Minutes

of

146th OCC Meeting

Date: 03.07.2018

Eastern Regional Power Committee

14, Golf Club Road, Tollygunge

Kolkata: 700 033

Eastern Regional Power Committee

Minutes of 146th OCC Meeting held on 15th June, 2018 at ERPC, Kolkata

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

Member Secretary, ERPC chaired the meeting. He welcomed all the participants to the meeting. He informed that MoP vide letter No. 23/70/2017-R&R dated 05.04.2018 published a detailed mechanism of allowing Flexibility in Generation and Scheduling of Thermal Power Stations to reduce emissions. Subsequently CEA vide its letter No. 7/X/VIP/GM/2018/923-27 dated 12.06.2018 requested all RPCs to make necessary changes in Energy Accounting to implement the above mentioned mechanism.

Details were circulated in the meeting and also enclosed at **Annexure-AA**.

Item no. 1: Confirmation of minutes of 145thOCC meeting of ERPC held on 21.05.2018

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

Members may confirm the minutes.

Deliberation in the meeting

*Bhutan requested for the addendum under "**Item no. C22 (5&6)**". On deliberation, OCC agreed to include the views of Bhutan as follows:*

"DGPC representative informed that error in the energy meters of above feeders at Birpara and Siliguri end is persisting for the month of April 2018 also, and requested PTC/POWERGRID to test their energy meter at the earliest. DGPC also informed that the energy meters of DGPC are already tested during January 2018.

POWERGRID suggested to monitor the performance of energy meters for the month of May 2018 and if the error persists greater than the permissible limits, then POWERGRID shall take up for necessary testing of the energy meters."

Members confirmed the minutes of 145th OCC meeting with above addendum.

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.

Deliberation in the meeting

ERLDC presented the performance of the Eastern Region grid during May 2018. Presentation is enclosed at ***Annexure- A1****.*

ERLDC informed that Odisha, West Bengal and DVC had overdrawn from the Grid for significant times during May, 2018.

OCC advised Odisha, West Bengal and DVC to plan their generation to balance the load by maximizing the availability of their internal generation and arranging procurement of power through STOA/ MTOA/ Power Exchange.

ERLDC added that Teesta-III, Dikchu and Chuzachen were not following the schedule and injecting more power to the grid.

OCC opined that the schedule could be revised, if any additional margin is available for evacuation of the generation. OCC advised the above generators to strictly follow the schedule.

Regarding RGMO/FGMO, ERLDC informed that they have received data from West Bengal, Barh & Talcher station. They informed that West Bengal has submitted summarized data but not the unit wise data.

OCC once again requested to submit one-second high-resolution data from generating units for the above-mentioned event within 7 days.

OCC advised ERLDC to analyse the response after getting all the data and place a report in upcoming TCC meeting scheduled to be held on 29th June,2018.

ERLDC informed that there is no significant improvement was observed in injection pattern of Bhutan hydro power.

In response to TUL's letter on FGMO operation, ERLDC informed that the Keeping the grid security as utmost priority, FGMO cannot be allowed in high hydro condition.

ERLDC added that reactive power performance of the generators is satisfactory.

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.

Deliberation in the meeting

WBSETCL informed that they are planning to install 590 MVAR additional capacitor banks in distribution network to improve the voltage. Tendering has been completed. The work would be awarded after approval of high level committee.

OPTCL informed that they are also planning to install capacitor banks in their distribution network.

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 22ndMarch 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.

Deliberation in the meeting

MS, ERPC informed that 9th meeting of the PSDF Project Monitoring Group for review of the projects approved under PSDF in Eastern Region was held at Binaguri on 8th June, 2018. The meeting was chaired by Chairperson, CEA. All the states/utilities of the Eastern Region participated in the meeting. The status/progress of all projects of Eastern Region was reviewed in the meeting. The minutes of the meeting are awaited.

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.

Deliberation in the meeting

WBPDCL informed that BHEL engineers had visited the site and attributed turbine vibration as the reason for low frequency oscillation. The necessary work for corrective measures is in progress. They will submit the detailed report after completion of the work.

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.

Deliberation in the meeting

WBPDCL and WBSETCL informed that the work would be completed by end of July, 2018.

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.

Deliberation in the meeting

MS, ERPC informed that the islanding scheme will be discussed in 64th PCC meeting scheduled to be held on 18.06.2018.

3. **Islanding scheme at KantiTPS - KBUNL**

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

Members may discuss.

Deliberation in the meeting

MS, ERPC informed that the islanding scheme will be discussed in 64th PCC meeting scheduled to be held on 18.06.2018.

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.

Deliberation in the meeting

Constituents agreed to examine both the options and send their feedback/comments to ERPC secretariat within ten days.

Item No. B.5: Frequentpower supply interruptions at various Railway traction sub stations under JUSNL. –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.

Deliberation in the meeting

The agenda could not be discussed in detail as the Railway representative was not present in the meeting.

However, JUSNL informed that there were some issues with respect to implementation of the above proposal and it would take some time for implementation.

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.

Deliberation in the meeting

BSPTCL informed that the shutdown was taken from 15th June, 2018 to 27th June, 2018 and the line would be restored by end of June 2018.

OCC advised BSPTCL to review the protection settings as per the new configuration in coordination with Rihand end.

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.

Deliberation in the meeting

ERLDC informed that as the STATCOMs are dynamic compensation devices, PMUs are required to be installed for availing synchronized data. The data will help in analyzing the dynamic response of the STATCOMs during day-to-day operation.

OCC recommended to install PMUs on the Coupling Transformer of the four STATCOMs as a part of the URTDSM project.

Powergrid informed that the proposal for installation of PMUs in above substations were not covered in original URTDSM project. They had taken up the matter with their Engineering Wing.

OCC referred to TCC for approval for installation of PMUs on the Coupling Transformer of the four STATCOMs are being in commissioning stage, as a part of the URTDSM project .

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.

Deliberation in the meeting

*Powergrid elaborated their detailed plan of interim arrangement during the commissioning work of above lines. The presentation is enclosed at **Annexure-B8**. They informed that, keeping in view the grid security and West Bengal demand, they had fine-tuned their plan so as to minimize the period of interim arrangement with reduced grid security to 10 days.*

WBSETCL informed that, based on the study undertaken by them, any outage of the lines in the interim arrangement during shutdown would likely to overload their ICTs which, in turn, would necessitate huge load curtailment.

OCC advised WBSETCL that, as the proposed line has significant importance in view of enhancing the power transfer capability to Bangladesh, it should facilitate the shutdown so as to complete the work in timely manner.

WBSETCL informed that they would discuss the issue with their management and revert back within a week.

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.

Deliberation in the meeting

OCC decided to constitute a Committee with representatives from ERPC, ERLDC, WBSETCL and Powergrid to look into the issue.

OCC agreed to compensate WBSETCL in case of the discrepancy is justified.

OCC opined that VAR compensation in West Bengal system is very much required and advised WBSETCL to plan for installation of capacitor banks at appropriate places.

WBSETCL informed that they have planned for installation of capacitor banks having total capacity of 590 MVAR. The project has been awarded through PSDF fund.

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.

Deliberation in the meeting

OCC advised Powergrid to submit the audit reports of other stations in ER.

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.

Deliberation in the meeting

IBEUL representative was not present in the meeting.

OCC noted that IBEUL is not adhering to the decisions of any forum of ERPC and not clearing the outstanding dues of various pool accounts of Eastern Region. Further, OCC recommends that suitable actions including de-registering IBEUL as Regional Entity might be explored.

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.

Deliberation in the meeting

West Bengal informed that they had sent the requisite information to CEA.

OCC advised all other constituents to 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.

Deliberation in the meeting

BSPTCL and OPTCL have submitted the UFRs healthiness certificate.

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.

Deliberation in the meeting

NTPC and WBPDCL have submitted the healthiness certificate for the month of May, 2018.

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, NTPC, Powergrid & JITPL*	*Nil*
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.

Deliberation in the meeting

Powergrid informed that Rangpo SPS has been tested on 13th June 2018.

Powergrid informed that Time synchronization of the respective panels at Dikchu, Jorthang and Tashinding is not proper.

OCC advised Dikchu and Dansenegy to check the time synchronization at their end.

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 Tendering for 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 142nd OCC, 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 2 minutes 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.

Deliberation in the meeting

ERLDC gave a presentation highlighting the cases where ADMS suppose to operate. Presentation is enclosed at Annexure-C4.1.

ERLDC informed that around 200 MW load rejection was obtained in DVC system and no load rejection was obtained in West Bengal system.

West Bengal informed that ADMS was not operated due to wrong settings.

OCC advised West Bengal to rectify the settings and submit a report to ERLDC.

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.

Deliberation in the meeting

DMTCL representative informed that the line will be restored by 20th July, 2018.

Item no. C.6: Restoration of 400kV MPL-Maithon D/c lines

At around 5:21 hrs on 10th May 2018, both 400kV MPL-Maithon 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 Maithon-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.

Deliberation in the meeting

Powergrid informed that the line will be restored by 15th July, 2018.

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.

Deliberation in the meeting

BSPTCL informed that 132kV Baisi-Dalkhola line was charged on 22nd May, 2018.

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.

Deliberation in the meeting

Powergrid informed that the jumpering arrangement was completed at 400 kV Kishanganj S/s. Powergrid added that they need shutdown for jumpering arrangement at Alipuarduar.

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.

Deliberation in the meeting

In 146th OCC, it was informed that recently three incidences were reported where the tripping was due to faults in the line, which is under the jurisdiction of Bhutan.

OCC advised Bhutan to submit a comprehensive plan to minimise the tripping in the line.

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.

Deliberation in the meeting

Sikkim informed that State Govt. for approval is pending.

OCC took serious note of delay in tower rectification and referred to TCC for further guidance.

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	*Testing completed. Trail operation by June 2018*

Powergrid may update.

Deliberation in the meeting

Powergrid updated the latest status as mentioned in above table.

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 June, 2018.
b.	Keonjhar (PG)-Turumunga(OPTCL) 220kV D/C line	By 2019. The work is yet to be started.

OPTCL may update.

Deliberation in the meeting

OPTCL updated the status as mentioned in above table.

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.

Deliberation in the meeting

JUSNL updated the status as mentioned in above table.

Item no. C.14: 220 kV inter-connecting lines of WBSETCL with 400/220 kV, 2x315 MVA Alipurduar & 2x500 MVA Rajarhat sub-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 line was commissioned on 6th June 2018.*
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.

Deliberation in the meeting

WBSETCL updated the status as mentioned in above table.

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

In 145th OCC, 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 May, 2018

BSPTCL may update.

Deliberation in the meeting

BSPTCL updated the status as below:

1. Darbhanga (ISTS) –Darbhanga (BSPTCL) 220kV D/C: *charged on 12th June,2018*
2. Darbhanga(ISTS)–Laukhi (earlier Supaul New) 220kVD/C: *Ckt-I charged on 05th June,2018*
   Ckt-II charged on 06th June, 2018.

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.

Deliberation in the meeting

*ERLDC has placed the latest status of telemetry, which is enclosed at **Annexure-C16**.*

NTPC informed that New Farakka data would be available by 19th June 2018.

OCC advised all the constituents take appropriate action to ensure data availability to ERLDC.

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

Deliberation in the meeting

ENCIL representative was not available in the meeting for discussion.

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.

Deliberation in the meeting

NTPC informed that SAS replacement will be completed by 19th June, 2018.

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.

Deliberation in the meeting

BSPTCL and Sikkim informed that the persons dealing with TTC/ATC calculation got transferred which resulted in the discontinuation of ATC/TTC assessment work.

ED, ERLDC advised BSPTCL & Sikkim to send their new personnel to ERLDC for necessary training for enabling them to undertake TTC/ATC calculation and thereby, regularize the process of TTC/ATC calculation at the earliest.

BSPTCL informed they would calculate & update from next month onwards.

OCC underlined the need for continuity of the calculation for the benefits of the states and referred to TCC for guidance.

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.

Deliberation in the meeting

Teesta-III informed that time correction had been done by them for all the SEMs installed at their end and the time drift is within permissible limits.

OCC opined that although time drift had been corrected, SEM connected to Teesta-III being Elster make are to be replaced by newly procured Genus make meter for AMR connectivity.

It was informed that SEMs at Jeerat(WB), Alipurduar(PG), New Melli (PG) Jindal(GRIDCO), Gangtok(PG) and Rangpor(PG) have been replaced with Genus make meters.

OCC advised all the utilities to check the time drift on weekly basis and correct the time drift immediately, if any.

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.

Deliberation in the meeting

Powergrid informed that the SEM installation in ER-I stations has been completed and the same at ER-II stations would be completed by June 2018.

Powergrid(Odisha) informed they will complete the SEM installation by July,2018.

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.

Deliberation in the meeting

Powergrid informed that both the meters have been replaced.

JITPL informed that meter on HV side of GT-I was showing erratic data. They have informed Powergrid and ERLDC for necessary action.

2. Less recording by Bidhanagar WBSETCL 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.

Deliberation in the meeting

It was informed that the meter has been installed but the data could not be recorded due to cable problem.

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.

Deliberation in the meeting

ERPC secretariat informed that the agenda was discussed in 37th Commercial meeting held on 11th June, 2018. The error was found to be within permissible limit for the meter reading of May-2018.

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.

Deliberation in the meeting

ERPC Secretariat informed that the agenda was discussed in 37th Commercial meeting held on 11th June, 2018. The error wasfound to be within permissible limit for the meter reading of May-2018.

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	*Completed on 8th June,2018*	Last Week of January2019	
2	Maithon	1stweek of June 2018	*Completed on 6th June,2018*	1stWeek of February2019	
3	Rengali	2ndweek of June 2018	*Planned in July,2018.*	Last week of November 2018	
4	U. Indarvati	3rdweek ofJune 2018	*Planned in July,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	*Completed on 7th 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.

Deliberation in the meeting

Members updated the status as mentioned in above table.

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 July 2018
- Barh TPS – Vibration problems will be attended during overhauling. The testing would be done after overhauling in December 2019.
- Raghunathpur – Coal not available
- GMR (Three units) – *Reactive Capability test for Unit 1 & 2 was done on 18th May 2018.*

Members may update.

Deliberation in the meeting

Members updated the status as mentioned above.

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 Powergrid is 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.

Deliberation in the meeting

Members noted.

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.

Deliberation in the meeting

DVC informed that they could bring down their machine up to 60 % without oil support and with the available quality of coal.

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.

Deliberation in the meeting

Members noted.

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.

Deliberation in the meeting

WBSEDCL informed that they would seek exemption from CERC / APTEL in this regard.

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.

Deliberation in the meeting

ERLDC informed that the scheduling based on the new methodology was started from 1st June, 2018.

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.

Deliberation in the meeting

OCC referred to TCC for guidance.

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.

Deliberation in the meeting

NTPC informed that bus splitting would be implemented by December, 2018.

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.

Deliberation in the meeting

POWERGRID updated that additional bus-reactor of 125 MVAR capacity at Beharampur was ccommissioned in March'18.

Powergrid informed that 125MVAR Bus Reactor at Durgapur would be commissioned by 30.06.2018 against investment approval schedule of Nov'18.

Members noted.

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.

Deliberation in the meeting

Members noted.

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.

Deliberation in the meeting

It was informed that request for load restriction through load in Pusauli - Sahupuri line has been sent to NRPC.

OCC advised Bihar to allow the shutdown. Bihar agreed to look into it.

PART D:: OPERATIONAL PLANNING

Item no. D.1: Anticipated power supply position during July'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. is at **Annexure-D.1**.

Members may confirm.

Deliberation in the meeting

Modified anticipated power supply position for the month of July 2018 after incorporating constituents' observations is given at **Annexure-D.1***.*

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

Members may finalize the Shutdown proposals of transmission lines and generating stations for the month of July 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.

Deliberation in the meeting

Approved maintenance programme of generators as follows:

System	Station	Unit	Size (MW)	Period		No. of Days	Reason
				From	To		
Jharkhand	TVNL, Tenughat	1	210	05.07.18	30.07.18	26	Already under shutdown
WBPDCL	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	16.07.18	25.08.18	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

Approved maintenance programme of transmission elements for the month of July 2018 is given at **Annexure-D.2.**

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.

Deliberation in the meeting

Members noted.

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 approved subjected to Grid conditions in June 2018.

Members may approve.

Deliberation in the meeting

In view of delay in synchronization of Unit 5, NTPC requested to consider Talcher Unit 2 shutdown from 1st August 2018 for 30 days.

OCC decided to finalize the shutdown in next OCC Meeting.

3. Overhauling schedule of MTPS Units of KBUNL

UNIT-4 (195 MW) SD JOB			UNIT-3 (195 MW) O/H		
START DATE	COMPLETION DATE	DURATION	START DATE	COMPLETION DATE	DURATION
10.06.2018	22.06.2018	13 DAYS	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.

Deliberation in the meeting

OCC agreed the Overhauling / Shutdown schedule of MTPS units as per following plan:

UNIT-4 (195 MW) SHUT DOWN			UNIT-3 (195 MW) O/H			UNIT-1 (110 MW) O/H		
START DATE	COMPLETION DATE	DURATION	START DATE	COMPLETION DATE	DURATION	START DATE	COMPLETION DATE	DURATION
10.06.2018	24.06.2018	15 DAYS	29.06.2018	23.07.2018	25 DAYS	01.08.2018	25.08.2018	25 DAYS

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.

Deliberation in the meeting

Shutdown could not be discussed as Alipurduar Transmission Limited representative was not available in the meeting.

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.

Deliberation in the meeting

OCC approved the shutdown as per the list given in **Annexure-D.2.**

It was informed that the deemed availability would be considered as per the CERC regulations.

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.

Deliberation in the meeting

Members noted.

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.

Deliberation in the meeting

Members noted.

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.

Deliberation in the meeting

Members noted.

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.

Deliberation in the meeting

Members noted.

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.

Deliberation in the meeting

Members noted.

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.

Deliberation in the meeting

Members noted.

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.

Deliberation in the meeting

Members noted.

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

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.

Deliberation in the meeting

Members noted.

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.

Deliberation in the meeting

Members noted.

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.

Deliberation in the meeting

Members noted.

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.

Deliberation in the meeting

Members noted.

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	GD-I

				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.	
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.

Deliberation in the meeting

Members noted.

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.

Deliberation in the meeting

Members noted.

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.

Deliberation in the meeting

Members noted.

Item No. E.14: Additional agenda

1. COMPLETION OF 400 KV ALIPURDUAR-PHUNATSANHGCHU-D/C QUAD LINE

As per approved project scheme 400 KV Alipurduar-Phunatsanchu-D/C Line (Quad) along with 400 KV Line Bays at Alipurduar S/S has been commissioned and successfully charged on 27th March 18. However due to non availability of Bhutan generation and balance construction activity at Bhutan end, Power flow is yet to initiate through the lines. POWERGRID has completed all the relevant work pertaining to the line, and as on date both the lines are charged from Alipurduar end up to Indian border as anti theft measure. POWERGRID should be allowed to declare DOCO of the said line from 27.03.2018 and claim tariff accordingly.

Deliberation in the meeting

Powergrid informed that the line up to Indian boarder is ready and it is in anti theft charge from Alipurduar end.

2. STATUS OF 400KV DIKCHU- RANGPO S/C LINE

Deliberation in the meeting

In 146th OCC, TPTL informed the construction of the line has been completed and the line is ready for charging.

OCC advised TPTL to submit the first time charging documents for their line segment to ERLDC. OCC advised concern bay owners (Dikchu and Powergrid) to submit the first time charging documents to ERLDC.

Meeting ended with vote of thanks to the chair

****

Annexure - A

Participants in 146th OCC Meeting of ERPC

Venue: ERPC Conference Room, Kolkata Time: 10:30 hrs Date: 15.06.2018 (Friday)

Sl No	Name	Designation/ Organization	Contact Number	Email	Signature
1	J. Bandyopadhyay	Member Secretary ERPC	9432326351	mserpc-power@gov.in	[signature]
2	P. Mukhopadhyay	ED, ERLDC	9869438073	pmukhopadhyay@posoco.in	[signature]
3	G. Mitra	DGM, ERLDC	9831297392	gopalmitra@posoco.in	[signature]
4	SURAJIT BANERJEE	DGM, ERLDC	9433041823	surajit.banerjee@posoco.in	[signature]
5	S.K. HAZRA	DGM, Powergrid ER-II	9433041805	skhazra@powergridindia.com	[signature]
6	S.K.SINGH	DGM/POWERGRID PATNA	8544401030	singhsk@powergridindia.com	[signature]
7	H.S. Sahu	NTPC, ER-I, Patna	9431932??	hssahu@ntpc.co.in	[signature]
8	R.P. Singh.	KBUNL	9431011366	ramparikshaa@rediffmail.com	[signature]
9	B. Pan	CE-I/SLDC DVC	9903247102	bpan.dvc@gmail.com	[signature]
10	Angu Rai	Manager, BPC	+975 77215415	[illegible]@gmail.com	[signature]
11	Krishna Kumar	EE/THP Bhutan	+97517626206	krishnakchettri@gmail.com	[signature]
12	Jamyangla	System operator	+97517203702	jamyangla@bpc.bt	[signature]
13	Biplab Chatterjee	Group Head (OPS) MPL	9204857100	biplab.chatterjee@tatapower.com	[signature]
14	AMIT BISWAS	Sr. Engineer Electrical	9583040387	electrical_orissa@jindalgroup.com	[signature]
15	Lalit Mohan	Sr. Manager (TUL)	7719365591	~~lalit.mohan@[illegible].com~~ lalitmohan[illegible]@gmail.com	[signature]
16	Y Kumar	Sr VP (TUL)	991041370?	ykumar@[illegible].com	[signature]
17	SKBHOWMICK	Sr VP, TPTL	9958008265	swapan.b@tptl.com	[signature]
18	RAJ PROTIM	Sr. Engr, ERLDC	9903329591	rajprotim@posoco.in	[signature]
19	[illegible]	Dy Mgr.	9433013173	[illegible]@gmail.com	[signature]
20	Chandan Mallick	Snr Engr.	9007059660	chandan_mallick@posoco.in	[signature]

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

Participants in 146th OCC Meeting of ERPC

Venue: ERPC Conference Room, Kolkata　　Time: 10:30 hrs　　Date: 15.06.2018 (Friday)

Sl No	Name	Designation/ Organization	Contact Number	Email	Signature
21	Rup Narayan Pradhan	Sr. Engineer BPSO, BPC, Bhutan	+975 17934948	rupnarayan@bpc.bt	[signature]
22	Karma	EE, DGPC	+975 77220257	karmal@gmail.com	[signature]
23	Tshedon MO	SO, KHP, DGPC	+975 77652592	[illegible]@gmail.com	[signature]
24	Om Nath Kuikel	AE/DGPC	+975 17687335	kuikelkhp@gmail.com	[signature]
25	PRANAY KARKI	EE/Sikkim	9647874671	pranay[illegible]@gmail.com	[signature]
26	NAMGYAL TASHI	EE/Sikkim	7797672243	namgyaltashi26@gmail.com	[signature]
27	A.K. Datta	AGM (EEMG/ER)	9431215304	dattaak@ntpc.co.in	[signature]
28	A.K. Chattopadhyay	AGM/(OS)	9434038978	akchattopadhyay@ntpc.co.in	[signature]
29	S.N Ghosh	DGM(EEMG)	9471006634	[illegible]@ntpc.co.in	[signature]
30	S.K. MISHRA	DGM (OS) NTPC, ER-II	9438233207	skmishra05@ntpc.co.in	[signature]
31	A.N. Pal	CM (SO) ERLDC, POSOCO	9831339589	anpal@posoco.in	[signature]
32	S. KONAR	CM, ERLDC	9436335370	konar_s@posoco.in	[signature]
33	D. Majumder	Sr Engineer ERLDC	9903593500	debajyoti[illegible]@gmail.com	[signature]
34	D.K. Bauri	EE (Comml), ERPC	9883617236	eecoml.erpc@gmail.com	[signature]
35	B. SARKHEL	ERPC Consultant	9433065724		[signature]
36	S.P. Datta	AGM, ERPC	9433067022	spdatta@rediffmail.com	[signature]
37	Abhishek Kumar	SLDC, BSPTCL	9430213191	abhijoyslife@gmail.com	Abhishek Kumar
38	R.K. Pandey	SLDC, JUSNL Ranchi	9934138298	k.rajesh.p@gmail.com	[signature]
39	P.K. Kundu	SLDC, WBSETCL	9434910030	ce.wbsldc@gmail.com	[signature]
40	A Karmakar	CE (CPD), WBSETCL	9434910019	cpd@wbsetcl.in	[signature]

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

Participants in 146th OCC Meeting of ERPC

Venue: ERPC Conference Room, Kolkata Time: 10:30 hrs Date: 15.06.2018 (Friday)

Sl No	Name	Designation/ Organization	Contact Number	Email	Signature
41	Preetam Banerjee	SE/WBSEDCL	9432140765	preebant2@gmail.com	[signature]
42	N.G. Saha	DAM, WBPDCL	8336907700	ngsaha@wbpdcl.co.in	[signature]
43	Arunava SenGupta	DAM/CESC	9831802682	arunava.gupta@rp-sg.in	[signature]
44	Pulak Nandy	DGM(OS)/HEL	8335067266	Pulak.nandy@rp-sg.in	[signature]
45	T. K. Mukhopadhyay	Sm/(O)/DPL	8370881407	tapanmkj@gmail.com	[signature]
46	Umakant Sahoo	Sr GM - SLDC Odisha	9438907403	ukc.bbsr@yahoo.com	[signature]
47	A.K. Mishra	DLD, SLDC Odisha	9438907402	cld.sldc@sldcorissa.org.in	[signature]
48	PRASHANT KUMAR DAS	G.M (El) GRIDCO LTD.	9438907408	prashantk_das@yahoo.co.in	[signature]
49	H.P. Mahapatra	G.M(El) OHPC	7328840015	hpm.ohpc@gmail.com	[signature]
50	S. K. Maharana	GRIDCO	9438591100	sanjitmaharana11@gmail.com	[signature]
51	S. Banerjee	SE(E)/WBSETCL	9434910093	svkbanerjee@yahoo.com	[signature]
52	C. K. Halder	ACE WB SLDC	9434910379	—	[signature]
53	S. M. JHA	Consultant ERPC	9874738913		[signature]
54	Rakesh kr singh	DMTCL	7673034014	rakeshkumar.singh@infra-essel.group.com	[signature]
55	Vikash Kumar	BSPTCL	9831574894	vikashsit035@gmail.com	[signature]
56	B.B. Deo	ERLDC	9438551830	bibhu.cok@gmail.com	[signature]
57	P. P. Jena	ERPC	9776198991	ppjena.erpc@gov.in	[signature]
58	A. De	ERPC	9681932906	alinpantha@gmail.com	[signature]
59	T.R. Mohapatra	ERLDC	9433041823	trmohapatra@posoco.in	[signature]
60	S.K. Naik	DGM/BBSR	9437962169	onmodisha@powergrid.co.in	[signature]

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

Participants in 146th OCC Meeting of ERPC

Venue: ERPC Conference Room, Kolkata Time: 10:30 hrs Date: 15.06.2018 (Friday)

Sl No	Name	Designation/ Organization	Contact Number	Email	Signature
61	Biswajit Mondal	ERLDC Sr. Engr.	9903329271	biswajit.mondal@posoco.in	[signature]
62	P. Ghosh	ER-II, Dy. Mgr	9434748263	parthaghosh@powergridindia.com	[signature]
63					
64					
65					
66					
67					
68					
69					
70					
71					
72					
73					
74					
75					
76					
77					
78					
79					
80					

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

No.23/70/2017-R&R
Government of India
Ministry of Power
***

Shram Shakti Bhawan, Rafi Marg,
New Delhi, the 5th April, 2018

To

1. Principal Secretaries/Secretaries (Power/Energy) of all State Governments/UTs.
2. CMD/MDs of State Gencos/ Discoms
3. CMD of all CPSUs under administrative control of Ministry of Power

Sub: Flexibility in Generation and Scheduling of Thermal Power Stations to reduce emissions.

Sir/Madam,

The concept of Flexible utilization of coal as introduced by the Central Government in year 2016, allows the use of coal within its basket in optimal manner. This avoids unnecessary coal transportation and reducing the power generation cost. In a similar manner, it is has been decided that there should be some flexibility in Generation and scheduling of Thermal Power Stations so that Discoms are able to meet their RPO without facing any additional financial burden.

2. Further, due to large scale integration of Grid connected renewables which inherently has huge variability of generation, there is a need of balancing power to maintain security and stability of Grid. Under present regulation, such balancing power is to be arranged by the Discoms. Hence, the responsibility of arranging balancing power requirement will now also be shared by the Generators.

3. This flexibility will provide the Power Generators an opportunity to optimally utilize generation from RE sources and also help in reducing emissions and it shall also facilitate further RE Capacity addition.

4. The detailed mechanism of allowing Flexibility in Generation and Scheduling of Thermal Power Stations is enclosed at **Annexure**.

5. All stakeholders are requested to take necessary action in this regard.

6. This issues with the approval of Hon'ble Minister of State (I/C) for Power and New & Renewable Energy.

Enclosure: as above

Yours sincerely,

5/4/18

(Ghanshyam Prasad)
Chief Engineer
Tel. No. 011-23710389

Copy to:
1. Secretary, Ministry of New & Renewable Energy, New Delhi
2. Secretary, Ministry of Coal, New Delhi
3. Chairperson, CEA, New Delhi
4. Secretary, CERC, Chanderlok Building, Janpath, New Delhi
5. Secretaries of all State Electricity Regulatory Commissions/JERCs

Copy for information to:
PS to MOSP (I/C), PPS to Secretary (Power), All Joint Secretaries/EA/ CE (OM&RR) and Directors/ DS, MoP

Flexibility in Generation and Scheduling of Thermal Power Stations to reduce emissions.

A. Background

The Government of India has given commitment that as part of Nationally Determined Contributions (NDC), India would have 40% of its installed capacity from non-fossil fuel sources by the year 2030.

In pursuance of this, as per provisions of Tariff Policy issued on 28th January, 2016, Ministry of Power has issued 'Long term growth trajectory of RPOs' for Non-solar as well as solar sources, uniformly for all States/UTs, initially for three years from 2016-17 to 2018-19.

Long Term trajectory	2016-17	2017-18	2018-19
Non-Solar	8.75%	9.5%	10.25%
Solar	2.75%	4.75%	6.75%
Total	11.5%	14.25%	17.00%

In the year 2016, Government has introduced the concept of flexible utilization of coal. Earlier, each power plant owned by a company had to sign Fuel Supply Agreements (FSA) for supply of coal from a specified coal mine. The policy for flexible utilization of coal allowed a company to use coal within its basket in the most optimal manner such that unnecessary coal transportation is avoided and lower costs of power generation could be passed on to the beneficiary states.

In a similar manner, there should be some flexibility provided in electricity Generation so that Discoms are able to meet their RPO without facing additional financial burden.

B. Need for allowing flexibility in Generation

Due to larger procurement of Renewables, the issues being faced by the stakeholders including Discoms which need to be addressed inter-alia are:

i) Need for balancing power: RE Generation sources have the benefits of cleaner energy sources but Solar and Wind energy is available only during some part of the day and is generally infirm in nature. This necessitates the user of RE energy

(mainly Discoms) to make arrangements for balancing power to meet the power requirement when RE energy will not be available. Thus, due to large scale integration of Grid connected renewable which inherently has huge variability of generation, there is a requirement of balancing power which matches with such variations so that the security and stability of Grid is maintained. Under present regulation, such balancing power is to be arranged by the Discoms.

ii) Additional financial burden to Discoms to meet RPO: Most of the states already have adequate PPA. In order to meet the RPO, Discoms will have to tie up additional RE power which will pose additional financial burden on them.

Thus, considering the impact of new environmental norms on thermal power generation capacity, energy storage capability of Hydro stations, infirm nature of RE Generation sources, balancing power requirements by Discoms and the benefit of Renewable Sources of energy in reducing environmental emissions, there is a need to provide flexibility to the Generating Stations to generate RE power and supply power under existing / future contractual agreements. Discoms will have flexibility to procure RE power within their existing PPA and meet their RPO.

C. Flexibility to Generating company

The generating company shall have the flexibility of using its Thermal power or renewable power to meet its scheduled generation from the specific thermal generating station. This flexibility will provide the Power Generators an opportunity to optimally utilize generation from RE sources and also help in reducing emissions. Beneficiaries of the Power will also get the firm power including Renewable power, which will help them to meet their RPO obligations and also the responsibility of arranging balancing power requirement will be shared by the Generators.

D. Proposed Mechanism for allowing Flexibility in Generation

i) Any generating company having coal/lignite/gas based thermal generating stations, may establish or procure renewable energy generating capacity anywhere in the country either at existing stations or at new locations.

ii) The generating companies would be allowed to utilize such renewable capacities for supplying power against existing commitments to supply the power from thermal station(s) anywhere in India.

iii) **Scheduling and commercial mechanism**

a. Declared Capacity (DC) shall be declared by the existing Thermal generating station as per the extent regulations. Once the schedule for the next day is received, the generating station shall have the flexibility of using its Thermal power or the generating company owned renewable power or procured RE Power to meet its generating station scheduled generation. Thus the RE power shall replace the Thermal power of any of the thermal generating station of the generating company, wherever found feasible by the generating company.

b. The sum total of all the power actually supplied from various generating sources shall be considered for DSM purposes.

c. The Declared Capacity of the Thermal Generating station shall be with respect to the terms of the PPA and the availability of primary fuel. The declared capacity of thermal generating station cannot be based on the availability of the additional RE power.

d. The changes in the regulation, if any, required for implementation of the above scheme shall be done by the appropriate Electricity Regulatory Commission.

e. The Power from RE stations would be supplied to the Beneficiaries at a Tariff which shall be equal to Energy Charge Rate (ECR) of the power station which was originally scheduled. This would include the balancing cost and the tariff risk to be taken by the Generator.

f. The net gain realized, if any, from supply of RE power in place of thermal power under existing PPA shall be passed on to the beneficiary appropriately considering balancing power support provided and the risk taken by the

generator. For this purpose, at the end of the year, truing-up can be done by the Appropriate Commission and the net gain , if any, earned by the Generator shall be shared with the beneficiary in the ratio of 50 (Beneficiary) : 50 (Generator).

g. This shall not be applicable to RE Projects for which PPAs have already been signed by the Generator and Beneficiaries.

h. The extra generation capacity available from existing thermal station(s) corresponding to the renewable generation capacity and up to the existing contracted capacity would make available additional power which at the time of need can be utilized by the beneficiaries.

iv) **RPO/ RGO** - Power which is generated from such renewable energy shall be eligible for any cross subsidies notified by the Government from time to time including waiver from ISTS transmission charges and losses as per notification from the Government. Such renewable energy procured by the beneficiaries shall qualify towards meeting their Renewable Purchase Obligations (RPO obligations). Further, such renewable power in capacity terms shall also qualify for Renewable Generation Obligations (RGO obligations) for the generators as envisaged in the Tariff Policy and as and when notified by Government of India.

v) **Deviation Settlement Mechanism (DSM)& Scheduling-**

For the purposes of flexible scheduling and operation of thermal stations, while giving the DC of the existing thermal station the generator shall not take into the account the forecast of generation from renewable component. Once the schedule for specific thermal generating station has been received, then depending upon the forecast available for RE energy, that Generating Station shall supply power either from existing thermal station or combination of thermal and RE power to meet its scheduled power as defined earlier in this scheme. Thus the deviation, if any, shall be made applicable to the scheduled generation from thermal station and sum total of actual generation from thermal/RE sources. No DSM shall be payable/receivable by the generating station if it is able to meet its scheduled generation by supplying thermal and RE power in any ratio.

vi) Procurement and supply of RE power by the Generator for supply under this scheme shall be allowed and necessary License required need to be fulfilled by the respective Generating Company.

vii) The proposed scheme shall be applicable only for the Thermal projects developed / being developed under Section 62 of the Electricity Act, i.e., "Regulated Tariff based Projects".

viii) Use of flexibility in generation as proposed in the scheme is optional and only if found feasible Generator can use power from RE sources to replace its existing thermal power to meet its schedule generation from thermal power station.

ix) Changes, if any, required in the Regulation for implementation of the above scheme shall be made by the appropriate Electricity Regulatory Commission.

x) Central Electricity Authority shall monitor the implementation and suggest changes, if required, in the scheme to the Central Government. In doing so, CEA may consult MNRE, POSOCO, CERC, Discoms and other stake holders.

xi) CEA shall also suggest a road map for implementation of the scheme at the Generating company level i.e a change from Station wise flexibility to company-wise flexibility

---

Power System Operation Corporation Ltd.

