



# Agenda for **154<sup>th</sup> OCC Meeting**

**Date: 21.02.2019**  
**Eastern Regional Power Committee**  
**14, Golf Club Road, Tollygunge**  
**Kolkata: 700 033**

## **Eastern Regional Power Committee**

**Agenda for 154<sup>th</sup> OCC Meeting to be held on 21<sup>st</sup> February, 2019 at Mejia TPS, DVC**

### **Item no. 1: Confirmation of minutes of 153<sup>rd</sup> OCC meeting of ERPC held on 21.01.2019**

The minutes of 153<sup>rd</sup> OCC meeting were uploaded in ERPC website and circulated vide letter dated 29.01.2019 to all the constituents.

**Members may confirm the minutes.**

## **PART A : ER GRID PERFORMANCE**

### **Item no. A1: ER Grid performance during January, 2019**

The average consumption of Eastern Region for January- 2019 was 357.9 Mu. Eastern Region energy consumption reached monthly highest 382.8 Mu on 22<sup>th</sup> January - 2019. Total Export schedule of Eastern region for January – 2019 was 2338 Mu, whereas actual export was 2177.4 Mu.

**ERLDC may present the performance of Eastern Regional Grid covering the followings:**

- 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**
- 7. Deviation Settlement Mechanism**
- 8. Fast Response Ancillary Service (FRAS) (Presentation would be given by ERPC)**

## **PART B: ITEMS FOR DISCUSSION**

### **Item No. B.1: Security Constrained Economic Dispatch (SCED) of Inter-State Generating Stations Pan-India: ERLDC**

Hon'ble Commission, vide Order in Petition No. 02/SM/2019 (Suo-Motu) dtd. 31st January, 2019, directed for Pilot on Security Constrained Economic Dispatch (**SCED**) of Inter-State Generating Stations (ISGS) Pan India "<http://cercind.gov.in/2019/orders/02-SM-2019.pdf>"

The Central Commission observed that there is an overarching objective to optimize the scheduling and dispatch of the generation resources and reduce the overall cost of production of electricity without major structural changes in the existing system/framework. Accordingly, the Commission directed for pilot of SCED for the Inter-State Generating Stations, on pilot basis, w.e.f. 01<sup>st</sup> April, 2019.

The SCED optimization model is for all the thermal Inter State Generating Stations (ISGS) that are regional entities and whose tariff is determined or adopted by the Commission for their full capacity without violating grid security and honoring the existing scheduling practices prescribed in the Indian Electricity Grid Code.

Letter issued from CGM (I/C), NLDC regarding the subject and a brief note about the matter are attached in **Annexure-B1**.

**ERLDC/NLDC shall present a brief procedure of SCED implementation during OCC meeting.**

**Members may please note.**

### **Item No. B.2: Use of Polymer Insulators in the transmission lines--CEA**

CEA vide letter dated 28<sup>th</sup> November 2018 informed that many representations have been received in CEA as well as VIP references from Ministry of Power from various manufacturers and associations highlighting the issue of indiscriminate use of polymer insulators which are mostly imported from China leading to closure of indigenous porcelain manufacturing industry. To resolve the issue, a meeting was held in CEA on 25.5.2018 with various stakeholders to deliberate on the issue.

PGCIL vide letter no . C/CTU/E/02/TBCB dated 24.10.2018, indicated that on the directions of RPC's, only polymer type insulators are being used in the new transmission lines of PGCIL traversing through states in Northern and eastern Regions. Moreover, PGCIL is replacing the porcelain insulators with polymer insulators in the existing transmission lines of the region . PGCIL has categorically mentioned that the same has been done in accordance with the decision taken in the meetings with Regional Power Committees.

It is to mention that CEA has issued the Regulations and there are specific provisions regarding use of porcelain (disc type / long rod) and polymer insulators . Regulation Clause No. 89(1)(f)(i) of CEA (Technical Standards for Construction of Electrical Plants and Electric Lines) Regulations 2010, may be referred in this regard.

It may be clarified whether decision of use of polymer insulation in place of porcelain insulator was taken for some particular lines or locations. Considering the sensitiveness of issue, the same may also be discussed in respective RPC meetings and a balanced approach may be adopted for all future lines.

*In 152<sup>nd</sup> OCC, Powergrid informed that they are following the "Regulation Clause No. 89(1)(f)(i) of CEA (Technical Standards for Construction of Electrical Plants and Electric Lines) Regulations 2010".*

*After detailed deliberation, OCC decided the following:*

- *Powergrid should submit the details of the progress made towards insulator replacement work and quantity of polymer insulators received till date*
- *Powergrid should submit the details of order placed for the polymer insulators, which are scheduled to be delivered in near future*
- *The issue would be placed in TCC/ERPC Meeting for detailed discussion*
- *Powergrid should not place any fresh order for polymer insulators till further decision by TCC/ERPC*

Powergrid in a communication dated 29/01/2019 informed that in order to avoid frequent de-capping incidents of insulators in the following transmission lines, the replacement works of porcelain insulators by polymer insulators would be undertaken:

- a) 400 kV Malda – Purnea D/C (167 Km)
- b) 400 kV Binaguri – Purnea D/C (168 Km)
- c) 400 kV Andal – Jamshedpur D/C (157 Km)
- d) 400 kV Jeerat – Subhasgram S/C (64 Km)
- e) 400 kV Maithon – Jamshedpur S/C (152 Km)

Extensive Puncture Insulation Detection (PID) test have been carried out in order to assess the condition of the Porcelain Insulators. It has been found that more than 40% Porcelain Insulator discs are defective. Further to the above, replacement works, Powergrid ER – II is also planning to replace insulators already installed by Long Rod Polymer Insulators in all major crossings like Railways / State – National Highways / Power line crossing of 132 kV and above / River Crossing etc. for all the lines under Powergrid ER – II. The stock of Polymer Insulators are available and further, requirement would be expected to be available from the already ordered from Corporate Centre.

Reply received from Powergrid Odisha Projects and Powergrid ER-I is enclosed at **Annexure-B2**.

**Powergrid may update.**

**Item No. B.3: Implementation of Automatic Generation Control (AGC) in India (at Inter-State level)**

CERC in its order dated 13.10.2015 in Petition No. 11/SM/2015 reiterated the need for mandating Primary Reserves as well as enabling Secondary Reserves, through Automatic Generation Control (AGC) as follows:

*“(a) All generating stations that are regional entities must plan to operationalise AGC along with reliable telemetry and communication by 1st April, 2017. This would entail a one-time expense for the generators to install requisite software and firmware, which could be compensated for. Communication infrastructure must be planned by the CTU and developed in parallel, in a cost-effective manner.*

*(b) On the other hand, National/Regional/State Load Dispatch Centres (NLDC/RLDCs/SLDCs) would need technical upgrades as well as operational procedures to be able to send automated signals to these generators. NLDC /RLDCs and SLDCs should plan to be ready with requisite software and procedures by the same date.*

*(c) The Central Commission advises the State Commissions to issue orders for intra-state generators in line with this timeline as AGC is essential for reliable operation of India’s large inter-connected grid.”*

The issue was discussed in 8<sup>th</sup> NPC Meeting held on 30th November 2018, it was decided that each RPC would submit the status of implementation of AGC to NPC.

**Members may discuss.**

**Item No. B.4: Power Assistance at Manique GSS from DVC and at Kendposi GSS from OPTCL –JUSNL**

JUSNL vide letter dated 8<sup>th</sup> February 2019 informed that they are planning shutdown of 132 KV D/C RCP-ADP line for erection of 05 nos. Multi Circuit Tower in place of existing transmission tower. Erection of Multi Circuit Tower is inevitable for new 132 KY RCP-Jadugoda transmission line due to limitation of vacant corridor.

Due to proposed shutdown, 220/132 KV Chandil GSS will be overloaded. It will be pertinent to mention here that SER is availing power from Kendposi, RКСN, CKP and Goilkera GSS which require reliable power for smooth functioning of Railway.

Considering all the above facts and for reliability of the system it is requested to shift the load of Manique GSS on DVC system and Kendposi should be fed through OPTCL Joda Power for 31 days.

**JUSNL may explain. Members may discuss.**

**Item No. B.5: Review of Rangpo SPS scheme after commissioning of 400 KV Teesta III-Kishanganj line ---ERLDC**

With the commissioning of 400 kV Teesta 3-Kishenganj and 400 kV Rangpo-Kishenganj circuit, the hydro generation in Sikkim are now having four transmission lines for safe evacuation. Earlier, 400 kV Rangpo-Bingaguri D/C was the only existing circuits for evacuation of Sikkim hydro generation and for the same SPS was designed to ensure the reliable power evacuation from these circuits.

After this 400 kV Teesta 3-Kishenganj circuit got commissioned in Month of January 2019. In view of the same one additional interim SPS has been implemented in case of its tripping which is as following:

**The Interim SPS for tripping of 400 kV Kishenganj-Teesta 3 ckt at Teesta 3**

- **Configuration:** Teesta-III HPS would maintain 792 MW generation from the 4 units synchronized to 400kV Bus-1, with Kishanganj and Dikchu 400kV lines connected to the same bus.

**SPS Condition:** Tripping of 400kV Teesta-III – Kishanganj S/C

**Action:** The Bus coupler CB at Teesta-III would be tripped instantaneously by the SPS (Local action), thereby isolating the units connected on Bus-2 from the grid and thus limiting generation to 792 MW.

However, with the four circuits presently, there is a need to review the existing SPS scheme and do the modification for various contingency scenarios. For the same, the study has been carried out by ERLDC to analyze the various contingencies.

Powergrid vide mail dated 16<sup>th</sup> February 2019 informed that SAS based SPS logic is going to be implemented in SAS Database at 400/220/132KV Rangpo SS by end of February 2019. M/s Schneider ltd is planning to depute their representative for final completion of SPS logic. Hence, the SPS logic is to be confirmed once again for final execution of the work.

**ERLDC may explain. Members may decide.**

**Item No. B.6: Installation of PMUs for observation of the dynamic performance of STATCOMs**

*In 39<sup>th</sup> ERPC Meeting, it was decided that,*

- i. Power Grid shall immediately place an order on M/s GE for supply and installation of 4 nos. PMUs for 4 STATCOMs in the Eastern Region at an estimated cost of Rs. 40 Lakh.*
- ii. The cost of the above should be included within the quantity variation clause under the URTDSM Project funded from PSDF.*
- iii. Powergrid shall approach the PSDF Appraisal Committee for inclusion of the above under the quantity variation clause under the URTDSM Project.*
- iv. In case PSDF funding for this addition supply and installation is not available, then the cost of PMUs including the installation cost (approx. Rs.40 Lakh) shall be included under the project "Upgradation of SCADA / RTUs / SAS in the Central Sector Stations and strengthening of OPGW network".*

*In 153<sup>rd</sup> OCC, Powergrid informed that M/s GE had agreed to supply and install of 4 nos PMUs for 4 STATCOMs in the Eastern Region within the quantity variation clause under the existing URTDSM Project.*

**Powergrid may update.**

**Item No. B.7: REPLACEMENT OF OLD RTUS IN EASTERN REGION FOR REPORTING OF RTU/SAS TO BACKUP CONTROL CENTRES**

*In 39<sup>th</sup> ERPC Meeting, it was decided that,*

- i) ERPC approved the proposal of Power Grid for replacement of the old RTUs in the Eastern Region for reporting of RTU / SAS to backup control centres at an estimated cost of Rs. 88.57 Crore with an implementation time of 36 months.*
- ii) Power Grid shall place a proposal before PSDF Committee for financing the above project from PSDF.*

**Powergrid may update.**

**Item No. B.8: Automatic Under Frequency Load Shedding (AUFLS) Scheme and Mapping of Feeders**

**(A) Review of AUFLS Settings**

In 8<sup>th</sup> NPC held on 30th November 2018, it was agreed for the AUFLS scheme with 4 stages and **raising the frequency by 0.2 Hz viz. 49.4, 49.2, 49.0 & 48.8 Hz**. It was also decided that, NRPC may appoint a Consultant from their own resources as proposed by MS (NRPC) for studying the AUFLS scheme for Indian grid and submit the study report to NPC Secretariat within a time of six months.

The revised load relief for AUFLS computed by NPC Secretariat would be discussed along with the report of Consultant appointed by NRPC (if available), in the next meeting of NPC which would be held in the month of May, 2019.

**Members may note.**

## **(B) Mapping of Feeders**

In 8<sup>th</sup> NPC held on 30<sup>th</sup> November 2018, it was decided that each RPC would submit the details / progress of feeder mapping to NPC secretariat on a regular basis (quarterly).

**Members may submit the latest status.**

### **Item No. B.9: Coal requirement for thermal power plants –MoP**

MoP vide letter dated 7<sup>th</sup> February 2019 informed that, it has been decided that in view of expected increased power demand in the next few months up to monsoons, all power plants be advised to be watchful, and do maintain plant availability and adequate coal stocks as per norms, in this period.

All the thermal plants are advised to take effective steps for immediate implementation of the decision. The action taken report may also be forwarded to the Ministry at the earliest.

**Thermal plants may comply and submit the report.**

### **Item No. B.10: Load Generation Balance Report (LGBR) for the year 2019-20**

The draft LGBR has been prepared by ERPC after the detailed discussion with the constituents of Eastern Region in the meeting on finalization of draft Load Generation Balance Report (LGBR) for the year 2019-20, which was held at ERPC, Kolkata on 18.12.2018. Major observations are given below:

The following major thermal units shutdown were deferred from summer months considering strong reservations by a no. of distribution utilities, which have their major share:

- NTPC Barh STPSU#4(660MW)(01.03.19to 04.05.19)to **01.11.19 to 04.01.20 (65 days continuous)**
- NTPC Barh STPS U#5 (660MW)(01.03.20 to 04.05.20) to **15.01.20 to 19.03.20 (65 days continuous)**
- NTPC FSTPSU#6(500 MW)(01.06.19 to 05.07.19) to **01.11.19 to 05.12.19 (35 days continuous)**
- NTPC TSTPS U#1 (500 MW)(22.07.19 to 25.08.19) to **01.12.19 to 04.01.20(35 days continuous)**
- DVC KodermaU#1(500 MW)(01.04.19 to 06.05.19) to **16.01.20 to19.02.20 (35 days continuous)**
- MPL Unit # 1 (525 MW) (25.05.19 to 07.06.19) to **01.11.19 to 14.11.19 (14 days continuous)**

Besides, the above revised outage programme, some of the NTPC units of Farakka,Kahalgoan STPS and Kolaghat&Santalidih TPS of WBPDCCL due to Boiler licence renewal were allowed to shift 10-15 days as per deliberations.The maintenance schedule of thermal generating units in ER during 2019-20 as agreed and finalised in the LGBR meeting is shown in **Annexure-B10.1**.

*In 153<sup>rd</sup> OCC, Beneficiaries advised NTPC to run FSTPS unit#5 during March 2019 and agreed to allow the maintenance of FSTPS unit#5 during April 2019 in case of acute water shortage.*

WBSEDCL vide letter dated 8<sup>th</sup> February 2019 informed that shutdown of unit-2 of MPL may be shifted from 06.04.2019 -30.05.2019 to coming winter in view of peak summer and Lok Sabha elections.

**Members may discuss.**

### **Item No. B.11: Declaration of commercial operation date (COD) of unit of Nabinagar Thermal Power Plant: East Central Railway**

East Central Railway vide letter dated 18<sup>th</sup> January 2019 informed the issues related to declaration of commercial operation date (COD) of unit #3 of Nabinagar Thermal Power Plant. The letter is enclosed at **Annexure-B11**.

**Members may discuss.**

**Item No. B.12: Import of Power by Bhutan in 2019--DGPC**

DGPC has imported net energy of 11.291923 MU in the month of January 2019. The import has occurred due to delay in commissioning of the 720MW Mangdechhu Hydroelectric Project (MHEP). The 1<sup>st</sup> Unit of MHEP was supposed to commission in 2018, however due to unavoidable circumstances beyond the control of the Project Authority, the 1<sup>st</sup> Unit is still not commissioned. It is now expected to be commissioned by end of February 2019 if all the works get executed as per the planned schedule.

During the meeting with ERPC in July 2018, DGPC have informed that Bhutan may not become net importer of electricity in a month once MHEP gets commissioned. However, due to delay in the commissioning of MHEP within 2018, DGPC have imported a net energy in January 2019. DGPC may again become net importer of electricity during the months of February and March 2019, till the 1<sup>st</sup> Unit of MHEP is commissioned.

DGPC would therefore like to inform on the above and to allow import of power by DGPC as and when required. ERPC shall be kept informed on the energy scenario in Bhutan and the progress of MHEP commissioning schedule.

**Members may discuss.**

**Item No. B.13: RGMO/FGMO and PSS Tuning of Generators in Eastern Region**

In line with 148<sup>th</sup> OCC decision, a separate meeting on Restricted Governor /Free Governor Mode Operation and PSS Tuning of generators with the power station authorities in the Eastern Region was held on 31<sup>st</sup> January 2019. All the station representatives stated that the gap in understanding the provisions of the grid code had been addressed through the deliberations in the meeting. Minutes of the meeting are awaited.

**Members may note.**

**Item No. B.14: Information regarding details of existing transmission system (220 kV and above AC & DC voltage level) in Eastern Region as on 31.12.2018**

CEA vide letter dated 29/01/2019 intimated that MoP, GoI has desired information regarding details of state wise growth of transmission system (both interstate and intra state system) over the years to create database of existing transmission system.

Accordingly, it is requested that the information in respect of existing transmission system (both interstate and intra state system) as well as State Power Map and single line Diagram of transmission network including Powergrid (ISTS) and other Transmission Service Provider (TSPs) (as on 31.12.2018) may please be made available in the specified format attached at **Annexure –B14. I & II** to ERPC for onward transmission to CEA / MoP by 28.02.2019.

**Members may furnish.**

**Item No. B.15: Adequate measures to safeguard system(s) during planned shutdown – Proposal of POSOCO**

It has been noted with concern that whenever the transmission elements including bus bars are taken under shutdown on account of Annual maintenance work / System Augmentation, inadvertent switching / testing activities / Mal – operations are causing unwanted tripping of other bus leading to multiple element tripping and in some cases complete outage of substations which is a real threat to system security /reliability. It is also observed that during planned shutdown, works related to bus bar stability, Protection testing, bay maintenance and other miscellaneous activities are carried out without any advanced intimation to NLDC / RLDC, which is causing difficulties in assessment of the risk involved for such shutdown.



It may be mentioned that the manual of “Transmission Planning Criterion ” of CEA suggests that even“ A stuck breaker condition shall not cause disruption of more than four feeders for the 220 kV systems and two feeders for the 400 kV and 765 kV Systems”.

All concerned are requested to take necessary precautions before availing shutdown and furnish the details of nature of work to be carried out during shutdown so as to ensure adequate measures & preparatory actions to safeguard systems during shutdown period.

**Members may opine.**

#### **Item No. B.16: Updation of Restoration procedure of Eastern Region**

In compliance with clause 5.8 (a) and (b) of the present IEGC, The Restoration Procedure has to be developed and updated annually by RLDC in consultation with NLDC, all users, STU, SLDC,CTU, RPC Secretariat of the region.

Draft copy of “Black Start and Restoration Procedure” was mailed on 11<sup>th</sup> Jan 2019 for review and feedback from stake holder.

Only DVC has provided the comments on the draft procedure. Based on comments and updates procedure was finalized on 31<sup>st</sup> Jan 2019 and same was also sent to all the entity of ER.

As per 153<sup>rd</sup> OCC decision, a workshop on Restoration procedure of Eastern Region had been conducted on 15<sup>th</sup> February 2019.

**Members may note.**

#### **1. Ensuing healthiness of normally switched off Tie lines between states/utilities for fast restoration during blackout: ERLDC**

As per approved black start and restoration procedure of Eastern Region the following 132 kV lines which are normally kept off may be required to be used during start-up procedure:

- a) Joda-Kendposi 132 kV S/C (GRIDCO/JUSNL)
- b) Sahupuri-Karmnasa 132 kV D/C (UPPCL /BSPTCL)
- c) Kharagpur-Kharagpur 132 kV Bus Extension (DVC/WBSETCL)
- d) Kolaghat-Kolaghat 132 kV Bus Extension (DVC/WBSETCL)
- e) Patratu-Patratu 132 kV S/C (DVC/JUSNL)
- f) Golekera-Rourkela 132 kV S/C (JUSNL/GRIDCO)

The lines, therefore, should be tested once in a month for its healthiness. The communication between the concerned stations should be kept healthy.

**Concerned may update the present status.**

#### **2. Updated Black Start and Restoration procedure of State**

As per clause IEGC 5.8(b)

“Detailed plans and procedures for restoration after partial/total blackout of each User's/STU/CTU system within a Region, will be finalized by the concerned User's/STU/CTU in coordination with the RLDC. The procedure will be reviewed, confirmed and/or revised once every subsequent year.”

In fulfillment of same constituents are requested to share their updated restoration procedure.

**SLDCs may update.**

**Item No. B.17: Ratification of projected Demand and generation for POC transmission charges and loss calculations for Q1 (2019-20)--ERLDC**

The projected Demand and Generation of ER constituents to be considered in the base case for POC transmission charge and loss calculations for Q1 (April 19-June 19) are attached at **Annexure-B17** for ratification by the constituents.

**Members may kindly go through and confirm.**

**Item No. B.18: Details of Capacitor bank installed in Distribution/Sub transmission network --ERLDC**

Details of capacitor installed in Eastern Region as a whole was last collected in year 2011. The last updated list is given in **Annexure-B18**. In the meantime, many utilities might have installed additional capacitor bank for better voltage regulation some has also applied for fund from PSDF for installation of capacitor banks.

Utilities are requested to provide the updated capacitor bank list for record purpose.

**Members may submit the data.**

**Item No. B.19: 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 Extended till March 2019	108.6 Cr	37 Cr.	100 % Supply and Erection is Completed. Compilation of final bills is in progress.
2		Renovation & modernisation of transmission system for relieving congestion in Intra-State Transmission System.	22-05-17	25 months from date of release of 1 <sup>st</sup> instalment	70.13	21.03 Cr	Order has been placed . Work is in progress.
3		Installation of switchable reactor at 400kV & shunt capacitors at 33kV	22-05-17	19 months from date of release of 1 <sup>st</sup> instalment	43.37	6.59 Cr	Order had been placed and work is in progress.
4	WBPDC	Implementation of Islanding scheme at Bandel Thermal Power Station	10.04.17	March 2018	1.39 Cr	1.25 Cr	The islanding scheme had been implemented and in operation wef15.11.2018
5		Upgradation of Protection and SAS		April 2020	23.48	2.348 Cr	Bid opened and order has been placed. Work started.
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	15.11.17		25.61 Cr.		Agreement signed on 03.01.2018
8		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	27.07.18		27.23 Cr		

9	OHPC	Renovation and up-gradation of protection and control system of 4 nos.OHPC substations.		<i>U.Kolab, Balimela, U.Indravati, Burla, Chiplima March 2019</i>	22.35 Cr.	2.235 Cr	Placed work order.
10	BSPTCL	Renovation and up-gradation of 220/132/33 KV GSS Biharshariff, Bodhgaya, Fatuha, Khagaul, Dehri -on-sone& 132/33 kV GSS Kataiya	11/5/15	31.07.2018	64.02 crore	56.04 crore	85% of work has been completed. Contract awarded for Rs.71.37 Cr till date. The work would be completed by Feb 2019.
11		Installation of capacitor bank at different 35 nos. of GSS under BSPTCL	5/9/2016	31 <sup>st</sup> March 2019	18.88 crore	Nil	Work awarded for all GSS. 90% supply and 60% of erection had been completed.
12		Renovation & up-gradation of protection and control system of 12 nos. 132/33 KV GSS under BSPTCL.	02.01.17	31 <sup>st</sup> 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.
13	JUSNL	Renovation and up-gradation of protection system	<i>September 2017</i>	<i>15 Months</i>	<i>138.13 crores</i>		LOA placed to Siemens on 28 <sup>th</sup> Sep 2018.
14	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. Work would be completed by May 2019.
15		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.	1 <sup>st</sup> installment of 14.05 Cr. received on 21.12.2017	Work awarded for 6.45 Cr. Price bid opened for West Bengal portion and technical bid opened for Jharkhand portion.
16	POWERGRID	Installation of STATCOM in ER		June 2018	<i>160.28 Cr</i>	<i>16.028 Cr</i>	Work is in progress, expected to complete by June 2018. STATCOM at Rourkela has been commissioned.
17	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 30 <sup>th</sup> 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 3 <sup>rd</sup> training on PSCT has been also completed at ERPC Kolkata.
18a	ERPC	Training for Power System Engineers	27.07.18		0.61 Cr.	Nil	Approved
18b		Training on Power market trading at NORD POOL Academy for Power System Engineers of Eastern Regional Constituents	27.07.18		5.46 Cr.	Nil	

## 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	The proposal requires third party protection audit. Issue was discussed in the Monitoring Group meeting in Siliguri on 8.6.2018. Sikkim was asked to coordinate with ERPC.
2		Drawing of optical ground wire (OPGW) cables on existing 132kV & 66kV transmission lines and integration	09-08-17	25.36 Cr	Scheme was approved by Appraisal Committee. It was sent to CERC for concurrence.

		of leftover substations with State Load Despatch Centre, Sikkim			
3	JUSNL	Reliable Communication & Data Acquisition System upto 132kV Substations.	23-08-17	102.31 Cr	Scheme was approved by Appraisal Committee. It was sent to CERC for concurrence.
4	OPTCL	Implementation of Automatic Demand Management System (ADMS) in SLDC, Odisha	22-12-17	3.26 Cr	Scheme was approved by Appraisal Committee. It was sent to CERC for concurrence.
5		Protection upgradation and installation of SAS for seven numbers of 220/132/33kV Grid substations (Balasore, Bidanasi, Budhipadar, Katapalli, Narendrapur, New-Bolangir&Paradeep).	12-03-18	41.1 Cr.	Scheme examined by TSEG on 20.03.2018. Inputs sought from the entity are awaited.
6	WBSETCL	Implementation of Integrated system for Scheduling, Accounting, Metering and Settlement of Transactions (SAMAST) system in West Bengal	22-12-17	25.96 Cr	Proposal recommended by Appraisal committee as communicated on 16.11.2018.
7		Installation of Bus Reactors at different 400kV Substation within the state of West Bengal for reactive power management of the Grid	12-03-18	78.75 Cr.	Proposal recommended by Appraisal committee as communicated on 16.11.2018.
8		Project for establishment of reliable communication and data acquisition at different substation at WBSETCL.	10-05-18	80.39 Cr.	Proposal recommended by Appraisal committee as communicated on 16.11.2018.
9	BSPTCL	Implementation of Scheduling, Accounting, Metering and settlement of Transaction in Electricity (SAMAST)in SLDC Bihar.	27-02-18	93.76 Cr.	Scheme examined by TSEG on 20.03.2018 & 31.05.2018. Further inputs furnished by BSPTCL on 1.8.2018. Shall be examined in the next meeting of TSEG.

**Respective constituents may update the status.**

**Item No. B.20: Additional agenda**

## **PART C: ITEMS FOR UPDATE**

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

UFR Healthiness Certification for the month of January, 2019 has been received from OPTCL, CESC, WBSETCL, DVC, BSPTCL and JUSNL.

**Members may note.**

### **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, WBPDC
3. Tata Power Islanding Scheme, Haldia
4. Chandrapura TPS Islanding Scheme, DVC
5. Farakka Islanding Scheme, NTPC
6. Bandel Islanding Scheme, WBPDC

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

The healthiness certificate for Islanding Scheme for January, 2019 has been received from CTPS, DVC, NTPC, West Bengal, JUSNL, WBPDC and CESC.

**Members may note.**

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

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

<b>Sl. No.</b>	<b>Name of the SPS</b>	<b>Healthiness certificate received from</b>	<b>Healthiness certificate not received from</b>
1.	Talcher HVDC	NTPC, GMR,	JITPL, Powergrid,
2.	Rangpo	Chuzachen,	Dikchu, Dansenergy, Powergrid, Teesta-III
3.	SPS in CESC system	CESC	Nil
4.	SPS at Chuzachen	Chuzachen	Nil

**Members may update.**

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

The latest status along with proposed logic as follows:

<b>Sl No</b>	<b>State/Utility</b>	<b>Logic for ADMS operation</b>	<b>Implementation status/target</b>	<b>Proposed logic (if different from under implementation logic)</b>
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	They would place the order to Chemtrol for implementation.	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. Offer received from Chemtrol for implementation.	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 142<sup>nd</sup> 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.

