Minutes

of

154th OCC Meeting

Date: 07.03.2019
Eastern Regional Power Committee
14, Golf Club Road, Tollygunge
Kolkata: 700 033

Eastern Regional Power Committee

Minutes of 154th OCC Meeting held on 21st February, 2019 at Mejia TPS, DVC

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

Item no. 1: Confirmation of minutes of 153rdOCC meeting of ERPC heldon21.01.2019

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

Members may confirm the minutes.

Deliberation in the meeting

Members confirmed the minutes of 153rd OCC meeting.

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 22thJanuary - 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)**

Deliberation in the meeting

ERLDC presented the performance of the Eastern Regional Grid during January 2019. Presentation is enclosed at ***Annexure- A1****.*

OCC observed that the % of time of frequency remaining within the IEGC had been decreased to 70% in January,19 w.r.t. 78% in January, 18. Similarly % of time of grid frequency greater than 50.05 Hz had been increased to 19% in January,19 w.r.t. 11% in January, 18. This trend was contrary to the expectation as amended DSM Regulation has come into force from 01.01.2019.

ER constituents opined that the frequency shown by the ERLDC is 15 min average frequency which is deviating from IEGC band whereas the instantaneous frequency is much fluctuating after implementation of new DSM regulation.

Member Secretary, ERPC highlighted the issue of imposition of penalty based on sign change on the generator against "ZERO" schedule. He also highlighted the issue of imposition of sign change penalty for marginal drawal schedule. He informed the OCC members regarding the decision taken in the last commercial Sub-Committee meeting to resolve the issue.

ERLDC added that BSPTCL and Odisha are perfectly maintaining their drawal as per the schedule whereas Jharkhand and Sikkim are paying huge amount of DSM charges.

OCC advised Jharkhand and Sikkim to maintain the drawl as per the schedule.

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. 01st 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.

Deliberation in the meeting

Member Secretary, ERPC briefly explained the objective, the basic philosophy and the operational and commercial issues involved in implementation of SCED.

*NLDC gave a detailed presentation elaborating procedure of SCED implementation. The presentation is enclosed at **Annexure-B1A**.*

OCC advised NLDC/ERLDC to give a presentation in TCC Meeting.

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

CEA vide letter dated 28th 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 use 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 *I* long rod) and polymer insulators . Regulation Clause No. 89(1)(f)(i) ofCEA (Technical Standards for Construction of Electrical Plants and Electric Lines) Regulations 201 0, 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 152nd 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.

Deliberation in the meeting

Powergrid informed that the installed polymer insulators were mostly purchased from Indian Vendors.

OCC decided that the details submitted by the Powergrid would be placed in TCC Meeting. Further, a Report would be submitted to CEA based on the deliberation in TCC.

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 8th 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.

Deliberation in the meeting

It was informed that ISGS generators at Barh and Teesta V are in the process of implementation of the AGC as a pilot project. However, the exact status of implementation could not be ascertained in the meeting.

It was informed by Member Secretary, ERPC that, during the deliberation in the 8th NPC meeting on 30.11.2019, it emerged that states in the other regions had already taken initiative for implementation of AGC. ERPC was advised to sensitize this issue in the ERPC forum.

OCC advised Odisha, West Bengal and DVC to identify one generator in their system for implementation of AGC as a pilot project and place the detailed implementation plan in coming TCC Meeting.

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

JUSNL vide letter dated 8th 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. lt will be pertinent to mention here that SER is availing power from Kendposi, RKSN, 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 ofManique GSS on DVC system and Kendposi should be fed through OPTCL Joda Power for 31 days.

JUSNL may explain. Members may discuss.

Deliberation in the meeting

JUSNL explained that they needed around 35 MW power from Manique (DVC) and 40 MW power from Joda (OPTCL) S/s during the shutdown of 132kV Ramchandrapur-Adityapur D/C line for 31 days.

DVC informed that, due to network constraints in DVC system, DVC would not be in a position to give power from Manique (DVC).

OPTCL informed that the ATRs at Joda are quite old and they are planning to augment the ATRs. Power could be extended to JUSNL only after completion of augmentation of ATR.

Underlining the need to facilitate the shut-down to JUSNL and at the same time, to ensure system integrity, OCC advised Member Secretary, ERPC to convene a special meeting at ERPC Secretariat to discuss the issue with JUSNL, DVC, OPTCL, ERPC and ERLDC to arrive at an acceptable solution.

Item No. B.5: Review of Rangpo SPS scheme after commissioning of 400 KV Teesta III-Kishangaanj 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 kVTeesta 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 outby ERLDC to analyze the various contingencies.

Powergrid vide mail dated 16th 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.

Deliberation in the meeting

It was informed in the meeting that SPS at Rangpo has been kept out of service after commissioning of dedicated lines of Teesta-III.

Teesta III informed that interim SPS has also been kept out of service.

OCC decided that a committee with members from Powergrid, Teesta-III, Teesta V, Dikchu, Dansenergy, Chuzachen, ERLDC and ERPC would study the requirement of SPS for safe evacuation of Sikkim hydro power and place the report in next OCC Meeting for further deliberation.

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

In 39th 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 153rd 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.

Deliberation in the meeting

Powergrid informed that they would send the updated status to ERPC within a week.

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

In 39th 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.

Deliberation in the meeting

Powergrid informed that they would send the updated status to ERPC within a week.

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

(A) Review of AUFLS Settings

In 8thNPC 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 bediscussed along with the report of Consultant appointed by NRPC (ifavailable), in the next meeting of NPC which would be held in the month of May, 2019.

Members may note.

Deliberation in the meeting

Members noted.

(B) Mapping of Feeders

In 8th NPC held on 30th 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.

Deliberation in the meeting

DVC informed that mapping of the UFR feeders had already been implemented in DVC system.

OCC advised all the other States to submit the latest status to ERPC.

OCC decided to discuss the issue also in SCADA O&M Meeting scheduled to be held on 6th March 2019.

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

MoP vide letter dated 7th 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.

Deliberation in the meeting

OCC advised all the thermal generators to assess the requirement of coal in the coming few months and take the necessary action to build up adequate stock to ensure uninterrupted supply of power. Power stations were advised to inform ERPC Secretariat any hurdle being faced by them in this respect, so that, if required, a separate meeting would be convened by ERPC Secretariat with the thermal generators, coal companies and the Railways.

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&Santaldih TPS of WBPDCL 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 153rd 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 8th 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 Loksabha elections.

Members may discuss.

Deliberation in the meeting

DVC requested to shift the maintenance schedule of Koderma U#1 to November 2019 from January 2020 as the unit had already completed 2000 operational hrs. ERPC assured to look into the proposal and discuss the same in the next OCC meeting.

No consensus was arrived at regarding the proposal of WBSEDCL for rescheduling of MPL Unit-2 shutdown, OCC referred the issue to TCC for further decision.

KBUNL requested for allowing the shutdown of Unit#4 (195 MW) from 26.03.2019 to 29.04.2019 (35 days) instead of 01.03.2019 to 04.04.2019 (35 days).

No consensus was arrived at regarding the proposal of KBUNL, OCC referred the issue to TCC for further decision.

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 18th 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.

Deliberation in the meeting

Representatives of East Central Railway and Nabinagar Thermal Power Plant were not available for discussion.

It was informed that Railway had filed a Petition in CERC in this regard.

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 1st Unit of MHEP was supposed to commission in 2018, however due to unavoidable circumstances beyond the control of the Project Authority, the 1st 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 1st 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.

Deliberation in the meeting

Member Secretary, ERPC outlined the issues involved in accounting the power imported by Bhutan during winter this year due to delay in commissioning of Mangdechhu Hydroelectric Project in Bhutan. He also informed that the issue was discussed in details in the Commercial Sub-Committee meeting. The decision of Commercial sub-Committee in this regards was also conveyed in the meeting.

In line with the decision taken in the Commercial sub-Committee meeting, OCC also decided to refer this issue to TCC for further guidance.

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

In line with 148th 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 31st 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.

Deliberation in the meeting

*The minutes of the meeting are enclosed at **Annexure-B13**. Minutes are also available at ERPC website.*

OCC advised all the generators to take necessary action to ensure proper RGMO response and Tuning of PSS.

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.

Deliberation in the meeting

OCC advised all the constituents to submit the relevant information as per the format to ERPC Secretariat vide mail at the earliest.

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 maybe 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.

Deliberation in the meeting

OCC advised all the transmission licenses to furnish the details of nature of work to be carried out during the shutdown while submitting the shutdown requisition to ensure adequate measures & preparatory actions to safeguard systems during shutdown period.

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 11th 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 31st Jan 2019 and same was also sent to all the entity of ER.

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

Members may note.

Deliberation in the meeting

Members noted.

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.

Deliberation in the meeting

Members updated that the following lines are in healthy condition:

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

OCC advised ERLDC to revise the restoration procedure considering updated 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.

Deliberation in the meeting

OCC advised all the SLDCs to submit the updated restoration procedure of their respective state.

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 forPOC 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.

Deliberation in the meeting

It was informed that the validation Committee Meeting would be held today.

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 form PSDF for installation of capacitor banks.

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

Members may submit the data.

Deliberation in the meeting

OCC advised all the states to submit the updated capacitor bank list in their control area to ERLDC and ERPC.

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 1st 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 1st instalment	43.37	6.59 Cr	Order had been placed and work is in progress.
4	WBPDCL	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 wef**15.11.2018***
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.		*U.Kolab, Balimela, U.Indravati, Burla, Chiplima March 2019*	*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	31st 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	31st March 2018	49.22 Cr.		75% work completed for seven no. GSS as part of R & M work. Revised DPR is to be submitted for rest 5 no. GSS.
13	JUSNL	Renovation and up-gradation of protection system	*September 2017*	*15 Months*	*138.13 crores*		LOA placed to Siemens on 28th 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.	1st installment of 14.05 Cr. received on 21.12.2017	Work awarded for 77.97 Cr.
16	POWERGRID	Installation of STATCOM in ER		June 2018	*160.28 Cr*	*16.028 Cr*	Work is in progress, expected to complete by June 2018. STATCOM at Rourkela has been commissioned.
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 30th October 2017	20 Cr.	4.94 Cr. + 9.88 Cr.	1) Protection Database Project has been declared 'Go live' w.e.f. 31.10.17. 2) Pending training on PDMS at Sikkim and 3rd training on PSCT has been also completed at ERPC Kolkata.
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 Integated 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 Schedulling, Accounting, Metering and settlement of Transcation 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 TESG.

Respective constituents may update the status.

Deliberation in the meeting

Members updated the status as mentioned in above table.

It was informed in the OCC that, in PSDF review Committee meeting held on 18th February 2019, it was decided that all the constituents are to submit their fund requisition by 15th March 2019 to the nodal agency for all the approved schemes.

Regarding sl no 12 in approved projects, BSPTCL was advised to submit the latest status to the nodal agency.

Item No. B.20: Additional agenda

1. Periodical Audit and Vulnerability Assessment & Penetration Testing (VPAT) of ICT Infrastructure--CEA

Central Electricity Authority vide letter dated 31st January 2019 informed that a vulnerability has been reported in website of an organization under Power Sector. Any vulnerability present in ICT infrastructure, website, web application etc. may invite attackers to carry out malicious activities. In this case, attackers could exploit the targeted organization.

To avoid the possibility of Cyber Security related issue by plugging and fixing the vulnerability, it is essential to conduct regular & meaningful audit and Vulnerability Assessment and Penetration testing (VPAT) of all ICT infrastructure in addition to adopting the best practices and guidelines by all Power Sector Organizations.

In this regard, all Power Sector organizations are requested to ensure periodical audit and Vulnerability Assessment and Penetration testing (VPAT) of all ICT infrastructure by competent auditors and testers. Further, Sectoral CERTs are requested to take immediate action and co-ordinate with organizations under their purview for the same.

Deliberation in the meeting

OCC advised all the constituents to conduct the Audit, Vulnerability Assessment and Penetration Testing (VPAT) of all ICT infrastructure, website, web application etc. and submit a report to CISO, MoP with a copy to ERPC Secretariat.

2. FLEXIBLE OPERATION OF THERMAL POWER STATIONS- IDENTIFICATION OF PILOT PROJECTS

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

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

In 142nd OCC Meeting, NTPC informed all the units of NTPC were capable of 55% minimum load operation.

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

In 39th TCC, TCC advised DVC to make a plan for demonstration of capability testing with the available grade of coal and the limitations in achieving the 55% of technical minimum, if any may be brought in the report to be submitted in the upcoming OCC Meeting.

Deliberation in the meeting

DVC operation services informed that they could not demonstrate the capability of 55% minimum load operation of DSTPS units due to poor coal quality issues. However, DVC had achieved the 55% of technical minimum operation for units at Chandrapura TPS and Koderma TPS.

OCC advised DVC operation services to submit a report to ERPC within two days to place the details in TCC Meeting.

3. Shutdown of Biharsharif- Sasaram 400 kV Ckt-1 and Ckt-2 for re- alignment work-- Powergrid

Powergrid vide letter dated 19th February 2019 informed that shutdown required for carrying out the re- alignment work of the existing 400 kV D/C Biharsharif- Sasaram (Ckt-1 & 2) transmission line for construction of the new Railway line. The above shutdown was discussed and approved in the 153rd OCC meeting (SI. No. 28 & 29) and accordingly, the shutdown was requested from ERLDC.

In this regard, Powergrid received a response from NLDC stating that the shutdown as requested may not be given due to loss in generation due to apprehended contingencies in Nabinagar.

Thereafter Powergrid had submitted the clarification to NLDC in this regard.

It is therefore requested that the shutdown as requested may kindly be granted.

Deliberation in the meeting

NLDC and ERLDC agreed to go through details for allowing the shutdown.

4. Emergency shutdown of 400kV Talcher-Meramundali DC line—Powergrid

Powergrid vide mail informed that emergency shutdown of 400kv Talcher-Meramundali DC line is required from 23rd Feb 2019 (6:00Hrs) to 26th Feb 2019(18:00Hrs) to rectify the deformed/damaged Tower(Loc.76). The rectification shall cover ,destringing of conductors ,dismantling of Tower upto 3rd level, cross arms, erection of Tower and stringing.

This shutdown may be discussed in the OCC and approval may be accorded considering emergency nature of work.

Deliberation in the meeting

Powergrid explained the condition of tower with photographs.

OCC agreed to consider the shutdown subjected to real time grid conditions.

5. Deferment of shutdown of Maithon-Ranchi and RTPS-Ranchi 400kV D/c –Powergrid

Powergrid vide mail informed that the shutdown of subject lines were approved in 153rd OCC from 15Feb to 1Mar 2019 for realignment work for RTPS, DVC coal-feeding Rail Line.

This shut down could not be availed due to severe ROW faced during the execution.

It is requested to grant the shut down from 1 Mar 2019 to 15 Mar 2019 on continuous basis to enable such execution.

Deliberation in the meeting

OCC agreed to consider the shutdown subjected to real time grid conditions.

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.

Deliberation in the meeting

Members noted.

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

At present, the following islanding schemes are in service:

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

In 108th 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, WBPDCL and CESC.

Members may note.

Deliberation in the meeting

KBUNL informed that islanding scheme of Kanti TPS is to be discussed and implementation at BSPTCL end for segregation of loads is to be decided.

OCC decided to review the Kanti TPS islanding scheme in a separate meeting with KBUNL, BSPTCL, ERLDC and ERPC.

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

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

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

Members may update.

Deliberation in the meeting

It was informed that SPS at Rangpo is not in service after commissioning of dedicated transmission lines of Teesta III.

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

The latest status along with proposed logic as follows:

Sl No	State/Utility	Logic for ADMS operation	Implementation status/target	Proposed logic (if different from under implementation logic)
1	West Bengal	F <49.7 AND deviation > 12 % or 150 MW	Implemented on 25.11.16	F <49.9 AND deviation > 12 % or 150 MW
2	DVC	F <49.7 AND deviation > 12 % or 150 MW	Implemented on 17.06.2016	
3	Bihar	F <49.7 AND deviation > 12 % or 150 MW	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 142nd OCC, it was opined that uniform logic should be implemented for all the states. OCC decided to review the logic of ADMS after implementation of the scheme by all the states.

During the Month of January19, 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.

Deliberation in the meeting

Bihar and JUSNL informed that Chemtrol was not responding. As a result, there had been no progress in the implementation of ADMS.

OCC decided to discuss the issue in SCADA O&M Meeting scheduled to be held on 6th March 2019 at ERLDC. OCC advised Bihar and JUSNL send a suitable representative to the meeting with all the relevant details for fruitful discussion.

Regarding operation ADMS, WBSETCL informed that as per their records, the over drawl was to the tune of 87 MW only. Hence the ADMS did not operate as per the logic.

ERLDC informed that the details furnished above were as per the SCADA data. However, they agreed verify the figures.

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

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

OPTCL may update.

Deliberation in the meeting

OPTCL updated the status as mentioned in above table.

Item no. C.6: 220 kV inter-connecting lines of JUSNL with 2x315 MVA, 400/220 kV sub-stations at Chaibasa, Daltonganj&Dhanbad

In last OCC, JUSNL updated the latest status as follows:

Sl. No.	Name of the transmission line	Completion schedule
1.	**Daltonganj 400/220/132kV S/s:**	
a.	Daltonganj(POWERGRID)–Latehar220kVD/c	By 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
2	**Chaibasa400/220kVS/s**	
A	Chaibasa(POWERGRID)–Noamundi220kVD/c	Not yet started
3	**Dhanbad400/220kVS/s**	
A	LILO of Govindpur–Jainamore/TTPS 220kVD/c at Dhanbad	ROW issues.Target date November 2018.

JUSNL may update.

Deliberation in the meeting

JUSNL updated the status as mentioned in above table.

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

In last OCC, *WBSETCL updated the latest status as follows:*

Sl. No.	Name of the transmission line	Completion schedule
1.	**2x500MVA, 400/220kV Rajarhat---**	
a.	Rajarhat-N. Town-3 (WBSETCL) 220 kV D/C line	The line commissioned on 1st February 2019.
b.	Rajarhat-N. Town-2 (WBSETCL) 220 kV D/C line	ROW problem, December 2019
c.	Rajarhat- Barasat (WBSETCL) 220 kV D/C line	The line is charged from Rajathat and Jeerat. The line would be charged from Barasat end after completion of rest of the work by March 2020.
2	**Subashgram400/220kVS/s**	
a	Subashgram–Baraipur220kVD/cline	Sep 2019, 80% of work has been completed.

WBSETCL may update.

Deliberation in the meeting

WBSETCL updated the status as mentioned in above table.

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

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

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

Powergrid updated the latest status as follows:

Sl No	Location /Sub-Station of POWERGRID in ER	STATCOM - Dynamic Shunt Controller (MVAr)	Mechanically Switched Compensation Sl. (MVAr)		Latest status
			Reactor (MSR)	Capacitor (MSC)	
1	Rourkela	±300	2x125		*In service from March 2018.*
2	Kishanganj	±200	2x125		*70% civil work completed. 30% switchyard equipment supplied. Expected to complete by January 2019*
3	Ranchi(New)	±300	2x125		*Commissioned on 12th July 2018*

4	Jeypore	±200	2x125	2x125	*Commissioned on 30th June 2018*

Powergrid may update.

Deliberation in the meeting

Powergrid informed that STATCOM testing was in progress at Kishanganj and it would be in service by end of February 2019.

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 150th OCC, Powergrid informed that bypass arrangement would be completed by January 2019.
Powergrid may update.

Deliberation in the meeting

Powergrid informed that bypass arrangement would be completed by mid March 2019.

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:

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

In 153rd OCC, Powergrid was advised to implement alternate OPGW link through 400 kV Kishenganj- 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.

Deliberation in the meeting

*ERLDC presented the latest status which is enclosed at **Annexure-C10**.*

Powergrid informed that a letter had been sent to Kalpatru Power Transmission Ltd. and DMTCL for necessary support to implement the scheme but no reply had been received from them.

OCC decided to discuss the issue in SCADA O&M meeting scheduled to be held on 6th March 2019 at ERLDC.

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 38th 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 151st OCC, Powergrid informed that they had handed over DCD, cable and supporting software to BPC on 14th November 2018.

BPC vide mail dated 13th 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 PGCILto 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 152nd 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 Gelephuis still not being sent to ERLDC.

PGCIL/Bhutan may please respond.

Deliberation in the meeting

It was informed that issues related to SEM at Malbase had been resolved.

BPC informed that the downloading cable is defective and needs replacement.

OCC advised BPC and Powergrid to discuss and resolve the issue.

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
PGCIL Substations					
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
BSPTCL Substation					
1	BEGUSARAI	220kV Begusarai-Purnea-1	ER-1344-A	19.12.18	Reverse Polarity

In 153rd 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.

Deliberation in the meeting

It was informed that the issues had been discussed in Commercial Committee Meeting.

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

Sl 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.

Deliberation in the meeting

OCC advised all the states to compute ATC/TTC figures three months in advance and send to ERLDC.

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 alsoreduce the cost of GSM.

In 153rd 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.

Deliberation in the meeting

Powergrid informed that optical fiber for AMR had been implemented at 32 locations and rest of the locations would be completed by April 2019.

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 8th June,2018*	Last Week of January2019	*Done on 27th Sep 2018*
2	Maithon	1stweek of June 2018	*Completed on 6th June,2018*	1stWeek of February2019	
3	Rengali	2ndweek of June 2018	*Done on 18th August,2018.*	Last week of November 2018	Done on 12th Feb 2019
4	U. Indarvati	3rdweek of une 2018	*Planned in Oct ,2018.*	2ndweek of February2019	*Done on 28th Dec 2018*
5	Subarnarekha	1stweek of October 2018	*Done on 10th August,2018.*	1stweek of January2019	Done on 9th Feb 2019
6	Balimela	3rdweek of October 2018	Done on 21st Dec, 2018	1stweek of March 2019	
7	Teesta-V	2ndweek of Nov 2018	Done on 3rd May 2018	Last week of February2019	
8	Chuzachen	Last Week of May2018	In May 2018	2nd week of January2019	Done on 15th Jan 19

9	Burla	Last Week of June 2018	*Completed on 7th June,2018*	Last week of February2019	
10	TLDP-III	1st Week of June 2018	After Monsoon	2ndWeek of January2019	Done on 10th Jan 2019
11	TLDP-IV	Last Week of June 2018	After Monsoon	1st Week of February2019	
12	Teesta-III	Last week of Oct 2018	Done on 30th Nov 2018	First Week of March 2019	
13	Jorthang	First Week of May 2018		First Week of Feb 2019	
14	Tasheding	2nd Week of May 2018		2nd Week of Feb 2019	
15	Dikchu	3rd Week of May 2018		3rd Week of Feb 2019	Mar 2019

Members may update.

Deliberation in the meeting

Members updated the status as mentioned in above table.

OCC advised ERLDC to prepare the schedule for next year.

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:

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

In 152nd 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.

Deliberation in the meeting

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

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 7th 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----

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.

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.

Deliberation in the meeting

OCC advised all the states and transmission licensees 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 7th day of the current month to ERLDC through mail.

OCC advised all the states to ensure SCADA data availability before charging the line and intimate ERLDC before charging the lines.

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 22nd 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 149th OCC, it was informed that one more ICT of 315 MVA had been planned in 13thPlan which would be commissioned by May 2020.

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

In 152nd 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.

Deliberation in the meeting

BSPTCL informed that they would submit the revised scheme within a week.

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.

Deliberation in the meeting

BSPTCL agreed to submit the data within two days.

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 bypower sector entities
6. Status of action taken on CERT-In / NCIIPC advisories

In 148th OCC, all the constituents were advised to send the latest status to 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 at the earliest.

Members may comply.

Deliberation in the meeting

Members noted.

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 >= 200 MWneed to be submitted to ERLDC so that the compilation and subsequent analysis of data of thermal generatorson an all India basis could be made within stipulated time period.

The format for data submissionwas intimated to all generators and state SLDCs via email. Till date only GMR, Adhunik, MPL and Sagardighihave 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 inerldcso@posoco.infor 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 152nd 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.

Deliberation in the meeting

ERLDC informed that the relevant information had been received from all the generators.

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 153rd OCC, OCC advised all the constituents to submit the details of renewable power plants of 5 MW and above.

Members may comply.

Deliberation in the meeting

OCC advised all the constituents to submit the details of renewable power plants of 5 MW and above.

PART D:: OPERATIONAL PLANNING

Item no. D.1: Anticipated power supply position during March19

The abstract of peak demand (MW) vis-à-vis availability and energy requirement vis-à-vis availability (MU) for the month of March19 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.

Deliberation in the meeting

Modified anticipated power supply position for the month of March 2019 after incorporating constituents' observations is given at **Annexure-D.1***.*

Item no. D.2: Shutdown proposal of transmission lines and generating units for the month of March19

In 151st 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* ***8th*** *of every Month. Based on this, ERLDC shall prepare the list which would be placed in OCC Agenda. Any shutdown requisition received after 8th 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* ***5th*** *of every month with a copy to respective RLDCs.*

Members may finalize the Shutdown proposals of transmission lines andgenerating 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 shutdownto be discussed on 19thFebruary 2019 through VC is given at **Annexure-D2**.

Members may confirm.

Deliberation in the meeting

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

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 witching 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.

Deliberation in the meeting

Issues referred to ERLDC for their comments.

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	WBPDCL	1	210	POLLUTION CONTROL PROBLEM	10-May-18	23:05
3	KOLAGHAT	WEST BENGAL	WBPDCL	3	210	POLLUTION CONTROL PROBLEM	23-Feb-17	11:51
4	KOLAGHAT	WEST BENGAL	WBPDCL	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	WBPDCL	2	300	COAL SHORTAGE	24-Dec-18	19:55
10	SAGARDIGHI	WEST BENGAL	WBPDCL	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-BIHARSARIFF(PG)-D/C	ENICL	10-08-18	10:28	TOWER COLLAPSE AT 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.

Deliberation in the meeting

Members noted.

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 153rd OCC ERPC, ERLDC has successfully operated its backup control center at NLDC, New Delhi from 11:00Hrs to 14:00Hrs on 8th 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 142nd OCC, ERLDC informed that, in line with Enquiry Committee Recommendation, cyber security audit is being conducted on regular basis for SCADA system installed at ERLDC and SLDC as well but cyber security audit for telecom infrastructure installed in Eastern Region is not being carried out.

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

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

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

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

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

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

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

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

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

- All NTPC stations in Eastern Region
- Teesta, NHPC
- All OHPC generating units
- All CESC generating units
- All units of WBPDCL
- DGPC units

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Members may comply.

Item No. E.7: 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 14th 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 1st 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/mails 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 *I* 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

Monthly commissioning List of Transmission element and generators: January 2019

SL NO	Element Name	Owner	Charging Date	Charging Time	Remarks
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 22/01/19and 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 KatapalliChiplima 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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Annexure-A

Registration of 154th OCC meeting of ERPC at DVC, MTPS on 21-02-2019.