146th OCC Meeting


At ERPC, Kolkata

15th June, 2018

ER Grid Performances

ERLDC POSOCO

Highlights for the month of May-18

Frequency Profile
Average Freq:- 49.95 Hz
Avg FVI: - 0.074
Lowest FVI:- 0.020

Max- 50.22Hz on 12th May' 18
Min- 49.56 Hz on 26th May' 18

71.16% of the time freq was with in IEGC Band

Whether any ADMS operation at DVC and West Bengal on 26th May'2018?

Peak Demand
ER: 22031 MW on 21st May 2018 at 20:46 hrs
% Growth in Average Demand Met w.r.t. last year: 8.0%

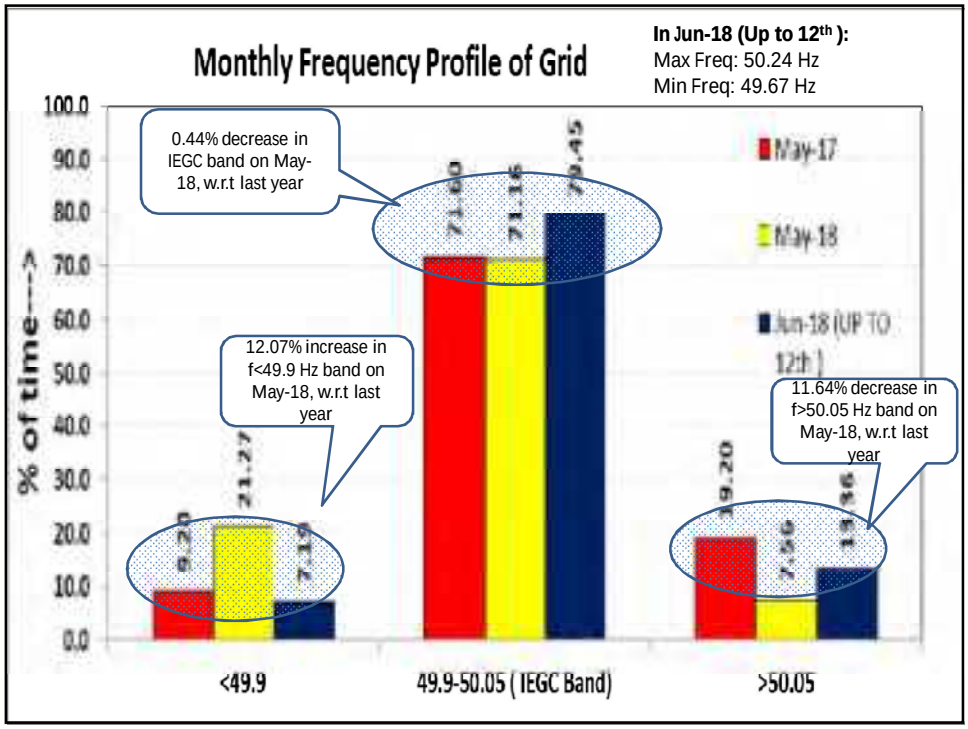
BSPHCL : 4868 MW ; ON 25/05/18
JUVNL: 1319 MW; ON 19/05/18
DVC: 3115 MW; ON 29/05/18
GRIDCO: 4785 MW; ON 24/05/18
WB: 8731 MW; ON 30/05/18
SIKKIM: 101 MW; ON 04/05/18

Energy met
Max. 480 MU on 30th May 2018
%Growth w.r.t. last year on Max energy 4.39%
Avg. 438 MU in May 2018
%Growth w.r.t. last year on Avg. energy : 7.4%

New Element
Generating Units-NIL

Open Access
STOA transactions approved -362 nos.

Energy Approved- 1048.3 MUs

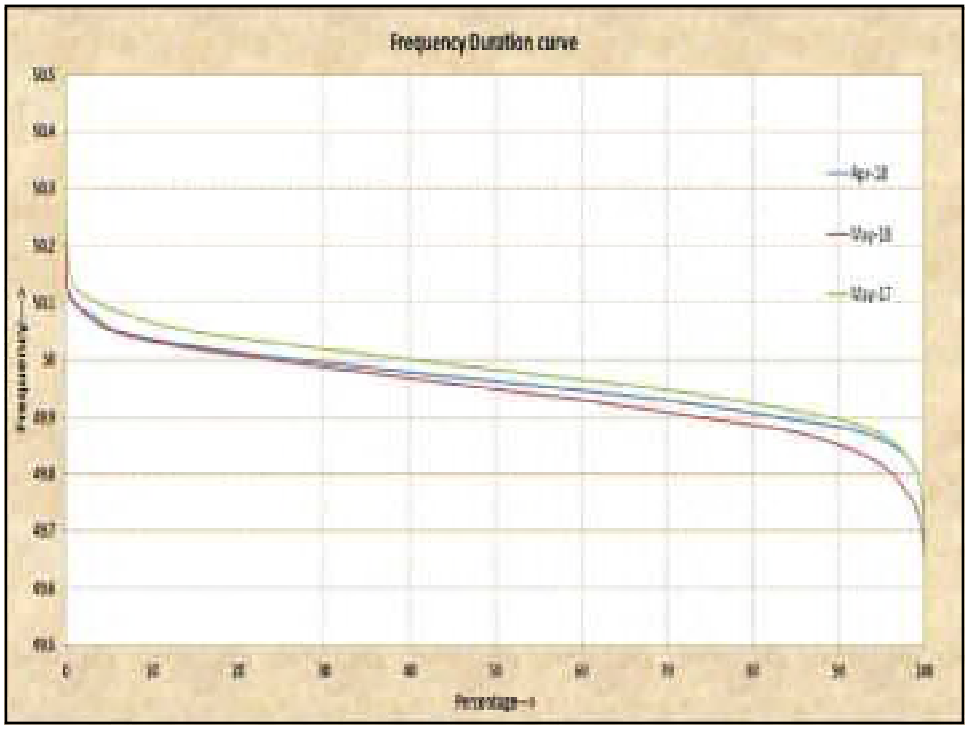


Commissioning list of transmission element and generators: May-2018

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.	

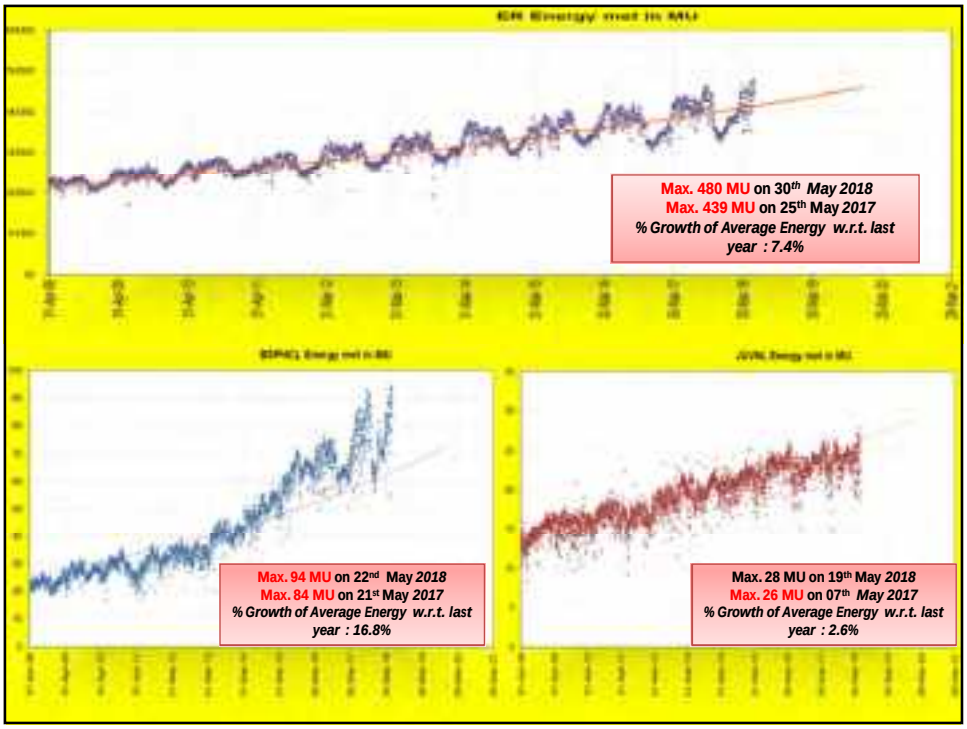
Commissioning list of transmission element and generators: May-2018

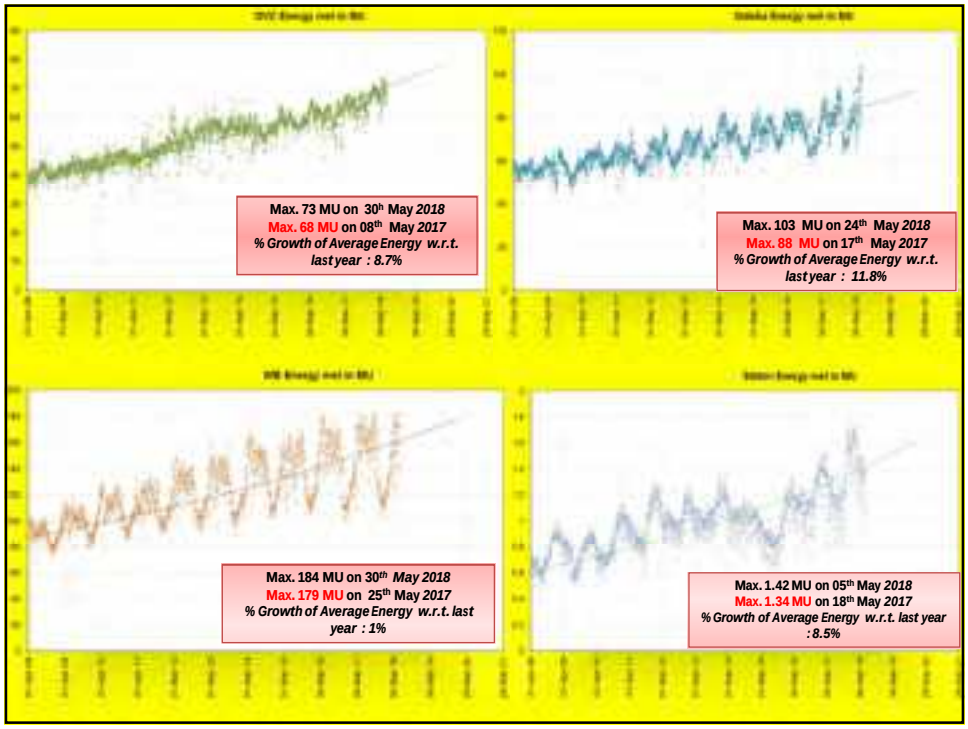
SL NO	Element Name	Owner	Charging Date	Charging Time	Remarks
12	132/33kv 31.5MVA TR#3 Chanditala	WBSETCL	04.05.18	14:50Hr	Charged(HV).
13	132/33kv 31.5MVA TR#3 Chanditala	WBSETCL	05.05.18	15:02Hr	Loaded
14	132/33 KV 50MVA TR#3 C K Road	WBSETCL	25/05/2018	19:00Hr	CHARGED(HV).
15	132/33 KV 50MVA TR#3 C 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



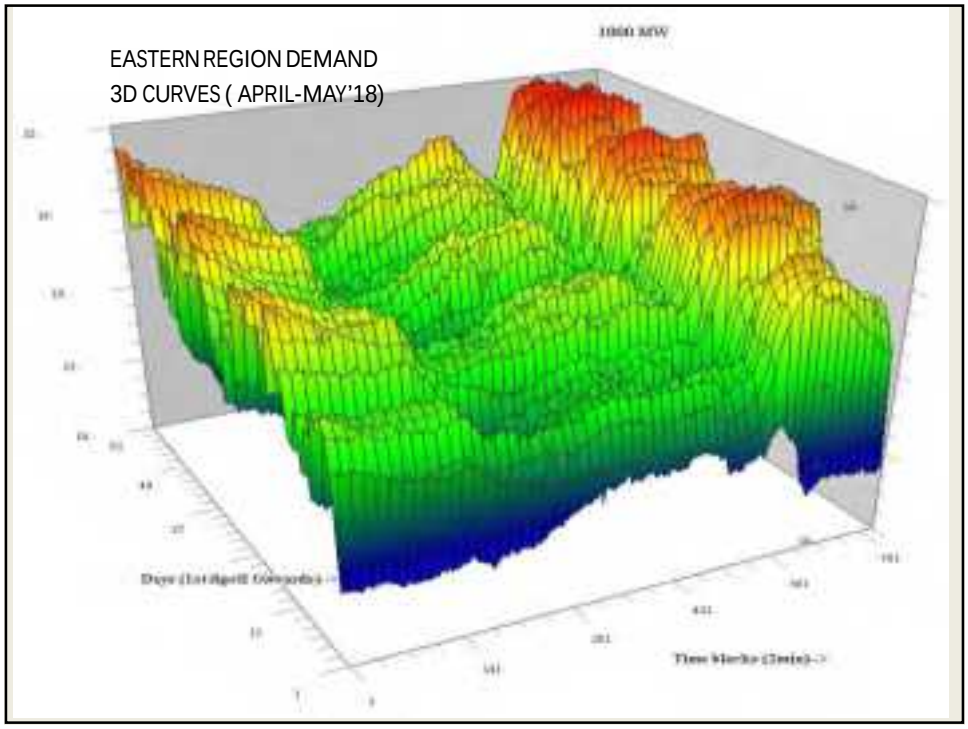
So Far Highest Demand				
Constitute	Demand (in MW)	Date	Time	Dmd met on 21st May'18 (max dmd met day)
Bihar	4868	25-May-18	21:26	4794
DVC	3333	10-Apr-16	20:57	2901
Jharkhand	1319	19-May-18	20:58	1304
Odisha	4785	24-May-18	19:37	4660
W. Bengal	8731	30-May-18	23:16	8195
Sikkim	117	28-Oct-16	18:59	86
ER	22040	07-June-18	20:47	22031

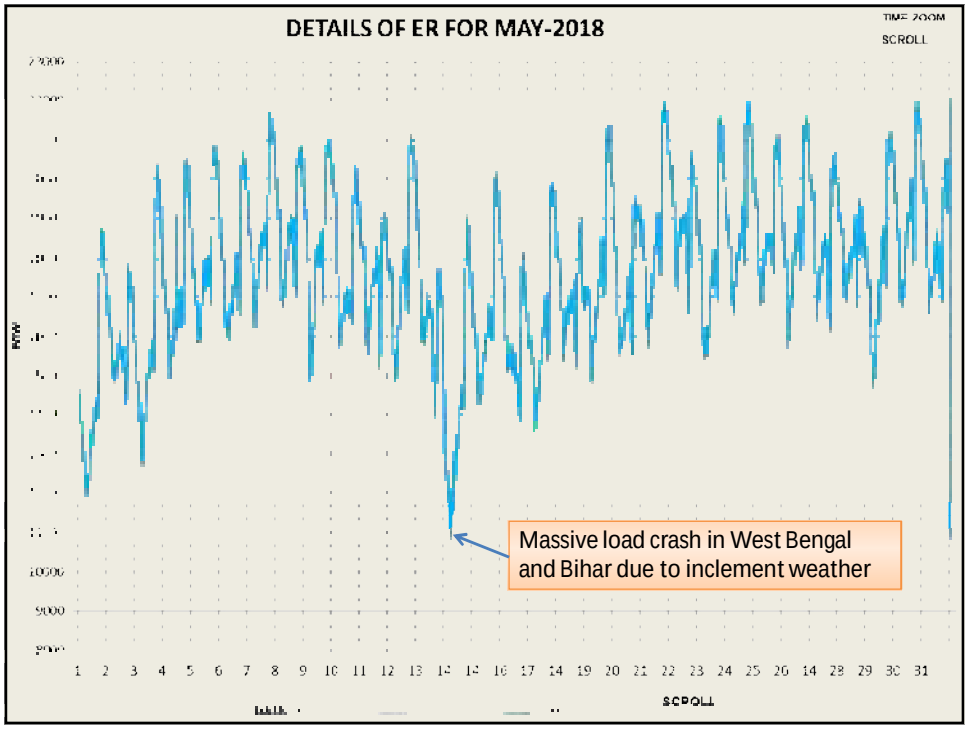
So Far Highest Energy Consumption			
Constitute	Energy consumption (in MUs)	Date	Dmd met on 21st May'18 (max dmd met day)
Bihar	96.4	06-June-18	91.4
DVC	75	23-Mar-17	64.6
Jharkhand	27.8	19-May-18	24.4
Odisha	103.5	24-May-18	90.7
West Bengal	184	30-May-18	165.9
Sikkim	2.1	07-Dec-17	1.5
ER	480	30-May-18	446



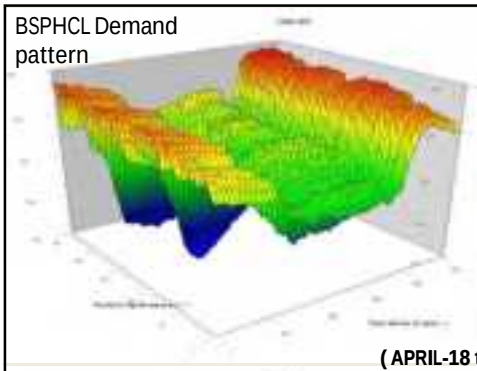


3D VIEW OF ER DEMAND PATTERN (APR-18 to May-18)

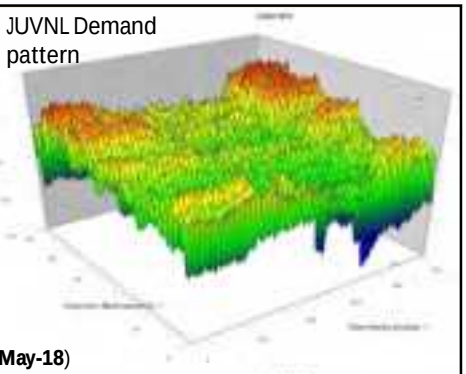

EASTERN REGION DEMAND
3D CURVES (APRIL-MAY'18)


DETAILS OF ER FOR MAY-2018
SCROLL
MW
Massive load crash in West Bengal
and Bihar due to inclement weather
SCROLL

BSPHCL Demand pattern

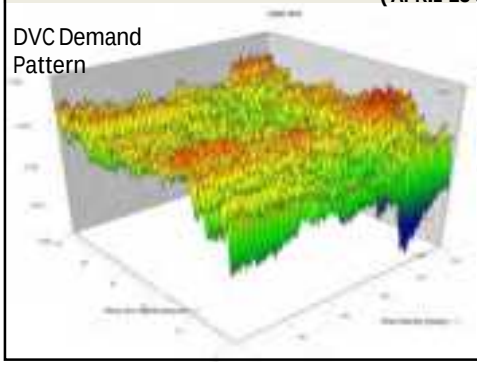


JUVNL Demand pattern

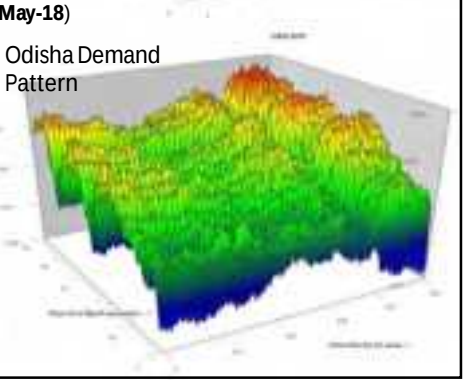


(APRIL-18 to May-18)

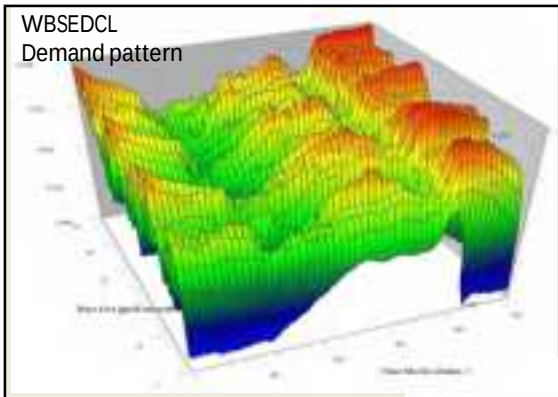
DVC Demand Pattern



Odisha Demand Pattern

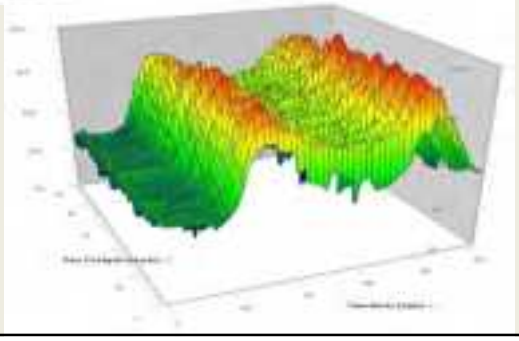


WBSEDCL Demand pattern



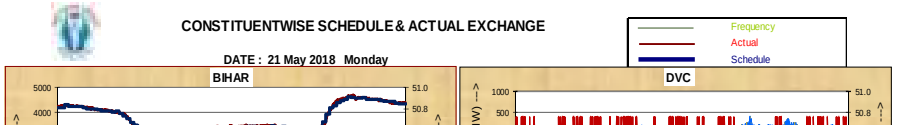
(APRIL-18 to May-18)

Sikkim Demand pattern

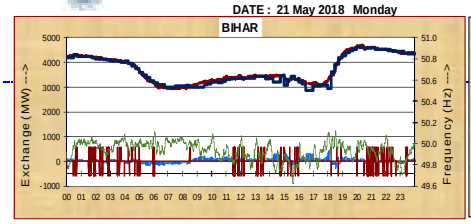


CONSTITUENTWISE SCHEDULE & ACTUAL EXCHANGE

DATE : 21 May 2018 Monday

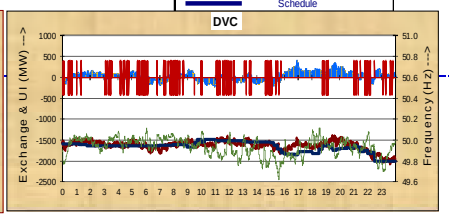


BIHAR



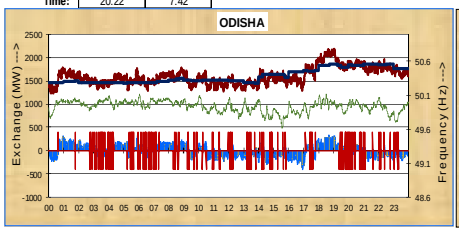
Act MU	MAX	MIN	Min/Max	UI	SCHEDULE
89.3	4702	2919	0.62	0.95	88.35
Time:	20:22	7:42			

DVC



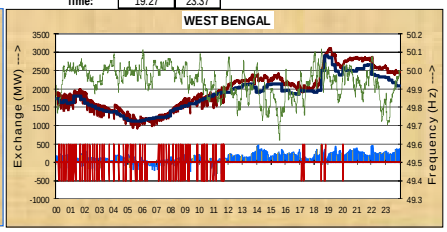
Act MU	MAX	MIN	Min/Max	UI	SCHEDULE
-38.9	-1385	-2066	0.67	0.85	-39.79
Time:	19:27	23:37			

ODISHA



Act MU	MAX	MIN	Min/Max	UI	SCHEDULE
38.4	2176	1235	0.57	0.04	38.40
Time:	19:03	0:10			

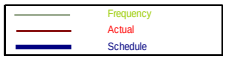
WEST BENGAL



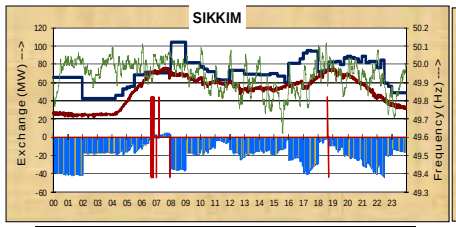
Act MU	MAX	MIN	Min/Max	UI	SCHEDULE
47.8	3108	918	0.30	3.32	44.48
Time:	19:10	5:41			

CONSTITUENTWISE SCHEDULE & ACTUAL EXCHANGE

DATE : 21 May 2018 Monday

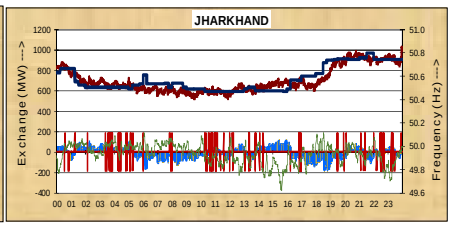


SIKKIM

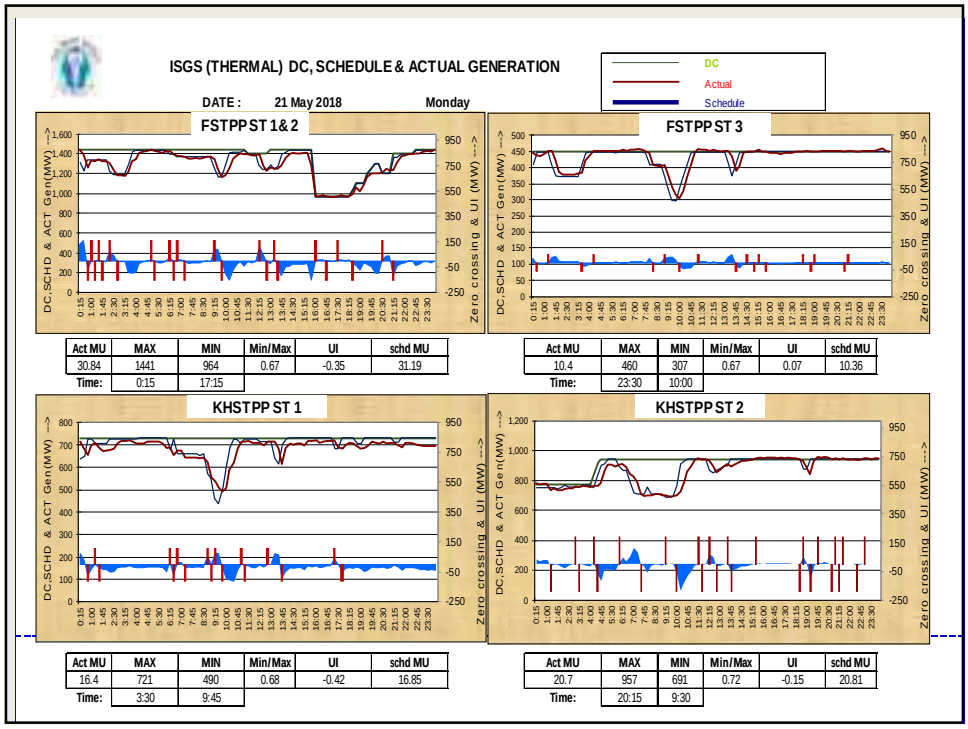


MU	MAX	MIN	Min/Max	UI	SCHEDULE
1.2	76	23	0.30	-0.45	1.68
Time:	19:01	1:15			

JHARKHAND



Act MU	MAX	MIN	Min/Max	UI	schd MU
16.88	1034	527	0.51	-0.27	17.15
Time:	23:56	11:52			

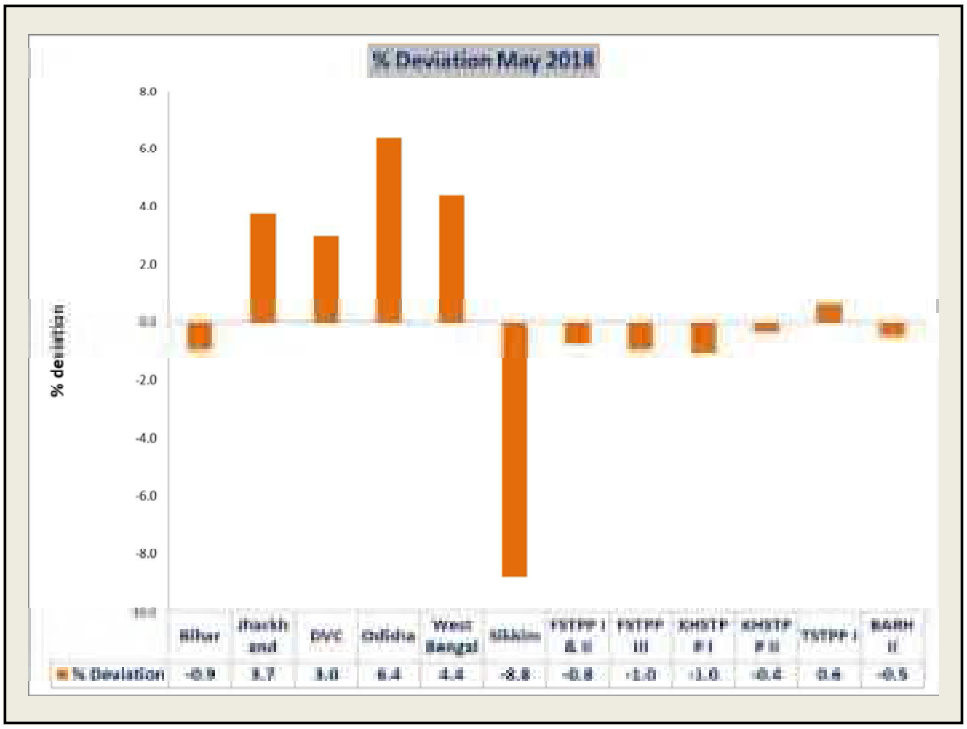


Over Drawl / Under Injection by ER Entities

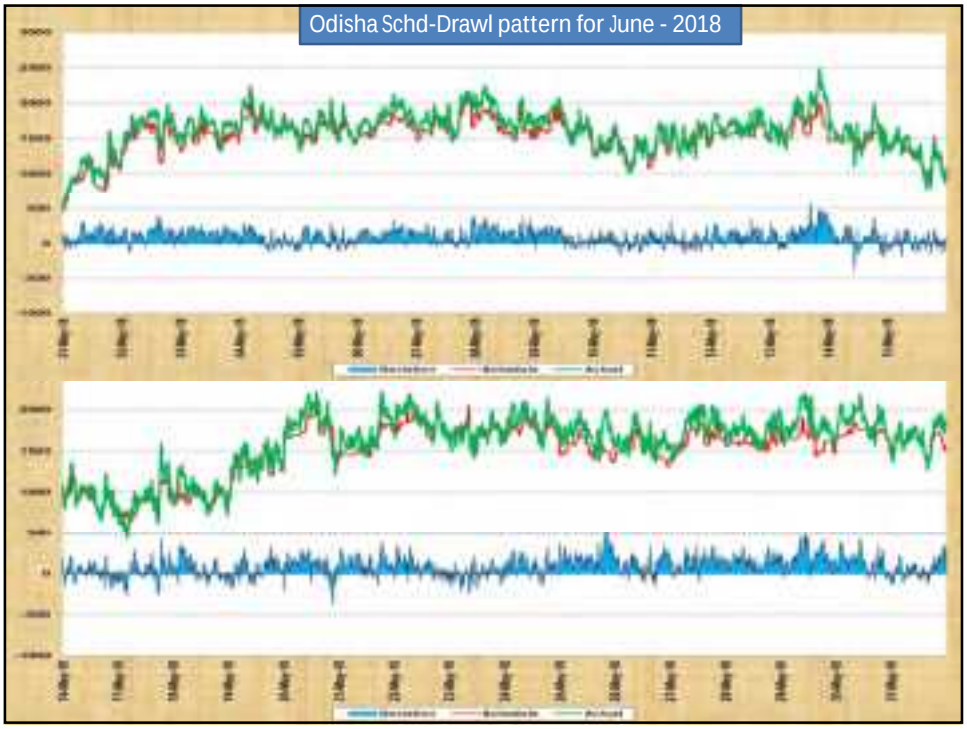
Non-compliance of direction issued by SLDC

May-2018 Schedule Vs Actual Drawl

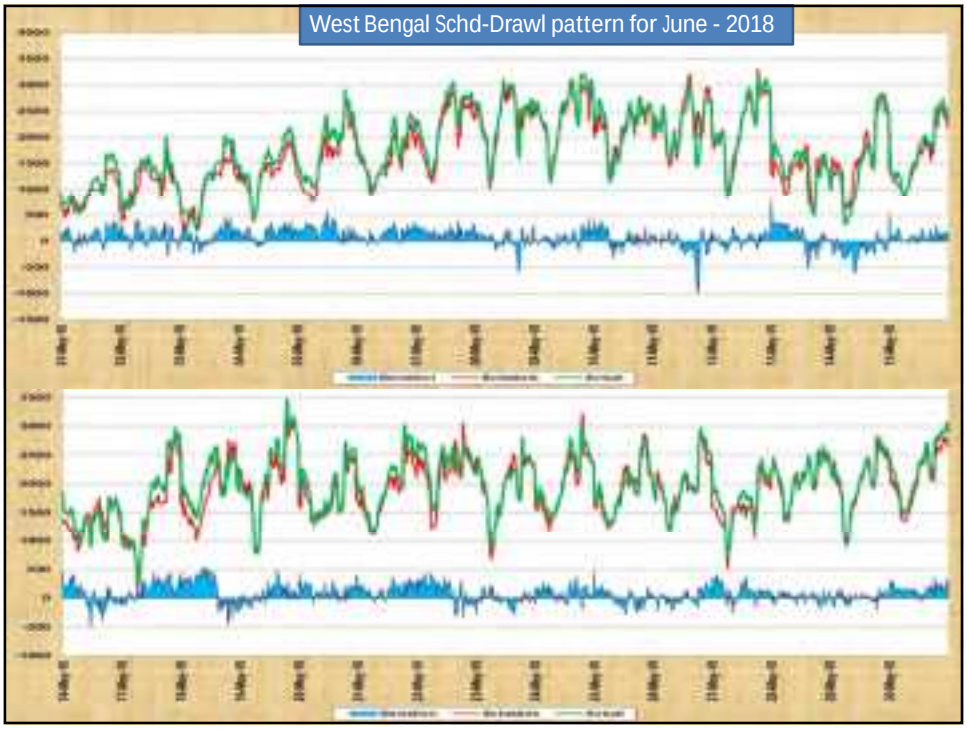
	Schedule (Mu)	Actual (Mu)	Deviation (Mu)	Daily Avg. Dev (Mu)	% Deviation (Daily Average)
Bihar	2582	2557	-24	-0.8	-0.9
Jharkhand	**561**	**582**	**21**	**0.7**	**3.7**
DVC	**-1452**	**-1408**	**44**	**1.4**	**3.0**
Odisha	**1121**	**1192**	**72**	**2.3**	**6.4**
West Bengal	**1352**	**1412**	**60**	**1.9**	**4.4**
Sikkim	43	39	-4	-0.1	-8.8
FSTPP I & II	791	785	-6	-0.2	-0.8
FSTPP III	309	306	-3	-0.1	-1.0
KHSTPP I	498	493	-5	-0.2	-1.0
KHSTPP II	736	733	-3	-0.1	-0.4
TSTPP I	655	659	4	0.1	0.6
BARH II	746	742	-4	-0.1	-0.5