During the Month of January 19, ADMS criteria got satisfied for following cases:

#### A. West Bengal

Sl No	Date & Time	West Bengal O/D (MW)	Frequency (Hz)	ADMS Optd (Y/N)	Relief (MW)
1	04-01-2019 07:31	270	49.69		
2	04-01-2019 07:32	282	49.61		
3	04-01-2019 07:33	264	49.58		
4	04-01-2019 07:34	249	49.60		
5	04-01-2019 07:35	273	49.61		
6	04-01-2019 07:36	231	49.60		
7	04-01-2019 07:37	232	49.63		
8	04-01-2019 07:38	233	49.67		
9	04-01-2019 07:39	264	49.69		

Members may update.

#### Item no. C.5: 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 last OCC, 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-Kesinga 220 kV D/C line at Bolangir S/S	Only 7 towers left (Severe ROW problem). <b>By March, 2019.</b>
2.	400/220kV Pandiabil Grid S/s:	
a.	Pratapsasan (OPTCL)-Pandiabil (PG) 220 kV D/C line	<b>By March, 2019.</b>

<b>3.</b>	<b>400/220 kV Keonjhar S/S</b>	
a.	Keonjhar (PG)-Keonjhar (OPTCL) 220 kV D/C line	One ckt completed, other ckt would be completed within 2 weeks.
b.	Keonjhar (PG)-Turumunga(OPTCL) 220kV D/C line	By 2019. The work is yet to be started.

**OPTCL may update.**

**Item no. C.6: 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
<b>1.</b>	<b>Daltonganj 400/220/132kV S/s:</b>	
a.	Daltonganj(POWERGRID)–Latehar220kVD/c	By Dec, 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 June 2019.
c	Daltonganj (POWERGRID) – Chatarpur/Lesliganj 132kV D/c	Tendering is in progress. Expected to be completed by October 2019
<b>2</b>	<b>Chaibasa400/220kVS/s</b>	
A	Chaibasa(POWERGRID)–Noamundi220kVD/c	Not yet started
<b>3</b>	<b>Dhanbad400/220kVS/s</b>	
A	LILO of Govindpur–Jainamore/TTPS 220kVD/c at Dhanbad	ROW issues.Target date November 2018.

**JUSNL may update.**

**Item no. C.7: 220 kV inter-connecting lines of WBSETCL with 400/220 kV, 2x315 MVA Subashgram& 2x500 MVA Rajarhat sub-stations**

In lastOCC, WBSETCL updated the latest status as follows:

Sl. No.	Name of the transmission line	Completion schedule
<b>1.</b>	<b>2x500MVA, 400/220kV Rajarhat---</b>	
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	ROW problem, December 2019
c.	Rajarhat- Barasat (WBSETCL) 220 kV D/C line	ROW problem, February 2019
<b>2</b>	<b>Subashgram400/220kVS/s</b>	
a	Subashgram–Baraipur220kVD/c line	June 2019,80% of work has been completed.

**WBSETCL may update.**

**Item no. C.8: Status of Installation of STATCOM in Eastern Region**

In the 15<sup>th</sup> 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:

SIN o	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		<i>In service from March 2018.</i>
2	Kishanganj	±200	2x125		<i>70% civil work completed. 30% switchyard equipment supplied. Expected to complete by January 2019</i>
3	Ranchi(New)	±300	2x125		<i>Commissioned on 12<sup>th</sup> July 2018</i>
4	Jeypore	±200	2x125	2x125	<i>Commissioned on 30<sup>th</sup> June 2018</i>

**Powergrid may update.**

#### **Item no. C.9: Bypassing arrangement of LILO of 400kV Lines at Angul**

LILO of Meramundali-Bolangir/Jeypore 400 kV S/C line and LILO of one Ckt of TalcherMeramundali 400 kV D/C line has been done at Angul 765/400kV Sub-station. The bypass arrangement for these circuits were under implementation at Angul by Powergrid.

*In 150<sup>th</sup> OCC, Powergrid informed that bypass arrangement would be completed by January 2019.*

**Powergrid may update.**

#### **Item no. C.10: 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.

Major issues are given below:

- Regarding frequent intermittent of real time SCADA data from Talcher STPS Stage 1 & 2, NTPC agreed to provide additional ports by March 2019.
- Alternate path for Malda–Farakka OPGW link

*In 153<sup>rd</sup> OCC, Powergrid was advised to implement alternate OPGW link through 400 kV Kishanganj- Darbhanga-Muzaffarpur lines.*

*OCC advised Powergrid to coordinate with Kalpatru Power Transmission Ltd. and DMTCL for implementation of the scheme.*

**ERLDC may present. Members may update.**



**Item no. C.11: Non submission of SEM data to ERLDC from Gelephu and Malbase S/S in Bhutan--ERLDC**

Malbase end meter data of 220 KV Malbase-Birpara(PG) and 400 KV Malbae-Binaguri(PG) D/C Line is not being received by ERLDC since last 2 months. Malbase informed ERLDC that due to non-working of DCD they are not sending the data to ERLDC.

In 38<sup>th</sup> CCM, it was emphasized that these two locations are very crucial and requested PGCIL to resolve the matter at the earliest by adjusting DCDs from any of the other locations which remained unutilized. It was also advised to PGCIL to collect the unutilized DCD from Teesta –III (TUL) and to hand over to Malbase.

In 151<sup>st</sup> OCC, Powergrid informed that they had handed over DCD, cable and supporting software to BPC on 14<sup>th</sup> November 2018.

BPC vide mail dated 13<sup>th</sup> December 2018 informed that the new DCD meter was issued to Malbase substation on 14.11.2018 by PGCIL. But it is of different make ( SANDS) and substation people are not familiar using the new DCD meter. They could download the readings from the SEM but the files could not be transferred from DCD to PC. Therefore, BPC requested to depute an official from PGCIL to guide our substation people on the usage of the new DCD meter for one time.

Regarding Gelephu, BPC informed the downloading cable is defective and needs replacement.

In 152<sup>nd</sup> OCC, Powergrid informed that they would arrange the demonstration of downloading meter data using DCD and the cable within a week.

OCC advised BPC to send the updated status after week to ERPC Secretariat.

However, the data from Malbase and Gelephu is still not being sent to ERLDC.

**PGCIL/Bhutan may please respond.**

**Item no. C.12: Replacement of Non-functioning/Defective Meter--ERLDC**

**i) Erroneous data of Energy meter**

Following meters at different substation of PGCIL and BSPTCL is recording erroneous reading since last few weeks. The problem was informed to the respective substation through e mail and telephonically. However the problem of erroneous data of meters is still persisting.

S. No.	Substation	Name of Feeder	Meter S.No	Date of start of problem (Date)	Issues
<b>PGCIL Substations</b>					
1	MALDA	132 KV SIDE OF MALDA 220/132 160 MVA ICT-2	ER-1103-A	03.12.18	Reverse Polarity
2	BIRPARA	132 KV SIDE OF BIRPARA 220/132 160 MVA ICT-1	ER-1041-A	03.12.18	Reverse Polarity
3	BIRPARA	132 KV SIDE OF BIRPARA 220/132 160 MVA ICT-2	NP-5891-A	03.12.18	Reverse Polarity
4	BOLANGIR	220 KV SIDE BOLANGIR 400/220 KV 500 MVA ICT-I	ER-1573-A	03.12.18	Wrong Connection of CT/PT
5	BOLANGIR	220 KV SIDE BOLANGIR 400/220 KV 500 MVA ICT-2	NP-7919-A	03.12.18	Wrong Connection of CT/PT

6	MOTIHARI	132kV SIDE OF 200MVA MOTIHARI(DMTCL) ICT-1	ER-1174-A	03.12.18	Reverse Polarity
7	SASARAM	400 KV SASARAM (PG)- BIHARSHARIFF(PG)-II	NP-6515-A	03.12.18	Wrong Connection of CT/PT
8	RANCHI	400 KV SIDE OF RANCHI ICT-2	NP-5873-A	27.12.18	Wrong Connection of CT/PT
9	BARIPADA	400 KV SIDE 500 MVA 400/220 BARIPADA ICT-3	ER-1564-A	26.12.18	Wrong Connection of CT/PT
<b>BSPTCL Substation</b>					
1	BEGUSARA I	220kV Begusarai-Purnea-1	ER-1344-A	19.12.18	Reverse Polarity

*In 153<sup>rd</sup> OCC, It was informed that the meter issues had been resolved at Sasaram, Ranchi and Baripada.*

*OCC advised all the concerned constituents to take the necessary action to resolve the issues at other locations.*

**Members may please update the status.**

#### **Item no. C.13: 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.

**Latest status of State ATC/TTC declared by states for the month of June-2019**

SI No	State/Utility	TTC import(MW)		RM(MW)		ATC (Import) MW		Remark
		Import	Export	Import	Export	Import	Export	
1	BSPTCL	4600	--	100	--	4500	--	March-19
2	JUSNL	1188	--	60	--	1128	--	April-19
3	DVC	1195.7	3141.3	62.02	48.68	1133.7	3092.6	May-19
4	OPTCL	2296	--	82	--	2207	--	May-19
5	WBSETCL	3818	--	300	--	3518	--	Feb-19
6	Sikkim	--	--	--	--	--	--	

Once again, it may kindly be note that the SLDC has to calculate ATC/TTC and show the same on their website in line with approved "Detailed Procedure for Relieving Congestion in Real Time Operation" as per the CERC (Measures to relieve congestion in real time operation) Regulations, 2009 regulation.

**Members may update.**

**Item no. C.14: Replacement of GPRS communication with Optical Fiber for AMR**

In ER, 80% meters are connected through Automated Meter Reading (AMR). At present the communication system used for data transfer from each location is GPRS. It has been observed that many locations are not communicating with AMR system due to poor/no GPRS signal. Many substations have their own optical fiber which is also used for the LAN network of respective stations. TCS has successfully connected 02 locations (Subhasgram-PG and Binaguri-PG) in ER-II with PGCIL intranet and these two locations are smoothly reporting to AMR system after connecting with PGCIL LAN. The proposed network will not only provide better communication but also reduce the cost of GSM.

*In 153<sup>rd</sup> OCC, Powergrid informed that optical fiber for AMR had been implemented at 30 locations and rest of the locations would be completed by February 2019.*

**POWERGRID may please update the progress.**

**Item no. C.15: 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 8 <sup>th</sup> June, 2018	Last Week of January 2019	In Dec 2018
2	Maithon	1st week of June 2018	Completed on 6 <sup>th</sup> June, 2018	1st Week of February 2019	
3	Rengali	2nd week of June 2018	Done on 18 <sup>th</sup> August, 2018	Last week of November 2018	Jan 19
4	U. Indarvati	3rd week of June 2018	Planned in Oct, 2018.	2nd week of February 2019	In Dec 2018
5	Subarnarekha	1st week of October 2018	Done on 10 <sup>th</sup> August, 2018.	1st week of January 2019	
6	Balimela	3rd week of October 2018	Done on 21 <sup>st</sup> Dec, 2018	1st week of March 2019	
7	Teesta-V	2nd week of Nov 2018	Done on 3 <sup>rd</sup> May 2018	Last week of February 2019	
8	Chuzachen	Last Week of May 2018	In May 2018	2 <sup>nd</sup> week of January 2019	Done on 15 <sup>th</sup> Jan 19
9	Burla	Last Week of June 2018	Completed on 7 <sup>th</sup> June, 2018	Last week of February 2019	
10	TLDP-III	1 <sup>st</sup> Week of June 2018	After Monsoon	2nd Week of January 2019	Done on 10 <sup>th</sup> Jan 2019
11	TLDP-IV	Last Week of June 2018	After Monsoon	1 <sup>st</sup> Week of February 2019	
12	Teesta-III	Last week of Oct 2018	Done on 30 <sup>th</sup> Nov 2018	First Week of March 2019	
13	Jorthang	First Week of May 2018		First Week of Feb 2019	
14	Tasheding	2 <sup>nd</sup> Week of May 2018		2 <sup>nd</sup> Week of Feb 2019	
15	Dikchu	3 <sup>rd</sup> Week of May 2018		3 <sup>rd</sup> Week of Feb 2019	

**Members may update.**

**Item no. C.16: Submission of Thermal Loading of Transmission line and associated terminal equipment by ISTS licensee**

In line with the MoM of 4th NRCE Meeting dt.03-11-14 and “Operational Guidelines for determination Of TTC, ATC and TRM for the Short-Term Horizon (0-3 Months)” published by NRCE dt.20-02-15, thermal limit for transmission line has to be used for calculation of ATC/TTC. However, the thermal loading of transmission line depend on the Maximum Conductor Temperature, End equipment thermal rating. This has to be submitted by the Owner of the equipment. Further, the equipment owner also has to confirm that relay setting has been aligned so that the line can be operated up to its thermal limit. In the absence of complete details, ERLDC is utilising the data from the CEA Planning Criteria for thermal rating as given below :

Conductor Type	Ampacity per conductor(A)*	Thermal loading limit of line (MVA)
765 kV Quad ACSR_Bersimis	732	3880
765 kV HexaACSR_Zebra	560	4452
400 kV Twin ACSR_Moose	631	874
400 kV Quad ACSR_Moose	631	1749
400 kV Quad ACSR_Bersimis	732	2029
400 kV Triple Snowbird	630	1309
400 kV Twin ACSR_Lapwing	773	1071
220 kV Single AAAC_Zebra	557	212
220 kV Single ACSR_Zebra	560	213
220 kV Twin ACSR_Moose	631	481
132 kV Single ACSR_Zebra	560	128
132 kV Single ACSR_Panther	366	84

\*Ambient and Maximum conductor temperature are taken as 45°C and 75°C respectively.

Apart from above specifically mentioned in CEA transmission planning criteria following loading limit is considered for HTLS line while calculating ATC/TTC

Conductor Type	Ampacity per conductor(A)*	Thermal loading limit of line (MVA)
400 kV Twin HTLS	1262	1750
220 kV Single HTLS	1020	390
132 kV Single HTLS	732	168

**In view of this, it is desired that all ISTS Licensee and STU(for 400 kV and important 220 kV lines) may kindly submit the following details to ERLDC for utilisation in ATC/TTC calculation:**

- Transmission line wise Ampacity and Thermal loading along with Maximum Conductor Temperature and conductor type.
- End Equipment Rating and
- Confirmation whether the relay setting has been adopted in line with the thermal rating of the line
- Any constraint during thermal loading of line

*In 152<sup>nd</sup> OCC, ERLDC informed they received the details only from DVC.*

OCC advised all the other ISTS licensees and STUs to submit the relevant data to ERLDC and ERPC.

**Members may note and comply.**

**Item no. C.17: Delay in furnishing information to ERLDC/ERPC regarding of Commissioning of new Transmission Elements/ Generating Units within State--ERLDC**

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 (ISTS & within state) synchronized **for the first time** during last month and new elements to be commissioned during next month, within 7<sup>th</sup> day of the current month to ERLDC through mail.

For the Month of January-2019, states and transmission licensees did not submit their List of Transmission element /generators synchronised **in the previous Month** and List of Transmission element and generators expected to be synchronised during next Month.

SL. NO.	Non-submission of new charged elements list of Jan '19	Non-submission tentative charging list of Feb '19
1	Bihar	Bihar
2	Jharkhand	Jharkhand
3	Odisha	Odisha
4	Sikkim	Sikkim
5	DVC	West Bengal
6		Powergrid
7		DVC

It has been observed that some major 220kV intra-state lines have been charged without any data integration & prior information to ERLDC. The list of the lines is as follows:

SL NO	NAME OF THE ELEMENT	STATION	AOR	DATE OF CHARGING
1	220KV Ramchandrapur(JH)-Chaibasa(JH)	Chaibasa	Jharkhand	30-01-2019
2	LILO of 220kV Sagardighi-Gokarna-DC at New-Sagardighi	Sagardighi New	W. Bengal	24-01-2019
3	220kV New Sagardighi	Sagardighi New	W. Bengal	24-01-2019
4	132kV Purulia-Bagmundi	Purulia/Bagmundi	W. Bengal	24-01-2019
5	132kV Sagardighi_New-Raghunathganj	Raghunathganj/Sagardighi_New	W. Bengal	24-01-2019
6	132KV Gokarna-Bhadrapur-DC	Gokarna/Bhadrapur	W. Bengal	24-01-2019
7	132KV Raghunathgunj-New Sagardighi DC	Raghunathgunj/New Sagardighi	W. Bengal	24-01-2019
8	220KV Bodhgaya(BH) – khizersarai(BG)	Khizersarai	Bihar	26-05-2018
9	220KV NewPurnia(PG)-Begusarai(BH)	Begusarai	Bihar	23-12-2018
10	220KV Alipurduar(PG)-Alipurduar (WB)	Alipurduar	W. Bengal	31-05-2018

11	220 KV Meramundali(GR)- Bhanjanagar(GR) lilo at Laxmipur	Laxmipur	OPTCL	---- unknown----
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## 220KV Arrah (PG)—Khagaul(BH) which was a tie-line has been charged as 220 KV Sipara(BH) –Khagaul (BH) without intimating both SCADA and Operation Dept . of ERLDC on 03/01/19.T

It is again requested to all states to integrate SCADA data before charging of any 220kV & 132kV lines and intimate ERLDC before charging.

**West Bengal, Bihar& Odisha may please explain.**

**Item no. C.18: Load Trimming Scheme on 400/132 kV Motihari ICTs.**

400/132 kV Motihari substation is having a two ICTs each with 200 MVA capacity. It has been observed that due to higher load catering of Bihar along with Nepal, the ICTs are running without N-1 reliability. On 22<sup>nd</sup> August 2018 at 14:59 Hrs, the ICTs combined load increased to 280 MW and one ICT got tripped on mal-operation of OSR relay due to moisture ingress. This led to overloading of other ICT, which tripped in overcurrent protection. This led to the loss of 280 MW of Bihar and Nepal.

Such unreliable operation of ICTs due to higher load is not desirable and following action point may be desired:

1. Implementation of Load Trimming Scheme (LTS) on Motihari ICTs.
2. BSPTCL Long term plan to ensure the meeting such high demand in the areas.
3. Prevention of Tripping of Motihari ICT on OSR relay mis-operation during moisture ingress in rainy season.
4. Capacity augmentation for longterm measures may be planned.

In 149<sup>th</sup> OCC, it was informed that one more ICT of 315 MVA had been planned in 13<sup>th</sup> Plan which would be commissioned by May 2020.

OCC advised Bihar to plan a load-trimming scheme till the availability of 3<sup>rd</sup> ICT.

*In 152<sup>nd</sup> OCC, BSPTCL explained the load trimming scheme.*

*OCC advised BSPTCL to trip radial loads instead of tripping 132kV lines. OCC also advised to ensure reliable communication for transferring trip signal to respective CBs for successful operation of load shedding scheme.*

*OCC advised BSPTCL to revise the scheme accordingly and submit the details to ERPC and ERLDC.*

**BSPTCL may update.**

**Item no. C.19: Status of Emergency Restoration system (ERS) of respective Transmission Licencees**

CEA vide mail dated 28-09-2018 has requested to provide Status of Emergency Restoration system (ERS) of respective Transmission Licencees in respective Regions as per the format.

*OCC advised all the transmission licensees to submit the requisite information as per the format in the form of soft copy through email (mail ID: mserpc-power@nic.in).*

Till date, the details have been received from WBSETCL, OPTCL and JUSNL as follows:

State-wise Emergency Restoration system				
Transmission Licensee	Requirement of Total no of ERS in State	Number of ERS available in state	No of ERS to Be Procured	Remark if Any .
WBSETCL	10	10	Nil	-
OPTCL	84	54	30	
JUSNL	13	8	5	
DVC	400kV – 2 nos	400kV- Nil	400kV – 2nos	
	220kV – 2 nos	220kV – 1 nos	220kV – 1 nos	
	132kV – 10 nos	132kV – 8 nos	132kV – 2 nos	

**BSPTCL may submit the details as per the format.**

**Item no. C.20: Review of Cyber Security Works/Activities- CEA**

CEA vide letter informed that Secretary (Power) is going to review the cyber security related works /activities being carried out in Power Sector. In this regard, it is requested to provide the State wise status on following action points pertaining to cyber security at the earliest:

1. Appointment of organization-wise Chief Information Security Officers and its status
2. Identification of organization-wise Critical Infrastructure and its status
3. Preparation of organization-wise Crisis Management Plan and its status
4. Status of Cyber Security Mock Drill activity in coordination with CERT-In
5. Status of Training / Workshops on Cyber Security organized / participated by power sector entities
6. Status of action taken on CERT-In / NCIIIPC advisories

In 148<sup>th</sup> OCC, all the constituents were advised to send the latest status to [mserpc-power@nic.in](mailto:mserpc-power@nic.in) within a week.

The details had been received from DVC, WBSETCL, Bihar and OPTCL only.

OCC advised all the other constituents to send the information to [mserpc-power@nic.in](mailto:mserpc-power@nic.in) at the earliest.

**Members may comply.**

**Item no. C.21: Submission of static data for preparation of a report on coal fired stations in the country--ERLDC**

One internal committee has been formed by POSOCO to prepare a report on coal fired stations in the country, which will be submitted to the FOLD &FOR, at a later stage. Similar reports have already been prepared by POSOCO for hydro, gas and RESplants, which has been widely appreciated in different forums like FOLD & FOR.

To prepare this report, some static data (commercial, technical, environmental & general) in proper format for all coal fired stations (ISGS, IPP and State Generators) of capacity  $\geq 200$  MW need to be submitted to ERLDC so that the compilation and subsequent analysis of data of thermal generators on an all India basis could be made within stipulated time period.

The format for data submission was intimated to all generators and state SLDCs via email. Till date only GMR, Adhunik, MPL and Sagardighi have submitted their static data.

ISGS (NTPC), IPP and State Generators of Eastern Region are requested to kindly accord high priority for submitting the static data to ERLDC in [erldcso@posoco.in](mailto:erldcso@posoco.in) for preparation of the report within stipulated period.

Nodal coordinators for this Process from ERLDC are:

1. ShriBiswajitMondal, Sr. Engineer, Mob No: 9903329271
2. ShriChandanMallick, Sr. Engineer, Mob No: 9007059660

*In 152<sup>nd</sup> OCC, ERLDC updated the following generating stations have not submitted static data for preparation of report on coal firing stations:*

1. IB thermal stage -1
2. TTPS (Odisha)
3. Talcher STPP
4. Santaldih TPP
5. Budge-Budge TPP
6. Tenughat TPP

*OCC advised above thermal generators to submit the relevant information to ERLDC at the earliest.*

**Members may update.**

**Item no. C.22: Collection of modelling data from Renewable as well as conventional energy generators: ERLDC**

As a National Grid operator, POSOCO is continuously working for ensuring reliability and security of the Grid. With penetration of more and more renewable energy source the task is becoming complicated day by day. An accurate dynamic modeling of the National Grid,needsmodelling of conventional as well as renewable / distributed generation sources. World Bank has engaged Digsilent as consultant for assisting POSOCO for building dynamic model of the Grid. A guideline for dynamic data collection has been developed in consultation with Digsilent Pacific team.

All the utilities are requested to collect data from the grid scale renewable power plants as well as from conventional power plants under their jurisdiction and submit the same to ERLDC/ERPC as early as possible.

*In 153<sup>rd</sup> OCC, OCC advised all the constituents to submit the details of renewable power plants of 5 MW and above.*

**Members may comply.**



## **PART D:: OPERATIONAL PLANNING**

### **Item no. D.1: Anticipated power supply position during March 19**

The abstract of peak demand (MW) vis-à-vis availability and energy requirement vis-à-vis availability (MU) for the month of March 19 were prepared by ERPC Secretariat on the basis of Provisional 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.**

### **Item no. D.2: Shutdown proposal of transmission lines and generating units for the month of March 19**

*In 151<sup>st</sup> OCC, it was observed that constituents had not submitting the shutdown requisition within stipulated time as a result ERLDC had been facing difficulty in properly analyzing the shutdown.*

*OCC decided the following procedure for submission of transmission elements outage requisition:*

1. **Shutdown of Intra Regional Lines** - Transmission licensee/SLDCs/Transmission Asset owners shall apply shutdown of their respective Intra Regional Lines for the next month to ERLDC strictly by 8<sup>th</sup> of every Month. Based on this, ERLDC shall prepare the list which would be placed in OCC Agenda. Any shutdown requisition received after 8<sup>th</sup> of the month would not be normally considered for discussion in the OCC meeting unless it is considered to be an emergency requirement.
2. **Shutdown of Inter Regional Lines** - Transmission licensee/ SLDCs/Transmission Asset owners shall send their shutdown requisition of Inter Regional Lines for the next month directly to NLDC strictly by 5<sup>th</sup> of every month with a copy to respective RLDCs.

Members may finalize the Shutdown proposals of transmission lines and generating stations for the month of March 19.

Dikchu informed that they would require extension of shutdown for Unit-2 till 22nd Feb' 19 against the earlier planned date of 15th Feb' 19 due to extra time consumed in TGB repair works.

Also it is to be informed that overlapping this period of Unit 1 shutdown, from 16th to 18th Feb, there will be no generation from Dikchu HEP as we have to carry out Reservoir flushing.

The list transmission line shutdown to be discussed on 19<sup>th</sup> February 2019 through VC is given at **Annexure-D2**.

**Members may confirm.**

#### **1. SLDC, West Bengal Agenda**

- Closing of 66 kV Chalsa-Kalimpong S/C and 66kV Melli(Sikkim)-Kalimpong line from Kalimpong end to feed Kalimpong from dual source to maintain redundancy in power supply.
- Emergency shutdown of 400kV elements of STU system or tie-lines has to be allowed by ERLDC control room if immediate switching off the line is required to avoid subsequent hazard.
- Approval of all planned shutdowns by ERLDC outage coordination team may please be issued at least two working days in advance to mobilize the workforce.

**Members may discuss.**

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

**(i) Thermal Generating units:**

S.No	Station	Location	Owner	Unit No	Capacity	Reason(s)	Outage	
					(MW)		Date	Time
1	BARAUNI	BIHAR	BSPHCL	6	105	R & M WORK	17-Mar-12	13:15
2	KOLAGHAT	WEST BENGAL	WBPDC	1	210	POLLUTION CONTROL PROBLEM	10-May-18	23:05
3	KOLAGHAT	WEST BENGAL	WBPDC	3	210	POLLUTION CONTROL PROBLEM	23-Feb-17	11:51
4	KOLAGHAT	WEST BENGAL	WBPDC	5	210	ANNUAL OVERHAULING	5-Feb-19	10:17
5	CTPS	JHARKHAND	DVC	3	130	TURBINE BLADE DAMAGE	30-Jul-17	00:00
6	GMR	ODISHA	GRIDCO	3	350	ANNUAL OVERHAULING	3-Feb-19	00:20
7	CTPS	JHARKHAND	DVC	7	250	CAPITAL OVERHAULING	9-Feb-19	23:52
8	JITPL	ODISHA	JITPL	2	600	COAL SHORTAGE	26-Jun-18	00:03
9	SAGARDIGHI	WEST BENGAL	WBPDC	2	300	COAL SHORTAGE	24-Dec-18	19:55
10	SAGARDIGHI	WEST BENGAL	WBPDC	4	500	COALSHORTAGE	4-Feb-19	21:46
11	TENUGHAT	JHARKHAND	JUVNL	1	210	COAL SHORTAGE	11-Dec-18	00:11
12	MEJIA	WEST BENGAL	DVC	3	210	STATOR EARTH FAULT	4-Feb-19	22:15
	Sub Total (SS)				3285			

Generators/ constituents are requested to update the expected date of revival of the units.

