ICT willremain in service and demand can be met accordingly. For allowing the shutdown of 315MVA ICT-2 at Pusauli, the load in Pusauli - Sahupuri line is to be restricted to 50 MW and the said shutdown maybe allowedw.e.f. 20.06.2018 to 25.07.2018. Load restriction through load in Pusauli - Sahupuri line may discussed with NR.

Members may approve.

PART D:: OPERATIONAL PLANNING

Item no. D.1: Anticipated power supply position duringJuly'18

The abstract of peak demand (MW) vis-à-vis availability and energy requirement vis-à-vis availability (MU) for the month ofJuly'18 were prepared by ERPC Secretariat on the basis ofProvisional LGBR for 2015-16 and feedback of constituents, keeping in view that the units are available for generation and expected load growth etc. isat **Annexure-D.1**.

Members may confirm.

Item no. D.2: Shutdown proposal of transmission lines and generating units for the month of June'18

Members may finalize the Shutdown proposals of transmission lines andgenerating stations for the month of June 18.

Shutdown proposals of generating stations:

System	Station	Unit	Size (MW)	Period		No. of Days	Reason
				From	To		
Bihar	MTPS (KBUNL)	1	110	15.07.18	05.08.18	22	Boiler Overhauling
Jharkhand	TVNL, Tenughat	1	210	05.07.18	30.07.18	26	Overhauling
WBPDCL	Kolaghat TPS	2	210	01.07.18	28.02.19	243	R&M
	Bakreswar TPS	2	210	03.07.18	01.08.18	30	Boiler Overhauling
	Sagarighi TPS	2	300	01.07.18	09.08.18	40	Capital Overhauling
DPL	DPPS	7	300	01.07.18	14.08.18	45	BTG OH
NTPC	FSTPP	2	200	10.07.18	03.08.18	25	Boiler, LPT
NTPC	KhSTPP	3	210	01.07.18	25.07.18	25	Boiler Overhauling
IPP	GMR	1	350	01.07.18	24.07.18	24	Annual Boiler Overhauling

ERLDC may place the list transmission line shutdown. Members may confirm.

1. Delay of synchronization Unit-4 after Overhauling.

After opening of LP turbine, unprecedented problem observed and for that LP Turbine Rotor was replaced. Details are enclosed at **Annexure-D2.1**.

Members may note.

2. Rescheduling of Talcher STPS unit 2 overhauling–NTPC

NTPC vide letter dated 27th March 2018 informed that overhauling of Talcher STPS unit 2 was initially scheduled from **10th November 2018 for 30 days** as per LGBR.

Subsequently considering the past experience of power demand in festive season of ER during October and November, NTPC requested to prepone the shutdown to **15th July 2018 to 13th August 2018** for 30 days. During this period there will be increased hydro generation and hence less demand in the Grid.

In 144th OCC, Members did not agree with the NTPC proposal regarding rescheduling of Unit-2 of Talcher STPS. NTPC was advised to strictly adhere to the schedule given in LGBR unless an emergent situation demands any revision of shut down program.

NTPC vide letter dated 10th May 2018 requested for the rescheduling of Talcher STPS unit 2.

145thOCC has given the provisional clearance for Talcher Unit 2 shutdown from 15thJuly 2018 to 13th August 2018 for 30 days. Shutdown would be approvedsubjected to Grid conditions in June 2018.

Members may approve.

3. Overhauling schedule of MTPS Units of KBUNL

UNIT-4 (195 MW) SD JOB		
START DATE	COMPLETION DATE	DURATION
10.06.2018	22.06.2018	13 DAYS

UNIT-3 (195 MW) O/H		
START DATE	COMPLETION DATE	DURATION
25.06.2018	19.07.2018	25 DAYS

UNIT-1 (110 MW) O/H		
START DATE	COMPLETION DATE	DURATION
01.08.2018	25.08.2018	25 DAYS

Members may approve.

4. Shutdown request by Alipurduar Transmission Limited for construction of 400kV GIS extension at Dharbhanga

Name of Line/Equipment	*Date and Time*	*Remarks*
Shutdown of Bus Reactor BS-2 400kV Sub-station of DMTCL at Darbhanga	From 15/05/2018 to 21/05/2018 on daily basis from 09-00Hrs to 18-00Hrs	For Erection of Gantry Tower 4T1A and 1No Beam.
Shutdown of Main Bus -1 400kV Sub-station of DMTCL at Darbhanga	From 01/06/2018 to 08/06/2018	For Integration of Bus Bar
Shutdown of Main Bus -2 400kV Sub-station of DMTCL at Darbhanga	From 10/06/2018 to 17/06/2018	For Integration of Bus Bar
Shutdown of both Bus Bar (Main Bus - 1 & 2) 400kV Sub-station of DMTCL at Darbhanga	From 16/06/2018 to 17/06/2018	For Bus Bar Protection Panel Integration

ATL may explain. Members may approve.

5. Shutdown for strengthening of 765 kV S/C delta tower in 765 kV Angul-Sundergarh line1&2-Consideration of deemed availability.--Powergrid

POWERGRID Odisha Projects vide letter dated 2nd June 2018 informed that there had been failures of 765kV S/C A-type towers of wind zone-4 in NR-1, NR-3, WR-1, ER-2 and ER-1. Strengthening of the WZ-4 A type delta tower has been developed by Powergrid in consultation with CPRI to prevent tower collapse.

Accordingly, it is required to strengthen 212 nos of 765kV Delta S/c towers in 765kV Angul-Sundergarh line I & II. The erection work is proposed to be taken during June 2018 by availing shutdown.

Powergrid requested for consideration of outages taken for Strengthening of 765KV S/C Delta Towers in 765KV Angul-Sundargarh#1 & 2 as deemed availability.

Members may approve.

Item no. D.3: Prolonged outage of Power System elements in Eastern Region

(i) Thermal Generating units:

S.No	Station	Owner	Unit No	Capacity (MW)	Reason(s)	Outage (Date)
1	KAHALGAON	NTPC	6	500	Overhauling	13-May-18
2	KOLAGHAT	WBPDCL	3	210	POLLUSION CONTROL PROBLEM	23-Feb-17
3	BANDEL	WBPDCL	5	210	UNDER MAINTAINANCE	26-May-18
4	CTPS	DVC	3	130	TURBINE BLADE DAMAGE	30-Jul-17
5	BAKRESHWAR	WBPDCL	5	210	BOILER OVERHAULING	5-Jun-18
6	JITPL	JITPL	1	600	ASH EVACUATION SYSTEM PROBLEM.	20-May-18
7	VEDANTA	GRIDCO	1	600	STATOR PROTECTION	19-May-18
8	VEDANTA	GRIDCO	2	600	PROBLEM IN BOILER	8-Feb-18
9	MEJIA	DVC	6	250	STATOR EARTH FAULT	15-Mar-18
10	SAGARDIGHI	WBPDCL	4	500	TURBINE VIBRATION	5-Apr-18
11	BOKARO A	DVC	1	500	ROTOR EARTH FAULT	6-Jun-18
12	TENUGHAT	JUVNL	1	210	COAL SHORTAGE	21-May-18
13	MEJIA	DVC	2	210	COAL SHORTAGE	30-Apr-18
14	RAGHUNATHPUR	DVC	1	600	COAL SHORTAGE	1-Jun-18
15	RAGHUNATHPUR	DVC	2	600	COAL SHORTAGE	7-Jun-18
16	NABINAGAR	BRBCL	2	250	COAL SHORTAGE	11-Apr-18

(ii) Hydro Generating units:

Sr. No	Generating Station	UNIT NO	CAP(MW)	REASONS FOR OUTAGE	OUTAGE DATE
1	BURLA	5	37.5	R & M WORK	25.10.2016
2	BURLA	6	37.5	R & M WORK	16.10.2015
3	CHIPLIMA	3	24	R & M WORK	15.10.2015
4	BALIMELA	1	60	R & M WORK	05.08.2016
5	BALIMELA	2	60	R & M WORK	20.11.2017
6	BALIMELA	7	75	Governor & Guide vane problem	12.10.2017
7	U.KOLAB	2	80	Repair of MIV & Draft tube gate leakage	28.05.2017

It is therefore seen that about 374 MW hydro capacity in Odisha is under forced outage / R&M and therefore not available for providing the much needed peaking support during peak. SLDC / OHPC may please indicate the capacity expected to be restored by 30/06/18.

(iii) Transmission elements

SL NO	Transmission Element / ICT	Agency	OutageDate	Reasons for Outage
1	220 KV BALIMELA - U' SILERU	OPTCL / APSEB	10.03.18	LINE ANTITHEFT CHARGED FROM UPPER SILERU ON 17-04-18
2	400KV TALA -BINAGURI -I	POWERGRID/BHUTAN	02.03.18	LINE OPENED ON O/V
3	400 KV MOTIHARI-GORAKHPUR -II	POWERGRID	07.04.18	SF6 GAS DUCT LEAKAGE IN MAIN AND TIE BAY ;
4	765 KV GAYA-VARANASI-I	POWERGRID	14.05.18	TOWER BEND AT LOC 368
5	400 KV MPL-MAITHON D/C	POWERGRID	10.05.18	TOWER COLLAPSED AT LOC NO -63/64/65
6	315MVA ICT-1 AT KOLAGHAT	WBSETCL	16.04.18	R PHASE BANK BURSTED
7	400 KV IBEUL - JHARSAGUDAD/C	IBEUL	29.04.18	TOWER COLLAPSE AT LOC 44,45

(Reported as per Clause 5.2(e) of IEGC)

** Transmission licensees whose line were out due to tower collapse/ bend, may please update the detail restoration plan and as on date work progress status in OCC.

Also Monthly progress report to be submitted to ERLDC/ERPC till restoration of the element.

Members may update.

PART E::ITEMS FOR INFORMATION

Item No. E.1: Restricted Governor /Free Governor Mode Operation of generators in ER

CERC vide their letter dated 05-06-2017 desired to know the present status of RGMO/FGMO response of all eligible thermal and hydro units. Accordingly ERLDC vide letter no.ERLDC/SS/FGMO/2017 dated 07-06-17 requested all concerned power stations and SLDCs to provide updated status of FGMO/ RGMO of units under their control.

The latest status of the RGMO/FGMO of ER generators is enclosed in **Annexure-E1**.

Members may note.

Item No. E.2: 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.

In 142nd OCC, ERLDC informed that, in line with Enquiry Committee Recommendation, cyber security audit is being conducted on regular basis for SCADA system installed at ERLDC and SLDC as well but cyber security audit for telecom infrastructure installed in Eastern Region is not being carried out.

OCC advised all the constituents to conduct the cyber security audit on telecom infrastructure installed in Eastern Region. It is further advised that compliance / mitigation of the points observed during the audit should also be completed for improvement of the telecom infrastructure in ER.

In 37th TCC meeting, it was decided that a workshop would be conducted by CEA at ERPC for further benefit of ER Constituents.

In 144th OCC, ERLDC informed that they have already conducted a workshop with the help of NPTI, Durgapur on 21st March 2018.

A workshop on cyber security was conducted by CEA at ERPC, Kolkataon 09-05-2018.

As suggested by CEA, a format would be circulated among ER constituents for furnishing the information of the their respective systems for discussion in OCC Meeting. The format is enclosed at **Annexure-E2**.

OCC advised all the constituents to submit the information to ERPC as per Annexure-E2.

Members may note.

Item No. E.3: Certification through BIS as per IS 18001:2007 to all generating/ transmission units.

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

As per the information received from the constituents the following generators certified with IS 18001:

- All NTPC stations in Eastern Region
- Teesta, NHPC

- All OHPC generating units
- All CESC generating units
- All units of WBPDCL
- DGPC units

Members may note.

Item No. E.4: Status of Disturbance Recorder, Stand alone Event Logger and Time Synchronization equipment.

The status of DR/EL and GPS as updated in previous OCCs is enclosed at **Annexure-E.4**.

Constituents are also requested to furnish their list of new DR/EL which are not included in the list.

TeestaUrja Limited vide letter dated 8th September 2017 informed that Disturbance Recorder, Stand alone Event Logger and Time Synchronization equipments are available at Teesta III HEP.

Members may note.

Item No. E.5: Status of Emergency Restoration System (ERS Towers) for Eastern Region constituents

CEA vide letter dated 21.07.2017 requested to send the status of state-wise availability of ERS towers and requirement of ERS towers.

In 136th OCC, MS, ERPC informed that CEA vide letter dated 21.07.2017 has sought the latest status on ERS. Therefore, OCC advised all constituents to send the updated status to ERPC secretariat vide mail (mserpc-power@nic.in).

Latest status is enclosed at **Annexure- E.5**.

In 138th OCC, WBSETCL informed that they are having total 10 ERS towers, 5 at Arambagh and 5 at Gokharno.

In 139th OCC, JUSNL informed that they are having eight 220/132kV ERS towers at following locations:

- Hatia – 3 nos
- Ranchi – 2 nos
- Dumka – 3 nos

Members may note.

Item No. E.6: Status of 1st Third Party Protection Audit:

The compliance status of 1st Third Party Protection Audit observations is as follows:

Name of Constituents	Total Observations	Complied	% of Compliance
Powergrid	54	46	85.19
NTPC	16	14	87.50
NHPC	1	1	100.00
DVC	40	26	65.00
WB	68	49	72.06
Odisha	59	42	71.19

JUSNL	34	25	73.53
BSPTCL	16	5	31.25
IPP (GMR, Sterlite and MPL)	5	5	100.00

** Pending observations of Powergridare related to PLCC problems at other end.*

The substation wise status of compliance are available at ERPC website (Observations include PLCC rectification/activation which needs a comprehensive plan).