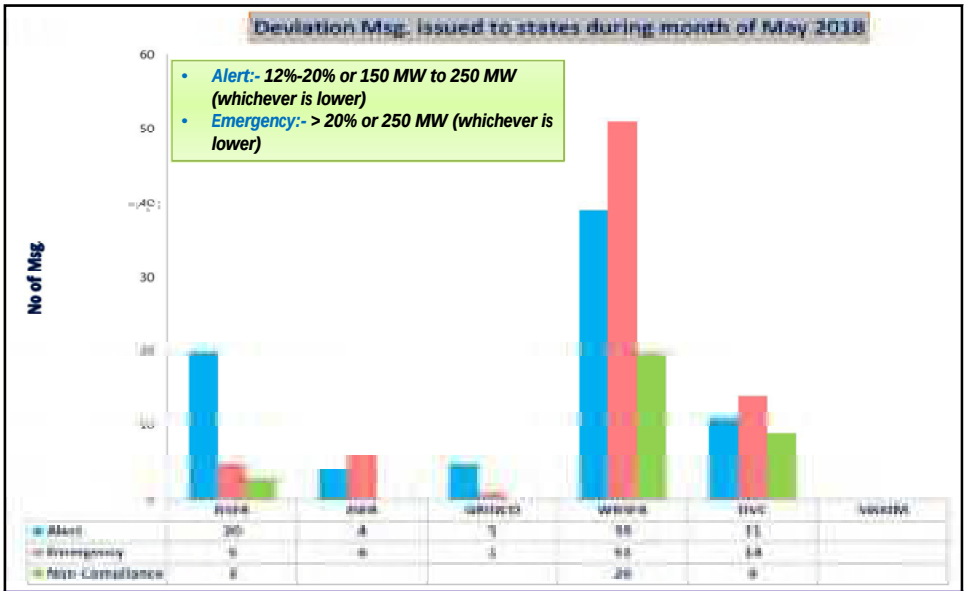


Odisha Schd-Drawl pattern for June - 2018

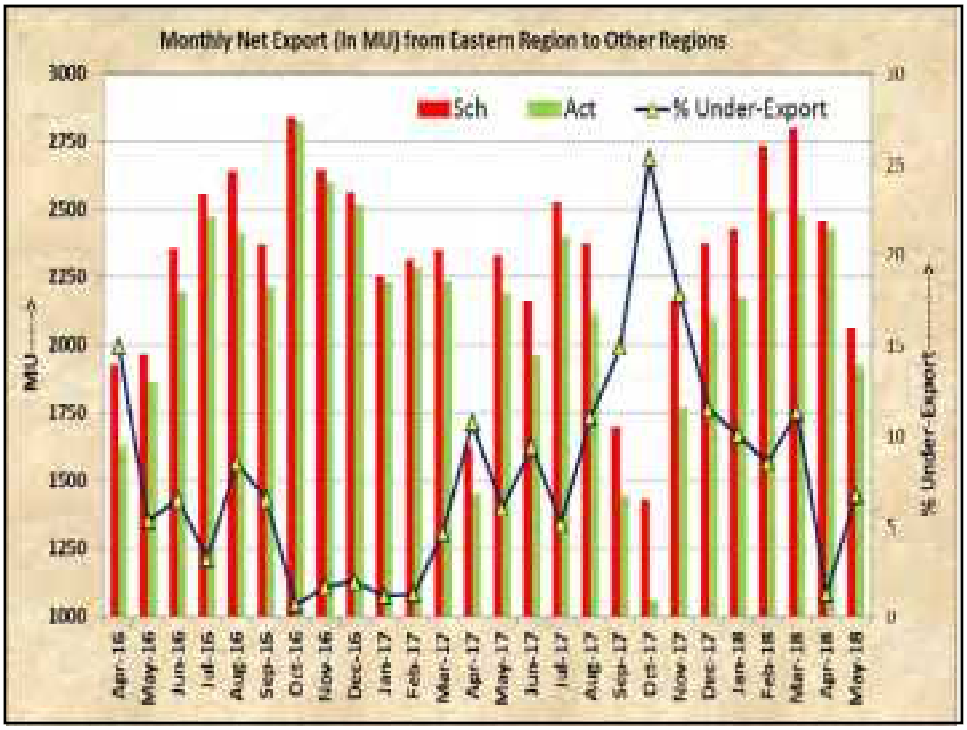


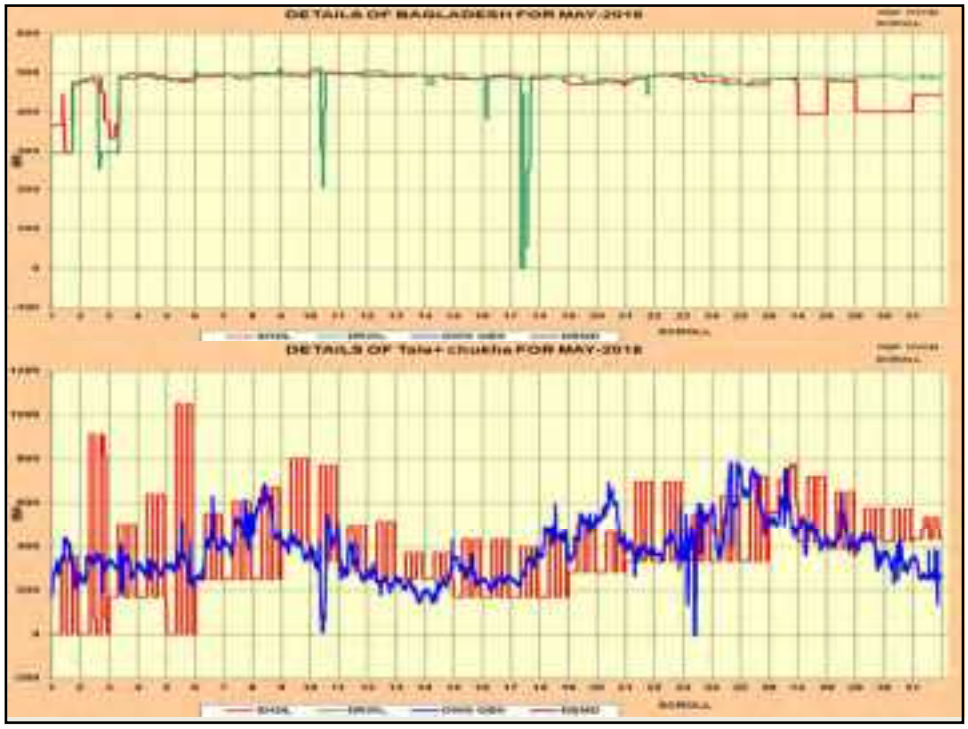
West Bengal Schd-Drawl pattern for June - 2018





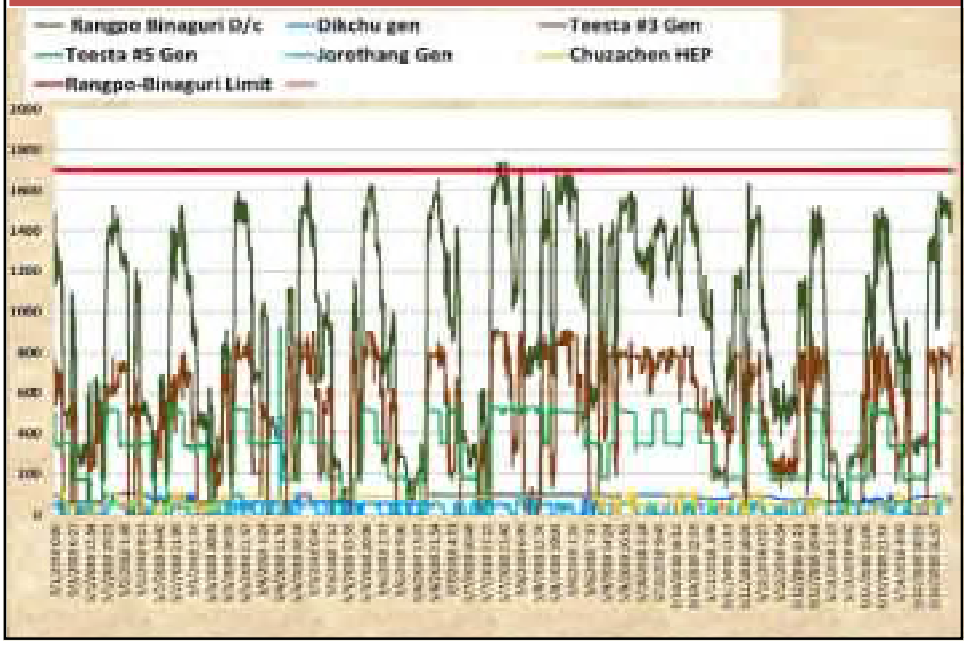
- Total Number of Deviation violation and zero crossing violation messages issued during May-2018 :- 240
- Deviation Violation Messages :- 203 & Zero Crossing Violation :- 37



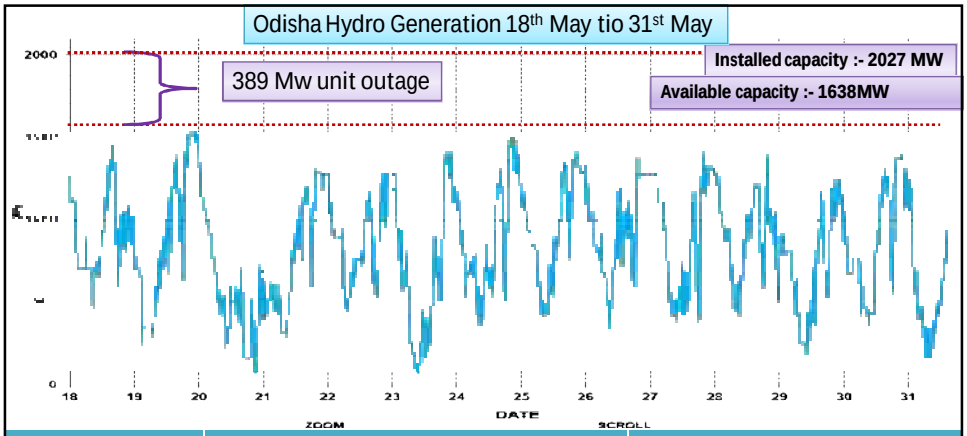


Rangpo – Binaguru – D/C loading Pattern

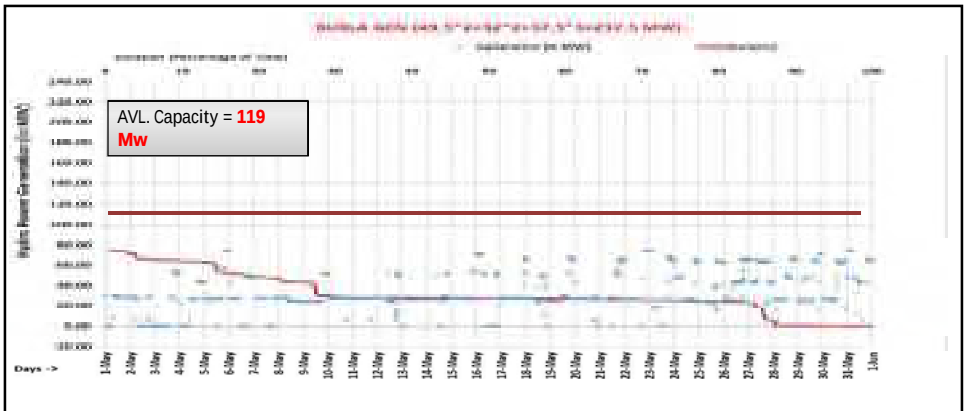
Rangpo – Binaguri D/C & Generation Pattern of Generators in Sikkim
01-06-2018 to 14-06-2018



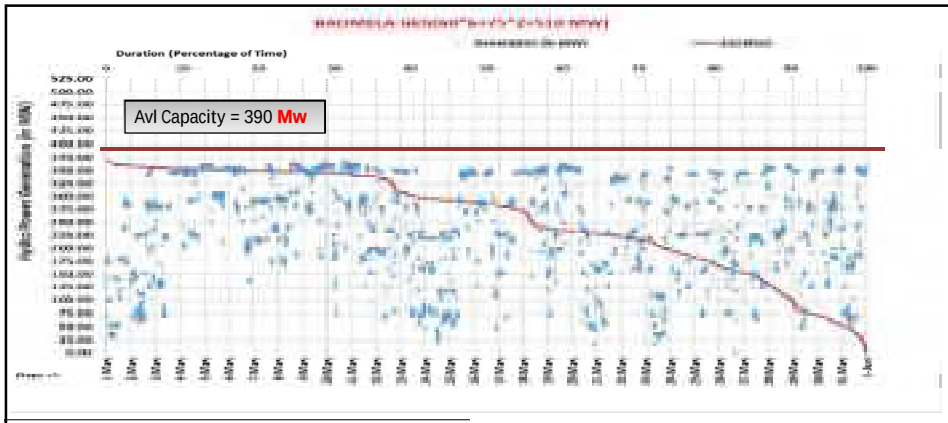
State Hydro Generators Performance

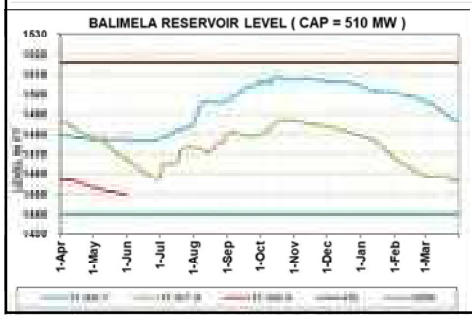


	Long Outage	Forced Outage
Burla	75 : U-5(37.5 mw), U-6(37.5 mw)	90: U-1(49.5 mw), U-2(49.5 mw)
Chipilima	24 :U-3 (24mW)	
Rengali		
Balimela	120 : U-1(60 mw) U-2(60Mw)	
Up Kolab	80 : U-2(80 Mw)	
Indravati		
	299	90

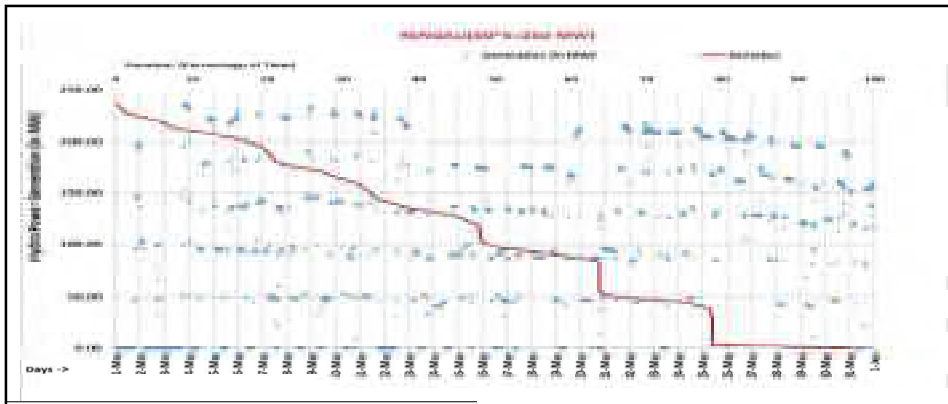


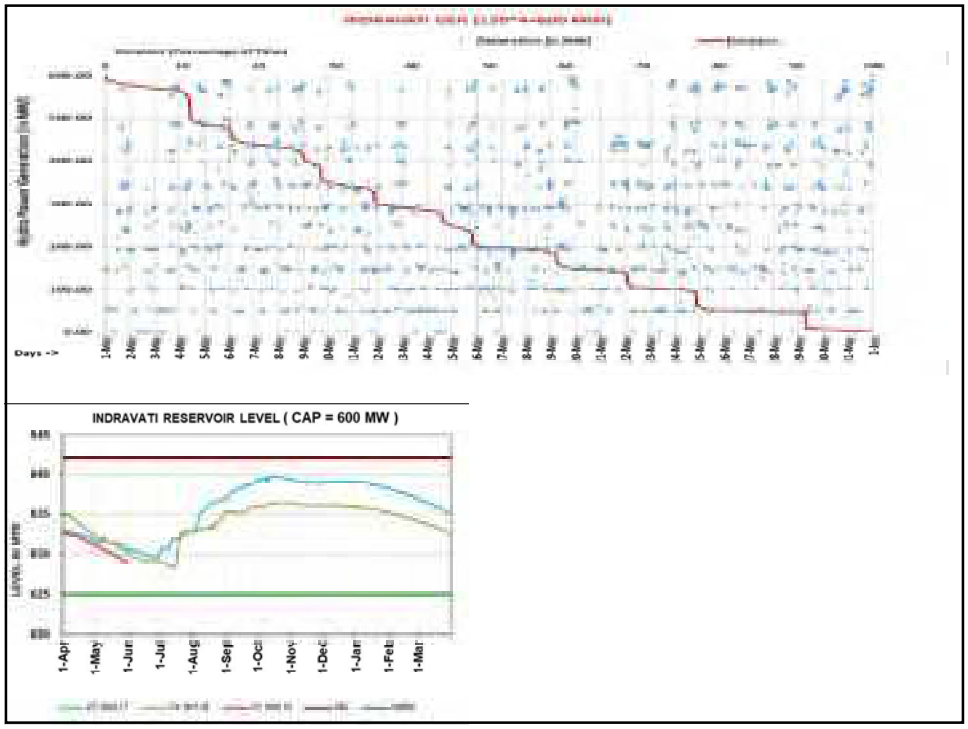
Unit No	Date of Outage	Reason
U - 1	14.03.18(17:20)	Turbine and Gen coupling cover water Leakage
U - 2	25.05.18(18:00)	Shaft Seal Prob.
U - 5	25.10.2016	R & M Work
U - 6	16.10.2015	R & M Work

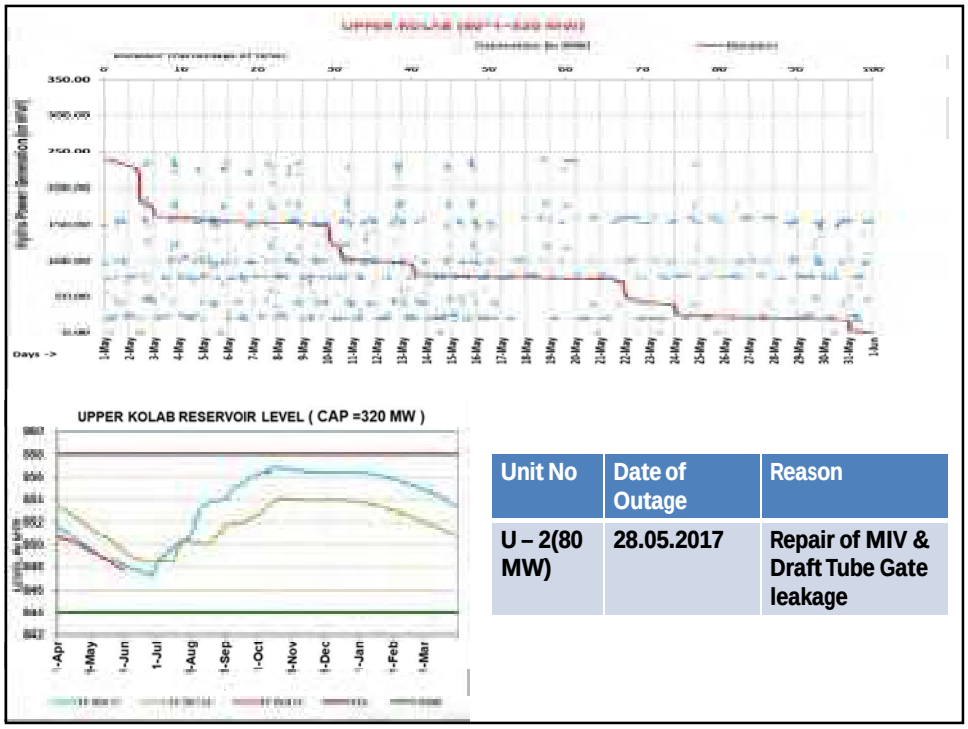




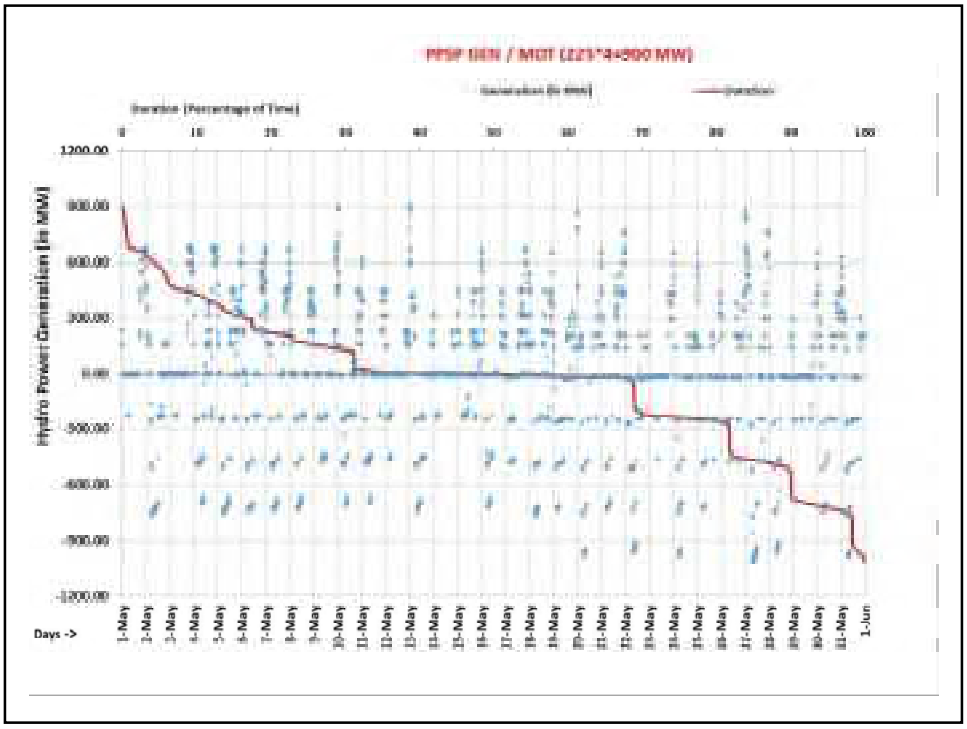
Unit No	Date of Outage	Reason
U – 1(60 MW)	05.08.16	R & M Work
U – 2(60 MW)	20.11.17	R & M Work







Unit No	Date of Outage	Reason
U – 2(80 MW)	28.05.2017	Repair of MIV & Draft Tube Gate leakage



Transmission Constraints & Bottlenecks Eastern Region

- **400 KV MPL-MAITHON D/C (TOWER COLLAPSED AT LOC NO -63/64/6) is out of service from 10.05.18 & 5:21Hrs.**

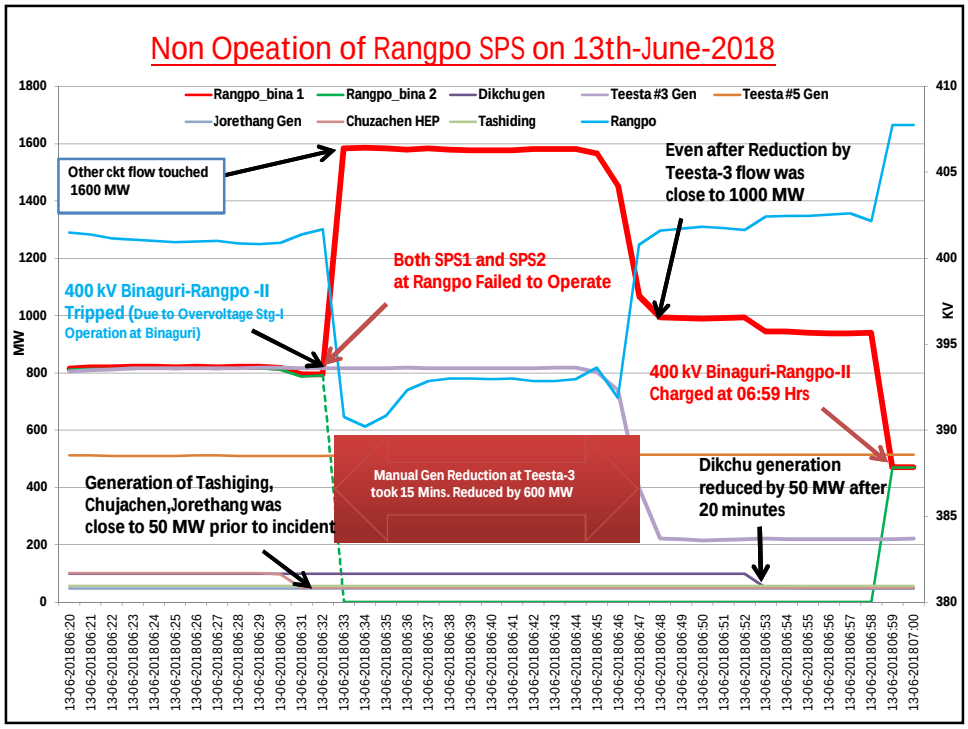
  Evacuation Constraint : MPL generation evacuated through 400 KV MPL-RANCHI D/C. Tripping of any single circuit of 400 KV MPL-RANCHI D/C will aggravate the situation.

- **400 KV MAIN BAY OF BIHARSARIFF-SASARAM CKT-II@BIHARSARIFF (INCOMPLETE OVER HAULING WORK) is out of service from 30/05/18 & 11:41Hrs.**

  Constraint : The above line is charged through tie bay. The other element in dia is 125 MVAR B/R-I. Any switching operation of B/R leads to power interruption on 400 KV BIHARSARIFF-SASARAM CKT-II.

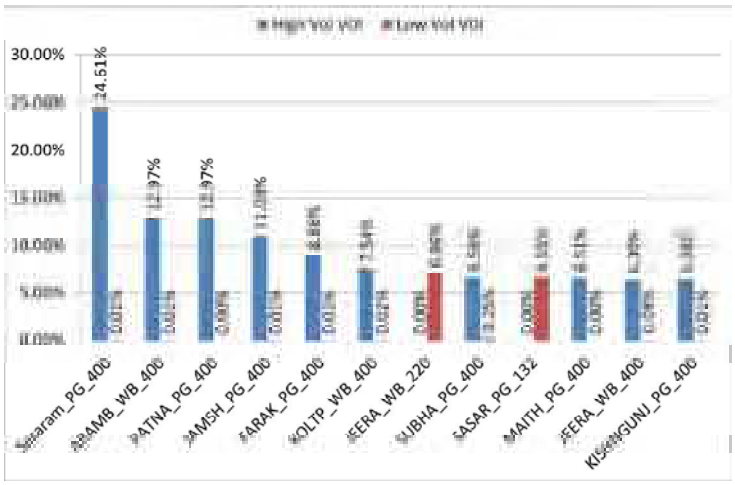
- **315MVA ICT-I AT KOLAGHAT (BANK OF R PH BURSTED) out of service from 16/04/2018 & 17:05Hrs.**

  Constraint : The auxiliary power to units of KOLAGHAT is supplied through only other available i.e. 315MVA ICT-II. Any tripping of 315MVA ICT-II KOLAGHAT will lead to forced outage of units of KOLAGHAT connected to 220 kV Bus.



Statistics of VDI of various S/S in Eastern Region for May, 2018

% of time voltage more than IEGC limit



Statistics of VDI of various S/S* in Eastern Region for May, 2018

% of time	No of S/S having voltage higher than IEGC limit for ...	No of S/S having voltage lower than IEGC limit for ...	No of S/S having voltage not in IEGC band for ...
100%	0	0	0
>= 50% but < 100%	0	0	0
>= 30% but < 50%	0	0	0
>= 10% but < 30%	4	0	4

* For all S/S at 400 kV and above voltage level and selective S/S at 220 kV and lower level where voltage data were available in SCADA for considerable amount of time

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.

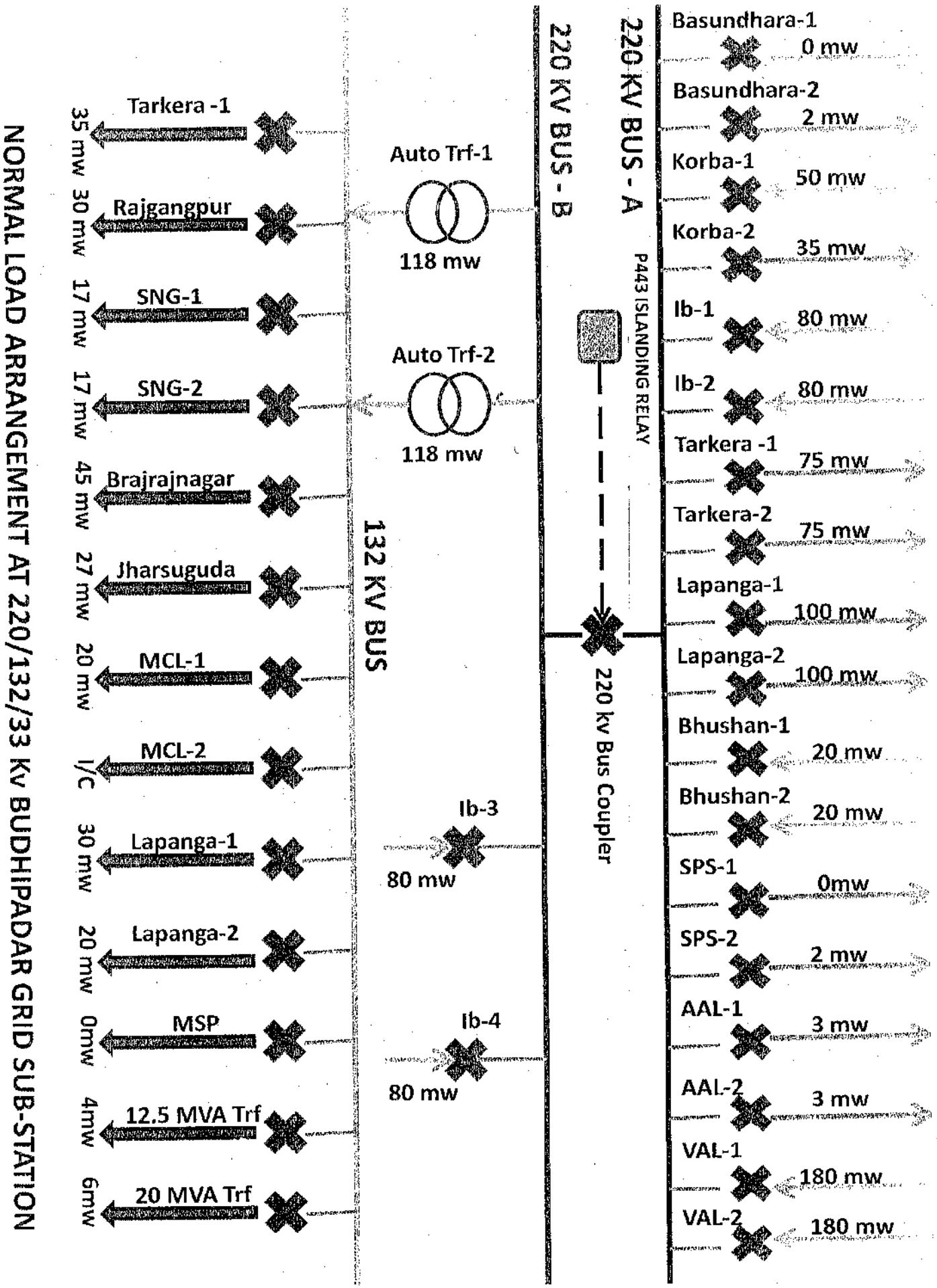
The above scheme can be adopted after installation of Carrier protection Scheme between 132kV Tarkera & Budhipadar, OPGW link & carrier protection (Permissive & DTT) for four number 220kV lines from IBTPS to Budhipadar Substation.

OPTCL/GRIDCO

OPGC

(P K MAHAPATRA)

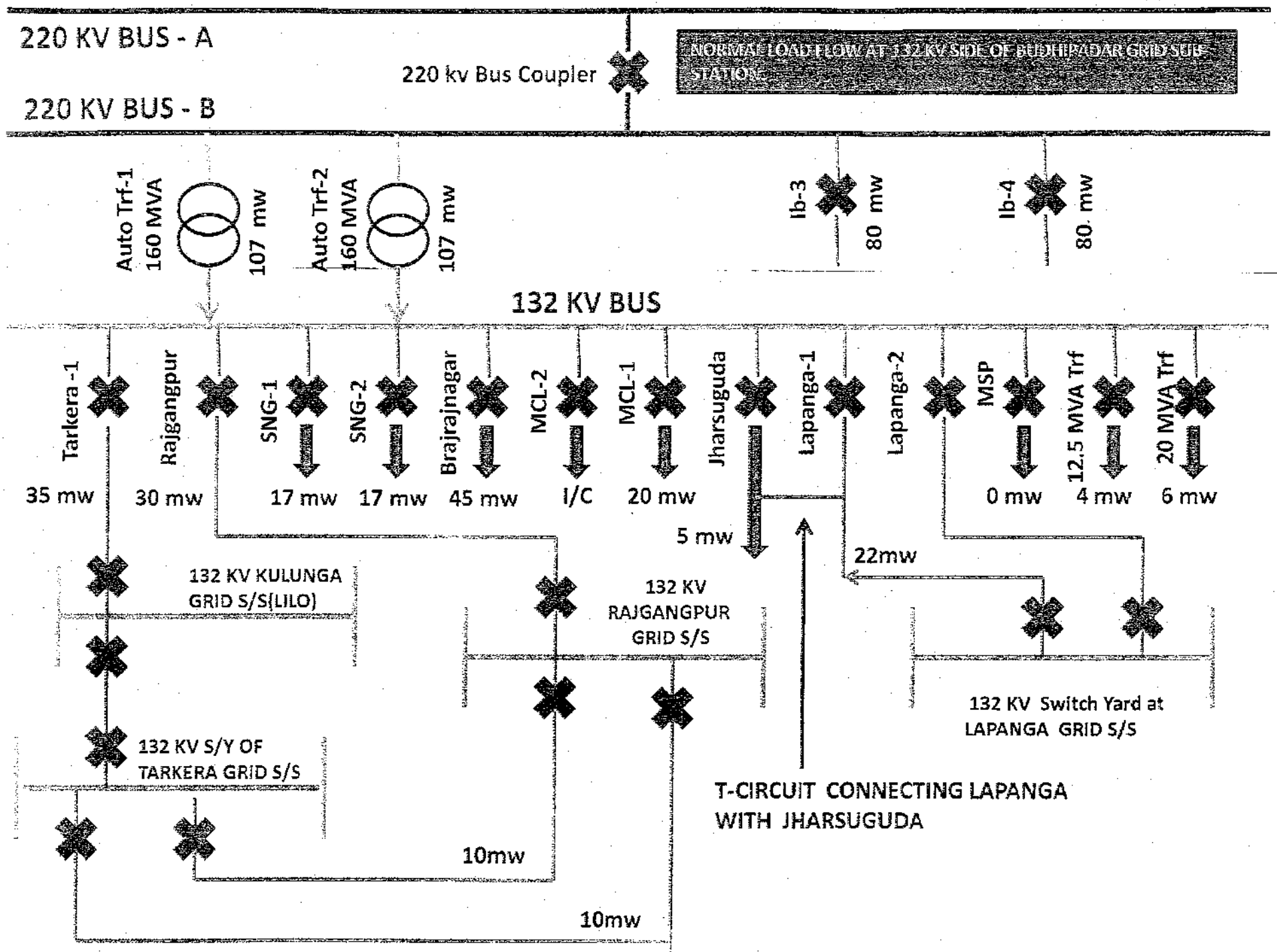
(CHK. Samantaray)