**(ii) Hydro Generating units:**

**(iii) Transmission elements**

SL NO	Transmission Element / ICT	Agency	Outage From		Reasons for Outage
			DATE	TIME (HRS)	
1	220 KV BALIMELA - U' SILERU	OPTCL / APSEB	10-03-18	22:45	LINE ANTITHEFT CHARGED FROM UPPER SILERU ON 17-04-18
2	400 KV IBEUL- JHARSAGUDA D/C	IBEUL	29-04-18	17:30	TOWER COLLAPSE AT LOC 44,45
3	400KV NEW PURNEA-	ENICL	10-08-18	10:28	TOWER COLLAPSE AT

	BIHARSARIFF(PG)-D/C				LOC 47/0
4	400 KV PATNA-KISHANGANJ-I	POWERGRID	01-09-2018	00:32	TOWER COLLAPSE AT LOC 129. PILING DAMAGED
5	315 MVA ICT II AT PATNA	POWERGRID	30-11-2018	08:28	FOR ICT REPLACEMENT WORK
6	400 KV TALA BINAGURI - I	POWERGRID	03-01-2019	11:01	TO CONTROL OVER VOLTAGE AT TALA END
7	400 KV TALA- BINAGURI - IV	POWERGRID	10-01-2019	15:48	OPENED DUE TO HIGH VOLTAGE
8	220 KV NEW PURNEA BEGUSARAI -II	BSPHCL	01-02-2019	13:35	CONTINUOUS DT RECEIVING AT PURNEA END/ PROBLEM IN PLCC AT BEGUSARAI END

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

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

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

**Members may update.**

## **PART E::ITEMS FOR INFORMATION**

The following agenda items are placed for information and necessary compliance:

### **Item No. E.1: Operation Eastern Regional grid from ERLDC back up control Centre at, NLDC, New Delhi as a part of Disaster Management--ERLDC**

As informed in 153<sup>rd</sup> OCC ERPC, ERLDC has successfully operated its backup control center at NLDC, New Delhi from 11:00Hrs to 14:00Hrs on 8<sup>th</sup> February 2019. All control room activity such as issuance of real time switching code, monitoring of Eastern Region GRID, real time scheduling & reporting were done from backup control center NLDC New Delhi. Entire SCADA system, Open Access & scheduling system have shifted to backup control center of ERLDC. During this process, all the utilities have obtained real time switching code from back up control center and use scheduling server hosted at backup control NLDC, New Delhi for submission of their requisition.

Entire process of operation of ERLDC backup control center was successful only because of full co-operation of utilities of Eastern Region.

**Members may please note.**

### **Item No. E.2: Preparation of crisis management plan for Cyber Security in Power Sector in line with CERT-IN.**

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

In 142<sup>nd</sup> 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 37<sup>th</sup> TCC meeting, it was decided that a workshop would be conducted by CEA at ERPC for further benefit of ER Constituents.

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

A workshop on cyber security was conducted by CEA at ERPC, Kolkata on 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.

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

In 84<sup>th</sup> 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 WBPDCCL
- DGPC units

**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 8<sup>th</sup> September 2017 informed that Disturbance Recorder, Stand alone Event Logger and Time Synchronization equipments are available at Teesta III HEP.*

**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 136<sup>th</sup> 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 138<sup>th</sup> OCC, WBSETCL informed that they are having total 10 ERS towers, 5 at Arambagh and 5 at Gokharno.

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

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

**Item No. E.6: Status of 1<sup>st</sup> Third Party Protection Audit:**

The compliance status of 1<sup>st</sup> 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

<b>Odisha</b>	59	42	71.19
<b>JUSNL</b>	34	25	73.53
<b>BSPTCL</b>	16	5	31.25
<b>IPP (GMR, Sterlite and MPL)</b>	5	5	100.00

\* Pending observations of Powergrid are 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 118<sup>th</sup> OCC, all the constituents were advised to comply the pending observations at the earliest. All the STUs informed that most of the observations are related to funding from PSDF. DPRs have been submitted to PSDF committee.

Members may comply.

#### **Item No. E.7: Providing relevant data by Power Utilities I Stations in National Power Portal.**

CEA vide letter dated 26th June 2018 informed that National Power Portal (NPP) (URL: npp.gov.in), has been launched by Hon'ble Minister of Power on 14<sup>th</sup> November, 2017. NPP is modified and more user-friendly data portal than the existing Information Management System (IMS) in CEA. Reports prepared from NPP are of vital importance for Power Sector data analytics in order to frame policies, regulations, future road-map for Power Sector etc. at Central as well as at State level. Accordingly, all power utilities have been issued user ID and password, either organisation-wise or station-wise, based on their request, for providing their data on NPP.

**NPP has replaced IMS since 1<sup>st</sup> June, 2018. A Circular (which is available in Circular Section of CEA Website, i.e. cea.nic.in) has been issued by CEA to all power utilities/stations on 14.06.2018 for providing their data online in NPP only.**

In this regard, letters/emails have been issued to Utilities to provide their data online through NPP. A letter dated 20.06.2018 was also issued to all SLDC, requesting them to direct the power utilities I stations under their purview for providing data on NPP.

Any issue/problem faced by utilities may kindly be communicated to itcea@nic.in, npp.support@gov.in, ceopm-cea@gov.in and if required, IT Division, CEA may be contacted on 011-26732368 or 011-26732303

CEA requested to pursue the power utilities / stations under their purview for providing data on NPP. Further, a workshop/presentation may be arranged if required in each region in which IT Division, CEA will provide a brief demonstration regarding data entering process and report generation into NPP.

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

The details of new units/transmission elements commissioned in the month of January-2019 based on the inputs received from beneficiaries

<b>Monthly commissioning List of Transmission element and generators: January 2019</b>					
<b>SL NO</b>	<b>Element Name</b>	<b>Owner</b>	<b>Charging Date</b>	<b>Charging Time</b>	<b>Remarks</b>
1	NTPP (BRBCL)-Nabinagar U#3	BRBCL	01-01-2019	02:43	Test Sync(successful trial run done between 07.02.19 to 10.02.19)
2	1500MVA ICT 4 (765/400kV) at Gaya	PGCIL	03-01-2019	17:32	
3	400kV Teesta_III-Kishanganj	TPTL	04-01-2019	17:07	

4	400kV New_Ranchi-Patratu-I	JSUNL	11-01-2019	13:47	Anti-theft charging upto 50.96kM
5	400kV New_Ranchi-Patratu-II	JSUNL	11-01-2019	16:09	Anti-theft charging upto 50.96kM, Ckt-I switched off at 15:47hrs. before charging of Ckt-II
6	NSTPP (NPGC) Unit #1	NPGC	14-01-2019	02:02	
7	400/132 kV, 200 MVA ICT # 2 at NSTPP (NPGC)	NPGC	15-01-2019	17:20	
8	50 Mvar Bus Reactor at NTPP Nabinagar(BRBCL)		18-01-2019	13:40	
9	IB_St2_OPGC unit # 4	OPGC	23-01-2019	18:01	First time synchronization
10	400kv Subhashgram-Rajarhat	PGCIL	28-01-2019	17:09	LILO of 400kV Jeerat-Subhasgram at Rajarhat
11	400kv Jeerat-Rajarhat	PGCIL	28-01-2019	17:51	
12	400kV Bus-I @Rajarhat	PGCIL	28-01-2019	17:09	
13	80MVAR Line reactor of 400kV Rajarhat-Gokarna at Rajarhat end	PGCIL	30-01-2019	21:52	Charged as Bus reactor
14	220 KV Chaibasa(JUSNL)-Ramchandrapur-I	JSUNL	30-01-2019	15:38	
15	220 KV Chaibasa(JUSNL)-Ramchandrapur-II	JSUNL	30-01-2019	15:24	

#### Item No. E.9: UFR operation during the month of January'19

System frequency touched a maximum of 50.28 Hz at 02:01Hrs of 22/01/19 and a minimum of 49.58 Hz at 07:32Hrs of 04/01/19. Hence, no report of operation of UFR has been received from any of the constituents.

#### Item No. E.10: Grid incidences during the month of January, 2019

Sr No	GD/GI	Date	Time	S/S involved	Summary	Load loss (MW)	Gen loss (MW)
1	GI-II	05-01-2019	06:56	Muzaffarpur	400 kV Muzaffarpur - Gorakhpur D/C & 400 kV Bus II at Muzaffarpur tripped	0	0
2	GD-I	05-01-2019	10:51	New Bargarh	At 10:52 hrs, 160 MVA 220/132 kV ATR - I tripped on REF, differential protection at New Bargarh S/S. Simultaneously B/B protection operated at New Bargarh S/S which led the tripping of 220 kV New Bargarh - New Bolangir S/C, 220 kV New Bargarh - Katapalli S/C and 220/132 kV 160 MVA ATR - II followed by station black out of 220 kV New Bargarh and New Bolangir S/S	100	0

3	GD-I	05-01-2019	11:20	Bodhgaya	220 kV Gaya - Bodhgaya D/C and 220 kV Gaya Khijasarai D/C tripped on Y-B fault on both sides. At the same time, 220 kV Bodhgaya- Khijasarai D/C tripped from Khijasarai end.	150	0
4	GI-II	06-01-2019	20:34	New Jalpaiguri	220KV NJP-TLDP IV-II, 220KV BINAGURI-NJP-I & 220 kV Bus I at NJP tripped	0	0
5	GD-I	07-01-2019	15:40	Katapalli	220 kV Katapalli - Bolangir S/C along with 220 kV Katapalli - Hindalco D/C, 132 kV Katapalli - Burla D/C and 132 kV Katapalli Chiplima D/C tripped due to snapping of R phase jumper of 220 kV Katapalli - Bolangir S/C	0	0
6	GI-II	09-01-2019	12:44	Gaya	220 KV Main Bus II at Gaya tripped at 12:44 Hrs along with '400/220 KV 315 MVA ICT II at Gaya, 220 KV Gaya-Khijasarai II, 220 KV Gaya-Sonenagar II, 220 KV Gaya-Dehri I, 220 KV Gaya-Bodhgaya I & 220 KV Bus Coupler at Gaya	0	0
7	GI-I	21-01-2019	02:29	Bakreswar	220 kV bus II along with 400/220 kV ICT II at Bakreswar, 220 kV Bakreswar - Bidhannagar - II, 220 kV Barkreswar - Sadai - II, 220 kV Bakreswar - Bidhannagar - II tripped due to CT burst of 220 kV Bakreswar - Bidhannagar - II at Bidhannagar end.	0	0
8	GD-I	23-01-2019	12:33	Hazipur	All lines emanating from Hazipur tripped due to fire hazard in 220 kV GIS bay of Amnour at Hazipur due to SF6 gas leakage.	124	0

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# पावर सिस्टम ऑपरेशन कॉर्पोरेशन लिमिटेड

(भारत सरकार का उद्यम)

## POWER SYSTEM OPERATION CORPORATION LIMITED

(A Govt. of India Enterprise)



पंजीकृत एवं केन्द्रीय कार्यालय : प्रथम तल, बी-9, कुतुब इंस्टीट्यूशनल एरिया, कटवारिया सराय, नई दिल्ली-110016

Registered & Corporate Office : 1st Floor, B-9, Qutab Institutional Area, Katwaria Sarai, New Delhi -110016

CIN : U40105DL2009GOI188682, Website : www.posoco.in, E-mail : posococc@posoco.in, Tel.: 011- 41035696, Fax : 011- 26536901

संदर्भ संख्या: पोसोको/एनएलडीसी/2019/402

दिनांक: 04<sup>th</sup> February, 2019

सेवा मे,

As per the Distribution List

**विषय:** Agenda Item regarding Pilot on Security Constrained Economic Dispatch (SCED) of Inter-State Generating Stations (ISGS) Pan India in respective Operational Coordination Committee (OCC) meetings

**संदर्भ:** CERC Order vide Petition No. 02/SM/2019(Suo-Motu) dtd. 31<sup>st</sup> January, 2019 in the matter of Pilot on Security Constrained Economic Dispatch (SCED) of Inter-State Generating Stations (ISGS) Pan India <http://cercind.gov.in/2019/orders/02-SM-2019.pdf>

महोदय,

With reference to the above-mentioned order by the Hon'ble Commission, it has been directed that stakeholder awareness programs may be conducted by Regional Power Committees (RPCs) and POSOCO for smooth implementation of SCED pan-India.

It is, hereby, requested that an Agenda Item regarding Pilot on Security Constrained Economic Dispatch (SCED) of Inter-State Generating Stations (ISGS) Pan India may be placed in the respective upcoming OCC meetings in the month of February, 2019. In this connection, an agenda note is also enclosed herewith for kind reference.

As and when the detailed procedure on implementation of SCED pan-India is finalized, the same would also be circulated in the forthcoming OCC meetings in the month of March, 2019.

सादर धन्यवाद,

संलग्न: As above

भवदीय,  
देबासिस डे  
04/02

मुख्य महाप्रबंधक

वितरण सूची:

- 1 सदस्य सचिव, उ. क्षे. वि. स., 18/ए, शहीद जीत सिंह सनसनवाल मार्ग, नई दिल्ली – 110016
- 2 सदस्य सचिव, प. क्षे. वि. स., एफ-3, एम आई डी सी क्षेत्र, अंधेरी(पूर्व), मुंबई – 400093
- 3 सदस्य सचिव, द. क्षे. वि. स., 29, रेस कोर्स क्रॉस रोड, बंगलूरु – 560009
- 4 सदस्य सचिव, पू. क्षे. वि. स., 14, गोल्फ क्लब रोड, कोलकाता – 700033
- 5 सदस्य सचिव, उ. पू. क्षे. वि. स., उ. पू. क्षे. वि. स. परिसर, दांग परमाव, लापलंग, शिलोंग – 793003
- 6 मुख्य अभियन्ता, राष्ट्रीय विद्युत समिति (एनपीसी), 18/ए, शहीद जीत सिंह सनसनवाल मार्ग, दिल्ली - 16

प्रतिलिपि :

1. प्रमुख, क्षे. भा. प्रे. के. (नई दिल्ली/मुंबई/ बंगलूरु/ कोलकाता/शिलोंग)

## **Agenda Note on Security Constrained Economic Dispatch (SCED) of Inter-State Generating Stations Pan-India**

- Hon'ble Commission, vide Order in Petition No. 02/SM/2019 (Suo-Motu) dtd. 31st January, 2019, directed for Pilot on SCED of Inter-State Generating Stations (ISGS) Pan India <http://cercind.gov.in/2019/orders/02-SM-2019.pdf>
- The Central Commission observed that there is an overarching objective to optimize the scheduling and dispatch of the generation resources and reduce the overall cost of production of electricity without major structural changes in the existing system/framework. SCED is a desired step in the Indian grid operation towards optimization methodologies. SCED is an involved procedure requiring developing software, creating interfaces and establishing various protocols, information dissemination and streamlining settlement system etc.
- Accordingly, the Commission directed for pilot of SCED for the Inter-State Generating Stations, on pilot basis, w.e.f. **01<sup>st</sup> April, 2019**.
- The SCED optimization model is for all the thermal Inter State Generating Stations (ISGS) that are regional entities and whose tariff is determined or adopted by the Commission for their full capacity without violating grid security and honouring the existing scheduling practices prescribed in the Indian Electricity Grid Code.
- A Detailed Procedure would be formulated that would contain the guidelines regarding operational aspects of SCED including scheduling, dispatch, accounting, settlement etc.
- The variable charges declared by the generators for the purpose of Reserve Regulation Ancillary Services (RRAS) would be considered in the optimization process.
- Schedules of the States/beneficiaries would not be changed and the beneficiaries would continue to pay the charges for the scheduled energy directly to the generator as per the existing practices.

- NLDC would open a separate bank account called "National Pool Account (SCED)". All payments to/from the generators on account of SCED schedules would flow to and from the said National Pool Account.
- For any increment in the injection schedule of a generator due to optimization, the generator would be paid from the National Pool Account (SCED) for the incremental generation at the rate of its variable charge.
- For any decrement in the schedule of a generator due to optimization, the generator would pay to the aforesaid National Pool Account (SCED) for the decremental generation at the rate of its variable charge after discounting compensation due to part load operation as certified by RPC as per the provisions of IEGC.
- The incremental changes in schedules on account of optimization would not be considered for incentive computation for the generating stations. The deviation in respect of such generators would be settled with reference to their revised schedule. The increment or decrement of generation under SCED would not form part of RRAS.
- RPCs would issue weekly SCED accounts along with the DSM, RRAS, FRAS and AGC accounts based on data provided to them by RLDCs.
- RPCs would issue the regional accounts including the SCED schedules and NLDC would issue a consolidated "National SCED Settlement Statement" comprising payment and receipts to/from all generators participating in the SCED.
- The savings obtained through SCED after settlement of all accounts of SCED would be recorded and maintained in the "National Pool Account (SCED)" by the NLDC.
- CTU is directed to ensure reliable communication between the respective generating stations and Load Despatch Centres.
- As and when the detailed procedure on implementation of SCED pan-India is finalized, the same would also be circulated in the forthcoming OCC meetings in the month of March, 2019.



पावर ग्रिड कारपोरेशन ऑफ इंडिया लिमिटेड

(भारत सरकार का उद्यम)

POWER GRID CORPORATION OF INDIA LIMITED

(A Government of India Enterprise)



प्लॉट नं.- 4, युनिट - 41, निलाद्री विहार, चन्द्रसेखरपुर - 751021

दुरभाष : 0674 - 2720754

Plot. No. 4, Unit - 41, Niladri Vihar, Chandrasekharpur,  
Bhubaneswar-751021, Tel: 0674-2720754

Ref: ODP/BB/AM/TLM

12517

Date: 24<sup>th</sup> Dec 2018

To

The Member Secretary

Eastern Regional Power Committee

14, Golf Club Road

Tollygunge, Kolkata-700033

Sub: Intimation regarding replacement of Porcelain insulator by Long Rod Polymer Insulator in transmission line of POWERGRID in Odisha

Dear Sir,


During Insulator de-capping, Conductor is grounded and if such incident occurs in crossing span of other transmission line/Railway line/Road/River, consequential effects are much higher. To minimize consequential effects in case of de-Capping the following lines will be provided with Composite Long Road Polymer Insulator for which no incident of de-capping has been reported. Few insulator strings will also be changed in these lines where insulator strings found defective during PID test and also de-capping of porcelain insulator incidents occurred in the past.

The list of the lines for which Long Rod polymer insulators has already been procured and contract has been awarded for replacement work is mentioned as below:

SI NO	Name of the line	Remark
1	400KV Rourkela-Talcher ckt-1&2	Material has already been procured and contract has been awarded for Installation of Long Rod Polymer insulators. Insulators will be replaced from Jan 2019 to May 2019 in stages after taking due shutdown approval of the lines in OCC.
2	400KV Bolangir-Angul	
3	400KV Jeypore-Bolangir	
4	400KV Jeypore-Indravati	
5	400KV Jeypore-Gazuwaka ckt-1 & 2	

This is for your kind information.

Regards.

  
(R.P. RATH)

Chief General Manager(AM)  
POWERGRID, Odisha Projects

CC: For kind information

1.ED, Odisha Projects

2.ED, ERLDC, POSOCO, Kolkata





एक कदम स्वच्छता की ओर

पावर ग्रिड कारपोरेशन ऑफ इंडिया लिमिटेड

(भारत सरकार का उद्यम)

POWER GRID CORPORATION OF INDIA LIMITED

(A Government of India Enterprise)



पावरग्रिड

पूर्वी क्षेत्र -I क्षेत्रीय मुख्यालय : बोर्ड कॉलोनी, शास्त्री नगर, पटना- 800023 ( बिहार ), दूरभाष : 0612-2283002 ( इपीएबीक्स )  
Eastern Region -I RHQ. : Board Colony, Shastri Nagar, Patna - 800023 (Bihar), Tel. : 0612-2283002 (EPABX)

CIN : L40101 DL 1989 GOI 038121

Ref: ER-1/PAT/CGM/AM/ 6333

Date: 12.02.2019

To,

The Member Secretary,  
Eastern Regional Power Committee,  
14, Golf Club Tollygunj, Kol - 700033.

Sub: Use of Polymer Insulator in Transmission Lines.

Sir,

You may kindly recall that the subject matter was discussed in the 153<sup>rd</sup> OCC meeting held at Kolkata. As desired, we are hereby giving the status of utilization/awards of Polymer Insulator in the Eastern Region-I :-

1) Porcelain Insulator already replaced with Polymer Type:

Sl no	Name of Transmission line	No. of Strings
1	400 kV Patna-Balia-III & IV	5916
2	220 kV Dalkhola Purnea	756
3	400 kV Kahalgaoon- Barh-I (M/C Portion)	1152
4	400 kV Barh-Patna-III & IV	5664

2) Replacement expected in future: Depending upon availability of shutdown from time to time.

3) Polymer Insulator presently lying in stocks.

Item description	Nos. of Strings
400 kV /120 kN	650
400 kV/160 kN	650

4) Polymer Insulator awarded and supply expected in next 6 months: Following Polymer Insulator are under procurement in ER-I.

Item description	Nos. of Strings
400 kV /120 kN	4000
400 kV/160 kN	4000

*खुशगुप्त*

Contd.....P/2



:: NP-2 ::

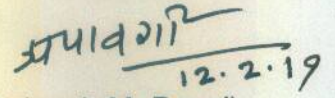
In addition to this, following nos. of strings are under procurement at our corporate level, which shall be utilized as spares in the transmission lines of Eastern Region-I

400 kV		765 kV		800 kV
120 kN	160 kN	120 kN	210 kN	420 kN
9140	20264	500	500	800

Any updates on the above shall be given to you from time to time.

Thanking you,

Yours faithfully,

  
12.2.19

(Avinash M. Pavgi)  
Chief General Manager (AM)

## ERPC:KOLKATA

**Proposed Maintenance Schedule of Thermal Generating Units of ER during 2019-20**  
**(as finalised in LGBR meeting dated 18.12.2018)**

System	Station	Unit	Capacity (MW)	Period		No. of Days	Reason
				From	To		
Jharkhand	TVNL, Tenughat	1	210	15.07.19	10.08.19	27	Annual Overhauling
		2	210	12.08.19	08.09.19	28	Annual Overhauling
DVC	MTPS	1	210	11.12.19	15.01.20	36	COH (Blr,Turb-RLA,Gen.)
		2	210	29.10.19	03.12.19	36	COH (Blr-RLA,Turb-RLA,Gen.)
		3	210	25.06.19	30.07.19	36	COH (Blr-RLA,Turb-RLA,Gen.)
		7	500	14.05.19	18.06.19	36	COH (Blr,Turb,Gen.)
		8	250	22.02.20	28.03.20	36	COH (Blr,Turb,Gen.)
	DSTPS	1	500	16.08.19	20.09.19	36	COH (Blr,Turb,Gen.)
	KTPS	1	500	16.01.20	19.02.20	35	COH (Blr,Turb,Gen.)
ODISHA	TTPS	1	60	01.02.20	15.02.20	15	AOH
		2	60	25.06.19	09.07.19	15	AOH
		3	60	20.07.19	03.08.19	15	AOH
		4	60	13.08.19	27.08.19	15	AOH
		5	110	09.09.19	28.09.19	20	AOH
		6	110	09.10.19	28.10.19	20	AOH
	IB TPS	1	210	11.07.19	31.07.19	21	AOH
		2	210	06.06.19	30.06.19	25	AOH
		3	660	01.12.19	25.12.19	25	AOH
		4	660				NO MAINTENANCE
WBPDC	Kolaghat TPS	1	210	07.06.18	30.06.19	91	R&M
		2	210	01.08.19	31.03.20	122	R&M
		4	210	01.02.20	15.03.20	44	Capital Overhauling
		5	210	24.11.19	30.11.19	7	Boiler License renewal
		6	210	01.11.19	28.11.19	28	Boiler Overhauling
	Bakreswar TPS	1	210	16.11.19	05.12.19	20	Boiler Overhauling
		2	210	21.08.19	27.08.19	7	Boiler License renewal
		3	210	01.11.19	07.11.19	7	Boiler License renewal
		4	210	01.07.19	07.07.19	7	Boiler License renewal
		4	210	01.01.20	07.02.20	38	COH
		5	210	24.06.19	30.06.19	7	Boiler License renewal
	Bandel TPS	1	60	16.06.19	14.08.19	60	Capital Overhauling
		2	60	25.12.19	31.12.19	15	Boiler License renewal
		5	210	12.11.19	18.11.19	7	Boiler License renewal
	Santalidih TPS	5	250	01.11.19	05.12.19	35	Capital Overhauling
		6	250	15.09.19	21.09.19	7	Boiler License renewal
	Sagarighi TPS	1	300	12.07.19	15.08.19	35	Capital Overhauling
		2	300	01.07.19	07.07.19	7	Boiler License renewal
		3	500	01.05.19	07.05.19	7	Boiler License renewal
		4	500	20.12.19	26.12.19	7	Boiler License renewal
CESC	BUDGE-BUDGE	1	250	10.11.19	14.11.19	4	Not Specified
		2	250	16.11.19	30.11.19	15	Not Specified
		3	250	02.12.19	19.12.19	18	Not Specified
	TITAGARH	1	60	02.01.20	05.01.20	4	Not Specified
		2	60	22.02.20	07.03.20	15	Not Specified
		3	60	12.12.19	26.12.19	15	Not Specified
		4	60	27.12.19	30.12.2019	4	Not Specified
	SOUTHERN	1	67.5	01.01.20	15.01.20	15	Not Specified
		2	67.5	17.01.20	20.01.20	4	Not Specified
							Not Specified
HEL	HALDIA	1	300	21.12.19	03.02.20	45	AOH
		2	300				NO MAINTENANCE
DPL	DPPS	7	300	17.08.19	31.08.19	15	Boiler License renewal & Maintenance of Boiler
		8	250	23.12.19	31.01.20	40	BTG OH
NTPC	FSTPP	1	200	01.09.19	25.09.19	25	AOH
		3	200	20.07.19	23.08.19	35	AOH
		4	500	11.03.20	05.04.20	26	AOH
		5	500	11.03.19	05.04.19	26	AOH
		6	500	01.11.19	05.12.19	35	AOH
	KhSTPP	1	210	27.08.19	30.09.19	35	AOH
		2	210	10.11.19	09.12.19	30	AOH
		4	210	25.07.19	23.08.19	30	AOH
		7	500	06.04.19	30.04.19	25	AOH
	Barh	4	660	01.11.19	04.01.20	65	Boiler Modification
		5	660	15.01.20	19.03.20	65	AOH
	TSTPS	1	500	01.12.19	04.01.20	35	AOH
		3	500	03.09.19	27.09.19	25	AOH
		4	500	21.06.19	15.07.19	25	AOH
							AOH
	KBUNL	3	195	15.11.19	20.12.19	35	LP rotor inspection,Boiler OH & Com.Modifi/NOX
	MTPS	4	195	01.03.19	04.04.19	35	LP rotor inspection,Boiler OH
BRBCL	Nabinagar TPP	1	250	26.07.19	19.08.19	25	LP turbine inspection,Rotor threading,Generator inspection.
		2	250	16.04.19	30.04.19	15	Boiler and TG PG Test,Boiler License Renewal
		3	250				No planned maintenance
							Turbine Overhauling
IPP	GMR	1	350	01.06.19	05.07.19	35	No planned maintenance
		2	350				No planned maintenance
		3	350				No planned maintenance
	JITPL	1	600	01.04.19	05.05.19		AOH
		2	600				No planned maintenance
	MPL	1	525	01.11.19	14.11.19	14	AOH
		2	525	06.04.19	03.05.19	28	AOH
	APNRL	1	270				No planned maintenance
		2	270				No planned maintenance

## Notes:

1) Considering the Secondary School Exam., on-set of summer load and expected Lok Sabha election, NTPC was requested to defer/prepone their S/D proposal of FSTPS U#4 & 5 to after festival month / to winter months as convenient to NTPC. But NTPC did not agree to that and they opined that due to water sharing agreement with Bangladesh in the month of March & April, water availability would be less and they would be compelled to take shut down the units during that period. In such a situation NTPC would be allowed to take opportunity shut down during that period. However, Constituents did not agree to that.

2) Also NTPC did not agree the shut down programme of Barh STPS unit#4&5(660 MW each) due to mobilization/ tie up with agency for major boiler modification. but the LGBR Committee decided the above S/D as per Grid load pattern/ requirement.





**East Central Railway**

Office of the  
Principal Chief Electrical Engineer  
Hajipur

No: ECR/ELD/300/49 Pt-IV Vol. 2

Dt.: 18.01.2019

**The Chairman,  
Bhartiya Rail Bijlee Company Ltd.,  
NTPC Bhawan, Core-7, SCOPE Complex,  
Lodhi Road, New Delhi-110 003.**

**Sub:** Declaration of Commercial Operations Date (COD) of Units 3 of the Nabinagar Thermal Power Plant (4X250 MW) by BRBCL without complying with the requirements of the Central Electricity Regulatory Commission's Statutory Regulations.