Sl. No.	Representative/ Participants	Designation/ organization	Signature
1	Shri Goutam Kr. Choubey	CE, SLDC, BSPTCL, Patna	
2	Shri R.K. Pandey	Sr. Manager, SLDC, JUSNL, Ranchi	
3	Shri Tinkaj Kumar	Manager, Trans Zone, Jamsedpur	
4	Shri P.K. Mishra	Chief Load Despatcher, SLDC, OPTCL, Bhubaneswar	
5	Shri P.K. Mohanty	Dy. Manager, SLDC, OPTCL, Bhubaneswar	
6	Shri H. P. Mohapatra	Sr. General Manager (E), OHPC Ltd, Bhubaneswar	21/2
7	Shri Chinmoy Kr. Haldar	Addl. Chief Engineer, CLD, WBSETCL, Howrah	21/02/19
8	Shri Souvik Banerjee	SE(E), Central Planning Wing, WBSETCL, Saltlake, Kolkata	
9	Shri Pritam Banerjee	SE(E), WBSETCL, Saltlake, Kolkata	21/02/19
10	Shri Prakash kumar Gupta	DGM, WBPDCL, Kolkata	21/2/19
11	Shri Chanchal Pal	DGM, WBPDCL, Kolkata	21.02.19
12	Shri Goutam Bose	Sr. Manager, WBPDCL, Kolkata	21.02.19
13	Shri Arunava Sengupta	DGM, System Control Dept., CESC, Chowringhee Square, Kolkata	
14	Shri Koushik Banerjee	Sr. Manager, System Control Dept., CESC, Chowringhee Square, Kolkata	21/2/19
15	Shri Krishna Pradhan	EE, Energy & Power Department, Govt. of Sikkim.	21.02.19
16	Shri Ashis Lamichaney	AE, Energy & Power Department, Govt. Of Sikkim.	21/2/19
17	Shri D K JAIN	Executive Director, ERLDC, Power System Operation Corporation Ltd. (POSOCO), Kolkata	21.02.19
18	Shri S BANERJEE	GM, ERLDC, Power System Operation Corporation Ltd. (POSOCO), Kolkata	21/2/19
19	Shri T R MOHAPATRA	CH. MGR, ERLDC, Power System Operation Corporation Ltd. (POSOCO), Kolkata	
20	Shri B MONDAL	DY. MGR, ERLDC, Power System Operation Corporation Ltd. (POSOCO), Kolkata	
21	Shri N. Nallararasan	Sr. GM, NLDC (POSOCO)	
22	Shri Raj Kr. Mandal	Addl. General Manager (EEMG/O&M), Kahalgaon, NTPC Limited, Bhagalpur, Bihar	21/02

Registration of 154th OCC meeting of ERPC at DVC, MTPS on 21-02-2019.			
Sl. No.	Representative/ Participants	Designation/ organization	Signature
23	Shri S. K. Pramanik	CGM (AM)/ER-II, Power Grid, Kolkata	
24	~~Shri S. K. Hazra~~	Sr. GM (RTAMC)/ER-II, Power Grid, Kolkata	
25	Shri P. Ghosh	Manager (AM)/ER-II, Power Grid, Kolkata	
26	Shri Sanjoy Kumar Sahu	DGM (AM/IT), POWERGRID, Odisha Projects, BBSR	
27	Shri Munna Prasad	Head (Performance Monitoring Division), O&M Department, Druk Green Power Corporation, Thimpu, Bhutan	
28	Tshering Duba	Manager, Bhutan Power Corporation, Thimpu, Bhutan	
29	Samten	Engineer, Bhutan Power Corporation, Thimpu, Bhutan	
30	Mr. Oma Nath Kuikel	Assistant Engineer, Chhukha Hydropower Plant, Bhutan	
31	Shri Choki Gyeltshen	Shift Charge Engineer Operation Division Unit D Tala Hydropower Plant.Druk Green Power Corporation Limited Chhukha : Bhutan	
32	Shri S. K. Choudhary	Asst. Vice President, Adhunik Power & Natural Resources, Jharkhand	
33	Shri Amal Baidya	GM (Operation), AVP, Adhunik Power	
34	Shri Biplab Chatterjee	Group Head - Operations, Maithon Power Limited, Dhanbad	
35	Shri S K Das	Head - commercial, Maithon Power Limited, Dhanbad	
36	Shri Avijit Chowdhury	Sr Control Desk engineer, Maithon Power Limited, Dhanbad	
37	Shri Bibhuti Routray	Lead Engineer - AHP, Maithon Power Limited, Dhanbad	
38	Shri Diptikanta Panda	Associate Manager, GMR, Odisha	
39	Shri B. Devendra Kumar	DGM/O&M Works,Power House Complex, Teesta Stage-III North Sikkim	
40	Shri Pulak Nandy	DY General Manager(OS), Haldia Energy Limited, Corporate Office, Kolkata	
41	Shri D. N. Singh	Manager EEMG, KBUNL, Muzaffarpur	
42	Shri V. K. Pandey	GM(Operation), KBUNL	
43	Shri Pradeep Kumar Mahapatra	Addl. General Manager, Odisha Power Generation Corporation Limited (OPGC Ltd), Bhubaneswar	
44	Shri. J. Bandyopadhyay	Member Secretary, ERPC Secretariat, Kolkata	
45	Shri. S. M. Jha	Consultant, Ex. Superintendent Engineer, ERPC Secretariat, Kolkata	

Registration of 154th OCC meeting of ERPC at DVC, MTPS on 21-02-2019.			
Sl. No.	Representative/ Participants	Designation/ organization	Signature
46	Shri. Dinesh Bauri	Executive Engineer, ERPC Secretariat, Kolkata	
47	Shri. J. G. Rao	Executive Engineer, ERPC Secretariat, Kolkata	
48	Smt. Pema Wangmo	Section Officer (Electrical), Kurichhu Hydropower Plant, Bhutan	
49	Mr. Kencho Dorji	Basochu Hydropower Plant, Bhutan	
50	Shri. Makarand Prakash Joshi	Plant Head, Dikchu H.E.P ,Sikkim	
51	Shri. Avinash M Pavgi	Chief General Manager, Powergrid, ER- I	21.2.19
52	Shri. S. A. Ansari	Manager, Powergrid, ER- I	
53	Shri. D K Bauri	Executive Engineer, ERPC	
54	Shri. Krishna Pradhan	DE, Sikkim	
55	Shri. Ashis Lamicheney	AE, Sikkim	
56	Shri. Arun Pramanik	AGM(OPN), TSTPS , NTPC	
57	Shri. P Joshi	GM, Dikchu Hydro Power Plant	
58	Sri Pradeep Mahapatra	AGM, Orissa PPHL	
59	Shri S.S. Nayak	Sr.GM, PP, GRIDCO, Bhubaneswar	
60	Shri Nand Kishongha	Executive Engineer DVC, BTPS	
62	Shri R.K. Ansary	EE (E), DVC, BTPS	
63	Sh. D. Dey	CE, CLD, Maithon	
64	Sri Swapan Patra	Sr. Manager, DPL	
65	Sri Sougata Dutta	Asst. Manager DPL	
66			

Registration of 154th OCC meeting of ERPC at DVC, MTPS on 21-02-2019.

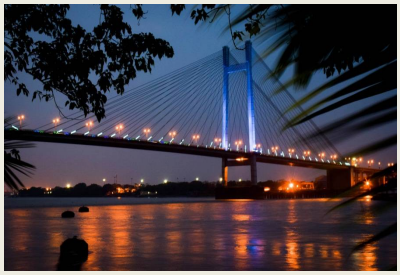
Sl. No.	Name	Designation	Department	Signature
1	Sri Manik Rakshit	CE-I		
2	Sri D P Paitundi	SE (E)	Commercial HQ	
3	Sri Subir Bhadra	DCE (E)	System , HQ	
4	Kazi Md Hanif	SE(M)	OS&U	21/2/19
5	Sri Debashish Dey	CE (E)	CLD Maithon	
~~6~~	~~Sri P Soren~~	SE(Comm)	SLDC, Howrah.	
7	Sri Arnab Mitra	SE(E)	SLDC-Howrah	21/02/19
8	Sri Preetosh Ghosh	EE(E)		Preetosh Ghosh 21/02/19
9	Sri A Chakraborty	DCE (E)	Trans , Maithon	21/02/19.
10	SRI NAND KISHORE JHA	EE (E)	BTPS	
11	MD. REJAUL KARIM ANSARI	EE (E)		
12			CTPS	
13				
14	Sreepada Dan		DTPS	Present
15	Prabhas Mondal			Present
16			DSTPS	
17				
18			KTPS	
19				
~~20~~	~~Sri G Kranti Kumar~~	SDE (E)	RTPS	
21				
22				
23				
24				
25				

Registration of 154th OCC meeting of ERPC at DVC, MTPS on 21-02-2019.

Sl. No.	Name	Designation	Department	Signature
1	Sri P K Mukherjee	Member (Secretary)	DVC	
2	Sri R P Tripathi	Member (Technical)		
3	Sri S Halder	Member (Finance)		
4	Sri S Dutta	ED (Commercial)	Commercial , HQ	
5				

Power System Operation Corporation Ltd.

154th OCC Meeting




At Mejia TPS, DVC

21st February, 2019

ER Grid Performances

ERLDC POSOCO

Highlights for the month of Jan-19

Frequency Profile
Average Freq:- 49.99 Hz
Avg FVI: - 0.051
Lowest FVI:- 0.033

Max- 50.28Hz on 22nd Jan' 19
Min- 49.58 Hz on 04th Jan'19

70.26% of the time freq was with in IEGC Band

Peak Demand
ER: 19227 MW on 22nd Jan 2019 at 19:42 hrs
% Growth in Average Demand Met w.r.t. last year: 1.51%

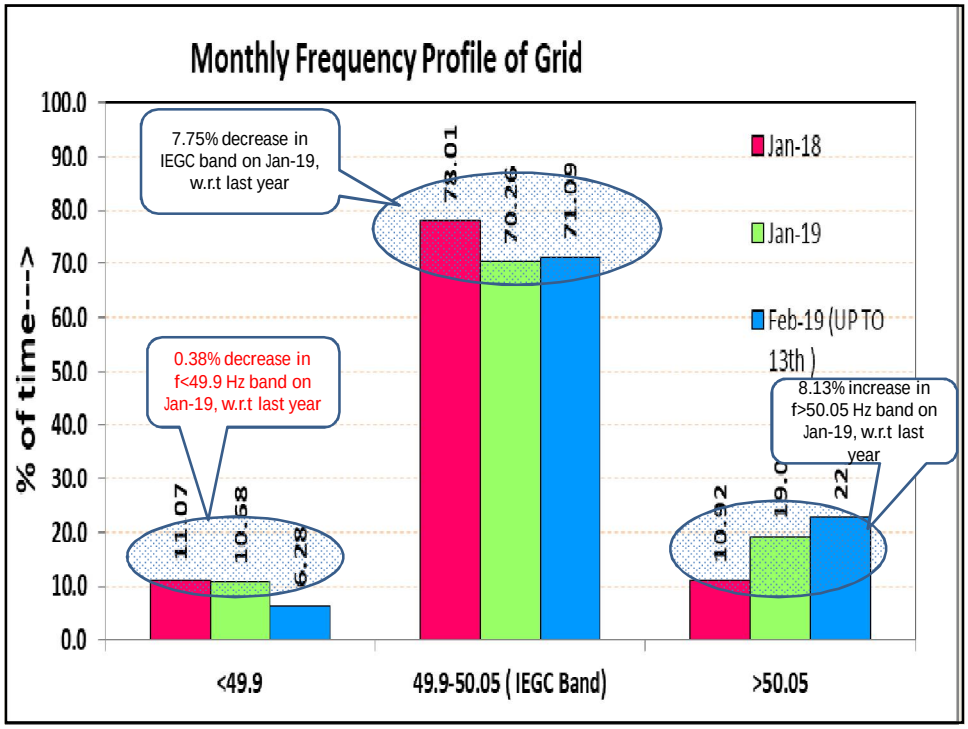
BSPHCL : 4252 MW ; ON 04/01/19
JUVNL: 1264 MW; ON 03/01/19
DVC: 3228 MW; ON 23/01/19
GRIDCO: 4406 MW; ON 07/01/19
WB: 6699 MW; ON 31/01/19
SIKKIM: 107 MW; ON 30/01/19

Energy met
Max. 392 MU on 30th Jan *2019*
%Growth w.r.t. last year on Max energy 1.57%
Avg. 369 MU in Jan *2019*
%Growth w.r.t. last year on Avg. energy : (-)0.7%

New Element
Generating Units-NIL

Open Access
STOA transactions approved -232 nos.

Energy Approved- 502.05 MUs



Important event list

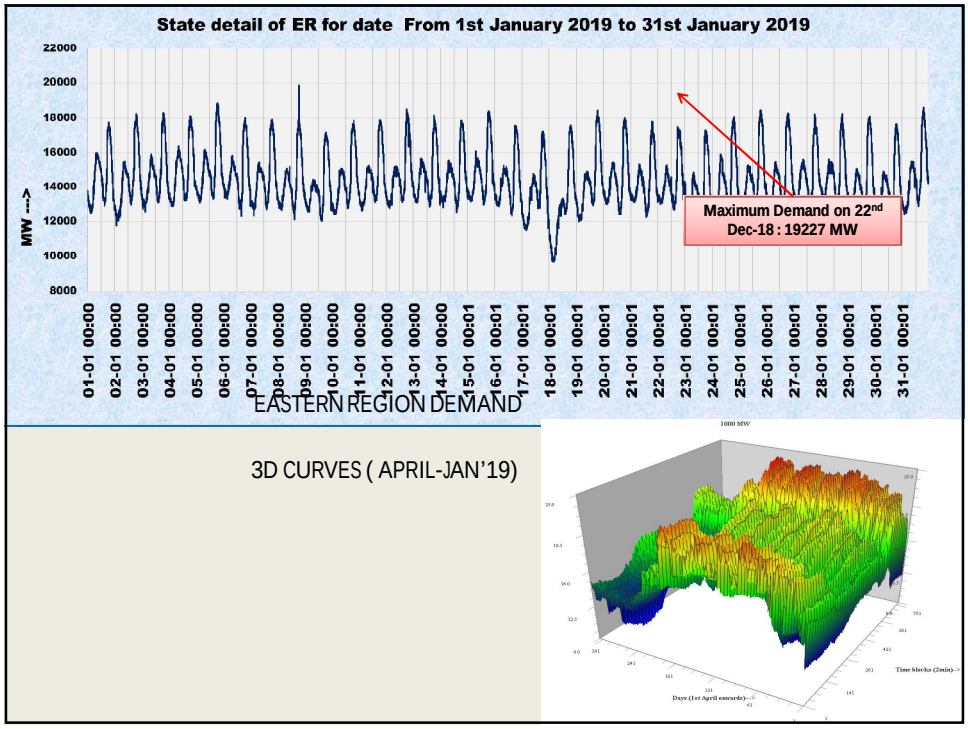
- **NTPP (BRBCL) U#3 of 250 MW** was synchronised for first time at 02:43hrs of 01/01/2019. Unit-3 completed it's 72hrs trial run from 01:30hrs of 07.02.2019 to 03:30hrs of 10/02/ 2019.
- **NSTPP (NPGC) U#1 of 660 MW** synchronised for first time at 02:02hrs of 14/01/2019.
- **IB_St-2 (OPGC) U#4 of 660 MW** synchronised for first time at 18:01 hrs of 23-01-2019.
- 400kV Teesta III-Kishanganj-S/C was charged at 17:07hrs of 04/01/2019.
- 400kV Rangpo-Kishanganj-S/C was charged at 16:22hrs of 11/02/2019.
- 400/220kV Rajarhat S/S charged for first time on 28-01-2019 by making LILO of 400kV Jeerat-Subhasgram-S/C. 500MVA ICT-I at Rajarhat & 220kV Jeerat-Newtown-DC was made LILO at Rajarhat on 01/02/2019.

New Element addition during the month:

Monthly commissioning List of Transmission elements and generators: January 2019					
SL NO	Element Name	Owner	Charging Date	Charging Time	Remarks
1	1500 MVA ICT 4 (765/400kV) at Gaya	PGCIL	03-01-2019	17:32	
2	400 KV Teesta_III-Kishanganj	TPTL	04-01-2019	17:07	
3	400/132 kV, 200 MVA ICT # 2 at NSTPP (NPGC)	NPGC	15-01-2019	17:20	
4	50 MVAR Bus Reactor at Nabinagar(BRBCL)	BRBCL	18-01-2019	13:40	
5	400 KV Subhashgram-Rajarhat	PGCIL	28-01-2019	17:09	LILO of 400kV Jeerat-Subhasgram at Rajarhat
6	400 KV Jeerat-Rajarhat	PGCIL	28-01-2019	17:51	
7	80 MVAR Line reactor of 400kV Rajarhat-Gokarna at Rajarhat end	PGCIL	30-01-2019	21:52	Charged as Bus reactor
8	220 KV Chaibasa(JUSNL)-Ramchandrapur-I	JSUNL	30-01-2019	15:38	
9	220 KV Chaibasa(JUSNL)-Ramchandrapur-II	JSUNL	30-01-2019	15:24	

So Far Highest Demand					
Constitute	Demand (in MW)	Date	Time	Dmd met (MW) on 22nd Jan'19 (max dmd met day)	
				MW	Time
Bihar	5011	12-July-18	0:05	4095	19:00
DVC	3536	12-July-18	8:55	3087	07:22
Jharkhand	1319	19-May-18	21:02	1131	20:20
Odisha	5558	23-Aug-18	20:21	4250	20:59
W. Bengal	8896	18-June-18	19:51	6520	18:02
Sikkim	117	28-Oct-16	19:22	92	17:44
ER	23030	03-Oct-18	20:43	19227	19:42

So Far Highest Energy Consumption			
Constitute	Energy consumption (in MUs)	Date	Energy met on 22nd Jan'19 (max dmd met day)
Bihar	104.0	02-Oct-18	73.3
DVC	75.8	12-July-18	67.1
Jharkhand	27.8	19-May-18	21.6
Odisha	123.5	02-Oct-18	79.9
West Bengal	192.6	05-Oct-18	125.7
Sikkim	2.1	07-Dec-17	1.6
ER	499.8	18-Aug-18	383



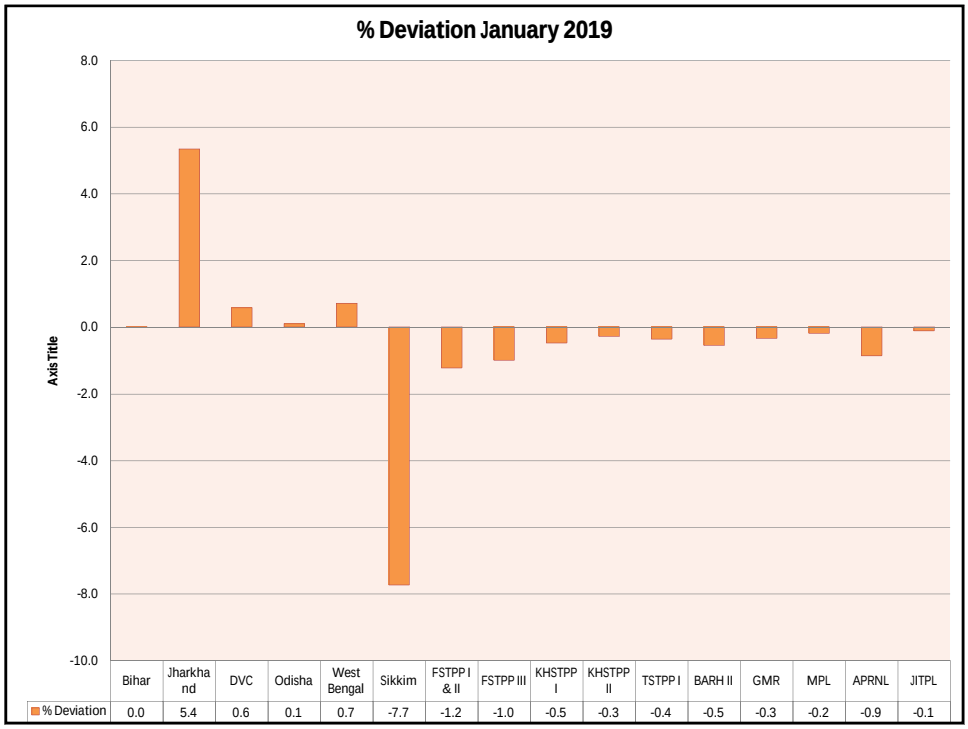
EASTERN REGION DEMAND

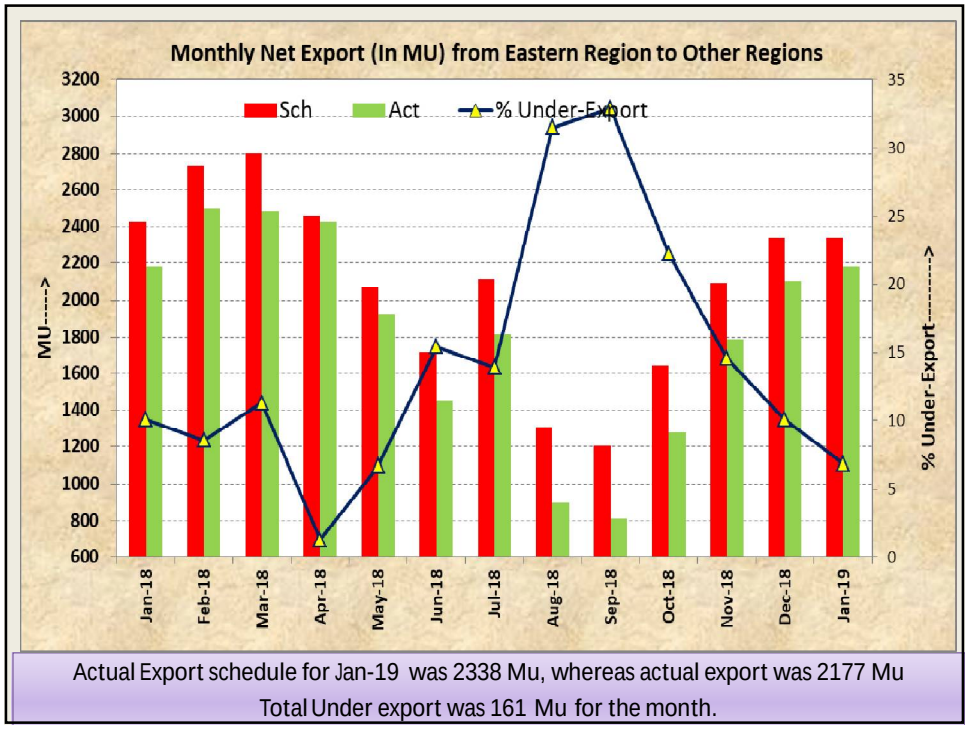
3D CURVES (APRIL-JAN'19)

Over Drawl / Under Injection by ER Entities

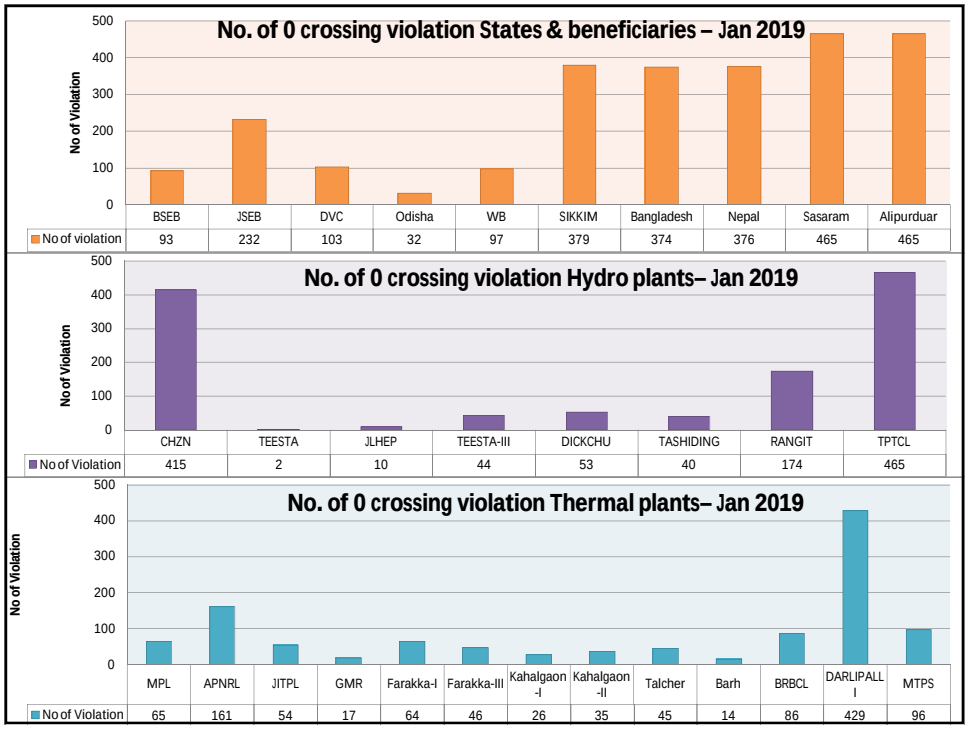
Non-compliance of direction issued by SLDC

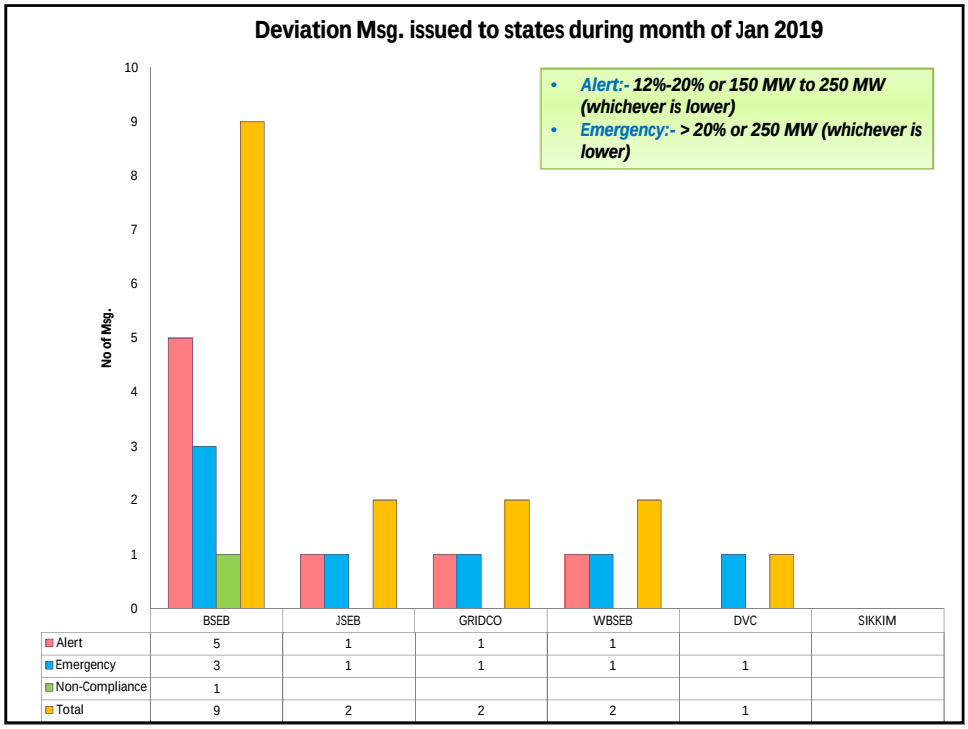
December 2018 Schedule vs Actual Status					
	Schedule	Actual	OD	Daily Avg OD	% Deviation
Bihar	2154	2154	0	0.0	0.0
Jharkhand	560	590	30	1.0	5.4
DVC	-1202	-1195	7	0.2	0.6
Odisha	815	815	1	0.0	0.1
West Bengal	751	756	5	0.2	0.7
Sikkim	56	51	-4	-0.1	-7.7
FSTPP I & II	993	981	-12	-0.4	-1.2
FSTPP III	309	306	-3	-0.1	-1.0
KHSTPP I	493	491	-2	-0.1	-0.5
KHSTPP II	900	898	-2	-0.1	-0.3
TSTPP I	378	377	-1	0.0	-0.4
BARH II	881	877	-5	-0.2	-0.5
GMR	314	313	-1	0.0	-0.3
MPL	552	551	-1	0.0	-0.2
APRNL	128	127	-1	0.0	-0.9
JITPL	358	357	0	0.0	-0.1



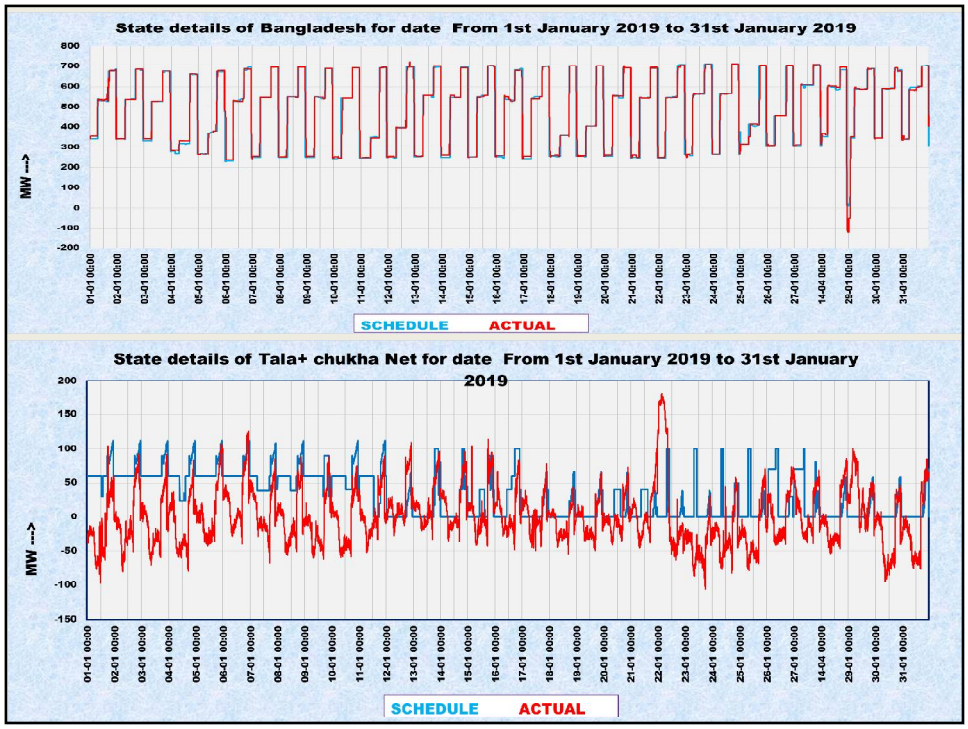


Actual Export schedule for Jan-19 was 2338 Mu, whereas actual export was 2177 Mu
Total Under export was 161 Mu for the month.