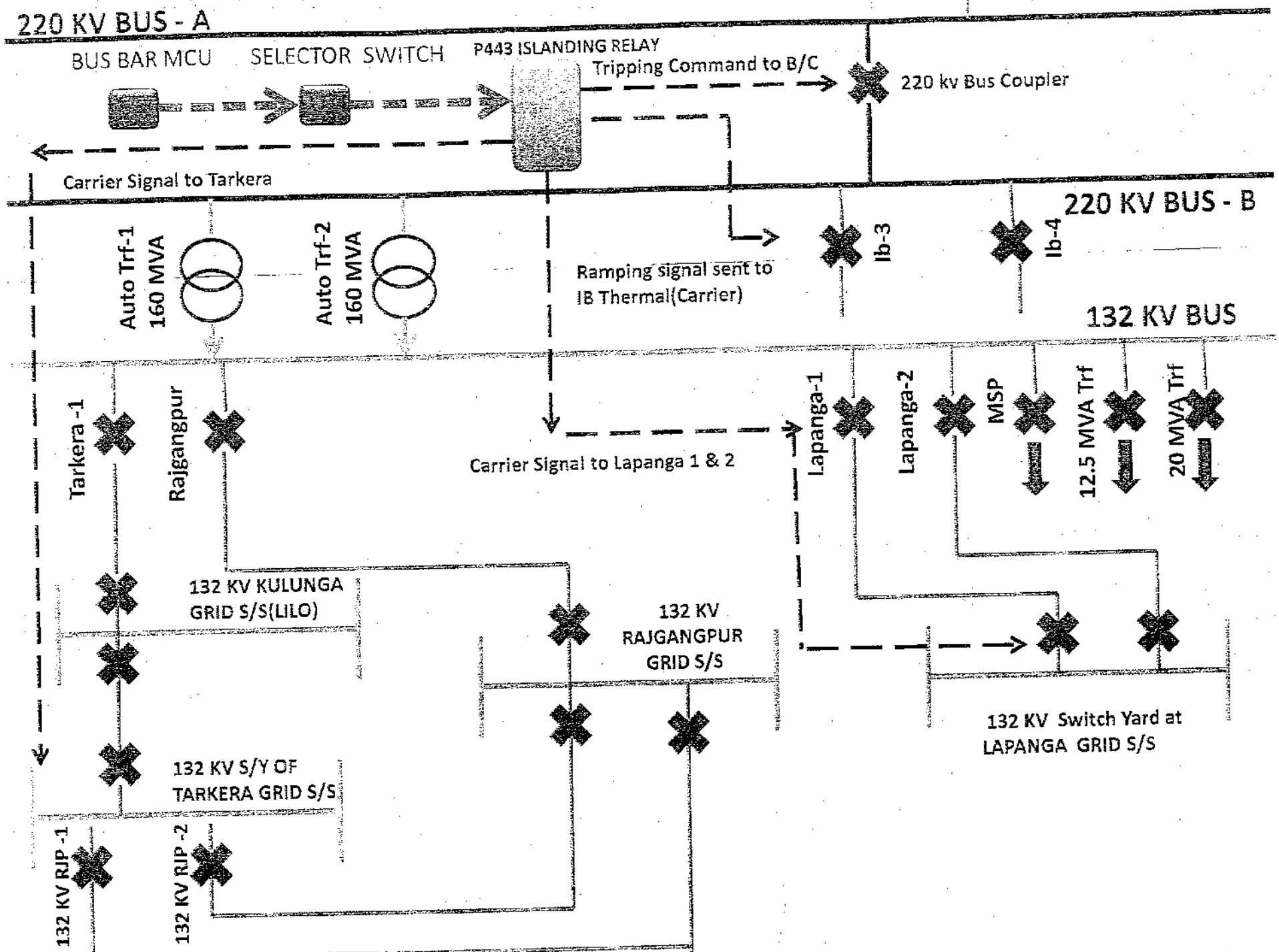

NORMAL LOAD ARRANGEMENT AT 220/132/33 Kv BUDHIPADAR GRID SUB-STATION
132 KV BUS
220 KV BUS - B
220 KV BUS - A
P443 ISLANDING RELAY
220 kv Bus Coupler
Auto Trf-1
118 mw
Auto Trf-2
118 mw
Ib-3
80 mw
Ib-4
80 mw
Tarkera -1
35 mw
Rajgangpur
30 mw
SNG-1
17 mw
SNG-2
17 mw
Brajrajnagar
45 mw
Jharsuguda
27 mw
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
Rajgangpur
SNG-1
SNG-2
Brajrajnagar
MCL-2
MCL-1
Jharsuguda
Lapanga-1
Lapanga-2
MSP
12.5 MVA Trf
20 MVA Trf
35 mw
30 mw
17 mw
17 mw
45 mw
I/C
20 mw
5 mw
22mw
0 mw
4 mw
6 mw
132 KV KULUNGA GRID S/S(LILO)
132 KV RAJGANGPUR GRID S/S
132 KV S/Y OF TARKERA GRID S/S
132 KV Switch Yard at LAPANGA GRID S/S
T-CIRCUIT CONNECTING LAPANGA WITH JHARSUGUDA
10mw
10mw


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

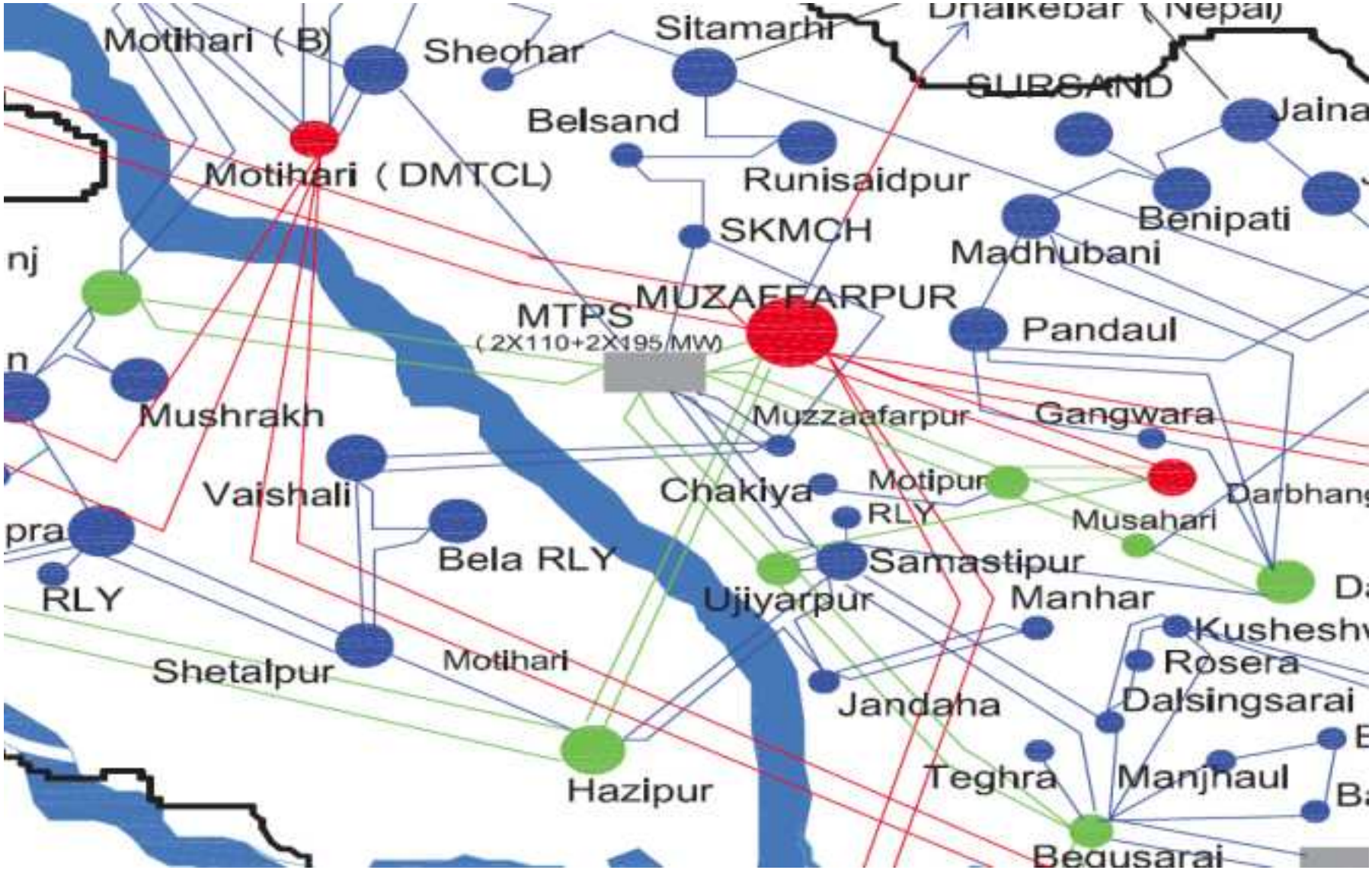
May 2018

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

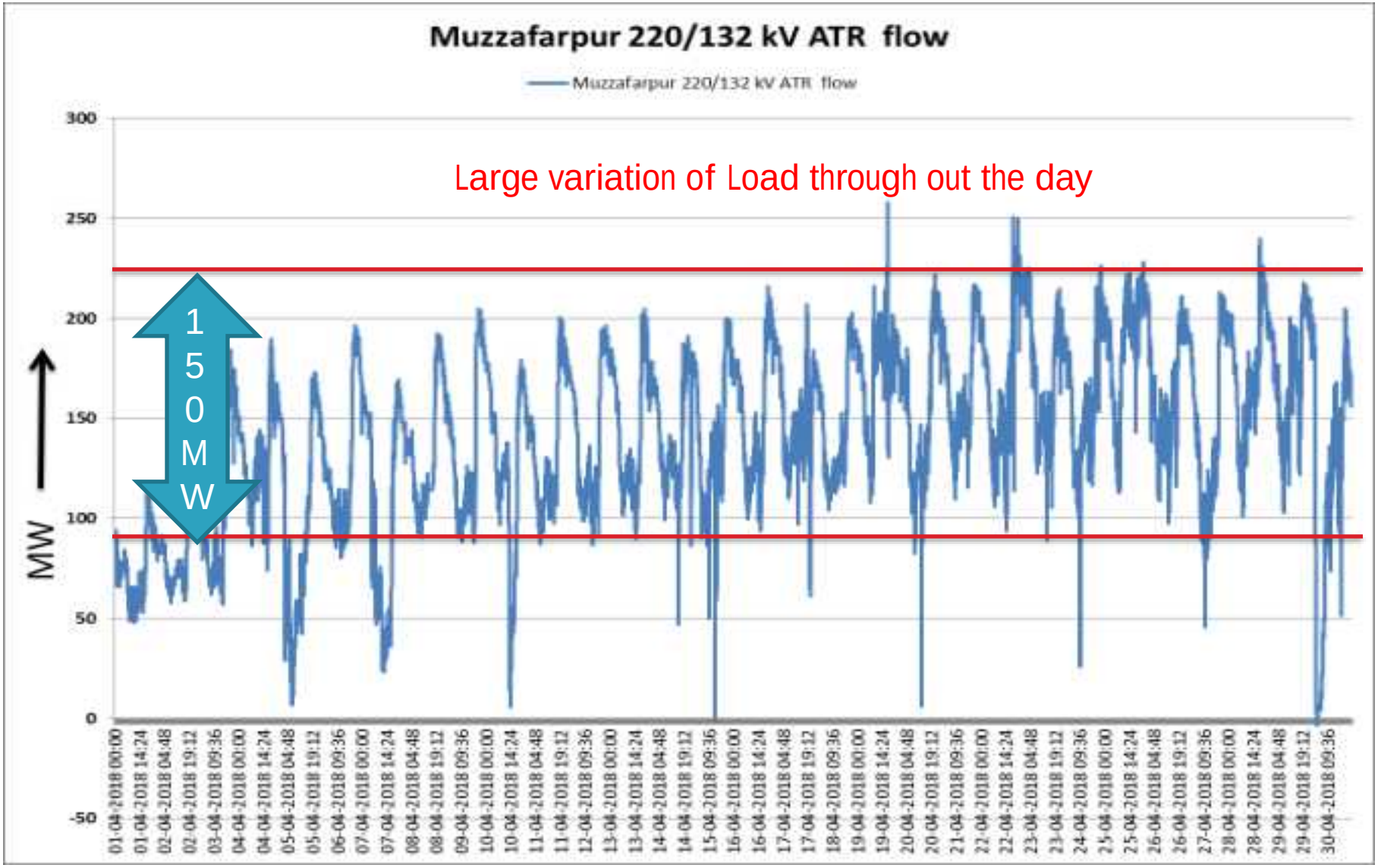
*BSPTCL may please confirm the above

Nearby substations and their loads

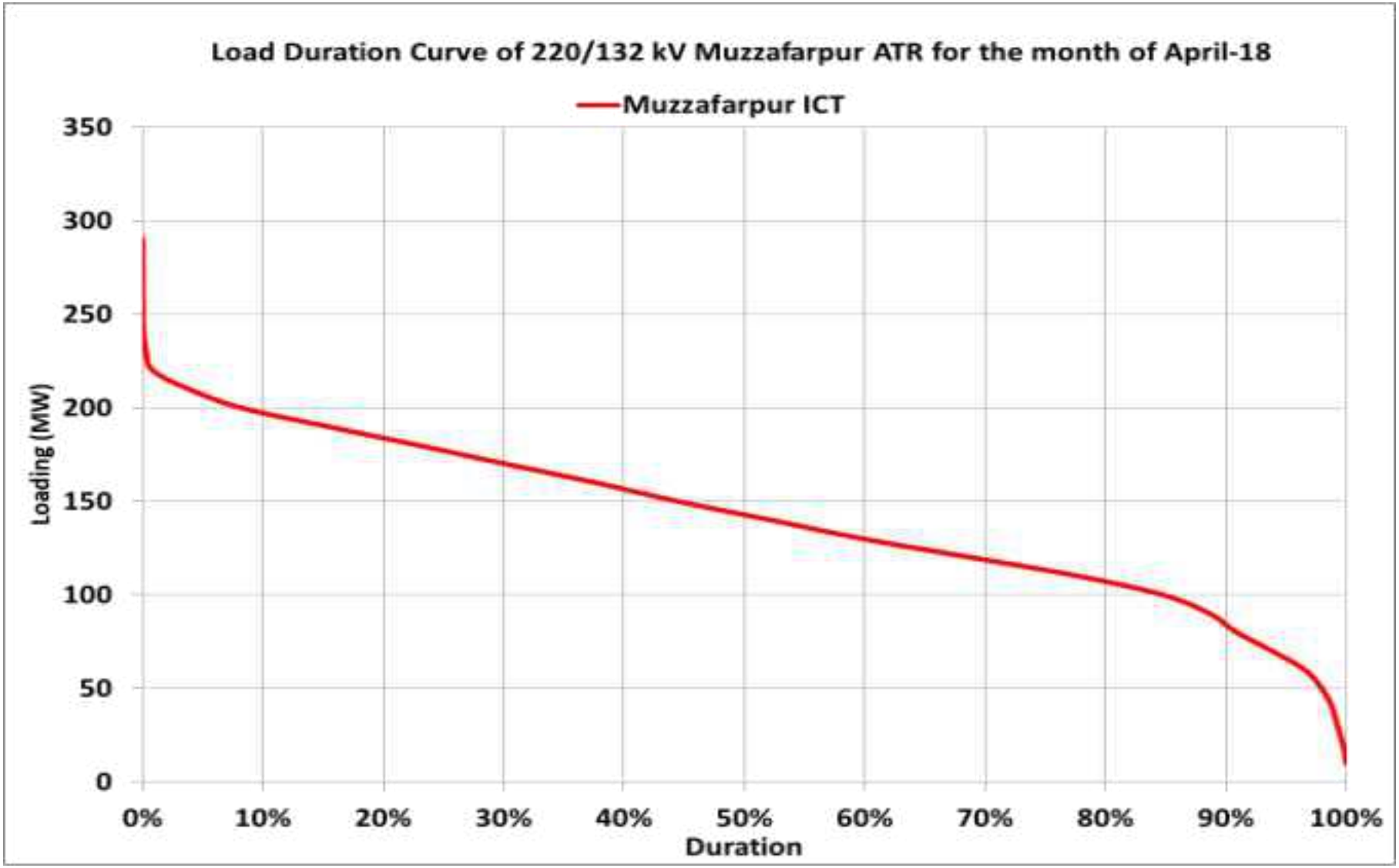
Sl Number	Name of Substation	Peak load	Off Peak Load
1	Kanti TPS	25(Plant load)	25(Plant Load)
2	Muzaffarpur	70	45
3	Vaishali	49	25
4	Shetalpur	25	15
5	SKMCH	57	45
6	Belsand	15	10
7	Runisaidpur	20	12
	Total	261	177

*BSPTCL may please confirm the above load quantum

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



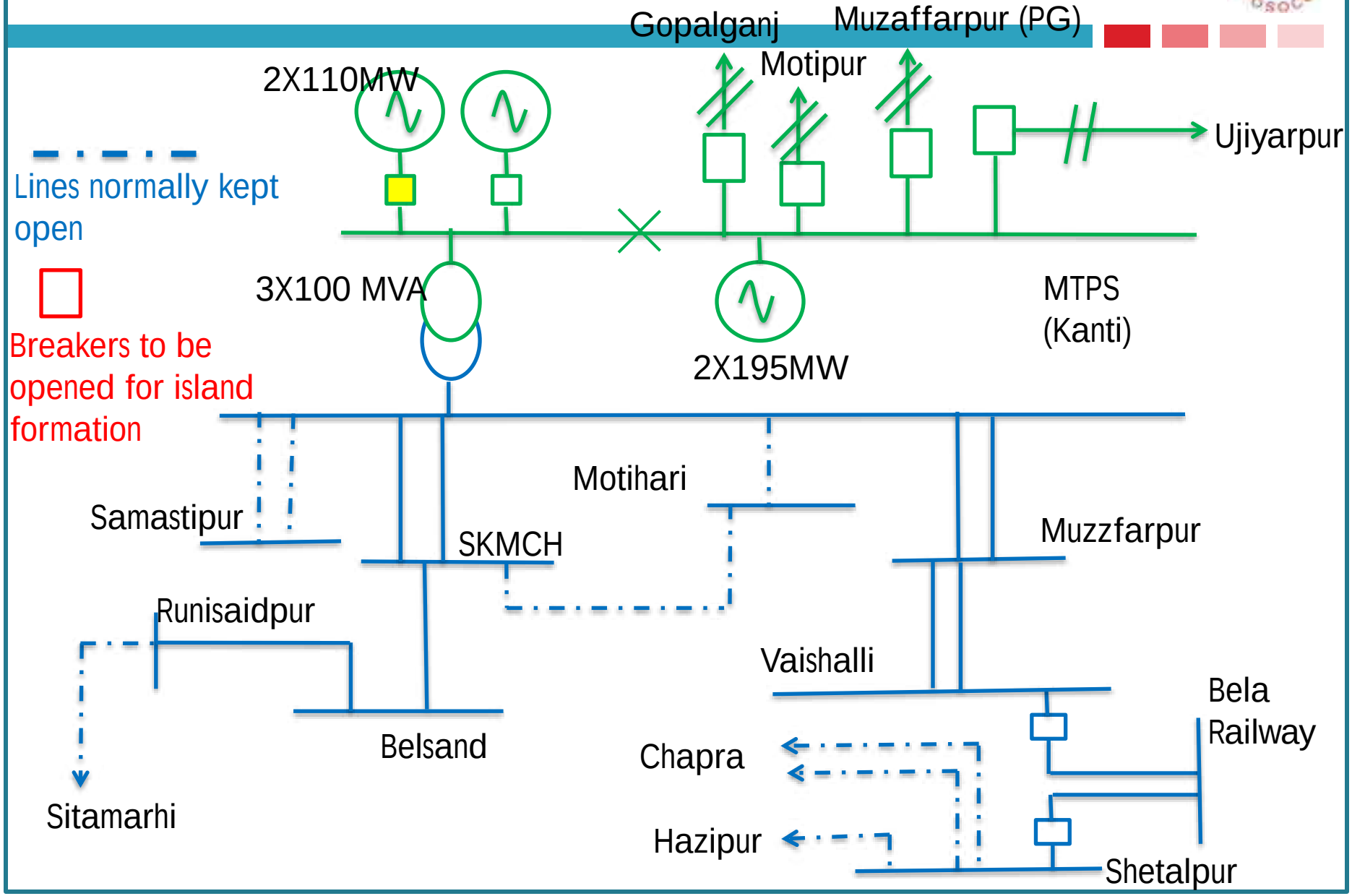
Load duration curve of 220/132 kV ATRs at MTPS for April 2018



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.

POWERGRID:ER-II

Comissioning of 400kV FSTPS – Baharampur (Twin HTLS) D/C line-

SCOPE UNDER PROJECT: ERSS-XV SUBSTATIONS

- **Eastern Region Strengthening Scheme-XV (ERSS-XV).**

(i) Extension of 400kV Farakka Substation

(ii) Extension of 400kV Baharampur Substation including supply of 1x125MVAR, 420kV, 3-ph Bus Reactor

(iii) Extension of 400kV Subhasgram Substation and

(iv) Extension of 400kV Sagardighi Substation

SCOPE UNDER PROJECT: ERSS-XV
Associated Transmission System

a) Farakka – Baharampur 400kV D/C line (TWIN HTLS)

b) Removal of the existing LILO of Farakka – Jeerat S/C line at Baharampur

c) LILO of the above Farakka – Jeerat 400kV S/C line at Sagardighi

d) LILO of Sagardighi – Subhasgram 400kV S/C line bays at Jeerat

DETAIL SCOPE: SUBSTATION

a) Extension of 400kV Farakka Substation of NTPC

(i) 2 nos. 400kV line bays for termination of Farakka – Baharampur 400kV D/C (TWIN HTLS) line at Farakka substation.

b) Extension of 400kV Baharampur Substation of POWERGRID

(i) 2 nos. 400kV line bays for termination of Farakka – Baharampur 400kV D/C (TWIN HTLS) line at Baharampur substation.

(ii) 1no. 125MVAR, 420kV, 3-ph Bus Reactor at Baharampur substation

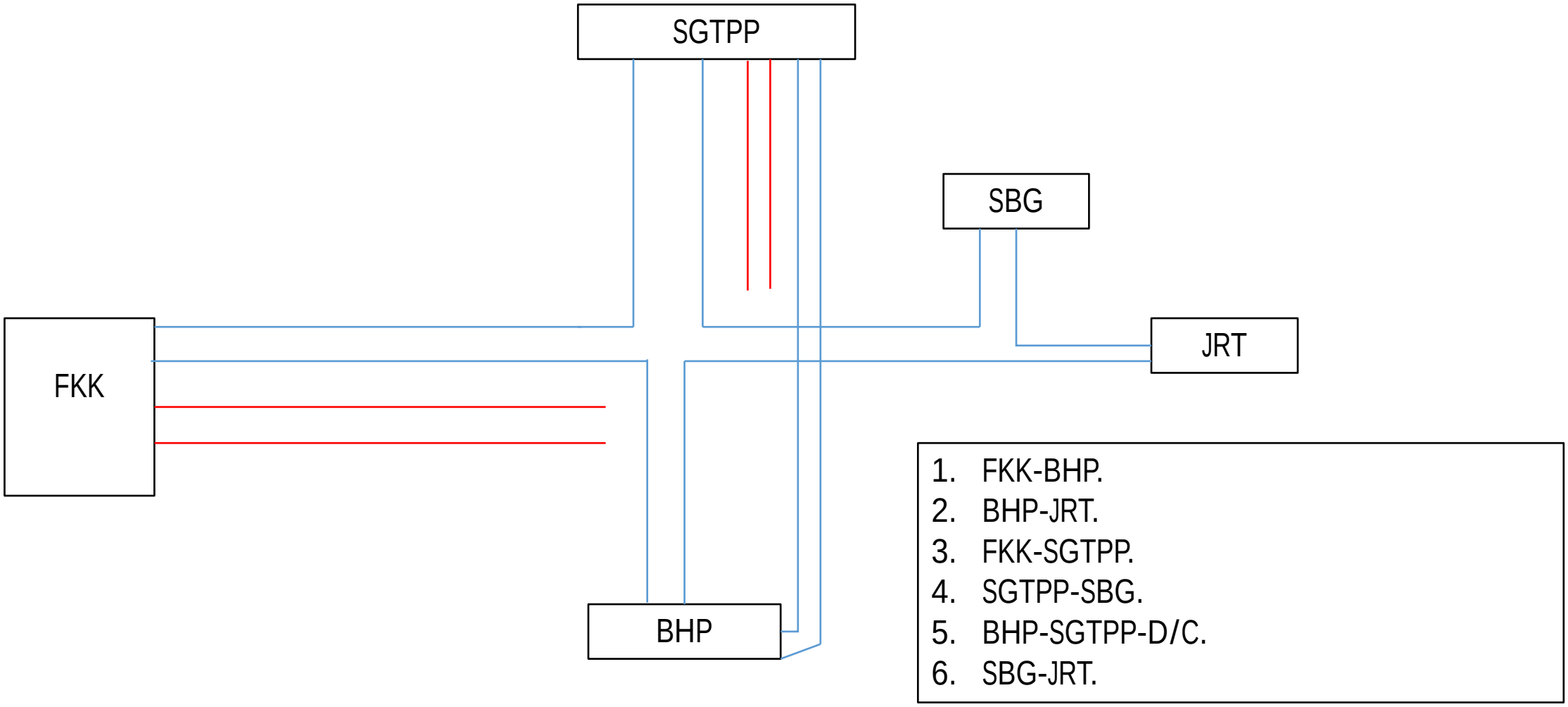
(iii) Connection of existing Bus Reactor to both the Main busbars after removal of LILO of Farakka – Jeerat 400kV S/C line at Baharampur substation.

c) Extension of 400kV Sagardighi Substation of WBSETCL

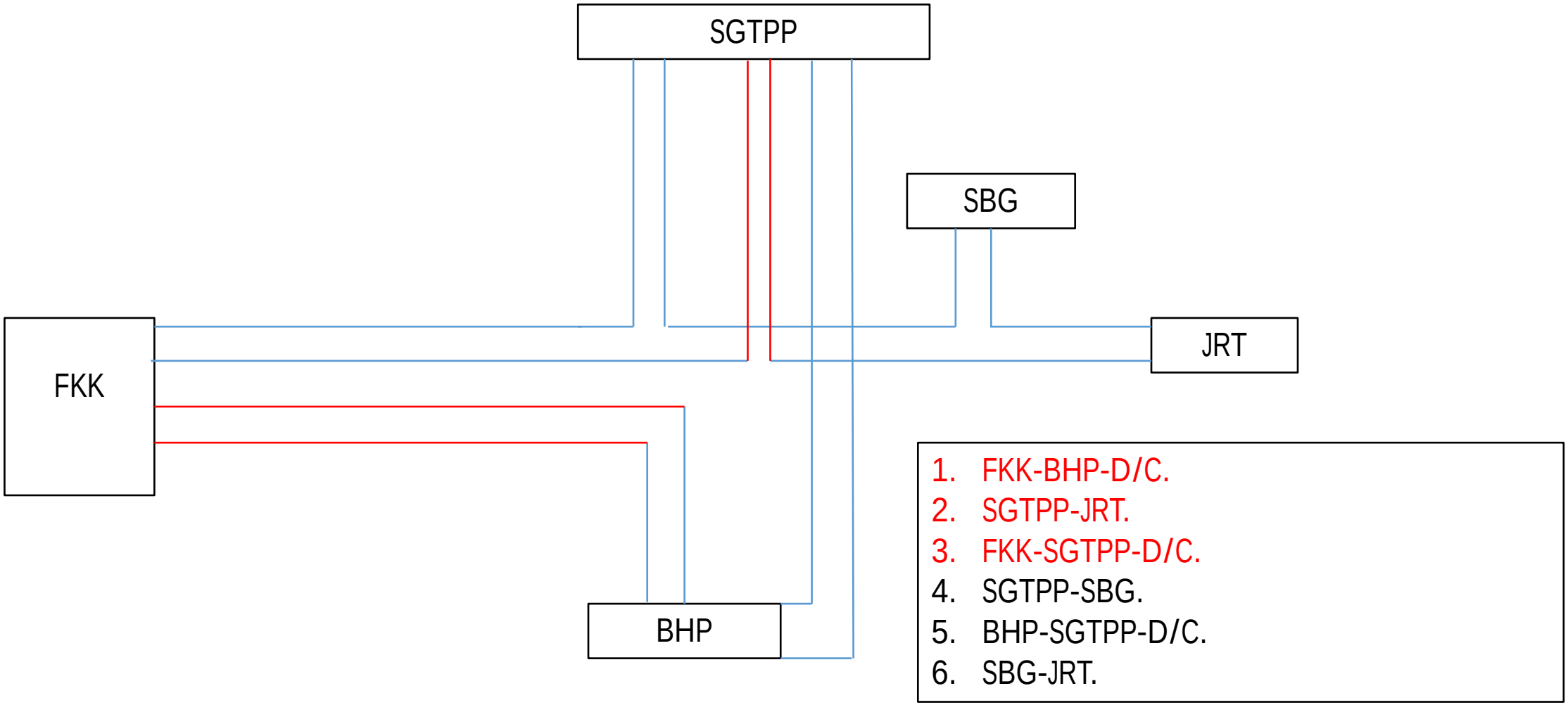
(i) 2 nos. 400kV line bays for termination of LILO of Farakka – Jeerat 400kV S/C line at Sagardighi substation.

d) Extension of 400kV Subhasgram Substation of POWERGRID

(i) Conversion of 50MVAR fixed line Reactor at Subhasgram end of Sagardighi – Subhasgram 400kV S/C line to switchable Reactor

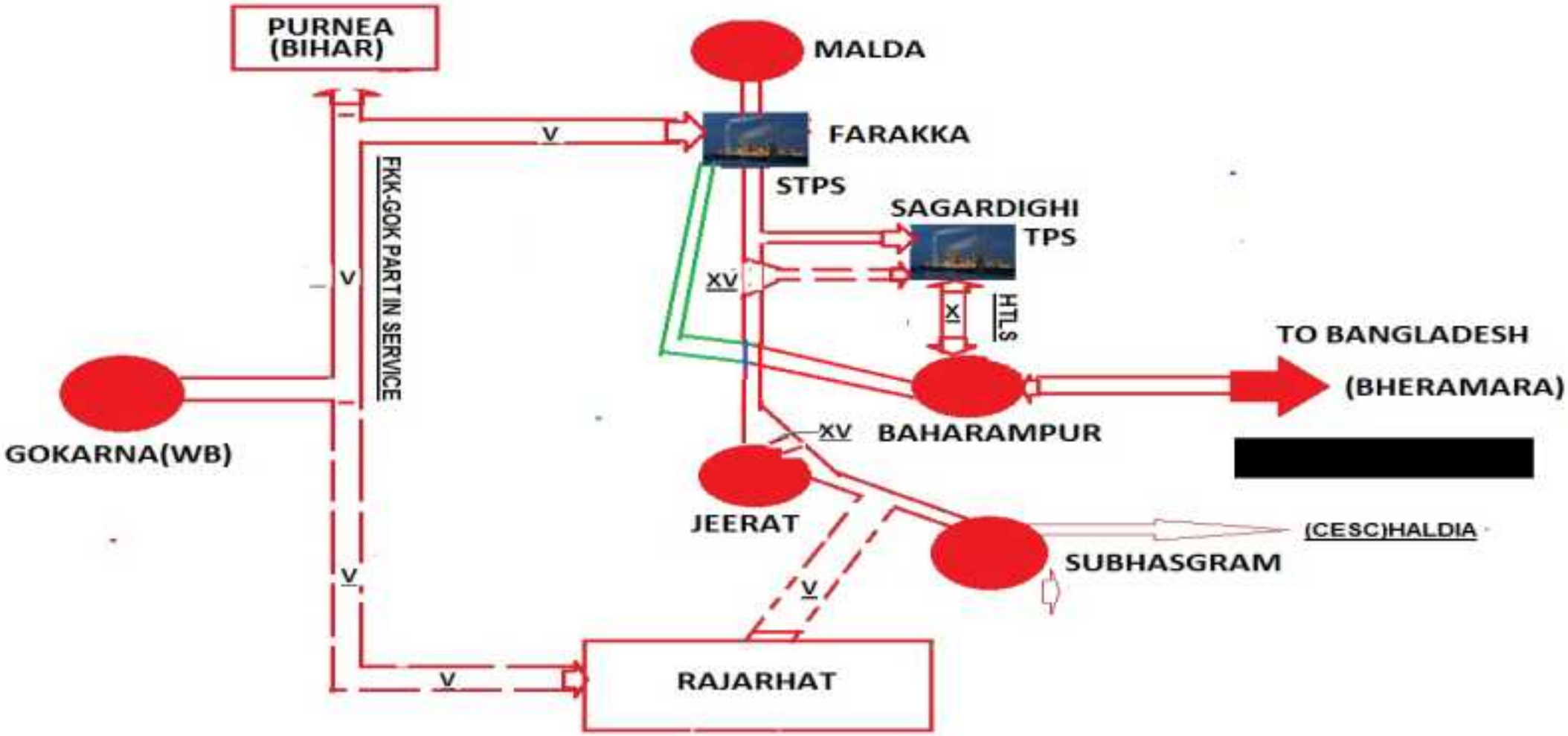


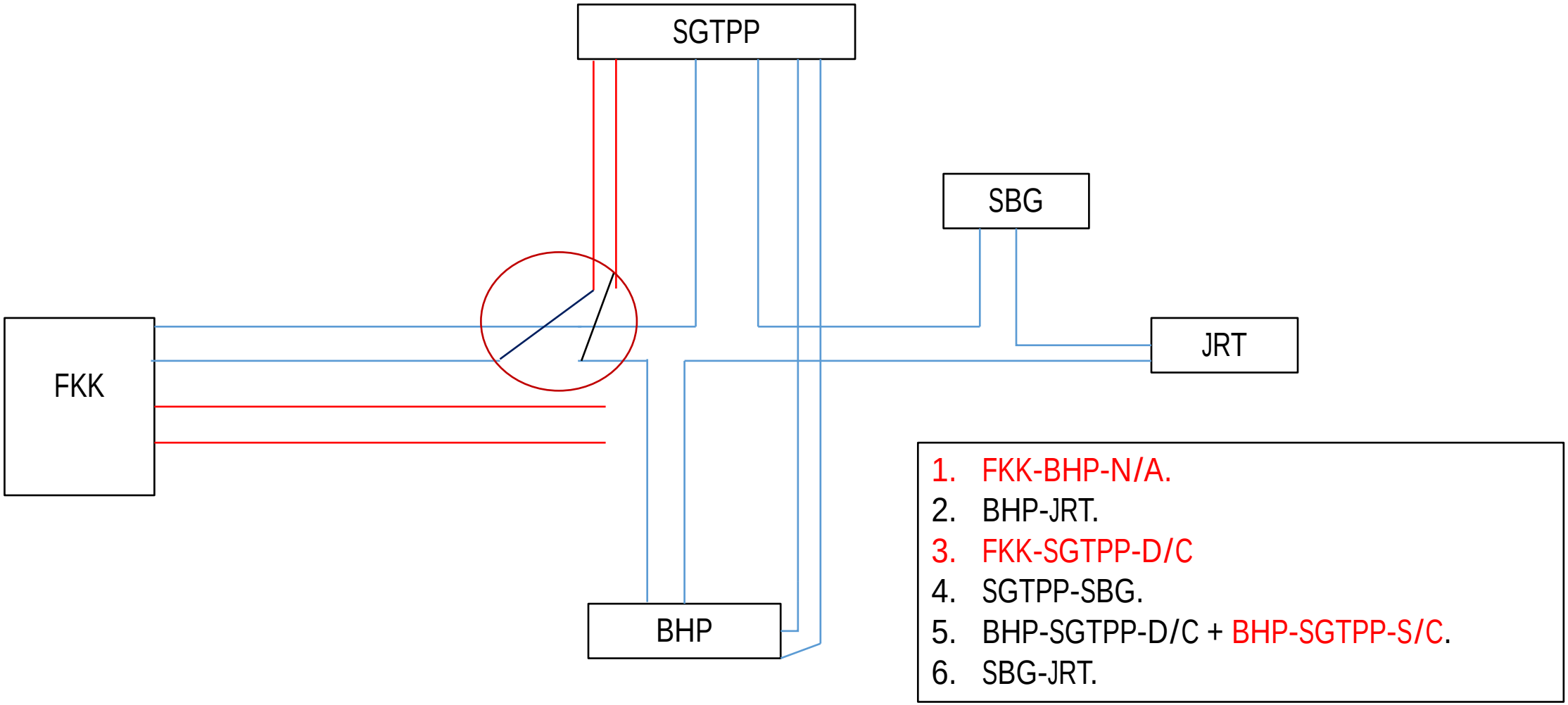
EXISTING SCHEME



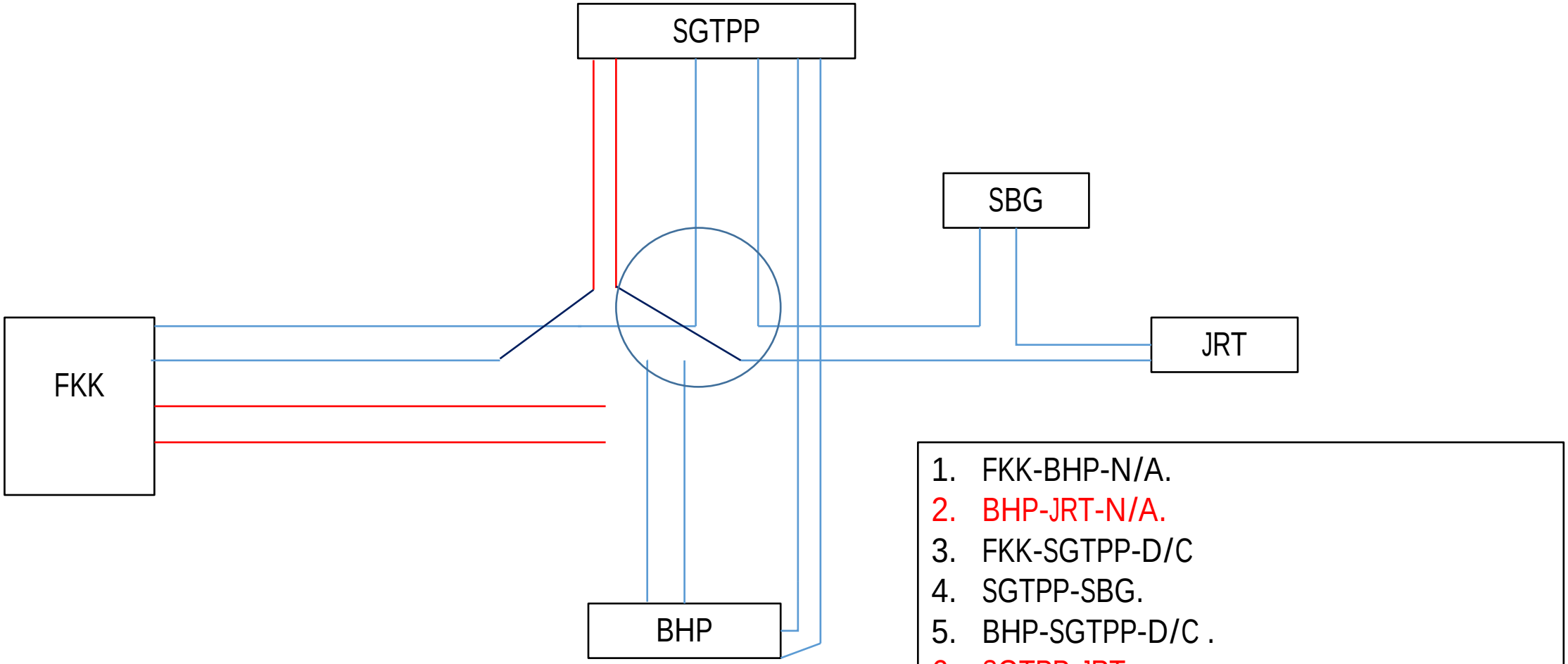
FINAL SCHEME

SCHEMATIC DIAGRAM



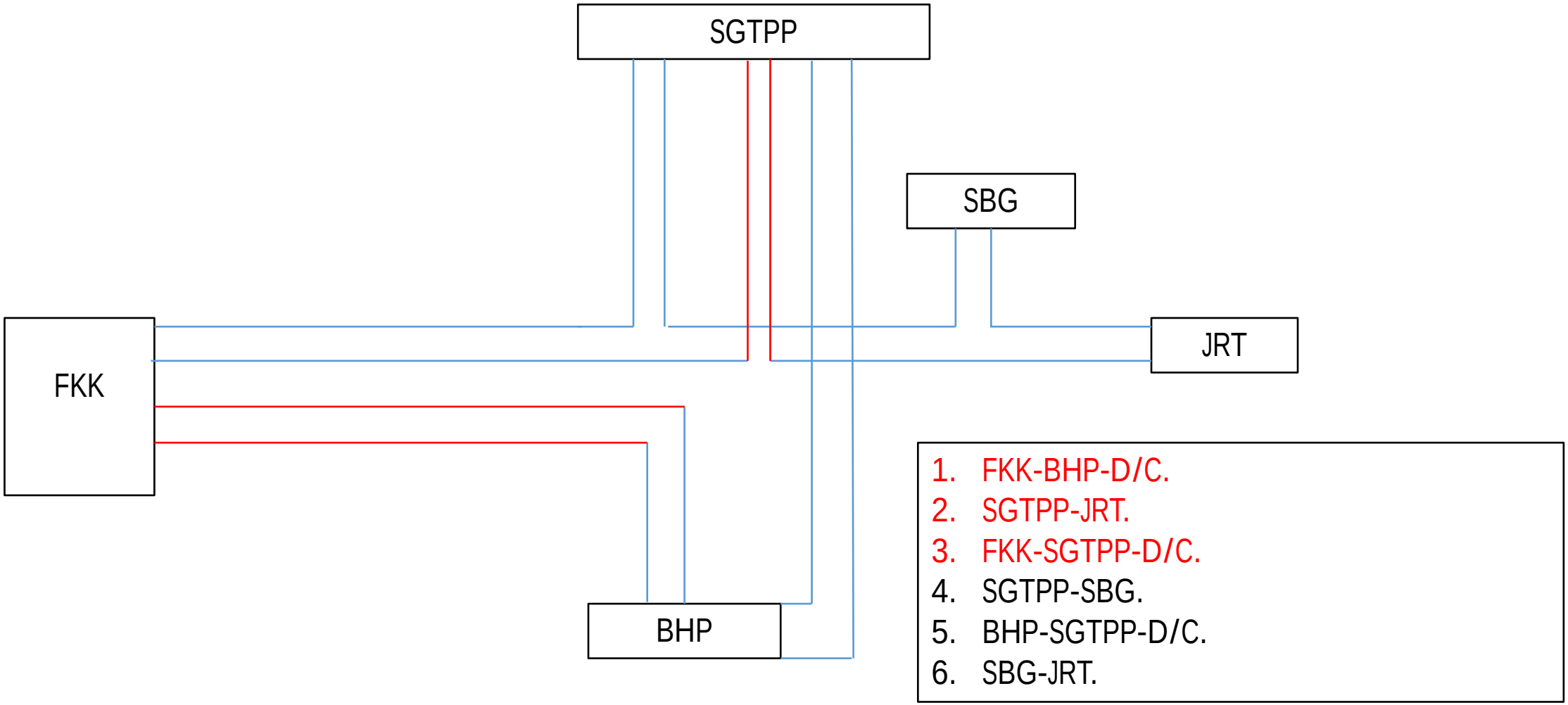


INTERIM SCHEME-STAGE-I



1. FKK-BHP-N/A.
2. BHP-JRT-N/A.
3. FKK-SGTPP-D/C
4. SGTPP-SBG.
5. BHP-SGTPP-D/C .
6. SGTPP-JRT.
7. SBG-JRT.

INTERIM SCHEME-STAGE-II



FINAL SCHEME

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

Violation of deviation limit by various states in ER in the Month of May 2018

Summary

- In 26% of time, frequency was less than 49.9 Hz and in 0.26% of time (almost 2 hours) frequency was less than 49.7 Hz.