**Ref:**

1. Amended petition submitted by Bharatiya Rail Bijlee Company Limited before the Ld. Central Electricity Regulatory Commission, dated 19.02.18;
2. Bulk Power Purchase Agreement dated 16.12.2010 ("**BPPA**")
3. CEO/BRBCL's letter No: BRBCL/NTPP/2019/CEO/O&M/U#3/6536, Dated: 01.01.2019
4. CEO/BRBCL's letter No: BRBCL/NTPP/2019/CEO/O&M/U#3/6598, Dated: 14.01.2019

Dear Sir,

Vide letter under reference (4), it has been intimated that trial of Unit 3 will be conducted from 22<sup>nd</sup> January 2019 and subsequently COD will be declared. We bring to your attention the following key issues:

1. It is noted that Unit 1 of the Project was declared to have achieved COD on 15.01.2017, as per the Certificate dated 13.01.2017 issued by BRBCL. Similarly, Unit 2 of the Project was declared to have achieved COD on 10.09.2017, as per the Certificate dated 07.09.2017 issued by BRBCL.
2. In terms of the proviso (iii) to Regulation 6.3A(1) of the Central Electricity Regulatory Commission (Indian Electricity Grid Code) Regulations 2010, as amended by the Central Electricity Regulatory Commission (Indian Electricity Grid Code)(Fourth Amendment) Regulations, 2016 notified with effect from 29.04.2016, ("**Grid Code**"), it is amendatory pre-condition for all generating companies desirous of declaring COD of its units that the auxiliary systems



including Balance of Plant are commissioned and operated on full load on a sustained basis along with the main plant equipment. The COD cannot be declared by a generating company without commissioning the auxiliary systems and Balance of Plant equipment. Regulation 6.3A of the Grid Code in relevant part has been quoted below:

***“6.3A Commercial operation of Central generating stations and inter-State Generating Stations***

1.

....

*Provided that:*

....

*(iii) The generating company shall certify that:*

*(a) The generating station meets the relevant requirements and provisions of the technical standards of Central Electricity Authority, (Technical Standards for Construction of Electrical Plants and Electric Lines) Regulations, 2010 and Indian Electricity Grid Code, as applicable:*

*(b) The main plant equipment and auxiliary systems including Balance of Plant, such as Fuel Oil System, Coal Handling Plant, DM plant, pre-treatment plant, fire-fighting system, Ash Disposal system and any other site specific system have been commissioned and are capable of full load operation of the units of the generating station on sustained basis.*

*(c) Permanent electric supply system including emergency supplies and all necessary instrumentation, control and protection systems and auto loops for full load operation of unit have been put in service*


1. In view of the above, it is clear that the conditions provided under proviso (iii) to Regulation 6.3A (1) of the Grid Code necessarily require that the auxiliaries and Balance of Plant equipment have to be commissioned for “full load operation” on a “sustained basis”. However, a list of such auxiliary equipment reported by BRBCL in tariff petition no. 23/GT/2017 before CERC has been reproduced below for convenient perusal.

Sl. No.	Name of the Component/ Package	COD/Anticipated COD
1.	Steam Generator including ESP	30.11.2018
2.	Turbine Generator and Auxiliaries	30.11.2018
3.	Coal Handling Plant	30.11.2018
4.	DM Plant	30.11.2018
5.	Infrastructure Civil works and Ash Dyke	31.07.2018
6.	400/132 kV Switchyard package	30.11.2018

A bare perusal of the aforementioned list exhibits that COD of unit 1 & 2 has been declared without commissioning of these vital auxiliaries. The COD of unit 1 & 2 has already been challenged by ECR before CERC vide petition no. 333/MP/2018 dated 18/10/2018 on this account and absence of environmental clearance.

2. A Special mention is made of the non completion of well for drawing water for DM plant. Even though the DM plant is said to be completed, without well, it's capacity is limited and that too with mud.
3. Therefore, as required under CERC guideline, it is important that COD of Unit 3 is not declared unless all auxiliaries are commissioned.
4. It is also expected that all future actions in this regard will be taken as per the applicable Regulations and in consultation with East Central Railway, which is the principle beneficiary and a stake holder in BRBCL.

Regards,

  
(Surendra Kumar)  
Chief Electrical Distribution Engineer  
East Central Railway, Hajipur

Copy to:

1. Member Secretary, Eastern Regional Power Committee, Kolkata
2. ED/ERLDC/Kolkata

**Existing Substations (220 KV and above ) as on 31st December 2018**

### 1. Intra- State:

[illegible]

*For Example*

1	AP	APTRANSCO	X	765kV	765/400kV 400/220kV	1500 1000	480	126	-	660	205	-
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## 2. Inter-State

[illegible]

**Existing Transmission Lines (220 KV & above ) as on 31st December 2018**

### 1. Intra- State:

[illegible]

*For example:*

1	Assam	AEGCL	A	B	220	150	D/C	1	ACSR Zebra
---	-------	-------	---	---	-----	-----	-----	---	------------

## 2. Inter- State:

[illegible]

### Generation Projection (April 2019 - June 2019)

				Generation declared Commercial from 1st Jul'18 to 31st Dec'18					Generation declared/expected to be declared Commercial from 1st Jan'19 to 31st Mar'19								
Sl. No.	Entities	Region	Projections based on 3 Years Data	Bus Name	Unit No.	Installed Capacity	Gen. considered	Sub Total	Bus Name	Unit No.	Installed Capacity	Gen. considered	Sub Total	TOTAL	Comments From DICs /Others (if any)	Figure as per Comments/PoC Data	Projected Generation before normalization w.r.t projected All India Peak Demand
			(MW)			(MW)	(MW)	(MW)			(MW)	(MW)	(MW)	(MW)			(MW)
1	West Bengal	ER	5467											5467			5467
2	Odisha	ER	2982						OPGC Stage-II				550	3532	As per data given by GRIDCO	3657	3657
3	Bihar	ER	202						Brauni Extn	8	250	164	164	365			365
4	Jharkhand	ER	316											316			316
5	Sikkim	ER	0											0			0
6	Chujachan	ER	109											109	As per CERC order dated: 22.06.2017	99	99
7	DVC	ER	4876											4876	As per data given by DVC	4188	4188
8	Durgapur Steel	ER															
9	Koderma TPP	ER															
10	Bokaro TPS	ER															
11	Raghunathpur	ER															
12	MPL	ER	1012											1012			1012
13	Teesta V	ER	532											532	As per data given by NHPC	522	522
14	Kahalgaon	ER	2175											2175	As per data given by NTPC	2161	2161
15	Farakka	ER	1821											1821		1968	1968
16	Talcher	ER	970											970	Restricted to the generation(Installed Capacity-NAC)	942	942
17	Rangit	ER	69											69	As per data given by NHPC	64	64
18	Adhunik Power	ER	505											505			505
19	Barh	ER	1320											1320	As per data given by NTPC	1240	1240
20	Kamalanga TPP (GMR)	ER	638											638			638
21	JITPL	ER	832											832			832
22	Jorethang	ER	94											94			94

### Generation Projection (April 2019 - June 2019)

				Generation declared Commercial from 1st Jul'18 to 31st Dec'18					Generation declared/expected to be declared Commercial from 1st Jan'19 to 31st Mar'19								
Sl. No.	Entities	Region	Projections based on 3 Years Data	Bus Name	Unit No.	Installed Capacity	Gen. considered	Sub Total	Bus Name	Unit No.	Installed Capacity	Gen. considered	Sub Total	TOTAL	Comments From DICs /Others (if any)	Figure as per Comments/PoC Data	Projected Generation before normalization w.r.t projected All India Peak Demand
			(MW)			(MW)	(MW)	(MW)			(MW)	(MW)	(MW)	(MW)			(MW)
23	Bhutan	ER	1096											1096			1096
24	Teesta-III	ER	1070											1070	As per CERC order dated: 22.06.2017	782	782
25	Dikchu HEP	ER	106											106		96	96
26	Nabinagar BRBCL	ER	270	Nabinagar BRBCL	2	250	164	164						434			434
27	Tashiding HEP	ER	103											103	As per CERC order dated: 22.06.2017	97	97
28	Kanti Bijlee Stg-2 (KBUNL)	ER													As per last quarter	350	350
	TOTAL		26566					164					714	27443			26925

**Note:**

1. Projections are based on monthly maximum injection in the last 3 years from actual metered data.
2. Generation forecast has been done based on the following criteria
  - (i) If there is an increasing trend then last year average generation has been considered
  - (ii) Otherwise average of past three year average generation has been considered
3. In case of new generators where past data was not available following has been assumed
  - (i) 1.0 plf for hydro generators
  - (ii) 0.7 plf for thermal generators.
  - (iii) 0.3 plf for gas stations



DEMAND FORECAST USING PAST 3 YEARS DATA (April 2019 - June 2019)															
										1	2	3	4	Data given by DICs	Comments
	2016-17			2017-18			2018-19								
	Apr-16	May-16	Jun-16	Apr-17	May-17	Jun-17	Apr-18	May-18	Jun-18	2015-16 Average	2016-17Average	2017-18 Average	Projected Demand for (Apr 2019 - June 2019) before normalization		
Bihar	3,521	3,638	3,441	3,904	4,021	4,131	4,595	4,814	4,900	3,533	4,019	4,770	5,344		
DVC	2,562	2,478	2,686	2,651	2,684	2,518	2,760	2,701	2,700	2,575	2,618	2,720	2,783	2960	As per data given by DVC
Jharkhand	1,177	1,498	1,119	1,197	1,211	1,228	1,221	1,284	1,198	1,265	1,212	1,234	1,207		
Odisha	4,012	3,898	3,970	4,227	4,208	3,929	4,348	4,615	4,652	3,960	4,121	4,538	4,785	4540	As per data given by GRIDCO
West Bengal	7,602	7,641	7,542	7,793	7,495	7,768	8,899	8,385	8,603	7,595	7,685	8,629	9,004		
Sikkim	112	93	93	91	78	78	90	88	78	99	82	85	75		

#### Notes

1. Projections are based on the past 3 years' monthly Peak Demand Met data available on the website of CEA

2. The above projections are being done for financial year 2019-2020 (Q1) i.e Apr 2019- June 2019

3. Projections are being done based on the forecast function available in MS Office Excel

4. CEA Reports can be accessed from the following links:

[http://www.cea.nic.in/reports/monthly/powersupply/2018/psp\\_peak-04.pdf](http://www.cea.nic.in/reports/monthly/powersupply/2018/psp_peak-04.pdf)

[http://www.cea.nic.in/reports/monthly/powersupply/2018/psp\\_peak-05.pdf](http://www.cea.nic.in/reports/monthly/powersupply/2018/psp_peak-05.pdf)

[http://www.cea.nic.in/reports/monthly/powersupply/2018/psp\\_peak-06.pdf](http://www.cea.nic.in/reports/monthly/powersupply/2018/psp_peak-06.pdf)

[http://www.cea.nic.in/reports/monthly/powersupply/2017/psp\\_peak-04.pdf](http://www.cea.nic.in/reports/monthly/powersupply/2017/psp_peak-04.pdf)

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[http://www.cea.nic.in/reports/monthly/powersupply/2016/psp\\_peak-06.pdf](http://www.cea.nic.in/reports/monthly/powersupply/2016/psp_peak-06.pdf)

CESC CAPACITORS DETAILSList of 6/11kV Capacitor Bank

STATION	CAPACITY (MVAR)	STATION	CAPACITY (MVAR)
Alipur	3	Kamarhati	4
Amherst Street	4.5	Kankurgachi	4.8
Auckland	3	Kasba	4.482(11kV)
Akra	4	Kuthighat	4
Baranagar	4.84	Kidderpore	4.5
Bhatpara	4	Liloah	4
Bally	3	Majerjat	3
Barisha	4.5	Maheshtala	4
Barrackpore	6	New Ballygunge East	4
BBD Bag	4	Princep Street	4
Belur	3	Patuli	4(11kV)
Budge Budge	1.5	Rabindra Sadan	4
Budge Budge South	4.8	Rashbehari	4(11kV)
Canal	4.5	Ritchie	4.8
Central Avenue	4	Srerampur	4
Dhakuria	3	Science City	4.8(11kV)
Dum Dum	4.5	Shalimar	3(2x1.5)
Entally D/S	1+3	Sinthia	4.5
Foreshore	3	Southern (Voltas)	6
Fort Gloster	1.59	Southern (Voltas)	4.5
Gourhati	4	South City	4.8
Grey Street	3.6	Strand South	4.842
Howrah Central	3	Strand North	6
Howrah South	4.842	Talpukur	4
Howrah West	4.5	Taratala	4
Jessore West	3	Tollygunge	4.8 (11kV)
Jadavpur	4	Total	215.656
Jadavpur	4.8(11kV)		

List of 132kV Capacitor Bank

STATION	CAPACITY (MVAR)
Taratala	50
East Calcutta	50
Chakmir	50
Total	150

List of 33kV Capacitor Bank

STATION	CAPACITY (MVAR)	STATION	CAPACITY (MVAR)
BBD Bag	15	NCGS	2x10
KRS 33 KV ODY	30	SRS	2x15
KRS M1 SECTION	30	MAJ	2x15
KRS M3 SECTION	30	JAD M1 SECTION	2x15
MSS	20	JAD M2 SECTION	2x10
BRS	15	Total	315
PRS	30		
PLN	15		

Planned Installation of Capacitor Banks in 2010-11

STATION	CAPACITY (MVAR)	LEVEL
EMSS	50	132kV
Botanical Gardens S/s	30	33kV
6 and 11 KV Distribution Stations	15-20	6/11 kV

Connected Total MVAR = 680.656



**BSEB**

**Capacitor Bank installation at different Grid sub-station of BSEB**

Sl. No.	Name of Grid S / Stn.	No. of Capacitor Bank	Capacity
1.	Jakkanpur	I	2x 12000 KVAR
		II	2x 12000 KVAR
		III	2x 12000 KVAR
2.	Fatuah	I	2x 12000 KVAR
		II	2x 12000 KVAR
		III	2x 12000 KVAR
3.	Khagaul	I	2x 12000 KVAR
		II	2x 12000 KVAR
		III	2x 12000 KVAR

**WBSEDCL**

Present Capacitor			Future Plan of Capacitive Compensation		
Sl. No.	Name of EHV S/Stn.	Exist Comp (MVAR)	Sl. No.	Name of EHV S/Stn.	Exist Comp (MVAR)
1	Adisaptagram	10.0	1	Adisaptagram	10.0
2	Bankura	10.0	2	Arambag	10.0
3	Barasat	10.0	3	Asokenagar	10.0
4	Joka	10.0	4	Balurghat	5.0
5	Berhampur	20.0	5	KLC	10.0
6	Bishnupur	10.0	6	Barasat	20.0
7	Bolpur	20.0	7	Basirhat	10.0
8	Ch. Kona Road	10.0	8	Joka	10.0
9	Debogram	20.0	9	Berhampur	10.0
10	Dharampur	10.0	10	Bongaon	10.0
11	Egra	10.0	11	Chanditala	10.0
12	Falta	20.0	12	Coochbehar	5.0
13	Gangarampur	14.4	13	Dalkhola	10.0
14	Gokarna	10.0	14	Dharampur	10.0
15	Kalyani	10.0	15	Domjur	10.0
16	Katwa	20.0	16	Haldia	5.0
17	Kolaghat	10.0	17	Jangipara	5.0
18	Krishnagar	28.8	18	Khanyan	5.0
19	Liluah	20.0	19	Lakhikantapur	5.0
20	Midnapur	10.0	20	Liluah	10.0
21	Moinaguri	10.0	21	Malda	10.0
22	NBU	10.0	22	Midnapur	5.0
23	Raghunathgunj	10.0	23	New Haldia	5.0
24	Rishra	30.0	24	Pingla	10.0
25	Sainthia	20.0	25	Purulia	10.0
26	Salt Lake	45.0	26	Raigunj	10.0
27	Samsi	10.0	27	Rafna	10.0
28	Satgachia	20.0	28	Rampurhat	10.0
29	Titagarh	25.0	29	Ranaghat	10.0
	Total	463.2	30	Siliguri	10.0
			31	Sonarpur	10.0
			32	Tamluk	10.0
			33	Tarakeswar	5.0
			34	Titagarh	10.0
			35	Ukhra	10.0
			36	Uluberia	10.0
				Total	325

**List of Capacitor Banks installed at different Grid S/Ss and proposed installation programme**

Name of Sub Station	S/S Capacity (MVA)	Rating of capacitor units (MVAR)	No of units	Total installed Capacity (MVAR)
Aska	2x40	5	1	5
Balugaon	2x20	5	1	5
Berhampur	1x12.5+1x40+1x20	10	1	10
Bolangir	2x40+1x12.5	5	2	10
Bhubaneswar	3x40	5	1	5
Cuttack	2x40	5	2	10
Kendrapara	1x40+1x20+1x12.5	5	2	10
Khurda	3x40	5	2	10
Puri	2x31.5	5	1	5
Balasore	2x40+1x12.5	10	1	10
Baripada	2x31.5	5	2	10
Bhadrak	2x40	5	2	10
Jajpur Road	1x40+2x20	5	2	10
Total installed capacity				<b>110</b>
<b>Proposed for installation</b>				
Sonepur	2x12.5			10
Pattamundei	1x20+1x12.5			15
Kendrapara	1x40+1x20+1x12.5			20
Kharior	2x20			10
Jajpur Tpnw	1x40+2x20			20
Rairangapur	1x20+1x12.5			10
Puri	2x31.5			10
Ransingpur	2x40			10
Chandikhol	2x20			10
Choudwar	1x20+1x40+1x10			10
Cuttack	2x40			5
Nuapatna	1x12.5+1x20			15
Sunabeda	2x12.5+1x12.5			10
Jaleswar	2x20+1x12.5			10
Bhadrak	2x40			15
Paradeep	2x20			15
Balugaon	2x20			10
Berhampur	1x12.5+1x40+1x20			10
Khurda	3x40			10
Jagatsingpur	2x20			15
Balasore	2x40+1x12.5			15
Junagarh	2x12.5			10
Phulabani				10
Total capacity (Proposed)				<b>275</b>