In 118th OCC, all the constituents were advised to comply the pending observations at the earliest. All the STUs informed that most of the observations are related to funding from PSDF. DPRs have been submitted to PSDF committee.

Members may comply.

Item No. E.7: Non-Payment of dues to Powergrid—PowergridOdisha

A. **JITPL**: Rs. 1.1 Crore from M/s JITPL (Rs. 0.53 Crore towards bay maintenance + Rs. 0.57 Crore towards interest charges)
B. **Ind-BharathEnergy(Utkal) Ltd (IBEUL):** Rs.1.19Crore is due from M/s Ind-Bharath (Utkal) Energy Limited towards Bay maintenance and Interest charges.
C. **Monnet Power Corporation Ltd:**Rs0.923crore is due from M/s Monnet Power Corporation Ltd.
D. **GMR KAMALANGA ENERGY INDIA LIMITED:** Rs 0.239 crore due from M/s GMR towards interest payment.

Members may note and clear the dues.

Item No. E.8: Commissioning of new transmission elements in Eastern Region

The details of new units/transmission elements commissioned in the month of May - 2018 based on information furnished by the constituents are depicted below:

SL NO	Element Name	Owner	Charging Date	Charging Time	Remarks
1	400/132 kV ICT-I at NPGC SS	NPGC	5/4/2018	13:54	
2	220kV Alipurduar(PG)-Alipuduar(WB)-II	WBSETCL	5/22/2018	17:53	Loaded on 06/06/18 at 16:04hrs.
3	315MVA, 400/220/33KV ICT#2 at DSTPS	DVC	5/23/2018	13:37	Idle charged from 400kv Side & 220kV side not constructed yet
4	220kV Darbhanga(DMTCL)-laukhai I	BSPTCL	5/23/2018	18:42	
5	220kV Darbhanga(DMTCL)-Laukahi II	BSPTCL	5/23/2018	18:48	
6	132kV LILO of Dhenkanal-ICCL Line	OPTCL	5/23/2018		Charging Time and LILO point may be updated
7	132/33kV, 2X40 MVA, Khuntuni GIS S/s	OPTCL	5/23/2018		Charging Time may be updated
8	220kV Alipurduar(PG)-Alipuduar(WB)-I	WBSETCL	5/31/2018	15:41	Loaded on 06/06/18 at 16:04hrs.

9	220/132KV 160MVA TR-1 at Alipurduar (WB)	WBSETCL	5/31/2018	17:26Hr.(HV SIDE)	VIA 220kv MB#1
10	220/132KV 160MVA TR-2 at Alipurduar (WB)	WBSETCL	5/31/2018	17:09Hr.(HV SIDE)	VIA 220kv MB#2
11	220 KV BUS COUPLER at Alipurduar (WB)	WBSETCL	5/31/2018	15:54Hr.	
12	132/33kv 31.5MVA TR#3 Chanditala	WBSETCL	04.05.18	14:50Hr	Charged(HV).
13	132/33kv 31.5MVA TR#3 Chanditala	WBSETCL	05.05.18	15:02Hr	Loaded
14	132/33 KV 50MVA TR#3 C K Road	WBSETCL	25/05/2018	19:00Hr	CHARGED(HV).
15	132/33 KV 50MVA TR#3 C K Road	WBSETCL	26/05/018	14:20Hr	LOADED.
16	132KV N.BISNUPUR-INDUS#2 (R.L.-37.858KM)	WBSETCL	30.05.2018	17:05HR.	CHARGED from N.BISH
17	132KV N.BISNUPUR-INDUS#1 (R.L.-37.858KM)	WBSETCL	30.05.18	17:54Hr.(N.BISH)	CHARGED at BOTH END
18	132KV N.BISNUPUR-INDUS#1 (R.L.-37.858KM	WBSETCL	31.05.18	20:02 Hr.(INDUS)	
19	132KV GIS M.B.#1 at INDUS 132/33 kV SS	WBSETCL	31.05.18	20:02HR.	VIA N.BISH-INDUS#1
20	132KV GIS M.B.#2 at INDUS 132/33 kV SS	WBSETCL	31.05.18	20:45 Hr.	VIA 132KV Bus Coupler
21	132/33KV 50MVA TR# 1 at INDUS 132/33 kV SS	WBSETCL	31.05.18	20:38/20:42 Hr.	33KV bus charged
22	132/33KV 50MVA TR#2 at INDUS 132/33 kV SS	WBSETCL	31.05.18	20:50HR.	Both HV & LV

Members may note.

Item No. E.9: Checklist for submission of updated data for Protection Database

The network data in Protection Database needs to be updated on regular basis on account of commissioning of new elements in the CTU as well as STU networks. Accordingly, a checklist has been prepared which is enclosed in **Annexure-E9**.

All the constituents are requested to submit the checklist on monthly bases in every OCC/PCC meetings.

In 139th OCC, all the constituents were advised to submit the data to ERPC vide mail (mserpc-power@nic.in) as per the checklist for last three months.

OCC advised all the constituents to submit the data to ERPC vide mail (mserpc-power@nic.in) as per the checklist for last three months.

Constituents may note and comply.

Item No. E.10: UFR operation during the month of May'18

System frequency touched a maximum of 50.22 Hz at 18:02 Hrs of 12/05/18 and a minimum of 49.56 Hz at 19:49 Hrs of 26/05/18. Hence, no report of operation of UFR has been received from any of the constituents.

Members may note.

Item No. E.11: Grid incidences during the month of May, 2018

Sl No	Date	Time	Affected System	Summary	GD/ GI
1	25-05-2018	16:30	OPTCL	At 16:30 Hrs R ph LA blasted in 220 KV Jaynagar-Laxmipurckt I at Jaynagar which led to remote end tripping of some 220 KV ckts and backup overcurrent/reverse zone clearing of some ckts from Jaynagar end. As a result, 220 KV Jaynagar substation became dead and due to loss in evacuation paths,160 MW in Upper Kolab(unit 1 and 3) and 268 MW in Balimela(Unit 3,4,5,6,7,8) tripped.	GD-I
2	26-05-2018	12:06	BSPTCL	At BODHGAYA GSS, Total power failed after tripping of both 220 KV Gaya(PG)-Bodhgaya ckt-1 and 2 at 12:06 Hrs from Gaya (PG) end.	GD-I
3	28-05-2018	21:41	BSPTCL	220 KV Gaya Bodhgaya d/c tripped from Gaya(PG) end only on 3-Ph Fault, zone III . Actually fault was in 220 KV Bodhgaya-Khizersarai-I line. During anti-theft charging of the said line 220 KV Gaya Bodhgaya d/c tripped from Gaya(PG) end.	GD-I
4	28-05-2018	19:04	WBSETCL & BSPTCL	At 19:04 hrs R-N fault took place in 400 KV Malda-Purnea-2 line and during A/R attempt Bus bar protection operated at Malda 400 KV and all the element tripped. Then Dalkhola B/C tripped in O/C and 220 kV Purnea-Purnea D/C and 220 kV Kishangunj-Dalkhola D/C tripped in DEF leading to wide spread blackout at Malda,Dalkhola and Purnea.	GD-I
5	30-05-2018	18:22	ISTS	220 kV Ranchi - Hatia D/C tripped in R-B fault at 18:22 hrs. At same time 220 kV Hatia - Patratu D/C tripped on overreaching the fault resulting interruption of power at 220/132 kV Hatia S/S and its surrounding areas	GD-I
6	31-05-2018	18:43	ISTS	Total power failure occurred at Daltongunj after tripping of 400 kV Sasaram - Daltongunj D/C at 18:43 hrs on R-N and B-N fault respectively.	GD-I

Members may note.

Item No. E.12: Non-compliance of directions issued by SLDC

Vide clause no 5.5.1.(c)(h) of IEGC, non-compliance of SLDC directions by SEB/Distribution licenses/bulk consumers to curtail overdrawal are 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 has yet received. Hence, ERLDC would be considering 'Nil' report for all constituents for May18.

Members may note.

Item No. E.13: Reporting of voltage deviation indices (VDI) for select S/Stns in ER

ERLDC submitted the Voltage Deviation Index (VDI) of selected 400 kV Sub-stations for May 2018 of Eastern Region which is enclosed at **Annexure- E13**.

Members may note.

Item No. E.14: Additional agenda

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MINUTES OF MEETING HELD AT THE OFFICE OF CHIEF GENERAL MANAGER (O & M) OPTCL, BHUBANESWAR ON 29TH DECEMBER'2014.

Meeting attended by: The list of participants is annexed.

Topic: The Special Protection Scheme for Islanding of IB Thermal Generating Units on system disturbance.

The Chief General Manager (O&M), OPTCL welcomed the participants and opined that the present form of islanding scheme need relook for effective islanding of IB TPS Units. The present islanding scheme at 220/132/33kV Grid Substation Budhipadar was discussed by the participants. The present islanding scheme is adopted as per discussion held on 11th April'2014 at Aditya Aluminum Training Centre, Lapanga, Jharsuguda. As per the arrangement, the Islanding relay is installed in 220kV Bus Coupler Panel. The load & IB TPS lines are distributed evenly so that on bus fault on one bus the Islanding relay will decouple the buses & the IB generation will be diverted to healthy bus .

The representative of IB TPS taking part in the discussion said that in the present scheme, as the IB Units are still connected to the main system, may not survive due to gap in the load & generation in the loop. They suggested arrangement of 220kV Buses is to be made such that on the event of system disturbance, the load in one 220kV Bus becomes radial with IB generation. Hence, on system disturbance the IB Unit can be islanded with the radial loads and synchronized with main system after clearance of disturbance.

After detail deliberations, the Special Protection Scheme for IB TPS islanding at Budhipadar Bus, following decisions were taken.

1. **Arrangement of Load in 220kV Bus of Budhipadar:**

BUS-1: KORBA 1 & 2, IBTPS 1 & 3, BHUSAN 1 & 2, RAIGARH, KATAPALLI 1 & 2, TARKERA 1 & 2, VAL 1 & 2.

BUS-2: IBTPS 2 & 4, AT 1 & 2, SPS, AAL 1 & 2.

2. **Arrangement of Radial Load.**
   - i. BUS-2 (220kV): IBTPS 2 & 4, AT 1 & 2, SPS, AAL 1 & 2.
   - ii. 132kV Bus: Station Load (20MW)+Rajgangpur (80MW)+Brajrajnagar (50MW)+Jharsuguda (35MW)+Sundergarh+MCL+MSP; **Total: 235MW**

3. In the event of system disturbance and Islanding relay operation, command from Islanding relay will trip the following breakers to achieve islanding of IB TPS Units with radial load.

Budhipadar 220Kv Bus: Bus Coupler & IBTPS 1 & 3 connected to Non-islanded Bus.

Budhipadar 132kV Bus : Tarkera & Burla 1 & 2.

Tarkera 132kV Grid Sub-station: Rajgangpur 1 & 2.

4. Provision for disconnection of 132kV Tarkera-Rajgangpur ckts from Tarkera end to make Budhipadar-Rajgangpur 132kV line to feed Rajgangpur load radially is required. The following arrangement need to be made for above.
   The command from Islanding relay is to be transmitted through carrier channel to Tarkera Grid S/S to trip Rajgangpur 1 & 2 Circuit Breaker at Tarkera Grid S/S.
5. GM (Telecom), OPTCL informed that the carrier protection provision between 132kV Budhipadar & Tarkera is to be provided on priority basis.
6. The facility of transmitting signal through OPGW/Carrier link to IB TPS from Islanding relay to ramp the generation to match the load is to be provided.
7. Further, provision of the carrier protection (Permissive & Direct Trip) to all four number 220kV lines between Budhipadar & IB TPS needs to be made for selective tripping of the lines.
8. GM (Telecom) informed that the above provision (Sl. 6 & 7) can be made after laying of OPGW cables between Budhipadar Grid & IBTPS and installation & commissioning of end equipment thereof. OPGC is to ensure necessary co-operation in this regard.