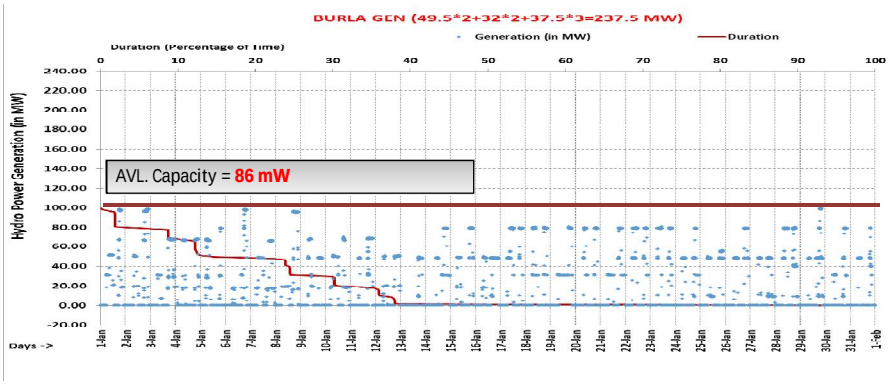


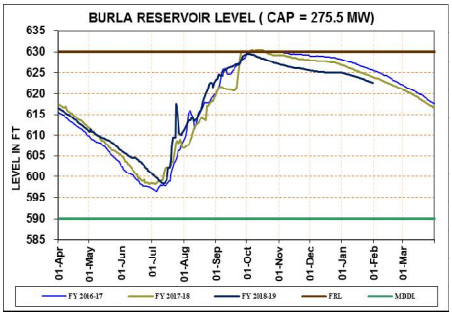


	BSEB	JSEB	GRIDCO	WBSEB	DVC	SIKKIM
Alert	5	1	1	1		
Emergency	3	1	1	1	1	
Non-Compliance	1					
Total	9	2	2	2	1	

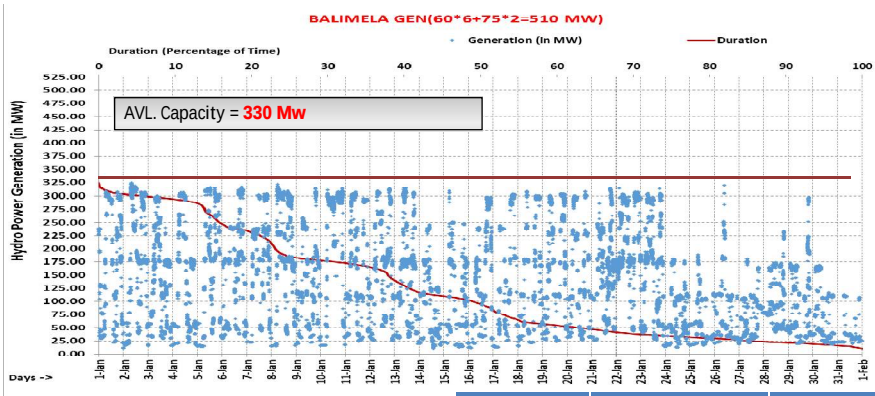


State Hydro Generators Performance

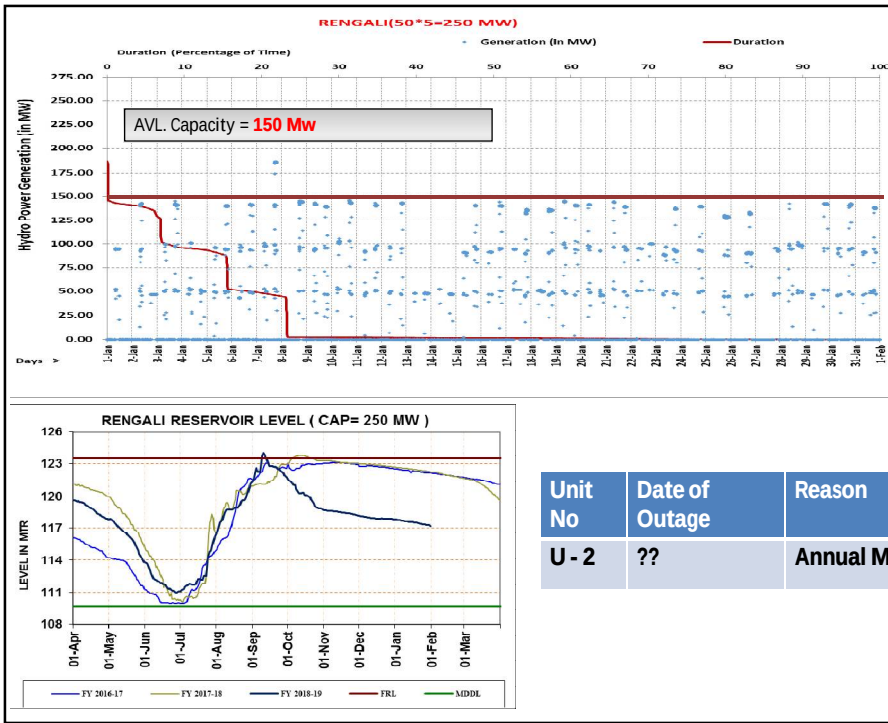




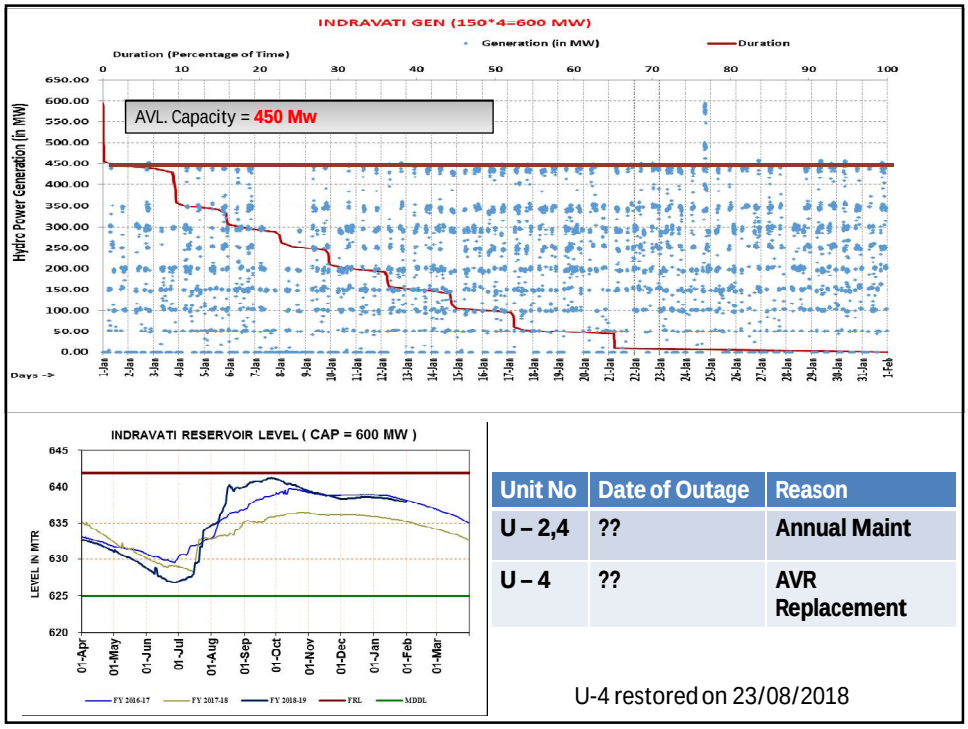
Unit No	Date of Outage	Reason
U - 1	19.11.17(19:00)	Gen. UGB oil temp high.
U - 4	??	Annual Maint.
U - 5	25.10.2016	R & M Work
U - 6	16.10.2015	R & M Work



Unit No	Date of Outage	Reason
U – 1(60 MW)	05.08.16	R & M Work
U – 5 (60 MW)	12.10.17(17:30) Restored ????	Vibration problem
U – 2(60 MW)	20.11.17	R & M Work
U-3(60 MW)	????	Maint.

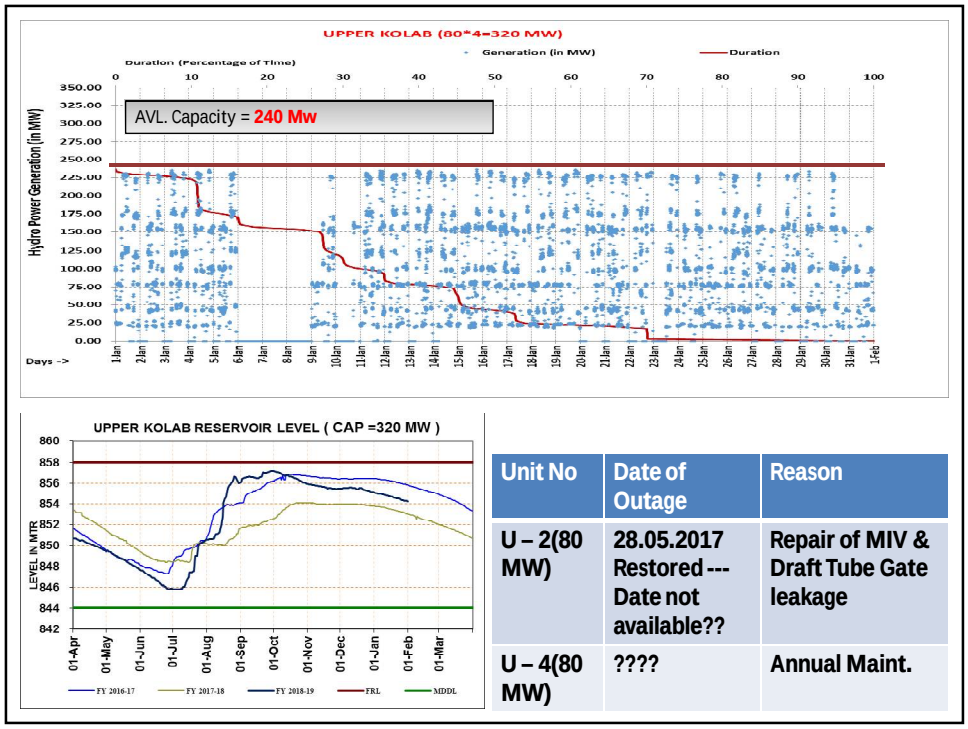


Unit No	Date of Outage	Reason
U - 2	??	Annual Maint

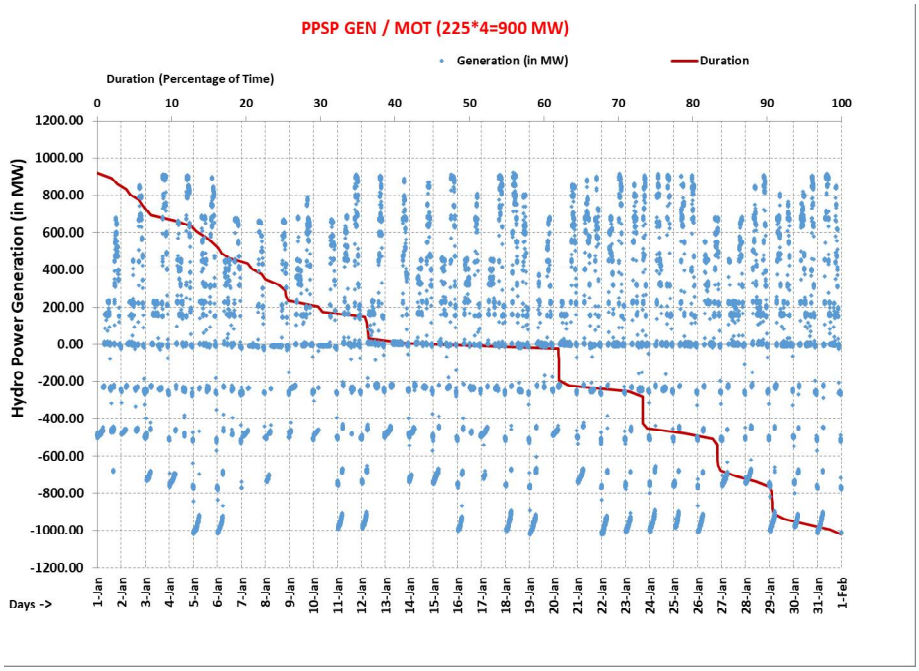


Unit No	Date of Outage	Reason
U – 2,4	??	Annual Maint
U – 4	??	AVR Replacement

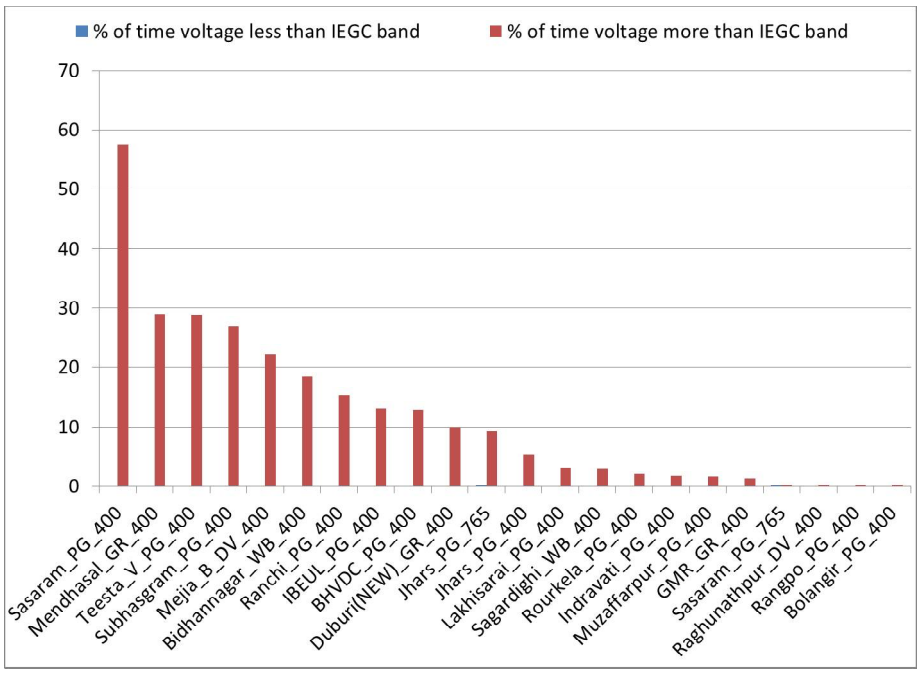
U-4 restored on 23/08/2018



Unit No	Date of Outage	Reason
U – 2(80 MW)	28.05.2017 Restored --- Date not available??	Repair of MIV & Draft Tube Gate leakage
U – 4(80 MW)	????	Annual Maint.



VDI & Reactive power performances of various units in the month of January, 2019



Reactive power performances of various units in the month of January, 2019

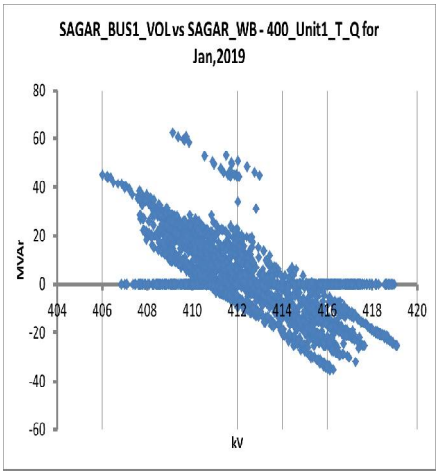
Reactive power injection and terminal bus voltage are compared for various generating units in ER.

- Scatter plot is plotted with taking
  - Terminal voltage across x axis
  - Reactive power injection across y axis
  - (Nominal terminal voltage (kV), 0 MVAr) as origin
- MVAr injection should reduce with increase in terminal voltage

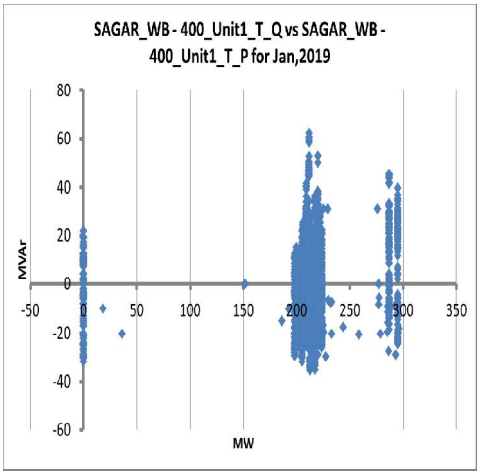
Performance of units in South Bengal in the month of January, 2019

- In the month of January, 2019, voltage at Jeerat and Subhasgram was Higher than nominal value (400 kV) for considerable amount of time. MVAr injection by nearby units is plotted along with their bus voltage
  - **Except Sagardighi and Kolaghat, MVAr absorption of all units in south Bengal was satisfactory during high voltage condition.**

Sagardighi units (2 x 300 MW + 2 x 500 MW) MVAr injection along with 400 kV bus voltage at Sagardighi

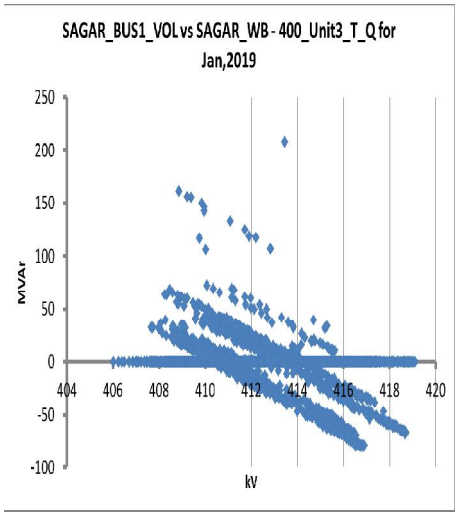


MVAR vs kV

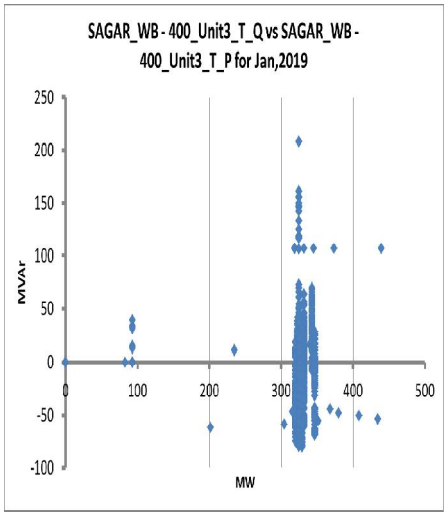


MVAR vs MW

Sagardighi units (2 x 300 MW + 2 x 500 MW) MVAr injection along with 400 kV bus voltage at Sagardighi

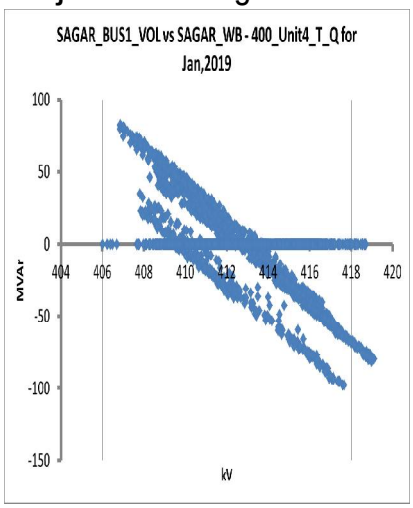


MVAR vs kV

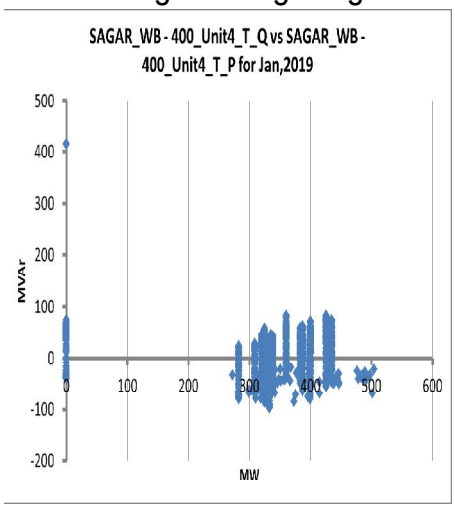


MVAR vs MW

Sagardighi units (2 x 300 MW + 2 x 500 MW) MVAr injection along with 400 kV bus voltage at Sagardighi

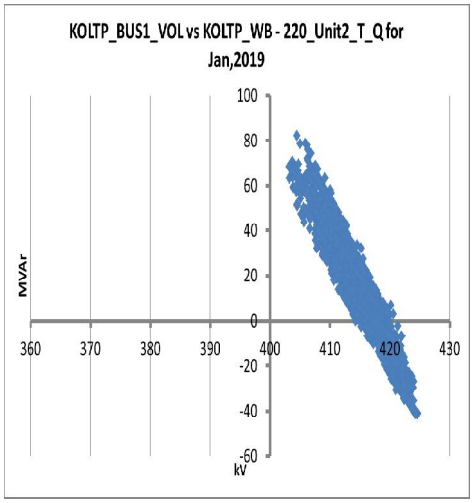


MVAR vs kV

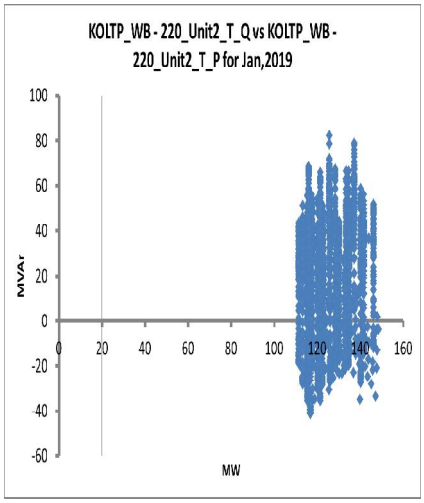


MVAR vs MW

KTPP units (6 x 210 MW) MVAr injection along with 400 kV bus voltage at KTPP

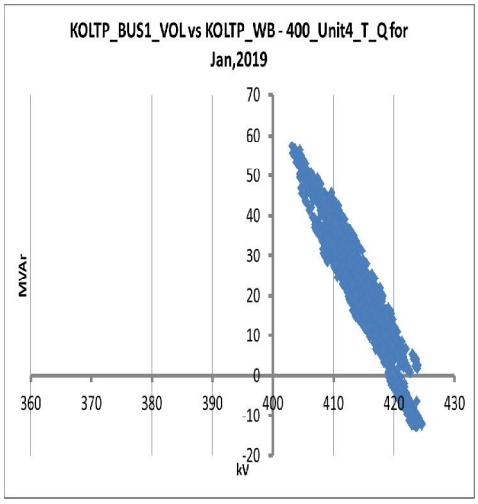


MVAR vs kV

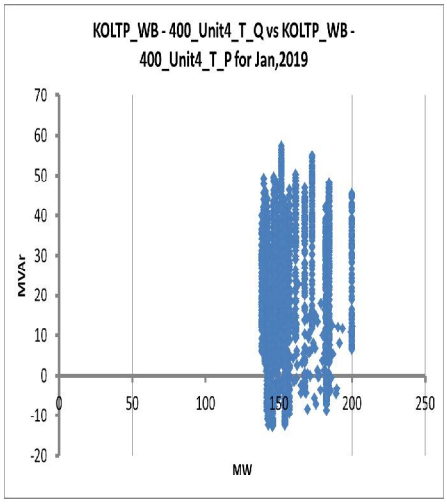


MVAR vs MW

KTPP units (6 x 210 MW) MVAr injection along with 400 kV bus voltage at KTPP

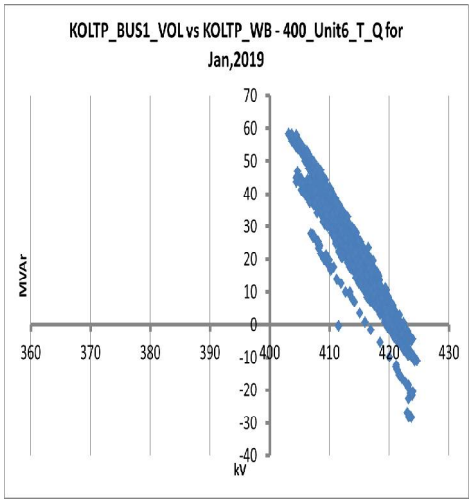


MVAR vs kV

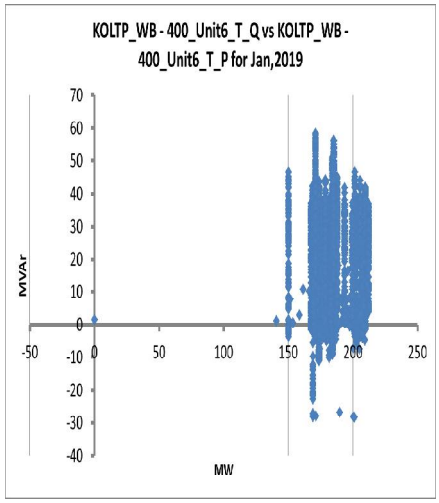


MVAR vs MW

KTPP units (6 x 210 MW) MVAr injection along with 400 kV bus voltage at KTPP

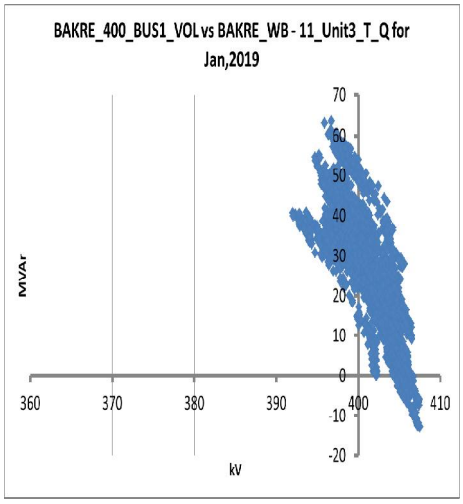


MVAR vs kV

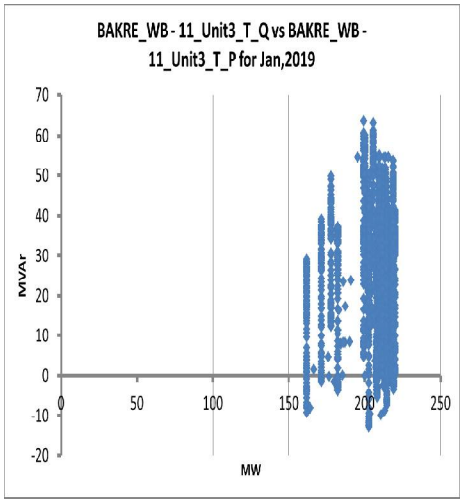


MVAR vs MW

Bakreswar units (5 x 210 MW) MVAr injection along with 400 kV bus voltage at Bakreswar