	Bihar	Jharkhand	DVC	Odisha	WB	Sikkim
% of Time violation of deviation limit	34%	30%	26%	26%	47%	4%
% of Time O/D more than deviation limit	16%	16%	16%	9%	39%	1%
% of Time O/D more than deviation limit when frequency <49.9 Hz	5%	5%	5%	1%	11%	0.16%
% of Time O/D more than deviation limit when frequency <49.7 Hz	0.09%	0.067%	0.085%	0.090%	0.148%	0.031%

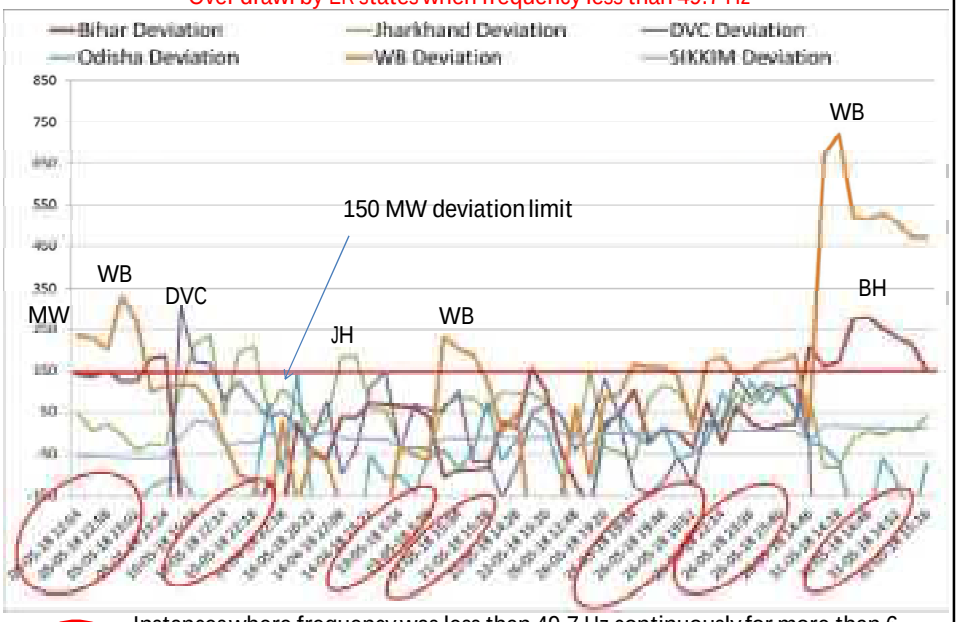
Minutes of 145th OCC meeting

- "B.6 …. all regional entities of Eastern Region are requested to strictly comply with the following
  1. All SLDCs may kindly ensure that the actual net drawl of the concerned control area is always maintained within the schedule…
  3. Area control error (ACE) of respective control areas may be closely monitored and prompt action for demand curtailment taken whenever the positive value of the same exceeds 150MW or 12% of the schedule, whichever is lower"

Methodology followed

- Deviation of various states in the month of May 2018 has been studied based on ERLDC SCADA data.
- Deviation limit is considered as 12% of schedule or 150 MW whichever is minimum
  - In case of schedule <400 MW, deviation limit is considered as 48 MW.

Over drawl by ER states when frequency less than 49.7 Hz

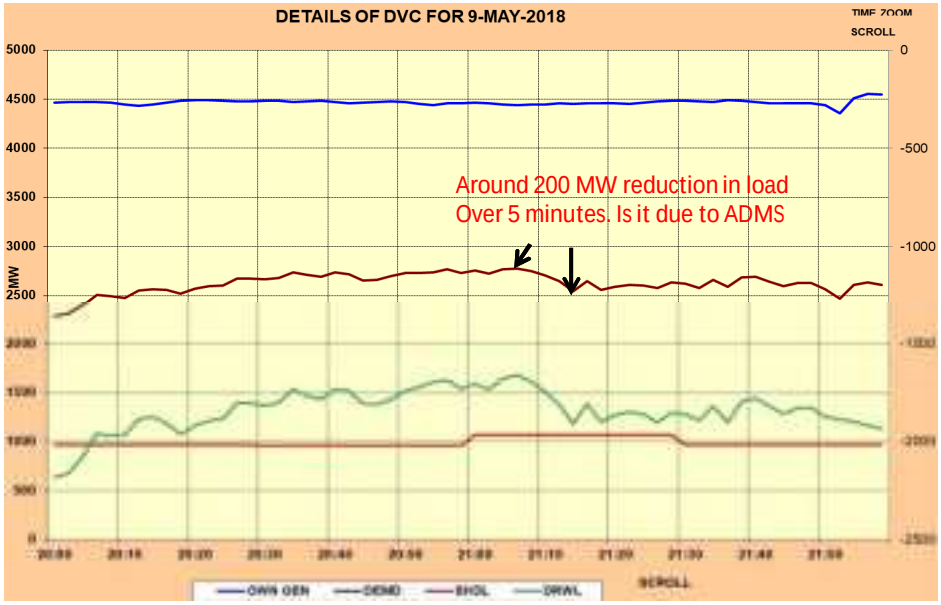


Instances where frequency was less than 49.7 Hz continuously for more than 6 minutes

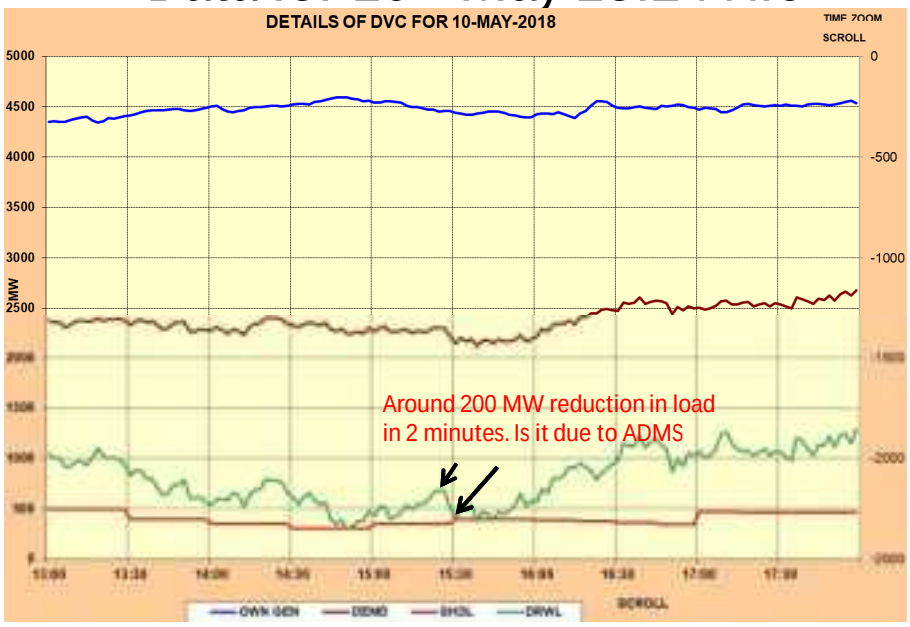
Load rejection in ADMS as per DVC

Date	Time (Hrs)	Feeder	CD(MVA)
09-05-2018	21:06	Barhi	30
		CTPS(Chas)	20
		Ramgarh-I	40
		Ramgarh-II	40
10-05-2018	15:24	Bokaro(JSEB)	30
		CTPS(Jainamore)	22
		Ramgarh-II	40

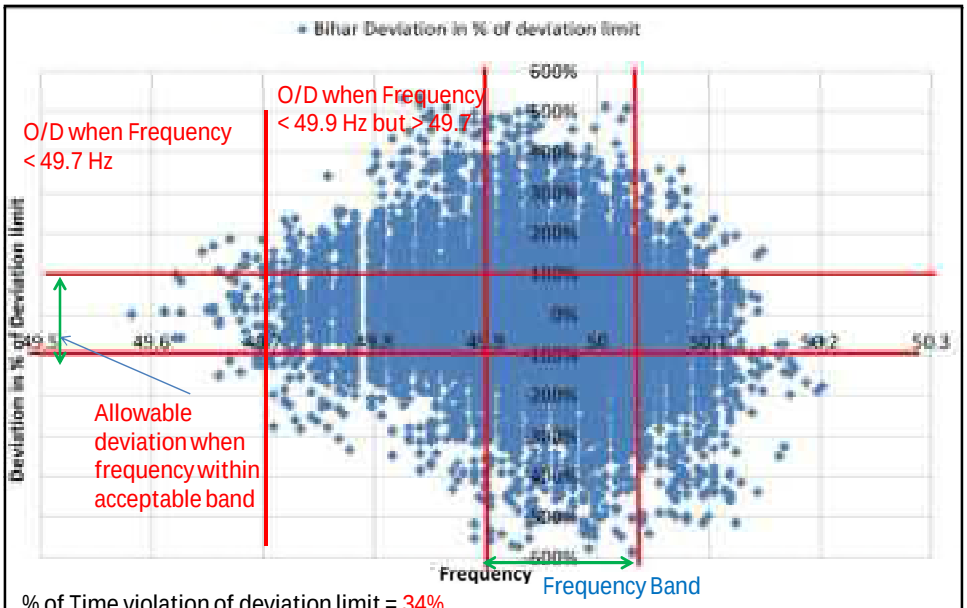
Data for 9th May 21:06 Hrs



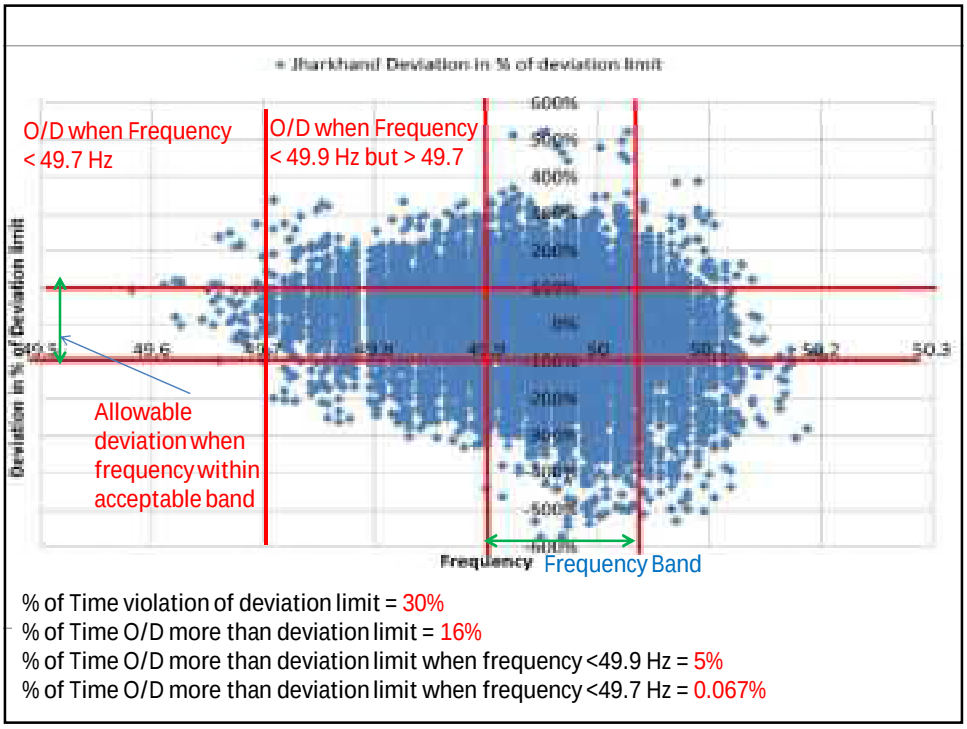
Data for 10th May 15:24 Hrs



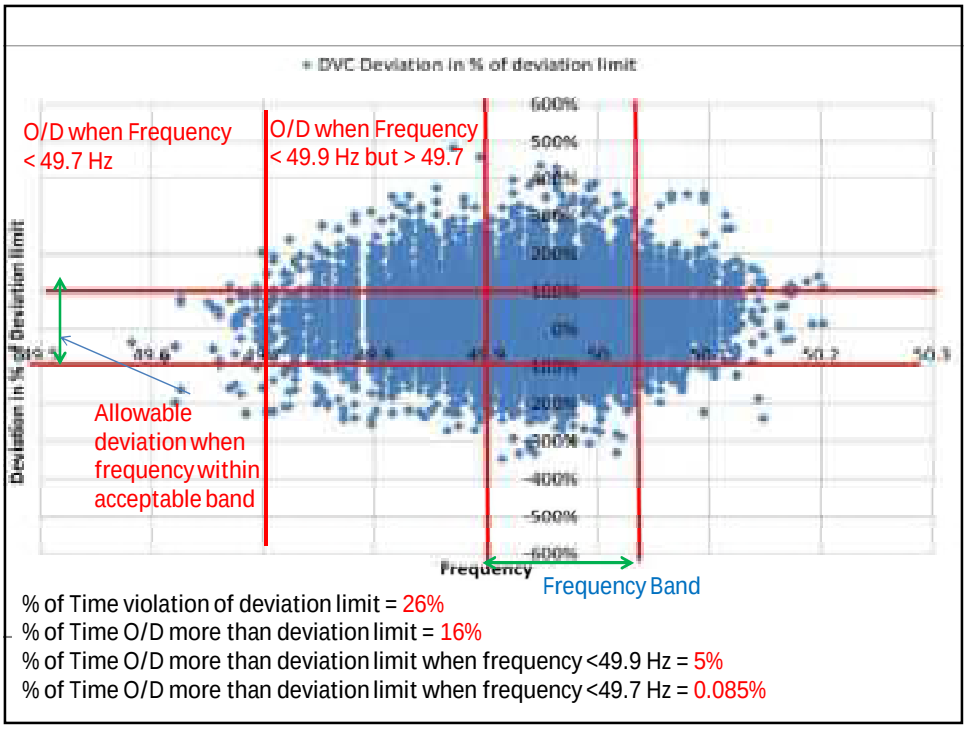
Scatter plot between % of deviation w.r.t. deviation limit and frequency



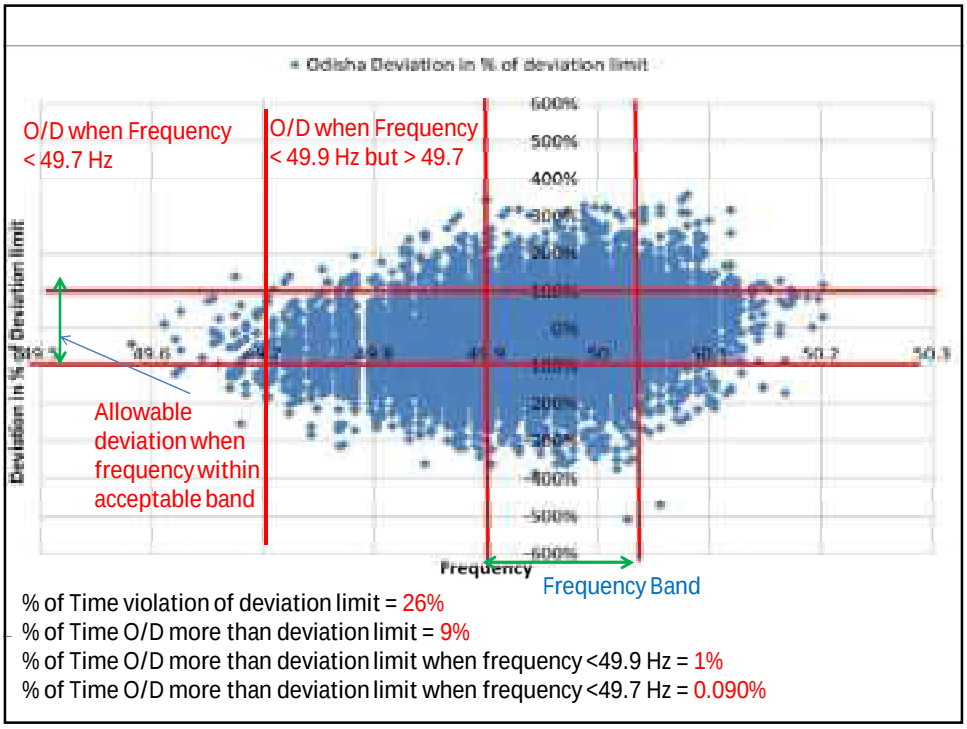
% of Time violation of deviation limit = 34%
% of Time O/D more than deviation limit = 16%
% of Time O/D more than deviation limit when frequency <49.9 Hz = 5%
% of Time O/D more than deviation limit when frequency <49.7 Hz = 0.090%



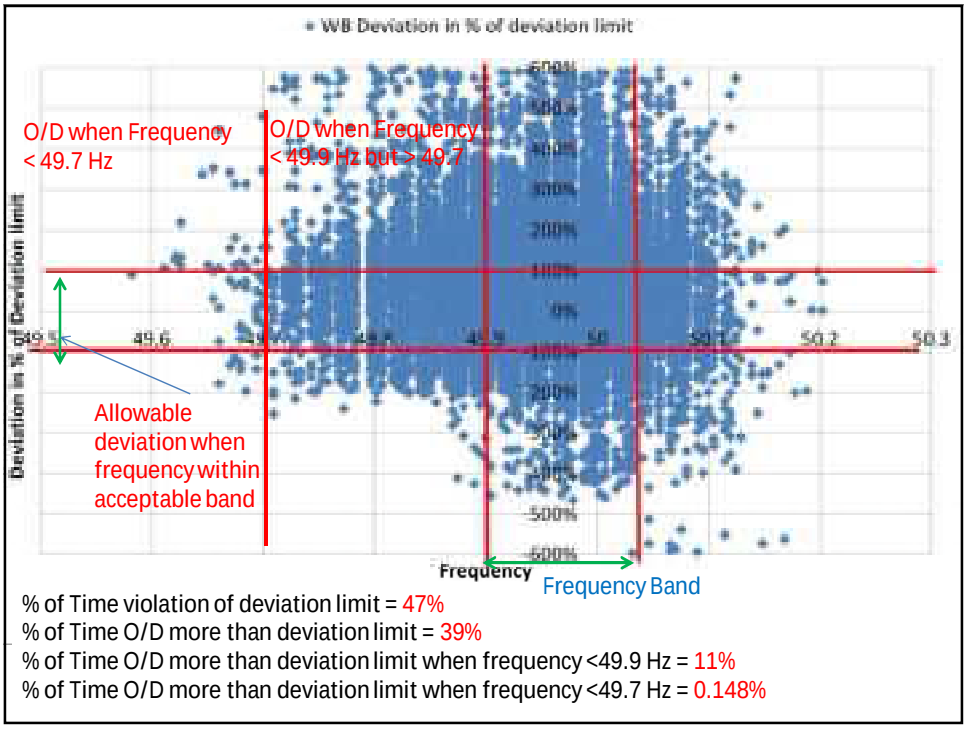
% of Time violation of deviation limit = 30%
% of Time O/D more than deviation limit = 16%
% of Time O/D more than deviation limit when frequency <49.9 Hz = 5%
% of Time O/D more than deviation limit when frequency <49.7 Hz = 0.067%



% of Time violation of deviation limit = 26%
% of Time O/D more than deviation limit = 16%
% of Time O/D more than deviation limit when frequency <49.9 Hz = 5%
% of Time O/D more than deviation limit when frequency <49.7 Hz = 0.085%

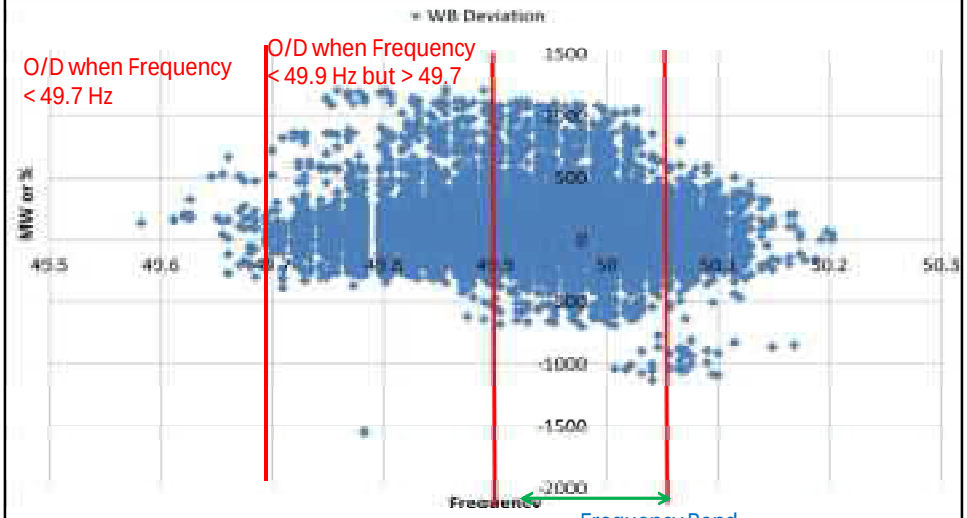


% of Time violation of deviation limit = 26%
% of Time O/D more than deviation limit = 9%
% of Time O/D more than deviation limit when frequency <49.9 Hz = 1%
% of Time O/D more than deviation limit when frequency <49.7 Hz = 0.090%

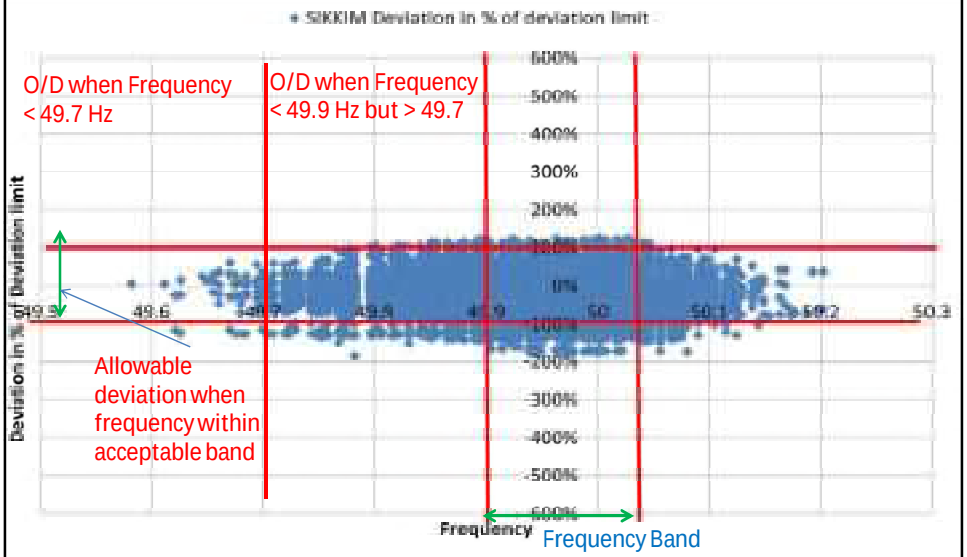


% of Time violation of deviation limit = 47%
% of Time O/D more than deviation limit = 39%
% of Time O/D more than deviation limit when frequency <49.9 Hz = 11%
% of Time O/D more than deviation limit when frequency <49.7 Hz = 0.148%

Variation of WB demand (in MW) with frequency



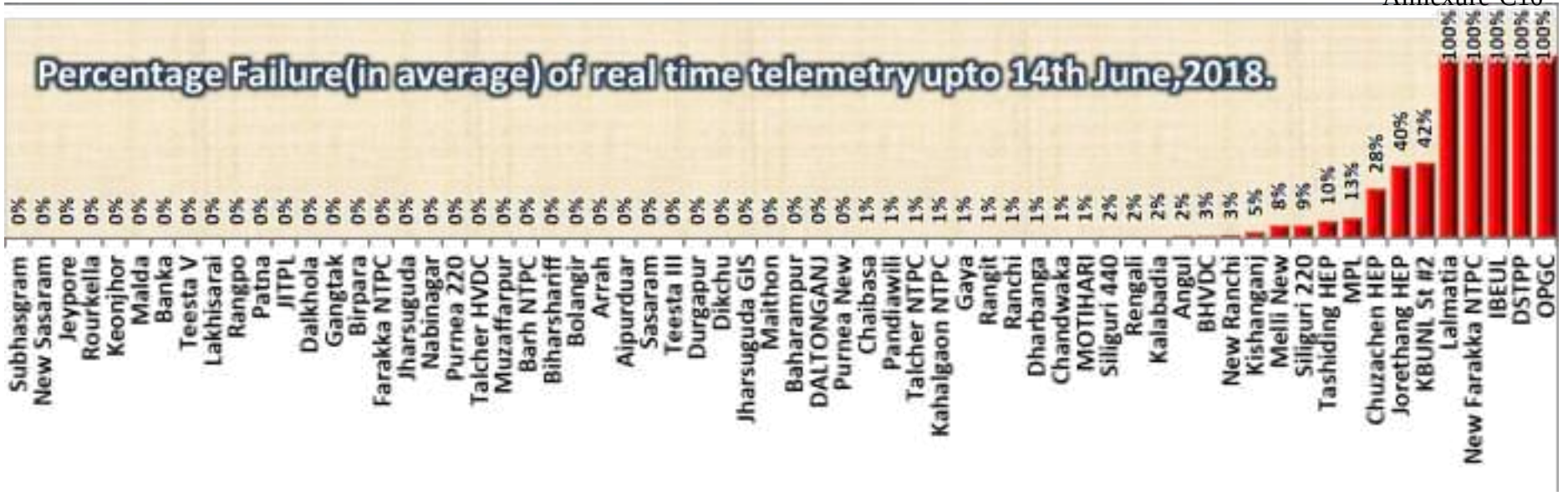
% of Time violation of deviation limit = 47%
% of Time O/D more than deviation limit = 39%
% of Time O/D more than deviation limit when frequency <49.9 Hz = 11%
% of Time O/D more than deviation limit when frequency <49.7 Hz = 0.148%

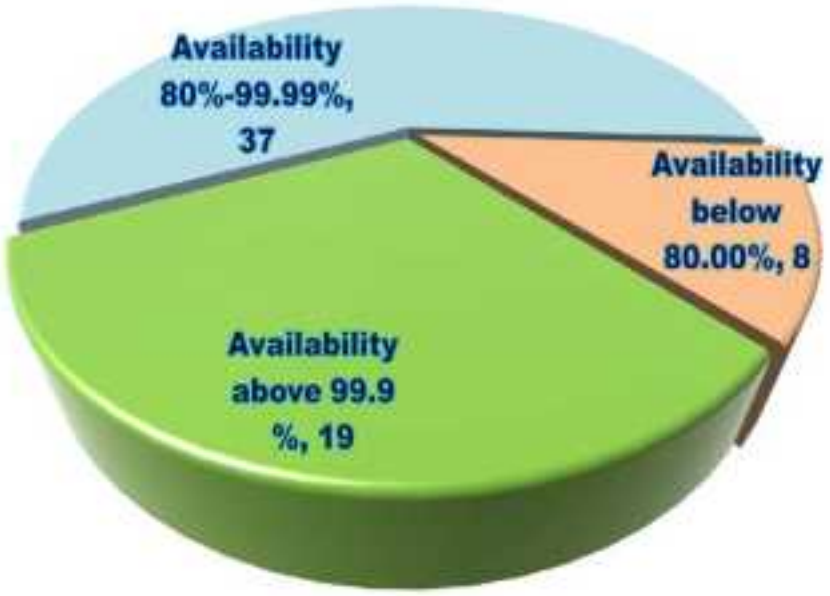


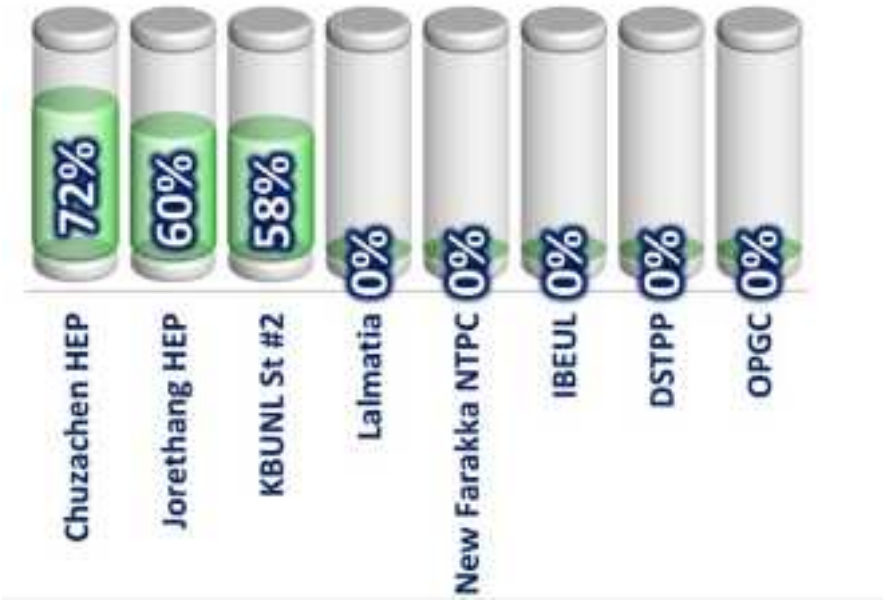
% of Time violation of deviation limit = 4%
% of Time O/D more than deviation limit = 1%
% of Time O/D more than deviation limit when frequency <49.9 Hz = 0.16%
% of Time O/D more than deviation limit when frequency <49.7 Hz = 0.148%

Overview of real time telemetry of Eastern region, June-2018.