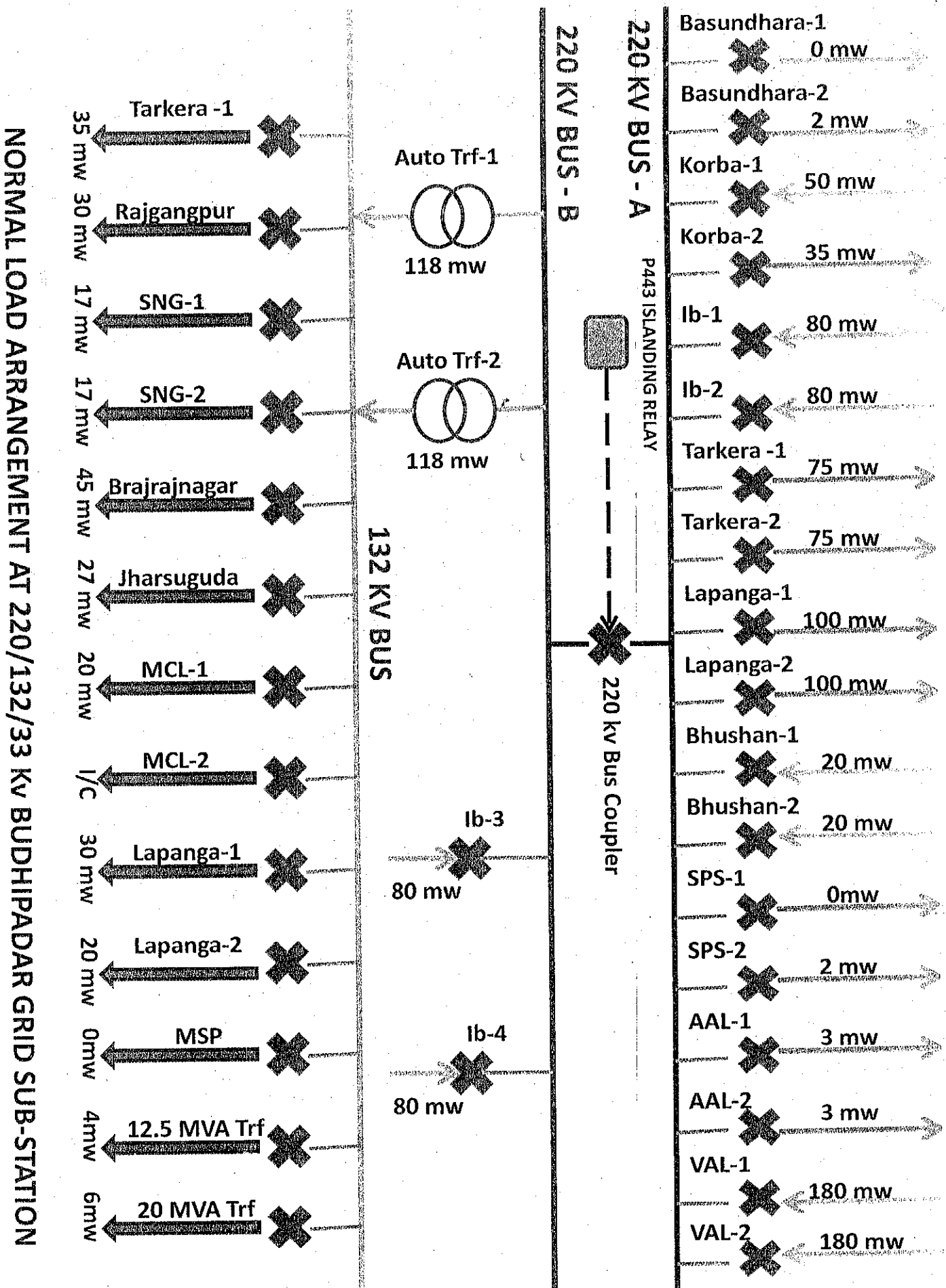
The above scheme can be adopted after installation of Carrier protection Scheme between 132kV Tarkera & Budhipadar, OPGW link & carrier protection (Permissive & DTT) for four number 220kV lines from IBTPS to Budhipadar Substation.

OPTCL/GRIDCO

(CHK. Samantaray)

OPGC

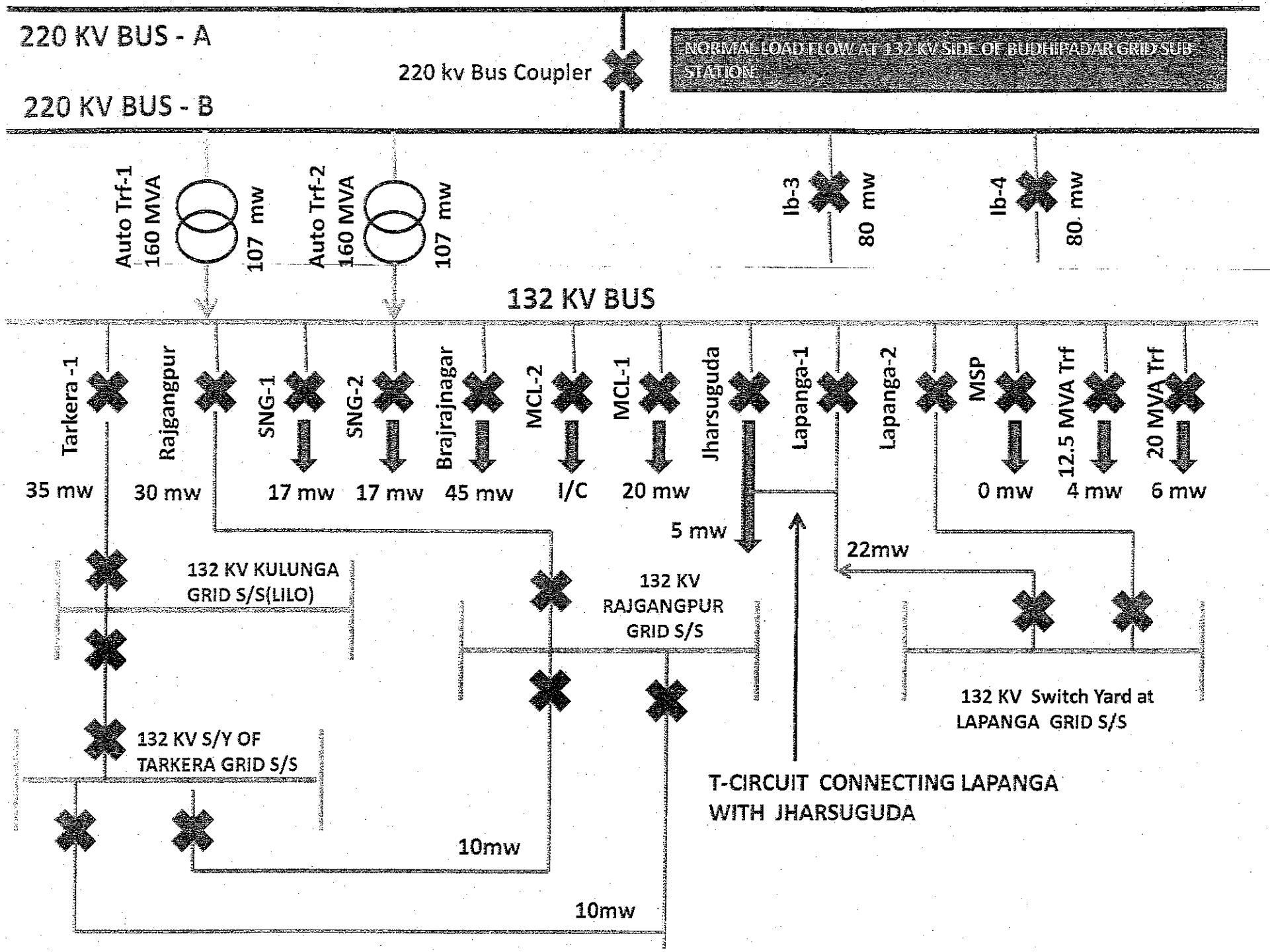
(P K MAHAPATRA)

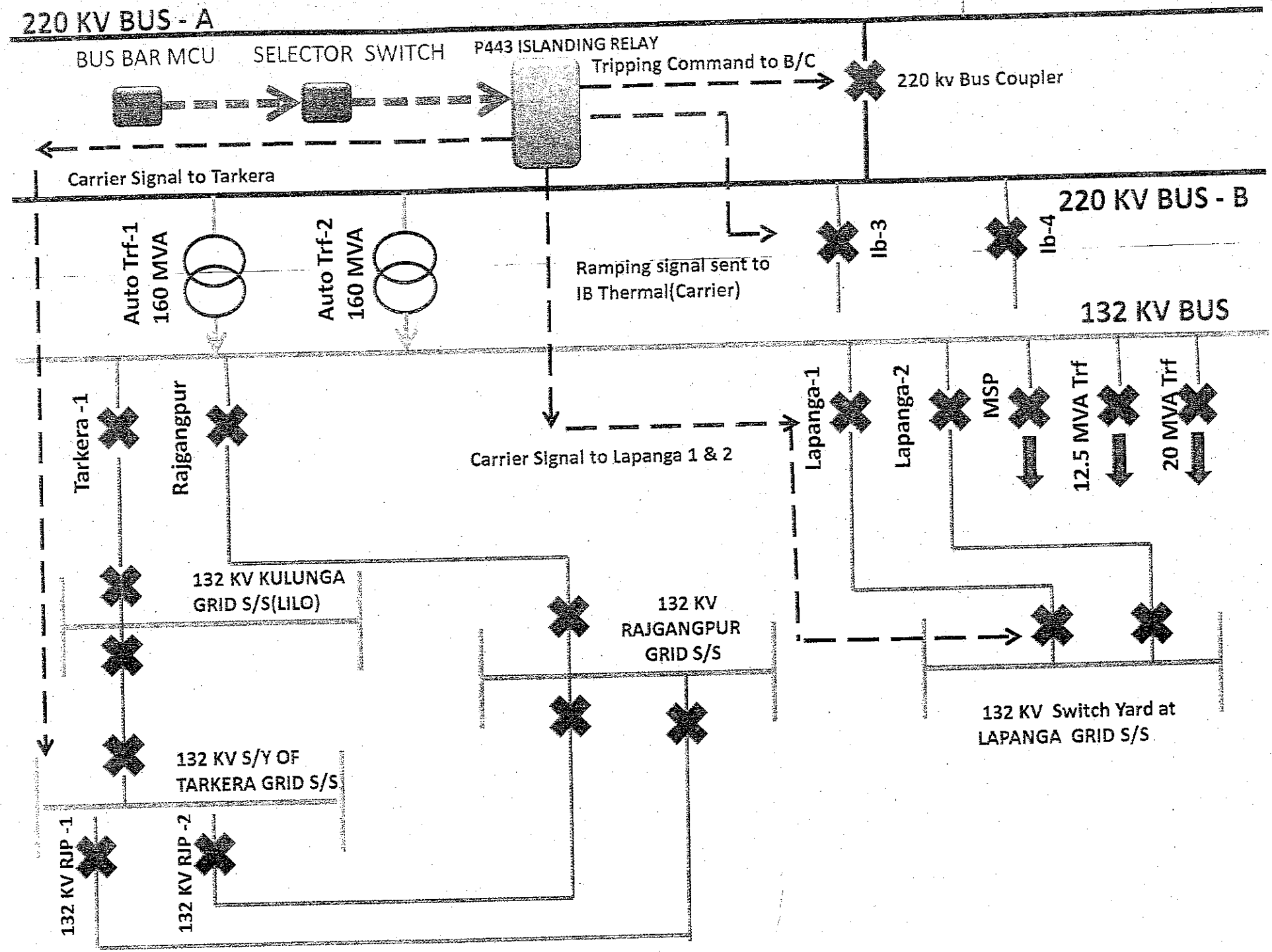

NORMAL LOAD ARRANGEMENT AT 220/132/33 Kv BUDHIPADAR GRID SUB-STATION
220 KV BUS - B
220 KV BUS - A
P443 ISLANDING RELAY
220 kv Bus Coupler
132 KV BUS
Auto Trf-1
118 mw
Auto Trf-2
118 mw
Ib-3
80 mw
Ib-4
80 mw
Tarkera -1
35 mw
Rajgangpur
30 mw
SNG-1
17 mw
SNG-2
17 mw
Brajrajnagar
45 mw
Jharsuguda
27 mw
MCL-1
20 mw
MCL-2
I/C
Lapanga-1
30 mw
Lapanga-2
20 mw
MSP
0mw
12.5 MVA Trf
4mw
20 MVA Trf
6mw
Basundhara-1
0 mw
Basundhara-2
2 mw
Korba-1
50 mw
Korba-2
35 mw
Ib-1
80 mw
Ib-2
80 mw
Tarkera -1
75 mw
Tarkera-2
75 mw
Lapanga-1
100 mw
Lapanga-2
100 mw
Bhushan-1
20 mw
Bhushan-2
20 mw
SPS-1
0mw
SPS-2
2 mw
AAL-1
3 mw
AAL-2
3 mw
VAL-1
180 mw
VAL-2
180 mw

CONDITIONS FOR ISLANDING RELAY

1. DF/DT.
2. >HZ (Over Frequency).
3. <HZ (Under Frequency).
4. Over Voltage.
5. Under Voltage.

Note- 132 /33 Kv Kuchinda Grid S/s will get power from either Rajgangpur or sambalpur


220 KV BUS - A
220 KV BUS - B
220 kv Bus Coupler
NORMAL LOAD FLOW AT 132 KV SIDE OF BUDHIPADAR GRID SUB STATION
Auto Trf-1 160 MVA
107 mw
Auto Trf-2 160 MVA
107 mw
Ib-3
80 mw
Ib-4
80. mw
132 KV BUS
Tarkera -1
35 mw
Rajgangpur
30 mw
SNG-1
17 mw
SNG-2
17 mw
Brajrajnagar
45 mw
MCL-2
I/C
MCL-1
20 mw
Jharsuguda
5 mw
Lapanga-1
Lapanga-2
22mw
MSP
0 mw
12.5 MVA Trf
4 mw
20 MVA Trf
6 mw
132 KV KULUNGA GRID S/S(LILO)
132 KV RAJGANGPUR GRID S/S
132 KV S/Y OF TARKERA GRID S/S
10mw
10mw
132 KV Switch Yard at LAPANGA GRID S/S
T-CIRCUIT CONNECTING LAPANGA WITH JHARSUGUDA


220 KV BUS - A
BUS BAR MCU
SELECTOR SWITCH
P443 ISLANDING RELAY
Tripping Command to B/C
220 kv Bus Coupler
Carrier Signal to Tarkera
220 KV BUS - B
Auto Trf-1 160 MVA
Auto Trf-2 160 MVA
Ramping signal sent to IB Thermal(Carrier)
Ib-3
Ib-4
132 KV BUS
Tarkera -1
Rajgangpur
Carrier Signal to Lapanga 1 & 2
Lapanga-1
Lapanga-2
MSP
12.5 MVA Trf
20 MVA Trf
132 KV KULUNGA GRID S/S(LILO)
132 KV RAJGANGPUR GRID S/S
132 KV Switch Yard at LAPANGA GRID S/S
132 KV S/Y OF TARKERA GRID S/S
132 KV RJP -1
132 KV RJP -2