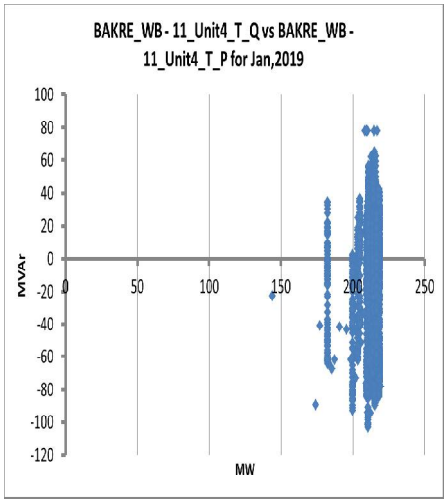


MVAR vs kV

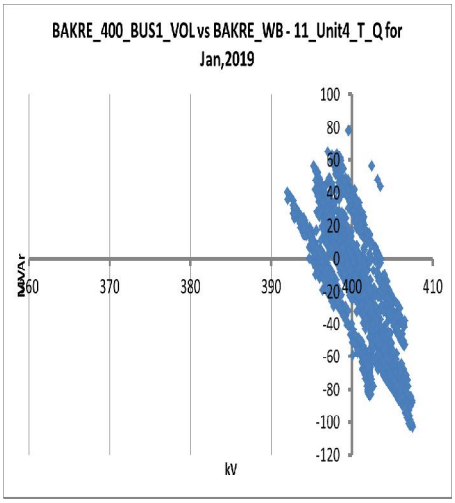


MVAR vs MW

Bakreswar units (5 x 210 MW) MVAr injection along with 400 kV bus voltage at Bakreswar

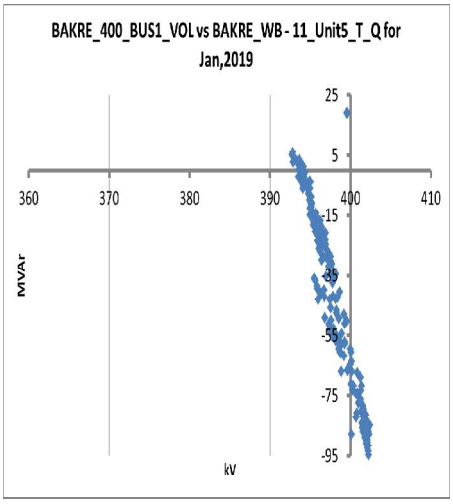


MVAR vs kV

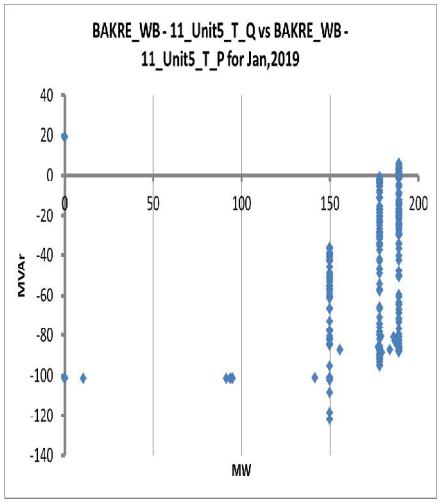


MVAR vs MW

Bakreswar units (5 x 210 MW) MVAr injection along with 400 kV bus voltage at Bakreswar

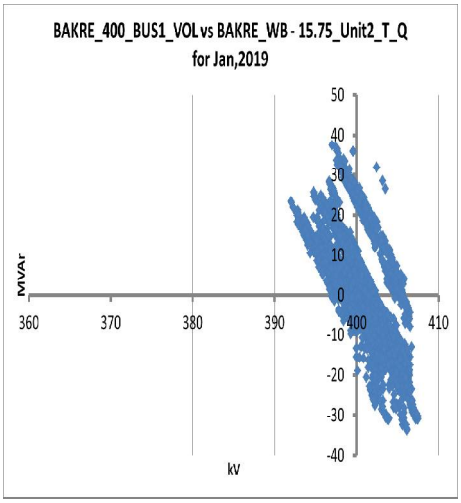


MVAR vs kV

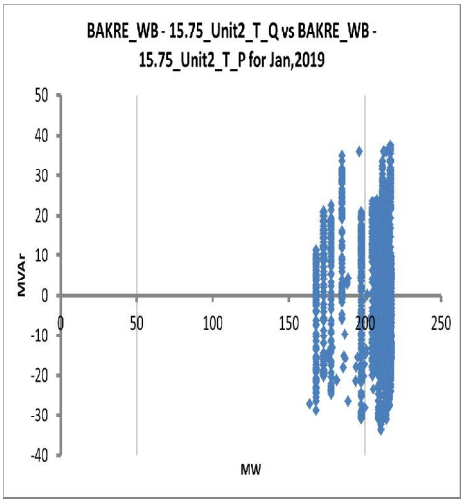


MVAR vs MW

Bakreswar units (5 x 210 MW) MVAr injection along with 400 kV bus voltage at Bakreswar

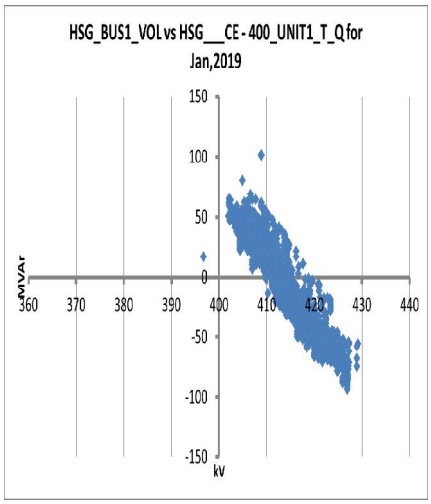


MVAR vs kV

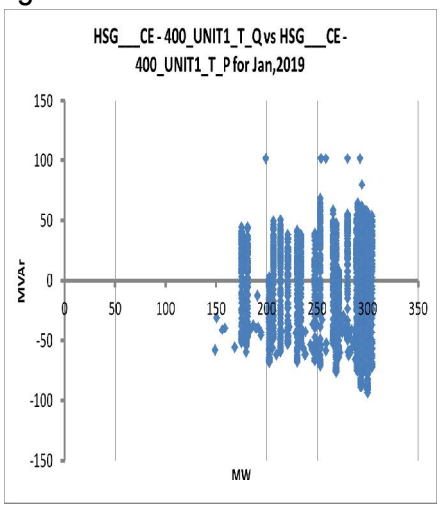


MVAR vs MW

HEL units (2 x 300 MW) MVAr injection along with 400 kV bus voltage at HEL

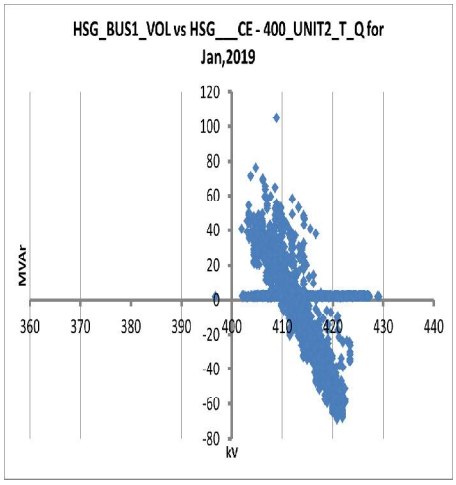


MVAR vs kV

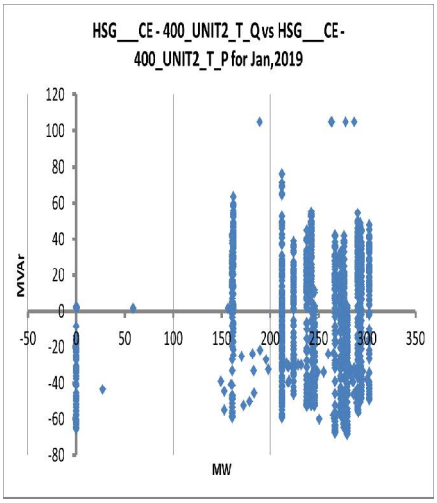


MVAR vs MW

HEL units (2 x 300 MW) MVAr injection along with 400 kV bus voltage at HEL

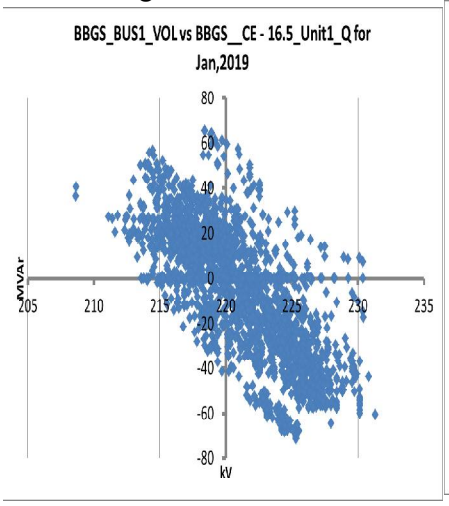


MVAR vs kV

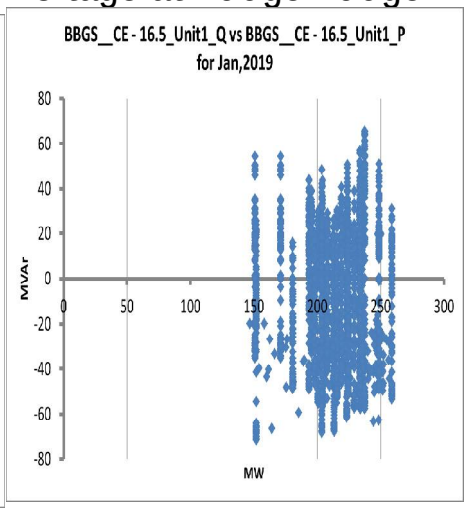


MVAR vs MW

Budge Budge units (3 x 250 MW) MVAr injection along with 220 kV bus voltage at Budge Budge

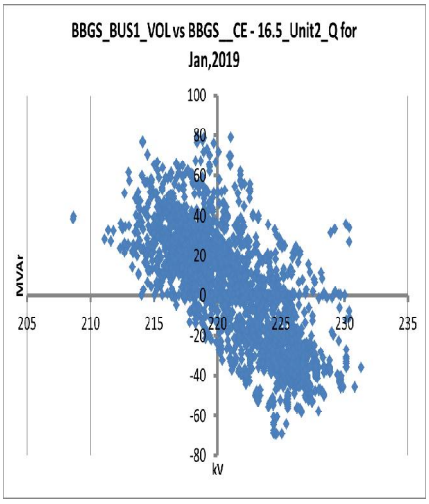


MVAR vs kV

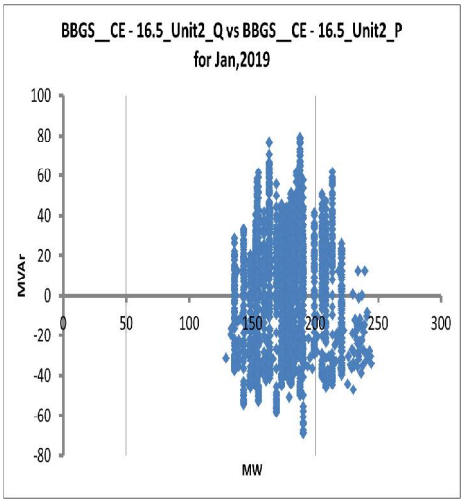


MVAR vs MW

Budge Budge units (3 x 250 MW) MVAr injection along with 220 kV bus voltage at Budge Budge

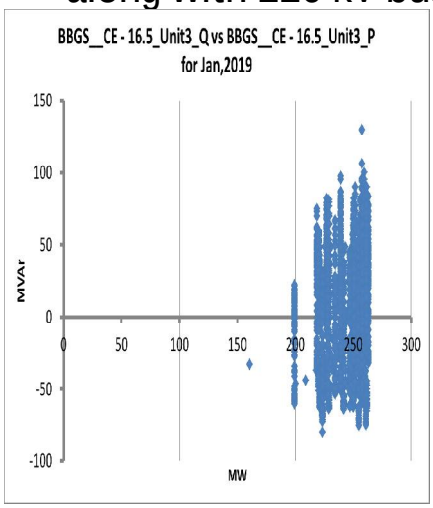


MVAR vs kV

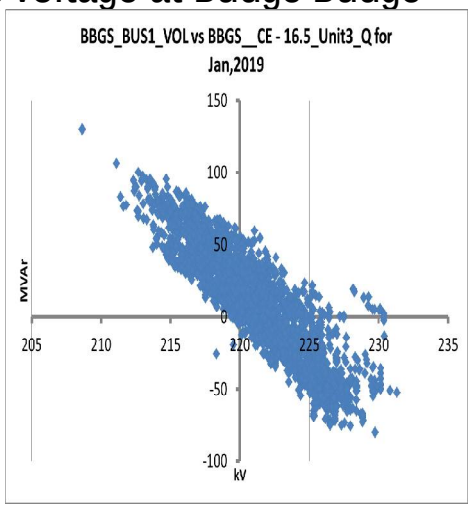


MVAR vs MW

Budge Budge units (3 x 250 MW) MVAr injection along with 220 kV bus voltage at Budge Budge



MVAR vs kV



MVAR vs MW

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 : Ist 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 दिनाँक: 04th 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. 31st 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,

भवदीय,
04/02
(देबासिस डे)
मुख्य महाप्रभंधक

संलग्न: As above

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

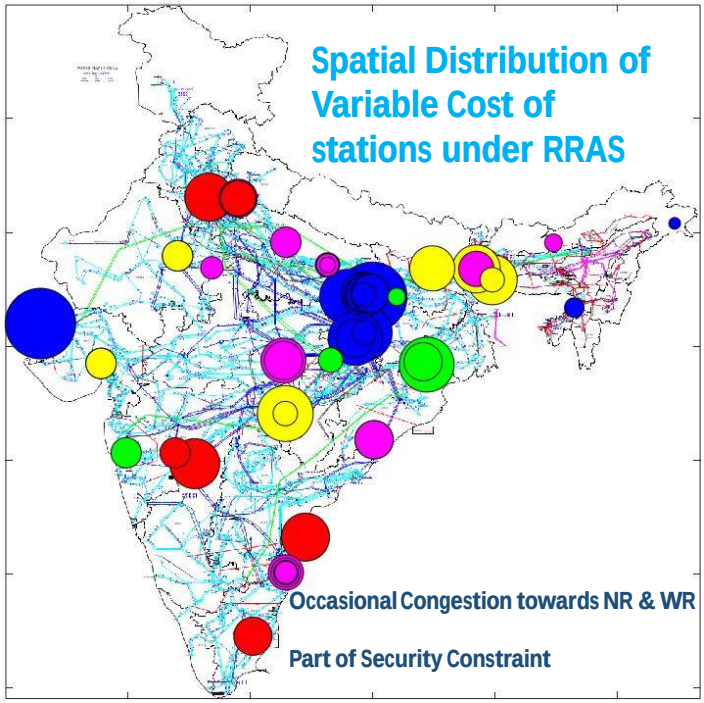
- Hon'ble Commission, vide Order in Petition No. 02/SM/2019 (Suo-Motu) dtd. 31st January, 2019, directed for Pilot on SCED of Inter-State Generating Stations (ISGS) Pan India http://cercind.gov.in/2019/orders/02-SM-2019.pdf
- The Central Commission observed that there is an overarching objective to optimize 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. **01st 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.

Introduction of *Security Constrained Economic Despatch* in *Indian Power System*

Implementation of Pilot w.e.f **01st April, 2019**

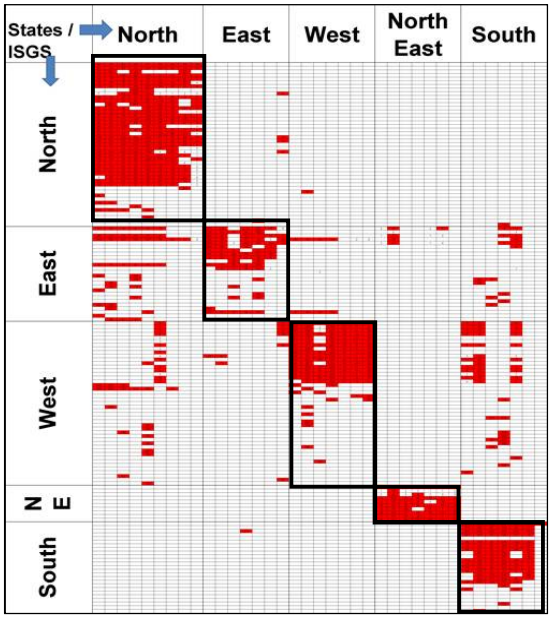
1



RRAS: Reserves Regulation Ancillary Service

2

Complexity of Allocations to Beneficiaries Portfolio



Composition of Allocation Matrix

- ~150 Plants (Inter-State)
- 36 States/UTs
- Approx. half a Million contracts/day (~ 150x 36 x 96)

Need for Optimization

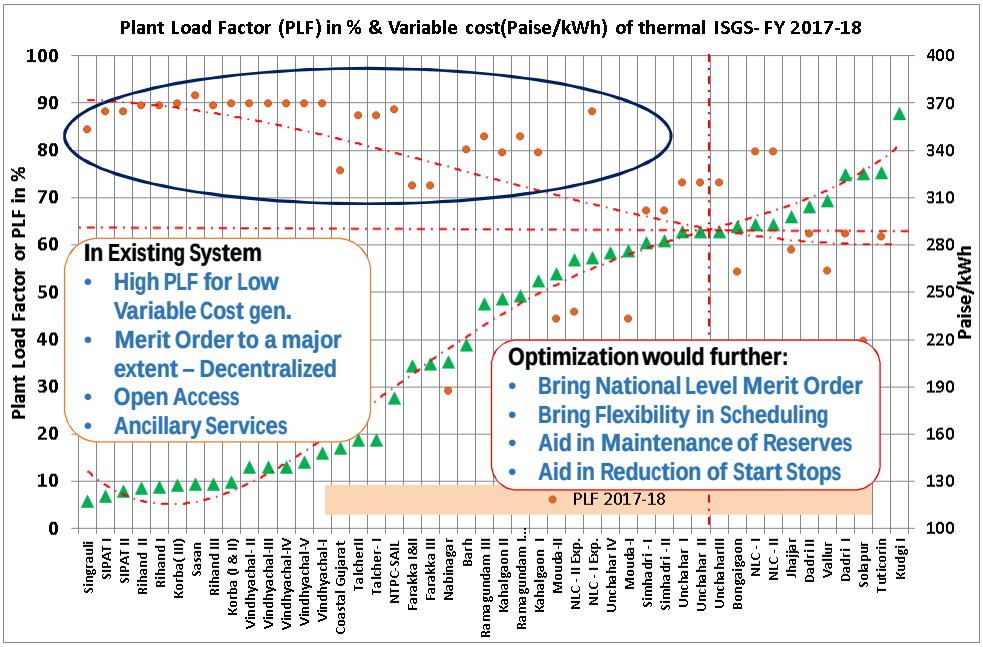
- Fragmented allocation
- Savings in Total Production Costs
- Harness Flexibility from Rigid Contracts

Ease of Implementation

- Additional Inputs to Existing Multilateral Coordinated Scheduling System

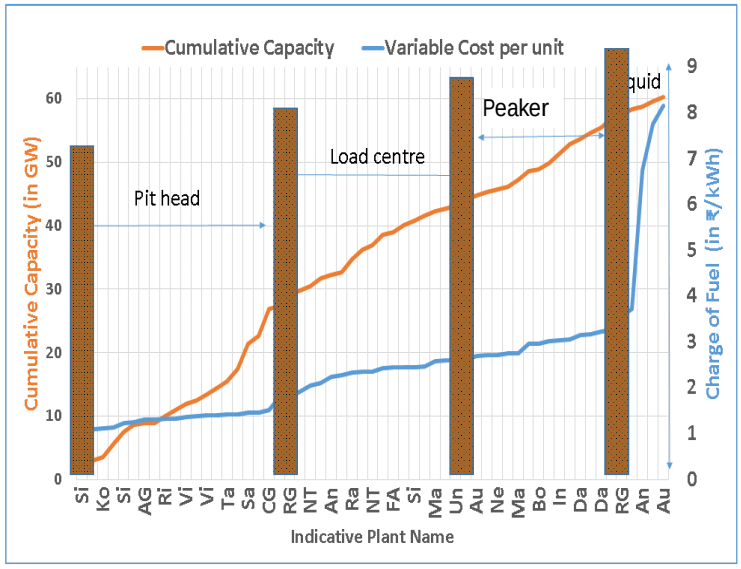
3

PLF & Variable Cost



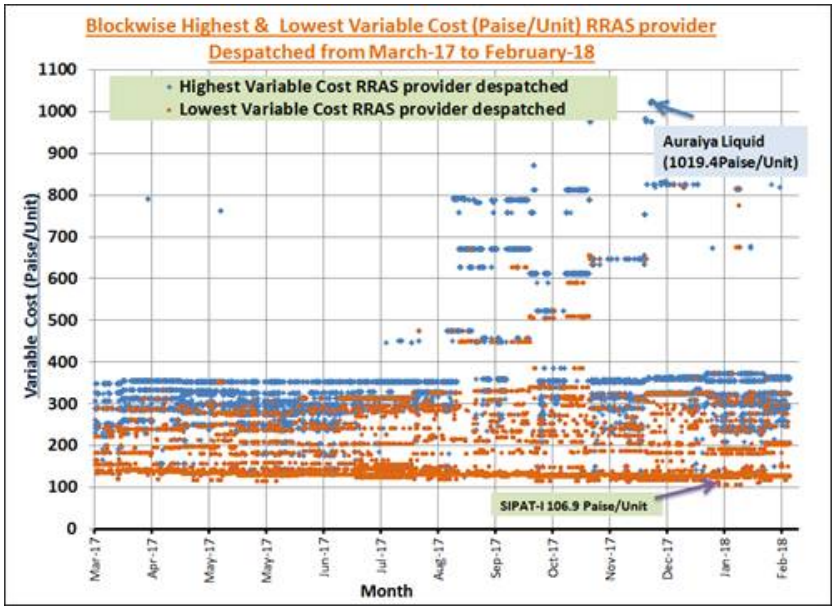
4

Cumulative Installed Capacity of generation and Variable Cost per unit



5

Variable Cost of RRAS Provider



RRAS: Reserves Regulation Ancillary Service

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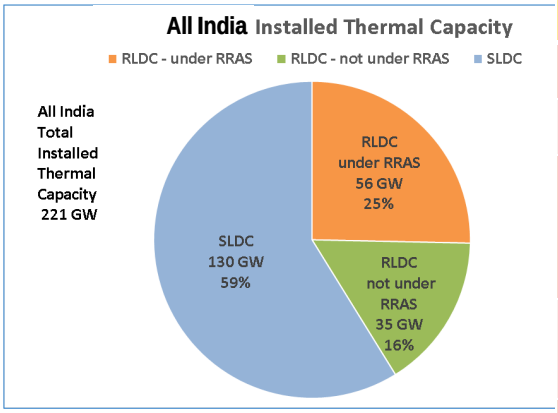
Present Scope

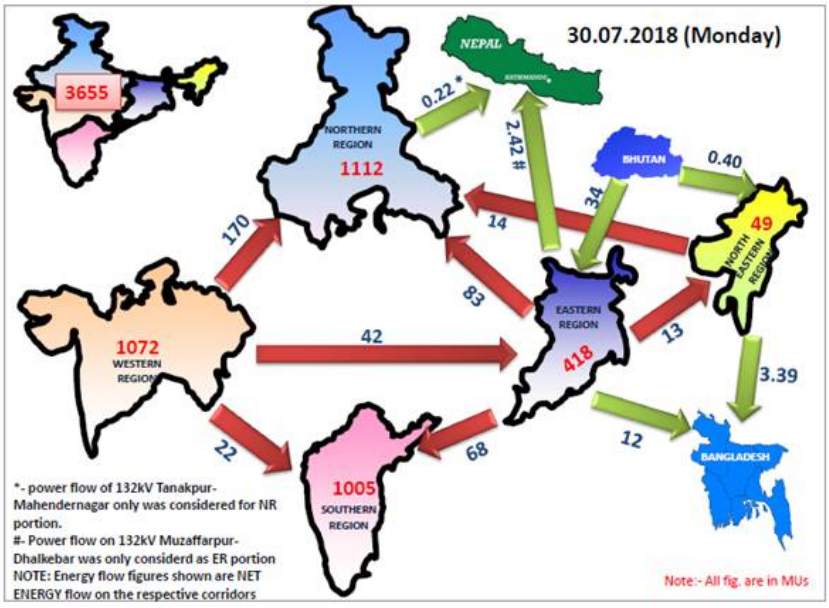
FY 2017-18



All India Thermal Generation	~ 954 BU / year
Thermal Generation under RRAS	343 BU/ year
% Energy from Plants under RRAS	36%
Weighted average variable charges of Plants under RRAS as per actual dispatch	₹ 1.99 / kWh
Total variable charges for thermal @ ₹ 1.99 /kWh	₹ 190116 crores
Total variable charges for thermal plants under RRAS	₹ 68405 crores (~ 36%)
2022 Thermal Energy as per GtG studies, 1050 BU / year	₹ 230000 crores

RRAS – Reserve Regulation Ancillary Services
GtG – Greening the Grid, USAID
SCED – Security Constrained Economic Despatch

Inter Regional Power transfer



- Transfer Capability to be factored
- System Security
- Spatial distribution of generation
- Cheaper generation in WR
- Costly generation in NR & SR

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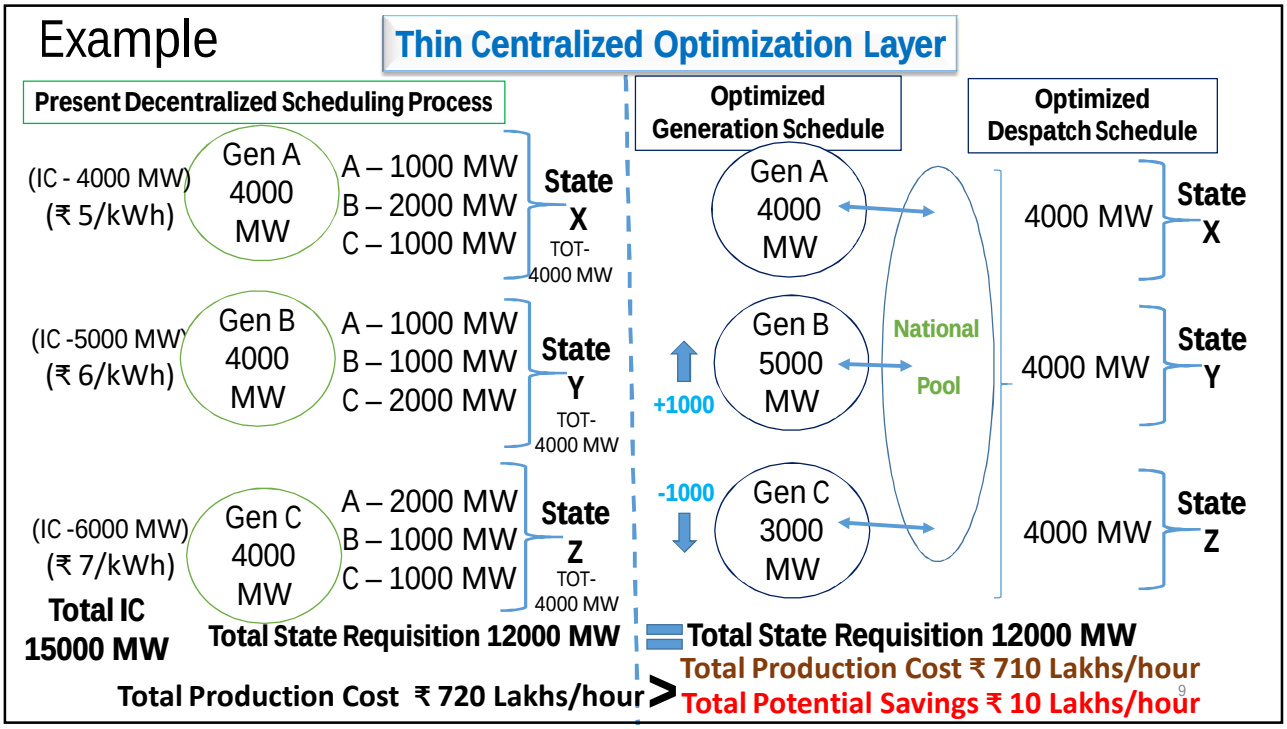
Example