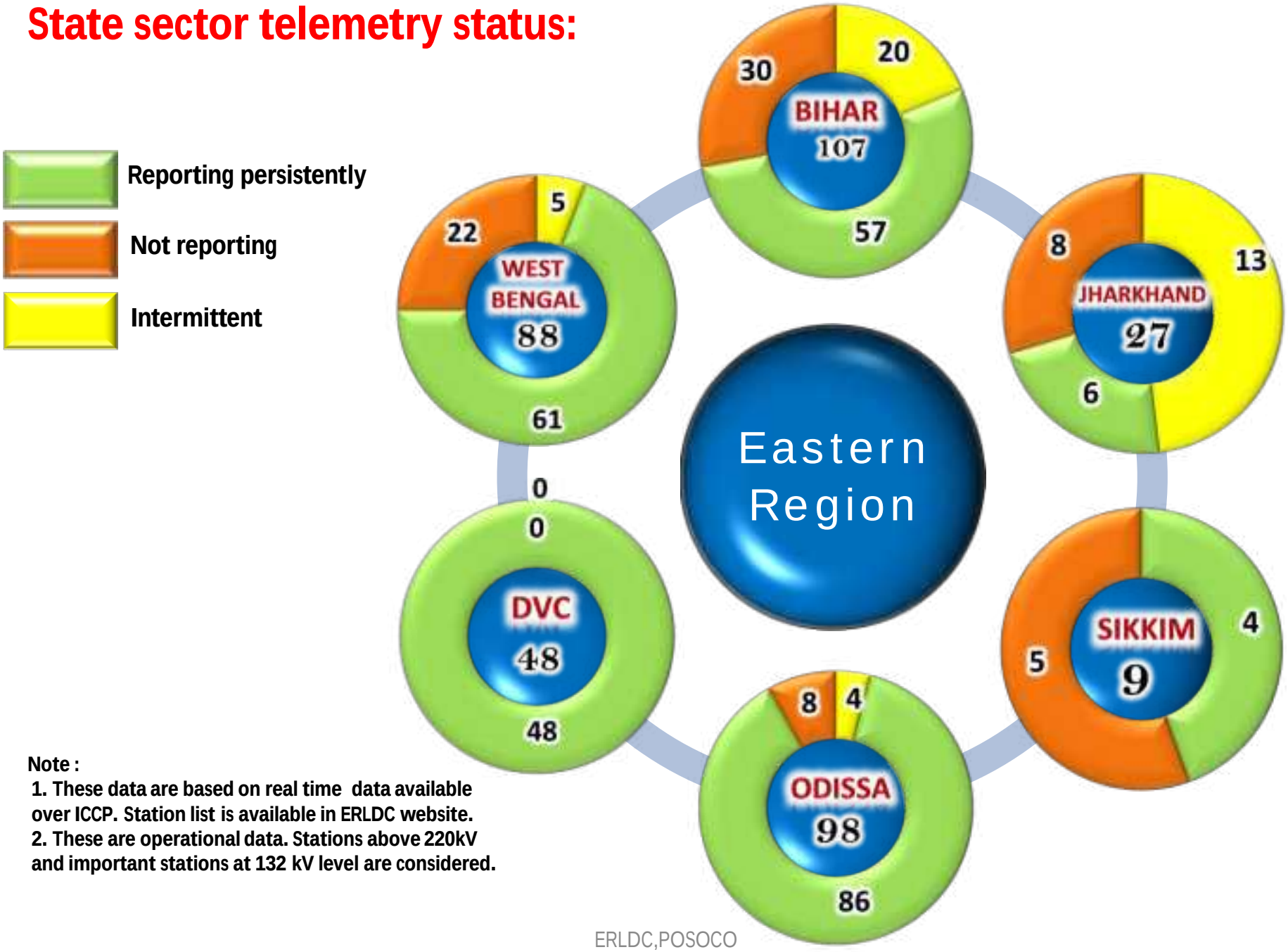
Annexure-C16







State sector telemetry status:



Note :

1. These data are based on real time data available over ICCP. Station list is available in ERLDC website.
2. These are operational data. Stations above 220kV and important stations at 132 kV level are considered.

– **Prolong outage:**

- **New Farakka (NTPC) since 09-09-2017(Target date 30th April,2018 ,as informed by NTPC in 143rd OCC).**
- **Lalmatia(NTPC) since 01-01-2018.**
- **Non availability of major analog data of Barh station.**
- **Erroneous telemetry of Baripada– Kharagpur MW data at Baripada end.**
- **Erroneous bus voltage measurement of Arambag 400 kV station.**

BIHAR

List of station having availability higher than 90% of time

Begusarai(220kV)	Biharsharif(220kV)	BODH GAYA(220kV)	Darbhanga(220kV)	Fatuha(220kV)	GOPALGANJ(220kV)
Hajipur(220kV)	KHAGAUL(220kV)	Sipara(220kV)	Arrah(132kV)	Aurangabad(132kV)	Banka(132kV)
BARH(132kV)	BARIPAHARI(132kV)	BIHTA(132kV)	BUXAR(132kV)	Chandauti(132kV)	Chhapra(132kV)
Dalsinghsarai(132kV)	DIGHA(132kV)	Dumraon(132kV)	Ekangarsarai(132kV)	Gaighat(132kV)	Gangwara(132kV)
GOH(132kV)	Hajipur Old(132kV)	Harnaut(132kV)	HULASGANJ(132kV)	Imamgunj(132kV)	Jagdishpur(132kV)
Jahanabad(132kV)	Jai Nagar(132kV)	Karmnasa(132kV)	Karpi(132kV)	Katihar(132kV)	Katra(132kV)
Kusheswar Asthan (132kV)	LAKHISARAI(132kV)	Madhubani(132kV)	Mithapur(132kV)	Nalanda(132kV)	Naugachhia(132kV)
Phulparas (132kV)	Raxaul (132kV)	Runisaidpur(132kV)	Sabour(132kV)	SAHARSA(132kV)	Sasaram(132kV)
Shekhpura(132kV)	Sherghati(132kV)	SKMCH(132kV)	Sonenagar(132kV)	Sultanganj(132kV)	TEHTA(132kV)
Tekari(132kV)	Wazirganj(132kV)	KBUNL_ST_1(220KV)			

List of station having intermittent data

DEHRI(220kV)	Kishanganj new(220kV)	Pusauli(220kV)	Samastipur new(220kV)	BANJARI(132kV)	BIKRAMGANJ(132kV)
DHAKA(132kV)	Jakkanpur(132kV)	Jandaha(132kV)	KARBIGAHIA(132kV)	Kochas (Dinara)(132kV)	Kundra(132kV)
MASRAKH(132kV)	Nawada(132kV)	Pandaul(132kV)	Samastipur(132kV)	Shitalpur(132kV)	Sitamarhi(132kV)
Vaishali(132kV)	Valmikinagar(132kV)				

List of stations having availability (less than 10% or RTU not integarated)

Madhepura(220kV)	sonenagar new(220kV)	Uda Kishanganj(132kV)	Belaganj(132kV)	BETIAH(132kV)	Dhandaha(132kV)
Ekma(132kV)	Forbisganj(132kV)	Hathidah(132kV)	Jamalpur(132kV)	Jamui(132kV)	Kahalgaon(132kV)
Khagaria(132kV)	Kishanganj(132kV)	Koshi(132kV)	MASAURHI(132kV)	Mohania(132kV)	Motihari(132kV)
uzaffarpur (Ramdayalu)(132k	Purnea(132kV)	RAFIGANJ(132kV)	Rajgir(132kV)	Ramnagar(132kV)	Siwan(132kV)
Sonebarsa(132kV)	Supaul(132kV)	BTPS_NEW(132KV)	DARBHANGA(132KV)	MOTIPUR(220KV)	MUSHAURI(220KV)

DVC

List of station having availability higher than 90%

BOKARO A TPS(400kV)	DURGAPUR TPS(400kV)	MEJIA B TPS(400kV)	RAGHUNATHPUR(400kV)	TISCO(400kV)	BARHI(132kV)
BURNPUR(220kV)	CTPS 1(132kV)	CTPS 2(220kV)	CTPS B(220kV)	DHANBAD(220kV)	DURGAPUR(220kV)
HOWRAH(132kV)	JAMSHEDPUR(220kV)	KALYANESWARI(220kV)	MEJIA A TPS(220kV)	MOSABANI(132kV)	PATRATU(132kV)
RAMGARH(220kV)	WARIA TPS(220kV)	ASP(132kV)	BAIDA(132kV)	BARDWAN(132kV)	BARJORA(220kV)
BELMURI(132kV)	CHANDIL(132kV)	GIRIDHI(220kV)	GOLA(132kV)	HAZARIBAG(132kV)	JAMURIA(132kV)
KALIPAHARI(132kV)	KHARAGPUR(132kV)	KODARMA(132kV)	KUMARDHUBI(132kV)	MAITHON HPS(132kV)	NIMIAGHAT(132kV)
NORTH KARANPURA(132kV)	PANCHET HPS(132kV)	PARULIA(132kV)	PATHERDIH(132kV)	PURULIA(220kV)	PUTKI(132kV)
RAMGARH(132kV)	RAMKANAL(132kV)	KODARMA(440kV)	BOKARO_B	KONAR	KOLAGHAT_NEW(132Kv)

JHARKHAND

List of station having availability higher than 90%

Chandil(220kV)	Patratu(220kV)	Ramchandrapur(220kV)	Tenughat(220kV)	Hatia-I(132kV)	Jadugoda(132kV)

List of station having intermittent data

Adityapur(132kV)	Chakradharpur(132kV)	Dumka(132kV)	Golmuri(132kV)	Japla(132kV)	Kamdara(132kV)
Kanke(132kV)	Lalmatia(132kV)	Manique(132kV)	Namkum(132kV)	Noamundi(132kV)	Pakur(132kV)
Sahebganj(132kV)					

List of station having availability less than 10%

Hatia-II(220kV)	Daltonganj(132kV)	Deoghar(132kV)	Garawah(132kV)	Goilkera(132kV)	Jamtara(132kV)
Latehar(132kV)	Rajkharsawan(132kV)				

WEST BENGAL

List of station having availability higher than 90%

Arambag(400kV)	Domjur(220kV)	Gokarna 400kv(400kV)	Haldia TPP(400kV)	Howrah(220kV)	Jeerat(400kV)
Kasba(220kV)	KTPS(400kV)	Lakshmikantapur(220kV)	Midnapur(220kV)	PPSP(400kV)	Satgachia(220kV)
Subhasgram(220kV)	Durgapur(400kV)	Bakreswar(400kV)	Kharagpur(400kV)	Sagardighi(400kV)	CHANDITALA(400kV)
Asansol(220kV)	DPL(220kV)	Durgapur(220kV)	Gokarna(220kV)	Rishra(220kV)	STPS(220kV)
NJP(220kV)	Krishnanagar(220kV)	BTPS(132kV)	Haldia Old(132kV)	Liluah(132kV)	Rammam(132kV)
Saltlake(132kV)	Maldah(132kV)	NBU(132kV)	Ashoknagar(132kV)	Adisaptagram(132kV)	Borjora(132kV)
Bighati(132kV)	Kursiang(132kV)	NPPSP(400kV)	FOUNDRY PARK(220kV)	JK NAGAR(220kV)	NEWTOWN3(220kV)
DHARAMPUR(220kV)	Budge Budge(CESC)(220kV)	Chakmir(CESC)(132kV)	Majherhat(CESC)(132kV)	Southern(CESC)(132kV)	Botanical gurden(CESC)(132kV)
New Coshipur(CESC)(220kV)	Princep street(CESC)(132kV)	Parklane(CESC)(132kV)	Titagarh(CESC)(132kV)	BT Road(CESC)(132kV)	Jadavpur(CESC)(132kV)
EM Bypass(CESC)(220kV)	Chakmir(CESC)(132kV)	East Calcutta(CESC)(132kV)	Dum Dum(CESC)(132kV)	Taratala(CESC)(132kV)	BBD Bag(CESC)(132kV)
Belur(CESC)(132kV)					

List of station having intermittent data

Haldia New(220kV)	Titagarh(132kV)	Tcf-2(132kV)	SADAIPUR(220kV)	TLDP4(220kV)

List of station having availability less than 10%

Dalkhola(220kV)	KLC Bantala(220kV)	Barasat(132kV)	Bishnupur(132kV)	Bongaon(132kV)	Kolaghat(132kV)
Raigunj(132kV)	Sainthia(132kV)	Birpara(132kV)	Chalsa(132kV)	Tcf-1(132kV)	Tcf-3(132kV)
Tarakeswar(132kV)	Alipuduar(132kV)	Gangarampur(132kV)	Joka(132kV)	New Bishnupur(220kV)	Kalimpong(66kV)
Hizli(132kV)	IPCHL(220kV)	TLDP3(220kV)	Patuli(CESC)(132kV)		

ODISHA

List of station having availability higher than 90%

Mendhasal(400kV)	Meramundali(400kV)	JSPLA(400kV)	GMR(400kV)	Jayanagar(220kV)	Balimela HPS(220kV)
Uper Kolab HPS(220kV)	Theruvalli(220kV)	Indravati HPS(220kV)	Bhanjanagar(220kV)	Narendrapur(220kV)	Bidanasi(220kV)
Chandaka(220kV)	Nayagarh(220kV)	Rengali HPS(220kV)	TTPS(220kV)	Rengali swiching station(220kV)	Duburi New(400kV)
Duburi Old(220kV)	Paradeep(220kV)	Bhdrakh(220kV)	Balasore(220kV)	Budhipadar(220kV)	IB TPS(220kV)
Bolangir New(220kV)	Tarkera(220kV)	Barkote(220kV)	TATA POWER(220kV)	JSL(220kV)	TSIL(220kV)
VEDANTA(220kV)	VISA(220kV)	JSPL(220kV)	MIL(220kV)	OPTCL (Podia)(220kV)	Sunabeda(132kV)
Machhkund HPS(132kV)	Rayagada(132kV)	Chhatrapur(132kV)	Aska(132kV)	Bhubaneswar (132kV)	Akhusinga(132kV)
Basta(132kV)	Balugaon(132kV)	Khurda(132kV)	Puri(132kV)	Cuttack(132kV)	Choudwar(132kV)
ICCL(132kV)	Chainpal(132kV)	Rairangpur(132kV)	Dhenkanal(132kV)	Baripada(132kV)	Jajpur Road(132kV)
Angul(132kV)	Boinda(132kV)	Kendrapara(132kV)	Kamakhyanagar(132kV)	Chiplima HPS(132kV)	Sambalpur(132kV)
Rajgangapur(132kV)	Bargarh(132kV)	ARYAN(132kV)	NBVL(132kV)	EMAMI(132kV)	ARATI(132kV)
AISCL(132kV)	IMFFA(132kV)	MINAKHEE(132kV)	OPCL(132kV)	OCLRJ(132kV)	OCL(132kV)
Soro(132kV)	Sonepur(132kV)	Anandpur (132kV)	ACC, Bargarh(132kV)	Barpalli(132kV)	Digapahandi(132kV)
Jaleswar(132kV)	Chhend(132kV)	Kesura(132kV)	Patnagarh(132kV)	Pattamundai(132kV)	Phulbani(132kV)
Sundargarh(132kV)	Kalarangi(132kV)				

List of station having intermittent data

NALCO(220kV)	Rourkela(132kV)	Burla HPS(132kV)	Parlakhemundi(132kV)		

List of station having availability less than 10%

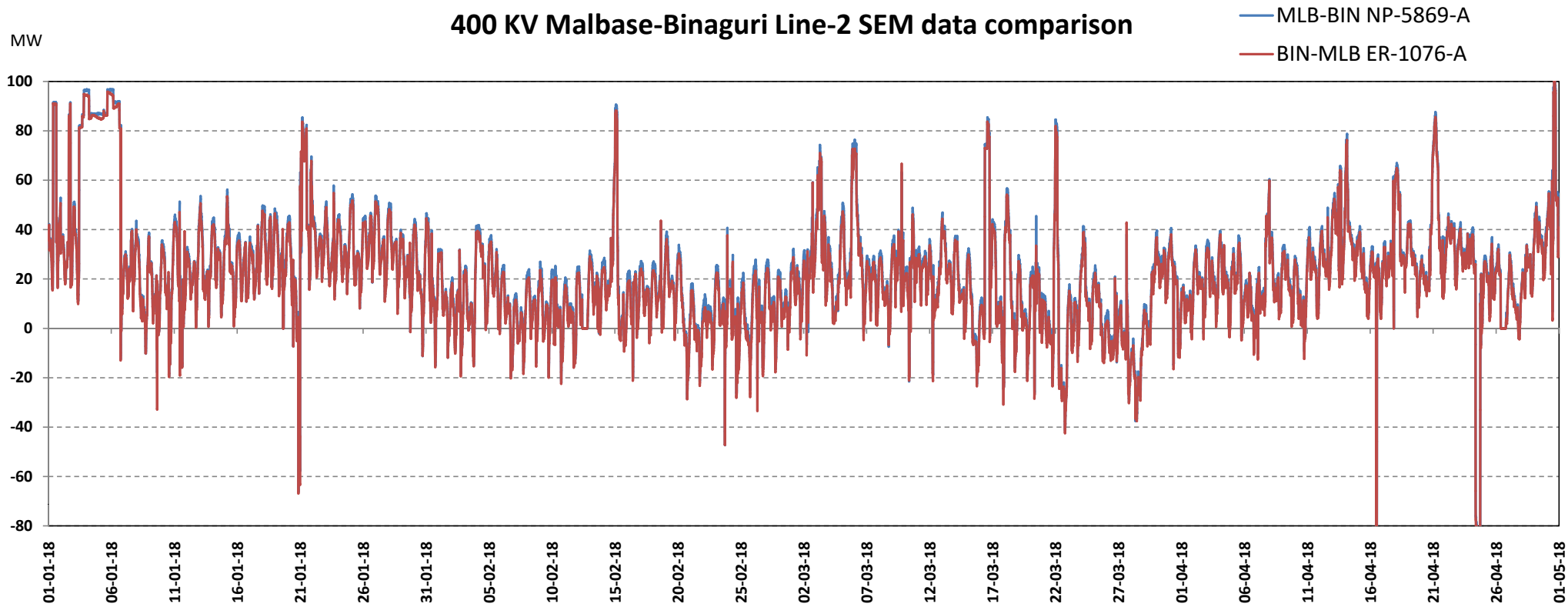
Joda(220kV)	Kesinga(132kV)	Sijua(132kV)	SHYAM(132kV)	VEDANTA(LANGIGARH)(132kV)	Bolangir Old(132kV)

Annexure-C20

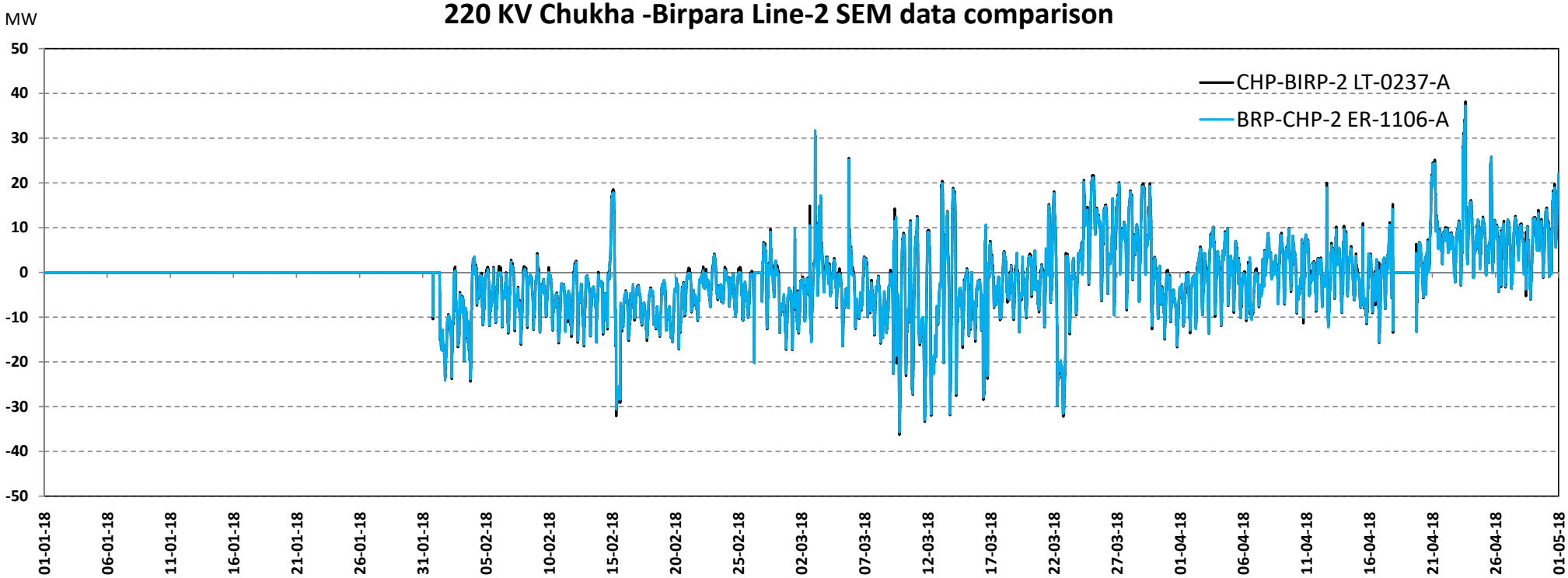
Sub Station	ICT	HV side Meter	LV Side Meter
ALIPURDUAR	400/220	2	2
BARIPADA	400/220	3	3
BIHARSHARIF	400/220	3	3
BINAGURI	400/220	2	2
BOLANGIR	400/220	2	2
CHAIBASA	400/220	2	2
DURGAPUR	400/220	2	2
GAYA	400/220	2	2
JAMSHEDPUR	400/220	3	3
JEYPORE	400/220	2	2
KEONJHAR	400/220	2	2
KISHANGANJ	400/220	2	2
MAITHON	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

Annexure-C24

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	Commissio ning	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	4600	2592
	ii)	NET POWER AVAILABILITY- Own Source (including bilateral)	900	177
		- Central Sector	3184	1923
	iii)	SURPLUS(+)/DEFICIT(-)	-516	-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	4500	2606
		- Central Sector	334	214
		Long term Bi-lateral (Export)	1512	1125
	iii)	SURPLUS(+)/DEFICIT(-)	572	0
4		**ORISSA**		
	i)	NET MAX DEMAND	4200	2678
	ii)	NET POWER AVAILABILITY- Own Source	3035	1680
		- Central Sector	1267	761
	iii)	SURPLUS(+)/DEFICIT(-)	102	-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)	200	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	765	502
		FROM HEL	540	348
		FROM CPL/PCBL	40	0
		Import Requirement	505	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	4474	2548
		- Central Sector+Others	3348	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	200	7
	ii)	**NET TOTAL POWER AVAILABILITY OF ER (INCLUDING C/S ALLOCATION)**	22303	12549
	iii)	**PEAK SURPLUS(+)/DEFICIT(-) OF ER (ii)-(i)**	464	-1115

EASTERN REGIONAL LOAD DESPATCH CENTRE
KOLKATA

TRANSMISSION ELEMENTS OUTAGE APPROVED IN 146TH OCC MEETING OF ERPC

		FROM		TO					
SL. No	NAME OF THE ELEMENTS	DATE	TIME	DATE	TIME	REMARKS	S.D availed BY	Reason	SUBJECT TO CONSENT FROM AGENCY
	Auto reclose of 400KV Balangir-Angul Line in non -auto mode	06-06-2018	08:00	28-06-2018	18:00	ODB	ER-II/Odisha/Balangir	For PID Scaning	NLDC
	400 KV BUS -2 AT NEW RANCHI	13-06-2018	08:00	14-06-2018	18:00	ODB	ER-I	STATCOM CONSTRUCTION	
	400KV Pandiabili-Mendhasal Ckt-I	19-06-2018	08:00	19-06-2018	17:00	ODB	ER-II/Odisha/ Pandiabili	For RTV coating of Porcelain equipments	GRIDCO
	400KV Pandiabili-Mendhasal Ckt-II	20-06-2018	08:00	20-06-2018	17:00	ODB	ER-II/Odisha/ Pandiabili	For RTV coating of Porcelain equipments	GRIDCO
	U/C LILO at Pundi 132 KV D/C Raghunathganj-	20-06-2018	09:00	21-06-2018	17:00	ODB	POWERGRID,ER-II	Stringing work (crossing) from loc no-54A/0 to 55/0 of	WB
	63MVAR Line Reactor of 400KV Pandiabili-Baripada Line at	21-06-2018	08:00	21-06-2018	17:00	ODB	ER-II/Odisha/ Pandiabili	For RTV coating of Porcelain equipments	SWITCHABLE?
	400 k V Biharsarif - Balia - I & II	22-06-2018	09:00	23-06-2018	18:00	ODB	POWERGRID ER-I	FOR POWER LINE CROSSING WORK OF 400 kV	NLDC
	63MVAR Line Reactor of 400KV Pandiabili-Duburi Line at	22-06-2018	08:00	22-06-2018	17:00	ODB	ER-II/Odisha/ Pandiabili	For RTV coating of Porcelain equipments	SWITCHABLE?
	Non-Auto of 400 KV Talcher- rourkela D/C Line	25-06-2018	09:00	25-07-2018	17:00	ODB	ER-II/Odisha/Rengali	for PID Work	
	132 KV S/C Gokarna-Sonar Bangla T/L & 132 KV S/C Lalgola-Sonar Bangla T/L (Both Ckt)	25-06-2018	09:00	26-06-2018	17:00	ODB	POWERGRID,ER-II	Stringing work (crossing) from loc no-4/0 to 5/0 of LILO of 400 KV S/C Farakka-Jeerat at Sagardighi T/L	WB
	400KV BARIPADA - DUBURI LINE	27-06-2018	06:00	28-06-2018	18:00	ODB	ER-II/Odisha/Bhadrak TL	To attend accumulated defects under Bhadrak Sec.	GRIDCO
	220 KV BUS-I AT GAYA S/S	28-06-2018	09:00	28-06-2018	18:00	ODB	POWERGRID ER-1	FOR KHIJARSARAI BAY COMMISIONING WORK	BSEB
	400 kV BIHARSARIF - SASARAM- I & II	28-06-2018	09:00	29-06-2018	18:00	ODB	POWERGRID ER-I	FOR POWER LINE CROSSING WORK OF 400 kV	NLDC
	400KV S/C FARAKKA - BEHRAMPUR T/L	28-06-2018	08:00	28-06-2018	18:00	ODB	POWERGRID,ER-II	For stringing between location no- 12/0 - 13/0 of 400 KV Farakka -Behrampur D/c line	WB
	220 KV BUS-II AT GAYA S/S	29-06-2018	09:00	29-06-2018	18:00	ODB	POWERGRID ER-1	FOR KHIJARSARAI BAY COMMISIONING WORK	BSEB
	A. 220 KV D/C Sagardighi-Gokarna Transmission	29-06-2018	09:00	30-06-2018	17:00	ODB	POWERGRID,ER-II	Stringing work (crossing) from loc no-60/0 to 61/0 of	WB
	400 KV Farakka- Kahalgaon-I line	29-06-2018	10:00	29-06-2018	18:00	ODB	POWERGRID,ER-II	For connecting bay-22 (Main Bay of 400 KV Farakka-	
	400KV S/C FARAKKA - SAGARDIGHI T/L	30-06-2018	08:00	30-06-2018	18:00	ODB	POWERGRID,ER-II	For stringing between location no- 13/0 - 14/0 of 400 KV	WB
	400 KV Farakka- Kahalgaon-III line	30-06-2018	10:00	30-06-2018	18:00	ODB	POWERGRID,ER-II	For connecting bay-34 (Tie Bay of 400 KV Farakka- Kahalgaon-	
	400kV D/C TL LILO to 765/400kV Kenapalli Grid S/S - A/R Non Auto mode	01-07-2018	08:00	10-07-2018	18:00	OCB	OGPTL	for Overhead Stringing of U/C 765KV D/C Raipur- Sundargarh Transmission	NLDC
	400kV D/C SUNDARGARH-SAHAJBAHAL Line - A/R Non Auto Mode	01-07-2018	08:00	10-07-2018	18:00	OCB	OGPTL	for Overhead Stringing of U/C 765KV D/C Raipur- Sundargarh Transmission	
	Auto reclose of 400KV Rengali-Indrawati Line in non -auto	01-07-2018	08:00	31-07-2018	18:00	ODB	ER-II/Odisha/Balangir	For PID Scaning	NLDC
	400 KV Rourkela-Sundargarh - I (One)	01-07-2018	08:00	31-07-2018	17:00	ODB	ER-	For PID Testing of Porcelin Insulator	
	400 KV Sundargarh-Raigarh - I (One)	01-07-2018	08:00	31-07-2018	17:00	ODB	ER-	For PID Testing of Porcelin Insulator	NLDC
	400 KV Rourkela-Sundargarh - II (Two)	01-07-2018	08:00	31-07-2018	17:00	ODB	ER-	For PID Testing of Porcelin Insulator	
	400 KV Sundargarh - Raigarh - II (Two)	01-07-2018	08:00	31-07-2018	17:00	ODB	ER-	For PID Testing of Porcelin Insulator	NLDC
	400 KV Rourkela-Sundargarh - III (Three)	01-07-2018	08:00	31-07-2018	17:00	ODB	ER-II/ODISHA/SUNDERGARH	For PID Testing of Porcelin Insulator	
	400 KV Sundargarh - Raigarh - III (Three)	01-07-2018	08:00	31-07-2018	17:00	ODB	ER-II/ODISHA/SUNDERGARH	For PID Testing of Porcelin Insulator	NLDC
	400 KV Rourkela-Sundargarh - IV (Four)	01-07-2018	08:00	31-07-2018	17:00	ODB	ER-II/ODISHA/SUNDERGARH	For PID Testing of Porcelin Insulator	
	400 KV Sundargarh - Raigarh - IV (Four)	01-07-2018	08:00	31-07-2018	17:00	ODB	ER-	For PID Testing of Porcelin Insulator	NLDC
	765 KV Angul-Jharsuguda line -I	01-07-2018	08:00	10-07-2018	17:00	ODB	ER-	Strengthening of "A" type delta towers	NLDC
	400 kV GAJUWAKA-I LINE	01-07-2018	09:00	04-07-2018	17:30	ODB	ER-II/Odisha /Jeypore	For Rectification of Shut Down Nature of Defects	NLDC
	500MVA ICT1 @ PATNA	01-07-2018	08:00	01-07-2018	17:30	ODB	POWERGRID ER-1	ISOLATORS ALIGNMENTS WORK	BSEB
	400KV HVDC NORTH SIDE CONVERTER TNX MAIN BAY @	01-07-2018	09:00	03-07-2018	18:00	OCB	POWERGRID ER-1	FOR BREAKER DRIVE OVERHAULING AND BAY AMP	NLDC
	400/220KV 500MVA ICT-I @ PUSAULI	01-07-2018	09:00	02-07-2018	18:00	OCB	POWERGRID ER-1	SHIFTING OF TRANSFORMER FOR TRANSFORMER RETROFITTING WORK	BSEB
	400 KV Subhasgram Jeerat Line	01-07-2018	08:00	01-07-2018	17:30	ODB	POWERGRID,ER-II	R,Y & B-Ph LA Rlacement	WB
	400KV BUS-I at Berhampore	01-07-2018	9:00	01-07-2018	17:00	ODB	POWERGRID,ER-II	Breaker erection for newly constructed Berhampore Farakka-Ckt-I bay (409 Bay) under ERSS-XV	NLDC
	400KV, 125 Mvar Bus Reactor at Powergrid,Baharampore	01-07-2018	9:00	04-07-2018	17:00	ODB	POWERGRID,ER-II	completion of Pending construction work under ERSS-XV	
	Tie Bay of Sagardighi Berhampore Ckt-I (Tie Bay no-429)	01-07-2018	9:00	01-07-2018	18:00	ODB	POWERGRID,ER-II	Bay construction work under ERSS-XV	
	400KV Berhampore Sagardighi Ckt-I Tie bay (Bay no-	01-07-2018	09:00	20-07-2018	17:00	OCB	POWERGRID,ER-II	For converting Future Bay (409 Bay) into Line Bay of	
	400 KV BUS-II of NTPC Farakka	01-07-2018	10:00	01-07-2018	18:00	ODB	POWERGRID,ER-II	For connecting BUS isolator of bay no-24 & 35 to BUS-II (After	
	220 kV Maithon-Dhanbad 1 Bay at Powergrid,Maithan	01-07-2018	09:00	05-07-2018	18:00	OCB	POWERGRID,ER-II	CB overhauling work, There will be no power	
	765kV D/C Jharsuguda-Dharamjaygarh Line (Ckt-3 & 4)	02-07-2018	08:00	04-07-2018	18:00	OCB	OGPTL	for Overhead Stringing of U/C 765KV D/C Raipur- Sundargarh Transmission line(of OGPTL) at OGPTL Location numbers AP 129D/0-	NLDC
	765 KV ANGUL-SUNDERGARH LINE I	02-07-2018	07:00	10-07-2018	18:00	ODB	ER-II/Odisha/Angul TL	Delta Tower strengthening work	NLDC
	S/D of 400KV Balangir-Angul line	02-07-2018	08:00	03-07-2018	18:00	ODB	ER-II/Odisha/Balangir	For Defect Insulators Replacement.	NLDC
	400 KV Indravati- Bus Reactor #1 Tie Bay (Bay No-411)	02-07-2018	09:00	03-07-2018	17:00	OCB	ER-II/Odisha/Rengali	For CT Replacement	
	TIE BAY OF B/R AND RKL-II (411) @ CHAIBASA	02-07-2018	10:00	02-07-2018	17:00	ODB	POWERGRID ER-1	AMP WORK	
	400KV DALTONGANJ- SASARAM-1 LINE	02-07-2018	10:00	02-07-2018	18:00	ODB	POWERGRID ER-1	50 MVAR LINE REACTOR COMMISSIONING WORK	BSEB
	220KV BUS-1 AT MUZAFFARPUR	02-07-2018	09:00	02-07-2018	16:00	ODB	POWERGRID ER-1	JUMPER CONNECTION AND STABILITY TEST OF 220KV	BSEB
	MAIN BAY OF KISHANGANJ-1(407) AT NEW PURNEA	02-07-2018	10:00	07-07-2018	18:00	OCB	POWERGRID ER-1	CB OPERTAING MECHANISM MID LIFE OVERHAULLING	
	765 kV 3X500 MVA ICT-I AT NEW RANCHI	02-07-2018	08:00	03-07-2018	18:00	ODB	ER-I	STATCOM CONSTRUCTION	NLDC
	400 KV PTN-KSNGJ CKT1 & 400KV BSF-MUZ CKT 1	02-07-2018	08:00	02-07-2018	17:30	ODB	POWERGRID ER-1	FOR REPLACEMENT OF PORCELAIN INSULATOR WITH POLYMER	AFTER RESTORATION OF BINAGURI-NEW PURNEA-III & IV
	315 MVA ICT2 @ PATNA	02-07-2018	08:00	31-07-2018	17:30	OCB	POWERGRID ER-1	REPLACEMENT OF 315 MVA ICT WITH 500MVA ICT	BSEB
	400/220KV 315MVA ICT-II @ PUSAULI	02-07-2018	09:00	01-08-2018	18:00	OCB	POWERGRID ER-1	FOR TRANSFORMER RETROFITTING WORK	BSEB
	220KV SAHAPURI-PUSAULI	02-07-2018	08:00	03-07-2018	17:00	ODB	POWERGRID ER-1	FOR CVT REPLACEMENT WORK	NLDC
	400KV HVDC NORTH SIDE CONVERTER TNX MAIN BAY @	02-07-2018	09:00	02-07-2018	18:00	ODB	POWERGRID ER-1	FOR COMPRESSOR OVERHAULING WORK	NLDC
	220KV WBSETCL Subhasgram CKT#1 Bay (Bay No.207)	02-07-2018	08:00	04-07-2018	17:30	OCB	POWERGRID,ER-II	CGL make CB Overhauling	WB
	400KV Berhampore Bheramara Ckt-I Main Bay (Bay no-404) at Berhampore	02-07-2018	9:00	02-07-2018	17:00	ODB	POWERGRID,ER-II	AMP work	
	400KV Maithon-Right Bank-1	02-07-2018	08:00	09-07-2018	18:00	OCB	POWERGRID,ER-II	Re conductoring work	
	400 kV Bus-II at Baripada	03-07-2018	08:30	03-07-2018	17:30	ODB	ER-II/Odisha/BARIPADA	For GIS bay EXTN works(for isolation of GIS Bus-II)	GRIDCO
	400 kV Bay 415 CB(GIS) at Baripada	03-07-2018	08:30	12-07-2018	17:30	ODB	ER-II/Odisha/BARIPADA	For GIS Bus-II ext. works	
	400 KV Jeypore-Rengali Tie Bay (402)	03-07-2018	08:00	03-07-2018	18:00	ODB	ER-II/Odisha /Indravati	AMP work of 400 KV Jeypore-Rengali Tie Bay (402)	
	50MVAR LR	03-07-2018	08:00	03-07-2018	18:00	ODB	ER-II/Odisha /Indravati	AMP work of 50MVAR LR	
	315MVA ICT#2 AT ROURKELA	03-07-2018	10:00	03-07-2018	13:00	ODB	ER-II/ODISHA/ROURKELA	FIXING OF ALUMINIUM/STEEL ENCLOSERS FOR	GRIDCO
	400 KV BIHARSHARIF - BALIA -1	03-07-2018	08:00	04-07-2018	18:00	ODB	POWERGRID ER-1	FOR REPLACEMENT OF PORCELAIN INSULATOR WITH	NLDC
	400KV BSF-MUZ-I LINE	03-07-2018	09:00	03-07-2018	17:00	ODB	POWERGRID ER-1	FOR REPLACEMENT OF PORCELAIN INSULATOR WITH POLYMER	