## TRANSMISSION ELEMENTS OUTAGE PROPOSED IN 153rd 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
1	400 KV Farakka-Gokarna-I	08/02/19	09:00	09/02/19	18:00	ODB	POWERGRID,ER-II	For Event Logger commissioning (Integration with NTPC system) under ERSS-V.	WB
2	220KV D/C BIRPARA -Chukha FEEDER I	13/02/19	08:00	14/03/19	17:30	ODB	POWERGRID,ER-II	Placement of New A/H at all Tension Tower	NLDC
3	220 kv Sasaram - Sahupuri	20/02/19	09:30	23/03/19	17:30	OCB	POWERGRID,ER-I	TO FACILITATE THE SHUT DOWN OF ICT - I AT SASARAM	NLDC
4	220 kV Bus - I at Patna SS	22/02/19	10:00	23/02/19	16:00	ODB	BihR Grid	Bus bar stability testing for 220 kV Khagaul - Patna Line	BSEB
5	400 kV Biarsarif - Muzaffarpur - II	24/02/19	10:00	28/02/19	16:00	ODB	BihR Grid	Tower erection work of 132 kV Biarsarif Sekhpura line	
6	220 kV Bus - II at Patna SS	24/02/19	10:00	28/02/19	16:00	ODB	BihR Grid	Bus bar stability testing for 220 kV Khagaul - Patna Line	BSEB
7	220 kV Transfer Bus at Patna SS	24/02/19	10:00	28/02/19	16:00	ODB	BihR Grid	Bus bar stability testing for 220 kV Khagaul - Patna Line	BSEB
8	3X166.67MVA coupling transformer (STATCOM)	28/02/19	10:00	28/02/19	12:00	ODB	ER-II/Odisha /Jeypore	To carry out AMP of UNIT #I of 3X166.67 Coupling Transformer by contractor as per contractual agreement for starting of 5 years warranty period. ( Unit change over from I, II, III, IV, V, VI, VII, VIII, IX, X, XI, XII, XIII, XIV, XV, XVI, XVII, XVIII, XIX, XX, XXI, XXII, XXIII, XXIV, XXV, XXVI, XXVII, XXVIII, XXIX, XXX, XXXI, XXXII, XXXIII, XXXIV, XXXV, XXXVI, XXXVII, XXXVIII, XXXIX, XL, XLI, XLII, XLIII, XLIV, XLV, XLVI, XLVII, XLVIII, XLIX, L, LI, LII, LIII, LIV, LV, LVI, LVII, LVIII, LVIX, LX, LXI, LXII, LXIII, LXIV, LXV, LXVI, LXVII, LXVIII, LXIX, LXX, LXXI, LXXII, LXXIII, LXXIV, LXXV, LXXVI, LXXVII, LXXVIII, LXXIX, LXXX, LXXXI, LXXXII, LXXXIII, LXXXIV, LXXXV, LXXXVI, LXXXVII, LXXXVIII, LXXXIX, XL, XLI, XLII, XLIII, XLIV, XLV, XLVI, XLVII, XLVIII, XLIX, L, LI, LII, LIII, LIV, LV, LVI, LVII, LVIII, LVIX, LX, LXI, LXII, LXIII, LXIV, LXV, LXVI, LXVII, LXVIII, LXIX, LXX, LXXI, LXXII, LXXIII, LXXIV, LXXV, LXXVI, LXXVII, LXXVIII, LXXIX, LXXX, LXXXI, LXXXII, LXXXIII, LXXXIV, LXXXV, LXXXVI, LXXXVII, LXXXVIII, LXXXIX, XL, XLI, XLII, XLIII, XLIV, XLV, XLVI, XLVII, XLVIII, XLIX, L, LI, LII, LIII, LIV, LV, LVI, LVII, LVIII, LVIX, LX, LXI, LXII, LXIII, LXIV, LXV, LXVI, LXVII, LXVIII, LXIX, LXX, LXXI, LXXII, LXXIII, LXXIV, LXXV, LXXVI, LXXVII, LXXVIII, LXXIX, LXXX, LXXXI, LXXXII, LXXXIII, LXXXIV, LXXXV, LXXXVI, LXXXVII, LXXXVIII, LXXXIX, XL, XLI, XLII, XLIII, XLIV, XLV, XLVI, XLVII, XLVIII, XLIX, L, LI, LII, LIII, LIV, LV, LVI, LVII, LVIII, LVIX, LX, LXI, LXII, LXIII, LXIV, LXV, LXVI, LXVII, LXVIII, LXIX, LXX, LXXI, LXXII, LXXIII, LXXIV, LXXV, LXXVI, LXXVII, LXXVIII, LXXIX, LXXX, LXXXI, LXXXII, LXXXIII, LXXXIV, LXXXV, LXXXVI, LXXXVII, LXXXVIII, LXXXIX, XL, XLI, XLII, XLIII, XLIV, XLV, XLVI, XLVII, XLVIII, XLIX, L, LI, LII, LIII, LIV, LV, LVI, LVII, LVIII, LVIX, LX, LXI, LXII, LXIII, LXIV, LXV, LXVI, LXVII, LXVIII, LXIX, LXX, LXXI, LXXII, LXXIII, LXXIV, LXXV, LXXVI, LXXVII, LXXVIII, LXXIX, LXXX, LXXXI, LXXXII, LXXXIII, LXXXIV, LXXXV, LXXXVI, LXXXVII, LXXXVIII, LXXXIX, XL, XLI, XLII, XLIII, XLIV, XLV, XLVI, XLVII, XLVIII, XLIX, L, LI, LII, LIII, LIV, LV, LVI, LVII, LVIII, LVIX, LX, LXI, LXII, LXIII, LXIV, LXV, LXVI, LXVII, LXVIII, LXIX, LXX, LXXI, LXXII, LXXIII, LXXIV, LXXV, LXXVI, LXXVII, LXXVIII, LXXIX, LXXX, LXXXI, LXXXII, LXXXIII, LXXXIV, LXXXV, LXXXVI, LXXXVII, LXXXVIII, LXXXIX, XL, XLI, XLII, XLIII, XLIV, XLV, XLVI, XLVII, XLVIII, XLIX, L, LI, LII, LIII, LIV, LV, LVI, LVII, LVIII, LVIX, LX, LXI, LXII, LXIII, LXIV, LXV, LXVI, LXVII, LXVIII, LXIX, LXX, LXXI, LXXII, LXXIII, LXXIV, LXXV, LXXVI, LXXVII, LXXVIII, LXXIX, LXXX, LXXXI, LXXXII, LXXXIII, LXXXIV, LXXXV, LXXXVI, LXXXVII, LXXXVIII, LXXXIX, XL, XLI, XLII, XLIII, XLIV, XLV, XLVI, XLVII, XLVIII, XLIX, L, LI, LII, LIII, LIV, LV, LVI, LVII, LVIII, LVIX, LX, LXI, LXII, LXIII, LXIV, LXV, LXVI, LXVII, LXVIII, LXIX, LXX, LXXI, LXXII, LXXIII, LXXIV, LXXV, LXXVI, LXXVII, LXXVIII, LXXIX, LXXX, LXXXI, LXXXII, LXXXIII, LXXXIV, LXXXV, LXXXVI, LXXXVII, LXXXVIII, LXXXIX, XL, XLI, XLII, XLIII, XLIV, XLV, XLVI, XLVII, XLVIII, XLIX, L, LI, LII, LIII, LIV, LV, LVI, LVII, LVIII, LVIX, LX, LXI, LXII, LXIII, LXIV, LXV, LXVI, LXVII, LXVIII, LXIX, LXX, LXXI, LXXII, LXXIII, LXXIV, LXXV, LXXVI, LXXVII, LXXVIII, LXXIX, LXXX, LXXXI, LXXXII, LXXXIII, LXXXIV, LXXXV, LXXXVI, LXXXVII, LXXXVIII, LXXXIX, XL, XLI, XLII, XLIII, XLIV, XLV, XLVI, XLVII, XLVIII, XLIX, L, LI, LII, LIII, LIV, LV, LVI, LVII, LVIII, LVIX, LX, LXI, LXII, LXIII, LXIV, LXV, LXVI, LXVII, LXVIII, LXIX, LXX, LXXI, LXXII, LXXIII, LXXIV, LXXV, LXXVI, LXXVII, LXXVIII, LXXIX, LXXX, LXXXI, LXXXII, LXXXIII, LXXXIV, LXXXV, LXXXVI, LXXXVII, LXXXVIII, LXXXIX, XL, XLI, XLII, XLIII, XLIV, XLV, XLVI, XLVII, XLVIII, XLIX, L, LI, LII, LIII, LIV, LV, LVI, LVII, LVIII, LVIX, LX, LXI, LXII, LXIII, LXIV, LXV, LXVI, LXVII, LXVIII, LXIX, LXX, LXXI, LXXII, LXXIII, LXXIV, LXXV, LXXVI, LXXVII, LXXVIII, LXXIX, LXXX, LXXXI, LXXXII, LXXXIII, LXXXIV, LXXXV, LXXXVI, LXXXVII, LXXXVIII, LXXXIX, XL, XLI, XLII, XLIII, XLIV, XLV, XLVI, XLVII, XLVIII, XLIX, L, LI, LII, LIII, LIV, LV, LVI, LVII, LVIII, LVIX, LX, LXI, LXII, LXIII, LXIV, LXV, LXVI, LXVII, LXVIII, LXIX, LXX, LXXI, LXXII, LXXIII, LXXIV, LXXV, LXXVI, LXXVII, LXXVIII, LXXIX, LXXX, LXXXI, LXXXII, LXXXIII, LXXXIV, LXXXV, LXXXVI, LXXXVII, LXXXVIII, LXXXIX, XL, XLI, XLII, XLIII, XLIV, XLV, XLVI, XLVII, XLVIII, XLIX, L, LI, LII, LIII, LIV, LV, LVI, LVII, LVIII, LVIX, LX, LXI, LXII, LXIII, LXIV, LXV, LXVI, LXVII, LXVIII, LXIX, LXX, LXXI, LXXII, LXXIII, LXXIV, LXXV, LXXVI, LXXVII, LXXVIII, LXXIX, LXXX, LXXXI, LXXXII, LXXXIII, LXXXIV, LXXXV, LXXXVI, LXXXVII, LXXXVIII, LXXXIX, XL, XLI, XLII, XLIII, XLIV, XLV, XLVI, XLVII, XLVIII, XLIX, L, LI, LII, LIII, LIV, LV, LVI, LVII, LVIII, LVIX, LX, LXI, LXII, LXIII, LXIV, LXV, LXVI, LXVII, LXVIII, LXIX, LXX, LXXI, LXXII, LXXIII, LXXIV, LXXV, LXXVI, LXXVII, LXXVIII, LXXIX, LXXX, LXXXI, LXXXII, LXXXIII, LXXXIV, LXXXV, LXXXVI, LXXXVII, LXXXVIII, LXXXIX, XL, XLI, XLII, XLIII, XLIV, XLV, XLVI, XLVII, XLVIII, XLIX, L, LI, LII, LIII, LIV, LV, LVI, LVII, LVIII, LVIX, LX, LXI, LXII, LXIII, LXIV, LXV, LXVI, LXVII, LXVIII, LXIX, LXX, LXXI, LXXII, LXXIII, LXXIV, LXXV, LXXVI, LXXVII, LXXVIII, LXXIX, LXXX, LXXXI, LXXXII, LXXXIII, LXXXIV, LXXXV, LXXXVI, LXXXVII, LXXXVIII, LXXXIX, XL, XLI, XLII, XLIII, XLIV, XLV, XLVI, XLVII, XLVIII, XLIX, L, LI, LII, LIII, LIV, LV, LVI, LVII, LVIII, LVIX, LX, LXI, LXII, LXIII, LXIV, LXV, LXVI, LXVII, LXVIII, LXIX, LXX, LXXI, LXXII, LXXIII, LXXIV, LXXV, LXXVI, LXXVII, LXXVIII, LXXIX, LXXX, LXXXI, LXXXII, LXXXIII, LXXXIV, LXXXV, LXXXVI, LXXXVII, LXXXVIII, LXXXIX, XL, XLI, XLII, XLIII, XLIV, XLV, XLVI, XLVII, XLVIII, XLIX, L, LI, LII, LIII, LIV, LV, LVI, LVII, LVIII, LVIX, LX, LXI, LXII, LXIII, LXIV, LXV, LXVI, LXVII, LXVIII, LXIX, LXX, LXXI, LXXII, LXXIII, LXXIV, LXXV, LXXVI, LXXVII, LXXVIII, LXXIX, LXXX, LXXXI, LXXXII, LXXXIII, LXXXIV, LXXXV, LXXXVI, LXXXVII, LXXXVIII, LXXXIX, XL, XLI, XLII, XLIII, XLIV, XLV, XLVI, XLVII, XLVIII, XLIX, L, LI, LII, LIII, LIV, LV, LVI, LVII, LVIII, LVIX, LX, LXI, LXII, LXIII, LXIV, LXV, LXVI, LXVII, LXVIII, LXIX, LXX, LXXI, LXXII, LXXIII, LXXIV, LXXV, LXXVI, LXXVII, LXXVIII, LXXIX, LXXX, LXXXI, LXXXII, LXXXIII, LXXXIV, LXXXV, 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25	132 KV LKR-Jamui Line-1	01/03/19	10:00	01/03/19	14:00	ODB	POWERGRID ER-I	AMP works of 110 & 110L Bay Equipments.	BSEB
26	413 BAY (MAIN BAY OF KHARAGPUR-I line) AT CHAIBASA	01/03/19	9:30	01/03/19	17:00	ODB	POWERGRID ER-I	AMP work of 413 Bay	
27	765kV Gaya-Varanasi-I	01/03/19	8:00	15/03/19	18:00	OCB	POWERGRID ER-I	for replacement of tower no.448	NLDC
28	400KV PRN-1_GKP-1 TIE BAY AT MUZAFFARPUR	01/03/19	9:30	01/03/19	17:30	ODB	POWERGRID ER-I	AMP WORK	
29	A/R OF 400 KV BIHARSARIF - BANKA - II	01/03/19	8:00	31/03/19	18:00	ODB	POWERGRID ER-I	A/R FOR OPGW INSTALLATION WORK	
30	A/R OF 400 KV BIHARSARIF - KODERMA - II	01/03/19	8:00	31/03/19	18:00	ODB	POWERGRID ER-I	A/R FOR OPGW INSTALLATION WORK	DVC
31	Main bay of Balia 1 (406 Bay) AT Biহারsarif	01/03/19	10:00	01/03/19	18:00	ODB	POWERGRID ER-I	Bay AMP	
32	400 KV Biহারsarif - Varanasi - I	01/03/19	8:00	29/03/19	18:00	OCB	POWERGRID ER-I	Realingmnet works of 400KV Biharsharif - Varanasi & 400KV Biharsharif - Sasaram Line due to Construction of New Railway Line by ECR from	NLDC
33	400 KV Biহারsarif - Varanasi - II	01/03/19	8:00	29/03/19	18:00	OCB	POWERGRID ER-I	Realingmnet works of 400KV Biharsharif - Varanasi & 400KV Biharsharif - Sasaram Line due to Construction of New Railway Line by ECR from	NLDC
34	400KV Biহারsarif - Sasaram -I	01/03/19	8:00	25/03/19	18:00	OCB	POWERGRID ER-I	Realingmnet works of 400KV Biharsharif - Varanasi & 400KV Biharsharif - Sasaram Line due to Construction of New Railway Line by ECR from	NLDC
35	400KV Biহারsarif - Sasaram -II	01/03/19	8:00	25/03/19	18:00	OCB	POWERGRID ER-I	Realingmnet works of 400KV Biharsharif - Varanasi & 400KV Biharsharif - Sasaram Line due to Construction of New Railway Line by ECR from	NLDC
36	400KV Bus -I At Patna	01/03/19	9:30	03/03/19	17:30	ODB	POWERGRID ER-1	Stringing of Sky bus under SS03 package of Patna Nabinagar Ckt 1	BSEB
37	207 bay 220KV of ICT 3 At Patna	01/03/19	9:30	01/03/19	17:30	ODB	POWERGRID ER-1	AMP	BSEB
38	80 MVAR Bus reactor along with its bay At Patna	01/03/19	9:30	15/04/19	17:30	OCB	POWERGRID ER-1	Under SS03 package for recommissioning of 80 MVAR Bus reactor as switchable line reactor of Patna Nabinagar Line 1 and equipment uprating	
39	500MVA ICT 1 At Patna	01/03/19	9:30	20/03/19	17:30	OCB	POWERGRID ER-1	Construction of Firewall of ICT 2 and equipment uprating & jumper connection	BSEB
40	408 bay Tie bay of ICT 2 and Future	01/03/19	9:30	15/03/19	17:30	OCB	POWERGRID ER-1	AMP & CB Overhauling	
41	400 KV Patna Barh line 1 At Patna	01/03/19	9:30	15/03/19	17:30	OCB	POWERGRID ER-1	For uprating of bay equipment under Nabinagar -2 Project.	
42	406 ICT#2 Main Bay at Subhasgram SS	02/03/19	09:00	02/03/19	17:00	ODB	POWERGRID,ER-II	AMP work	
43	400 KV Farakka- Kahalgaon-I line	02/03/19	09:00	02/03/19	18:00	ODB	POWERGRID,ER-II	For bay stability between bay-22 (Main Bay of 400 KV Farakka- Kahalgaon-I) & bay-23	
44	132 KV siliguri Melli	02/03/19	09:00	02/03/19	17:00	ODB	POWERGRID,ER-II	For 3-Ph A/R implementation.	SIKKIM
45	132kV BUS-1 at Rangpo	02/03/19	09:00	12/03/19	17:00	OCB	POWERGRID,ER-II	For Bus extension to new Chuzachen bays (Construction works)	SIKKIM
46	220KV SLG-KISHENGUNJ # I & II	02/03/19	08:00	03/03/19	17:00	OCB	POWERGRID,ER-II	For shorting at Anch-I tower (M/C)to by-pass the LILO portion of 220KV SLG-KNE-DLK -I&II line terminating Kishanganji S/S . This arrangement	
47	220KV DLK-KISHENGUNJ # I & II	02/03/19	08:00	03/03/19	17:00	OCB	POWERGRID,ER-II	For shorting at Anch-I tower (M/C)to by-pass the LILO portion of 220KV SLG-KNE-DLK -I&II line terminating Kishanganji S/S . This arrangement	
48	50MVAR BALANGIR-JEYPORE LINE REACTOR	02/03/19	09:00	02/03/19	18:00	ODB	ER-II/Odisha/Balangir	AMP for 50MVAR Jeypore L/R and 403R 52CB	
49	220/132 kV 160MVA ICT#1	02/03/19	09:00	02/03/19	17:30	ODB	ER-II/Odisha/BARIPADA S/S	AMP works	GRIDCO
50	3X166.67MVA coupling transformer (STATCOM)	02/03/19	10:00	02/03/19	12:00	ODB	ER-II/Odisha /Jeypore	To carry out AMP of UNIT #III of 3X166.67 Coupling Transformer by contractor as per contractual agreement for starting of 5 years warranty period. ( Unit change over from I, II, III, IV, V, VI, VII, VIII, IX, X, XI, XII, XIII, XIV, XV, XVI, XVII, XVIII, XIX, XX, XXI, XXII, XXIII, XXIV, XXV, XXVI, XXVII, XXVIII, XXIX, XXX, XXXI, XXXII, XXXIII, XXXIV, XXXV, XXXVI, XXXVII, XXXVIII, XXXIX, XL, XLI, XLII, XLIII, XLIV, XLV, XLVI, XLVII, XLVIII, XLIX, L, LI, LII, LIII, LIV, LV, LVI, LVII, LVIII, LVIX, LX, LXI, LXII, LXIII, LXIV, LXV, LXVI, LXVII, LXVIII, LXIX, LXX, LXXI, LXXII, LXXIII, LXXIV, LXXV, LXXVI, LXXVII, LXXVIII, LXXIX, LXXX, LXXXI, LXXXII, LXXXIII, LXXXIV, LXXXV, LXXXVI, LXXXVII, LXXXVIII, LXXXIX, XL, XLI, XLII, XLIII, XLIV, XLV, XLVI, XLVII, XLVIII, XLIX, L, LI, LII, LIII, LIV, LV, LVI, LVII, LVIII, LVIX, LX, LXI, LXII, LXIII, LXIV, LXV, LXVI, LXVII, LXVIII, LXIX, LXX, LXXI, LXXII, LXXIII, LXXIV, LXXV, LXXVI, LXXVII, LXXVIII, LXXIX, LXXX, LXXXI, LXXXII, LXXXIII, LXXXIV, LXXXV, LXXXVI, LXXXVII, LXXXVIII, LXXXIX, XL, XLI, XLII, XLIII, XLIV, XLV, XLVI, XLVII, XLVIII, XLIX, L, LI, LII, LIII, LIV, LV, LVI, LVII, LVIII, LVIX, LX, 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52	765kV Angul-Srikakulam line-II	02/03/19	07:00	02/03/19	18:00	ODB	ER-II/Nayagarh TL	AMP	NLDC
53	765 KV BUS-II at Gaya S/S	02/03/19	9:00	02/03/19	18:00	ODB	POWERGRID ER-I	For AMP Work	NLDC
54	400/220kV 500MVA ICT-I at Pusauli	02/03/19	9:00	05/03/19	18:00	OCB	POWERGRID ER-I	Shifting of transformer for Transformer Retrofitting Work	BSEB
55	400KV ICT-3 MAIN BAY AT MUZAFFARPUR	02/03/19	9:30	02/03/19	17:30	ODB	POWERGRID ER-I	AMP WORK	BSEB
56	208 bay main bay sipara 1 At Patna	02/03/19	9:30	03/03/19	17:30	OCB	POWERGRID ER-1	AMP & CB Overhauling	BSEB
57	400 KV 406 Main Bay of 315 MVA ICT-II	03/03/19	09:00	03/03/19	17:30	ODB	ER-II/Odisha/BARIPADA S/S	AMP works	
58	A/R OF 400kV Sundargarh-Raigarh Ckt#1	03/03/19	08:00	14/03/19	18:00	ODB	ER-II/ODISHA/SUNDERGARH	For PID Testing of Porcelain Insulator. Only Auto reclose relay will be off. Line will be in service	NLDC
59	Main Bay-407 of 400KV Raigarh Line-I	03/03/19	09:00	03/03/19	18:00	ODB	ER-II/Odisha/Sundergarh	AMP Work	
60	400kV Maithon-Gaya-1 line	03/03/19	9:00	28/03/19	18:00	OCB	POWERGRID ER-I	Destrining, erection & re-stringing of multi ckt. Tower Loc. 80 (Brassing member and legs of tower no 80 is found bend during the routine patrolling)	NLDC
61	400kV Maithon-Gaya-2 line	03/03/19	9:00	28/03/19	18:00	OCB	POWERGRID ER-I	Destrining, erection & re-stringing of multi ckt. Tower Loc. 80 (Brassing member and legs of tower no 80 is found bend during the routine patrolling)	NLDC
62	400kV Koderma-Gaya-1 line	03/03/19	9:00	28/03/19	18:00	OCB	POWERGRID ER-I	Destrining, erection & re-stringing of multi ckt. Tower Loc. 80 (Brassing member and legs of tower no 80 is found bend during the routine patrolling)	NLDC
63	400kV Koderma-Gaya-2 line	03/03/19	9:00	28/03/19	18:00	OCB	POWERGRID ER-I	Destrining, erection & re-stringing of multi ckt. Tower Loc. 80 (Brassing member and legs of tower no 80 is found bend during the routine patrolling)	NLDC
64	400 KV Farakka- Berhampur-II	04/03/19	09:00	05/03/19	18:00	ODB	POWERGRID.ER-II	For balance protection scheme checking of bay-23 ( Tie bay of 400 KV Fkk- Bhp-II and 400 KV Fkk- Khg-II) with respect with bay-24 & to carry out punch point	
65	132 KV siliguri kurseong	04/03/19	09:00	04/03/19	17:00	ODB	POWERGRID.ER-II	Line defect rectification & Line AMP works.	WB
66	Rangpo - Teesta -V Line 2	04/03/19	08:00	08/03/19	17:00	OCB	POWERGRID.ER-II	For rectification of SF6 gas leakage repair work	
67	220KV 203 Bus Coupler Bay	04/03/19	09:00	04/03/19	17:30	ODB	ER-II/Odisha/BARIPADA S/S	AMP works	
68	100MVAR VSC # I (STATCOM)	04/03/19	09:00	04/03/19	18:00	ODB	ER-II/Odisha /Jeypore	To carry out AMP of 100MVAR VSC # I (STATCOM) by contractor as per contractual agreement for starting of 5 years warranty period.	
69	TIE BAY OF 400KV SIPAT-I & FUT. BAY-I (420 BAY) AT RANCHI	04/03/19	10:00	04/03/19	17:00	ODB	POWERGRID ER-I	AMP	
70	TIE BAY OF 400KV SIPAT-I & FUT. BAY-I (420 BAY) AT RANCHI	04/03/19	10:00	04/03/19	17:00	ODB	POWERGRID ER-I	AMP	
71	63 MVA Muzaffarpur Line-I Reactor (Switchable Line Reactor) at New Purnea	04/03/19	9:30	04/03/19	18:00	ODB	POWERGRID ER-I	For AMP Work	
72	400kV Pusauli-Biharsharif-II	04/03/19	10:00	04/03/19	18:00	ODB	POWERGRID ER-I	For Relay Retrofitting Job	
73	400KV ICT-2-TIE BAY AT MUZAFFARPUR	04/03/19	9:30	04/03/19	17:30	ODB	POWERGRID ER-I	AMP WORK	BSEB
74	400 KV D/C Patna-Balia I & II line.	04/03/19	9:00	05/03/19	18:00	ODB	POWERGRID ER-I	to facilitate the stringing work of 400 kv nabinagar II patna line	NLDC
75	400 KV BIHARSHARIF - PURNEA CKT 2	04/03/19	9:00	04/03/19	18:00	ODB	POWERGRID ER-I	AMP of Line Bay, Line reactor & LR bay	
76	400KV Bus 2 At Patna	04/03/19	9:30	06/03/19	17:30	ODB	POWERGRID ER-1	Stringing of Sky bus under SS03 package of Patna Nabinagar Ckt 1	BSEB

77	210 bay main bay sipara 2 At Patna	04/03/19		06/03/19					BSEB
			9:30		17:30	OCB	POWERGRID ER-1	AMP & CB Overhauling	
78	400kV SASARAM-Biharsharif-II	04/03/19	10:00	04/03/19	18:00	ODB	POWERGRID ER-I	For Relay Retrofitting Job	
79	400 KV D/C Patna-Balia I & II line.	04/03/19	9:00	05/03/19	18:00	ODB	POWERGRID ER-I	to facilitate the stringing work of 400 kv nabinagar II patna line	NLDC
80	409 ICT#3 Main Bay at Subhasgram SS	05/03/19	09:00	05/03/19	17:00	ODB	POWERGRID,ER-II	AMP work	
81	50 MVA ICT 132/66 KV at Gangtok	05/03/19	09:00	05/03/19	18:00	ODB	POWERGRID,ER-II	For AnnualAMP Works	SIKKIM
82	31.5 MVAR Bus Reactor-I at New Melli	05/03/19	10:00	05/03/19	17:00	ODB	POWERGRID,ER-II	AMP (tand Delta & PD testing)	
83	400 KV Maithon-KHG-2 Line	05/03/19	09:00	06/03/19	18:00	ODB	POWERGRID,ER-II	Replacement of Main Bay and Line Bay CT	
84	125MVAR BUS REACTOR-2	05/03/19	09:00	07/03/19	18:00	OCB	ER-II/Odisha/Balangir	Attending Aircell problem, Fine Tuning of CSD, CT Oil sampling, Rectification of SF6 Gas leakage in R-PH CB of 406 Bay and Validation of SCADA point.	
85	400 kV 407 main Bay of Baripada-Duburi line	05/03/19	09:00	06/03/19	17:30	ODB	ER-II/Odisha/BARIPADA S/S	Gasket replacement	
86	100MVAR VSC # II (STATCOM)	05/03/19	09:00	05/03/19	18:00	ODB	ER-II/Odisha /Jeypore	To carry out AMP of 100MVAR VSC # II (STATCOM) by contractor as per contractual agreement for starting of 5 years warranty period.	
87	315 MVA ICT#2 MAIN BAY (BAY NO.-415)	05/03/19	09:00	05/03/19	18:00	ODB	ER-II/ODISHA/ROURKELA	BAY AMP WORK	
88	765KV LINE REACTOR OF SUNDARGARH LINE-1 AT ANGUL	05/03/19	10:00	05/03/19	14:00	ODB	ER-II/Odisha/Angul SS	To take out spare reactor & take in R-phase Reactor after attending oil leakage by full gasket replacement by M/s TBEA.	NLDC
89	400kV Sundargarh-Raigarh Ckt#1&3	05/03/19	08:00	07/03/19	18:00	OCB	ER-II /ODISHA/SUNDERGARH	OPGC Line diversion (Rectification work at Railway crossing)	NLDC
90	Tie Bay-408 of 400KV Raigarh Line-I & Future	05/03/19	09:00	05/03/19	18:00	ODB	ER-II/Odisha/Sundergarh	AMP Work	
91	220 KV Budhipada-Korba Line	05/03/19	10:00	05/03/19	13:00	ODB	ER-II/ODISHA	PMU Connectivity under URTDSMA project at Budhipada End	NLDC
92	TIE BAY OF 400KV SIPAT-II& FUT. BAY-I (423 BAY) AT RANCHI	05/03/19	10:00	05/03/19	17:00	ODB	POWERGRID ER-I	AMP	
93	400kV JSR -DURGAPUR LINE	05/03/19	9:30	05/03/19	17:30	ODB	POWERGRID ER-I	Static Auto reclose relay to be replaced with numerical relay AT JSR	
94	400 /220 kV ICT-I at Gaya ss	05/03/19	9:00	05/03/19	18:00	ODB	POWERGRID ER-I	For uprating of bay equipment under Nabinagar -2 Project.	BSEB
95	TIE BAY OF 400KV SIPAT-II& FUT. BAY-I (423 BAY) AT RANCHI	05/03/19	10:00	05/03/19	17:00	ODB	POWERGRID ER-I	AMP	
96	63 MVAr Muzaffarpur Line-II Reactor (Switchable Line Reactor) at New Purnea	05/03/19	9:30	05/03/19	18:00	ODB	POWERGRID ER-I	For AMP Work	
97	132 kV LKR-Jamui Line-2	05/03/19	10:00	05/03/19	14:00	ODB	POWERGRID ER-I	AMP works of 111 & 111L Bay Equipments.	BSEB
98	400 KV Chaibasa- KHARAGPUR-I Line	05/03/19	9:30	05/03/19	17:30	ODB	POWERGRID ER-I	AMP WORK OF KGP-I LINE REACTOR & Auto reclose checking/testing at Chaibasa end	WB
99	220kV Bus-I@Pusauli	05/03/19	9:00	05/03/19	18:00	ODB	POWERGRID ER-I	To attend Isolator Misalignment Problem & Reley retrofitting Job	BSEB
100	220kV Pusauli-Sahapuri	05/03/19	8:00	05/03/19	13:00	ODB	POWERGRID ER-I	To attend Isolator Misalignment Problem & Reley retrofitting Job	NLDC
101	220kV Pusauli-Ara	05/03/19	8:00	05/03/19	18:00	ODB	POWERGRID ER-I	To attend Isolator Misalignment Problem & Reley retrofitting Job	BSEB

102	400KV BUS REACTOR-1 MAIN BAY AT MUZAFFARPUR	05/03/19	9:30	05/03/19	17:30	ODB	POWERGRID ER-I	AMP WORK	
103	Main bay of Balia 2 (407 Bay) AT Biharsarif	05/03/19	10:00	05/03/19	18:00	ODB	POWERGRID ER-I	Bay AMP	
104	400kV Biharsharif-Varanasi-I	05/03/19	8:00	06/03/19	18:00	ODB	POWERGRID ER-I	fixing of missing jumper bolts and fixing of missing hardware fitting bolts.(During the S/D period Auto Reclosure of 400kV Biharsharif - Varanasi-II shall be in off condition)	NLDC
105	400 KV /220KV ICT-2 TRANSFORMER in TSTPS(400 KV Bay – 4,5 and 220KV Bay no- 14 )	05/03/19	08:00	08/03/19	18:00	Continuous	TALCHER	Transformer oil leakage arrest, Transformer LA replacement,AMP jobs	
106	412 ICT#4 Main Bay at Subhasgram SS	06/03/19	09:00	06/03/19	17:00	ODB	POWERGRID,ER-II	AMP work	
107	400 KV Farakka-Gokarna-II	06/03/19	09:00	06/03/19	18:00	ODB	POWERGRID,ER-II	For Event Logger commissioning (Integration with NTPC system) under ERSS-V.	WB
108	31.5 MVAR Bus Reactor-II at New Melli	06/03/19	10:00	06/03/19	17:00	ODB	POWERGRID,ER-II	AMP (tand Delta & PD testing)	
109	220KV DALKHOLA-MALDA-II	06/03/19	08:00	06/03/19	17:00	ODB	POWERGRID,ER-II	Jumper Tightening and PG Clamp Change. Anticipated duration of outage of LILO section 40 Days.	
110	125MVAR MSC # I (STATCOM)	06/03/19	09:00	06/03/19	18:00	ODB	ER-II/Odisha /Jeypore	To carry out AMP of 125MVAR MSC # I (STATCOM) by contractor as per contractual agreement for starting of 5 years warranty period.	
111	315 MVA ICT#1 MAIN BAY (BAY NO.-424)	06/03/19	09:00	06/03/19	18:00	ODB	ER-II/ODISHA/ROURKELA	BAY AMP WORK	
112	50 MVAR Line Reactor	06/03/19	09:00	06/03/19	18:00	ODB	ER-II/Odisha /Indravati	AMP work of 50MVAR LR.Power flow will be interrupt for this shutdown .	
113	765KV, 3*80 MVAR SUNDARGARH LINE REACTOR-4 AT ANGUL	06/03/19	10:00	06/03/19	18:00	ODB	ER-II/Odisha/Angul SS	AMP Work.	NLDC
114	Tie Bay-414 of 400KV Bus Reactor-I&Future	06/03/19	09:00	06/03/19	18:00	ODB	ER-II/Odisha/Sundergarh	AMP Work	
115	765KV Bus-I at Sundargarh	06/03/19	09:00	12/03/19	18:00	OCB	ER-II/Odisha/Sundergarh	Erection of SF6 to Air bushing of 765KV GIS bus sectionalizer, jumpering , HV & impulse testing for commissioning of 765KV GIS and Stringing of jack bus of	NLDC
116	Mendhasal-Pandiabli CKT-1 at Mendhasal along with Main bay & Tie Bay NB: DIA WILL BE IN OPENED CONDITION DURING THE	06/03/19	08:30	06/03/19	18:00	ODB	ER-II/Odisha/ Pandiabli GIS	Maintenance of ISOLATORS at Mendhasal	GRIDCO
117	125 MVAR Bus Reactor	06/03/19	09:00	09/03/19	18:00	OCB	ER-II/Odisha/Keonjhar	For replacement of defective radiator of Bus Reactor	
118	400KV Kahalgaon-Lakhisarai Line-1	06/03/19	09:30	06/03/19	17:30	ODB	KAHALGAON	PM works and Relay Testing	
119	400KV RNC-SIPAT-2 MAIN BAY (424) AT RANCHI	06/03/19	10:00	06/03/19	17:00	ODB	POWERGRID ER-I	AMP	
120	400KV RANCHI - RAURKELA - 2	06/03/19	9:30	06/03/19	17:00	ODB	POWERGRID ER-I	REPLACEMENT INSULATOR DAMAGED BY MISCREANTS	
121	160 MVA ICT#1 AT PURNEA	06/03/19	10:00	06/03/19	17:00	ODB	POWERGRID ER-I	NTAMC WORK	BSEB
122	400 /220 kV ICT-II at Gaya ss	06/03/19	9:00	06/03/19	18:00	ODB	POWERGRID ER-I	For uprating of bay equipment under Nabinagar -2 Project.	BSEB
123	400KV RNC-SIPAT-2 MAIN BAY (424) AT RANCHI	06/03/19	10:00	06/03/19	17:00	ODB	POWERGRID ER-I	AMP	
124	400KV RANCHI - RAURKELA - 2	06/03/19	9:30	06/03/19	17:00	ODB	POWERGRID ER-I	REPLACEMENT INSULATOR DAMAGED BY MISCREANTS	
125	125MVA Bus Reactor-II at New Purnea	06/03/19	9:30	06/03/19	18:00	ODB	POWERGRID ER-I	For AMP Work	
126	400 KV Chaibasa - KHARAGPUR-II Line	06/03/19	9:30	06/03/19	17:30	ODB	POWERGRID ER-I	Auto reclose checking/testing at Chaibasa end	WB
127	220kV Main Bus-II @ Pusauli	06/03/19	8:00	06/03/19	20:00	ODB	POWERGRID ER-I	To attend Isolator Misalignment Problem & Reley retrofitting Job	BSEB
128	400/220kV 500MVA ICT-II at Pusauli	06/03/19	8:00	06/03/19	13:00	ODB	POWERGRID ER-I	To attend Isolator Misalignment Problem & Reley retrofitting Job	BSEB