Economic Despatch - Mathematical Formulation

Objective Function

- Minimize Pan India ISGS Variable Cost

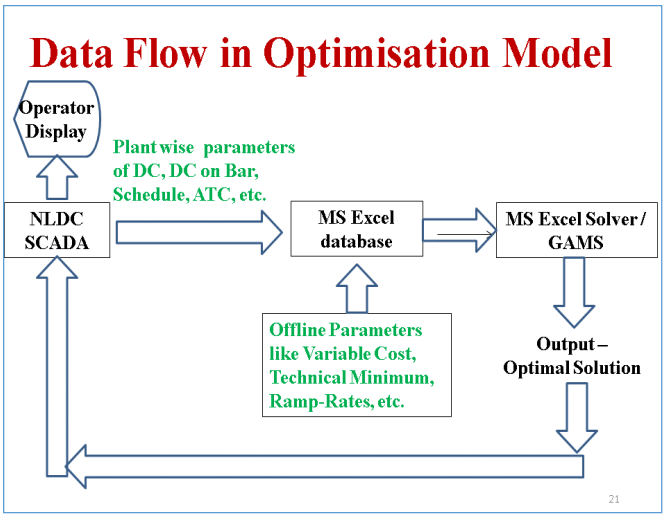
Subject to Constraints

- Meeting Total Requisition by States from ISGS
- Transmission Constraints (ATC)
- Technical Minimum of Plants
- Maximum Generation (DC-on-bar)
- Ramp up and down rate
- Factoring Spinning Reserves/Heat Rate

- Minimise $\sum_{i=1}^{k} C_i P_i$
  - k = *total number of Plants*
  - *Where* C_i *is the variable per unit cost of the* i^{th} *Plant*
  - P_i *is the optimised scheduled power of the* i^{th} *Plant*
- Subject to
  - $\sum_{i=1}^{k} P_i = \sum_{i=1}^{k} S_i$
  - $P_i \leq (DC\ on\ bar)$
  - $P_i \geq P_{i,min}$
  - $P_{i,t} \leq P_{i,t-1} + Ramp\ up\ rate$
  - $P_{i,t} \geq P_{i,t-1} - Ramp\ down\ rate$
  - $\forall r \in R,\ \sum_r (P_{i,r} - S_{i,r}) \geq (SCHIR_r - ATC_r)$
    - S -is the scheduled power
    - t -represents current time of execution
    - R -represents each of the regions viz., North, East, West, South and North East
    - ATC -is the Available Transmission Capability of each region R
    - $SCHIR$ -is the Scheduled Net Interchange of the region R
    - $P_{i,min}$ is the *technical minimum* for thermal power plants, considered 55% of *DC on bar*

Modelling for Economic Despatch – Process Flow

- RRAS implementation since April 2016
- The plant wise database for parameters were populated.
- Mathematical model was solved using the linear programming technique.
- General Algebraic Modeling System (GAMS) language and powerful commercial solvers like IBM CPLEX accessed through GAMS, was also used.
- Program executed every five minutes.
- All the input and output data archived.
- Data Analysis
- ~>50 man-months of efforts



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Sample Snapshots – Economic Despatch…1

S. NO.	TYPE	PLANT NAME	REG.	INSTALLED CAPACITY	TOTAL (MW)	DC ON BAR (MW),	SCHEDULE (MW),	VAR. COST P/UNIT	OPT. SCH. (MW)	OPT.SAV (LAKHS)	OPT.SCH. DIFF.(MW)
25	T	NABINAGAR TPP	E	1x250	250	228	167	191	228	1	61
26	G	NTPC GANDHAR	W	3x144+ 1x255	657	180	180	205	180	0	0
27	G	ANTA GPS	N	3x89 + 1x153	419	0	0	224	0	0	0
28	T	RAMAGUNDAM TPS-STG.-III	S	1x500	500	471	259	227	471	5	212
29	T	RAMAGUNDAM TPS-STG.-I , II	S	3x200+3x500	2100	1800	1078	233	1800	17	722
30	T	KAHALGAON STG-II	E	3x500	1500	1414	1365	236	1414	1	49
31	G	NTPC KAWAS	W	4x106 + 2x116	656	255	255	236	255	0	0
32	T	FARAKKA STG 1 AND 2	E	3x200 + 2x500	1600	1100	936	243	1100	4	164
33	T	FARAKKA STG-III	E	1x500	500	300	259	244	300	1	41
34	T	SIMHADRI-NTPC STAGE-I	S	2x500	1000	948	521	244	948	10	427
35	T	SIMHADRI-NTPC STAGE-II	S	2x500	1000	948	521	245	825	7	303
36	T	KAHALGAON STG-I	E	4x210	840	740	618	246	407	-5	-211
37	T	MAUDA-II	W	1x660	660	375	343	259	206	-4	-137
38	T	UNCHAHAR TPS-III	N	1x210	210	191	191	261	105	-2	-86
39	T	UNCHAHAR TPS-I	N	2x210	420	382	382	261	210	-4	-172
40	T	UNCHAHAR TPS-II	N	2x210	420	382	382	261	210	-4	-172
41	G	AURAIYA GPS	N	4x111+ 2x109	663	0	0	270	0	0	0
42	L	NEYVELI TPS-II (EXPN.)-NLC	S	2x250	500	185	124	271	102	-1	-22
43	L	NEYVELI TPS-I (EXPN.)-NLC	S	2x210	420	385	210	271	212	0	1
44	T	UNCHAHAR TPS-IV	N	1x500	500	0	0	275	0	0	0
45	T	MAUDA	W	2x500	1000	575	518	276	316	-6	-202
46	L	NEYVELI-II (ISGS)- NLC	S	7x210	1470	1256	723	296	691	-1	-32
47	T	BONGAIGAON	NE	1x250	250	455	350	297	250	-3	-100
48	T	DADRI STG-2	N	2x490	980	464	357	302	255	-3	-101
49	T	INDIRA GANDHI TPS JHAJJAR	N	3x500	1500	1421	1097	303	782	-10	-316
50	T	VALLUR NTECL	S	3X500	1500	933	513	306	513	0	0
51	G	DADRI GPS	N	4x130+ 2x154	830	200	181	316	110	-2	-71
52	T	NTPC SOLAPUR	W	2x660	1320	270	270	327	149	-4	-122
53	T	NTPL	S	2x500	1000	938	516	317	516	0	0
54	T	DADRI STG-1	N	4x210	840	769	632	323	423	-7	-209
55	G	RGPPL IR	W		664	540	482	357	297	-7	-185

Database Covering Regulated Tariff Generating Plants available pan-India

Real time Data

Plant-wise and Region-wise Operator Display

Change from Positive to Negative

System Marginal Cost

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Sample Snapshots – Economic Despatch…2

PLANT NAME		TOTAL (MW)	DC (MW), A	DC ON BAR (MW), B	SCHEDULE (MW), C	ACTUAL (MW), D	COLD RESERVE E=(A-B)	ACTUAL MARGIN F=(B-D)	TOTAL URS G=(A-C)	SMP (Optimised)	POSSIBLE UP H=(B-C)	REGUALTN DOWN I=[C-(J*B)]	RRAS APPLIED (VAE)	DEVTN. K=(D-C)	OPT. SCH. (MW) (L)	OP.COST (LAKHS) (M)	PRE.COST (LAKHS) (N)	OPT.SAV. (LAKHS) (Q)	OPT.SCH. DIFF.(MW) (O)
NORTHERN REGION	43 UNITS	11282	9063	7884	7297	7182	1179	748	1766	245	587	2960	0	-125	6170	114	147	-33	-1127
EASTERN REGION	19 UNITS	7010	5968	5968	5432	5399	0	569	536	245	536	3001	0	-79	5635	121	117	4	203
WESTERN REGION	54 UNITS	23907	20057	20057	19327	19521	0	-309	189	245	189	8593	0	-246	18725	275	294	-19	-603
SOUTHERN REGION	32 UNITS	12290	10398	10398	6646	6886	0	3373	3752	245	3752	1139	0	428	8272	198	160	38	1626
NORTH-EASTERN REGION	18 UNITS	671	744	744	639	625	0	119	105	245	105	230	0	-12	539	11	14	-3	-100
ALL INDIA	167 UNITS	55160	46230	45051	39341	39612	1179	4501	6349		5170	15923	0	-34	39341	719	732	-12	0

Regional Summary Display

Net Zero

13

Pan-India Optimization Results at a Glance

Interstate Thermal Generation Plants	57 Nos
Thermal Units	167 Nos
Total Installed Capacity	55160 MW
Range of Scheduled Power in a day	32000 MW – 46000 MW
Variable Cost range	₹ 1.12 -8.15 / kWh
Marginal Price range	₹ 2-4 / kWh
Weighted Average Variable Cost	₹ 1.89 / kWh
Average Production Cost per day	₹ 186 Crores / day
Average Potential Savings per day	₹ 2.4 Crores / day
Production Cost that can be saved	~ 1% to 2% (~1.3%)

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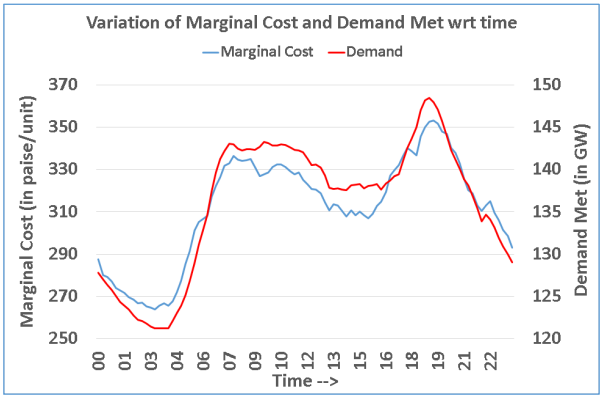
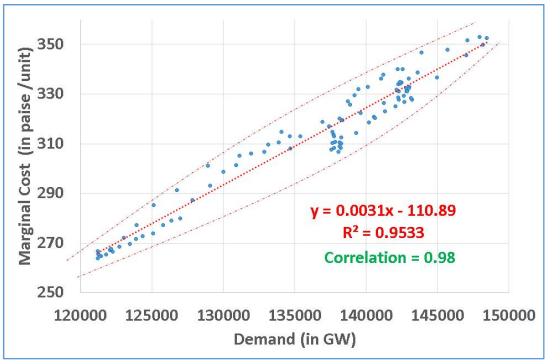
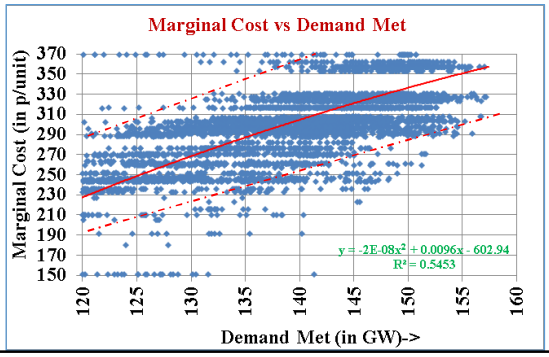
System Marginal Cost and Demand

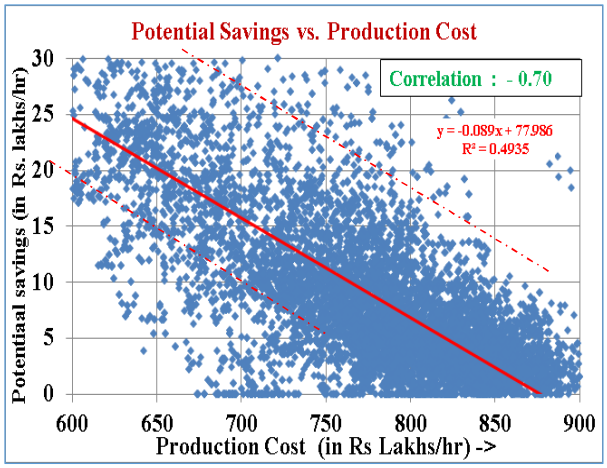


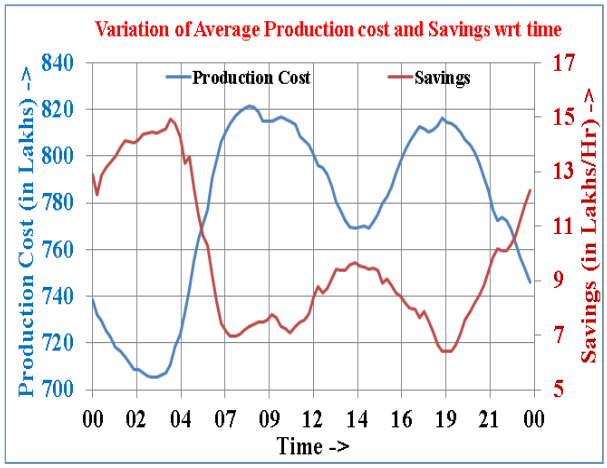




- During periods of high demand Production Cost and System Marginal Cost are high

Potential Savings ...1





- Potential of savings inversely related to production cost
  - Possible Savings are the highest during off peak hours
- Compensation for increase in Net Heat Rate
  - ➢ Potential savings are slightly over estimated

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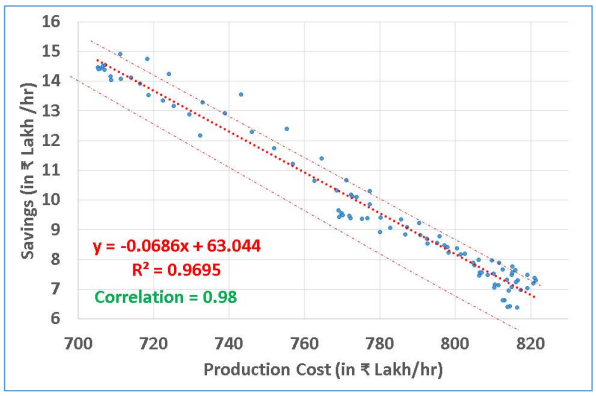
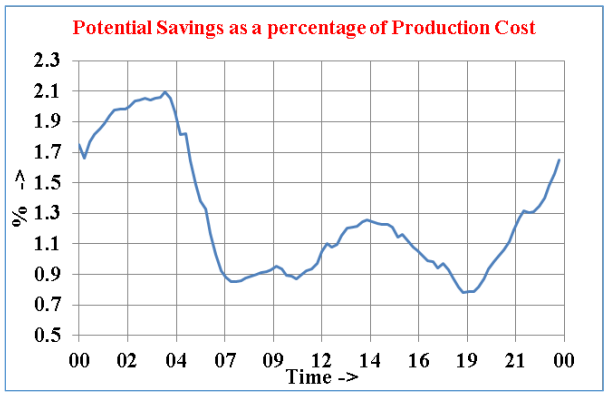
Potential Savings ...2





- Potential Savings is 1.3% of Production Cost
- Scope for incremental optimization and generating savings
  - Fragmented nature of allocations
  - Diversity
  - Decentralized scheduling
  - Transaction Cost

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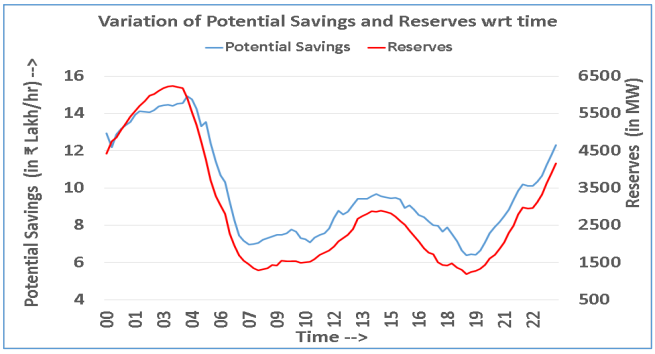
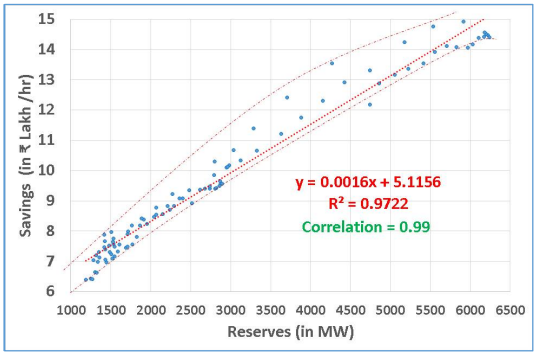
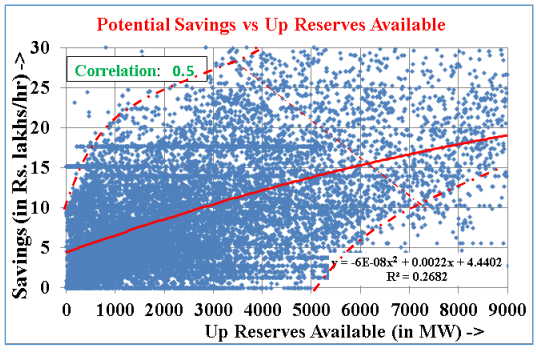
Potential Savings and Flexibility

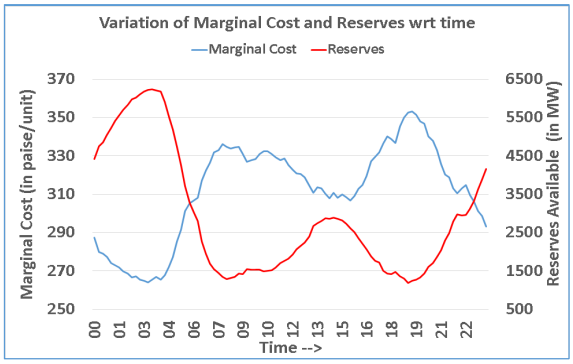


- Diversity in off peak and peak demand in the same day
- Some units were operated at technical minimum of 55%
- Flexible power plants provide higher savings potential

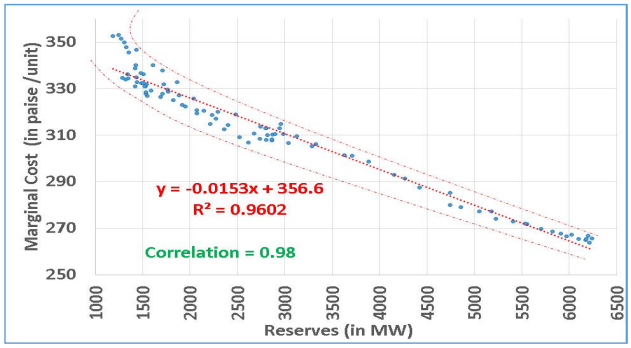


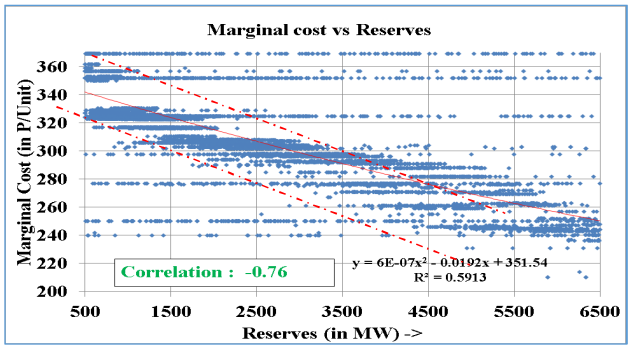


Spinning Reserve

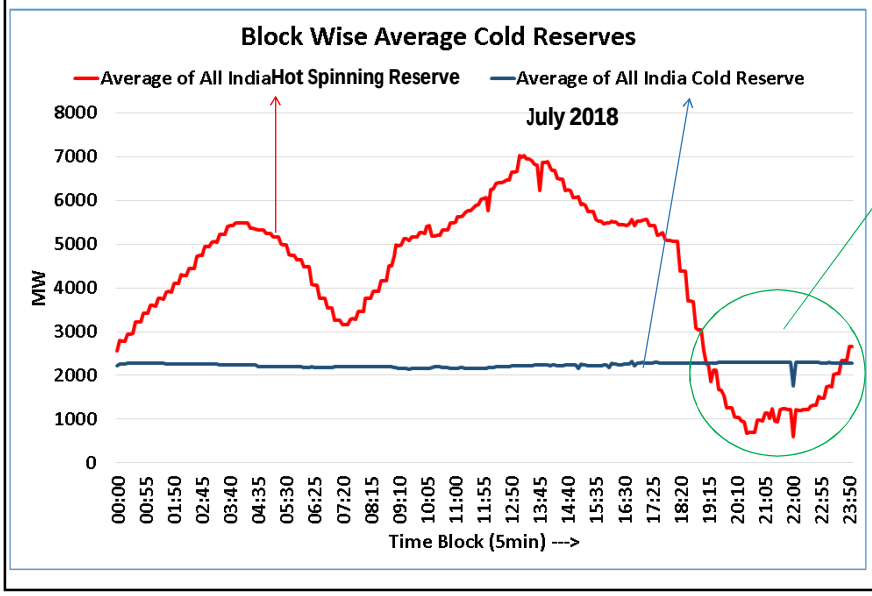


- System Marginal Cost inversely proportional to spinning reserve available
- System Marginal Cost during peak demand is high and Reserve is close to nil
- **Mandate needed for Reserves in Grid Code**





Spinning (Hot) Reserve and Non Spinning (Cold) Reserve



- Cold Reserve = DC-DConbar
- Time of necessity
- Cold Start up time
- Out of Merit generation
  - For majority of the day

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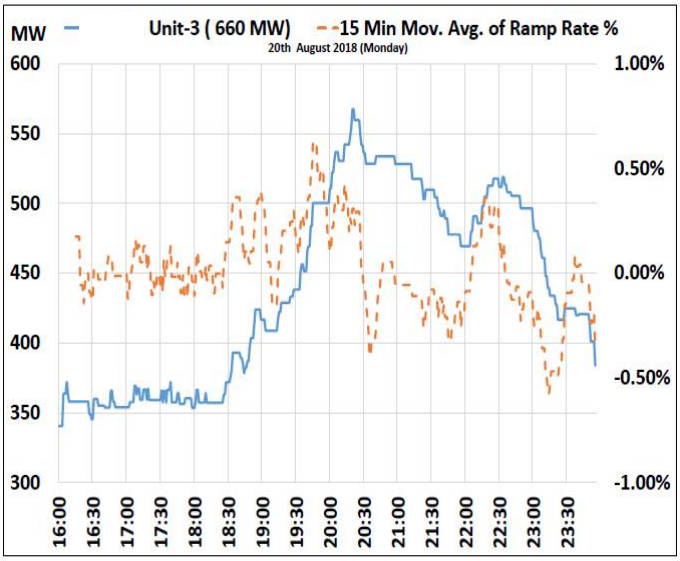
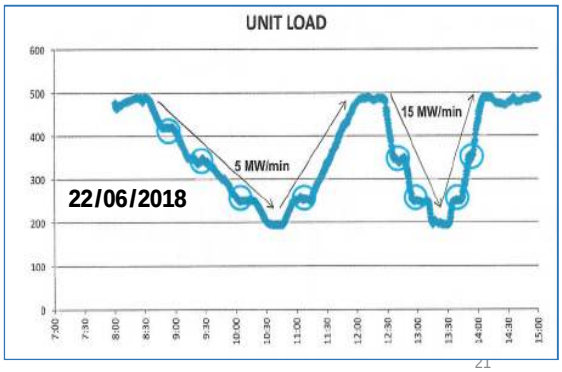
Unit Ramp Rate effect on SCED



- Relatively Slow Ramping observed for some units
- **Declared Ramp should be Honoured**
- Effects of non performance might be cumulative
- Dadri demonstrated 3%



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Action till Date

POSOCO report on 'Security Constrained Economic Despatch pan India' submitted to Hon'ble CERC

03 August 2018

MoP scheme on 'Flexibility in Generation and scheduling of thermal power stations to reduce the cost of power to the consumer'

30 August, 2018

POSOCO Consultation paper on "Security Constrained Economic Dispatch (SCED) of Inter-State Generating Stations pan India" submitted to Hon'ble CERC

12 September, 2018

https://posoco.in/download/posocos-observations-on-comments-on-the-consultation-paper-on-sced/?wpdmdl=21606

https://posoco.in/download/consultation-paper-on-security-constrained-economic-dispatch-of-isgs-pan-india/?wpdmdl=19708

Stakeholder Consultation

28 September 2018 - 20 November 2018

(10 Nos. Responses)

Hon'ble CERC Order Petition No. 02/SM/2019 (Suo-Motu)

31st January 2019

Operationalization 01 April 2019

Participation in the Pilot

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.