	400 KV CHAIBASA - KHARAGPUR-I	03-07-2018	10:00	03-07-2018	18:00	ODB	POWERGRID ER-1	CHECKING OF AUTORECLOSE	WB
	400 KV BUS-II AT GAYA S/S	03-07-2018	09:00	06-07-2018	18:00	ODB	POWERGRID ER-1	FOR STRINGING & ISOLATOR , BPI ERECTION WORK FOR	BSEB
	220KV BUS-2 AT MUZAFFARPUR	03-07-2018	09:00	03-07-2018	15:00	ODB	POWERGRID ER-1	JUMPER CONNECTION AND STABILITY TEST OF 220KV	BSEB
	400 KV PTN-KSNGJ CKT1 & 400KV BSF-MUZ CKT 2	03-07-2018	08:00	03-07-2018	17:30	ODB	POWERGRID ER-1	FOR REPLACEMENT OF PORCELAIN INSULATOR WITH	
	220KV RANCHI HATIA LINE-2	03-07-2018	10:00	03-07-2018	17:30	ODB	POWERGRID ER-1	CHANGING OF FLASH OVER INSULATOR	BSEB
	400KV HVDC NORTH SIDE FILTER MAIN BAY @ PUSAULI	03-07-2018	09:00	03-07-2018	18:00	ODB	POWERGRID ER-1	FOR COMPRESSOR OVERHAULING WORK	NLDC
	3*110MVAR 765KV BUS REACTOR BAY@PUSAULI	03-07-2018	09:00	03-07-2018	18:00	ODB	POWERGRID ER-1	AMP WORK	NLDC
	220kV Alipurduar -Salakati Ckt - I	03-07-2018	08:00	03-07-2018	18:00	ODB	POWERGRID,ER-II	AMP work	NLDC
	400KV Berhampore Sagardighi Ckt-II Tie bay (Bay no-411) at Berhampore	03-07-2018	9:00	03-07-2018	17:00	ODB	POWERGRID,ER-II	AMP work	
	400 KV Baharampore -JEERAT Line	03-07-2018	8:30	03-07-2018	16:00	ODB	POWERGRID,ER-II	Jumper tightness fixing of arcing Horn Eirth wire VD Conductor VD , Conductor Spacer and others hardware fittings	WB
	400KV S/C FARAKKA - DURGAPUR-I T/L	03-07-2018	08:00	03-07-2018	18:00	ODB	POWERGRID,ER-II	For stringing between location no- 10/0 to 11/0 of 400 KV Farakka -Behrampur D/c line	
	220KV Malda- Dalkhola-II line	03-07-2018	08:00	03-07-2018	10:00	ODB	POWERGRID,ER-II	TO COLLECT CT OIL SAMPLE	
	220KV DLK-DLK-I	03-07-2018	11:00	03-07-2018	14:00	ODB	POWERGRID,ER-II	TO COLLECT CT OIL SAMPLE	WB
	220KV DLK-DLK-II	03-07-2018	15:00	03-07-2018	18:00	ODB	POWERGRID,ER-II	TO COLLECT CT OIL SAMPLE	WB
	50 MVAR BR#1 at Powergrid,Durgapur	03-07-2018	09:00	03-07-2018	17:00	ODB	POWERGRID,ER-II	Attending oil leakage from the top of the reactor tank	
	220kV SILIGURI-DALKHOLA-I	03-07-2018	08:00	05-07-2018	17:00	OCB	ER-II	S/D required for shifting Anchor-1 on pile through installation of ERS Tower.Presently Line shorting has been done at Anchor Tower-1	
	220kV SILIGURI-DALKHOLA-II	03-07-2018	08:00	05-07-2018	17:00	OCB	ER-II	S/D required for shifting Anchor-1 on pile through installation of ERS Tower.Presently Line shorting has been done at Anchor Tower-2	
	400KV BINAGURI-RANGPO-I	03-07-2018	08:00	03-07-2018	14:00	ODB	ER-II	FOR SPS IMPLEMENTATION AT BINAGURI END.	
	400KV Bus-I at Keonjhar	04-07-2018	09.00	09-07-2018	18.00	ODB	ER-II/Odisha/Keonjhar	Stringing of Jack Bus over Bus-I for 125 MVAR Reactor	
	400 KV ICT # 2	04-07-2018	09:00	04-07-2018	17:00	ODB	ER-II/Odisha/Rengali	For Additional Neutral Earthing	
	80MVAR L/R OF 400KV BSF-PURNEA-I AT BIHARSHARIF	04-07-2018	09:00	04-07-2018	17:00	ODB	POWERGRID ER-1	AMP WORK	
	400 KV CHAIBASA - KHARAGPUR-2	04-07-2018	10:00	04-07-2018	18:00	ODB	POWERGRID ER-1	CHECKING OF AUTORECLOSE	WB
	200 MVA ICT-1 AT LAKHISARAI	04-07-2018	08:00	05-07-2018	18:00	ODB	POWERGRID ER-1	CHECKING OF AIR CELL & AMP	BSEB
	132KV MUZ-DHALKEBAR (NEPAL) LINE	04-07-2018	09:00	04-07-2018	15:00	ODB	POWERGRID ER-1	JUMPER CONNECTION AND STABILITY TEST OF 220KV GIS UPCOMING BAYS AT MUZAFFARPUR.S/D SHALL BE BOOKED IN CONSTRUCTION HEAD.	NLDC
	765 KV NRNC - RANCHI CKT-1	04-07-2018	09:00	04-07-2018	18:00	ODB	POWERGRID ER-1	FOR REPLACEMENT OF INSULATORS DAMAGED BU MISCREANTS	NLDC
	765 kV 3X500 MVA ICT-II AT NEW RANCHI	04-07-2018	08:00	05-07-2018	18:00	ODB	ER-I	STATCOM CONSTRUCTION	NLDC
	400 KV PTN-KSNGJ CKT 2 & 400KV BSF-MUZ CKT 1	04-07-2018	08:00	04-07-2018	17:30	ODB	POWERGRID ER-1	FOR REPLACEMENT OF PORCELAIN INSULATOR WITH POLYMER	
	220KV RANCHI CHANDIL LINE-I	04-07-2018	10:00	04-07-2018	17:30	ODB	POWERGRID ER-1	CHANGING OF FLASH OVER INSULATOR	JUSNL
	400KV NORTH CONVERTER TNX_FILTER TIE BAY@ PUSAULI	04-07-2018	09:00	04-07-2018	18:00	ODB	POWERGRID ER-1	FOR COMPRESSOR OVERHAULING WORK	NLDC
	220KV DEHRI-PUSAULI	04-07-2018	08:00	04-07-2018	17:00	ODB	POWERGRID ER-1	FOR CVT REPLACEMENT WORK	BSEB
	400KV HVDC EAST SIDE CONVERTER TNX MAIN BAY @ PUSAULI	04-07-2018	09:00	06-07-2018	18:00	OCB	POWERGRID ER-1	FOR BREAKER DRIVE OVERHAULING AND BAY AMP WORK	NLDC
	400KV ICT-I MAIN BAY@ PUSAULI	04-07-2018	09:00	07-07-2018	18:00	OCB	POWERGRID ER-1	TO ATTEND GAS LEAKAGE IN BREAKER.	
	400KV Berhampore Bheramara Ckt-II Tie bay (Bay no-402) at Berhampore	04-07-2018	9:00	04-07-2018	17:00	ODB	POWERGRID,ER-II	Earth Switch Interlock checking and rectification.	
	400 KV BUS-I of NTPC Farakka	04-07-2018	10:00	04-07-2018	18:00	ODB	POWERGRID,ER-II	For disconnecting BUS isolator of bay no-22 & 33 from BUS-I (For augmentation of BUS Isolator from 2000A to 3150 A rating under ERSS-XV projects).	
	66KV Tadong (Line#2) Feeder	04-07-2018	09:30	04-07-2018	17:30	ODB	POWERGRID,ER-II	CT tan delta and Line Isolator and Transfer Bus Isolator AMP and Dir. O/C Relay Replacemnet	SIKKIM
	400KV Teesta 3-408 bay at Powergrid,Rangpo	04-07-2018	08:00	08-07-2018	17:00	OCB	POWERGRID,ER-II	For rectification of SF6 gas leakage repair work	
	400KV BINAGURI-RANGPO-II	04-07-2018	08:00	04-07-2018	14:00	ODB	ER-II	FOR SPS IMPLEMENTATION AT BINAGURI END.	
	765kV, 3*110MVAR Bus Reactor-1 at Angul	05-07-2018	10:00	05-07-2018	18:00	ODB	ER-II/Odisha/Angul SS	Routine changeover of Spare B/R with B/R-1.	NLDC
	765 KV SNG-DHARAMJAYGARH - I & II	05-07-2018	08:00	06-07-2018	17:00	ODB	ER-II/ODISHA/SUNDERGARH	1. S/D related works like C C Ring tightening,cotter pin inclusion, Jumper tightening checking etc. in old portion of line.	NLDC
	400 kV GAJUWAKA-II LINE	05-07-2018	09:00	08-07-2018	17:30	ODB	ER-II/Odisha /Jeypore	For Rectification of Shut Down Nature of Defects	NLDC
	401 KV ICT # 1	05-07-2018	09:00	05-07-2018	17:00	ODB	ER-II/Odisha/Rengali	For Additional Neutral Earthing	
	132 KV ARA JAGDISHPUR	05-07-2018	10:00	05-07-2018	17:00	ODB	POWERGRID ER-1	AMP	BSEB
	400 KV BIHARSHARIF - BALIA -2	05-07-2018	08:00	06-07-2018	18:00	ODB	POWERGRID ER-1	FOR REPLACEMENT OF PORCELAIN INSULATOR WITH POLYMER	NLDC
	400KV BSF-MUZ-II LINE	05-07-2018	09:00	05-07-2018	17:00	ODB	POWERGRID ER-1	FOR REPLACEMENT OF PORCELAIN INSULATOR WITH POLYMER	
	220 KV CHAIBASA-CHAIBASA -1 (JUSNL LINE)	05-07-2018	09:00	05-07-2018	13:00	ODB	POWERGRID ER-1	AMP	
	220KV BUS-1 AT MUZAFFARPUR	05-07-2018	09:00	05-07-2018	12:00	ODB	POWERGRID ER-1	FOR ISOLATING RECENTLY CHARGED BAY	BSEB
	400 KV PTN-KSNGJ CKT 2 & 400KV BSF-MUZ CKT 2	05-07-2018	08:00	05-07-2018	17:30	ODB	POWERGRID ER-1	FOR REPLACEMENT OF PORCELAIN INSULATOR WITH POLYMER	
	400KV ALLAHABAD L/R BAY @ PUSAULI	05-07-2018	09:00	05-07-2018	18:00	ODB	POWERGRID ER-1	FOR COMPRESSOR OVERHAULING WORK	
	220KV MAIN BUS-I @ PUSAULI	05-07-2018	08:00	05-07-2018	18:00	ODB	POWERGRID ER-1	TO ATTEND ISOLATOR MISALIGNMENT PROBLEM	BSEB
	400KV Kahalgaon-Banka Line-1	05-07-2018	09:30	05-07-2018	17:30	**ODB**	**KAHALGAON**	**PM works & relay testing**	

	220KV WBSETCL Subhasgram CKT#2 Bay (Bay No.209) at Powergrid,Subhasgram	05-07-2018	08:00	07-07-2018	17:30	OCB	POWERGRID,ER-II	CGL make CB Overhauling	WB
	220kV Alipurduar -Salakati Ckt - II	05-07-2018	08:00	05-07-2018	18:00	ODB	POWERGRID,ER-II	AMP work	NLDC
	400KV Berhampore Bheramara Ckt-I Tie bay (Bay no-405) at Berhampore	05-07-2018	9:00	05-07-2018	17:00	ODB	POWERGRID,ER-II	Earth Switch Interlock checking and rectification.	
	400 KV Binaguri-Purnea Ckt-1	05-07-2018	09:00	06/07/2018	17:00	ODB	POWERGRID,ER-II	Indenfied Defect insulator replacment work	
	400KV S/C FARAKKA - DURGAPUR-II T/L	05-07-2018	08:00	05-07-2018	18:00	ODB	POWERGRID,ER-II	For stringing between location no- 8/0 to 9/0 of 400 KV Farakka -Behrampur D/c line	
	400 KV Farakka- Kahalgaon-I line	05-07-2018	10:00	05-07-2018	18:00	ODB	POWERGRID,ER-II	For disconnecting bay-22 (Main Bay of 400 KV Farakka-Kahalgaon-I) from line side for augmentation of Isolator & CT from 2000A to 3150 A rating under ERSS-XV projects.	
	Main Bay of 400 KV Farakka- Kahalgaon-I (Bay-22)	05-07-2018	10:00	20-07-2018	18:00	OCB	POWERGRID,ER-II	For augmentation of Isolator & CT from 2000A to 3150 A rating under ERSS-XV projects.	
	66KV Bulbulay (Line#1) Feeder	05-07-2018	09:30	05-07-2018	17:30	ODB	POWERGRID,ER-II	Dir. O/C & EF Relay Replacemnet	SIKKIM
	(400/220/33 KV) 315 MVA ICT-III at Powergrid,Malda	05-07-2018	08:00	05-07-2018	17:00	ODB	POWERGRID,ER-II	AMP &Tertiary taking in service	WB
	765kV, 3*80MVAR Line Reactor-2 at Angul	06-07-2018	09:00	06-07-2018	18:00	ODB	ER-II/Odisha/Angul SS	For attending oil leakage in Y phase Reactor.	NLDC
	220 KV Balangir- Sadapali Line Bay(205 Bay)	06-07-2018	09:00	06-07-2018	18:00	ODB	ER-II/Odisha/Balangir	AMP For 205 CB and 205 CT	GRIDCO
	125MVAR BUS REACTOR#1 AT ROURKELA	06-07-2018	09:00	06-07-2018	18:00	ODB	ER-II/ODISHA/ROURKELA	COMMISSIONING OF CSD IN ITS TIE BAY CB (42352 CB) & OVERHAULING OF MECHANICALLY JAMMED 42289A ISOLATOR	
	400 KV Keonjhar- Talcher #2 Tie Bay (Bay No-402)	06-07-2018	09:00	06-07-2018	17:00	ODB	ER-II/Odisha/Rengali	For Replacement of CB Auxilary Contact	
	400KV BSF-BALIA LINE-I	06-07-2018	09:00	06-07-2018	17:00	ODB	POWERGRID ER-1	AUTO-RECLOSE RELAY COMMISSIONING WORK	NLDC
	220 KV CHAIBASA-CHAIBASA -2 (JUSNL LINE)	06-07-2018	09:00	06-07-2018	13:00	ODB	POWERGRID ER-1	AMP	
	50 MVAR BR1 @ JAMSHEDPUR	06-07-2018	09:30	06-07-2018	17:30	ODB	POWERGRID ER-1	BR1 YPHASE AIR CELL REPLACEMENT WORK	
	220KV BUS-2 AT MUZAFFARPUR	06-07-2018	09:00	06-07-2018	12:00	ODB	POWERGRID ER-1	FOR ISOLATING RECENTLY CHARGED BAY	BSEB
	400 KV Ranchi-NPPSP-I line	06-07-2018	08:00	07-07-2018	18:00	ODB	ER-I	STATCOM CONSTRUCTION	WB
	400 KV PTN-KSNGJ CKT 1 & 400KV KHL BARH CKT 1	06-07-2018	08:00	06-07-2018	17:30	ODB	POWERGRID ER-1	FOR REPLACEMENT OF PORCELAIN INSULATOR WITH POLYMER	
	400KV ALLAHABAD MAIN BAY @ PUSAULI	06-07-2018	09:00	06-07-2018	18:00	ODB	POWERGRID ER-1	FOR COMPRESSOR OVERHAULING WORK	
	220KV MAIN BUS-II @ PUSAULI	06-07-2018	08:00	06-06-2020	18:00	ODB	POWERGRID ER-1	TO ATTEND ISOLATOR MISALIGNMENT PROBLEM	BSEB
	400 KV Farakka- Kahalgaon-III line	06-07-2018	10:00	06-07-2018	18:00	ODB	POWERGRID,ER-II	For disconnecting bay-34 (Tie Bay of 400 KV Farakka-Kahalgaon-III) from line side for augmentation of Isolator & CT from 2000A to 3150 A rating under ERSS-XV projects.	
	Tie Bay of 400 KV Farakka- Kahalgaon-III (Bay-33 & 34)	06-07-2018	10:00	20-07-2018	18:00	OCB	POWERGRID,ER-II	For augmentation of Isolator & CT from 2000A to 3150 A in bay-34 & for installation of new equipment in Bay-33 under ERSS-XV projects.	
	400 Kv Bus-3 at Powergrid,Durgapur	06-07-2018	09:00	06-07-2018	17:00	ODB	POWERGRID,ER-II	Isolator Droper connection with Bus in ERSS-XVII(SPML)	
	66KV Lagyap (Line#3) Feeder	06-07-2018	09:30	06-07-2018	17:30	ODB	POWERGRID,ER-II	CT tan delta and Line Isolator and Transfer Bus Isolator AMP & Dir. O/C & EF Relay Replacemnet	SIKKIM
	220 kV Maithon-Dhanbad 2 Bay at Powergrid,Maithan	06-07-2018	09:00	10-07-2018	18:00	OCB	POWERGRID,ER-II	CB overhauling work, There will be no power interruption occurred. The said line will be in service through TBC	
	400kv Maithon- Durgapur-1	06-07-2018	09:00	06-07-2018	17:30	ODB	POWERGRID,ER-II	Jumper rectication	
	765 KV, 3*500 MVA ICT 1 at Angul	07-07-2018	09:00	07-07-2018	18:00	ODB	ER-II/Odisha/Angul SS	For attending oil leakage in R phase of ICT 1 bank.	NLDC
	160 MVA ICT#1 at Baripada	07-07-2018	09:00	07-07-2018	17:30	ODB	ER-II/Odisha/BARIPADA S/S	AMP	GRIDCO
	400 KV PTN-KSNGJ CKT 1 & 400KV KHL BARH CKT 2	07-07-2018	10:00	07-07-2018	13:00	ODB	POWERGRID ER-1	FOR REPLACEMENT OF PORCELAIN INSULATOR WITH POLYMER	
	400KV ALLAHABAD_FUT TIE BAY @ PUSAULI	07-07-2018	09:00	07-07-2018	18:00	ODB	POWERGRID ER-1	FOR COMPRESSOR OVERHAULING WORK	
	220KV PUSAULI-DEHRI	07-07-2018	08:00	07-07-2018	13:00	ODB	POWERGRID ER-1	TO ATTEND ISOLATOR MISALIGNMENT PROBLEM	BSEB
	220KV PUSAULI-ARA	07-07-2018	13:00	07-07-2018	18:00	ODB	POWERGRID ER-1	TO ATTEND ISOLATOR MISALIGNMENT PROBLEM	BSEB
	400KV HVDC EAST SIDE CONVERTER TNX_FILTER TIE BAY @ PUSAULI	07-07-2018	09:00	09-07-2018	18:00	OCB	POWERGRID ER-1	FOR BREAKER DRIVE OVERHAULING AND BAY AMP WORK	NLDC
	220 KV Birpara-Malbase	07-07-2018	08:00	07-07-2018	17:30	ODB	POWERGRID,ER-II	B-PH CVT SOS activity due to high temprature of CVT tank	NLDC
	132 KV Gangtok- Rangpo Line	07-07-2018	09:30	07-07-2018	17:30	ODB	POWERGRID,ER-II	Dir. O/C and EF Relay Replacemnet	SIKKIM
	204 BAY(Pandiabili-Samagara ckt-1)	08-07-2018	10:00	08-07-2018	16:00	ODB	ER-II/Odisha/ Pandiabili GIS	Timing and CRM of Breaker	
	400KV SARANATH L/R BAY @ PUSAULI	08-07-2018	09:00	08-07-2018	18:00	ODB	POWERGRID ER-1	FOR COMPRESSOR OVERHAULING WORK	
	400KV 500MVA ICT-I @ PUSAULI	08-07-2018	08:00	08-07-2018	12:00	ODB	POWERGRID ER-1	TO ATTEND ISOLATOR MISALIGNMENT PROBLEM	BSEB
	220KV PUSAULI-ARA	08-07-2018	12:00	08-07-2018	16:00	ODB	POWERGRID ER-1	TO ATTEND ISOLATOR MISALIGNMENT PROBLEM	BSEB
	220KV PUSAULI-NADHOKHAR	08-07-2018	16:00	08-07-2018	20:00	ODB	POWERGRID ER-1	TO ATTEND ISOLATOR MISALIGNMENT PROBLEM	BSEB
	220KV WBSETCL KLC Bantala Line at Powergrid,Subhasgram	08-07-2018	09:00	08-07-2018	17:30	ODB	POWERGRID,ER-II	R-Ph LA Rlacement	WB
	400 KV Binaguri-Purnea Ckt-2	08-07-2018	09:00	9/07/2018	17:00	ODB	POWERGRID,ER-II	Indenfied Defect insulator replacment work	
	220KV FARAKKA-LALMATIA T/L	08-07-2018	08:00	08-07-2018	18:00	ODB	POWERGRID,ER-II	For stringing between location no- 5/0 to 6/0 of 400 KV Farakka -Behrampur D/c line	JUSNL
	132kV main BUS at Baripada	09-07-2018	09:30	09-07-2018	12:30	ODB	ER-II/Odisha/BARIPADA S/S	Bus CVT JB replacement	GRIDCO
	400KV TALCHER#2 & CHAIBASA#2 TIE BAY (BAY NO.-408)	09-07-2018	09:00	10-07-2018	18:00	OCB	ER-II/ODISHA/ROURKELA	FOR ARRESTING SF6 GAS LEAKAGE FROM R-PH & B-PH OF 40852 CB.	

	400 kV Jeypore-Indravati S/C Line	09-07-2018	09:00	10-07-2018	18:00	ODB	ER-II/Odisha /Jeypore	For Replacement of PID Defective Insulators in Jey-Ivt Line	NLDC
	400 KV Keonjhar Main Bay (Bay No-401)	09-07-2018	09:00	10-07-2018	17:00	OCB	ER-II/Odisha/Rengali	For CT Replacement	
	400 KV BUS-I AT GAYA S/S	09-07-2018	09:00	11-07-2018	18:00	ODB	POWERGRID ER-1	FOR STRINGING & ISOLATOR , BPI ERECTION WORK FOR 400/220 KV ICT- III UNDER TECHNO PACKAGE	BSEB
	400 KV MAIN BUS-2 AT LAKHISARAI	09-07-2018	10:00	09-07-2018	14:00	ODB	POWERGRID ER-1	AMP	BSEB
	MAIN BAY OF MUZ-2(409) AT NEW PURNEA	09-07-2018	10:00	14-07-2018	18:00	OCB	POWERGRID ER-1	CB OPERTAING MECHANISM MID LIFE OVERHAULLING WORK	
	400 KV BUS -I AT NEW RANCHI	09-07-2018	08:00	10-07-2018	18:00	ODB	ER-I	STATCOM CONSTRUCTION	
	400 KV PTN-KSNGJ CKT 2 & 400KV KHL BARH CKT 1	09-07-2018	08:00	09-07-2018	17:30	ODB	POWERGRID ER-1	FOR REPLACEMENT OF PORCELAIN INSULATOR WITH POLYMER	
	315 MVA ICT-I @ RANCHI	09-07-2018	10:00	09-07-2018	17:00	ODB	POWERGRID ER-1	CHEKING AND RECTIFICATION OF MAIN BAY ISOLATOR (40389ARPH) CT SIDE CONTACT	JUSNL
	400KV EAST SIDE BUS-I@PUSAULI	09-07-2018	08:00	09-07-2018	18:00	ODB	POWERGRID ER-1	TO ATTEND ISOLATOR MISALIGNMENT PROBLEM	NLDC
	Maintenance work for ICT-1	09-07-2018	09:30	14-07-2018	18:00	**OCB**	**BARH**	**Annual testing of ICT 1**	
	Maintenance work for ICT-1 BAY Equipments	09-07-2018	09:30	14-07-2018	18:00	**OCB**	**BARH**	**Annual testing of Bay Equipments**	
	220KV WBSETCL Newtown Line Bay (Bay No.205) at Powergrid,Subhasgram	09-07-2018	08:00	11-07-2018	17:30	OCB	POWERGRID,ER-II	CGL make CB Overhauling	WB
	132KV / 66KV 50 MVA ICT#2 Gangtok	09-07-2018	09:00	09-07-2018	17:30	ODB	POWERGRID,ER-II	ICT AMP Dir. O/C and EF Relay Replacemnet	SIKKIM
	220KV BUS-1 at Powergrid,Rangpo	09-07-2018	08:00	11-07-2018	17:00	OCB	POWERGRID,ER-II	For rectification of SF6 gas leakage repair work(both Shutdown needed on same dates)	
	220KV Rangpo-NEW MELLI line	09-07-2018	08:00	11-07-2018	17:00	OCB	POWERGRID,ER-II	For rectification of SF6 gas leakage repair work(both Shutdown needed on same dates)	
	220 kV Siliguri -New Siliguri (Binaguri) - I	09-07-2018	10:00	09-07-2018	17:00	ODB	POWERGRID,ER-II	AMP of 220 KV Siliguri -New Siliguri (Binaguri) Ckt- I; Bay -204 at Siliguri	
	160MVA ICT-II at Powergrid,Malda	09-07-2018	08:00	09-07-2018	16:00	ODB	POWERGRID,ER-II	AMP work	WB
	220 KV Bus Coupler Bay (204 Bay)	10-07-2018	09:00	10-07-2018	18:00	ODB	ER-II/Odisha/Balangir	AMP For 204 CB and 204 CT	
	400KV TIE Bay (40102 BAY) of ICT-I & Balangir-Angul line	10-07-2018	09:00	13-07-2018	18:00	ODB	ER-II/Odisha/Balangir	Cleaning, painting and plaster work of newly constructed ACP Room under 125 MVAR Bus Reactor Bay extension work	
	765 KV SNG-DHARAMJAYGARH - III & IV	10-07-2018	08:00	14-07-2018	17:00	ODB	ER-II/ODISHA/SUNDERGARH	Maintenance works and coonection with new portion of balance line after swapping arrangement (Under Antitheft Charging)	NLDC
	400 KV Sundargarh - Raigarh - II & IV	10-07-2018	08:00	11-07-2018	17:00	ODB	ER-II/ODISHA/SUNDERGARH	For tree /Bamboo cutting at Loc No. 426 AND S/D related works for various compliance of cross patrolling team of AM, BBSR	NLDC
	400KV BSF-BANKA-I LINE	10-07-2018	09:00	10-07-2018	17:00	ODB	POWERGRID ER-1	FOR REPLACEMENT OF PORCELAIN INSULATOR WITH POLYMER	
	400 KV CHAIBASA JAMSHEDPUR LINE 2	10-07-2018	09:00	10-07-2018	18:00	ODB	POWERGRID ER-1	CHECKING OF AUTORECLOSE	
	80 MVAR LR in Patna- KIshanganj CKT II	10-07-2018	10:00	10-07-2018	15:00	ODB	POWERGRID ER-1	AMP	
	400 KV PTN-KSNGJ CKT 2 & 400KV KHL BARH CKT 2	10-07-2018	08:00	10-07-2018	17:30	ODB	POWERGRID ER-1	FOR REPLACEMENT OF PORCELAIN INSULATOR WITH POLYMER	
	220 KV PURNEA DALKHOLA-1	10-07-2018	09:00	10-07-2018	17:00	OCB	POWERGRID ER-1	POWERGRID FOR AUTO RECLOSE RELAY CHECKING AND RECTIFICATION WORK	
	400KV RANCHI SIPAT CKT-2	10-07-2018	11:00	10-07-2018	17:00	ODB	POWERGRID ER-1	CHANGING OF FLASH OVER INSULATOR	NLDC
	400KV SARANATH MAIN BAY @ PUSAULI	10-07-2018	09:00	10-07-2018	18:00	ODB	POWERGRID ER-1	FOR COMPRESSOR OVERHAULING WORK	
	400KV EAST SIDE BUS-II@PUSAULI	10-07-2018	08:00	10-07-2018	18:00	ODB	POWERGRID ER-1	TO ATTEND ISOLATOR MISALIGNMENT PROBLEM	NLDC
	400kV Fkk-DGP Line-2	10-07-2018	09:00	10-07-2018	17:00	**ODB**	**FARAKKA**	**Relay test**	
	400KV Alipurduar-Bongaigaon-II	10-07-2018	08:00	10-07-2018	18:00	ODB	POWERGRID,ER-II	AMP work	NLDC
	400KV Berhampore Bheramara Ckt-I Line Bay (404L Bay) at Berhampore	10-07-2018	9:00	10-07-2018	17:00	ODB	POWERGRID,ER-II	Relay testing under AMP schedule	
	400KV D/C FARAKKA - KAHALGAON -(I & II) T/L	10-07-2018	08:00	11-07-2018	18:00	ODB	POWERGRID,ER-II	For stringing between location no- 4/0 to 5/0 of 400 KV Farakka -Behrampur D/c line	
	220KV BIRPARA -NSLG-I	10-07-2018	08:00	11-07-2018	17:30	ODB	POWERGRID,ER-II	Fitting of CC ring & Arching horn	
	400 kv Bus-1 at Powergrid,Durgapur	10-07-2018	09:00	10-07-2018	17:00	ODB	POWERGRID,ER-II	busbar protection checking by ABB engineer	
	400KV Maithon-Right Bank-2	10-07-2018	08:00	23-07-2018	18:00	OCB	POWERGRID,ER-II	Re conductoring work	
	220 kV Siliguri -New Siliguri (Binaguri) - II	10-07-2018	10:00	10-07-2018	17:00	ODB	POWERGRID,ER-II	AMP of 220 KV Siliguri -New Siliguri (Binaguri) Ckt-II; Bay-203 at Siliguri	
	765 KV ANGUL-SUNDERGARH LINE II	11-07-2018	07:00	20-07-2018	18:00	ODB	ER-II/Odisha/Angul TL	Delta Tower strengthening work	NLDC
	400Kv Indravati-Rengali S/c Line	11-07-2018	07:00	13-07-2018	18:00	ODB	ER-II/Odisha/BHAWANIPATNA TL	For attending camera patrolling defects and changing displaced Rigid spacers in tension tower Jumpers.	NLDC
	400KV Bus-II at Keonjhar	11-07-2018	09.00	16-07-2018	18.00	ODB	ER-II/Odisha/Keonjhar	Stringing of Jack Bus over Bus-II for 125 MVAR Reactor	
	766 KV Angul-Jharsuguda line -II	11-07-2018	08:00	20-07-2018	17:00	ODB	ER-II/ODISHA/SUNDERGARH	Strengthening of "A" type delta towers	NLDC
	400KV Jeypore - Bolangir Line at Jeypore	11-07-2018	09:00	12-07-2018	17:30	ODB	ER-II/Odisha /Jeypore	For Rectification of Shut Down Nature of Defects	NLDC
	205 BAY(Pandiabili-Samagara- ckt-2)	11-07-2018	10:00	11-07-2018	16:00	ODB	ER-II/Odisha/ Pandiabili GIS	Timing and CRM of Breaker	
	400 KV PATNA - BALIA -3	11-07-2018	08:00	11-07-2018	18:00	ODB	POWERGRID ER-1	FOR REPLACEMENT OF PORCELAIN INSULATOR WITH POLYMER	NLDC
	MAIN BAY OF 400 KV BSF-MUZ-2 AT BIHARSHARIF	11-07-2018	09:00	11-07-2018	17:00	ODB	POWERGRID ER-1	AMP WORK	

	400/220KV, 315MVA ICT-3 @ JAMSHEDPUR	11-07-2018	09:30	11-07-2018	17:30	ODB	POWERGRID ER-1	CSD TESTING WORK	JUSNL
	80 MVAR BUS REACTOR AT LAKHISARAI	11-07-2018	08:00	12-07-2018	18:00	ODB	POWERGRID ER-1	FOR CHECKING/RECTIFICATION OF ALIGNMENT OF BUS REACTOR ISOLATOR	
	400 KV CHANDAWA - GAYA CKT-2	11-07-2018	09:00	11-07-2018	18:00	ODB	POWERGRID ER-1	REPLACEMENT OF INSULATORS FLASHED OVER DUE TO LIGHTNING	
	400 KV Ranchi-NPPSP-II line	11-07-2018	08:00	12-07-2018	18:00	ODB	ER-I	STATCOM CONSTRUCTION	WB
	220 KV PURNEA DALKHOLA-2	11-07-2018	09:00	11-07-2018	17:00	OCB	POWERGRID ER-1	POWERGRID FOR AUTO RECLOSE RELAY CHECKING AND RECTIFICATION WORK	
	400KV SARANATH_FUT TIE BAY @ PUSAULI	11-07-2018	09:00	11-07-2018	18:00	ODB	POWERGRID ER-1	FOR COMPRESSOR OVERHAULING WORK	
	400KV NORTH SIDE BUS-I@PUSAULI	11-07-2018	08:00	11-07-2018	18:00	ODB	POWERGRID ER-1	TO ATTEND ISOLATOR MISALIGNMENT PROBLEM	NLDC
	400KV NORTH SIDE FILTER MAIN BAY@PUSAULI	11-07-2018	09:00	13-07-2018	18:00	OCB	POWERGRID ER-1	FOR BREAKER DRIVE OVERHAULING AND BAY AMP WORK	NLDC
	765/400KV, 1500MVA, ICT FOR REGULAR CHANGEOVER IN 06 MONTH @ PUSAULI	11-07-2018	09:00	13-07-2018	18:00	OCB	POWERGRID ER-1	02 DAYS FOR STABILITY TEST AND CHANGING OF DELTA CONNECTION IN LV SIDE AND 01 DAY FOR IDLE CHARGING (WITHOUT LOAD) FOR 24 HRS DUE TO FIRST	NLDC
	400KV Berhampore Bheramara Ckt-II Line Bay (401L Bay) at Berhampore	11-07-2018	9:00	11-07-2018	17:00	ODB	POWERGRID,ER-II	Relay testing under AMP schedule	
	132KV / 66KV 50 MVA ICT#1 Gangtok	11-07-2018	09:00	11-07-2018	17:30	ODB	POWERGRID,ER-II	ICT AMP Dir. O/C and EF Relay Replacemnet	SIKKIM
	220 kV Maithon-Kalyaneswari line 1 Bay at Powergrid,Maithan	11-07-2018	09:00	11-07-2018	18:00	ODB	POWERGRID,ER-II	Replacement Isolator Arm	
	765 KV, 3*500 MVA ICT 2 at Angul	12-07-2018	09:00	12-07-2018	18:00	ODB	ER-II/Odisha/Angul SS	For Replacing NRV of B-phase of ICT 2 bank.	NLDC
	400 kV Bus-II at Baripada	12-07-2018	08:30	12-07-2018	17:30	ODB	ER-II/Odisha/BARIPADA S/S	For GIS bay EXTN works(for recoonecting jumpers to GIS Bus-II)	GRIDCO
	400KV TALCHER#1 TIE BAY (BAY NO.-405)	12-07-2018	09:00	12-07-2018	18:00	ODB	ER-II/ODISHA/ROURKELA	OVERHAULING OF MECHANICALLY JAMMED 40589B ISOLATOR	
	400 KV PATNA - BALIA -4	12-07-2018	08:00	12-07-2018	18:00	ODB	POWERGRID ER-1	FOR REPLACEMENT OF PORCELAIN INSULATOR WITH POLYMER	NLDC
	MAIN BAY OF 400KV BSF-LAKHISARAI-1 (413) AT BIHARSHARIF	12-07-2018	09:00	12-07-2018	17:00	ODB	POWERGRID ER-1	AMP WORK	
	400 KV PTN-KSNGJ CKT 1	12-07-2018	08:00	12-07-2018	17:30	ODB	POWERGRID ER-1	E/W RECTIFICATION OF PAT-KSG#1 AT XING POINT OF 400 PAT-BALIA 1&2	AFTER RESTORATION OF BINAGURI-NEW PURNEA-III & IV
	400 KV PTN-BALIA 1 & 2	12-07-2018	10:00	12-07-2018	13:00	ODB	POWERGRID ER-1	E/W RECTIFICATION OF PAT-KSG#1 AT XING POINT OF 400 PAT-BALIA 1&2	NLDC
	400KV HVDC EAST SIDE CONVERTER TNX MAIN BAY @ PUSAULI	12-07-2018	09:00	12-07-2018	18:00	ODB	POWERGRID ER-1	FOR COMPRESSOR OVERHAULING WORK	NLDC
	400KV NORTH SIDE BUS-II@PUSAULI	12-07-2018	08:00	12-07-2018	18:00	ODB	POWERGRID ER-1	TO ATTEND ISOLATOR MISALIGNMENT PROBLEM	NLDC
	765KV FATEHPUR LINE MAIN BAY @ PUSAULI	12-07-2018	09:00	12-07-2018	18:00	ODB	POWERGRID ER-1	AMP WORK	NLDC
	400kV Bay 13 & 14	12-07-2018	09:00	13-07-2018	17:00	**ODB**	**FARAKKA**	**CT testing**	
	220KV WBSETCL KLC Bantala Bay (Bay No.206) at Powergrid,Subhasgram	12-07-2018	08:00	14-07-2018	17:30	OCB	POWERGRID,ER-II	CGL make CB Overhauling	WB
	125MVAR BR - 2 at Powergrid,Alipurduar	12-07-2018	10:00	12-07-2018	13:00	ODB	POWERGRID,ER-II	Bushing Tan Delta measurement	
	220KV BIRPARA -NSLG-II	12-07-2018	08:00	13-07-2018	17:30	ODB	POWERGRID,ER-II	Fitting of CC ring & Arching horn	
	132KV / 66KV 50 MVA ICT#2 Gangtok	12-07-2018	09:00	12-07-2018	17:30	ODB	POWERGRID,ER-II	ICT AMP Dir. O/C and EF Relay Replacemnet	SIKKIM
	220 kV Maithon-Kalyaneswari 1 Bay at Powergrid,Maithan	12-07-2018	09:00	16-07-2018	18:00	OCB	POWERGRID,ER-II	CB overhauling work, There will be no power interruption occurred. The said line will be in service through TBC	
	400\220kV 315 MVA ICT-2 at Powergrid,Rangpo	12-07-2018	08:00	15-07-2018	17:00	OCB	POWERGRID,ER-II	For rectification of SF6 gas leakage repair work	
	400 kV Bus-I at Baripada	13-07-2018	08:30	13-07-2018	17:30	ODB	ER-II/Odisha/BARIPADA S/S	For GIS bay EXTN works(for isolation of GIS Bus-I)	GRIDCO
	400 kV Bay 413CB(GIS) at Baripada	13-07-2018	08:30	22-07-2018	17:30	ODB	ER-II/Odisha/BARIPADA S/S	For GIS Bus-I ext. works	
	Indravati Line - Gajuwaka-I TieBay (411) at Jeypore	13-07-2018	09:00	13-07-2018	18:00	ODB	ER-II/Odisha /Jeypore	For AMP Works	
	206 BYA(Bus coupler Bay)	13-07-2018	10:00	13-07-2018	16:00	ODB	ER-II/Odisha/ Pandiabili GIS	Timing and CRM of Breaker	
	TIE BAY OF ICT-2 & BR-3 (423) AT BIHARHSARIF	13-07-2018	09:00	13-07-2018	17:00	ODB	POWERGRID ER-1	AMP WORK	
	400KV CHAIBASA-ROURKELA 2	13-07-2018	09:30	13-07-2018	17:30	ODB	POWERGRID ER-1	FOR REPLACEMENT OF PORCELAIN INSULATOR WITH POLYMER	
	400KV HVDC EAST SIDE FILTER MAIN BAY @ PUSAULI	13-07-2018	09:00	13-07-2018	18:00	ODB	POWERGRID ER-1	FOR COMPRESSOR OVERHAULING WORK	NLDC
	HVDC ALONG WITH AC BYPASS @ PUSAULI	13-07-2018	08:00	13-07-2018	18:00	ODB	POWERGRID ER-1	TO ATTEND ISOLATOR MISALIGNMENT PROBLEM	NLDC
	400KV EAST SIDE FILTER MAIN BAY@PUSAULI	13-07-2018	09:00	15-07-2018	18:00	OCB	POWERGRID ER-1	FOR BREAKER DRIVE OVERHAULING AND BAY AMP WORK	NLDC
	63 MVAR ALLAHABAD LINE REACTOR(NORTH SIDE) BAY @ PUSAULI	13-07-2018	09:00	15-07-2018	18:00	OCB	POWERGRID ER-1	FOR BREAKER DRIVE OVERHAULING AND BAY AMP WORK	SWITCHABLE?
	132 KV Gangtok- Rangpo Line	13-07-2018	09:30	13-07-2018	17:30	OCB	POWERGRID,ER-II	Implementation of Auto reclose scheme,Balance AMP work of Line	SIKKIM
	315MVA ICT-II at Baripada	14-07-2018	09:30	14-07-2018	17:30	ODB	ER-II/Odisha/BARIPADA S/S	AMP works	GRIDCO
	Indravati Line Main Bay (410) at Jeypore	14-07-2018	09:00	14-07-2018	18:00	ODB	ER-II/Odisha /Jeypore	For AMP Works	
	765 KV GAYA BALIA	14-07-2018	08:00	16-07-2018	18:00	ODB	POWERGRID ER-1	FOR REPLACEMENT OF PORCELAIN INSULATOR WITH POLYMER	NLDC
	400KV EAST CONVERTER TNX_FILTER TIE BAY@ PUSAULI	14-07-2018	09:00	14-07-2018	18:00	ODB	POWERGRID ER-1	FOR COMPRESSOR OVERHAULING WORK	NLDC