129	220kV Pusauli-Dehri	06/03/19	13:00	06/03/19	18:00	ODB	POWERGRID ER-I	To attend Isolator Misalignment Problem & Reley retrofitting Job	BSEB
130	400/220kV 315MVA ICT-II at Pusauli	06/03/19	8:00	10/04/19	18:00	OCB	POWERGRID ER-I	For Transformer Retrofitting Work	BSEB
131	400KV BUS-REACTOR-ICT-1 TIE BAY AT MUZAFFARPUR	06/03/19	9:30	06/03/19	17:30	ODB	POWERGRID ER-I	AMP WORK	
132	415 ICT#5 Main Bay at Subhasgram SS	07/03/19	09:00	07/03/19	17:00	ODB	POWERGRID,ER-II	AMP work	
133	400 KV Farakka- Berhampur-I	07/03/19	09:00	07/03/19	18:00	ODB	POWERGRID,ER-II	For protection scheme checking of Bay-34 with respect of bay-33 after upgradation of bay-34 under ERSS-XV projects	
134	50 MVA ICT 132/66KV at Gangtok	07/03/19	09:00	07/03/19	18:00	ODB	POWERGRID,ER-II	For AnnualAmp Works	SIKKIM
135	220 KV Birpara-NSLG Feeder-I	07/03/19	08:00	07/03/19	17:30	ODB	POWERGRID,ER-II	220KV R-Ph CT replacement work	
136	220 KV Alipurduar - Salakati - 1	07/03/19	07:00	28/03/19	17:00	ODB	POWERGRID,ER-II	Shut down may be arranged on alternate day basis for Ckt 1 and 2 except 21.03.2019 and 22.03.2019 for fixing Transmission Line LA.	NLDC
137	220 KV Alipurduar - Salakati - 2	07/03/19	07:00	28/03/19	17:00	ODB	POWERGRID,ER-II	Shut down may be arranged on alternate day basis for Ckt 1 and 2 except 21.03.2019 and 22.03.2019 for fixing Transmission Line LA.	NLDC
138	400KV Mejia-Jamshedpur line	07/03/19	09:00	08/03/19	18:00	ODB	POWERGRID,ER-II	To replaced Punctured disc Insulator	DVC
139	400 KV, 315 MVA ICT # 2	07/03/19	09:00	11/03/19	17:00	OCB	ER-II/Odisha/Rengali	For Bushing Replacement (220 KV Side , R-Ph)	GRIDCO
140	400 kV 411 Tie Bay of Baripada-Pandiabili & Baripada-TISCO line	07/03/19	09:00	08/03/19	17:30	ODB	ER-II/Odisha/BARIPADA S/S	AMP & Gasket replacement	
141	125MVAR MSC # II (STATCOM)	07/03/19	09:00	07/03/19	18:00	ODB	ER-II/Odisha /Jeypore	To carry out AMP of 125MVAR MSC # II (STATCOM) by contractor as per contractual agreement for starting of 5 years warranty period.	
142	400 KV CHAIBASA#1 MAIN BAY (BAY NO.-416)	07/03/19	09:00	07/03/19	18:00	ODB	ER-II/ODISHA/ROURKELA	BAY AMP WORK	
143	765KV SRIKAKULAM LINE REACTOR -1 BAY (729R)	07/03/19	10:00	07/03/19	18:00	ODB	ER-II/Odisha/Angul SS	AMP Work.	NLDC
144	Main Bay-701 of 765KV 240MVAR B/R-I	07/03/19	08:00	07/03/19	18:00	ODB	ER-II/Odisha/Sundergarh	AMP Work	
145	Mendhasal-Pandiabili CKT-2 at Mendhasal along with Main bay & Tie Bay NB: DIA WILL BE IN OPENED CONDITION DURING THE	07/03/19	08:30	07/03/19	18:00	ODB	ER-II/Odisha/ Pandiabili GIS	Maintenance of ISOLATOR at Mendhasal	GRIDCO
146	400kV BUS-1 AT DALTONGANJ	07/03/19	09:30	07/03/19	17:30	ODB	POWERGRID	AMP	JSEB
147	Maintenance work for BUS Reactor	07/03/19	09:30	18/03/19	18:00	OCB	BARH	Annual Maintenance & Testing of BUS Reactor	
148	Maintenance work for BUS Reactor Bay	07/03/19	09:30	18/03/19	18:00	OCB	BARH	Annual Maintenance & Testing of Bays Equipments	
149	220 KV Baripada PG-Balasore-I & II	07/03/19	09:00	07/03/19	17:00	ODB	GRIDCO	AMP	
150	220KV RANCHI-HATIA LINE-I	07/03/19	10:00	07/03/19	17:00	ODB	POWERGRID ER-I	AMP	JSEB
151	400 KV 125 MVAR BR-I at Gaya ss	07/03/19	9:00	07/03/19	18:00	ODB	POWERGRID ER-I	For uprating of bay equipment under Nabinagar -2 Project.	
152	Main Bay of 400kV Kishanganj-I (Bay no. 407) at New Purnea	07/03/19	9:30	07/03/19	18:00	ODB	POWERGRID ER-I	For AMP Work	
153	200 MVA ICT-1 at Lakhisarai	07/03/19	9:00	08/03/19	17:00	ODB	POWERGRID ER-I	Checking of Air Cell	BSEB
154	132 KV Main BUS AT BANKA	07/03/19	9:30	07/03/19	17:30	ODB	POWERGRID ER-I	TO REPLACE GASKET OF 132 kV Banka - Banka - II FOR SF6 LEAKAGE ATTEND	BSEB
155	East Side Filter Bay at Pusauli(CWC54)	07/03/19	9:00	07/03/19	18:00	ODB	POWERGRID ER-I	AMP work	NLDC



156	400kV East Side Bus-I@Pusauli	07/03/19	8:00	07/03/19	18:00	ODB	POWERGRID ER-I	To attend Isolator Misalignment Problem & Reley retrofitting Job	NLDC
157	400KV PRN-1 LINE REACTOR BAY AT MUZAFFARPUR	07/03/19	9:30	07/03/19	17:30	ODB	POWERGRID ER-I	AMP WORK	
158	Tie Bay of ICT-1 & Lakhisarai 1 (414 Bay) AT Biharsarif	07/03/19	10:00	07/03/19	18:00	ODB	POWERGRID ER-I	Bay AMP	
159	416 bay Ballia -IV Main bay At Patna	07/03/19	9:30	09/03/19	17:30	OCB	POWERGRID ER-1	AMP & CB Overhauling	
160	420 Tie bay of Barh 3 and ballia 3 At Patna	07/03/19	9:30	07/03/19	17:30	ODB	POWERGRID ER-1	AMP	
161	220 KV Ara khagaul line 1 At Patna	07/03/19	9:30	07/03/19	17:30	ODB	POWERGRID ER-1	AMP	BSEB
162	400kV Biharsharif-Varanasi-II	07/03/19	8:00	08/03/19	18:00	ODB	POWERGRID ER-I	fixing of missing jumper bolts and fixing of missing hardware fitting bolts.(During the S/D period Auto Reclosure of 400kV Biharsarif - Varanasi-I shall be in off condition)	NLDC
163	405 Tie Bay of 315 MVA ICT#2 and 400 KV Subhasgram Jeerat Line	08/03/19	09:00	08/03/19	17:00	ODB	POWERGRID.ER-II	405 Bay Y-Ph CT Replacement	
164	400 KV Farakka- Kahalgaon-III line	08/03/19	09:00	09/03/19	18:00	ODB	POWERGRID.ER-II	For Jumper coconnection, relay setting change & Bay stability between Bay- 34 & 35 after upgradation of bay-34 under ERSS-XV projects.	
165	400 KV Bus -2 at Binaguri	08/03/19	09:00	14/03/19	18:00	ODB	POWERGRID.ER-II	400 KV Busbar relay Replacement Under ERSS-XX.	
166	400kV Andal-jamshedpur Ckt-I	08/03/19	10:00	08/03/19	13:00	ODB	POWERGRID.ER-II	Checking healthiness of relay at Andal & JSR end by creating fault in the line	DVC
167	400kV Andal-jamshedpur Ckt-II	08/03/19	13:00	08/03/19	16:00	ODB	POWERGRID.ER-II	Checking healthiness of relay at Andal & JSR end by creating fault in the line	DVC
168	125MVAR MSR # I (STATCOM)	08/03/19	09:00	08/03/19	18:00	ODB	ER-II/Odisha /Jeypore	To carry out AMP of 125MVAR MSR # I (STATCOM) by contractor as per contractual agreement for starting of 5 years warranty period.	
169	125 MVAR B/R#2 & SUNDARGARH#4 TIE BAY (BAY NO.- 426)	08/03/19	09:00	08/03/19	18:00	ODB	ER-II/ODISHA/ROURKELA	BAY AMP WORK	
170	765KV SUNDARGARH LINE-2 MAIN BAY (706)	08/03/19	10:00	08/03/19	18:00	ODB	ER-II/Odisha/Angul SS	AMP Work.	NLDC
171	400kV Sundargarh-Raigarh Ckt#2&4	08/03/19	08:00	19/03/19	18:00	OCB	ER-II /ODISHA/SUNDERGARH	NTPC Lara Railway Diversion work	NLDC
172	Tie Bay-702 of 765KV 240MVAR B/R-I & 765/400KV ICT-I	08/03/19	08:00	08/03/19	18:00	ODB	ER-II/Odisha/Sundergarh	AMP Work	
173	Bus-I along with Main bay of Mendhsal- Pandiabili CKT-1at Mendhsal	08/03/19	08:30	08/03/19	18:00	ODB	ER-II/Odisha/ Pandiabili GIS	Maintenance of ISOLATOR at Mendhasal	GRIDCO
174	400kV BUS-2 AT DALTONGANJ	08/03/19	09:30	08/03/19	17:30	ODB	POWERGRID	AMP	JSEB
175	At JRT :315 MVA ICT-1	08/03/19	06:00	08/03/19	15:00	ODB	WBSEDCL	AMP	
176	400KV Angul-Bolangir S/C Line	08/03/19	08:00	11/03/19	18:00	ODB	ER-II/Odisha/Balangir	Replacement of defective insulator by Polymer long Rod Insulator.	NLDC
177	400KV RNC-MTN-I MAIN BAY (401) AT RANCHI	08/03/19	10:00	08/03/19	17:00	ODB	POWERGRID ER-I	AMP	
178	160 MVA ICT#2 At PURNEA	08/03/19	10:00	08/03/19	17:00	ODB	POWERGRID ER-I	NTAMC WORK	BSEB
179	400kV JSR - Mejia LINE	08/03/19	9:30	08/03/19	17:30	ODB	POWERGRID ER-I	Static Auto reclose relay to be replaced with numerical relay AT JSR	DVC
180	400KV RNC-MTN-I MAIN BAY (401) AT RANCHI	08/03/19	10:00	08/03/19	17:00	ODB	POWERGRID ER-I	AMP	
181	400 KV 125 MVAR BR-II Gaya ss	08/03/19	9:00	08/03/19	18:00	ODB	POWERGRID ER-I	For uprating of bay equipment under Nabinagar -2 Project.	
182	Tie Bay of Kishanganj-I& Muzaffarpur-II (Bay no. 408) at New Purnea	08/03/19	9:30	08/03/19	18:00	ODB	POWERGRID ER-I	For AMP Work	

183	400kV East Side Bus-II@Pusaui	08/03/19	8:00	08/03/19	18:00	ODB	POWERGRID ER-I	To attend Isolator Misalignment Problem & Reley retrofitting Job	NLDC
184	400KV PRN-2 LINE REACTOR BAY AT MUZAFFARPUR	08/03/19	9:30	08/03/19	17:30	ODB	POWERGRID ER-I	AMP WORK	
185	400 kV Barh-Kahalgao Ckt I	08/03/19	9:30	08/03/19	17:30	ODB	POWERGRID ER-1	for replacement of porcelain insulator with polymer insulator	
186	422 Main bay Ballia 4 At Patna	08/03/19	9:30	08/03/19	17:30	ODB	POWERGRID ER-1	AMP	
187	220 KV Ara Khagaul line 2 At Patna	08/03/19	9:30	08/03/19	17:30	ODB	POWERGRID ER-1	AMP	BSEB
188	315 MVA ICT#1 at Subhasgram S/s	09/03/19	09:00	09/03/19	17:00	ODB	POWERGRID,ER-II	Retrofitting of Numerical REF Relay	WB
189	132KV Gangtok-Rangpo Line	09/03/19	09:00	09/03/19	12:00	ODB	POWERGRID,ER-II	Line A/R implementation	SIKKIM
190	220KV BUS-1 at Rangpo	09/03/19	08:00	11/03/19	17:00	OCB	POWERGRID,ER-II	For rectification of SF6 gas leakage repair work(both Shutdown needed on same dates)	
191	220KV Rangpo NEW MELLI line	09/03/19	08:00	13/03/19	17:00	OCB	POWERGRID,ER-II	For rectification of SF6 gas leakage repair work,	
192	220 KV Birpara-Alipurduar Feeder-I	09/03/19	08:00	09/03/19	17:30	ODB	POWERGRID,ER-II	LA VENT direction change & AMP work(SIR Compliance)	
193	400KV Balangir-Jeypore Line TIE BAY(40304BAY)	09/03/19	09:00	09/03/19	18:00	ODB	ER-II/Odisha/Balangir	AMP for 40304 52 CB and 40304 CT	
194	63 MVAR Baripada-Duburi Line Reactor	09/03/19	09:00	09/03/19	17:30	ODB	ER-II/Odisha/BARIPADA S/S	AMP works	
195	125MVAR MSR # II (STATCOM)	09/03/19	09:00	09/03/19	18:00	ODB	ER-II/Odisha /Jeypore	To carry out AMP of 125MVAR MSR # II (STATCOM) by contractor as per contractual agreement for starting of 5 years warranty period.	
196	765KV SUNDARGARH LINE-1 REACTOR BAY (709R)	09/03/19	10:00	09/03/19	18:00	ODB	ER-II/Odisha/Angul SS	AMP Work.	NLDC
197	Main Bay-703 of 765/400KV ICT-I	09/03/19	08:00	09/03/19	18:00	ODB	ER-II/Odisha/Sundergarh	AMP Work	
198	BUS-II along with Main bay of Mendhsal-Pandiablii CKT-II at Mendhsal	09/03/19	08:30	09/03/19	18:00	ODB	ER-II/Odisha/ Pandiablii GIS	Maintenance of Line ISOLATOR at Mendhsal	GRIDCO
199	400kV DALTONGANJ - SASARAM LINE-2	09/03/19	09:30	09/03/19	17:30	ODB	POWERGRID	Erection of Bushing of 50 MVAR Line Reactor	JSEB
200	400kV JSR - Maithon Line	09/03/19	9:30	09/03/19	17:30	ODB	POWERGRID ER-I	Static Auto reclose relay to be replaced with numerical relay AT JSR	
201	Main Bay of Kishanganj-II (Bay no. 410) at New Purnea	09/03/19	9:30	09/03/19	18:00	ODB	POWERGRID ER-I	For AMP Work	
202	417 BAY (Tie BAY OF KHARAGPUR-II LINE and Future Bay) AT CHAIBASA	09/03/19	9:30	09/03/19	17:00	ODB	POWERGRID ER-I	AMP work of 417 Bay	
203	400kV North Side Bus-I@Pusaui	09/03/19	8:00	09/03/19	18:00	ODB	POWERGRID ER-I	To attend Isolator Misalignment Problem & Reley retrofitting Job	NLDC
204	400KV GKP-1 LINE REACTOR BAY AT MUZAFFARPUR	09/03/19	9:30	09/03/19	17:30	ODB	POWERGRID ER-I	AMP WORK	
205	Main Bay of Tenughat (416 Bay) AT Biharsarif	09/03/19	10:00	09/03/19	18:00	ODB	POWERGRID ER-I	Bay AMP	
206	400 kV Barh-Kahalgao Ckt II	09/03/19	9:30	09/03/19	17:30	ODB	POWERGRID ER-1	for replacement of porcelain insulator with polymer insulator	
207	423 bay Tie bay of Barh 4 and Ballia 4	09/03/19	9:30	09/03/19	17:30	ODB	POWERGRID ER-1	AMP	
208	315 MVA ICT#2 at Subhasgram S/s	10/03/19	09:00	10/03/19	17:00	ODB	POWERGRID,ER-II	Retrofitting of Numerical REF Relay	WB

209	220 KV Birpara-Alipurduar Feeder-II	10/03/19	08:00	10/03/19	17:30	ODB	POWERGRID,ER-II	LA VENT direction change & AMP work(SIR Compliance)	
210	400KV Maithon-Durgapur#2	10/03/19	09:00	10/03/19	18:00	ODB	POWERGRID,ER-II	Jumper rectification .	
211	125 MVAR Bus Reactor-1	10/03/19	09:00	10/03/19	17:30	ODB	ER-II/Odisha/BARIPADA S/S	AMP works	
212	Main Bay-704 of 765KV 240MVAR B/R-II	10/03/19	08:00	10/03/19	18:00	ODB	ER-II/Odisha/Sundergarh	AMP Work	
213	At JRT: 400 kv 100 MVAR Bus-reactor & Transfer -bus bay	10/03/19	06:00	10/03/19	15:00	ODB	WBSEDCL	AMP	
214	200 MVA ICT-2 at Lakhsarai	10/03/19	9:00	13/03/19	17:00	ODB	POWERGRID ER-I	Checking of Aircel of ICT-2	BSEB
215	400KV Barh- Motihari CKT-1	10/03/19	8:00	31/03/19	18:00	OCB	POWERGRID ER-I	Realignmnet works of 400KV Barh- Motihari Line due to Construction of Barh Bypass by NHA!	NLDC
216	400KV Barh- Motihari CKT-II	10/03/19	8:00	31/03/19	18:00	OCB	POWERGRID ER-I	Realignmnet works of 400KV Barh- Motihari Line due to Construction of Barh Bypass by NHA!	NLDC
217	415 main bay Patna Barh -2 At Patna	10/03/19	9:30	11/03/19	17:30	OCB	POWERGRID ER-1	AMP	
218	424 Main bay Barh 4 At Patna	10/03/19	9:30	10/03/19	17:30	ODB	POWERGRID ER-1	AMP	
219	220 KV Patna Sipara -1	10/03/19	9:30	10/03/19	17:30	ODB	POWERGRID ER-1	AMP	BSEB
220	315 MVA ICT#3 at Powergrid,Subhasgram	11/03/19	09:00	11/03/19	17:00	ODB	POWERGRID,ER-II	AMP of 315 MVA ICT#3.	WB
221	400 KV BUS-I of NTPC Farakka	11/03/19	09:00	11/03/19	18:00	ODB	POWERGRID,ER-II	For disconnecting BUS isolator of bay no-22 from BUS-I (For augmentation of BUS Isolator from 2000A to 3150 A rating under ERSS-XV projects).	
222	220 KV S/C Birpara-Malbase Feeder	11/03/19	08:00	12/03/19	17:30	ODB	POWERGRID,ER-II	Placement of New A/H at all Tension Tower, Replacement of Dead End to remove PG clamp at location 110 (Multi ckt Tower).	NLDC
223	400 KV D/C TALA-NSLG Feeder I	11/03/19	08:00	11/03/19	17:30	ODB	POWERGRID,ER-II	Replacement of Dead End to remove PG clamp at location 110 (Multi ckt Tower) in the 220 KV S/C Birpara-Malbase Feeder for which Shut down	NLDC
224	220kV Maithon-Dhanbad-1 Line	11/03/19	09:00	11/03/19	18:00	ODB	POWERGRID,ER-II	AMP work and relay testing work	DVC
225	400 KV Binaguri-Tala CKT 3	11/03/19	08:00	12/03/19	17:30	ODB	POWERGRID,ER-II	Replacement of broken insulators damaged by misceants	NLDC
226	400KV Balangir-Jeypore Line Main BAY(403BAY)	11/03/19	09:00	11/03/19	18:00	ODB	ER-II/Odisha/Balangir	AMP for 403 52 CB and 403 CT	
227	41152- Tie Bay of Pandiabili line & TISCO Line	11/03/19	09:00	11/03/19	17:30	ODB	ER-II/Odisha/BARIPADA S/S	AMP works	
228	419 MAIN BAY	11/03/19	09:00	11/03/19	18:00	ODB	ER-II/Odisha /Jeypore	To carry out AMP of 419 MAIN BAY (STATCOM) by contractor as per contractual agreement for starting of 5 years warranty period.	
229	SUNDARGARH#3 & RANCHI#2 TIE BAY (BAY NO.-420)	11/03/19	09:00	11/03/19	18:00	ODB	ER-II/ODISHA/ROURKELA	BAY AMP WORK	
230	125 MVAR BR	11/03/19	09:00	11/03/19	13:00	ODB	ER-II/Odisha /Indravati	To Replace Terminal Box of PRD.	
231	765KV SUNDARGARH LINE-2 REACTOR BAY (706R)	11/03/19	10:00	11/03/19	18:00	ODB	ER-II/Odisha/Angul SS	AMP Work.	NLDC
232	Tie Bay-705 of 765KV 240MVAR B/R-II & 765/400KV ICT-II	11/03/19	08:00	11/03/19	18:00	ODB	ER-II/Odisha/Sundergarh	AMP Work	
233	BAY NO. 407 (SASARAM LINE-1 MAIN) AT DALTONGANJ	11/03/19	09:30	11/03/19	17:30	ODB	POWERGRID	AMP	
234	TIE BAY OF 400KV ICT-I & MTN-I (402 BAY) AT RANCHI	11/03/19	10:00	11/03/19	17:00	ODB	POWERGRID ER-I	AMP	
235	315MVA ICT-II AT RANCHI	11/03/19	10:00	13/03/19	17:00	OCB	POWERGRID ER-I	OVERHAULING OF OLTC	JSEB

236	160 MVA ICT#3 at PURNEA	11/03/19	10:00	11/03/19	17:00	ODB	POWERGRID ER-I	NTAMC WORK	BSEB
237	400kV JSR - Chaibasa 1 Line	11/03/19	9:30	11/03/19	17:30	ODB	POWERGRID ER-I	Static Auto reclose relay to be replaced with numerical relay AT JSR	
238	TIE BAY OF 400KV ICT-I & MTN-I (402 BAY) AT RANCHI	11/03/19	10:00	11/03/19	17:00	ODB	POWERGRID ER-I	AMP	
239	315MVA ICT-II AT RANCHI	11/03/19	10:00	13/03/19	17:00	OCB	POWERGRID ER-I	OVERHAULING OF OLTC	JSEB
240	400 KV BUS-II at Gaya S/S	11/03/19	9:00	16/03/19	18:00	ODB	POWERGRID ER-I	For uprating of bay equipment under Nabinagar -2 Project.	BSEB
241	400 KV GAYA-NABINAGAR -1 line	11/03/19	9:00	13/03/19	18:00	ODB	POWERGRID ER-I	For uprating of bay equipment under Nabinagar -2 Project.	
242	Tie Bay of Kishanganj-II& Muzaffarpur-I (Bay no. 411) at New Purnea	11/03/19	9:30	11/03/19	18:00	ODB	POWERGRID ER-I	For AMP Work	
243	400KV BANKA-BIHARSHARIF CKT-I	11/03/19	9:30	11/03/19	13:00	ODB	POWERGRID ER-I	LINE BAY AMP & AUTO RECLOSE TESTING	
244	416 BAY (MAIN BAY OF KGP-II LINE) AT CHAIBASA	11/03/19	9:30	11/03/19	17:00	ODB	POWERGRID ER-I	AMP work of 416 Bay	
245	400kV Sasaram-Nabinagar I	11/03/19	8:00	28/03/19	19:00	OCB	POWERGRID ER-I	Replacement of deformed leg at tower no.170(DD+0) by de-stringing,tower dismantling and re-erection of tower and stringing by replacing	
246	400kV Sasaram-Nabinagar II	11/03/19	8:00	28/03/19	19:00	OCB	POWERGRID ER-I	Replacement of deformed leg at tower no.170(DD+0) by de-stringing,tower dismantling and re-erection of tower and stringing by replacing	
247	220kV Bus Coupler at Pusauli	11/03/19	8:00	11/03/19	18:00	ODB	POWERGRID ER-I	AMP work	BSEB
248	400kV North Side Bus-II@Pusauli	11/03/19	8:00	11/03/19	18:00	ODB	POWERGRID ER-I	To attend Isolator Misalignment Problem.	NLDC
249	400KV GKP-2 LINE REACTOR BAY AT MUZAFFARPUR	11/03/19	9:30	11/03/19	17:30	ODB	POWERGRID ER-I	AMP WORK	
250	50 Mvar Bus Reactor - 1 AT Biharsarif	11/03/19	10:00	11/03/19	18:00	ODB	POWERGRID ER-I	AMP work (At the time of switching off and on, S/d of 125 Mvar Bus reactor 4 will also be needed for 10 minuts	
251	419 Main bay Patna Ballia 3 At Patna	11/03/19	9:30	11/03/19	17:30	ODB	POWERGRID ER-1	AMP	
252	220 KV Patna Sipara -2	11/03/19	9:30	11/03/19	17:30	ODB	POWERGRID ER-1	AMP	BSEB
253	400KV TSTPS-Rengali ckt-2 (400 KV Bay no-16,17 )	11/03/19	08:00	13/03/19	18:00	Continuous	TALCHER	Line LA replacement AMP jobs	
254	315 MVA ICT#4 at Powergrid,Subhasgram	12/03/19	09:00	12/03/19	17:00	ODB	POWERGRID,ER-II	AMP of 315 MVA ICT#4.	WB
255	400 KV Farakka- Kahalgaon-I line	12/03/19	09:00	12/03/19	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	
256	Main bay of 400 KV Farakka- Kahalgaon-I (Bay- 22)	12/03/19	09:00	28/03/19	18:00	ODB	POWERGRID,ER-II	Bay-22 will be taken into shutdown for bay upgradation work under ERSS-XV. 400 KV Farakka- Kahalgaon-I will be charoed through tie bay (Bay-	
257	132 KV Gangtok-Chuzachen Line	12/03/19	09:00	12/03/19	12:00	ODB	POWERGRID,ER-II	For AnnualAMP Works & DCRM	SIKKIM
258	400/220kV 315 MVA ICT-2 -at Rangpo	12/03/19	08:00	15/03/19	17:00	OCB	POWERGRID,ER-II	For rectification of SF6 gas leakage repair work,	
259	New Melli -JLHEP Line 1 at New Melli	12/03/19	11:00	12/03/19	13:00	ODB	POWERGRID,ER-II	AMP (PD Testing)	
260	400kV Maithon-Mejia-3 Line	12/03/19	09:00	13/03/19	18:00	ODB	POWERGRID,ER-II	Replacement of Main Bay and Line Bay CT	DVC
261	40552- Tie Bay of Kharagpur line & 315MVA ICT II	12/03/19	09:00	12/03/19	17:30	ODB	ER-II/Odisha/BARIPADA S/S	AMP works	
262	420 MAIN BAY	12/03/19	09:00	12/03/19	18:00	ODB	ER-II/Odisha /Jeypore	To carry out AMP of 420 MAIN BAY (STATCOM) by contractor as per contractual agreement for starting of 5 years warranty period.	