Annexure-I

Annexure-B3.2

OUTLINE FOR ISLANDING SCHEME OF KANTI TPS

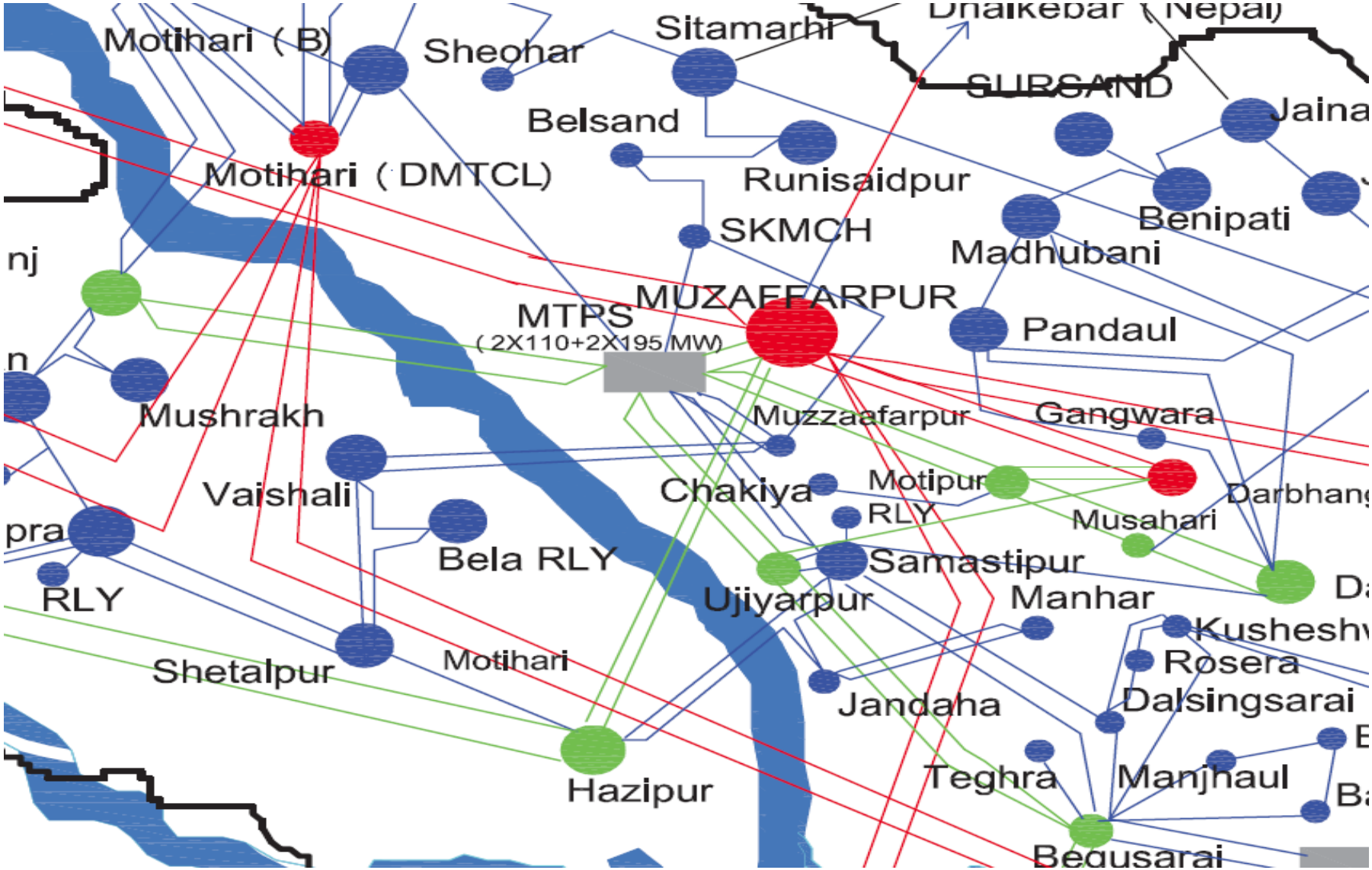
May 2018

ERLDC, POSOCO

Introduction

- Kanti TPS has installed capacity of 610 MW (Stg-I: 2 x 110 MW + Stg-2: 2 x 195 MW) located near to load centres in north Bihar
- At present there is no islanding scheme in Bihar system
- In 142nd OCC meeting it was decided to explore the possibility of implementing a power station islanding scheme for Kanti TPS

Network around MTPS (Kanti)



Lines normally kept open

- Following lines are normally kept open during normal operation
  - 132 kV Motihari-MTPS S/C
  - 132 kV Muzzafarpur-SKMCH S/C
  - 132 kV Sitamarhi-Runisaidpur S/C
  - 132 kV Shetalpur-Chapra D/C
  - 132 kV Shetalpur-Hazipur S/C

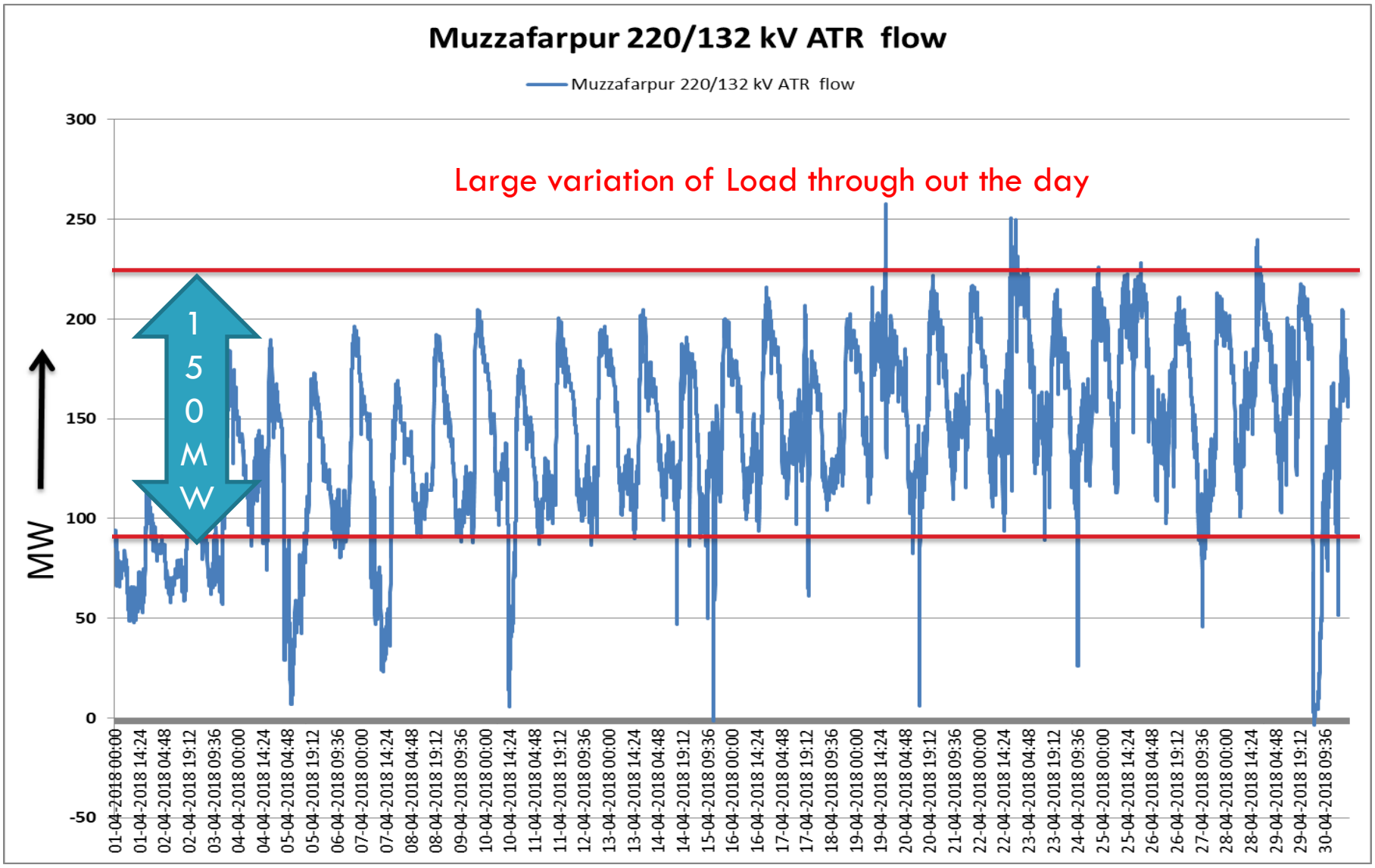
*BSPTCL may please confirm the above

Nearby substations and their loads

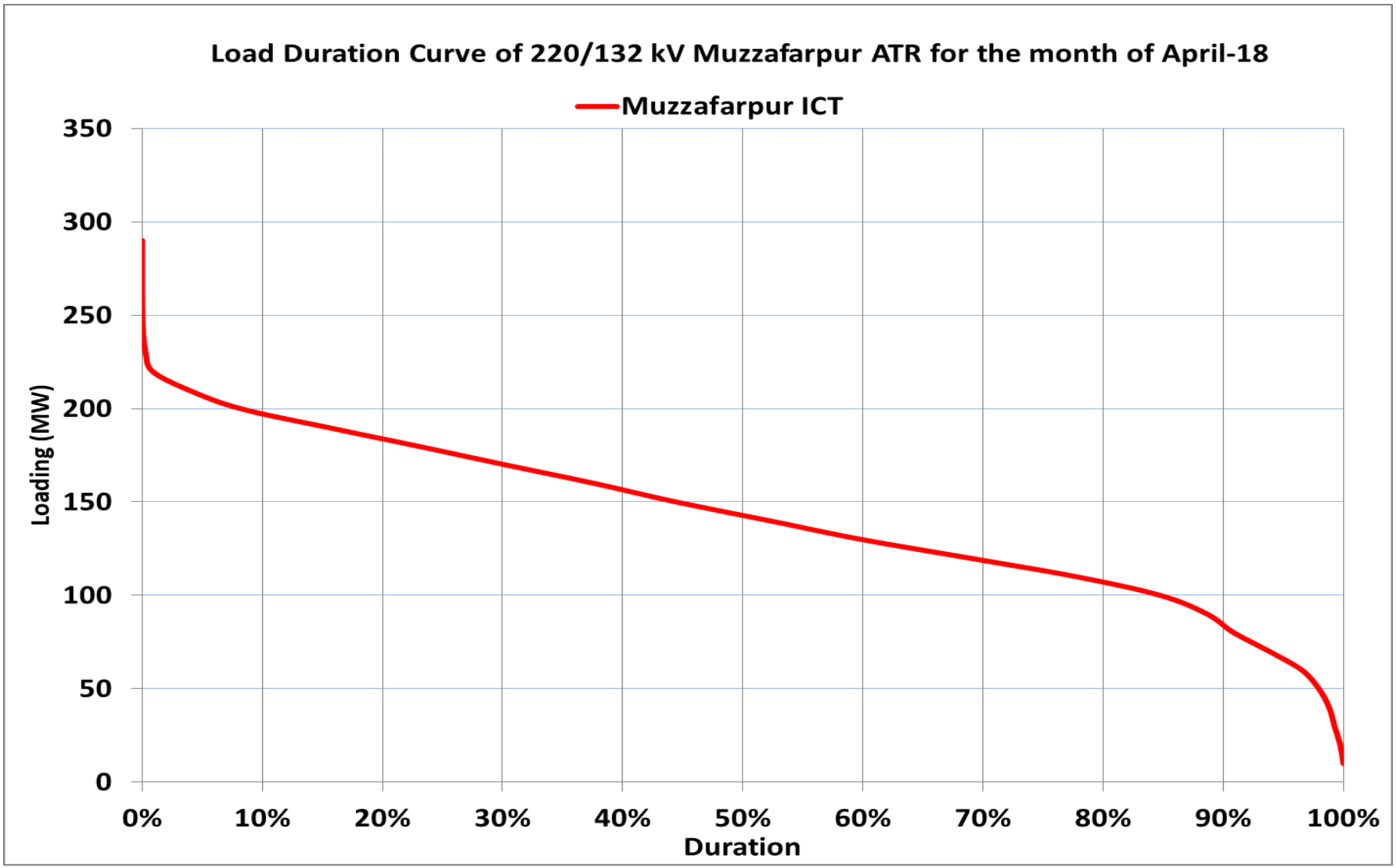
Sl Number	Name of Substation	Peak load	Off Peak Load
1	Kanti TPS	25(Plant load)	25(Plant Load)
2	Muzaffarpur	70	45
3	Vaishali	49	25
4	Shetalpur	25	15
5	SKMCH	57	45
6	Belsand	15	10
7	Runisaidpur	20	12
	Total	261	177