	765/400KV 1500MVA ICT MAIN BAY @ PUSAULI	14-07-2018	09:00	14-07-2018	18:00	ODB	POWERGRID ER-1	AMP WORK	NLDC
	132KV Chuzachen-Gangtok line	14-07-2018	08:00	19-07-2018	17:00	ODB	POWERGRID,ER-II	Balance Porcelin Insulator repacement with CLR insulator and Dir. O/C & EF Relay Replacemnet at	SIKKIM
	132KV MALDA-WBSETCL-I	14-07-2018	07:00	14-07-2018	16:00	ODB	POWERGRID,ER-II	Numerical over current relay commissioning	WB
	765 KV Angul-Jharsuguda Bay (III & IV)	15-07-2018	08:00	15-07-2018	17:00	ODB	ER-II/ODISHA/SUNDERGARH	Coonection of 765 KV Angul-Jharsuguda line (III & IV) for line charging	NLDC
	207 BAY(200KV side ICT-1 BAY)	15-07-2018	10:00	15-07-2018	16:00	ODB	ER-II/Odisha/ Pandiabili GIS	Timing and CRM of Breaker	
	400KV BIHARSHARIF-I L/R BAY @ PUSAULI	15-07-2018	09:00	15-07-2018	18:00	ODB	POWERGRID ER-1	FOR COMPRESSOR OVERHAULING WORK	SWITCHABLE?
	220KV WBSETCL Subhasgram CKT#1 Line at Powergrid,Subhasgram	15-07-2018	09:00	15-07-2018	17:30	ODB	POWERGRID,ER-II	Y & B-Ph LA Rlacement	WB
	400KV BUS-I at Sagardighi WBPDCL	15-07-2018	09:00	16-07-2018	17:00	ODB	POWERGRID,ER-II	BUS Pipe extension from existing BUS under ERSS-XV.	WB
	132KV MALDA-WBSETCL-II	15-07-2018	07:00	15-07-2018	16:00	ODB	POWERGRID,ER-II	Numerical over current relay commissioning	WB
	400 KV UIHEP-BR Tie Bay (411)	16-07-2018	08:00	16-07-2018	18:00	ODB	ER-II/Odisha /Indravati	AMP work of 400 KV UIHEP-BR Tie Bay (411)	
	400KV ROURKELA-SUNDARGARH#1	16-07-2018	09:00	16-07-2018	18:00	ODB	ER-II/ODISHA/ROURKELA	MEGGERING OF R-PHASE LA DUE TO HIGH THRC VALUE.	
	220KV JEYNAGAR-I Line	16-07-2018	09:30	16-07-2018	17:30	ODB	ER-II/Odisha /Jeypore	For Isolator Retrofitting works (220KV JeynagarI TBC Isolator)	GRIDCO
	765 KV BUS-I AT GAYA S/S	16-07-2018	09:00	16-07-2018	18:00	ODB	POWERGRID ER-1	FOR AMP WORK	NLDC
	200 MVA ICT-2 & 80 MVAR BUS REACTOR AT LAKHISARAI	16-07-2018	08:00	19-07-2018	18:00	ODB	POWERGRID ER-1	FIRE WALL CONSTRUCTION, CHECKING OF AIRCEL OF ICT-2	
	MAIN BAY OF MUZ--1(412) AT NEW PURNEA	16-07-2018	10:00	21-07-2018	18:00	OCB	POWERGRID ER-1	CB OPERTAING MECHANISM MID LIFE OVERHAULLING WORK	
	Tie Bay of 400 kV PPSP - I and Patratu -I AT NEW RANCHI	16-07-2018	08:00	16-07-2018	18:00	ODB	ER-I	AMP	
	400KV VARANASI_FUT TIE BAY (NORTH SIDE)@ PUSAULI	16-07-2018	09:00	18-07-2018	18:00	OCB	POWERGRID ER-1	FOR BREAKER DRIVE OVERHAULING AND BAY AMP WORK	NLDC
	220kV Fkk-Kahalgaon Line-2	16-07-2018	09:00	16-07-2018	17:00	**ODB**	**FARAKKA**	**CT & relay test**	
	220KV ICT#1 Bay (Bay No.208) at Powergrid,Subhasgram	16-07-2018	08:00	18-07-2018	17:30	OCB	POWERGRID,ER-II	CGL make CB Overhauling	WB
	220\132 Kv 100 MVA ICT-2 at Powergrid,Rangpo	16-07-2018	08:00	19-07-2018	17:00	OCB	POWERGRID,ER-II	For rectification of SF6 gas leakage repair work	
	765 KV, 3*500 MVA ICT 3 at Angul	17-07-2018	09:00	17-07-2018	18:00	ODB	ER-II/Odisha/Angul SS	For Replacing NRV of R-phase of ICT 2 bank.	NLDC
	400 KV Rourkela-Sundargarh - II (Two)	17-07-2018	08:00	17-07-2018	17:00	ODB	ER-II/ODISHA/SUNDERGARH	For S/D related works like C C Ring tightening,cotter pin inclusion, VD displaced work, Jumper tightening checking etc	
	220KV JEYNAGAR-II Line	17-07-2018	09:30	17-07-2018	17:30	ODB	ER-II/Odisha /Jeypore	For Isolator Retrofitting works (220KV JeynagarII TBC Isolator)	GRIDCO
	765 KV BUS-II AT GAYA S/S	17-07-2018	10:00	17-07-2018	18:00	ODB	POWERGRID ER-1	FOR AMP WORK	NLDC
	Main Bay of Patratu - I AT NEW RANCHI	17-07-2018	08:00	17-07-2018	18:00	ODB	ER-I	AMP	
	400 KV PTN-BRH CKT – II & 400KV KHL BARH CKT-I	17-07-2018	08:00	17-07-2018	15:30	ODB	POWERGRID ER-1	FOR REPLACEMENT OF PORCELAIN INSULATOR WITH POLYMER	
	400 KV PTN-BRH CKT – I & 400KV KHL BARH CKT-II	17-07-2018	08:00	17-07-2018	15:30	ODB	POWERGRID ER-1	FOR REPLACEMENT OF PORCELAIN INSULATOR WITH POLYMER	
	400KV BIHARSHARIF-I MAIN BAY @ PUSAULI	17-07-2018	09:00	17-07-2018	18:00	ODB	POWERGRID ER-1	FOR COMPRESSOR OVERHAULING WORK	
	125MVAR BUS REACTOR-II MAIN BAY	17-07-2018	09:00	17-07-2018	18:00	ODB	POWERGRID ER-1	AMP WORK	
	400KV BUS-II at Sagardighi WBPDCL	17-07-2018	09:00	18-07-2018	17:00	ODB	POWERGRID,ER-II	BUS Pipe extension from existing BUS under ERSS-XV.	WB
	220KV MAIN BUS-I at Powergrid,Birpara	17-07-2018	08:00	17-07-2018	17:30	ODB	POWERGRID,ER-II	MAIN BUS-1 CVT SOS activity	WB
	132KV / 66KV 50 MVA ICT#1 Gangtok	17-07-2018	09:00	17-07-2018	17:30	ODB	POWERGRID,ER-II	Dir. O/C and EF Relay Replacemnet	SIKKIM
	220 kV Maithon-Kalyaneswari line 2 Bay at Powergrid,Maithan	17-07-2018	09:00	17-07-2018	18:00	ODB	POWERGRID,ER-II	Replacement Isolator Arm	
	400 KV MALDA BUS-I	17-07-2018	09:00	17-07-2018	17:00	ODB	FARAKKA	BUS DIFFERENTIAL PROTECTION CIRCUIT TESTING & CHECKING	
	400 KV Chandawa - Gaya Ckt-1	**17-07-2018**	**09:00**	**17-07-2018**	**18:00**	**ODB**	POWERGRID ER-1	**Replacement of Insulators flashed over due to lightning**	
	400KV ROURKELA-SUNDARGARH#2	18-07-2018	08:00	18-07-2018	18:00	ODB	ER-II/ODISHA/ROURKELA	RE-FIXING OF JUMPER BOLT, CC RING BOLT, VD, FIXING OF SPLIT PINS FOUND IN CROSS PATROLLING.	
	ICT-I (3x 105 MVA) at Jeypore	18-07-2018	09:30	18-07-2018	17:30	ODB	ER-II/Odisha /Jeypore	For Isolator Retrofitting works (220KV ICT I TBC Isolator)	GRIDCO
	208 BAY(220KV Pandiabili-Atri-2)	18-07-2018	10:00	18-07-2018	16:00	ODB	ER-II/Odisha/ Pandiabili GIS	Timing and CRM of Breaker	
	765KV S/C GAYA-BALIA LINE	18-07-2018	09:00	19-07-2018	18:00	ODB	POWERGRID ER-1	TIGHTENING OF JUMPER & HARDWARE FITTING.	NLDC
	765 /400 KV ICT-III AT GAYA SS	18-07-2018	09:00	19-07-2018	18:00	ODB	POWERGRID ER-1	TOWER ERECTION WORK FOR ICT-4 UNDER GE PACKAGE	NLDC
	220 KV BUS-I @ PATNA	18-07-2018	09:30	19-07-2018	17:30	ODB	POWERGRID ER-1	ISOLATORS ALIGNMENTS WORK	BSEB
	400KV RANCHI - ROURKELA -2	18-07-2018	10:00	18-07-2018	17:00	ODB	POWERGRID ER-1	FIXING OF LINE EARTH SWITCH ARM IN YPH	
	400KV BIHARSHARIF-I _ICT-II TIE BAY @ PUSAULI	18-07-2018	09:00	18-07-2018	18:00	ODB	POWERGRID ER-1	FOR COMPRESSOR OVERHAULING WORK	
	400KV D/C Berhampore Sagardighi CKT-I	18-07-2018	8:30	18-07-2018	16:00	ODB	POWERGRID,ER-II	Jumper tightness fixing of arcing Horn Eirth wire VD Conductor VD , Conductor Spacer and others hardware fittings	WB
	220KV MAIN BUS-II at Powergrid,Birpara	18-07-2018	08:00	18-07-2018	17:30	ODB	POWERGRID,ER-II	MAIN BUS-2 CVT SOS activity	WB

	132KV / 66KV 50 MVA ICT#2 Gangtok	18-07-2018	09:00	18-07-2018	17:30	ODB	POWERGRID,ER-II	Dir. O/C and EF Relay Replacemnet	SIKKIM
	220 kV Maithon-Kalyaneswari 2 Bay at Powergrid,Maithan	18-07-2018	09:00	22-07-2018	18:00	OCB	POWERGRID,ER-II	CB overhauling work, There will be no power interruption occurred. The said line will be in service through TBC	
	220KV MLD-DLK-I	18-07-2018	08:00	18-07-2018	16:00	ODB	POWERGRID,ER-II	Auto Reclose Relay scheme rewiring	
	220KV MLD-DLK-I	18-07-2018	08:00	18-07-2018	16:00	ODB	ER-II	Auto Reclose Relay scheme rewiring	
	3X80 MVAR, 765 KV B/R-II	18-07-2018	08:00	18-07-2018	18:00	ODB	POWERGRID ER-1	Switching of R-phase reactor with spare after stability	NLDC
	400KV ROURKELA-SUNDARGARH#4	19-07-2018	08:00	19-07-2018	18:00	ODB	ER-II/ODISHA/ROURKELA	RE-FIXING OF JUMPER BOLT, CC RING BOLT, VD, FIXING OF SPLIT PINS FOUND IN CROSS PATROLLING.	
	220 kV Bus -II at Jeypore	19-07-2018	09:30	19-07-2018	13:30	ODB	ER-II/Odisha /Jeypore	Isolator Retrofitting Works of Bus-II side Isolators of Jeynagar I	GRIDCO
	400/220KV, 315MVA ICT-2 @ JAMSHEDPUR	19-07-2018	09:30	19-07-2018	17:30	ODB	POWERGRID ER-1	ISOLATOR MAINTT. WORK	JUSNL
	400KV BIHARSHARIF-II L/R BAY @ PUSAULI	19-07-2018	09:00	19-07-2018	18:00	ODB	POWERGRID ER-1	FOR COMPRESSOR OVERHAULING WORK	SWITCHABLE?
	400KV BSF-I_ICT-II TIE BAY @PUSAULI	19-07-2018	09:00	21-07-2018	18:00	OCB	POWERGRID ER-1	FOR BREAKER DRIVE OVERHAULING AND BAY AMP WORK	
	400KV ALLAHABAD MAIN BAY @ PUSAULI	19-07-2018	09:00	21-07-2018	18:00	OCB	POWERGRID ER-1	FOR BREAKER DRIVE OVERHAULING AND BAY AMP WORK	
	400KV Kahalgaon-Banka Line-2	19-07-2018	09:30	19-07-2018	17:30	**ODB**	**KAHALGAON**	**PM works & relay testing**	
	220KV ICT#2 Bay (Bay No.210) at Powergrid,Subhasgram	19-07-2018	08:00	21-07-2018	17:30	OCB	POWERGRID,ER-II	CGL make CB Overhauling	WB
	400 KV MALDA BUS-II	19-07-2018	09:00	19-07-2018	17:00	ODB	FARAKKA	BUS DIFFERENTIAL PROTECTION CIRCUIT TESTING & CHECKING	
	220 kV Bus -II at Jeypore	20-07-2018	09:30	20-07-2018	13:30	ODB	ER-II/Odisha /Jeypore	Isolator Retrofitting Works of Bus-II side Isolators of Jeynagar II	GRIDCO
	209BAY(220KV Pandiabili-Atri-1)	20-07-2018	10:00	20-07-2018	16:00	ODB	ER-II/Odisha/ Pandiabili GIS	Timing and CRM of Breaker	
	765 /400 KV ICT-II AT GAYA SS	20-07-2018	09:00	20-07-2018	18:00	ODB	POWERGRID ER-1	TOWER ERECTION WORK FOR ICT-4 UNDER GE PACKAGE	NLDC
	400KV PTN BARH -III & 400KV BARH MOTIHARI -I	20-07-2018	08:00	20-07-2018	17:30	ODB	POWERGRID ER-1	FOR REPLACEMENT OF PORCELAIN INSULATOR WITH POLYMER	
	220KV BUS-2 @ PATNA	20-07-2018	09:30	21-07-2018	17:30	ODB	POWERGRID ER-1	ISOLATORS ALIGNMENTS WORK	BSEB
	400KV BIHARSHARIF-II MAIN BAY @ PUSAULI	20-07-2018	09:00	20-07-2018	18:00	ODB	POWERGRID ER-1	FOR COMPRESSOR OVERHAULING WORK	
	400kv Maithon- Durgapur-2	20-07-2018	09:00	20-07-2018	17:30	ODB	POWERGRID,ER-II	Jumper rectication	
	400\220kV 315 MVAICT -1 at Powergrid,Rangpo	20-07-2018	08:00	24-07-2018	17:00	OCB	POWERGRID,ER-II	For rectification of SF6 gas leakage repair work	
	132KV Rangpo-Rangit line	20-07-2018	08:00	23-07-2018	17:00	ODB	POWERGRID,ER-II	Balance Porcelin Insulator repacement with CLR insulator	SIKKIM
	220KV MLD-DLK-II	20-07-2018	08:00	20-07-2018	16:00	ODB	ER-II	Auto Reclose Relay scheme rewiring	
	220 kV BUS-I at Baripada	21-07-2018	09:30	21-07-2018	13:30	ODB	ER-II/Odisha/BARIPADA S/S	CVT JB replacement works	GRIDCO
	220 kV Bus -II at Jeypore	21-07-2018	09:30	21-07-2018	13:30	ODB	ER-II/Odisha /Jeypore	Isolator Retrofitting Works of Bus-II side Isolators of ICT-I	GRIDCO
	400KV PTN BARH -IV & 400KV BARH MOTIHARI -II	21-07-2018	08:00	21-07-2018	17:30	ODB	POWERGRID ER-1	FOR REPLACEMENT OF PORCELAIN INSULATOR WITH POLYMER	
	400KV BIHARSHARIF-II _BR-I TIE BAY @ PUSAULI	21-07-2018	09:00	21-07-2018	18:00	ODB	POWERGRID ER-1	FOR COMPRESSOR OVERHAULING WORK	
	400 KV Farakka- Kahalgaon-I line	21-07-2018	10:00	21-07-2018	18:00	ODB	POWERGRID,ER-II	For connecting bay-22 (Main Bay of 400 KV Farakka-Kahalgaon-I) from line side after augmentation of Isolator & CT from 2000A to 3150 A rating under ERSS-XV projects.	
	400 kV Bus-I at Baripada	22-07-2018	08:30	22-07-2018	17:30	ODB	ER-II/Odisha/BARIPADA S/S	For GIS bay EXTN works(for recoonecting jumpers to GIS Bus-I)	GRIDCO
	220 kV Bus -II at Jeypore	22-07-2018	09:30	22-07-2018	13:30	ODB	ER-II/Odisha /Jeypore	Isolator Retrofitting Works of Bus-II side Isolators of Bus Coupler	GRIDCO
	202 BAY(220KV ICT-2 BAY)	22-07-2018	10:00	22-07-2018	16:00	ODB	ER-II/Odisha/ Pandiabili GIS	Timing and CRM of Breaker	
	63MVAR BIHARSHARIF-II L/R BAY@PUSAULI	22-07-2018	09:00	24-07-2018	18:00	OCB	POWERGRID ER-1	FOR BREAKER DRIVE OVERHAULING AND BAY AMP WORK	
	400KV VARANASI MAIN BAY (EAST SIDE) AT PUSAULI	22-07-2018	09:00	22-07-2018	18:00	ODB	POWERGRID ER-1	AMP WORK	
	315 MVA ICT#1 at Powergrid,Subhasgram	22-07-2018	08:00	22-07-2018	17:30	OCB	POWERGRID,ER-II	Y-Ph LA Rlacement	WB
	400 KV Farakka- Kahalgaon-III line	22-07-2018	10:00	22-07-2018	18:00	ODB	POWERGRID,ER-II	For connecting bay-34 (Tie Bay of 400 KV Farakka- Kahalgaon-III) from line side after augmentation of Isolator & CT from 2000A to 3150 A rating under ERSS-XV projects.	
	220 kV BUS-II at Baripada	23-07-2018	09:30	23-07-2018	13:30	ODB	ER-II/Odisha/BARIPADA S/S	CVT JB replacement works	GRIDCO
	400KV, BUS-I	23-07-2018	09:00	24-07-2018	18:00	ODB	ER-II/Odisha/Balangir	Jumpering work for new 125 MVAR Bus Reactor Bay extension work	GRIDCO
	400KV ROURKELA-RANCHI#1	23-07-2018	09:00	23-07-2018	18:00	ODB	ER-II/ODISHA/ROURKELA	TO ARREST SF6 GAS LEAKAGE IN R-PHASE OF 42852 CB.	
	220 kV Bus -I at Jeypore	23-07-2018	09:30	23-07-2018	13:30	ODB	ER-II/Odisha /Jeypore	Isolator Retrofitting Works of Bus-I side Isolators of Jeynagar I	GRIDCO
	400 KV BUS-II AT BANKA	23-07-2018	09:00	24-07-2018	18:00	ODB	POWERGRID ER-1	ERECTION OF IPS TUBE &STRINGING OF JUMPER FOR FUTURE(BR-2) BAY CONSTRUCTION WORK OF 125 MVAR B/R - 2	BSEB
	TIE BAY OF MUZ-1 & KISHANGANJ-2(411) AT NEW PURNEA	23-07-2018	10:00	28-07-2018	18:00	OCB	POWERGRID ER-1	CB OPERTAING MECHANISM MID LIFE OVERHAULLING WORK	
	220KV Bus Coupler Bay (Bay No.204) at Powergrid,Subhasgram	23-07-2018	08:00	25-07-2018	17:30	OCB	POWERGRID,ER-II	CGL make CB Overhauling	
	400 kV Maithan- Kahalgaon line 1	23-07-2018	09:00	23-07-2018	17:00	ODB	POWERGRID,ER-II	Retrofitting of Diff relay	
	400KV MALDA-PURNEA-II	23-07-2018	08:00	23-07-2018	17:00	ODB	ER-II	Auto Reclose Relay scheme rewiring	
	220kV Korba-Budhipadar Line Ckt-3	24-07-2018	08:00	26-07-2018	18:00	OCB	OGPTL	for Overhead Stringing of U/C 765KV D/C Raipur- Sundargarh Transmission line(of OGPTL) at OGPTL Location numbers AP 104A/0-AP105/0.(PGCIL tower Nos: 345N-346N)	NLDC

	400kV Baripada-Kharagpur line	24-07-2018	09:30	24-07-2018	13:30	ODB	ER-II/Odisha/BARIPADA S/S	Replacement of CVT JB	WB
	220 kV Bus -I at Jeypore	24-07-2018	09:30	24-07-2018	13:30	ODB	ER-II/Odisha /Jeypore	Isolator Retrofitting Works of Bus-I side Isolators of Jeynagar II	GRIDCO
	Maintenance work for Barh Patna Line-1	24-07-2018	09:30	25-07-2018	18:00	**OCB**	**BARH**	**Attending defects of isolator & annual testing of Bay equipments**	
	400 KV BUS-I of NTPC Farakka	24-07-2018	10:00	24-07-2018	18:00	ODB	POWERGRID,ER-II	For connecting BUS isolator of bay no-22 & 33 to BUS-I (After augmentation of BUS Isolator from 2000A to 3150 A rating under ERSS-XV projects).	
	400 kV Maithan-Kahalgaon line 2	24-07-2018	09:00	24-07-2018	17:00	ODB	POWERGRID,ER-II	Retrofitting of Diff relay	
	400KV Maithon-Right Bank-1	24-07-2018	08:00	30-07-2018	18:00	OCB	POWERGRID,ER-II	Re conductoring work	
	400KV MALDA-PURNEA-I	24-07-2018	08:00	24-07-2018	17:00	ODB	POWERGRID,ER-II	CT replacement of B-ph and For replacement of 2 nos. bend E/W peak.	
	400KV MALDA-PURNEA-I	24-07-2018	08:00	24-07-2018	17:00	ODB	ER-II	CT replacement of B-ph and For replacement of 2 nos. bend E/W peak.	
	132kV Baripada- Bangriposi line	25-07-2018	09:30	25-07-2018	17:30	ODB	ER-II/Odisha/BARIPADA S/S	CT JB replacemnet works	WB
	400KV, BUS-II	25-07-2018	09:00	26-07-2018	18:00	ODB	ER-II/Odisha/Balangir	Jumpering work for new 125 MVAR Bus Reactor Bay extension work	GRIDCO
	400KV CHAIBASA#1 MAIN BAY (BAY NO.-416)	25-07-2018	09:00	25-07-2018	18:00	ODB	ER-II/ODISHA/ROURKELA	REPLACEMENT OF DEFECTIVE AUXILIARY SWITCH ASSEMBLY OF 41652 CB.	
	125 MVAR Bus Reactor	25-07-2018	09:00	25-07-2018	10:00	ODB	ER-II/Odisha /Jeypore	For STATCOM Post commissioning Test of External Reactive device switching **(For the above, Outage to be booked under**	
	200MVA ICT-1 AT BANKA	25-07-2018	10:00	25-07-2018	18:00	ODB	POWERGRID ER-1	PROVIDING INSULATION SLEEVES ON TERTIARY CONDUCTOR BY M/S SARTHAK COMPONENTS.	BSEB
	400KV BIHARSHARIF-II_BR-I TIE BAY@PUSAULI	25-07-2018	09:00	27-07-2018	18:00	OCB	POWERGRID ER-1	FOR BREAKER DRIVE OVERHAULING AND BAY AMP WORK	
	400\220kV 315 MVAICT -4 -at Powergrid,Rangpo	25-07-2018	08:00	29-07-2018	17:00	OCB	POWERGRID,ER-II	For rectification of SF6 gas leakage repair work	
	400KV Rangpo-Binaguri-I line	25-07-2018	08:00	27-07-2018	17:00	ODB	POWERGRID,ER-II	Balanced AMP works & Line maintenance	
	400KV Rangpo-Teesta-5 line II	25-07-2018	08:00	27-07-2018	17:00	ODB	POWERGRID,ER-II	Balanced AMP works & Line maintenance	
	400 KV MALDA-FARAKKA-I	25-07-2018	08:00	25-07-2018	14:00	ODB	ER-II	FOR A/R SCHEME IMPLEMENTATION.	
	315MVA ICT-I at Baripada	26-07-2018	09:00	26-07-2018	13:30	ODB	ER-II/Odisha/BARIPADA S/S	AMP	GRIDCO
	315 MVA ICT-II	26-07-2018	12:00	26-07-2018	13:00	ODB	ER-II/Odisha /Jeypore	For STATCOM Post commissioning Test of External Transformer Switching **(For the above, Outage to be booked under**	GRIDCO
	200MVA ICT-2 AT BANKA	26-07-2018	10:00	26-07-2018	18:00	ODB	POWERGRID ER-1	PROVIDING INSULATION SLEEVES ON TERTIARY CONDUCTOR BY M/S SARTHAK COMPONENTS.	BSEB
	400KV 125MVAR BUS REACTOR-II @ PUSAULI	26-07-2018	09:00	26-07-2018	18:00	ODB	POWERGRID ER-1	AMP WORK	
	400KV Kahalgaon-Maithon Line-2	26-07-2018	09:30	26-07-2018	17:30	**ODB**	**KAHALGAON**	**PM works & relay testing**	
	50 MVAR Bus Reactor at WBSETCL Jeerat Substation	26-07-2018	08:00	31-07-2018	17:30	OCB	POWERGRID,ER-II	B-Ph Bushing Replacement	
	400KV D/C Berhampore Sagardighi CKT-II	26-07-2018	8:30	26-07-2018	16:00	ODB	POWERGRID,ER-II	Jumper tightness fixing of arcing Horn Eirth wire VD Conductor VD , Conductor Spacer and others hardware fittings	WB
	400 KV MALDA-FARAKKA-II	26-07-2018	08:00	26-07-2018	14:00	ODB	ER-II	FOR A/R SCHEME IMPLEMENTATION.	
	400KV CHAIBASA#1 TIE BAY (BAY NO.-417)	27-07-2018	09:00	27-07-2018	18:00	ODB	ER-II/ODISHA/ROURKELA	MODIFICATION IN THE A/R CIRCUIT OF 41752 CB.	
	220 kV Bus -I at Jeypore	27-07-2018	09:30	27-07-2018	13:30	ODB	ER-II/Odisha /Jeypore	Isolator Retrofitting Works of Bus-I side Isolators of ICT- I	GRIDCO
	63MVAR BIHARSHARIF-II L/R AT PUSAULI	27-07-2018	09:00	27-07-2018	18:00	ODB	POWERGRID ER-1	AMP WORK	
	220 kV Bus -I at Jeypore	28-07-2018	09:30	28-07-2018	13:30	ODB	ER-II/Odisha /Jeypore	Isolator Retrofitting Works of Bus-I side Isolators of Bus Coupler	GRIDCO
	400KV HVDC NORTH SIDE CONVERTER TNX_FILTER TIE BAY @ PUSAULI	28-07-2018	09:00	30-07-2018	18:00	OCB	POWERGRID ER-1	FOR BREAKER DRIVE OVERHAULING AND BAY AMP WORK	NLDC
	400KV Rangpo-Binaguri-II line	28-07-2018	08:00	29-07-2018	17:00	ODB	POWERGRID,ER-II	Balanced AMP works & Line maintenance	
	400KV Rangpo-Teesta-5 line I	28-07-2018	08:00	30-07-2018	17:00	ODB	POWERGRID,ER-II	Balanced AMP works & Line maintenance	
	220KV JEYNAGAR-I Line	29-07-2018	09:30	29-07-2018	17:00	ODB	ER-II/Odisha /Jeypore	For Isolator Retrofitting works (220KV JeynagarI 89C Isolator) & R-ph CVT replacement work	GRIDCO
	500MVA ICT #3 at Baripada	30-07-2018	09:30	30-07-2018	17:30	ODB	ER-II/Odisha/BARIPADA S/S	PRD replacement works	GRIDCO
	220KV JEYNAGAR-II Line	30-07-2018	09:30	30-07-2018	13:30	ODB	ER-II/Odisha /Jeypore	For Isolator Retrofitting works (220KV JeynagarII 89C Isolator)	GRIDCO
	400kV Subhasgram-Sagardighi Line	30-07-2018	08:00	31-07-2018	16:00	ODB	POWERGRID,ER-II	For Broken insultaor discs replacement,Jumper tightness fixing of arcing Horn Eirth wire VD Conductor VD , Conductor Spacer and others hardware fittings	WB
	500KV HVDC Talcher-Kolar Pole-I&II	6/18/2018	08:00	6/19/2018	17:00	ODB	ER-II/Odisha/ Angul TLC	For stringing work of under construction 765KV Angul-Sundargarh-3&4 at power line crossing	NLDC
	400KV JITPL-Angul D/C Line-I&II	6/21/2018	08:00	6/22/2018	17:00	ODB	ER-II/Odisha/ Angul TLC	For stringing work of under construction 765KV Angul-Sundargarh-3&4 at power line crossing	JITPL

Outages proposed in other RPCs requiring ERPC approval

Sl No	Name of Elements	From		To		Basis	outages proposed in	Reason	Remarks
		Date	Time	Date	Time				
	FATEHPUR-PG (765 KV)-SASARAM-ER (765KV)	19-Jul-18	09:00	19-Jul-18	18:00	DAILY	NRPC	Twin Neutral Jumper Modification work Guy Wire , Arrangement as per CC AM Guideline,and AMP of the Line Reactor and line side Equipment	
	Agra-BNC-Alipurdaur HVDC Bi pole	20-Jun-18	09:00	22-Jun-18	18:00	continuous	NRPC	to restore both the 800KV HVDC Poles on normal Towers, which were collapsed during dust storm in May.	

	220kV Korba-Budhipadar circuit 3	24-Jul-18	07:00	26-Jul-18	18:00	continuous	WRPC	Overhead stringing works of U/C 765kV D/C Rapur-Sundergarh Line	
	765kV D/C Jharsuguda-Dharamjaygarh ckt 3& 4	02-Jul-18	08:00	04-Jun-18	18:00	continuous	WRPC	Overhead stringing works of U/C 765kV D/C Rapur-Sundergarh Line	
	765kV D'JAIGARH- JHARSUGUDA I	10-Jul-18	09:00	15-Jul-18	18:00	CONTI..	WRPC	Swapping of Ckt # 1 and 2 with under construction D'garh-Jharsuguda Ckt # 3 and 4	
	765kV D'JAIGARH- JHARSUGUDA II	10-Jul-18	09:00	15-Jul-18	18:00	CONTI..	WRPC	Swapping of Ckt # 1 and 2 with under construction D'garh-Jharsuguda Ckt # 3 and 4	
	400kV_Jeypore_Gazuwaka-1	29-Jun-18	07:00	29-Jun-18	18:00	Daily	SRPC	AMP & Insulator Replacement works/RTV Coating works/DTPC Commmissioning as per PCSC recommendations	300MW curtailmnet in ER-SR corridor
	400kV Jeypore_Gazuwaka-2	30-Jun-18	07:00	30-Jun-18	18:00	Daily	SRPC	AMP & Insulator Replacement works/RTV Coating works/DTPC Commmissioning as per PCSC recommendations	300MW curtailmnet in ER-SR corridor
	HVDC Pole-1 at Gazuwaka SS	07-Jul-18	09:00	07-Jul-18	18:00	Daily	SRPC	RC Divider Installation & RTV Coating Works	Clubbed with Jaypore - Gajuwaka Line Outage proposed by ER. 300MW curtailmnet in ER-SR corridor
	HVDC Pole-2 at Gazuwaka SS	08-Jul-18	09:00	08-Jul-18	18:00	Daily	SRPC	RTV Coating Works	
	HVDC Talcher- Kolar Bi pole A/R	15-Jun-18	09:00	30-Jun-18	18:00	Daily	SRPC	For Hot line washing	

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	

20

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	8.74	424	395	0.42	421	390	0.14