263	(+)300/(-)550 MVAR STATCOM SYSTEM MAIN BAY (BAY NO.-410)	12/03/19	09:00	12/03/19	18:00	ODB	ER-II/ODISHA/ROURKELA	BAY AMP WORK	
264	765KV ICT-1 & SUNDARGARH LINE-2 TIE BAY (705)	12/03/19	10:00	12/03/19	18:00	ODB	ER-II/Odisha/Angul SS	AMP Work.	NLDC
265	Main Bay-706 of 765/400KV ICT-II	12/03/19	08:00	12/03/19	18:00	ODB	ER-II/Odisha/Sundergarh	AMP Work	
266	80 MVAR Bus Reactor	12/03/19	09:00	12/03/19	18:00	ODB	ER-II/Odisha/Keonjhar	AMP activity of Bus Reactor	
267	BAY NO. 408 (ICT-1 & SASARAM - I TIE BAY)	12/03/19	09:30	12/03/19	17:30	ODB	POWERGRID	AMP	
268	400KV FKK-Malda Line-2	12/03/19	09:00	13/03/19	17:00	ODB	FARAKKA	CB and Relay test	AFTER RESTORATION OF 400KV NEW PURNEA-BIHARSARIFF-DC
269	400 kV Jeypore-Bolangir S/C Line	12/03/19	08:00	13/03/19	18:00	ODB	ER-II/Odisha /Jeypore	AMP of Bolangir L/R and PID defect Insulator replacement with polymer long rod insulator.	NLDC
270	TIE BAY OF 400KV ICT-II & RGP-I (405 BAY) AT RANCHI	12/03/19	10:00	12/03/19	17:00	ODB	POWERGRID ER-I	AMP	
271	TIE BAY OF 400KV ICT-II & RGP-I (405 BAY) AT RANCHI	12/03/19	10:00	12/03/19	17:00	ODB	POWERGRID ER-I	AMP	
272	765kV Gaya-Balia line	12/03/19	9:00	13/03/19	18:00	OCB	POWERGRID ER-I	replacement of insulators damaged by miscreant	NLDC
273	Main Bay of Muzaffarpur-I (Bay no. 412) at New Purnea	12/03/19	9:30	12/03/19	18:00	ODB	POWERGRID ER-I	For AMP Work	
274	400KV BANKA-BIHARSHARIF CKT-II	12/03/19	9:30	12/03/19	13:00	ODB	POWERGRID ER-I	LINE BAY AMP & AUTO RECLOSE TESTING	
275	414 BAY (Tie BAY OF KHARAGPUR-I line and Bus-Reactor II) AT CHAIBASA	12/03/19	9:30	12/03/19	17:00	ODB	POWERGRID ER-I	AMP work of 414 Bay	
276	400KV GKP-2 MAIN BAY AT MUZAFFARPUR	12/03/19	9:30	12/03/19	17:30	ODB	POWERGRID ER-I	AMP WORK	
277	400 KV Bus -3 AT Biarsarif	12/03/19	10:00	12/03/19	18:00	ODB	POWERGRID ER-I	AMP work	BSEB
278	400 kV Barh-Patna Ckt I	12/03/19	9:30	12/03/19	17:30	ODB	POWERGRID ER-1	for replacement of porcelain insulator with polymer insulator	
279	205 bay Bus coupler At Patna	12/03/19	9:30	14/03/19	17:30	OCB	POWERGRID ER-1	AMP & CB Overhauling	BSEB
280	125 MVAR Bus reactor 1 At Patna	12/03/19	9:30	12/03/19	17:30	ODB	POWERGRID ER-1	AMP	
281	765kV Gaya-Balia line	12/03/19	9:00	13/03/19	18:00	OCB	POWERGRID ER-I	replacement of insulators damaged by miscreant	NLDC
282	500 MVA ICT#5 at Powergrid,Subhasgram	13/03/19	09:00	13/03/19	17:00	ODB	POWERGRID,ER-II	CSD FINE TUNING.	WB
283	400 KV Farakka- Berhampur-I	13/03/19	09:00	14/03/19	18:00	ODB	POWERGRID,ER-II	For Event logger commissioning work under ERSS-XV projects	
284	132KV Rangpo-Chuzachen line	13/03/19	09:00	13/03/19	18:00	ODB	POWERGRID,ER-II	Line A/R implementation	
285	New Melli - JLHEP Line 2 at New Melli	13/03/19	11:00	13/03/19	13:00	ODB	POWERGRID,ER-II	AMP (PD Testing)	
286	400 KV Binaguri-Tala CKT 4	13/03/19	08:00	14/03/19	17:30	ODB	POWERGRID,ER-II	Replacement of broken insulators damaged by misceants	NLDC
287	400 KV ICT # 2 Main Bay (Bay No-409)	13/03/19	09:00	13/03/19	17:00	ODB	ER-II/Odisha/Rengali	AMP Work	
288	50MVAR BALANGIR-ANGUL LINE REACTOR	13/03/19	09:00	13/03/19	18:00	ODB	ER-II/Odisha/Balangir	AMP for 50MVAR Angul L/R and 401R 52 CB	

289	20852- 315MVA ICT I Bay	13/03/19	09:00	13/03/19	17:30	ODB	ER-II/Odisha/BARIPADA S/S	Amp Works	
290	ICT-I (3x 105 MVA) at Jeypore	13/03/19	08:00	13/03/19	18:00	ODB	ER-II/Odisha /Jeypore	For changing ICT-I combination from Unit-III, IV to Unit-I, II & IV for charging Unit-II & To carry Insulation sleeves work Territory side of ICT 1 <i>For Isolator Retrofitting works (220KV, ICT, LTBC Isolator)</i>	GRIDCO
291	(+300)/(-)550 MVAR STATCOM SYSTEM TIE BAY (BAY NO.-411)	13/03/19	09:00	13/03/19	18:00	ODB	ER-II/ODISHA/ROURKELA	BAY AMP WORK	
292	765KV, 3*80 MVAR SRIKAKULAM LINE REACTOR-2 AT ANGUL	13/03/19	10:00	13/03/19	18:00	ODB	ER-II/Odisha/Angul SS	AMP Work.	NLDC
293	Main Bay-707 of 765KV Angul Ckt-4	13/03/19	08:00	13/03/19	18:00	ODB	ER-II/Odisha/Sundergarh	AMP Work	
294	132kV DALTONGANJ LINE-1	13/03/19	09:30	13/03/19	17:30	ODB	POWERGRID	AMP	JSEB
295	400KV Kahalgaon-Lakhisarai Line-2	13/03/19	09:30	13/03/19	17:30	ODB	KAHALGAON	PM works and Relay Testing	
296	400KV RANCHI - MAITHON-I	13/03/19	9:30	13/03/19	17:00	ODB	POWERGRID ER-I	RECTIFICATION OF SAG OF RLY. CROSSING	
297	132 kV Bus-Coupler at PURNEA	13/03/19	10:00	13/03/19	17:00	ODB	POWERGRID ER-I	NTAMC WORK	
298	400kV JSR - Chaibasa 2 Line	13/03/19	9:30	13/03/19	17:30	ODB	POWERGRID ER-I	Static Auto reclose relay to be replaced with numerical relay AT JSR	
299	400KV RANCHI - MAITHON-I	13/03/19	9:30	13/03/19	17:00	ODB	POWERGRID ER-I	RECTIFICATION OF SAG OF RLY. CROSSING	
300	Main Bay of 400kV Malda-II (Bay no. 413) at New Purnea	13/03/19	9:30	13/03/19	18:00	ODB	POWERGRID ER-I	For AMP Work	
301	400KV BANKA-KAHALGAON CKT-II	13/03/19	9:30	13/03/19	13:00	ODB	POWERGRID ER-I	AUTO RECLOSE TESTING	
302	401 BAY (MAIN BAY OF JAMSHEDPUR-I LINE) AT CHAIBASA	13/03/19	9:30	13/03/19	11:00	ODB	POWERGRID ER-I	CT OIL SAMPLING	
303	402 BAY (TIE BAY OF JAMSHEDPUR-I LINE & ICT-I) AT CHAIBASA	13/03/19	11:30	13/03/19	13:00	ODB	POWERGRID ER-I	CT OIL SAMPLING	
304	403 BAY (MAIN BAY OF ICT-I) AT CHAIBASA	13/03/19	13:30	13/03/19	15:00	ODB	POWERGRID ER-I	CT OIL SAMPLING	
305	404 BAY (MAIN BAY OF RAURKELA-I LINE) AT CHAIBASA	13/03/19	15:30	13/03/19	17:00	ODB	POWERGRID ER-I	CT OIL SAMPLING	
306	132kV Pusauli-Dehri	13/03/19	9:00	13/03/19	18:00	ODB	POWERGRID ER-I	To attend Isolator Problem and Relay retrofitting Job.Transfer Bus at Dehri shall be out during the S/D period	BSEB
307	400 KV PRN-1_GKP-1 TIE BAY AT MUZAFFARPUR	13/03/19	9:30	13/03/19	17:30	ODB	POWERGRID ER-I	AMP WORK	
308	Main Bay of ICT-1 (415 Bay) AT Biharsarif	13/03/19	10:00	13/03/19	18:00	OCB	POWERGRID ER-I	Bay AMP	
309	400 kV Barh-Patna Ckt II	13/03/19	9:30	13/03/19	17:30	ODB	POWERGRID ER-1	for replacement of porcelain insulator with polymer insulator	
310	220Kv Patna Fatuha line At Patna	13/03/19	9:30	13/03/19	17:30	ODB	POWERGRID ER-1	AMP	BSEB
311	50 MVAR Line Reactor at Subhasgram S/s	14/03/19	09:00	14/03/19	17:00	ODB	POWERGRID,ER-II	Retrofitting of Numerical REF Relay	WB
312	66 KV Gangtok-Tadong Line	14/03/19	09:00	16/12/18	12:00	ODB	POWERGRID,ER-II	For Annual Amp Works	SIKKIM
313	132kV BUS-2 at Rangpo	14/03/19	09:00	24/03/19	17:00	OCB	POWERGRID,ER-II	For Bus extension to new Chuzachen bays (Construction works)	SIKKIM
314	New Melli - THEP Line at New Melli	14/03/19	11:00	14/03/19	13:00	ODB	POWERGRID,ER-II	AMP (PD Testing)	
315	220 KV Arambag - Midnapore LINE- (TL139-DA+0-TL140 DA+0)	14/03/19	07:00	15/03/19	16:30	ODB	POWERGRID,ER-II	For Powerline crossing of 400 KV CKTL-Loop IN-AP-22/0-(DD+9+2 RC)- AP-23/0-( DD+18)- SPAN-243 MTR	WB

316	400 KV Rengali-Indravati Line	14/03/19	09:00	14/03/19	17:00	ODB	ER-II/Odisha/Rengali	AMP Work	NLDC
317	20452- 315MVA ICT II Bay	14/03/19	09:00	14/03/19	17:30	ODB	ER-II/Odisha/BARIPADA S/S	Amp Works	
318	400 kv Jeypore-Bolangir S/C Line	14/03/19	08:00	14/03/19	18:00	ODB	ER-II/Odisha /Jeypore	For attending shutdown nature defects & AMP of Bolangir L/R	NLDC
319	400 KV BUS-I	14/03/19	09:00	14/03/19	18:00	ODB	ER-II/ODISHA/ROURKELA	AMP WORK	GRIDCO
320	765KV SRIKAKULAM LINE-1 & FUTURE TIE BAY (728)	14/03/19	10:00	14/03/19	18:00	ODB	ER-II/Odisha/Angul SS	AMP Work.	NLDC
321	765KV Bus-II at Sundargarh	14/03/19	08:00	20/03/19	18:00	OCB	ER-II/Odisha/Sundergarh	Erection of SF6 to Air bushing of 765KV GIS bus sectionalizer, jumpering , HV & impulse testing for commissioning of 765KV GIS under construction head.	NLDC
322	132kV DALTONGANJ LINE-2	14/03/19	09:30	14/03/19	17:30	ODB	POWERGRID	AMP	JSEB
323	400KV FKK-Kahalgaon Line-2	14/03/19	09:30	15/03/19	17:30	ODB	NTPC	AMP	
324	400KV FKK-Kahalgaon Line#2	14/03/19	09:00	15/03/19	17:00	ODB	FARAKKA	CB and Relay test	
325	400 kv SGTPP-PARULIA #1	14/03/19	07:00	14/03/19	15:00	ODB	WBSEDCL	AMP	
326	At JRT: 400 kv 100 Main Bus-2, Diversion of 315 mva ict-3, ict-2, ict-1, o.a.a to 400 kv Trans bus.	14/03/19	06:00	14/03/19	15:00	ODB	WBSEDCL	AMP	
327	400KV RANCHI - RAGHUNATHPUR - I	14/03/19	9:30	14/03/19	17:00	ODB	POWERGRID ER-I	RECTIFICATION OF SAG OF RLY. CROSSING	DVC
328	400KV RANCHI - RAGHUNATHPUR - I	14/03/19	9:30	14/03/19	17:00	ODB	POWERGRID ER-I	RECTIFICATION OF SAG OF RLY. CROSSING	DVC
329	400 KV GAYA-NABINAGAR -2 line	14/03/19	9:00	16/03/19	18:00	ODB	POWERGRID ER-I	For uprating of bay equipment under Nabinagar -2 Project.	
330	Tie Bay of 400kV Malda-II& 125MVA B/R-I (Bay no. 414) at New Purnea	14/03/19	9:30	14/03/19	18:00	ODB	POWERGRID ER-I	For AMP Work	
331	405 BAY (TIE BAY OF RKL-I LINE& ICT-II ) AT CHAIBASA	14/03/19	9:30	14/03/19	11:00	ODB	POWERGRID ER-I	CT OIL SAMPLING	
332	406 BAY (MAIN BAY OF ICT-II) AT CHAIBASA	14/03/19	11:30	14/03/19	13:00	ODB	POWERGRID ER-I	CT OIL SAMPLING	
333	411 BAY (TIE BAY OF BR-I & RAURKELA-II LINE) AT CHAIBASA	14/03/19	13:30	14/03/19	15:00	ODB	POWERGRID ER-I	CT OIL SAMPLING	
334	412 BAY (MAIN BAY OF BR-I) AT CHAIBASA	14/03/19	15:30	14/03/19	17:00	ODB	POWERGRID ER-I	CT OIL SAMPLING	
335	132kV Pusauli-Karmanasha	14/03/19	9:00	14/03/19	18:00	ODB	POWERGRID ER-I	To attend Isolator Problem and Relay retrofitting Job.Transfer Bus at Karmanasha shall be out during the S/D period	BSEB
336	400KV BSF-1 _FUTURE TIE BAY AT MUZAFFARPUR	14/03/19	9:30	14/03/19	17:30	ODB	POWERGRID ER-I	AMP WORK	
337	Tie Bay of Purnea 1 & Future (438 Bay) AT Biarsarif	14/03/19	10:00	14/03/19	18:00	ODB	POWERGRID ER-I	Bay AMP	
338	400KV Bus -I At Patna	14/03/19	9:30	15/03/19	17:30	ODB	POWERGRID ER-1	Dismantling and erection of Bus isolator of Dia of Patna Nabinagar D/C	BSEB
339	220Kv Bus 1 At Patna	14/03/19	9:30	15/03/19	17:30	ODB	POWERGRID ER-1	AMP	BSEB
340	220kV WBSETCL - I Bay at Alipurduar	15/03/19	08:00	15/03/19	18:00	ODB	POWERGRID,ER-II	Associated Bay AMP	WB
341	220KV CESC CKT#2 (Bay No.203) at Powergrid,Subhasgram	15/03/19	09:00	15/03/19	17:00	ODB	POWERGRID,ER-II	AMP work	WB
342	400 KV Farakka- Berhampur- II	15/03/19	09:00	16/03/19	18:00	ODB	POWERGRID,ER-II	For Event logger commissioning work under ERSS-XV projects	

343	220 kv bus coupler bay at Binaguri	15/03/19	09:00	15/03/19	16:00	ODB	POWERGRID,ER-II	AMP works	
344	220 KV BUS-II at Malda	15/03/19	08:00	15/03/19	17:00	ODB	POWERGRID,ER-II	AMP	WB
345	220KV D/C BIRPARA -Chukha FEEDER II	15/03/19	08:00	16/03/19	17:30	ODB	POWERGRID,ER-II	Placement of New A/H at all Tension Tower	NLDC
346	400 KV ICT 1 & 2 Tie Bay (Bay No-408)	15/03/19	09:00	15/03/19	17:00	ODB	ER-II/Odisha/Rengali	AMP Work	
347	400KV Balangir-Angul Line TIE BAY(40102BAY)	15/03/19	09:00	15/03/19	18:00	ODB	ER-II/Odisha/Balangir	AMP for 40102 52 CB and 40102 CT	
348	400 kV 408 Tie Bay of Baripada-Duburi & Baripada-Jamshedpur line	15/03/19	09:00	16/03/19	17:30	ODB	ER-II/Odisha/BARIPADA S/S	Gasket replacement	
349	400 kV Jeypore-Indravati S/C Line	15/03/19	08:00	15/03/19	18:00	ODB	ER-II/Odisha /Jeypore	For testing New A/R relayof Jeypore - Indravati Line & For PID defect insulator replacement work	NLDC
350	400 KV BUS-II	15/03/19	09:00	15/03/19	18:00	ODB	ER-II/ODISHA/ROURKELA	AMP WORK	GRIDCO
351	765KV SRIKAKULAM LINE REACTOR -2 BAY (726R)	15/03/19	10:00	15/03/19	18:00	ODB	ER-II/Odisha/Angul SS	AMP Work.	NLDC
352	765 KV DC Sundargarh - Dharamjaygarh Ckt-I	15/03/19	08:00	19/03/19	18:00	ODB	ER-II/ODISHA/SUNDERGARH	TL Maintenance works	NLDC
353	Tie Bay-708 of 765KV Angul Ckt-4 & Future	15/03/19	08:00	15/03/19	18:00	ODB	ER-II/Odisha/Sundergarh	AMP Work	NLDC
354	BAY NO. 409 (ICT-1 MAIN BAY) AT DALTONGANJ	15/03/19	09:30	15/03/19	17:30	ODB	POWERGRID	AMP	
355	At JRT: 400 kv Main Bus-2 & Div of Sgtpp#,400 kv B/C,Trans Bus.	15/03/19	06:00	15/03/19	15:00	ODB	WBSEDCL	AMP	
356	400 kV Jeypore-Indravati S/C Line	15/03/19	08:00	16/03/19	18:00	ODB	ER-II/Odisha /Jeypore	Testing New A/R relay of Jeypore - Indravati Line & PID defect insulator replacement work	NLDC
357	315 MVA ICT3 AT JAMSHEDPUR S/S	15/03/19	9:30	15/03/19	17:30	ODB	POWERGRID ER-I	AMP TESTING of 220kV side equipment at JUSNL end	JSEB
358	765kV Gaya-Varanasi-2 line	15/03/19	9:00	15/03/19	18:00	ODB	POWERGRID ER-I	replacement of insulators damaged by miscreant	NLDC
359	Main Bay of 125 MVA Bus Recator-I (Bay no. 415) at New Purnea	15/03/19	9:30	15/03/19	18:00	ODB	POWERGRID ER-I	For AMP Work	
360	413 BAY (MAIN BAY OF KHARAGPUR-I LINE) AT CHAIBASA	15/03/19	9:30	15/03/19	11:00	ODB	POWERGRID ER-I	CT OIL SAMPLING	
361	414 BAY (TIE BAY OF BR-II & KGP-I LINE) AT CHAIBASA	15/03/19	11:30	15/03/19	13:00	ODB	POWERGRID ER-I	CT OIL SAMPLING	
362	416 BAY (MAIN BAY OF KHARAGPUR-II LINE) AT CHAIBASA	15/03/19	13:30	15/03/19	15:00	ODB	POWERGRID ER-I	CT OIL SAMPLING	
363	417 BAY (TIE BAY OF KGP-II LINE & FUTURE BAY) AT CHAIBASA	15/03/19	15:30	15/03/19	17:00	ODB	POWERGRID ER-I	CT OIL SAMPLING	
364	400KV MUZ-DBG-2 MAIN BAY AT MUZAFFARPUR	15/03/19	9:30	15/03/19	17:30	ODB	POWERGRID ER-I	AMP WORK	
365	400 KV Bus -4 AT Bharsarif	15/03/19	10:00	15/03/19	19:00	ODB	POWERGRID ER-I	For construction of ICT -4 Bay	BSEB
366	Tie Bay of Koderma 2 & ICT-4 (future) (426 Bay) AT Bharsarif	15/03/19	10:00	30/03/19	18:00	OCB	POWERGRID ER-I	For construction of ICT -4 Bay	
367	400 kV Barh-Patna Ckt III	15/03/19	9:30	15/03/19	17:30	ODB	POWERGRID ER-1	for replacement of porcelain insulator with polymer insulator	
368	765 kV New Ranchi - Dharamjaygarh CKT-I	15/03/19	9:00	15/03/19	18:00	ODB	POWERGRID ER-I	For replacement of insulators damaged by miscreants	NLDC
369	400kV SAGARDIGHI-JEERAT	16/03/19	09:00	16/03/19	17:00	ODB	POWERGRID,ER-II	A/R Relay retrofitting at WBSETCL Jeerat end.	WB



370	220KV NEWTOWN LINE (Bay No.205) at Powergrid,Subhasgram	16/03/19	09:00	16/03/19	17:00	ODB	POWERGRID,ER-II	AMP work	WB
371	400KV Binaguri Rangpo Ckt-2	16/03/19	09:00	30/03/19	17:00	OCB	POWERGRID,ER-II	Line reconductoring job under ERSS-XX.	
372	66 KV Gangtok-Bulbulay Line	16/03/19	09:00	18/12/18	12:00	ODB	POWERGRID,ER-II	For AnnualAMP Works	SIKKIM
373	220\132 Kv 100 MVA ICT-2 -at Rangpo	16/03/19	08:00	19/03/19	17:00	OCB	POWERGRID,ER-II	For rectification of SF6 gas leakage repair work,	
374	400 KV MALA-NEW PURNEA-I	16/03/19	08:00	17/03/19	17:00	ODB	POWERGRID,ER-II	S/D required for rectification of OPGW Peak Bend	AFTER RESTORATION OF 400KV NEW PURNEA-BIHARSARIFF-DC
375	220 KV S/C STPS - Chandil TL-(TL-229-230)-WBSETCL	16/03/19	8.00	17/03/19	17:00	ODB	POWERGRID,ER-II	For Powerline crossing of 765 KV RMTL-AP 83/0 (DD+9)-84/0( DD+9). Span Length-160 mtr	WB
376	220KV JEYNAGAR-I Line	16/03/19	08:00	16/03/19	18:00	ODB	ER-II/Odisha /Jeypore	For Isolator Retrofitting works (220KV Jeynagar-I TBC Isolator) & AMP Works	GRIDCO
377	765KV,3*110 MVAR BUS REACTOR-2 AT ANGUL	16/03/19	10:00	16/03/19	18:00	ODB	ER-II/Odisha/Angul SS	AMP Work.	NLDC
378	765 KV DC Sundargarh - Dharamjaygarh Ckt-II	16/03/19	08:00	20/03/19	18:00	ODB	ER-II/ODISHA/SUNDERGARH	TL Maintenance works	NLDC
379	Main Bay-710 of 765KV Angul Ckt-3	16/03/19	08:00	16/03/19	18:00	ODB	ER-II/Odisha/Sundergarh	AMP Work	NLDC
380	BAY NO. 410 (MAIN BAY SASARAM LINE-2 ) AT DALTONGANJ	16/03/19	09:30	16/03/19	17:30	ODB	POWERGRID	AMP	
381	400 kv Arambag-Durgapur s/c	16/03/19	07:00	16/03/19	15:00	ODB	WBSEDCL	AMP	
382	At JRT:400 kv Main Bus-2 & Div. of Rajarhat#,Bus-reactor,Ict-4 o.a.a to 400 kv Trans bus.	16/03/19	06:00	16/03/19	15:00	ODB	WBSEDCL	AMP	
383	Main Bay of 400kV Malda-I (Bay no. 416) at New Purnea	16/03/19	9:30	16/03/19	18:00	ODB	POWERGRID ER-I	For AMP Work	
384	Main Bay of 400 kV LKR-BSF Line -1 at Lakhisarai	16/03/19	10:00	16/03/19	14:00	ODB	POWERGRID ER-I	AMP of Main Bay of 400 kV LKR-BSF Line -1	
385	220 KV CHAIBASA- CHAIBASA(JUSNL)-I LINE	16/03/19	9:30	16/03/19	11:00	ODB	POWERGRID ER-I	CT OIL SAMPLING	JSEB
386	220 KV CHAIBASA- CHAIBASA(JUSNL)-II LINE	16/03/19	11:30	16/03/19	13:00	ODB	POWERGRID ER-I	CT OIL SAMPLING	JSEB
387	201 BAY (BUS COUPLER BAY) AT CHAIBASA	16/03/19	17:30	16/03/19	19:00	ODB	POWERGRID ER-I	CT OIL SAMPLING	JSEB
388	400KV 125 MVA BUS REACTOR-2 MAIN BAY AT MUZAFFARPUR	16/03/19	9:30	16/03/19	17:30	ODB	POWERGRID ER-I	AMP WORK	
389	400 kV Barh-Patna Ckt IV	16/03/19	9:30	16/03/19	17:30	ODB	POWERGRID ER-1	for replacement of porcelain insulator with polymer insulator	
390	400KV Bus 2 At Patna	16/03/19	9:30	17/03/19	17:30	ODB	POWERGRID ER-1	Dismantling and erection of Bus isolator of Dia of Patna Nabinagar D/C	BSEB
391	417 Tie bay Ballia 2 & Barh 2 At Patna	16/03/19	9:30	18/03/19	17:30	OCB	POWERGRID ER-1	AMP & CB Overhauling	
392	412 Main bay Of ICT - 1 At Patna	16/03/19	9:30	28/03/19	17:30	OCB	POWERGRID ER-1	Equipment uprating under SS03 package for Patna Nabinagar Bay	
393	220KV Bus 2 At Patna	16/03/19	9:30	17/03/19	17:30	ODB	POWERGRID ER-1	AMP	BSEB
394	220KV KLC Bantala Line (Bay No.206) at Powergrid,Subhasgram	17/03/19	09:00	17/03/19	17:00	ODB	POWERGRID,ER-II	AMP work	WB
395	400 kV 410 main Bay of Baripada-Pandiabili line	17/03/19	09:00	18/03/19	17:30	ODB	ER-II/Odisha/BARIPADA S/S	AMP & Gasket replacement	
396	220KV JEYNAGAR-II Line	17/03/19	08:00	17/03/19	18:00	ODB	ER-II/Odisha /Jeypore	For Isolator Retrofitting works (220KV Jeynagar-II TBC Isolator) & AMP Works	GRIDCO

397	Tie Bay-711 of 765KV Angul ckt-3 & future	17/03/19	08:00	17/03/19	18:00	ODB	ER-II/Odisha/Sundergarh	AMP Work	NLDC
398	At Durgapur :50 MVAR Bus Reactor.	17/03/19	07:00	17/03/19	15:00	ODB	WBSEDCL	AMP	
399	At JRT :400 kv Main Bus-1 & Div.of Ict-3,Ict-2& Ict-1, o.a.a to 400 kv Trans Bus.	17/03/19	06:00	17/03/19	15:00	ODB	WBSEDCL	AMP	
400	400 KV Rengali-Indravati Line S/C Line	17/03/19	09:00	18/03/19	17:00	ODB	ER-II/Odisha/Rengali	AMP Work and replacement of PID defect Insulator with Polymer long rod insulator	NLDC
401	400 KV BUS-I at Gaya S/S	17/03/19	9:00	19/03/19	18:00	ODB	POWERGRID ER-I	For uprating of bay equipment under Nabinagar -2 Project.	BSEB
402	125MVAR BUS REACTOR at Baharampore	18/03/19	09:00	18/03/19	17:00	ODB	POWERGRID.ER-II	For balance construction activity (Fire fighting ring modification) pertaining to ERSS-XV.	
403	220KV Subhasgram Ckt#1 (Bay No.207) at Powergrid,Subhasgram	18/03/19	09:00	18/03/19	17:00	ODB	POWERGRID.ER-II	AMP work	WB
404	132KV Rangpo Melli	18/03/19	09:00	21/03/19	18:00	ODB	POWERGRID.ER-II	Sag adjustment work in Span LILO 84 - LILO85 - LILO86 under Sikkim Govt. jurisdiction	SIKKIM
405	400kV Farakka-Durgapur S/C-I	18/03/19	09:00	19/03/19	17:00	ODB	POWERGRID.ER-II	Insulator replacement damaged by miscreants, Jumper tightening etc	
406	220KV Side, 315MVA ICT-1 BAY (208 BAY)	18/03/19	09:00	18/03/19	18:00	ODB	ER-II/Odisha/Balangir	AMP for 208 52 CB and 208 CT	
407	220 kV Bus -I at Jeypore & 220 kV Bus Coupler CB(202 52)	18/03/19	08:00	20/03/19	18:00	OCB	ER-II/Odisha /Jeypore	Isolator Retrofitting Works of Bus-I side Isolators of Jeypnagar I, Jeypnagar-2 & ICT-I & Bus Coupler Bay	
408	400 KV ROURKELA-TALCHER#1	18/03/19	09:00	19/03/19	18:00	ODB	ER-II/ODISHA/ROURKELA	INSULATOR REPLACEMENT WITH POLYMER INSULATOR WHICH ARE FOUND DEFECTIVE IN PID TEST AND ATTENDING DEFECTS NOTICED DURING CAMERA PATROL LINE	
409	400 KV Indravati-Jeypore Main Bay (401)	18/03/19	09:00	18/03/19	18:00	ODB	ER-II/Odisha /Indravati	AMP work of 400 KV Indravati-Jeypore Main Bay (401)	
410	765KV,3*80 MVAR SRIKAKULAM LINE REACTOR-1 AT ANGUL	18/03/19	10:00	18/03/19	18:00	ODB	ER-II/Odisha/Angul SS	AMP Work.	NLDC
411	Main Bay-713 of 765KV Angul Ckt-2	18/03/19	08:00	18/03/19	18:00	ODB	ER-II/Odisha/Sundergarh	AMP Work	NLDC
412	BAY NO. 411 (SASARAM LINE-2 & 80 MVAR B/R TIE BAY) AT DALTONGANJ	18/03/19	09:30	18/03/19	17:30	ODB	POWERGRID	AMP	
413	At JRT :400 kv Main Bus-1 & Div of 100 mvar bus-reactor, Ict 4, o.a.a to 400 kv Trans Bus.	18/03/19	06:00	18/03/19	15:00	ODB	WBSEDCL	AMP	
414	220KV RANCHI- HATIA LINE-II	18/03/19	10:00	18/03/19	17:00	ODB	POWERGRID ER-I	AMP	JSEB
415	220KV RANCHI- HATIA LINE-II	18/03/19	10:00	18/03/19	17:00	ODB	POWERGRID ER-I	AMP	JSEB
416	Main Bay of 125 MVar Bus Recator-II (Bay no. 418) at New Purnea	18/03/19	9:30	18/03/19	18:00	ODB	POWERGRID ER-I	For AMP Work	
417	Tie Bay of 400 kV LKR-BSF-1 & 200 MVA ICT-1 at Lakhisarai	18/03/19	10:00	18/03/19	14:00	ODB	POWERGRID ER-I	AMP of Tie Bay of 400 kV LKR-BSF-1 & 200 MVA ICT-1	
418	400kV Varanasi Main Bay (East Side) at Pusauli	18/03/19	9:00	18/03/19	18:00	ODB	POWERGRID ER-I	AMP work	
419	400KV MUZ-DBG-1 MAIN BAY AT MUZAFFARPUR	18/03/19	9:30	18/03/19	17:30	ODB	POWERGRID ER-I	AMP WORK	
420	400 KV Bus -1 AT Biharsarif	18/03/19	10:00	18/03/19	16:00	ODB	POWERGRID ER-I	AMP work	BSEB
421	500 MVA ICT 3 At Patna	18/03/19	9:30	18/03/19	17:30	ODB	POWERGRID ER-1	AMP	BSEB
422	765 kV Sasaram - Fatehpur	18/03/19	8:00	22/03/19	16:00	ODB	POWERGRID/NR-3	Strengthening of balance suspension towers delta configuration (419 Nos)	NLDC
423	220KV TSTPS-Rengali (220 KV Bay -7 )	18/03/19	08:00	20/03/19	18:00	Continuous	TALCHER	Line LA replacementAMP jobs	