*BSPTCL may please confirm the above load quantum

Flow through 220/132 kV ATRs of MTPS for April-18



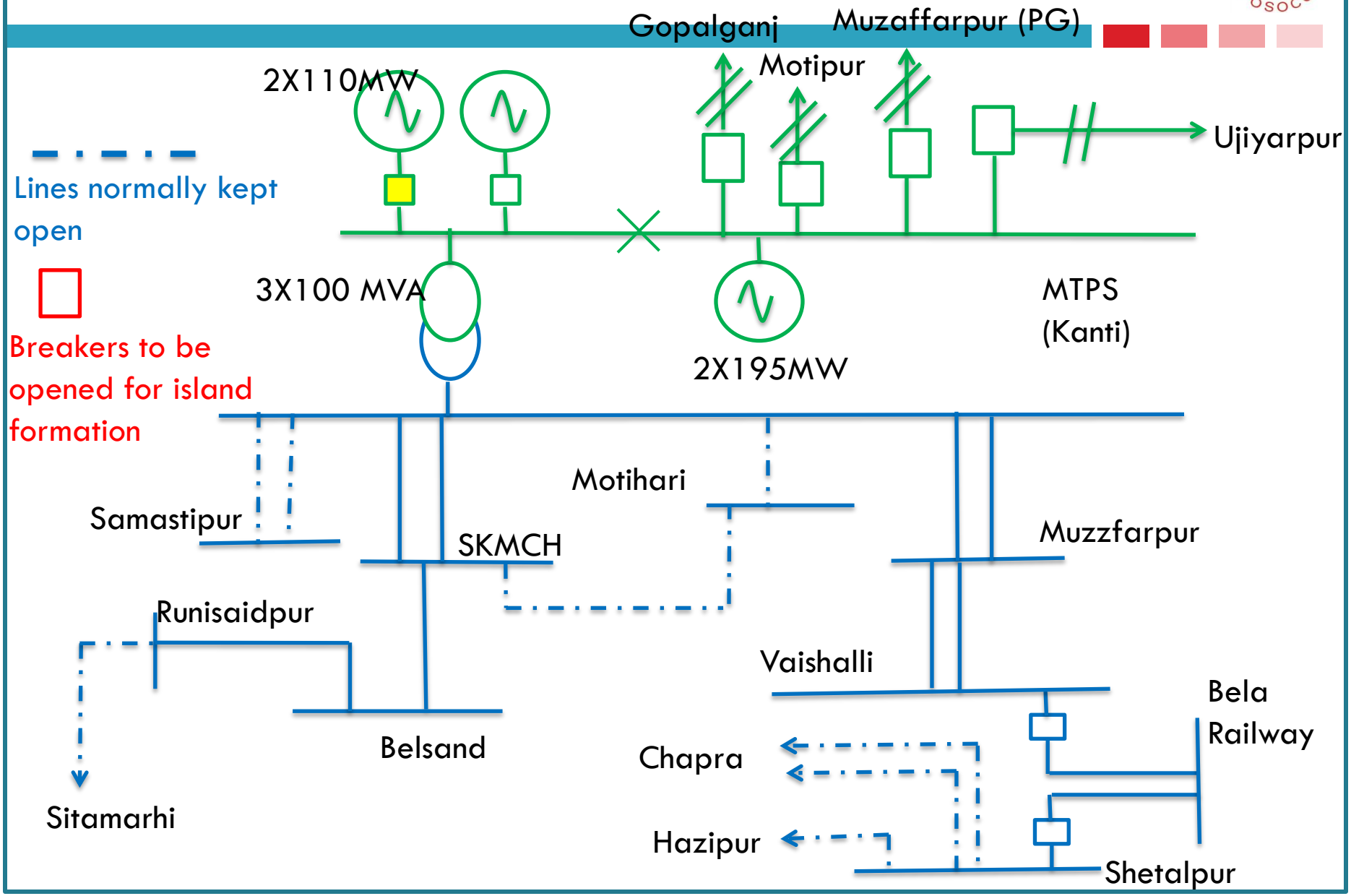
Load duration curve of 220/132 kV ATRs at MTPS for April 2018



Logic for formation of island

- If summation of power flow through 220/132 kV ATRs at MTPS is
  - Greater than 200 MW
    - Select both 195 MW units of KBUNL-2 for Islanding
    - In case one unit is out(planned or forced outage) select one 195 MW unit and one 110 MW unit(KBUNL-1) for islanding
  - In between 110 MW and 200 MW
    - Select one 195 MW unit of KBUNL-2 for Islanding
  - Is below 110 MW
    - Select one 110 MW unit of KBUNL-1 for Islanding

Formation of island (cont.....)



Formation of island

- Once the frequency falls to say 48.2 Hz the PLC at MTPS should give signal to appropriate C.Bs to open following lines to form an island with above loads, after 500 ms delay.
  - At 220 kV MTPS
    - 220 kV Muzaffarpur(PG)-MTPS D/C
    - 220 kV Ujiyarpur-MTPS D/C
    - 220 kV Gopalganj-MTPS D/C
    - 220kV Motipur-MTPS D/C
    - Units of KBUNL-1 and/or KBUNL-2 depending upon logic
  - At 132 kV Vaishali
    - 132 kV Vaishali-Bela Railways S/C
  - At 132 kV Shetalpur
    - 132 kV Vaishali-Bela Railways S/C
- Further PLC will continuously monitor both 195 MW and 110 MW units of Kanti and depending upon parameter of unit (i.e. Steam temp, pressure etc.) it will select the Suitable one for islanding

Load-generation balancing

- Islanding will trigger PMS (Power Management System). Post Islanding Power & Load will be calculated.
- If the mismatch between load and generation of one of the 195 MW units is within (±5%) then the other unit would be tripped. However if the mismatch is within (±5%) of the total generation, then both units would be kept on bar.
- If frequency of the island shoots above 51.0 Hz, then HP-LP steam bypass is to be activated from PMS via DCS.
- Immediately after the islanding, governor operation of the unit(s) of Stg-2 should change from load control to frequency control mode
- If frequency falls below 48.0 Hz, further load shedding within the island has to be carried out by tripping appropriate 33/11 kV feeders (say at 47.9 Hz). Since the power number of formed island will be very low a very precise load generation matching technique is needed

Some Typical numbers/facts

- U#3 CMC mode operation in practice.
- U#4 CMC mode operation to be commissioned.
- Droop characteristic setting for EHTC mode operation is 5%.
- Switchyard SLD attached. 220 kV Bus sectionalizer bay to be erected. Switchyard package for balance of work is under award stage. 220 kV Darbhanga & Begusarai lines only one circuit in service.
- Critical minimum limit to run the unit is 55% of 195 MW, i.e. 107 MW
- Maximum overload capacity on continuous operation is 105% of 195 MW, i.e. 204.75 MW.
- Maximum & minimum ramp up rate is 1 MW/ min.
- Maximum frequency for stable operation of unit < 52.5 Hz, full load rejection at 52.5 Hz.
- Minimum frequency for stable operation of unit is > 47.5 Hz, full load rejection at 47.5 Hz.
- Total auxiliary load during islanding is 25 MW.

Issue of concern

- Large variation of flow through 220/132 kV ATRs at MTPS
- Due to large variation of load and uncertainty of availability of units the 110 MW units of KBUNL may also need to be considered for formation of Island and thus its healthiness is also need to be ensured
- Healthiness of turbine governing system of the units
- Availability of dedicated communication /PLCC in 132 kV lines for formation of island or in the extreme case of absence of same, tripping of requisite CBs using UFR
- Loads selected for power station islanding should not overlap with those under normal UFLS scheme
- Due to small size of island, its power number is expected to be very low (6-10 MW/Hz) so precise load shedding at 33/11 kV is required.

Instances satisfying ADMS logic for DVC (12 % or 150 MW Deviation)

Time	Freq	DVC Schedule	DVC Actual	Deviation
09-05-2018 21:06	49.70	-1968.0	-1661.6	306.4
10-05-2018 15:24	49.67	-2324.7	-2154.2	170.5
10-05-2018 15:26	49.69	-2324.7	-2158.3	166.3

Instances satisfying ADMS logic for West Bengal (12 % or 150 MW Deviation)

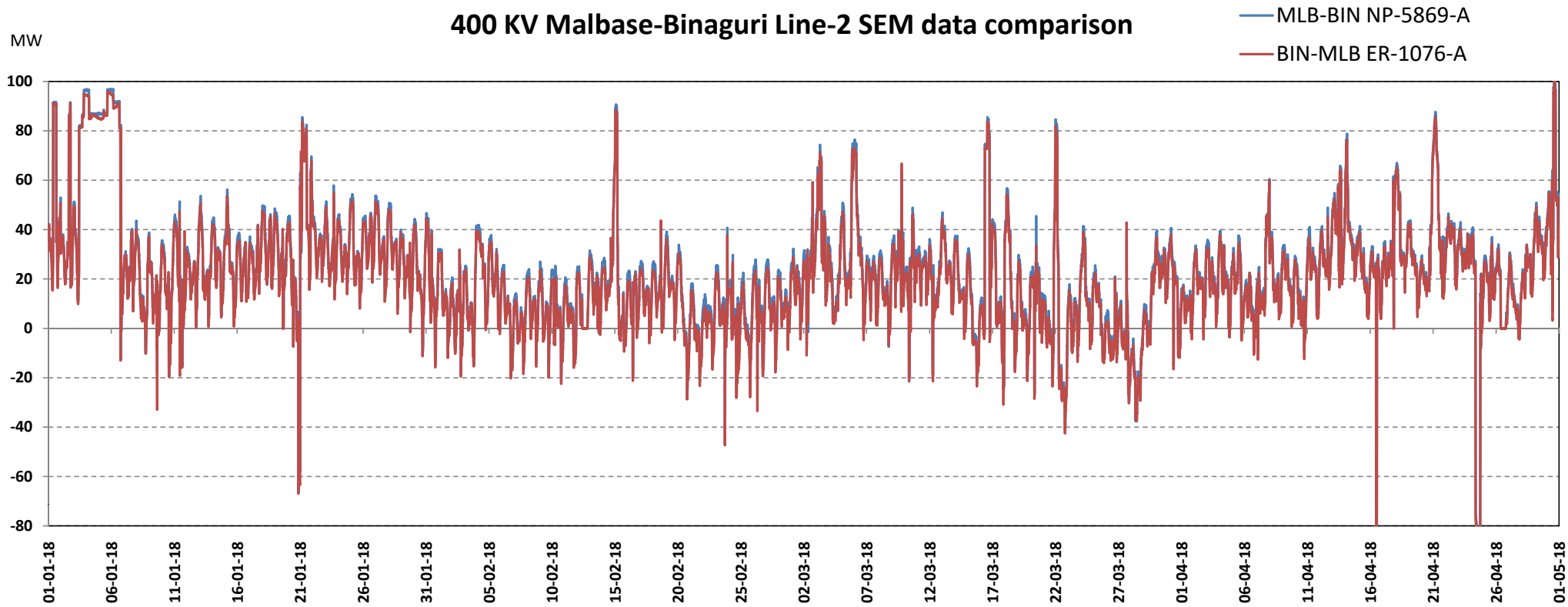
Time	Freq	WB Schedule	WB Actual	Deviation
05-05-2018 22:54	49.70	2160	2396	236
05-05-2018 22:56	49.67	2160	2391	231
05-05-2018 22:58	49.62	2160	2362	202
05-05-2018 23:00	49.63	2037	2366	329
05-05-2018 23:02	49.68	2037	2309	272
21-05-2018 15:30	49.68	2137	2369	232
21-05-2018 15:34	49.63	2137	2338	201
21-05-2018 15:36	49.62	2137	2326	189
26-05-2018 19:44	49.68	2782	2947	165
26-05-2018 19:46	49.66	2776	2935	159
26-05-2018 19:48	49.61	2776	2935	159
26-05-2018 22:12	49.68	2406	2577	171
26-05-2018 22:14	49.68	2406	2588	182
26-05-2018 23:38	49.63	2274	2447	173
26-05-2018 23:40	49.65	2274	2447	172
26-05-2018 23:42	49.69	2274	2463	189
31-05-2018 14:16	49.66	1604	2274	671
31-05-2018 14:18	49.70	1604	2325	722
31-05-2018 14:46	49.70	1732	2253	521
31-05-2018 14:48	49.67	1732	2245	513
31-05-2018 14:50	49.66	1732	2260	529
31-05-2018 14:52	49.65	1732	2238	506
31-05-2018 14:54	49.68	1732	2203	471
31-05-2018 15:16	49.68	1745	2215	471

Annexure-C20

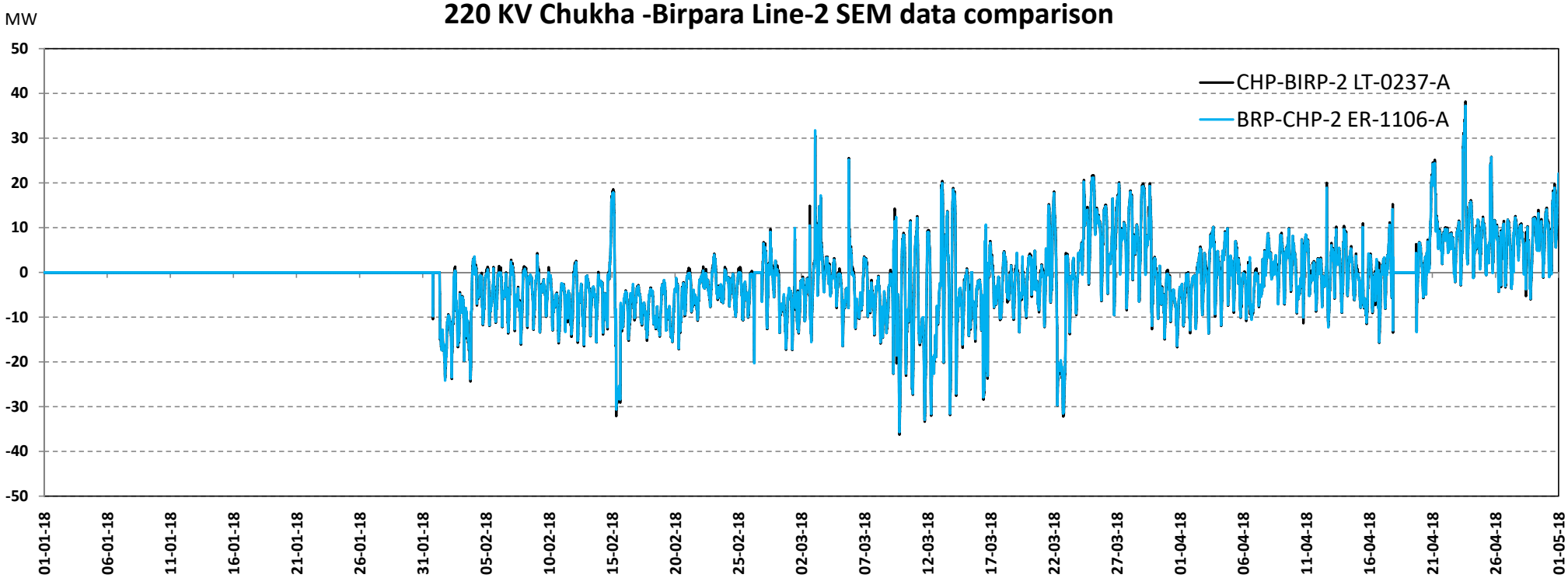
Sub Station	ICT	HV side Meter	LV Side Meter
ALIPURDUAR	400/220	2	2
BARIPADA	400/220	3	3
BIHARSHARIF	400/220	3	3
BINAGURI	400/220	2	2
BOLANGIR	400/220	2	2
CHAIBASA	400/220	2	2
DURGAPUR	400/220	2	2
GAYA	400/220	2	2
JAMSHEDPUR	400/220	3	3
JEYPORE	400/220	2	2
KEONJHAR	400/220	2	2
KISHANGANJ	400/220	2	2
MAITHON	400/220	2	2
MALDA	400/220	2	2
MUZAFFARPUR	400/220	3	3
NEW PURNEA	400/220	2	2
PANDIABILI	400/220	2	2
PATNA	400/220	3	3
RANCHI	400/220	2	2
RENGALI	400/220	2	2
ROURKELA	400/220	2	2
SASARAM	400/220	2	2
SUBHASGRAM	400/220	5	5
BANKA	400/132	2	2
LAKHISARAI	400/132	2	2