Sl No	RRAS Provider Name	Region	Installed Capacity (MW)	Fixed cost (Paisa/kWh)	Variable cost (Paisa/kWh)	Ramp Up (MW/Block)	Ramp Down (MW/Block)	Technical Minimum (MW)
1	AGTPP - Agartala*	AR	130	172.1	159.8	8	8	70
2	AGBPP - Kathalguri	AR	291	199.5	214.8	34	34	264
3	BongaigaonGTPP	AR	250	271.42	301.9	15	15	138
	Total Installed Capacity	**AR**	**671**					
	Source- NERPC-http://www.nerpc.nic.in/Ancillary%20Service.php							
4	Talcher STPS - I	ER	1000	96.4	158.4	48	48	518
5	Nabinagar Thermal Power Project	ER	500	242.6	180	40	40	275
6	Barh TPS	ER	1320	186.5	215.9	90	90	684
7	Kahalgaon STPS - II	ER	1500	109.8	220.1	113	113	778
8	Farakka STPS - I & II	ER	1600	83.5	224.9	120	120	823
9	Farakka STPS - III	ER	500	150.4	225.5	38	38	259
10	Kahalgaon STPS - I	ER	840	106.5	230.2	90	90	421
11	MTPS Stage-II	ER	390	234.9	248.8	30	30	195
	Total Installed Capacity	**ER**	**7650**					
	Source- ERPC-http://erpc.gov.in/as-3-formats							
12	Singrauli STPS	NR	2000	65.7	137.1	135	197	1400
13	Rihand TPS Stage - II	NR	1000	71.2	138.4	100	150	518
14	Rihand TPS Stage - I	NR	1000	85.8	140.6	100	150	507
15	Rihand TPS Stage - III	NR	1000	145.6	141.5	100	150	518
16	Unchahar TPS Stage - IV	NR	500	165.1	284.3	35	35	275
17	Unchahar TPS Stage - I	NR	420	109.6	307.2	30	30	210
18	Unchahar TPS Stage - II	NR	420	101.3	307.2	30	30	210
19	Unchahar TPS Stage - III	NR	210	136.4	307.2	15	15	105
20	Auraiya Gas Power Project GF	NR	663	64.2	322.6	138	138	356
21	Anta Gas Power Project GF	NR	419	71.7	325	225	225	225
22	Dadri Gas Power Project GF	NR	830	58.2	333.7	50	50	445
23	Dadri TPS Stage - II	NR	980	145	341.4	100	100	509
24	Indra Gandhi STPS	NR	1500	162.8	345.7	150	150	782
25	Dadri TPS Stage - I	NR	840	98.7	364.1	80	80	422
26	Anta Gas Power Project RF	NR	419	71.7	885.7	225	225	225
27	Dadri Gas Power Project RF	NR	830	58.2	890.9	50	50	445
28	Auraiya Gas Power Project RF	NR	663	64.2	934.7	138	138	356
29	Dadri Gas Power Project LF	NR	830	58.2	1240	50	50	445
30	Auraiya Gas Power Project LF	NR	663	64.2	1255.3	138	138	356
31	Anta Gas Power Project LF	NR	419	71.7	1271.6	225	225	225
	Total Installed Capacity		**11782**					
	Source- NRPC -http://www.nrpc.gov.in/comm/ancillaryservices.html							
32	Talcher STPS - II	SR	2000	72.1	157.4	150	150	1037
33	NLC TPS - I Exp	SR	420	102.5	236.3	36	45	211
34	NLC TPS - II Exp	SR	500	234.7	236.8	36	27	248
35	Ramagundam STPS - III	SR	500	77.6	251.1	50	50	259
36	NLC TPS - I	SR	630	80.5	255.7	54	68	312
37	NLC TPS - II	SR	840	83.4	255.7	72	90	416
38	Ramagundam STPS - I & II	SR	2100	73.2	257.4	210	210	1078
39	Simhadri STPS - I	SR	1000	95.1	277.4	100	100	521
40	Simhadri STPS - II	SR	1000	153.3	277.9	100	100	521
41	NTPL - Tuticorin TPS	SR	1000	156.2	305.4	75	75	516
42	NTECL - Vallur TPS	SR	1500	178.4	373.2	113	113	770
43	Kudgi STPS I	SR	2400	155.2	385.2	180	180	1244
	Total Installed Capacity	**SR**	**13890**					
	Source- http://www.srpc.kar.nic.in/html/all_uploads.html							
44	SIPAT TPS Stg-I	WR	1980	131.54	116	90	90	1026
45	SIPAT TPS Stg-II	WR	1000	124.87	120.3	69	69	518
46	Korba STPS STG (III)	WR	500	139.6	129.7	30	30	256
47	Korba STPS STG (I & II)	WR	2100	68.9	131.5	135	135	820
48	Sasan Power Ltd	WR	3960	17	131.7	180	180	2400
49	Vindhyachal-III	WR	1000	105.5	140.2	70	70	518
50	Vindhyachal-II	WR	1000	70.1	140.6	70	70	518
51	Vindhyachal-IV	WR	1000	158	140.6	70	70	518
52	Vindhyachal-V	WR	500	168.65	141.2	35	35	256
53	Vindhyachal-I	WR	1260	86.4	150.1	90	90	631
54	Costal Gujarat Power Ltd	WR	4150	90.31	179.65	150	150	2090
55	Ratnagiri Gas & Power Pvt Ltd GF	WR	663.54	130	249.0	300	300	354
56	Gandhar Gas Power Project GF	WR	657.39	105.7	258.9	293	293	354
57	Kawas Gas Power Project GF	WR	656.2	85.4	262.5	208	208	352
58	NTPC-SAIL Power Company Pvt. Ltd	WR	500	172.5	264.5	30	30	250
59	Mouda STPP Stage-I	WR	1000	189.4	277	70	70	518
60	Mouda STPP Stage-II	WR	1320	142.2	283.4	70	70	686
61	Gandhar Gas Power Project NAPM	WR	657.39	105.7	288.1	293	293	354
62	Kawas Gas Power Project NAPM	WR	656.2	85.4	288.6	208	208	352
63	Ratnagiri Gas & Power Pvt Ltd IR	WR	540	130	407.0	300	300	288
64	RGPPL-Maharashtra	WR	68	130	407.0	300	300	36
65	RGPPL-Others	WR	32	130	407.0	300	300	17
66	Solapur Super Thermal Power Project	WR	660	215.6	418.9	30	30	343
67	Ratnagiri Gas & Power Pvt Ltd RF	WR	1122	130	465.0	300	300	354
68	Gandhar Gas Power Project RF	WR	657.39	105.7	739.2	293	293	354
69	Kawas Gas Power Project RF	WR	656.2	85.4	747.5	208	208	352
70	Kawas Gas Power Project LF	WR	656.2	85.4	1115.5	208	208	352
	Total Installed Capacity	**WR**	**23907**					
	http://www.wrpc.gov.in/Commercial_rras_dat.asp?ln=e							
	All India Total Installed Capacity		**57901**					

All thermal RRAS Providers would also participate in the SCED pilot.

The latest list of RRAS Providers is available at https://posoco.in/download/rras-providers-rate-from-16th-jan19-to-15th-feb19/?wpdmdl=21301

SCED Accounting & Settlement

SCED Energy Accounting

- To be incorporated by RPCs on weekly basis along with DSM RRAS, FRAS and AGC accounts
- SCED Schedules to be provided by NLDC through the RLDCs
- NLDC would indicate consolidated "National SCED Settlement Statement"
  - Schedules on account of SCED.
  - Payment and receipts to/from SCED Providers.

SCED Energy Settlement

- National Pool Account (SCED) to be operated by NLDC
- Settlement using variable charges declared under RRAS
- All payments shall flow from/to the National Pool Account (SCED)
  - For Increment in Scheduled Generation, SCED provider to be paid from the National Pool Account (SCED)
  - For Decrement in Scheduled Generation, SCED Provider to pay to National Pool Account (SCED)
- Compensation due to part load operation as certified by RPC in accordance with the provisions of IEGC to be factored
- No retrospective settlement
- Any deviation settled as per CERC DSM Regulation

Implementation Actions

- Detailed Procedures to be issued by NLDC
- 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 practice
- NLDC to open a separate bank account - "National Pool Account (SCED)"
  - 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.
  - The sharing of benefits/savings has been accepted in principle by the Commission. However, methodology of sharing shall be decided after the results of the pilot and the extent of savings are available.
- Web Based Energy Scheduling Software
  - Batch processing of schedules
  - Schedule data interchanges between the RLDCs/NLDC, synching of data
  - Pre-processing & validation being sent to the SCED engine
  - Core optimization (SCED) engine – development, testing and validation
  - Output of SCED to be incorporated in the schedules
- Creation of a counterparty to SCED
- Augmentation of Communication infrastructure

25

Annexure-B2

पावर ग्रिड कारपोरेशन ऑफ इंडिया लिमिटेड
(भारत सरकार का उद्यम)
POWER GRID CORPORATION OF INDIA LIMITED
(A Government of India Enterprise)

पावरग्रिड

प्लाट नं.- 4, युनिट - 41, निलाद्री विहार, चंन्द्रसेखरपुर - 751021
दुरभाष : 0674 - 2720754
Plot. No. 4, Unit - 41, Niladri Vihar, Chandrasekharpur,
Bhubaneswar-751021, Tel: 0674-2720754

Ref: ODP/BB/AM/TLM /2517

Date:24th 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:

Sl 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.

24.12.2018

(R.P. RATH)
Chief General Manager(AM)
POWERGRID, Odisha Projects

CC: For kind information
1.ED, Odisha Projects
2.ED, ERLDC, POSOCO, Kolkata

स्वच्छ भारत
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 153rd 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 Kahalgaon- 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

Contd.....P/2

In addition to this, following nos. of strings are under procurement at our corporate level, which shall 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)

ANNEXURE - B10.1

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.)
	CTPS	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
WBPDCL	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
	Santaldih 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
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
	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
IPP	GMR	1	350	01.06.19	05.07.19	35	Turbine Overhauling
		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 summar 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 agreed 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 oppertuinty shut down during that period. However, Constituenta did not agreed 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.

Annexure-B11

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 22nd 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,

18/01/19

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

Copy to:

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

Eastern Regional Power Committee, Kolkata

Minutes of Special Meeting on "RGMO/FGMO and PSS Tuning of Generators in Eastern Region" held at ERPC, Kolkata on 31.01.2019 at 11:00 hrs

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

Member Secretary, ERPC chaired the meeting. He welcomed all the participants in the meeting. He informed that the issue of RGMO/FGMO and PSS Tuning is being reviewed in every OCC Meeting. But there was no significant improvement in the performance of the generators. In order to discuss the issue in detail, in 148th OCC Meeting held on 20.08.2018, it was decided that a separate meeting on Restricted Governor /Free Governor Mode Operation and PSS Tuning of generators with the power station authorities in the Eastern Region shall be convened for detailed deliberation.

He informed that vide CERC order dated 31st July 2017 in Petition No. 84/MP/2015, the Commission directed the following:

Section 23 "

a) Considering the fact that further measures have been put in place to facilitate desirable primary response, the Commission, starting from the month of September, 2017 shall be closely watching the primary response of ISGSs as reported by POSOCO/NLDCs. At the State level, SLDCs shall report the frequency response of intra-State generators to the concerned SERCs.
b) NLDCs and SLDCs through the assistance of POSOCO shall start the process of selecting independent third parties capable of undertaking periodic checkups to monitor the RGMO/FGMO response. To start with, selected independent third parties shall be sent to the generating stations which are not providing the desired RGMO/FGMO response. Independent Third Parties shall ensure that the generator has not, in any way, prevented/disabled the governor from providing the desired response. In case, even after enabling the governors, units are not able to provide the desired response as per the provisions of the Grid Code, third parties, based on the submissions of the generators, shall bring out the technical constraints, if any, which limit the primary response of the units.
c) All ISGSs are directed to provide primary response compulsorily in terms of Regulation 5.2 (f), (g), (h) and (i) of the Grid Code failing which we would not hesitate in initiating action under Section 142 of Electricity Act, 2003 for not providing desired RGMO/FGMO response without any valid reasons. "

Section 24

"….. The Committee (on implementation of FGMO / primary response) has also recommended that there is no requirement for granting any exemption even to LMZ units from operation under RGMO/FGMO with manual intervention."

"… has the option of either expediting the R&M of old units which shall include installation of new EHG governors capable of providing adequate primary response or to go in for retrofit of mechanical governors for adopting RGMO features or to operate on FGMO with manual intervention…"

He advised all the power stations to take the necessary action to improve the performance of the generators.

I. RGMO/FGMO performance of Generators

ERLDC gave detailed presentation on Primary Response of Generators in the Eastern Regions. The presentation is enclosed at **Annexure-I**.

During the meeting, the generating stations raised queries pertaining to the following:

1. Regulatory requirement from the IEGC, CERC orders and Expert Committee recommendations
2. Exemption to old units from providing FGMO / RGMO response

3. Triggering criteria for frequency response, rate/quantum/duration of response
4. Data logging (resolution) and assessment of response

The queries raised by the generating stations were clarified by ERLDC/ERPC as under:

1. Primary frequency control is automatic and it aims to arrest the grid frequency variations by automatically varying generator output as per its droop characteristics. Restoration of frequency to the nominal i.e. 50 Hz in case of India is achieved through secondary and tertiary controls ranging from few minutes to hours.
2. Time frame for primary governor control action is of the order of a few seconds i.e. 5- 30 seconds and should last for at least 3-4 minutes to enable secondary control to take over which will allow the primary reserves to be restored. **(Ref: 17.2 of Report of the Committee on Free Governor Mode Operation of Generating Units, Ref: Chapter 4, Page 34 of Report of Expert Group to review and suggest measures for bringing power system operation closer to National Reference Frequency).**
3. IEGC permits a ripple filter of 0.03 Hz. This implies that the unit shall provide primary response whenever the change in frequency is more than 0.03 Hz. The time between two successive frequency measurements shall be suitably tuned to provide primary response within 5-30 seconds of the grid event causing the change in frequency. **(Ref : IEGC 5.2(f))**
4. After the automatic primary response the unit may be brought back to its scheduled load at the rate of 1% per minute though local supplementary control. (**Ref: IEGC 5.2(i))**
5. The ex-bus schedule shall be restricted to MCR less normative auxiliary consumption. Operation in Valve wide-open mode is prohibited. The control valves shall be kept throttled to provide governor response at all times. (**Ref: IEGC 5.2(h))**
6. No exemption has been granted by CEC to LMZ units for operation under RGMO/FGMO. In case of difficulty to operate in RGMO, generators may operate under FGMO with manual intervention for providing mandated response as per the provisions of the Grid Code. (**Ref: CERC order in Petition No. 65/MP/2014, Ref: CERC order in Petition No. 84/MP/2015,Ref: 19.9 of Report of the Committee on Free Governor Mode Operation of Generating Units)**.
7. The methodology used for computing the Frequency Response Characteristics shall be as per the procedure approved by Hon'ble CERC vides order dated 3rd May 2013. All generators as well HVDC were advised to calculate their response as per the described procedure during the meeting.(**Ref: CERC order in Petition No. 47/MP/2012**). SLDCs were advisedto report the frequencyresponse of intra-State generators to the concerned SERCs. (**Ref: CERC order in Petition No. 84/MP/2015).**
8. A generator response which is minimum 40% of ideal FRC is to be considered as adequate response. **(Ref: 9.6 (b) of Report of Expert Group to review and suggest measures for bringing power system operation closer to National Reference Frequency).**
9. The MW and frequency data available at station DCS shall be archived at a resolution of at least 1 second, for post-facto analysis of the adequacy of the response.

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. They assured that the governor settings would be re-tuned in the next few days to provide the response expected as per the IEGC 5th amendment. All the generating utilities updated the latest status and their action plan which is enclosed at **Annexure-IA**.

The two frequency response events, which occurred in the month of January 2019, were also informed by ERLDC to all generators. It was decided that all generators would submit high resolution (1 sec) data of MW output, Frequency (Hz), and RGMO influence in MW (if available) along with FRC calculation and suitable explanation of response by 4th Feb 2019 to erldcprotection@posoco.in and erpcprotection@gmail.com.

Events Date and Time:

Date and Time	Time period for required data	Event	Frequency Drop
16-01-2019 12:25 hrs	12:24 hrs to 12:29 hrs	Solar Generation loss in Northern region of 1400 MW	0.107 Hz
23-01-2019 06:37 Hrs	06:36 hrs to 06:41 hrs	Loss of generation at Rampur & NJPC in Northern region	0.08 Hz

After detailed deliberation, the following decisions were taken in the meeting:

1. All the generators would take necessary tuning of their units along with the Boiler logic to provide adequate RGMO/FGMO response
2. Generator which cannot provide automatic response should operate on FGMO with manual intervention
3. All the generators would address the issues related to implementation of RGMO/FGMO during R & M works immediately.
4. All the generators shall calculate the RGMO/FGMO response for the events informed by ERLDC.
5. All the generators shall submit the high resolution data to SLDC and ERLDC for computation of the response.
6. The status of implementation of RGMO/FGMO and the performance of the generators shall be reviewed in monthly OCC Meetings.

II. **PSS Tuning of Generators**

ERLDC gave a detailed presentation on role of Power System Stabilizer and the importance of its tuning. Presentation is enclosed at **Annexure-II**. ERLDC explained the following during the PSS Tuning Session:

1. Low frequency oscillation and its adverse effect on the grid as well generating plants
2. Basics of PSS tuning, PSS Tuning Requirement as per Regulation/Standards
3. Criteria for PSS tuning and analysis of PSS tuning.
4. Exciter, PSS Data and its tuning details as received from various generators **(Annexure-II A)**
5. Analysis of PSS tuning field reports submitted by the various generators **(Annexure-II B)**
6. Need for Model data submission from generators and its utilization

After detailed deliberation, the following decisions were taken in the meeting:

1. Generators who had already done the PSS tuning shall submit the details of the Excitation System, PSS tuning and its report as per the list attached at **Annexure-II A**. The generators shall submit the Generator terminal voltage, Field voltage, Real power, Reactive Power, Generator Speed, and PSS output in excel/.csv format for better analysis of the result.
2. Generators for which PSS tuning was not carried out shall take up the PSS Tuning with OEM immediately
3. Generators for which PSS was not in service shall take up the issue with OEM immediately to bring the PSS into service.
4. For any future tuning, it was recommended to all generators to collect the response along with data in .csv/excel format.
5. All the generators where the PSS tuning was done and PSS not in service shall submit their action plan for PSS Tuning in line with IEGC and CEA standards before the next OCC meeting to ERPC/ERLDC.

Meeting ended with vote of thanks to the chair.

****

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

1. Intra- State:

S.no.	State	Name of Transmission Utility / Tr. Service Provider (TSP)	Substation name	Highest system voltage level (kV)	Transformation voltage Ratio (s)	Transformation Capacity (MVA) at each transformation level	Line reactors (in MVAR)			Bur Reactors (in MVAR)		
							765kV	400kV	220kV / 132kV	765kV	400kV	220kV / 132kV

For Example

1	*AP*	*APTRANSCO*	*X*	*765kV*	*765/400kV* *400/220kV*	*1500* *1000*	*480*	*126*	*-*	*660*	*205*	-

2. Inter-State

S.no.	State	Name of Transmission Utility / Tr. Service Provider (TSP)	Substation name	Highest system voltage level (kV)	Transformation voltage Ratio (s)	Transformation Capacity (MVA) at each transformation level	Line reactors (in MVAR)			Bur Reactors (in MVAR)		
							765kV	400kV	220kV / 132kV	765kV	400kV	220kV / 132kV

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

1. Intra- State:

s.no.	State	Transmission Utility	Transmission Line		Voltage Level (KV)	Length of Transmission Lines (**in Circuit Kms**)	S/C or D/C or S/C line on D/C towers or multi-circuit & multi voltage	No. of conducter(s)/ phase	Type & Name of conductor (ACSR/AAAC/AL59/ any other; Bersimis/ Lapwing/ Moose/ Zebra/Panther/ Dog/any other)
			From (End 1)	To (End 2)					

For example:

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

2. Inter- State:

s.no.	From State	To State	Transmission Utility	Transmission Line		Voltage Level (KV)	Length of Transmission Lines **(in Circuit Kms)**	S/C or D/C or S/C line on D/C towers or multi-circuit & multi voltage	No. of conducter(s)/ phase	Type & Name of conductor (ACSR/AAAC/AL59/ any other; Bersimis/ Lapwing/ Moose/ Zebra/Panther/ Dog/any other)
				From (End 1)	To (End 2)					

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		
	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	Data given by DICs	Comments
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-05.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-05.pdf
http://www.cea.nic.in/reports/monthly/powersupply/2017/psp_peak-06.pdf
http://www.cea.nic.in/reports/monthly/powersupply/2016/psp_peak-04.pdf
http://www.cea.nic.in/reports/monthly/powersupply/2016/psp_peak-05.pdf
http://www.cea.nic.in/reports/monthly/powersupply/2016/psp_peak-06.pdf

ANNEXURE-E

CESC **CAPACITORS DETAILS**

List if 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	Raina	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

OPTCL

Annexure III

2 of 2

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				**110**
Proposed for installation				
Sonepur	2x12.5			10
Pattamundei	1x20+1x12.5			15
Kendrapara	1x40+1x20+1x12.5			20
Kharior	2x20			10
Jajpur Tpwn	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)				**275**

Talcher STPS related matter

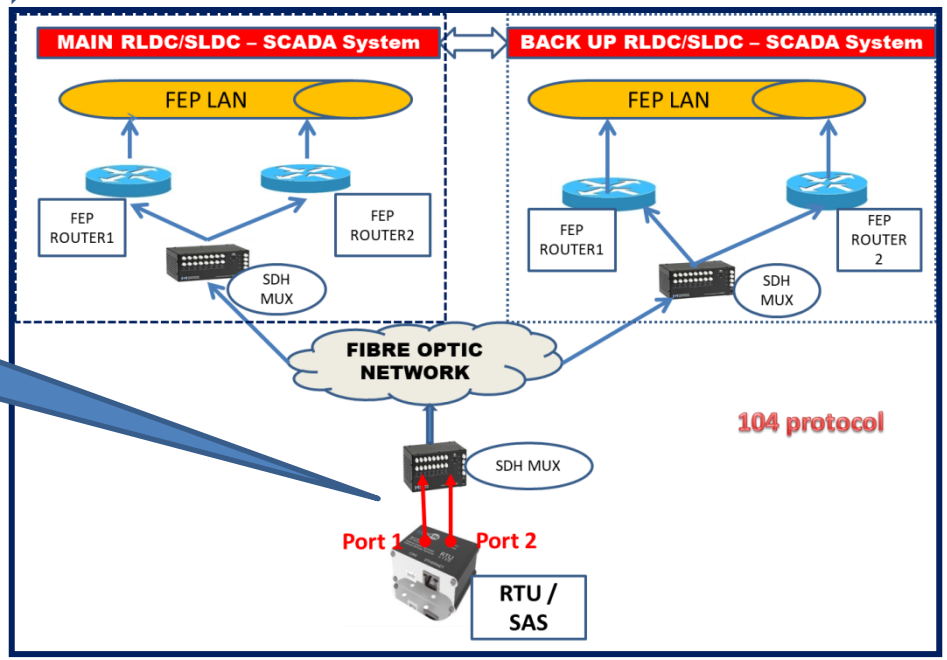
1. Non availability of elementary SCADA data

Sl No.	Feeder Name	Measurement
1	400kv Rourkela -1	MVAr
2	400/11 kV Station transformer #3	MVAr
3	400/11 kV Station transformer #4	MVAr
4	400kvV Bus Sectionalizer of Bus 2 of stage 1 and Bus 2 of stage 2	MW & MVAr
5	GT - 6 (UNIT-6)	MVAr

2. Stand by channel configuration.

Resolution:

1. **Port 1 & Port 2 should be dedicated for reporting to ERLDC Main CC and ERLDC Back up CC**



Non availability of SCADA data above 220 kV Level

WBSETCL

- Following 220 kV station data not available:
  - TLDP 4 220kV : Communication link failure.
  - Dharampur 220kV : Communication link issue.
  - Egra 220 : Communication link issue.
  - Bantala 220kV : Communication link issue.
  - Alipurduar 220kV: Communication link yet to be established.
  - Vidyasagar 220kV
  - Rishra 220kV

Non availability of SCADA data above 220 kV Level &132kV Station having tie lines

- **BIHAR**
  - Motipur 220kV
  - Barauni TPS 220kV
  - Laukahi 220kV
  - Baisi 132kV.
- **Odisha**
  - Narsingpur 220kV Station commissioned on 24-08-2018. SCADA data yet to be integrated at Odissa SLDC end.
  - Nalco 220kV : Most of CB and Isolator data are not available
  - Jindal Steel and Power Limited (JSPL) 400kV: Most of CB and Isolator data are not available
- **JHARKHAND**
  - Hatia New 220 : RTU not reporting to SLDC.
  - Dumka 220 : RTU not yet integrated at Jharkhand SLDC.
  - Jamtara 132kV
  - Dalbhumgarh 132kV
  - Garwa 132kV
  - Deoghar 132kV
  - Kendposi 132 kV

Annexure-D.1

Anticipated Power Supply Position for the month of
Mar-19

SL.NO		PARTICULARS	PEAK DEMAND MW	ENERGY MU
1		**BIHAR**		
	i)	NET MAX DEMAND	4500	2592
	ii)	NET POWER AVAILABILITY- Own Source (including bilateral)	620	339
		- Central Sector	3140	1759
	iii)	SURPLUS(+)/DEFICIT(-)	-740	-494
2		**JHARKHAND**		
	i)	NET MAX DEMAND	1260	810
	ii)	NET POWER AVAILABILITY- Own Source (including bilateral)	341	161
		- Central Sector	822	430
	iii)	SURPLUS(+)/DEFICIT(-)	-97	-219
3		**DVC**		
	i)	NET MAX DEMAND (OWN)	2850	1765
	ii)	NET POWER AVAILABILITY- Own Source	5052	2804
		- Central Sector	318	153
		Long term Bi-lateral (Export)	1468	1092
	iii)	SURPLUS(+)/DEFICIT(-)	1052	99
4		**ODISHA**		
	i)	NET MAX DEMAND	4100	2567
	ii)	NET POWER AVAILABILITY- Own Source	3094	1617
		- Central Sector	1258	681
	iii)	SURPLUS(+)/DEFICIT(-)	252	-269
5		**WEST BENGAL**		
5.1		**WBSEDCL**		
	i)	NET MAX DEMAND (OWN)	6760	3671
	ii)	CESC's DRAWAL	0	0
	iii)	TOTAL WBSEDCL's DEMAND	6760	3671
	iv)	NET POWER AVAILABILITY- Own Source	3632	2133
		- Import from DPL	400	0
		- Central Sector	3245	1578
	v)	SURPLUS(+)/DEFICIT(-)	517	39
	vi)	EXPORT (TO B'DESH & SIKKIM)	5	4
5.2		**DPL**		
	i)	NET MAX DEMAND	0	169
	ii)	NET POWER AVAILABILITY	400	191
	iii)	SURPLUS(+)/DEFICIT(-)	400	22
5.3		**CESC**		
	i)	NET MAX DEMAND	1870	862
	ii)	NET POWER AVAILABILITY - OWN SOURCE	765	503
		FROM HEL	540	349
		FROM CPL/PCBL	45	0
		Import Requirement	520	10
	iii)	TOTAL AVAILABILITY	1870	862
	iv)	SURPLUS(+)/DEFICIT(-)	0	0
6		**WEST BENGAL (WBSEDCL+DPL+CESC)** **(excluding DVC's supply to WBSEDCL's command area)**		
	i)	NET MAX DEMAND	8630	4702
	ii)	NET POWER AVAILABILITY- Own Source	4797	2827
		- Central Sector+Others	4350	1927
	iii)	SURPLUS(+)/DEFICIT(-)	517	51
7		**SIKKIM**		
	i)	NET MAX DEMAND	100	38
	ii)	NET POWER AVAILABILITY- Own Source	1	0
		- Central Sector+Others	157	63
	iii)	SURPLUS(+)/DEFICIT(-)	58	25
8		**EASTERN REGION** **At 1.03 AS DIVERSITY FACTOR**		
	i)	**NET MAX DEMAND**	20816	12474
		Long term Bi-lateral by DVC	1468	1092
		EXPORT BY WBSEDCL	5	4
	ii)	**NET TOTAL POWER AVAILABILITY OF ER (INCLUDING C/S ALLOCATION)**	23949	12761
	iii)	**PEAK SURPLUS(+)/DEFICIT(-) OF ER (ii)-(i)**	1661	-809

Annexure-D2

ERLDC, KOLKATA

TRANSMISSION ELEMENTS OUTAGE APPROVED IN 154th 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**	**COMMENT**
1	220kV Katapalli- Sadeipalli Circuit-II	01/03/19	9:00	01/03/19	17:00	ODB	GRIDCO	AMP		**S/D TO BE TAKEN ON 01.03.19**
2	403 ICT#1 Main Bay at Subhasgram SS	01/03/19	9:00	01/03/19	17:00	ODB	POWERGRID,ER-II	AMP work		**S/D TO BE TAKEN ON 04.03.19**
3	A/R OF 400 KV Farakka- Sagradighi-II	01/03/19	9:00	31/03/19	18:00	ODB	POWERGRID,ER-II	Auto reclose to be kept on Non auto mode from both end for PID testing of insulator.	WB	
4	400 KV Bus -1 at Binaguri	01/03/19	9:00	07/03/19	18:00	ODB	POWERGRID,ER-II	400 KV Busbar relay Replacement Under ERSS-XX.		**CONSENT GIVEN FOR S/D AFTER 14TH**
5	132 KV kurseong-Rangit	01/03/19	9:00	01/03/19	17:00	ODB	POWERGRID,ER-II	Sag/Tension correction between Loc 51-52, due to land slide. Complete release of tension required.	WB	
6	400KV Binaguri Rangpo Ckt-1	01/03/19	9:00	15/03/19	17:00	OCB	POWERGRID,ER-II	Line reconductoring job under ERSS-XX.		
7	220 KV TBC at Malda	01/03/19	8:00	31/03/19	17:00	OCB	POWERGRID,ER-II	ERSS-XVII-B Constructional work	**WB**	After implemetation of SPS for tripping of 400kv Rangpo-
8	400KV TBC at Malda	01/03/19	8:00	31/03/19	17:00	OCB	POWERGRID,ER-II	ERSS-XVII-B Constructional work	WB	**CONSENT GIVEN FOR S/D AFTER 14TH**
9	400 KV Maithon-Jamshedpur Line	01/03/19	9:00	02/03/19	18:00	ODB	POWERGRID,ER-II	Replacement of Main Bay and Line Bay CT and To replaced Punctured disc Insulator		**CONSENT GIVEN FOR S/D AFTER 14TH**
10	220/132 kV 160 MVA ICT#2	01/03/19	9:00	01/03/19	17:30	ODB	ER-II/Odisha/BARIPADA S/S	AMP works	**GRIDCO**	
11	3X166.67MVA coupling transformer (STATCOM)	01/03/19	10:00	01/03/19	12:00	ODB	ER-II/Odisha /Jeypore	To carry out AMP of UNIT #II of 3X166.67 Coupling Transformer by contractor as per contractual agreement for starting of 5 years warranty period. (Unit change over		
12	400KV Bus-1	01/03/19	9:00	01/03/19	12:00	ODB	R-II/Odisha/Sunderga	For rectification of 400KV Bus-1 side isolator(41589A) of 400KV Sterlite Ckt-1(male contact of the isolator is stuck in	GRIDCO	
13	Main bay-415 of 400KV Vedanta Ckt-1	01/03/19	9:00	01/03/19	18:00	ODB	R-II/Odisha/Sunderga	AMP work		
14	765kV Angul-Srikakulam line-I	01/03/19	7:00	01/03/19	18:00	ODB	ER-II/Nayagarh TL	AMP	NLDC	
15	765 KV BUS-I at Gaya S/S	01/03/19	9:00	01/03/19	18:00	ODB	POWERGRID ER-	For AMP Work	NLDC	
16	132 kV LKR-Jamui Line-1	01/03/19	10:00	01/03/19	14:00	ODB	POWERGRID ER-	AMP works of 110 & 110L Bay Equipments.	**BSEB**	
17	413 BAY (MAIN BAY OF KHARAGPUR-I line) AT CHAIBASA	01/03/19	9:30	01/03/19	17:00	ODB	POWERGRID ER-	AMP work of 413 Bay		