424	80 Mvar BUS REACTOR at Baharampore	19/03/19	09:00	19/03/19	17:00	ODB	POWERGRID,ER-II	For Reactor AMP	
425	220KV Subhasgram Ckt#2 (Bay No.209) at Powergrid,Subhasgram	19/03/19	09:00	19/03/19	17:00	ODB	POWERGRID,ER-II	AMP work	WB
426	66 KV Gangtok-LLHP Line	19/03/19	09:00	20/12/18	12:00	ODB	POWERGRID,ER-II	For AnnualAMP Works	SIKKIM
427	160 MVAR ICT-II at Malda	19/03/19	08:00	19/03/19	17:00	ODB	POWERGRID,ER-II	AMP	WB
428	132 KV D/C Purulia - Jamshedpur (TL-	19/03/19	8.00	20/03/19	17.00	ODB	POWERGRID,ER-II	For Powerline crossing of 765 KV RMTL-AP 95/0 (DD+9)-96/0( DD+18). Span Length-258 mtr	DVC
429	400 KV Rengali-Talcher Line # 2	19/03/19	09:00	19/03/19	17:00	ODB	ER-II/Odisha/Rengali	AMP Work	
430	400 kV 403 Baripada-Duburi Line Main Bay at Duburi SS	19/03/19	09:00	19/03/19	17:30	ODB	ER-II/Odisha/BARIPADA S/S	AMP works	
431	765KVANGUL-SUNDERGARH S/C LINE-1	19/03/19	08:00	19/03/19	18:00	ODB	ER-II/Odisha/Angul TL	LINE MAINTENANCE WORK	NLDC
432	765 KV DC Sundargarh - Angul Ckt-I	19/03/19	08:00	19/03/19	18:00	ODB	ER-II/ODISHA/SUNDERGARH	TL Maintenance works	NLDC
433	Tie Bay-714 of 765KV Angul ckt-2 & Dharamjaygarh Ckt-3	19/03/19	08:00	19/03/19	18:00	ODB	ER-II/Odisha/Sundergarh	AMP Work	NLDC
434	At JRT : 315 mva ICT-2	19/03/19	06:00	19/03/19	15:00	ODB	WBSEDCL	AMP	
435	400KV RANCHI - RAGHUNATHPUR-I MAIN BAY (404) AT RANCHI	19/03/19	10:00	19/03/19	17:00	ODB	POWERGRID ER-I	AMP	
436	41852 CB Main Bay of JSR-Baripada line at JAMSHEDPUR	19/03/19	9:30	19/03/19	17:30	ODB	POWERGRID ER-I	Maintenance of CB Catch gear unit	
437	400KV RANCHI - RAGHUNATHPUR-I MAIN BAY (404) AT RANCHI	19/03/19	10:00	19/03/19	17:00	ODB	POWERGRID ER-I	AMP	
438	Main Bay of 400kV Biharsariff-I (Bay no. 421) at New Purnea	19/03/19	9:30	19/03/19	18:00	ODB	POWERGRID ER-I	For AMP Work	
439	125MVAR Bus Reactor Main Bay @ Pusauli	19/03/19	9:00	19/03/19	18:00	ODB	POWERGRID ER-I	AMP work	
440	400KV MUZ-DBG-1_FUTURE TIE BAY AT MUZAFFARPUR	19/03/19	9:30	19/03/19	17:30	ODB	POWERGRID ER-I	AMP WORK	
441	400 KV Bus -2 AT Biharsarif	19/03/19	10:00	19/03/19	17:00	ODB	POWERGRID ER-I	AMP work	BSEB
442	220 Kv Patna Sipara 3	19/03/19	9:30	19/03/19	17:30	ODB	POWERGRID ER-1	AMP	BSEB
443	765 kV New Ranchi - Dharamjaygarh CKT-II	19/03/19	9:00	23/03/19	18:00	ODB	POWERGRID ER-I	For replacement of insulators damaged by miscreants	NLDC
444	400/220kV 315 MVAICT -4 - -at Rangpo	20/03/19	08:00	24/03/19	17:00	OCB	POWERGRID,ER-II	For rectification of SF6 gas leakage repair work,	
445	400kV Farakka-Durgapur S/C-II	20/03/19	09:00	21/03/19	17:00	ODB	POWERGRID,ER-II	Jumper tightening, replacement of damage CC ring, Arcing horn, VD etc	
446	400 KV ICT # 1 Main Bay (Bay No-407)	20/03/19	09:00	20/03/19	17:00	ODB	ER-II/Odisha/Rengali	AMP Work	
447	400 KV ROURKELA-TALCHER#2	20/03/19	09:00	21/03/19	18:00	ODB	ER-II/ODISHA/ROURKELA	INSULATOR REPLACEMENT WITH POLYMER INSULATOR WHICH ARE FOUND DEFECTIVE IN PID TEST AND ATTENDING DEFECTS NOTICED DURING CAMERA PATROL LINE	
448	765KVANGUL-SUNDERGARH S/C LINE-2	20/03/19	08:00	20/03/19	18:00	ODB	ER-II/Odisha/Angul TL	LINE MAINTENANCE WORK	NLDC
449	765 KV DC Sundargarh - Angul Ckt-II	20/03/19	08:00	20/03/19	18:00	ODB	ER-II/ODISHA/SUNDERGARH	TL Maintenance works	NLDC
450	765KV Sundargarh-Angul Ckt #1 with LR	20/03/19	08:00	20/03/19	18:00	ODB	ER-II/Odisha/Sundergarh	AMP Work	NLDC

451	AT JRT : 315 mva ICT-3 & 400 kv Trans. Bus	20/03/19	06:00	20/03/19	15:00	ODB	WBSEDCL	AMP	
452	400kV New Purnea-Siliguri Line- 2	20/03/19	9:30	20/03/19	18:00	ODB	POWERGRID ER-I	Testing of retrofitted Auto Reclose Relay.	
453	Main Bay of 200 MVA ICT-1 at Lakhisarai	20/03/19	10:00	20/03/19	14:00	ODB	POWERGRID ER-I	AMP of Main Bay of 200 MVA ICT-1	
454	204 bay Main Sipra 3 At Patna	20/03/19	9:30	20/03/19	17:30	ODB	POWERGRID ER-1	AMP	BSEB
455	400 KV Rourkela-Talcher Line # 1	21/03/19	09:00	21/03/19	17:00	ODB	ER-II/Odisha/Rengali	AMP Work	
456	400 kV 4034 Tie Bay of Baripada Line & Bus Reactor at Duburi SS	21/03/19	09:00	21/03/19	17:30	ODB	ER-II/Odisha/BARIPADA S/S	AMP works	
457	220 kV Bus -II at Jeypore & 220 kV Bus Coupler CB(202 52)	21/03/19	08:00	23/03/19	18:00	OCB	ER-II/Odisha /Jeypore	Isolator Retrofitting Works of Bus-II side Isolators of Jeypore I, Jeypore-2 & ICT-I & Bus Coupler Bay	
458	765 KV DC Sundargarh - Dharamjaygarh Ckt-III	21/03/19	08:00	21/03/19	18:00	ODB	ER-II/ODISHA/SUNDERGARH	TL Maintenance works	NLDC
459	765KV Sundargarh-Angul Ckt #2 with LR	21/03/19	08:00	21/03/19	18:00	ODB	ER-II/Odisha/Sundergarh	AMP Work	NLDC
460	213 main bay 220KV Fatuha line At Patna	21/03/19	9:30	23/03/19	17:30	OCB	POWERGRID ER-1	AMP & CB Overhauling	BSEB
461	132 KV D/C Bishnupur - Khatra (TL-180-181)	22/03/19	8:00	23/03/19	17:00	ODB	POWERGRID,ER-II	For Powerline crossing of 765 KV RMTL-AP 134/4 (DD+9+3 RC)-135/0( DD+9). Span Length-320 mtr	WB
462	400 kV 404 Main Bay of 80 MVAR Bus Reactor at Duburi SS	22/03/19	09:00	22/03/19	17:30	ODB	ER-II/Odisha/BARIPADA S/S	AMP works	
463	413 MAIN BAY (JEYPORE-GAZ II MAIN BAY)	22/03/19	09:00	25/03/19	17:00	OCB	ER-II/Odisha /Jeypore	Overhauling of 41352 (CB)(JEYPORE-GAZ II MAIN BAY)	
464	ICT-II Main Bay (205)	22/03/19	09:00	22/03/19	18:00	ODB	ER-II/Odisha /Indravati	AMP work of ICT-II Main Bay (205) at OHPC S/Y.	
465	ICT-II Main Bay (403)	22/03/19	09:00	22/03/19	18:00	ODB	ER-II/Odisha /Indravati	AMP work of ICT-II Main Bay (403) at OHPC S/Y.	
466	400KV RANCHI - SIPAT-I MAIN BAY (421) AT RANCHI	22/03/19	10:00	22/03/19	17:00	ODB	POWERGRID ER-I	AMP	
467	400kV New Purnea- Kishanganj Line- 1	22/03/19	9:30	22/03/19	18:00	ODB	POWERGRID ER-I	Testing of retrofitted Auto Reclose Relay.	
468	400KV Bus -I At Patna	22/03/19	9:30	23/03/19	17:30	ODB	POWERGRID ER-1	Jumper connection of Bus isolator and Bus stability	BSEB
469	413 Main Bay Ballia 1 At Patna	22/03/19	9:30	23/03/19	17:30	OCB	POWERGRID ER-1	AMP & CB Overhauling	
470	400 KV Subhasgram Rajarhat Line.	23/03/19	09:00	25/03/19	17:00	ODB	POWERGRID,ER-II	R-Ph LA Placement, A/R Relay retrofitting at Subhasgram end and live line defects attending and defective isolator replacement in line.	WB
471	220KV,Future Line-IV BAY (209 BAY)	23/03/19	09:00	23/03/19	18:00	ODB	ER-II/Odisha/Balangir	AMP for 209 52 CB and 209 CT	
472	400 kV 402 Main Bay of Duburi-Pandiabili Line at Duburi SS	23/03/19	09:00	23/03/19	17:30	ODB	ER-II/Odisha/BARIPADA S/S	AMP works	
473	Main Bay-716 of 765KV Angul Ckt-1	23/03/19	08:00	23/03/19	18:00	ODB	ER-II/Odisha/Sundergarh	AMP Work	NLDC
474	400kV New Purnea-Kishanganj Line- 2	23/03/19	9:30	23/03/19	18:00	ODB	POWERGRID ER-I	Testing of retrofitted Auto Reclose Relay.	
475	Main Bay of 400 kV LKR-BSF Line -2 at Lakhisarai	23/03/19	10:00	23/03/19	14:00	ODB	POWERGRID ER-I	AMP of Main Bay of 400 kV LKR-BSF Line -2	
476	400 kV 4012 Tie Bay of Duburi-Pandiabili Line at Duburi SS	24/03/19	09:00	24/03/19	17:30	ODB	ER-II/Odisha/BARIPADA S/S	AMP works	
477	400KV Bus 2 At Patna	24/03/19	9:30	25/03/19	17:30	ODB	POWERGRID ER-1	Jumper connection of Bus isolator and Bus stability	BSEB

478	412 Main bay ICT 1 At Patna	24/03/19	9:30	25/03/19	17:30	OCB	POWERGRID ER-1	AMP & CB Overhauling	
479	400kV Berhampore-Bheramara-1	25/03/19	09:00	25/03/19	17:00	ODB	POWERGRID,ER-II	Modified SPS scheme implementation	NLDC
480	400/220kV 315 MVAICT -3 --at Rangpo	25/03/19	08:00	29/03/19	17:00	OCB	POWERGRID,ER-II	For rectification of SF6 gas leakage repair work,	
481	400 KV Rourkela-Talcher Line # 2	25/03/19	09:00	25/03/19	17:00	ODB	ER-II/Odisha/Rengali	AMP Work	
482	80 MVAR Bus Reactor at Duburi SS	25/03/19	09:00	25/03/19	17:30	ODB	ER-II/Odisha/BARIPADA S/S	AMP works	
483	125 MVAR BUS REACTOR-I	25/03/19	09:00	25/03/19	18:00	ODB	ER-II/ODISHA/ROURKELA	COMMISSIONING OF CSD IN ITS TIE BAY CB (42352 CB)	
484	765 KV DC Sundargarh - Dharamjaygarh Ckt-IV	25/03/19	08:00	25/03/19	18:00	ODB	ER-II/ODISHA/SUNDERGARH	TL Maintenance works	NLDC
485	Tie Bay-720 of 765KV Darlipali Ckt-2 & Dharamjaygarh Ckt-1	25/03/19	08:00	25/03/19	18:00	ODB	ER-II/Odisha/Sundergarh	AMP Work	NLDC
486	220kV BUS-1 AT DALTONGANJ	25/03/19	09:30	25/03/19	17:30	ODB	POWERGRID	AMP	JSEB
487	400KV BUS-BAR-I AT RANCHI	25/03/19	10:00	25/03/19	17:00	ODB	POWERGRID ER-I	Errction & Commissioning of Jack bus for Tie Bay of Ranchi-New Ranchi-I & II) & fixing of CVT Stool	JSEB
488	220 KV BUS-I at Gaya S/S	25/03/19	9:00	25/03/19	18:00	ODB	POWERGRID ER-I	For uprating of bay equipment under Nabinagar -2 Project.	BSEB
489	400kV New Purnea-Muzaffarpur Line - 1	25/03/19	9:30	25/03/19	18:00	ODB	POWERGRID ER-I	Testing of retrofitted Auto Reclose Relay.	NLDC
490	Tie Bay of 400 kV LKR-BSF-2 & 200 MVA ICT-2 at Lakhisarai	25/03/19	10:00	25/03/19	14:00	ODB	POWERGRID ER-I	AMP of Tie Bay of 400 kV LKR-BSF-2 & 200 MVA ICT-2	
491	400 KV BUS-2 AT MUZAFFARPUR	25/03/19	9:30	26/03/19	17:30	ODB	POWERGRID ER-I	AMP WORK	BSEB
492	Tie Bay of Tenughat & Lakhisarai 2 (417 Bay) AT Biharsarif	25/03/19	10:00	25/03/19	18:00	ODB	POWERGRID ER-I	Bay AMP	
493	400 kV Patna-Ballia Ckt III	25/03/19	9:30	25/03/19	17:30	ODB	POWERGRID ER-1	for replacement of porcelain insulator with polymer insulator	NLDC
494	400 KV /220KV ICT-1 TRANSFORMER in TSTPS(400 KV Bay – 1,2,3 and 220KV Bay no-5 )	25/03/19	08:00	28/03/19	18:00	Continuous	TALCHER	Transformer LA replacement,AMP jobs	
495	400kV Berhampore-Bheramara-2	26/03/19	09:00	26/03/19	17:00	ODB	POWERGRID,ER-II	Modified SPS scheme implementation	NLDC
496	400 KV Subhasgram Sagardighi Line.	26/03/19	09:00	28/03/19	17:00	ODB	POWERGRID,ER-II	A/R Relay retrofitting at Subhasgram end live line defects attending and defective isolator replacement in line.	WB
497	220KV Side, 315MVA ICT-2 BAY (208 BAY)	26/03/19	09:00	26/03/19	18:00	ODB	ER-II/Odisha/Balangir	AMP for 212 52 CB and 212 CT	
498	220 kV Bus-1	26/03/19	09:00	26/03/19	17:30	ODB	ER-II/Odisha/BARIPADA S/S	Isolator Alignment works	GRIDCO
499	220KV JEYPORE- JEYNAGAR-I Line	26/03/19	10:00	26/03/19	12:00	ODB	ER-II/Odisha /Jeypore	For Change over of Jeynagar Line from TBC CB to Jeynagar-I Bay(204 CB) after Isolator Retrofitting works of 204 89C ( Jeynagar -I Line Isolator)	GRIDCO
500	315 MVA ICT#1	26/03/19	09:00	26/03/19	18:00	ODB	ER-II/ODISHA/ROURKELA	RETROFITTING OF EXISTING OLD ICT PROTECTION RELAYS WITH NEW NUMERICAL RELAYS	GRIDCO
501	Bus bar-1	26/03/19	09:00	26/03/19	18:00	ODB	ER-II/Odisha /Indravati	AMP works -Bus-1	GRIDCO
502	400kV Sundargarh-Rourkela Ckt #1	26/03/19	08:00	26/03/19	18:00	ODB	ER-II/ODISHA/SUNDERGARH	TL Maintenance works	
503	765KV 240 MVAR Bus Reactor-1	26/03/19	08:00	26/03/19	18:00	ODB	ER-II/Odisha/Sundergarh	AMP works and taking R-Ph Reactor in to service in place of Spare Reactor after attending oil leakage of R-Ph reactor	NLDC
504	205 ICT-II Bay	26/03/19	09:00	26/03/19	18:00	ODB	ER-II/Odisha/Keonjhar	For CB timing & DCRM rectification job	

505	220kV BUS-2 AT DALTONGANJ	26/03/19	09:30	26/03/19	17:30	ODB	POWERGRID	AMP	JSEB
506	Barh Kahalgaon LINE # 1	26/03/19	09:30	27/03/19	18:00	OCB	BARH	For Leveling of Land & Annual Maintenance & Testing of Bays Equipments	
507	220V BUS -BAR-II AT RANCHI	26/03/19	10:00	26/03/19	17:00	ODB	POWERGRID ER-I	AMP	JSEB
508	220 KV BUS-II at Gaya S/S	26/03/19	9:00	26/03/19	18:00	ODB	POWERGRID ER-I	For uprating of bay equipment under Nabinagar -2 Project.	BSEB
509	400kV New Purnea-Muzaffarpur Line - 2	26/03/19	9:30	26/03/19	18:00	ODB	POWERGRID ER-I	Testing of retrofitted Auto Reclose Relay.	NLDC
510	208 BAY(220 KV FUTURE BAY) AT CHAIBASA	26/03/19	9:30	26/03/19	17:00	ODB	POWERGRID ER-I	AMP OF 208 BAY	
511	Main Bay of Lakhisarai 2 (418 Bay) AT Biharsarif	26/03/19	10:00	26/03/19	18:00	ODB	POWERGRID ER-I	Bay AMP	
512	400 kV Patna-Ballia Ckt IV	26/03/19	9:30	26/03/19	17:30	ODB	POWERGRID ER-1	for replacement of porcelain insulator with polymer insulator	NLDC
513	214 Main bay ICT 1 At Patna	26/03/19	9:30	27/03/19	17:30	OCB	POWERGRID ER-1	AMP & CB Overhauling	BSEB
514	400 kV Patna - Ballia - IV	26/03/19	09:30	26/03/19	17:30	ODB	POWERGRID ER-I	for replacement of porcelain insulator with polymer insulator	NLDC
515	220kV WBSETCL - II Bay at Alipurduar	27/03/19	08:00	27/03/19	18:00	ODB	POWERGRID.ER-II	Associated Bay AMP	WB
516	400kV Berhampore-Sagardighi-1	27/03/19	09:00	27/03/19	17:00	ODB	POWERGRID.ER-II	Line Maintanace	WB
517	400 KV D/C Malthan - Jamshedpur(TATA) (TL -(316-317)	27/03/19	8.00	28/03/19	17.00	ODB	POWERGRID.ER-II	For Powerline crossing of 765 KV RMTL-AP 85/0 (DD+25)-86/0( DD+25+1.5 RC). Span Length-262 mtr	
518	400 KV Indravati- BR # 2 Tie Bay (Bay No-411)	27/03/19	09:00	27/03/19	17:00	ODB	ER-II/Odisha/Rengali	for CT Replacemrnt	
519	220 kV Bus-2	27/03/19	09:00	27/03/19	17:30	ODB	ER-II/Odisha/BARIPADA S/S	Isolator Alignment works	GRIDCO
520	220KV JEYPORE-JEYNAGAR-II Line	27/03/19	10:00	27/03/19	12:00	ODB	ER-II/Odisha /Jeypore	For Change over of Jeynagar Line from TBC CB to Jeynagar-II Bay(205 CB) after Isolator Retrofitting works of 205 89C ( Jeynagar-II Line Isolator)	GRIDCO
521	315 MVA ICT#2	27/03/19	09:00	27/03/19	18:00	ODB	ER-II/ODISHA/ROURKELA	RETROFITTING OF EXISTING OLD ICT PROTECTION RELAYS WITH NEW NUMERICAL RELAYS	GRIDCO
522	Bus bar-2	27/03/19	09:00	27/03/19	18:00	ODB	ER-II/Odisha /Indravati	AMP works -Bus-2	GRIDCO
523	400kV Sundargarh-Rourkela Ckt #2	27/03/19	08:00	27/03/19	18:00	ODB	ER-II/ODISHA/SUNDERGARH	TL Maintenance works	
524	765KV 240 MVAR Bus Reactor-2	27/03/19	08:00	27/03/19	18:00	ODB	ER-II/Odisha/Sundergarh	AMP Work	NLDC
525	Main Bay-404 of 400KV Rourkela Line-II	27/03/19	09:00	28/02/19	18:00	ODB	ER-II/Odisha/Sundergarh	AMP Work	
526	207 bus coupler	27/03/19	09:00	27/03/19	18:00	ODB	ER-II/Odisha/Keonjhar	For CB timing & DCRM rectification job	
527	400KV Kahalgaon-Maithon Line-1	27/03/19	09:30	27/03/19	17:30	ODB	KAHALGAON	PM works and Relay Testing	
528	400KV BUS-BAR-II AT RANCHI	27/03/19	10:00	27/03/19	17:00	ODB	POWERGRID ER-I	Fixing of stool on Bus CVT Yph	JSEB
529	400kV New Purnea-Malda Line - 1	27/03/19	9:30	27/03/19	18:00	ODB	POWERGRID ER-I	Testing of retrofitted Auto Reclose Relay.	AFTER RESTORATION OF 400KV NEW PURNEA-BIHARSARIEFF-DC
530	209 BAY(220 KV FUTURE BAY) AT CHAIBASA	27/03/19	9:30	27/03/19	17:00	ODB	POWERGRID ER-I	AMP OF 209 BAY	
531	220KV MTPS-2 MAIN BAY AT MUZAFFARPUR	27/03/19	9:30	27/03/19	17:30	ODB	POWERGRID ER-I	AMP WORK	

532	Main Bay of Bus Reactor -1 (421 Bay) AT Biharsarif	27/03/19	10:00	27/03/19	18:00	ODB	POWERGRID ER-I	Bay AMP	
533	400kV Berhampore-Sagardighi-2	28/03/19	09:00	28/03/19	17:00	ODB	POWERGRID,ER-II	Line Maintenace	WB
534	132kV Rangpo Chuzachen and 132kV Rangpo Melli ,	28/03/19	08:00	28/03/19	18:00	ODB	POWERGRID,ER-II	For new Chuzachen bays LILO (Construction works)	SIKKIM
535	400/220 Kv 315MVA ICT II	28/03/19	09:00	28/03/19	17:30	ODB	ER-II/Odisha/BARIPADA S/S	Oil Leakage Arresting	GRIDCO
536	315MVA ICT # II	28/03/19	09:00	28/03/19	18:00	ODB	ER-II/Odisha /Jeypore	AMP of ICT # II, 208 Bay and testing of Back up Impedance relay	GRIDCO
537	220KV BUS-I	28/03/19	09:00	28/03/19	18:00	ODB	ER-II/ODISHA/ROURKELA	AMP WORK	GRIDCO
538	765/400KV 1500MVA ICT-1	28/03/19	08:00	28/03/19	18:00	ODB	ER-II/Odisha/Sundergarh	AMP Work	NLDC
539	206 Bay	28/03/19	09:00	28/03/19	18:00	ODB	ER-II/Odisha/Keonjhar	For CB timing & DCRM rectification job	
540	315 MVA ICT-II MAIN BAY (406) AT RANCHI	28/03/19	10:00	27/03/19	17:00	ODB	POWERGRID ER-I	AMP	
541	400kV New Purnea-Malda Line - 2	28/03/19	9:30	28/03/19	18:00	ODB	POWERGRID ER-I	Testing of retrofitted Auto Reclose Relay.	AFTER RESTORATION OF 400KV NEW PURNEA-BIHARSARIFF-DC
542	Main Bay of 200 MVA ICT-2 at Lakhisarai	28/03/19	10:00	28/03/19	14:00	ODB	POWERGRID ER-I	AMP of Main Bay of 200 MVA ICT-2	
543	220KV MTPS-1MAIN BAY AT MUZAFFARPUR	28/03/19	9:30	28/03/19	17:30	ODB	POWERGRID ER-I	AMP WORK	
544	Main Bay of Bus Reactor - 3(424 Bay) AT Biharsarif	28/03/19	10:00	28/03/19	18:00	ODB	POWERGRID ER-I	Bay AMP	
545	212 Main bay Khagaul line At Patna	28/03/19	9:30	30/03/19	17:30	OCB	POWERGRID ER-1	AMP & CB Overhauling	BSEB
546	125MVAR BR- I at Alipurduar	29/03/19	08:00	30/03/19	18:00	OCB	POWERGRID,ER-II	Oil leakage and Air Cell rectification	
547	400 KV Rajarhat Jeerat Line	29/03/19	09:00	31/03/19	17:00	ODB	POWERGRID,ER-II	A/R Relay retrofitting at WBSETCL Jeerat end and Live line defects attending and defective isolator replacement in line.	WB
548	400 KV BUS-I of NTPC Farakka	29/03/19	09:00	29/03/19	18:00	ODB	POWERGRID,ER-II	For connecting BUS isolator of bay no-22 to BUS-I (After augmentation of BUS Isolator from 2000A to 3150 A rating under ERSS-XV projects).	
549	400 KV S/C Durgapur - Jamshedpur TL- ( TL-329-330)	29/03/19	8:00	30/03/19	17:00	ODB	POWERGRID,ER-II	For Powerline crossing of 765 KV RMTL-AP 102/0 (DD+25+1.5 RC)-103/0( DD+9). Span Length-208 mtr	
550	400 KV, 50 MVAR Rengali-Indravati Line Reactor (412LR)	29/03/19	09:00	29/03/19	17:00	ODB	ER-II/Odisha/Rengali	AMP Work	
551	400KV Balangir-Angul Line Main BAY(401BAY)	29/03/19	09:00	29/03/19	18:00	ODB	ER-II/Odisha/Balangir	AMP for 401 52 CB and 401 CT	
552	412 Main Bay (JEYPORE-GAZ I MAIN BAY)	29/03/19	09:00	03/04/19	18:00	OCB	ER-II/Odisha /Jeypore	Overhauling of R, Y, B of 41252 (CB)(JEYPORE-GAZ I MAIN BAY)	
553	220KV BUS-II	29/03/19	09:00	29/03/19	18:00	ODB	ER-II/ODISHA/ROURKELA	AMP WORK	GRIDCO
554	765/400KV 1500MVA ICT-1	29/03/19	08:00	29/03/19	18:00	ODB	ER-II/Odisha/Sundergarh	AMP Work	NLDC
555	208 bay	29/03/19	09:00	29/03/19	18:00	ODB	ER-II/Odisha/Keonjhar	For CB timing & DCRM rectification job	
556	400kV New Purnea-Siliguri Line - 1	29/03/19	9:30	29/03/19	18:00	ODB	POWERGRID ER-I	Testing of retrofitted Auto Reclose Relay.	
557	220KV BUS-COUPLER AT MUZAFFARPUR	29/03/19	9:30	29/03/19	17:30	ODB	POWERGRID ER-I	AMP WORK	
558	Main Bay of Purnea 1 (437 Bay) AT Biharsarif	29/03/19	10:00	29/03/19	18:00	ODB	POWERGRID ER-I	Bay AMP	

[illegible]



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# Quarterly Preparedness Monitoring -AGENDA

( Status as on :  
 )

S.No.	State	Sector ( G/T/D)	Utilities	Status of CISO Nomination	Critical Infra Identified	Crisis managem ent 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 _____		

**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	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>	
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
<b>Total</b>		<b>42</b>	

- 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 25<sup>th</sup> 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.