ARAH	220/132	3	3
BARIPADA	220/132	2	2
BIRPARA	220/132	2	2
MALDA	220/132	2	2
NJP/SILIGURI	220/132	2	2
PURNEA	220/132	3	3
GANGTOK	132/66	2	2
	Total	**74**	**74**

400 KV MALBASE-BINAGURI LINE SEM DATA COMPARISON



220 KV CHUKHA-BIRAPARA LINE-2 SEM DATA COMPARISON



MONTHLY ENERGY COMPARISON

Month	400 KV MLB-BIN at Malbase	BIN-MLB at Bina end	BIN-MLB at Bina end	DIFF between DGPC and PG meter at Bina	% DIFF between DGPC and PG meter at Bina	CHP-BIRP-2	BRP-CHP-2	BRP-CHP-2 at Birpara end	DIFF between DGPC and PG meter at Birpara	% DIFF between DGPC and PG meter at Birpara
	NP-5869-A	ER-1076-A PG meter	DGPC meter			LT-0237-A	ER-1106-A	DGPC meter (LT-0327-A)		
	MU	MU	MU	MU		MU	MU	MU	MU	
Jan-18	26.00	24.95	24.72	-0.23	-0.94	0.06	0.06	0.06	0.00	0.00
Feb-18	7.78	6.23	6.41	0.18	2.84	3.83	3.83	3.83	0.00	-0.03
Mar-18	12.80	11.05	11.06	0.01	0.10	1.55	1.60	1.60	0.00	-0.30
Apr-18	17.91	16.60	17.49	0.90	5.14	2.26	2.26	2.33	0.07	3.00

PMU Installation and commissioning status of ER as on 12.01.2018

S.No	Region	State	Sub-Station	Owner/ Utility	S/S type	PMU	TOTAL PANEL QTY	PMU Delivery status	Cable Delivery status	Erection	Cable laying	CT/PT/DI termination	Commissio ning	Integration	SAT	Remarks
			78			296	175	74	75	66	65	64	64	43	60	
1	ER-II	West Bengal	Arambagh	WBSETCL	CR	3	1	Yes	Yes	done	done	done	done	done	done	
2	ER-II	West Bengal	BAKRESHWAR TPS	WBSETCL	CR	4	1	Yes	Yes	done	done	done	done	done	done	
3	ER-II	West Bengal	Bidhannagar	WBSETCL	CR	3	1	Yes	Yes	done	done	done	done	done	done	
4	ER-II	West Bengal	JEERAT	WBSETCL	CR	2	1	Yes	Yes	done	done	done	done	done	pending	SAT pending as customer didn't agree to witness SAT.
57	ER-II	West Bengal	Alipurduar	Powergrid	CR	6	7	Yes	Yes	partially done	partially done	partially done	partially done	Pending	pending	Work started on 22.12.2016. 4 PMU panels and network panel installed. Rest 2 PMU panels could not be erected because location not finalised. Cable laying and termination at PMU panel completed for 6 feeders. CT/PT interfacing pending due to unavailability of shutdown. PGCIL is asking to take DI points from field, which is not in scope. Work is held up. Team demobilised.
6	ER-II	West Bengal	KASBA	WBSETCL	CR	3	1	Yes	Yes	done	done	done	done	done	done	
7	ER-II	DVC	DSTPS	DVC	CR	2	1	Yes	Yes	done	done	done	done	Pending	done	Communication Link not available.
67	ER-I	BIHAR	BANKA	Powergrid	Kiosk	4	5	Yes	Yes	done	done	done	done	Pending	pending	SAT pending.
9	ER-II	DVC	MEJIA-B	DVC	CR	2	1	Yes	Yes	done	done	done	done	done	done	Integrated on 07.12.2016
45	ER-II	Jharkhand	Bokaro TPS	DVC	CR	1	1	Yes	Yes	done	done	done	done	Pending	done	S/S couldn't be integrated because distance between PMU panel and SDH is more than 100 mtrs.
11	ER-II	DVC	Raghunathpur TPS	DVC	CR	3	1	Yes	Yes	done	done	done	done	done	done	
33	Odisha	Orissa	Bolangir	Powergrid	CR+Kiosk	2	3	Yes	Yes	done	done	done	done	Pending	done	Communication Link not available.
13	ER-II	DVC	Bokaro	DVC	CR	2	1	Yes	Yes	done	done	done	done	done	done	PMU integrated on 24.06.2016
14	ER-II	DVC	CTPS(Chanderpura)	DVC	CR	2	1	Yes	Yes	done	done	done	done	Pending	done	S/S couldn't be integrated because distance between PMU panel and SDH is more than 100 mtrs.
78	ER-I	Bihar	Barauni PP	Bihar	CR	0	0	No	No	N/A	N/A	N/A	N/A	N/A	N/A	Substation deleted.
16	Odisha	Orissa	MENDHASAL	OPTCL	CR	2	1	Yes	Yes	done	done	done	done	done	done	
17	Odisha	Orissa	MERAMANDALI	OPTCL	CR	6	2	Yes	Yes	done	done	done	done	done	done	
18	Odisha	Orissa	RENGALI	OPTCL	CR	2	1	Yes	Yes	done	done	done	done	done	done	Integrated on 22.06.2017
37	Odisha	Orissa	GMR	GMR	Kiosk	3	4	Yes	Yes	done	done	done	done	Pending	pending	SDH Panel not commisioned, powergrid supervision required for SAT activity
20	Odisha	Orissa	BALIMELA(H)	OPTCL	CR	3	1	Yes	Yes	done	done	done	done	done	done	
21	ER-II	West Bengal	Durgapur	Powergrid	CR	5	2	Yes	Yes	done	done	done	done	done	done	PMU integrated on 30.05.2016.
15	Odisha	Orissa	Budhipadar	OPTCL	CR	10	0	No	Yes	pending	pending	pending	pending	pending	pending	Manufactured, waiting for FAT. Will be dispatched after FAT.
23	Odisha	Orissa	Indrawati	Powergrid	CR	2	1	Yes	Yes	done	done	done	done	Pending	done	Communication Link not available.
24	Odisha	Orissa	Indrawati HPS	OPTCL	CR	1	1	Yes	Yes	done	done	done	done	done	done	Team deployed in substation. Permission for panel installation & cable laying given but no work permission in existing control panel is given. Team was idle for more than. 10 days.
25	Odisha	Orissa	JEYPORE	Powergrid	CR	2	1	Yes	Yes	done	done	done	done	Pending	done	Communication Link not available.
26	ER-II	West Bengal	MAITHON	Powergrid	CR	7	2	Yes	Yes	done	done	done	done	done	done	PMU integrated on 21.06.2016.
27	ER-II	West Bengal	MALDA	Powergrid	CR	2	1	Yes	Yes	done	done	done	done	done	done	PMU integrated on 24.06.2016
28	Odisha	Orissa	Rengali	Powergrid	Kiosk	2	1	Yes	Yes	done	done	done	done	done	done	PMU integrated on 04.05.2016
29	Odisha	Orissa	ROURKELA	Powergrid	Kiosk	5	2	Yes	Yes	done	done	done	done	done	done	PMU integrated on 21.04.2016
30	ER-II	West Bengal	Binaguri	Powergrid	CR	7	2	Yes	Yes	done	done	done	done	done	done	PMU integrated on 28.07.2016

PMU Installation and commissioning status of ER as on 12.01.2018

S.No	Region	State	Sub-Station	Owner/ Utility	S/S type	PMU	TOTAL PANEL QTY	PMU Delivery status	Cable Delivery status	Erection	Cable laying	CT/PT/DI termination	Commissioning	Integration	SAT	Remarks
31	ER-II	West Bengal	SUBHASHGRAM	Powergrid	Kiosk	2	1	Yes	Yes	done	done	done	done	done	done	PMU integrated on 22.06.2016
32	Odisha	Orissa	Baripada	Powergrid	CR	3	1	Yes	Yes	done	done	done	done	done	done	PMU integrated on 30.01.2017.
75	ER-I	Jharkhand	Jharkhand Pool (Chan	Powergrid	Kiosk	4	1	Yes	Yes	done	done	done	done	Pending	done	S/S couldn't be integrated because distance between PMU panel and SDH is more than 100 mts.
34	Odisha	Orissa	ANGUL	Powergrid	Kiosk	10	11	Yes	Yes	done	done	done	done	done	done	PMU integrated on 24.03.2017.
35	Odisha	Orissa	Keonjhar	Powergrid	CR	2	3	Yes	Yes	done	done	done	done	done	done	PMU integrated on 18.01.2017.
36	Odisha	Orissa	Jharsuguda	Powergrid	Kiosk	8	9	Yes	Yes	done	done	done	done	done	done	PMU integrated on 29.07.2016
74	ER-I	Bihar	Kishanganj (karandegh	Powergrid	CR	4	1	Yes	Yes	done	done	done	done	Pending	done	S/S couldn't be integrated because distance between PMU panel and SDH is more than 100 mts.
8	ER-II	DVC	Kodarma TPS	DVC	CR	3	1	Yes	Yes	done	done	done	done	Pending	done	SDH panel does not exist.
39	ER-II	West Bengal	Baharampur	Powergrid	CR	2	3	Yes	Yes	done	done	done	done	done	done	PMU integrated on 10.05.2016
40	ER-II	West Bengal	Birpara	Powergrid	CR	4	1	Yes	Yes	done	done	done	done	done	done	PMU integrated on 15.07.2016.
41	ER-II	DVC	CTPS B	DVC	CR	3	1	Yes	Yes	done	done	done	done	done	done	mom/sat signature pending from powergrid end.
42	ER-II	DVC	KALYANESWARI	DVC	CR	4	1	Yes	Yes	done	done	done	done	done	done	PMU integrated on 02.01.2017.
43	ER-II	DVC	PARULIA	DVC	CR	5	2	Yes	Yes	done	done	done	done	done	done	PMU integrated on 21.02.2017.
44	ER-II	West Bengal	Purulia PSP	WBSETCL	CR	2	1	Yes	Yes	done	done	done	done	done	done	
66	ER-I	BIHAR	LakhiSarai	Powergrid	Kiosk	4	5	Yes	Yes	done	done	done	done	Pending	done	SAT completed. Integration planed
46	ER-II	West Bengal	Durgapur TPS	DVC	CR	3	1	Yes	Yes	done	done	done	done	done	done	
73	ER-I	Jharkhand	Daltonganj	Powergrid	Kiosk	2	3	Yes	Yes	N/A	N/A	N/A	N/A	N/A	N/A	Site on-hold as Substation is under construction.
22	ER-II	West Bengal	FARRAKA	NTPC	CR	5	2	Yes	Yes	done	done	done	done	pending	done	S/S couldn't be integrated because distance between PMU panel and SDH is more than 100 mtrs.
54	Odisha	Orissa	Ind barath	Ind barath	Kiosk	1	1	Yes	Yes	pending	pending	pending	pending	pending	pending	Permission awaited
10	ER-II	DVC	Maithon RB TPS	DVC	CR	2	1	Yes	Yes	done	done	done	done	Pending	done	Work started on 04.07.2016. Panel shifted. Team demobilised due to access issue and panel location issue. Team deputed again 18th August, I&C done, integration pending due to communication break with control center.
51	Odisha	Orissa	Jindal	JITPL	CR	2	1	Yes	Yes	pending	pending	pending	pending	pending	pending	Permission awaited
5	ER-II	West Bengal	Kolaghat TPS	WBSETCL	CR	4	1	Yes	Yes	done	done	done	done	done	done	
52	Odisha	Orissa	Monnet	Monnet	CR	1	1	Yes	Yes	pending	pending	pending	pending	pending	pending	Permission awaited
55	ER-II	Sikkim	New Melli	Powergrid	CR	0	0	No	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Substation deleted.
76	ER-I	Jharkhand	Patratu	Jharkhand	CR	3	1	Yes	Yes	N/A	N/A	N/A	N/A	N/A	N/A	Permission awaited.
53	Odisha	Orissa	Strelite	Strelite	CR	3	1	Yes	Yes	done	done	done	done	pending	done	SDH not commisioned
48	Odisha	Orissa	TALCHER	NTPC	CR	5	2	Yes	Yes	pending	pending	pending	pending	pending	pending	Permission awaited
58	ER-II	West Bengal	Rajarhat	Powergrid	CR	2	1	Yes	Yes	done	pending	pending	pending	Pending	pending	Site on-hold. Work withheld due to localite agitation issue.
59	ER-I	Jharkhand	JAMSHEDPUR	Powergrid	CR	6	2	Yes	Yes	done	done	done	done	done	done	PMU integrated on 14.02.2017
60	ER-I	BIHAR	Kahalgaon(KHSTPP)	NTPC	CR	6	2	Yes	Yes	done	done	pending	pending	Pending	pending	Work on-hold. NTPC asked to use Armoured cable. Out of scope. Team idemobilized from site. Site assumed as closed as per PRM in Kolkatta.
61	ER-I	BIHAR	Purnea	Powergrid	CR	6	2	Yes	Yes	done	done	done	done	done	done	PMU integrated on 13.04.2017