18	765kV Gaya-Varanasi-I	01/03/19	8:00	15/03/19	18:00	OCB	POWERGRID ER-	for replacement of tower no.448	NLDC	
19	400KV PRN-1_GKP-1 TIE BAY AT MUZAFFARPUR	01/03/19	9:30	01/03/19	17:30	ODB	POWERGRID ER-	AMP WORK		
20	A/R OF 400 KV BIHARSARIF - BANKA - II	01/03/19	8:00	31/03/19	18:00	ODB	POWERGRID ER-	A/R FOR OPGW INSTALLATION WORK		
21	A/R OF 400 KV BIHARSARIF - KODERMA - II	01/03/19	8:00	31/03/19	18:00	ODB	POWERGRID ER-	A/R FOR OPGW INSTALLATION WORK	DVC	
22	Main bay of Balia 1 (406 Bay) AT Biharsarif	01/03/19	10:00	01/03/19	18:00	ODB	POWERGRID ER-	Bay AMP		
23	400 KV Biharsarif - Varanasi - I	01/03/19	8:00	29/03/19	18:00	OCB	POWERGRID ER-	Realingmnet works of 400KV Biharsharif - Varanasi & 400KV Biharsharif - Sasaram Line due to	**NLDC**	
24	400 KV Biharsarif - Varanasi - II	01/03/19	8:00	29/03/19	18:00	OCB	POWERGRID ER-	Realingmnet works of 400KV Biharsharif - Varanasi & 400KV Biharsharif - Sasaram Line due to	NLDC	
25	400KV Biharsarif - Sasaram -I	01/03/19	8:00	25/03/19	18:00	OCB	POWERGRID ER-	Realingmnet works of 400KV Biharsharif - Varanasi & 400KV Biharsharif - Sasaram Line due to	**NLDC**	
26	400KV Biharsarif - Sasaram -II	01/03/19	8:00	25/03/19	18:00	OCB	POWERGRID ER-	Realingmnet works of 400KV Biharsharif - Varanasi & 400KV Biharsharif - Sasaram Line due to	NLDC	
27	400KV Bus -I At Patna	01/03/19	9:30	03/03/19	17:30	ODB	POWERGRID ER-	Stringing of Sky bus under SS03 package of Patna Nabinagar Ckt 1	**BSEB**	
28	207 bay 220KV of ICT 3 At Patna	01/03/19	9:30	01/03/19	17:30	ODB	POWERGRID ER-	AMP	BSEB	
29	80 MVAR Bus reactor along with its bay At Patna	01/03/19	9:30	15/04/19	17:30	OCB	POWERGRID ER-	Under SS03 package for recommissioning of 80 MVAR Bus reactor as switchable line reactor of		
30	500MVA ICT 1 At Patna	01/03/19	9:30	20/03/19	17:30	OCB	POWERGRID ER-	Construction of Firewall of ICT 2 and equipment uprating & jumper connection	BSEB	
31	408 bay Tie bay of ICT 2 and Future	01/03/19	9:30	15/03/19	17:30	OCB	POWERGRID ER-	AMP & CB Overhauling		**CONSENT GIVEN**
32	400 KV Patna Barh line 1 At Patna	01/03/19	9:30	15/03/19	17:30	OCB	POWERGRID ER-	For uprating of bay equipment under Nabinagar -2 Project.		
33	406 ICT#2 Main Bay at Subhasgram SS	02/03/19	9:00	02/03/19	17:00	ODB	POWERGRID,ER-II	AMP work		
34	400 KV Farakka- Kahalgaon-I line	02/03/19	9:00	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		
35	132 KV siliguri Melli	02/03/19	9:00	02/03/19	17:00	ODB	POWERGRID,ER-II	For 3-Ph A/R implementation.	SIKKIM	
36	132kV BUS-1 at Rangpo	02/03/19	9:00	12/03/19	17:00	OCB	POWERGRID,ER-II	For Bus extension to new Chuzachen bays (Construction works)	SIKKIM	
37	220KV SLG-KISHENGUNJ # I & II	02/03/19	8:00	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		

38	220KV DLK-KISHENGUNJ # I & II	02/03/19	8:00	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		
39	50MVAR BALANGIR-JEYPORE LINE REACTOR	02/03/19	9:00	02/03/19	18:00	ODB	ER-II/Odisha/Balangir	AMP for 50MVAR Jeypore L/R and 403R 52CB		
40	220/132 kV 160MVA ICT#1	02/03/19	9:00	02/03/19	17:30	ODB	ER-II/Odisha/BARIPADA S/S	AMP works	**GRIDCO**	
41	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		
42	400KV Main Bay-406 of 765/400KV ICT-II	02/03/19	9:00	02/03/19	18:00	ODB	R-II/Odisha/Sunderga	AMP Work		
43	765kV Angul-Srikakulam line-II	02/03/19	7:00	02/03/19	18:00	ODB	ER-II/Nayagarh TL	AMP	NLDC	
44	765 KV BUS-II at Gaya S/S	02/03/19	9:00	02/03/19	18:00	ODB	POWERGRID ER-	For AMP Work	NLDC	**SUBJECT TO SRLDC CONSENT**
45	400/220kV 500MVA ICT-I at Pusauli	02/03/19	9:00	05/03/19	18:00	OCB	POWERGRID ER-	Shifting of transformer for Transformer Retrofitting Work	**BSEB**	
46	400KV ICT-3 MAIN BAY AT MUZAFFARPUR	02/03/19	9:30	02/03/19	17:30	ODB	POWERGRID ER-	AMP WORK	BSEB	
47	208 bay main bay sipara 1 At Patna	02/03/19	9:30	03/03/19	17:30	OCB	POWERGRID ER-I	AMP & CB Overhauling	BSEB	
48	765 KV BUS-2 AT NEW RANCHI	02/03/19	9:00	02/03/19	18:00	ODB	POWERGRID ER-I	For AMP Work		
49	400 KV Rengali-Indravati Line	02/03/19	9:00	02/03/19	17:00	ODB	ER-II/Odisha/Rengali	AMP Work	NLDC	
50	400 KV 406 Main Bay of 315 MVA ICT-II	03/03/19	9:00	03/03/19	17:30	ODB	ER-II/Odisha/BARIPADA S/S	AMP works		
51	A/R OF 400kV Sundargarh-Raigarh Ckt#1	03/03/19	8:00	14/03/19	18:00	ODB	ER-II/ODISHA/SUNDER GARH	For PID Testing of Porcelain Insulator. Only Auto reclose relay will be off. Line will be in service	NLDC	**SUBJECT TO WRPC CONSENT**
52	Main Bay-407 of 400KV Raigarh Line-I	03/03/19	9:00	03/03/19	18:00	ODB	R-II/Odisha/Sunderga	AMP Work		
53	400kV Maithon-Gaya-1 line	03/03/19	9:00	28/03/19	18:00	OCB	POWERGRID ER-	Destringing, 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**	**DETAILED WORK PROJECT REQUIRED.**
54	400kV Maithon-Gaya-2 line	03/03/19	9:00	28/03/19	18:00	OCB	POWERGRID ER-	Destringing, erection & re-stringing of multi ckt. Tower Loc. 80 (Brassing member and legs of tower no 80 is	NLDC	**DETAILED WORK PROJECT REQUIRED.**
55	400kV Koderma-Gaya-1 line	03/03/19	9:00	28/03/19	18:00	OCB	POWERGRID ER-	Destringing, erection & re-stringing of multi ckt. Tower Loc. 80 (Brassing member and legs of tower no 80 is	NLDC	**DETAILED WORK PROJECT REQUIRED.**
56	400kV Koderma-Gaya-2 line	03/03/19	9:00	28/03/19	18:00	OCB	POWERGRID ER-	Destringing, erection & re-stringing of multi ckt. Tower Loc. 80 (Brassing member and legs of tower no 80 is	NLDC	**DETAILED WORK PROJECT REQUIRED.**
57	220 KV Baripada PG-Balasore-I & II	04/03/19	9:00	04/03/19	17:00	ODB	GRIDCO	AMP		
58	400 KV Farakka- Berhampur-II	04/03/19	9:00	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-		

59	132 KV siliguri kurseong	04/03/19	9:00	04/03/19	17:00	ODB	POWERGRID,ER-II	Line defect rectification & Line AMP works.	WB	
60	Rangpo - Teesta -V Line 2	04/03/19	8:00	08/03/19	17:00	OCB	POWERGRID,ER-II	For rectification of SF6 gas leakage repair work		
61	220KV 203 Bus Coupler Bay	04/03/19	9:00	04/03/19	17:30	ODB	ER-II/Odisha/BARIPADA S/S	AMP works		
62	100MVAR VSC # I (STATCOM)	04/03/19	9:00	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		
63	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-	AMP		
64	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-	AMP		
65	63 MVAr Muzaffarpur Line-I Reactor (Switchable Line Reactor) at New Purnea	04/03/19	9:30	04/03/19	18:00	ODB	POWERGRID ER-	For AMP Work		
66	400kV Pusauli-Biharsharif-II	04/03/19	10:00	04/03/19	18:00	ODB	POWERGRID ER-	For Relay Retrofitting Job		
67	400KV ICT-2-TIE BAY AT MUZAFFARPUR	04/03/19	9:30	04/03/19	17:30	ODB	POWERGRID ER-	AMP WORK	BSEB	**CONSENT GIVEN**
68	400 KV D/C Patna-Balia I & II line.	04/03/19	9:00	05/03/19	18:00	ODB	POWERGRID ER-	to facilitate the stringing work of 400 kv nabinagar II patna line	NLDC	
69	400 KV BIHARSHARIF - PURNEA CKT 2	04/03/19	9:00	04/03/19	18:00	ODB	POWERGRID ER-	AMP of Line Bay, Line reactor & LR bay		
70	400KV Bus 2 At Patna	04/03/19	9:30	06/03/19	17:30	ODB	POWERGRID ER-	Stringing of Sky bus under SS03 package of Patna Nabinagar Ckt 1	BSEB	
71	210 bay main bay sipara 2 At Patna	04/03/19	9:30	06/03/19	17:30	OCB	POWERGRID ER-	AMP & CB Overhauling	BSEB	
72	400kV SASARAM-Biharsharif-II	04/03/19	10:00	04/03/19	18:00	ODB	POWERGRID ER-I	For Relay Retrofitting Job		
73	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	
74	409 ICT#3 Main Bay at Subhasgram SS	05/03/19	9:00	05/03/19	17:00	ODB	POWERGRID,ER-II	AMP work		
75	50 MVA ICT 132/66 KV at Gangtok	05/03/19	9:00	05/03/19	18:00	ODB	POWERGRID,ER-II	For AnnualAMp Works	**SIKKIM**	

76	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)		
77	400 KV Maithon-KHG-2 Line	05/03/19	9:00	06/03/19	18:00	ODB	POWERGRID,ER-II	Replacement of Main Bay and Line Bay CT		
78	125MVAR BUS REACTOR-2	05/03/19	9:00	07/03/19	18:00	OCB	ER-II/Odisha/Balangir	Attending Aircell problem, Fine Tuning of CSD, CT Oil sampling, Rectificaton of SF6 Gas leakage in R-PH CB of 406 Bay and Validation of SCADA point		
79	400 kV 407 main Bay of Baripada-Duburi line	05/03/19	9:00	06/03/19	17:30	ODB	ER-II/Odisha/BARIPADA S/S	Gasket replacement		
80	100MVAR VSC # II (STATCOM)	05/03/19	9:00	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		
81	315 MVA ICT#2 MAIN BAY (BAY NO.-415)	05/03/19	9:00	05/03/19	18:00	ODB	ER-II/ODISHA/ROURKELA	BAY AMP WORK		
82	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 rector & take in R-phase Reactor after attending oil leakage by full gasket replacement by M/s TBEA.	NLDC	**SUBJECT TO WRPC CONSENT**
83	400kV Sundargarh-Raigarh Ckt#1&3	05/03/19	8:00	07/03/19	18:00	OCB	/ODISHA/SUNDERG	OPGC Line diversion (Rectification work at Railway crossing)	NLDC	
84	Tie Bay-408 of 400KV Raigarh Line-I & Future	05/03/19	9:00	05/03/19	18:00	ODB	R-II/Odisha/Sunderga	AMP Work		
85	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	
86	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-	AMP		
87	400kV JSR -DURGAPUR LINE	05/03/19	9:30	05/03/19	17:30	ODB	POWERGRID ER-	Static Auto reclose relay to be replaced with numerical relay AT JSR		
88	400 /220 kV ICT-I at Gaya ss	05/03/19	9:00	05/03/19	18:00	ODB	POWERGRID ER-	For uprating of bay equipment under Nabinagar -2 Project.	BSEB	
89	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-	AMP		
90	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-	For AMP Work		
91	132 kV LKR-Jamui Line-2	05/03/19	10:00	05/03/19	14:00	ODB	POWERGRID ER-	AMP works of 111 & 111L Bay Equipments.	BSEB	**CONSENT GIVEN FOR S/D ON 8TH/10TH**
92	400 KV Chaibasa- KHARAGPUR-I Line	05/03/19	9:30	05/03/19	17:30	ODB	POWERGRID ER-	AMP WORK OF KGP-I LINE REACTOR & Auto reclose checking/testing at Chaibasa end	WB	
93	220kV Bus-I@Pusauli	05/03/19	9:00	05/03/19	18:00	ODB	POWERGRID ER-	To attend Isolator Misalignment Problem & Reley retrofitting Job	BSEB	TO BE TAKEN WITH SASARAM ICT
94	220kV Pusauli-Sahapuri	05/03/19	8:00	05/03/19	13:00	ODB	POWERGRID ER-	To attend Isolator Misalignment Problem & Reley retrofitting Job	**NLDC**	
95	220kV Pusauli-Ara	05/03/19	8:00	05/03/19	18:00	ODB	POWERGRID ER-	To attend Isolator Misalignment Problem & Reley retrofitting Job	BSEB	
96	400KV BUS REACTOR-1 MAIN BAY AT MUZAFFARPUR	05/03/19	9:30	05/03/19	17:30	ODB	POWERGRID ER-	AMP WORK		

97	Main bay of Balia 2 (407 Bay) AT Biharsarif	05/03/19	10:00	05/03/19	18:00	ODB	POWERGRID ER-	Bay AMP		
98	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 Biharsarif - Varanasi-II shall be in off condition)	NLDC	
99	400 KV /220KV ICT-2 TRANSFORMER in TSTPS(400 KV Bay – 4,5 and 220KV Bay no- 14)	05/03/19	8:00	08/03/19	18:00	Continuous	TALCHER	Transformer oil leakage arrest, Transformer LA replacement,AMP jobs		
100	315MVA ICT-I DURGAPUR	05/03/19	9:00	05/03/19	17:00	ODB	POWERGRID,ER-II	AMP WORK		
101	412 ICT#4 Main Bay at Subhasgram SS	06/03/19	9:00	06/03/19	17:00	ODB	POWERGRID,ER-II	AMP work		
102	400 KV Farakka-Gokarna-II	06/03/19	9:00	06/03/19	18:00	ODB	POWERGRID,ER-II	For Event Logger commissioning (Integration with NTPC system) under ERSS-V.	WB	
103	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)		
104	220KV DALKHOLA-MALDA-II	06/03/19	8:00	06/03/19	17:00	ODB	POWERGRID,ER-II	Jumper Tightening and PG Clamp Change. Anticipated duration of outage of LILO section 40 Days.		
105	125MVAR MSC # I (STATCOM)	06/03/19	9:00	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		
106	315 MVA ICT#1 MAIN BAY (BAY NO.-424)	06/03/19	9:00	06/03/19	18:00	ODB	ER-II/ODISHA/ROURKELA	BAY AMP WORK		
107	50 MVAR Line Reactor	06/03/19	9:00	06/03/19	18:00	ODB	ER-II/Odisha /Indravati	AMP work of 50MVAR LR.Power flow will be interrupt for this shutdown .		
108	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	
109	Tie Bay-414 of 400KV Bus Reactor-I&Future	06/03/19	9:00	06/03/19	18:00	ODB	R-II/Odisha/Sunderga	AMP Work		
110	765KV Bus-I at Sundargarh	06/03/19	9:00	12/03/19	18:00	OCB	R-II/Odisha/Sunderga	Erection of SF6 to Air bushing of 765KV GIS bus sectionalizer, jumpering , HV & impulse testing for commissioning of	NLDC	
111	Mendhasal-Pandiabili CKT-1 at Mendhasal along with Main bay & Tie Bay	06/03/19	8:30	06/03/19	18:00	ODB	ER-II/Odisha/ Pandiabili GIS	Maintenance of ISOLATORs at Mendhasal	GRIDCO	
112	125 MVAR Bus Reactor	06/03/19	9:00	09/03/19	18:00	OCB	ER-II/Odisha/Keonjhar	For replacement of defective rediator of Bus Reactor		
113	400KV Kahalgaon-Lakhisarai Line-1	06/03/19	9:30	06/03/19	17:30	ODB	KAHALGAON	PM works and Relay Testing		
114	400KV RNC-SIPAT-2 MAIN BAY (424) AT RANCHI	06/03/19	10:00	06/03/19	17:00	ODB	POWERGRID ER-	AMP		
115	400KV RANCHI - RAURKELA - 2	06/03/19	9:30	06/03/19	17:00	ODB	POWERGRID ER-	REPLACEMENT INSULATOR DAMAGED BY MISCREANTS		
116	160 MVA ICT#1 AT PURNEA	06/03/19	10:00	06/03/19	17:00	ODB	POWERGRID ER-	NTAMC WORK	BSEB	

117	400 /220 kV ICT-II at Gaya ss	06/03/19	9:00	06/03/19	18:00	ODB	POWERGRID ER-	For uprating of bay equipment under Nabinagar -2 Project.	BSEB	
118	400KV RNC-SIPAT-2 MAIN BAY (424) AT RANCHI	06/03/19	10:00	06/03/19	17:00	ODB	POWERGRID ER-	AMP		
119	400KV RANCHI - RAURKELA - 2	06/03/19	9:30	06/03/19	17:00	ODB	POWERGRID ER-	REPLACEMENT INSULATOR DAMAGED BY MISCREANTS		
120	125MVAr Bus Reactor-II at New Purnea	06/03/19	9:30	06/03/19	18:00	ODB	POWERGRID ER-	For AMP Work		
121	400 KV Chaibasa - KHARAGPUR-II Line	06/03/19	9:30	06/03/19	17:30	ODB	POWERGRID ER-	Auto reclose checking/testing at Chaibasa end	WB	
122	220kV Main Bus-II @ Pusauli	06/03/19	8:00	06/03/19	20:00	ODB	POWERGRID ER-	To attend Isolator Misalignment Problem & Reley retrofitting Job	BSEB	
123	400/220kV 500MVA ICT-II at Pusauli	06/03/19	8:00	06/03/19	13:00	ODB	POWERGRID ER-	To attend Isolator Misalignment Problem & Reley retrofitting Job	**BSEB**	
124	220kV Pusauli-Dehri	06/03/19	13:00	06/03/19	18:00	ODB	POWERGRID ER-	To attend Isolator Misalignment Problem & Reley retrofitting Job	**BSEB**	
125	400/220kV 315MVA ICT-II at Pusauli	06/03/19	8:00	10/04/19	18:00	OCB	POWERGRID ER-	For Transformer Retrofitting Work	BSEB	
126	400KV BUS-REACTOR-ICT-1 TIE BAY AT MUZAFFARPUR	06/03/19	9:30	06/03/19	17:30	ODB	POWERGRID ER-	AMP WORK		
127	415 ICT#5 Main Bay at Subhasgram SS	07/03/19	9:00	07/03/19	17:00	ODB	POWERGRID,ER-II	AMP work		
128	400 KV Farakka- Berhampur-I	07/03/19	9:00	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-		
129	50 MVA ICT 132/66KV at Gangtok	07/03/19	9:00	07/03/19	18:00	ODB	POWERGRID,ER-II	For AnnualAMp Works	**SIKKIM**	
130	220 KV Birpara-NSLG Feeder-I	07/03/19	8:00	07/03/19	17:30	ODB	POWERGRID,ER-II	220KV R-Ph CT replacement work		
131	220 KV Alipurduar - Salakati - 1	07/03/19	7:00	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**	
132	220 KV Alipurduar - Salakati - 2	07/03/19	7:00	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	NLDC	
133	400KV Mejia-Jamshedpur line	07/03/19	9:00	08/03/19	18:00	ODB	POWERGRID,ER-II	To replaced Punctured disc Insulator	DVC	
134	400 KV, 315 MVA ICT # 2	07/03/19	9:00	11/03/19	17:00	OCB	ER-II/Odisha/Rengali	For Bushing Replacement (220 KV Side , R-Ph)	GRIDCO	
135	400 kV 411 Tie Bay of Baripada-Pandiabili & Baripada-TISCO line	07/03/19	9:00	08/03/19	17:30	ODB	ER-II/Odisha/BARIPADA S/S	AMP & Gasket replacement		
136	125MVAR MSC # II (STATCOM)	07/03/19	9:00	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		

137	400 KV CHAIBASA#1 MAIN BAY (BAY NO.-416)	07/03/19	9:00	07/03/19	18:00	ODB	ER-II/ODISHA/ROURKELA	BAY AMP WORK		
138	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	
139	Main Bay-701 of 765KV 240MVAR B/R-I	07/03/19	8:00	07/03/19	18:00	ODB	R-II/Odisha/Sunderga	AMP Work		
140	Mendhasal-Pandiabili CKT-2 at Mendhasal along with Main bay & Tie Bay NB: DIA WILL BE IN OPENED CONDITION DURING THE S/D	07/03/19	8:30	07/03/19	18:00	ODB	ER-II/Odisha/ Pandiabili GIS	Maintenance of ISOLATOR at Mendhasal	GRIDCO	
141	400kV BUS-1 AT DALTONGANJ	07/03/19	9:30	07/03/19	17:30	ODB	POWERGRID	AMP	JSEB	
142	Maintenance work for BUS Reactor	07/03/19	9:30	18/03/19	18:00	OCB	BARH	Annual Maintenance & Testing of BUS Reactor		
143	Maintenance work for BUS Reactor Bay	07/03/19	9:30	18/03/19	18:00	OCB	BARH	Annual Maintenance & Testing of Bays Equipments		
144	220 KV Baripada PG-Balasore-I & II	07/03/19	9:00	07/03/19	17:00	ODB	GRIDCO	AMP		
145	220KV RANCHI-HATIA LINE-I	07/03/19	10:00	07/03/19	17:00	ODB	POWERGRID ER-	AMP	JSEB	
146	400 KV 125 MVAR BR-I at Gaya ss	07/03/19	9:00	07/03/19	18:00	ODB	POWERGRID ER-	For uprating of bay equipment under Nabinagar -2 Project.		
147	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-	For AMP Work		
148	200 MVA ICT-1 at Lakhisarai	07/03/19	9:00	08/03/19	17:00	ODB	POWERGRID ER-	Checking of Air Cell	BSEB	
149	132 KV Main BUS AT BANKA	07/03/19	9:30	07/03/19	17:30	ODB	POWERGRID ER-	TO REPLACE GASKET OF 132 kV Banka - Banka - II FOR SF6 LEAKAGE ATTEND	BSEB	
150	East Side Filter Bay at Pusauli(CWC54)	07/03/19	9:00	07/03/19	18:00	ODB	POWERGRID ER-	AMP work	NLDC	
151	400kV East Side Bus-I@Pusauli	07/03/19	8:00	07/03/19	18:00	ODB	POWERGRID ER-	To attend Isolator Misalignment Problem & Reley retrofitting Job	**NLDC**	
152	400KV PRN-1 LINE REACTOR BAY AT MUZAFFARPUR	07/03/19	9:30	07/03/19	17:30	ODB	POWERGRID ER-	AMP WORK		
153	Tie Bay of ICT-1 & Lakhisarai 1 (414 Bay) AT Biharsarif	07/03/19	10:00	07/03/19	18:00	ODB	POWERGRID ER-	Bay AMP		
154	416 bay Ballia -IV Main bay At Patna	07/03/19	9:30	09/03/19	17:30	OCB	POWERGRID ER-I	AMP & CB Overhauling		
155	420 Tie bay of Barh 3 and ballia 3 At Patna	07/03/19	9:30	07/03/19	17:30	ODB	POWERGRID ER-I	AMP		
156	220 KV Ara khagaul line 1 At Patna	07/03/19	9:30	07/03/19	17:30	ODB	POWERGRID ER-I	AMP	BSEB	
157	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	

158	405 Tie Bay of 315 MVA ICT#2 and 400 KV Subhasgram Jeerat Line	08/03/19	9:00	08/03/19	17:00	ODB	POWERGRID,ER-II	405 Bay Y-Ph CT Replacement		
159	400 KV Farakka- Kahalgaon-III line	08/03/19	9:00	09/03/19	18:00	ODB	POWERGRID,ER-II	For Jumper coonnection, relay setting change & Bay stability between Bay- 34 & 35 after		
160	400 KV Bus -2 at Binaguri	08/03/19	9:00	14/03/19	18:00	ODB	POWERGRID,ER-II	400 KV Busbar relay Replacement Under ERSS-XX.		
161	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	
162	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	
163	125MVAR MSR # I (STATCOM)	08/03/19	9:00	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.		
164	125 MVAR B/R#2 & SUNDARGARH#4 TIE BAY (BAY NO.-426)	08/03/19	9:00	08/03/19	18:00	ODB	ER-II/ODISHA/ROURKELA	BAY AMP WORK		
165	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	
166	400kV Sundargarh-Raigarh Ckt#2&4	08/03/19	8:00	19/03/19	18:00	OCB	ER-II /ODISHA/SUNDERGARH	NTPC Lara Railway Diversion work	NLDC	
167	Tie Bay-702 of 765KV 240MVAR B/R-I & 765/400KV ICT-I	08/03/19	8:00	08/03/19	18:00	ODB	R-II/Odisha/Sunderga	AMP Work		
168	Bus-I along with Main bay of Mendhsal-Pandiabili CKT-1at Mendhsal	08/03/19	8:30	08/03/19	18:00	ODB	ER-II/Odisha/ Pandiabili GIS	Maintenance of ISOLATOR at Mendhasal	GRIDCO	
169	400kV BUS-2 AT DALTONGANJ	08/03/19	9:30	08/03/19	17:30	ODB	POWERGRID	AMP	JSEB	
170	At JRT :315 MVA ICT-1	08/03/19	6:00	08/03/19	15:00	ODB	WBSEDCL	AMP		
171	400KV Angul-Bolangir S/C Line	08/03/19	8:00	11/03/19	18:00	ODB	ER-II/Odisha/Balangir	Replacement of defective insulator by Polymer long Rod Insulator.	NLDC	
172	400KV RNC-MTN-I MAIN BAY (401) AT RANCHI	08/03/19	10:00	08/03/19	17:00	ODB	POWERGRID ER-	AMP		
173	160 MVA ICT#2 At PURNEA	08/03/19	10:00	08/03/19	17:00	ODB	POWERGRID ER-	NTAMC WORK	BSEB	
174	400kV JSR - Mejia LINE	08/03/19	9:30	08/03/19	17:30	ODB	POWERGRID ER-	Static Auto reclose relay to be replaced with numerical relay AT JSR	DVC	
175	400KV RNC-MTN-I MAIN BAY (401) AT RANCHI	08/03/19	10:00	08/03/19	17:00	ODB	POWERGRID ER-	AMP		
176	400 KV 125 MVAR BR-II Gaya ss	08/03/19	9:00	08/03/19	18:00	ODB	POWERGRID ER-	For uprating of bay equipment under Nabinagar -2 Project.		
177	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-	For AMP Work		