PMU Installation and commissioning status of ER as on 12.01.2018

S.No	Region	State	Sub-Station	Owner/ Utility	S/S type	PMU	TOTAL PANEL QTY	PMU Delivery status	Cable Delivery status	Erection	Cable laying	CT/PT/DI termination	Commissioning	Integration	SAT	Remarks
62	ER-I	BIHAR	PATNA	Powergrid	Kiosk	6	7	Yes	Yes	done	done	done	done	done	done	PMU integrated on 11.04.2017
63	ER-I	Jharkhand	RANCHI	Powergrid	Kiosk	12	13	Yes	Yes	done	done	done	done	done	done	
64	ER-I	BIHAR	SASARAM(Pusauli)	Powergrid	CR+Kiosk	9	3	Yes	Yes	done	done	done	done	done	done	
65	ER-I	BIHAR	BARH	NTPC	CR	4	1	Yes	Yes	done	done	done	done	Pending	done	Communication Link not available.
12	ER-II	DVC	MEJIA	DVC	CR	5	2	Yes	Yes	done	done	done	done	Pending	done	S/S couldn't be integrated because distance between PMU panel and SDH is more than 100 mtrs.
38	ER-II	Sikkim	RANGPO	Powergrid	CR	4	1	Yes	Yes	done	done	done	done	Pending	done	S/S couldn't be integrated because distance between PMU panel and SDH is more than 100 mtrs.
68	ER-I	Jharkhand	Chaibasa	Powergrid	Kiosk	4	5	Yes	Yes	done	done	done	done	done	done	
69	ER-I	BIHAR	765kv Gaya	Powergrid	Kiosk	11	12	Yes	Yes	done	done	done	done	done	done	PMU integrated on 24.02.2017
70	ER-I	Jharkhand	765/400kV Ranchi (N)	Powergrid	Kiosk	8	9	Yes	Yes	done	done	done	done	done	done	PMU integrated on 24.02.2017
71	ER-I	Bihar	Biharshariff	Powergrid	CR	9	3	Yes	Yes	done	done	done	done	done	done	
72	ER-I	Bihar	MUZAFFAPUR	Powergrid	CR	5	2	Yes	Yes	done	done	done	done	done	done	
49	ER-II	Sikkim	TEESTA	NHPC	CR	1	1	Yes	Yes	done	done	done	done	done	pending	SAT pending due to no supervision
77	ER-I	Jharkhand	Tenughat	Jharkhand	CR	2	1	Yes	Yes	done	done	done	done	Pending	done	SDH panel not commisioned
19	Odisha	Orissa	U.KOLAB	OPTCL	CR	2	1	Yes	Yes	done	done	done	done	Pending	done	Communication Link not available.
56	ER-II	Sikkim	TT Pool	Powergrid	CR	0	0	No	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Substation deleted.
50	Odisha	Orissa	Uttara	Powergrid	CR	2	1	Yes	Yes	done	done	done	done	Pending	done	Communication link from s/s to ERLDC not available.
47	Odisha	Orissa	TTPS(Talcher)	OPTCL	CR	3	1	Yes	Yes	pending	pending	pending	pending	pending	pending	Permission awaited

ER PMU site activity Summary:

Sl. No.	Region	Utility	As per approved BOQ		Supplied		Installed		Commissioned		Integrated to ERLDC/ SLDC	
			No. of Substations	No. of PMU	S/S	PMU	S/S	PMU	S/S	PMU	S/S	PMU
1	ER-I	Powergrid	15	94	15	94	14	92	14	92	10	76
2	ER-I	NTPC	2	10	2	10	2	10	1	4	0	0
3	ER-I	Jharkhand	2	5	2	5	1	2	1	2	0	0
4	ER-I	Bihar	0	0	0	0	0	0	0	0	0	0
	ER-I	**Total**	**19**	**109**	**19**	**109**	**17**	**104**	**16**	**98**	10	76
1	ER-II	Powergrid	10	41	10	42	9	35	8	33	7	29
	ER-II	NHPC	1	1	1	1	1	1	1	1	1	1
2	ER-II	NTPC	1	5	1	5	1	5	1	5	0	0
3	ER-II	DVC	13	37	13	37	13	37	13	37	7	22
4	ER-II	WBSETCL	7	21	7	21	7	21	7	21	7	21
	ER-II	**Total**	**32**	**105**	**32**	**106**	**31**	**99**	**30**	**97**	**22**	**73**
1	Odisha	Powergrid	10	38	10	38	10	38	10	38	6	30
2	Odisha	OPTCL	8	29	7	19	6	16	6	16	5	14
3	Odisha	NTPC	1	5	1	5	0	0	0	0	0	0
4	Odisha	IPP	5	10	5	10	2	6	2	6	0	0
	Odisha	**Total**	**24**	**82**	**23**	**72**	**18**	**60**	**18**	**60**	**11**	**44**
	ER	**Total**	**75**	**296**	**74**	**287**	**66**	**263**	**64**	**255**	**43**	**193**

Annexure-D.1

Anticipated Power Supply Position for the month of
Jul-18

SL.NO		PARTICULARS	PEAK DEMAND MW	ENERGY MU
1		**BIHAR**		
	i)	NET MAX DEMAND	4500	2592
	ii)	NET POWER AVAILABILITY- Own Source (including bilateral)	317	177
		- Central Sector	3184	1923
	iii)	SURPLUS(+)/DEFICIT(-)	-999	-492
2		**JHARKHAND**		
	i)	NET MAX DEMAND	1270	790
	ii)	NET POWER AVAILABILITY- Own Source (including bilateral)	262	101
		- Central Sector	840	492
	iii)	SURPLUS(+)/DEFICIT(-)	-167	-196
3		**DVC**		
	i)	NET MAX DEMAND (OWN)	2750	1695
	ii)	NET POWER AVAILABILITY- Own Source	4790	2606
		- Central Sector	334	214
		Long term Bi-lateral (Export)	1512	1125
	iii)	SURPLUS(+)/DEFICIT(-)	861	0
4		**ORISSA**		
	i)	NET MAX DEMAND	4300	2678
	ii)	NET POWER AVAILABILITY- Own Source	3035	1680
		- Central Sector	1267	761
	iii)	SURPLUS(+)/DEFICIT(-)	2	-237
5		**WEST BENGAL**		
5.1		**WBSEDCL**		
	i)	NET MAX DEMAND (OWN)	5708	3547
	ii)	CESC's DRAWAL	0	0
	iii)	TOTAL WBSEDCL's DEMAND	5708	3547
	iv)	NET POWER AVAILABILITY- Own Source	3456	1956
		- Import from DPL	-15	0
		- Central Sector	2263	1597
	v)	SURPLUS(+)/DEFICIT(-)	-4	7
	vi)	EXPORT (TO B'DESH & SIKKIM)	10	7
5.2		**DPL**		
	i)	NET MAX DEMAND	268	179
	ii)	NET POWER AVAILABILITY	253	90
	iii)	SURPLUS(+)/DEFICIT(-)	-15	-89
5.3		**CESC**		
	i)	NET MAX DEMAND	1850	1016
	ii)	NET POWER AVAILABILITY - OWN SOURCE	750	502
		FROM HEL	540	348
		FROM CPL/PCBL	0	0
		Import Requirement	560	166
	iii)	TOTAL AVAILABILITY	1850	1016
	iv)	SURPLUS(+)/DEFICIT(-)	0	0
6		**WEST BENGAL (WBSEDCL+DPL+CESC)** **(excluding DVC's supply to WBSEDCL's command area)**		
	i)	NET MAX DEMAND	7826	4742
	ii)	NET POWER AVAILABILITY- Own Source	4459	2548
		- Central Sector+Others	3363	1945
	iii)	SURPLUS(+)/DEFICIT(-)	-4	-249
7		**SIKKIM**		
	i)	NET MAX DEMAND	85	34
	ii)	NET POWER AVAILABILITY- Own Source	2	0
		- Central Sector+Others	157	102
	iii)	SURPLUS(+)/DEFICIT(-)	75	67
8		**EASTERN REGION** **At 1.03 AS DIVERSITY FACTOR**		
	i)	**NET MAX DEMAND**	20127	12531
		Long term Bi-lateral by DVC	1512	1125
		EXPORT BY WBSEDCL	10	7
	ii)	**NET TOTAL POWER AVAILABILITY OF ER (INCLUDING C/S ALLOCATION)**	22010	12549
	iii)	**PEAK SURPLUS(+)/DEFICIT(-) OF ER (ii)-(i)**	361	-1115

Summary of Unit-4 (500 MW), NTPC, Farakka

Overhauling Duration

Date	Description	Extra duration (days)
11.03.2018	Unit-4 taken out for overhauling (35days)	
18.03.2018	Observed that 2R blades of LP rotor heavily eroded alongwith locking plate.	
19.03.2018	Planned for replacement with spare rotor from NTPC,Ramagundam	
23.03.2018	Transportation contract awarding	04
26.03.2018	Vehicle reached NTPC,Ramadundam	
28.03.2018	Exit from NTPC,Ramagundam	
21.04.2018	LP rotor reached NTPC,Farakka	24
24.04.2018	4 nos. loose LP blades rectified	02
27.04.2018	Flow path correction of new rotor	02
17.05.2018	Unit Synchronized	

Summary : -- Unit-4 schedule of overhauling duration : 35 days
-- Extra work duration : 32 days
-- Total work completed : 67 days

Annexure-E1

Details of stations/Units required to operate under RGMO/FGMO as per IEGC							Whether operating under RGMO	indicate in case of status is not available
Name of State	Type	Name of Uitlity	Sector (CS/SS/Private)	Name of Station	Name of Stage/ Unit	Installed capacity (MW)		
JHARKHAND	Thermal	TVNL	SS	Tenughat	1	210	No	Difficulties in implementing RGMO & exemption not
			SS		2	210	No	
	Hydro	JSEB	SS	Subarnrekha	1	65	Yes	
			SS		2	65	Yes	
WEST BENGAL	Termal	WBPDCL	SS	Bandel TPS	1	82.5	No	
			SS		2	82.5	No	
			SS		3	82.5	No	
			SS		4	82.5	No	
			SS		5	210	No	
			SS	Santaldih	5	250	No	Unit#6 could not be implemented because of some technical problem
			SS		6	250	No	
			SS	Kolaghat	1	210	No	Nil
			SS		2	210	No	Nil
			SS		3	210	No	Nil
			SS		4	210	No	Nil
			SS		5	210	No	Nil
			SS		6	210	No	Nil
			SS	Bakreshwar	1	210	Yes	
			SS		2	210	Yes	
			SS		3	210	Yes	
			SS		4	210	Yes	
			SS		5	210	Yes	
			SS	Sagardighi	1	300	No	Without OEM support it is not possible to put in FGMO/RGMO. At present OEM support is not
			SS		2	300	No	
	Hydro		SS	PPSP	1	225	Yes	In 134th OCC WBPDCL informed that the units are in RGMO/FGMO mode
			SS		2	225	Yes	
			SS		3	225	Yes	
			SS		4	225	Yes	
	Thermal	CESC	SS	Budge-Budge	1	250	Yes	
			SS		2	250	Yes	
			SS		3	250	Yes	
			SS	Haldia	1	300	Yes	
			SS		2	300	Yes	
	Thermal	DPL	SS	DPL	7	300	Yes	
Orissa		OPGC	SS	IB TPS	1	210	No	Not adequate response in RGMO
			SS		2	210	No	
	Hydro	OHPC	SS	Burla	1	49.5	No	
			SS		2	49.5	No	
			SS		3	32	No	
			SS		4	32	No	
			SS		5	37.5	No	
			SS		6	37.5	No	
			SS		7	37.5	No	
			SS	Balimela	1	60	No	
			SS		2	60	No	
			SS		3	60	No	
			SS		4	60	No	
			SS		5	60	No	
			SS		6	60	No	
			SS		7	75	No	
			SS		8	75	No	
			SS	Rengali	1	50	No	
			SS		2	50	No	
			SS		3	50	No	
			SS		4	50	No	
			SS		5	50	No	
			SS	Upper Kolab	1	80	No	
			SS		2	80	No	
			SS		3	80	No	
			SS		4	80	No	
			SS	Indravati	1	150	No	
			SS		2	150	No	

			SS	Indravati	3	150	No	
			SS		4	150	No	
			64					
Central Sector	Thermal	DVC	CS	Bokaro-A	1	500	Yes	
			CS	Bokaro-B	3	210	No	Not possible due to non availability of Electro hydraulic governing. The units will be decommissioned shortly.
			CS	CTPS	3	130	No	Not possible due to non availability of Electro hydraulic governing. The units will be decommissioned shortly.
			CS		7	250	Yes	
			CS		8	250	Yes	
			CS	DTPS	4	210	No	Not possible due to non availability of Electro hydraulic governing. The units will be decommissioned shortly.
			CS	Mejia	1	210	No	Not possible due to non availability of Electro
			CS		2	210	No	
			CS		3	210	No	Action has been initiated to put in RGMO, but testing is not yet completed.
			CS		4	210	Yes	
			CS		5	250	Yes	
			CS		6	250	Yes	
			CS	Mejia - B	7	500	Yes	
			CS		8	500	Yes	
			CS	DSTPS	1	500	Yes	
			CS		2	500	Yes	
			CS	KODERMA	1	500	Yes	
			CS		2	500	Yes	
			CS	RTPS	1	600	Yes	
			CS		2	600	Yes	
	Hydro		CS	Panchet	1	40	No	RGMO mode of operation would not be possible for
			CS		2	40	No	
	Thermal	NTPC	CS	Farakka STPP-I	1	200	Yes	
			CS		2	200	Yes	
			CS		3	200	Yes	
			CS	Farakka STPP-II	1	500	Yes	
			CS		2	500	Yes	
			CS	Farakka-U#6		500	Yes	Kept in RGMO mode from April, 2014
			CS	Kahalgoan STPP	1	210	Yes	
			CS		2	210	Yes	
			CS		3	210	Yes	
			CS		4	210	Yes	
			CS		5	500	Yes	
			CS		6	500	Yes	
			CS		7	500	Yes	
			CS	Talcher STPP Stg-I	1	500	Yes	
			CS		2	500	Yes	
			CS	Barh	5	660	Yes	
			CS	Barh	6	660	Yes	
	Hydro	NHPC	CS	Teesta HEP	1	170	Yes	
			CS		2	170	Yes	
			CS		3	170	Yes	
			42					
IPP	Thermal	IPP	PS	Maithon RB TPP	1	525	Yes	
			PS		2	525	Yes	
			PS	Sterlite	1	600	Yes	
			PS		2	600	Yes	
			PS		3	600	Yes	
			PS		4	600	Yes	
			PS	Adhunik Power	1	270	Yes	
			PS		2	270	Yes	
			PS	JLHEP	1	48	No	(RoR project with 3 hours pondage)
			PS		2	48	No	
			PS	Chujachen HEP	1	49.5	No	(RoR project with 3 hours pondage)
			PS		2	49.5	No	
			PS		1	200	No	could be put in RGMO

	Hydro	IPP	PS	Teesta Urja	2	200	No	could be put in RGMO mode but because of transmission evacuation constraint RGMO/FGMO is disabled
			PS		3	200	No	
			PS		4	200	No	
			PS		5	200	No	
			PS		6	200	No	
			PS	Dikchu	1	48	No	(RoR project with 3 hours pondage)
			PS		2	48	No	

Quarterly Preparedness Monitoring -AGENDA

(Status as on :)

S.No.	State	Sector (G/T/D)	Utilities	Status of CISO Nomination	Critical Infra Identified	Crisis management Plan Prepared	Status of CS mock drill	Status of Training/ Workshops organized/ participated by utility	Action taken on CERT-In/NCIIPC Advisories
1	Tamilnadu	T	TANGEDCO	Yes/No	Yes/No	Yes/No	Done on ____		

Annexure – E.4

AVAILABILITY STATUS OF EVENT LOGGER, DISTURBANCE RECORDER & GPS

Sl. NO	Substation	Protection & Control System						Remarks
		Availability			Time Synchronization			
		EL	DR	GPS	Relay	DR	EL	
1	Subhasgram	Yes	Yes	Yes	Yes	Yes	Yes	
2	Maithon	Yes	Yes	Yes	Yes	Yes	Yes	
3	Durgapur	Yes	Yes	Yes	Yes	Yes	Yes	
4	Malda	Yes	Yes	Yes	Yes	Yes	Yes	
5	Dalkhola	Yes	Yes	Yes	Yes	Yes	Yes	
6	Siliguri	Yes	Yes	Yes	Yes	Yes	Yes	
7	Binaguri	Yes	Yes	Yes	Yes	Yes	Yes	
8	Birpara	Yes	Yes	Yes	Yes	Yes	Yes	
9	Gangtok	Yes	Yes	Yes	Yes	Yes	Yes	
10	Baripada	Yes	Yes	Yes	Yes	Yes	Yes	
11	Rengali	Yes	Yes	Yes	Yes	Yes	No	New EL would be implemented in BCU under NTAMC project by March'2015
12	Indravati (PGCIL)	Yes	Yes	Yes	Yes	Yes	No	EL is old one(model-PERM 200), provision for time synchronisation is not available. New EL would be implemented in BCU under NTAMC project by March'2015
13	Jeypore	Yes	Yes	Yes	Yes	Yes	Yes	EL is old and not working satisfactorily. New EL would be implemented in BCU under NTAMC project by March, 2015
14	Talcher	Yes	Yes	Yes	Yes	Yes	Yes	
15	Rourkela	Yes	Yes	Yes	Yes	Yes	Yes	
16	Bolangir	Yes	Yes	Yes	Yes	Yes	Yes	
17	Patna	Yes	Yes	Yes	Yes	Yes	Yes	
18	Ranchi	Yes	Yes	Yes	Yes	Yes	Yes	
19	Muzaffarpur	Yes	Yes	Yes	Yes	Yes	Yes	
20	Jamshedpur	Yes	Yes	Yes	Yes	Yes	Yes	
21	New Purnea	Yes	Yes	Yes	Yes	Yes	Yes	
22	Gaya	Yes	Yes	Yes	Yes	Yes	Yes	
23	Banka	Yes	Yes	Yes	Yes	Yes	Yes	
24	Biharsariif	Yes	Yes	Yes	Yes	Yes	Yes	
25	Barh	Yes	Yes	Yes	Yes	Yes	Yes	
26	Sagardighi	No	Yes	Yes	Yes	Yes	No	EL is under process of restoration with help from OEM, China
27	Kahalgaon	Yes	Yes	Yes	Yes	Yes	Yes	
28	Farakka	Yes	Yes	No	No	No	No	Time synchronization available for Farakka-Kahalgaon line-III & IV. The same will be implemented in rest of the lines by December, 2014.
29	Meramundali	Defunct	Yes	Yes	Yes	Yes	Yes	
30	Tisco	Yes	Yes	Yes	Yes	Yes	Yes	
31	Bidhannagar	No	Yes	Yes	No	No	No	Using DR & EL available in Numerical

								relays. GPS will be put in service by January, 2015.
32	Indravati (OHPC)	Yes	Faulty	No	No	No	No	Time synchronization will be done by Feb, 2015. ICT-I feeders using DR & EL available in Numerical relays. 400 kV ICT-II feeder is being maintained by PGCIL, Mukhiguda.Status may confirm from PGCIL
33	Kharagpur	No	Yes	Yes	No	No	No	Using DR & EL available in Numerical relays.
34	DSTPS	Yes	Yes	Yes	Yes	Yes	Yes	
35	Sterlite	Yes	Yes	Yes	Yes	Yes	Yes	
36	Mejia 'B'	Yes	Yes	Yes	Yes	Yes	Yes	
37	Mendhasal	Defunct	Yes	Yes	Yes	Yes	No	EL will be restored by March, 2015.
38	Arambagh	No	Yes	Yes	No	No	No	Using DR & EL available in Numerical relays
39	Jeerat	No	Yes	No	No	No	No	Using DR & EL available in Numerical relays. Procurement of new GPS is in progress.
40	Bakreswar	Yes	Yes	Yes	Yes	Yes	Yes	
41	GMR	Yes	Yes	Yes	Yes	Yes	Yes	
42	Maithon RB	Yes	Yes	Yes	Yes	Yes	Yes	
43	Raghunathpur	Yes	Yes	Yes	Yes	Yes	Yes	
44	Kolaghat	Yes	Yes	Yes	Yes	Yes	Yes	
45	Teesta V	Yes	Yes	Yes	Yes	Yes	Yes	
46	Koderma	Yes	Yes	Yes	Yes	Yes	Yes	
47	Sasaram	Yes	Yes	Yes	Yes	Yes	Yes	
48	Rangpo	Yes	Yes	Yes	Yes	Yes	Yes	
49	Adhunik	Yes	Yes	Yes	Yes	Yes	Yes	
50	JITPL	***Yes***	***Yes***	***Yes***	***Yes***	***Yes***	***Yes***	
51	765kV Angul	Yes	Yes	Yes	Yes	Yes	Yes	
52	Chuzachen	Yes	Yes	Yes	No	Yes	Yes	
53	New Ranchi 765kV	Yes	Yes	Yes	Yes	Yes	Yes	
54	Lakhisarai	Yes	Yes	Yes	Yes	Yes	Yes	
55	Chaibasa							
56	765kV Jharsuguda	Yes	Yes	Yes	Yes	Yes	Yes	All are in working condition. However a dedicated DR for 765KV Lines; make TESLA is not working. M/s Siemens has assured to commission the same by 31.01.15
57	Beharampur	Yes	Yes	Yes	Yes	Yes	Yes	
58	Keonjhar	Yes	Yes	Yes	Yes	Yes	Yes	

Eastern Regional Power Committee

The status of ERS towers in Eastern Region as updated in OCC meetings is given below:

1) ERS towers available in Powergrid S/s is as given below:

Sl. No.	Name of S/S	No. of ERS towers available
1	Durgapur, ER-II	1 Set (8 towers)
2	Rourkela, ER-II	3 towers incomplete shape
3	Jamshedpur, ER-I	15 towers (10 nos Tension tower and 5 nos suspension tower)

2) The present status of ERS towers in OPTCL system is as follows:

Sl. No.	Name of S/S	No. of ERS towers available
1	Mancheswar	2 nos, 400 kV ERS towers
2	Mancheswar, Chatrapur & Budhipadar	42 nos, 220 kV ERS towers

- 12 nos. of new 400 kV ERS towers have been recieved.
- Another, 16 nos of 400 kV towers accompanied with 6 sets of T&P are required which is under process

3) The present status of ERS towers in WBSETCL system is as follows:

Sl. No.	Name of S/S	No. of ERS towers available
1	Gokarna	2 sets
2	Arambag	2 sets

4) The present status of ERS towers in BSPTCL system is as follows:

Sl. No.	Type	Quantity	Remarks
1	Tension ERS Tower	12	New
2	Suspension ERS Tower	20	New
3	Old ERS Tower	10	1 no. is defective
Total		**42**	

- As informed in ERS meeting held on 10-11-2014 taken by Member (Power System), CEA; 2 sets (12 tension & 20 suspension) of ERS towers had been procured and currently available in BSPTCL system (as mentioned in above table with remarks “New”).
- Same ERS tower is used in both 220 kV and 132 kV circuits.

5) In 25th ERPC meeting held on 21.09.2014, E R P C concurred to the proposal of procurement of four sets of ERS and it was also informed that, the proposed four sets of ERS will be kept at Sikkim, Siliguri, Ranchi and Gaya and will be used by all constituents of ER during emergencies.

   Powergrid informed that four sets of ERS for Eastern Region will be procured.

5) DVC informed that they are in process of procuring two (2) sets of 400 kV ERS towers.

Checklist for Submission of new transmission elements for updation in Protection Database

NAME OF ORGANISATION:
FOR THE MONTH OF:

SUBSTATION DETAIL:

Sl No	DETAILS OF ELEMENTS	DATA TYPE	Status of Submission (Y/N)	Remarks
1	TRANSMISSION LINE	LINE LENGTH, CONDUCTOR TYPE, VOLTAGE GRADE		
2	POWER TRANSFORMER	NAMEPLATE DETAILS		
3	GENERATOR	TECHNICAL PARAMETERS		
4	CURRENT TRANSFORMER	NAMEPLATE DETAILS		
5	VOLTAGE TRANSFORMER	NAMEPLATE DETAILS		
6	RELAY DATA	MAKE, MODEL and FEEDER NAME		
7	RELAY SETTINGS	NUMERICAL RELAYS: CSV or XML file extracted from Relay ELECTROMECHANICAL RELAYS: SNAPSHOT of RELAY		
8	REACTOR	NAMEPLATE DETAILS		
9	CAPACITOR	NAMEPLATE DETAILS		
9	UPDATED SLD			

SIGNATURE:
NAME OF REPRESENTATIVE:
DESIGNATION:
CONTACT:
E-MAIL ID:

VDI of Selected 765 kV & 400 kV in Eastern Region in the month of May - 2018

नई रांची / Ranchi New			जमशेदपुर / Jamshedpur			मुजफ्फरपुर / Muzaffarpur		
MAX	MIN	VDI (% of Time)	MAX	MIN	VDI (% of Time)	MAX	MIN	VDI (% of Time)
805	756	0.76	426	407	10.68	422	387	0.41

बिहार शरीफ / Bihar Sariff			बिनागुरी / Binaguri			जीरत / Jeerat		
MAX	MIN	VDI (% of Time)	MAX	MIN	VDI (% of Time)	MAX	MIN	VDI (% of Time)
427	398	1.63	425	394	2.51	427	379	6.60

राउरकेला / Rourkela			जयपोर / Jeypore			कोडरमा / Koderma		
MAX	MIN	VDI (% of Time)	MAX	MIN	VDI (% of Time)	MAX	MIN	VDI (% of Time)
413	402	0.00	427	396	0.58	425	403	1.95

मैथन / Maithon			तीस्ता / Teesta			रांगपो / Rangpo		
MAX	MIN	VDI (% of Time)	MAX	MIN	VDI (% of Time)	MAX	MIN	VDI (% of Time)
426	405	6.74	424	395	0.42	421	390	0.14