178	400kV East Side Bus-II@Pusauli	08/03/19	8:00	08/03/19	18:00	ODB	POWERGRID ER-	To attend Isolator Misalignment Problem & Releay retrofitting Job	NLDC	
179	400KV PRN-2 LINE REACTOR BAY AT MUZAFFARPUR	08/03/19	9:30	08/03/19	17:30	ODB	POWERGRID ER-	AMP WORK		
180	400 kV Barh-Kahalgaon Ckt I	08/03/19	9:30	08/03/19	17:30	ODB	POWERGRID ER-	for replacement of porcelain insulator with polymer insulator		
181	422 Main bay Ballia 4 At Patna	08/03/19	9:30	08/03/19	17:30	ODB	POWERGRID ER-	AMP		
182	220 KV Ara Khagaul line 2 At Patna	08/03/19	9:30	08/03/19	17:30	ODB	POWERGRID ER-	AMP	BSEB	**CONSENT GIVEN FOR S/D AFTER 14TH**
183	315 MVA ICT#1 at Subhasgram S/s	09/03/19	9:00	09/03/19	17:00	ODB	POWERGRID,ER-II	Retrofitting of Numerical REF Relay	**WB**	
184	132KV Gangtok-Rangpo Line	09/03/19	9:00	09/03/19	12:00	ODB	POWERGRID,ER-II	Line A/R implementation	SIKKIM	
185	220KV BUS-1 at Rangpo	09/03/19	8:00	11/03/19	17:00	OCB	POWERGRID,ER-II	For rectification of SF6 gas leakage repair work(both Shutdown needed on same dates)		
186	220KV Rangpo NEW MELLI line	09/03/19	8:00	13/03/19	17:00	OCB	POWERGRID,ER-II	For rectification of SF6 gas leakage repair work,		
187	220 KV Birpara-Alipurduar Feeder-I	09/03/19	8:00	09/03/19	17:30	ODB	POWERGRID,ER-II	LA VENT direction change & AMP work(SIR Compliance)		
188	400KV Balangir-Jeypore Line TIE BAY(40304BAY)	09/03/19	9:00	09/03/19	18:00	ODB	ER-II/Odisha/Balangir	AMP for 40304 52 CB and 40304 CT		
189	63 MVAR Baripada-Duburi Line Reactor	09/03/19	9:00	09/03/19	17:30	ODB	ER-II/Odisha/BARIPADA S/S	AMP works		
190	125MVAR MSR # II (STATCOM)	09/03/19	9:00	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		
191	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	
192	Main Bay-703 of 765/400KV ICT-I	09/03/19	8:00	09/03/19	18:00	ODB	R-II/Odisha/Sunderga	AMP Work		
193	BUS-II along with Main bay of Mendhsal-Pandiabili CKT-II at Mendhsal	09/03/19	8:30	09/03/19	18:00	ODB	ER-II/Odisha/ Pandiabili GIS	Maintenance of Line ISOLATOR at Mendhasal	GRIDCO	
194	400kV DALTONGANJ - SASARAM LINE-2	09/03/19	9:30	09/03/19	17:30	ODB	POWERGRID	Erection of Bushing of 50 MVAR Line Reactor	JSEB	
195	400kV JSR - Maithon Line	09/03/19	9:30	09/03/19	17:30	ODB	POWERGRID ER-	Static Auto reclose relay to be replaced with numerical relay AT JSR		
196	Main Bay of Kishanganj-II (Bay no. 410) at New Purnea	09/03/19	9:30	09/03/19	18:00	ODB	POWERGRID ER-	For AMP Work		
197	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-	AMP work of 417 Bay		

198	400kV North Side Bus-I@Pusauli	09/03/19	8:00	09/03/19	18:00	ODB	POWERGRID ER-	To attend Isolator Misalignment Problem & Releay retrofitting Job	**NLDC**	
199	400KV GKP-1 LINE REACTOR BAY AT MUZAFFARPUR	09/03/19	9:30	09/03/19	17:30	ODB	POWERGRID ER-	AMP WORK		
200	Main Bay of Tenughat (416 Bay) AT Biharsarif	09/03/19	10:00	09/03/19	18:00	ODB	POWERGRID ER-	Bay AMP		
201	400 kV Barh-Kahalgaon Ckt II	09/03/19	9:30	09/03/19	17:30	ODB	POWERGRID ER-	for replacement of porcelain insulator with polymer insulator		
202	423 bay Tie bay of Barh 4 and Ballia 4	09/03/19	9:30	09/03/19	17:30	ODB	POWERGRID ER-	AMP		
203	400 KV, 50 MVAR Rengali-Indravati Line Reactor (412LR) AT INDRAVATI	09/03/19	9:00	09/03/19	17:00	ODB	ER-II/Odisha/Rengali	Replacement of Gaskets in Bushings, PRD, Inspection point, Radiator Banks, Valves, Oil Circulation work. During this period, 50MVAR LR will be out of service but the 400KV Indravati-		
204	315 MVA ICT#2 at Subhasgram S/s	10/03/19	9:00	10/03/19	17:00	ODB	POWERGRID,ER-II	Retrofitting of Numerical REF Relay	WB	
205	220 KV Birpara-Alipurduar Feeder-II	10/03/19	8:00	10/03/19	17:30	ODB	POWERGRID,ER-II	LA VENT direction change & AMP work(SIR Compliance)		
206	400KV Maithon-Durgapur#2	10/03/19	9:00	10/03/19	18:00	ODB	POWERGRID,ER-II	Jumper rectification .		
207	125 MVAR Bus Reactor-1	10/03/19	9:00	10/03/19	17:30	ODB	ER-II/Odisha/BARIPADA S/S	AMP works		
208	Main Bay-704 of 765KV 240MVAR B/R-II	10/03/19	8:00	10/03/19	18:00	ODB	R-II/Odisha/Sunderga	AMP Work		
209	At JRT: 400 kv 100 MVAR Bus-reactor & Transfer -bus bay	10/03/19	6:00	10/03/19	15:00	ODB	WBSEDCL	AMP		Subject to ALL OTHER MAINTENANCE WORK IN ER-NR CORRIDOR
210	200 MVA ICT-2 at Lakhisarai	10/03/19	9:00	13/03/19	17:00	ODB	POWERGRID ER-	Checking of Aircel of ICT-2	**BSEB**	Subject to ALL OTHER MAINTENANCE WORK IN ER-NR CORRIDOR COMPLETION.
211	400KV Barh- Motihari CKT-1	10/03/19	8:00	31/03/19	18:00	OCB	POWERGRID ER-	Realingmnet works of 400KV Barh-Motihari Line due to Construction of Barh Bypass by NHAI	NLDC	
212	400KV Barh- Motihari CKT-II	10/03/19	8:00	31/03/19	18:00	OCB	POWERGRID ER-	Realingmnet works of 400KV Barh-Motihari Line due to Construction of Barh Bypass by NHAI	NLDC	
213	415 main bay Patna Barh -2 At Patna	10/03/19	9:30	11/03/19	17:30	OCB	POWERGRID ER-	AMP		
214	424 Main bay Barh 4 At Patna	10/03/19	9:30	10/03/19	17:30	ODB	POWERGRID ER-	AMP		**CONSENT GIVEN FOR S/D AFTER 14TH**
215	220 KV Patna Sipara -1	10/03/19	9:30	10/03/19	17:30	ODB	POWERGRID ER-	AMP	BSEB	
216	315 MVA ICT#3 at Powergrid,Subhasgram	11/03/19	9:00	11/03/19	17:00	ODB	POWERGRID,ER-II	AMP of 315 MVA ICT#3.	WB	
217	400 KV BUS-I of NTPC Farakka	11/03/19	9:00	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		

218	220 KV S/C Birpara-Malbase Feeder	11/03/19	8:00	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	**S/D TO BE TAKEN AFTER REVIVAL OF CTPS-7**
219	400 KV D/C TALA-NSLG Feeder I	11/03/19	8:00	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	NLDC	
220	220kV Maithon-Dhanbad-1 Line	11/03/19	9:00	11/03/19	18:00	ODB	POWERGRID,ER-II	AMP work and relay testing work	DVC	
221	400 KV Binaguri-Tala CKT 3	11/03/19	8:00	12/03/19	17:30	ODB	POWERGRID,ER-II	Replacement of broken insulators damaged by misceants	NLDC	
222	400KV Balangir-Jeypore Line Main BAY(403BAY)	11/03/19	9:00	11/03/19	18:00	ODB	ER-II/Odisha/Balangir	AMP for 403 52 CB and 403 CT		
223	41152- Tie Bay of Pandiabilli line & TISCO Line	11/03/19	9:00	11/03/19	17:30	ODB	ER-II/Odisha/BARIPADA S/S	AMP works		
224	419 MAIN BAY	11/03/19	9:00	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		
225	SUNDARGARH#3 & RANCHI#2 TIE BAY (BAY NO.-420)	11/03/19	9:00	11/03/19	18:00	ODB	ER-II/ODISHA/ROURKELA	BAY AMP WORK		
226	125 MVAR BR	11/03/19	9:00	11/03/19	13:00	ODB	ER-II/Odisha /Indravati	To Replace Terminal Box of PRD.		
227	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	
228	Tie Bay-705 of 765KV 240MVAR B/R-II & 765/400KV ICT-II	11/03/19	8:00	11/03/19	18:00	ODB	R-II/Odisha/Sunderga	AMP Work		
229	BAY NO. 407 (SASARAM LINE-1 MAIN) AT DALTONGANJ	11/03/19	9:30	11/03/19	17:30	ODB	POWERGRID	AMP		**CONSENT GIVEN**
230	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-	AMP		
231	315MVA ICT-II AT RANCHI	11/03/19	10:00	13/03/19	17:00	OCB	POWERGRID ER-	OVERHAULING OF OLTC	JSEB	
232	160 MVA ICT#3 at PURNEA	11/03/19	10:00	11/03/19	17:00	ODB	POWERGRID ER-	NTAMC WORK	BSEB	
233	400kV JSR - Chaibasa 1 Line	11/03/19	9:30	11/03/19	17:30	ODB	POWERGRID ER-	Static Auto reclose relay to be replaced with numerical relay AT JSR		
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-	AMP		
235	315MVA ICT-II AT RANCHI	11/03/19	10:00	13/03/19	17:00	OCB	POWERGRID ER-	OVERHAULING OF OLTC	JSEB	
236	400 KV BUS-II at Gaya S/S	11/03/19	9:00	16/03/19	18:00	ODB	POWERGRID ER-	For uprating of bay equipment under Nabinagar -2 Project.	BSEB	
237	400 KV GAYA-NABINAGAR -1 line	11/03/19	9:00	13/03/19	18:00	ODB	POWERGRID ER-	For uprating of bay equipment under Nabinagar -2 Project.		

238	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-	For AMP Work		
239	400KV BANKA-BIHARSHARIF CKT-I	11/03/19	9:30	11/03/19	13:00	ODB	POWERGRID ER-	LINE BAY AMP & AUTO RECLOSE TESTING		
240	416 BAY (MAIN BAY OF KGP-II LINE) AT CHAIBASA	11/03/19	9:30	11/03/19	17:00	ODB	POWERGRID ER-	AMP work of 416 Bay		
241	400kV Sasaram-Nabinagar I	11/03/19	8:00	28/03/19	19:00	OCB	POWERGRID ER-	Replacement of deformed leg at tower no.170(DD+0) by de-stringing,tower dismantling and re-		
242	400kV Sasaram-Nabinagar II	11/03/19	8:00	28/03/19	19:00	OCB	POWERGRID ER-	Replacement of deformed leg at tower no.170(DD+0) by de-stringing,tower dismantling and re-		
243	220kV Bus Coupler at Pusauli	11/03/19	8:00	11/03/19	18:00	ODB	POWERGRID ER-	AMP work	BSEB	
244	400kV North Side Bus-II@Pusauli	11/03/19	8:00	11/03/19	18:00	ODB	POWERGRID ER-	To attend Isolator Misalignment Problem.	NLDC	
245	400KV GKP-2 LINE REACTOR BAY AT MUZAFFARPUR	11/03/19	9:30	11/03/19	17:30	ODB	POWERGRID ER-	AMP WORK		
246	50 Mvar Bus Reactor - 1 AT Biharsarif	11/03/19	10:00	11/03/19	18:00	ODB	POWERGRID ER-	AMP work (At the time of switching off and on, S/d of 125 Mvar Bus reactor 4 will		
247	419 Main bay Patna Ballia 3 At Patna	11/03/19	9:30	11/03/19	17:30	ODB	POWERGRID ER-	AMP		
248	220 KV Patna Sipara -2	11/03/19	9:30	11/03/19	17:30	ODB	POWERGRID ER-	AMP	BSEB	
249	400KV TSTPS-Rengali ckt-2 (400 KV Bay no-16,17)	11/03/19	8:00	13/03/19	18:00	Continuous	TALCHER	Line LA replacement,AMP jobs		
250	418 BAY(ICT-II MAIN BAY)	11/03/19	9:00	13/03/19	17:00	OCB	POWERGRID,ER-II	INTERRUPTER REPLACEMENT OF MAIN CB		
251	315 MVA ICT#4 at Powergrid,Subhasgram	12/03/19	9:00	12/03/19	17:00	ODB	POWERGRID,ER-II	AMP of 315 MVA ICT#4.	WB	
252	400 KV Farakka- Kahalgaon-I line	12/03/19	9:00	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		
253	Main bay of 400 KV Farakka- Kahalgaon-I (Bay- 22)	12/03/19	9:00	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-		
254	132 KV Gangtok-Chuzachen Line	12/03/19	9:00	12/03/19	12:00	ODB	POWERGRID,ER-II	For AnnualAMp Works & DCRM	SIKKIM	
255	400\220kV 315 MVA ICT-2 -at Rangpo	12/03/19	8:00	15/03/19	17:00	OCB	POWERGRID,ER-II	For rectification of SF6 gas leakage repair work,		
256	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)		
257	400kV Maithon-Mejia-3 Line	12/03/19	9:00	13/03/19	18:00	ODB	POWERGRID,ER-II	Replacement of Main Bay and Line Bay CT	DVC	
258	40552- Tie Bay of Kharagpur line & 315MVA ICT II	12/03/19	9:00	12/03/19	17:30	ODB	ER-II/Odisha/BARIPADA S/S	AMP works		

259	420 MAIN BAY	12/03/19	9:00	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		
260	(+)300/(-)550 MVAR STATCOM SYSTEM MAIN BAY (BAY NO.-410)	12/03/19	9:00	12/03/19	18:00	ODB	ER-II/ODISHA/ROURKELA	BAY AMP WORK		
261	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**	
262	Main Bay-706 of 765/400KV ICT-II	12/03/19	8:00	12/03/19	18:00	ODB	R-II/Odisha/Sunderga	AMP Work		
263	80 MVAR Bus Reactor	12/03/19	9:00	12/03/19	18:00	ODB	ER-II/Odisha/Keonjhar	AMP activity of Bus Reactor		
264	BAY NO. 408 (ICT-1 & SASARAM - I TIE BAY)	12/03/19	9:30	12/03/19	17:30	ODB	POWERGRID	AMP		
265	400KV FKK-Malda Line-2	12/03/19	9:00	13/03/19	17:00	ODB	FARAKKA	CB and Relay test	AFTER RESTORATION OF 400KV NEW PURNEA-	**S/D APPROVED AT SRPC FOR 1 DAY ONLY**
266	400 kV Jeypore-Bolangir S/C Line	12/03/19	8:00	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	
267	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-	AMP		
268	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-	AMP		**Subject to ALL OTHER MAINTENANCE WORK IN ER-NR CORRIDOR COMPLETION.**
269	765kV Gaya-Balia line	12/03/19	9:00	13/03/19	18:00	OCB	POWERGRID ER-	replacement of insulators damaged by miscreant	**NLDC**	
270	Main Bay of Muzaffarpur-I (Bay no. 412) at New Purnea	12/03/19	9:30	12/03/19	18:00	ODB	POWERGRID ER-	For AMP Work		
271	400KV BANKA-BIHARSHARIF CKT-II	12/03/19	9:30	12/03/19	13:00	ODB	POWERGRID ER-	LINE BAY AMP & AUTO RECLOSE TESTING		
272	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-	AMP work of 414 Bay		
273	400KV GKP-2 MAIN BAY AT MUZAFFARPUR	12/03/19	9:30	12/03/19	17:30	ODB	POWERGRID ER-	AMP WORK		
274	400 KV Bus -3 AT Biharsarif	12/03/19	10:00	12/03/19	18:00	ODB	POWERGRID ER-	AMP work	**BSEB**	
275	400 kV Barh-Patna Ckt I	12/03/19	9:30	12/03/19	17:30	ODB	POWERGRID ER-	for replacement of porcelain insulator with polymer insulator		
276	205 bay Bus coupler At Patna	12/03/19	9:30	14/03/19	17:30	OCB	POWERGRID ER-	AMP & CB Overhauling	BSEB	
277	125 MVAR Bus reactor 1 At Patna	12/03/19	9:30	12/03/19	17:30	ODB	POWERGRID ER-	AMP		

278	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	
279	400kv Talcher-Rourkela Ckt-2	12/03/19	8:00	31/03/19	18:00	ODB	ER-II/Odisha/Rengali	Only Auto reclose will be in off condition for PID testing. Line will be in service.There will be no power interruption		
280	500 MVA ICT#5 at Powergrid,Subhasgram	13/03/19	9:00	13/03/19	17:00	ODB	POWERGRID,ER-II	CSD FINE TUNING.	WB	
281	400 KV Farakka- Berhampur-I	13/03/19	9:00	14/03/19	18:00	ODB	POWERGRID,ER-II	For Event logger commissioning work under ERSS-XV projects		
282	132KV Rangpo-Chuzachen line	13/03/19	9:00	13/03/19	18:00	ODB	POWERGRID,ER-II	Line A/R implementation		
283	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)		
284	400 KV Binaguri-Tala CKT 4	13/03/19	8:00	14/03/19	17:30	ODB	POWERGRID,ER-II	Replacement of broken insulators damaged by misceants	NLDC	
285	400 KV ICT # 2 Main Bay (Bay No-409)	13/03/19	9:00	13/03/19	17:00	ODB	ER-II/Odisha/Rengali	AMP Work		
286	50MVAR BALANGIR-ANGUL LINE REACTOR	13/03/19	9:00	13/03/19	18:00	ODB	ER-II/Odisha/Balangir	AMP for 50MVAR Angul L/R and 401R 52 CB		
287	20852- 315MVA ICT I Bay	13/03/19	9:00	13/03/19	17:30	ODB	ER-II/Odisha/BARIPADA S/S	Amp Works		
288	ICT-I (3x 105 MVA) at Jeypore	13/03/19	8:00	13/03/19	18:00	ODB	ER-II/Odisha /Jeypore	For changing ICT-I combination form Unit-I,III, IV to Unit-I , II & IV for charging Unit-II & To carry Insulation sleeves work Teritiry side of ICT-1	GRIDCO	
289	(+)300/(-)550 MVAR STATCOM SYSTEM TIE BAY (BAY NO.-411)	13/03/19	9:00	13/03/19	18:00	ODB	ER-II/ODISHA/ROURKELA	BAY AMP WORK		
290	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	
291	Main Bay-707 of 765KV Angul Ckt-4	13/03/19	8:00	13/03/19	18:00	ODB	R-II/Odisha/Sunderga	AMP Work		
292	132kV DALTONGANJ LINE-1	13/03/19	9:30	13/03/19	17:30	ODB	POWERGRID	AMP	JSEB	
293	400KV Kahalgaon-Lakhisarai Line-2	13/03/19	9:30	13/03/19	17:30	ODB	KAHALGAON	PM works and Relay Testing		
294	400KV RANCHI - MAITHON-I	13/03/19	9:30	13/03/19	17:00	ODB	POWERGRID ER-	RECTIFICATION OF SAG OF RLY. CROSSING		
295	132 kV Bus-Coupler at PURNEA	13/03/19	10:00	13/03/19	17:00	ODB	POWERGRID ER-	NTAMC WORK		
296	400kV JSR - Chaibasa 2 Line	13/03/19	9:30	13/03/19	17:30	ODB	POWERGRID ER-	Static Auto reclose relay to be replaced with numerical relay AT JSR		
297	400KV RANCHI - MAITHON-I	13/03/19	9:30	13/03/19	17:00	ODB	POWERGRID ER-	RECTIFICATION OF SAG OF RLY. CROSSING		
298	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-	For AMP Work		

299	400KV BANKA-KAHALGAON CKT-II	13/03/19	9:30	13/03/19	13:00	ODB	POWERGRID ER-	AUTO RECLOSE TESTING		
300	401 BAY (MAIN BAY OF JAMSHEDPUR-I LINE) AT CHAIBASA	13/03/19	9:30	13/03/19	11:00	ODB	POWERGRID ER-	CT OIL SAMPLING		
301	402 BAY (TIE BAY OFJAMSHEDPUR-I LINE & ICT-I) AT CHAIBASA	13/03/19	11:30	13/03/19	13:00	ODB	POWERGRID ER-	CT OIL SAMPLING		
302	403 BAY (MAIN BAY OF ICT-I) AT CHAIBASA	13/03/19	13:30	13/03/19	15:00	ODB	POWERGRID ER-	CT OIL SAMPLING		
303	404 BAY (MAIN BAY OF RAURKELA-I LINE) AT CHAIBASA	13/03/19	15:30	13/03/19	17:00	ODB	POWERGRID ER-	CT OIL SAMPLING		
304	132kV Pusauli-Dehri	13/03/19	9:00	13/03/19	18:00	ODB	POWERGRID ER-	To attend Isolator Problem and Relay retrofitting Job.Transfer Bus at Dehri shall be out during the S/D	BSEB	
305	400 KV PRN-1_GKP-1 TIE BAY AT MUZAFFARPUR	13/03/19	9:30	13/03/19	17:30	ODB	POWERGRID ER-	AMP WORK		
306	Main Bay of ICT-1 (415 Bay) AT Biharsarif	13/03/19	10:00	13/03/19	18:00	OCB	POWERGRID ER-	Bay AMP		
307	400 kV Barh-Patna Ckt II	13/03/19	9:30	13/03/19	17:30	ODB	POWERGRID ER-I	for replacement of porcelain insulator with polymer insulator		
308	220Kv Patna Fatuha line At Patna	13/03/19	9:30	13/03/19	17:30	ODB	POWERGRID ER-I	AMP	BSEB	
309	420 BAY(MAITHON-II & FUTURE TIE BAY)	14/03/19	9:00	15/03/19	17:00	ODB	POWERGRID,ER-II	GASKET REPLACEMENT IN MAIN POLE		
310	50 MVAR Line Reactor at Subhasgram S/s	14/03/19	9:00	14/03/19	17:00	ODB	POWERGRID,ER-II	Retrofitting of Numerical REF Relay	**WB**	
311	66 KV Gangtok-Tadong Line	14/03/19	9:00	16/12/18	12:00	ODB	POWERGRID,ER-II	For AnnualAMp Works	SIKKIM	
312	132kV BUS-2 at Rangpo	14/03/19	9:00	24/03/19	17:00	OCB	POWERGRID,ER-II	For Bus extension to new Chuzachen bays (Construction works)	SIKKIM	**TO BE TAKEN ON 02/03**
313	New Melli - THEP Line at New Melli	14/03/19	11:00	14/03/19	13:00	ODB	POWERGRID,ER-II	AMP (PD Testing)		
314	220 KV Arambag - Midnapore LINE-(TL139-DA+0-TL140 DA+0)	14/03/19	7:00	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	WB	**CONSENT GIVEN**
315	20452- 315MVA ICT II Bay	14/03/19	9:00	14/03/19	17:30	ODB	ER-II/Odisha/BARIPADA S/S	Amp Works		
316	400 kV Jeypore-Bolangir S/C Line	14/03/19	8:00	14/03/19	18:00	ODB	ER-II/Odisha /Jeypore	For attending shutdown nature defects & AMP of Bolangir L/R	NLDC	
317	400 KV BUS-I	14/03/19	9:00	14/03/19	18:00	ODB	ER-II/ODISHA/ROURKELA	AMP WORK	GRIDCO	
318	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	
319	765KV Bus-II at Sundargarh	14/03/19	8:00	20/03/19	18:00	OCB	R-II/Odisha/Sunderga	Erection of SF6 to Air bushing of 765KV GIS bus sectionalizer, jumpering , HV & impulse testing for commissioning of	NLDC	

320	132kV DALTONGANJ LINE-2	14/03/19	9:30	14/03/19	17:30	ODB	POWERGRID	AMP	JSEB	
321	400KV FKK-Kahalgaon Line-2	14/03/19	9:30	15/03/19	17:30	ODB	NTPC	AMP		
322	400KV FKK-Kahalgaon Line#2	14/03/19	9:00	15/03/19	17:00	ODB	FARAKKA	CB and Relay test		
323	400 kv SGTPP-PARULIA #1	14/03/19	7:00	14/03/19	15:00	ODB	WBSEDCL	AMP		
324	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	6:00	14/03/19	15:00	ODB	WBSEDCL	AMP		
325	400KV RANCHI - RAGHUNATHPUR - I	14/03/19	9:30	14/03/19	17:00	ODB	POWERGRID ER-	RECTIFICATION OF SAG OF RLY. CROSSING	DVC	
326	400KV RANCHI - RAGHUNATHPUR - I	14/03/19	9:30	14/03/19	17:00	ODB	POWERGRID ER-	RECTIFICATION OF SAG OF RLY. CROSSING	DVC	
327	400 KV GAYA-NABINAGAR -2 line	14/03/19	9:00	16/03/19	18:00	ODB	POWERGRID ER-	For uprating of bay equipment under Nabinagar -2 Project.		
328	Tie Bay of 400kV Malda-II& 125MVAr B/R-I (Bay no. 414) at New Purnea	14/03/19	9:30	14/03/19	18:00	ODB	POWERGRID ER-	For AMP Work		
329	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-	CT OIL SAMPLING		
330	406 BAY (MAIN BAY OF ICT-II) AT CHAIBASA	14/03/19	11:30	14/03/19	13:00	ODB	POWERGRID ER-	CT OIL SAMPLING		
331	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-	CT OIL SAMPLING		
332	412 BAY (MAIN BAY OF BR-I) AT CHAIBASA	14/03/19	15:30	14/03/19	17:00	ODB	POWERGRID ER-	CT OIL SAMPLING		
333	132kV Pusauli-Karmanasha	14/03/19	9:00	14/03/19	18:00	ODB	POWERGRID ER-	To attend Isolator Problem and Relay retrofitting Job.Transfer Bus at Karmnasha shall be out during the S/D period	BSEB	
334	400KV BSF-1_FUTURE TIE BAY AT MUZAFFARPUR	14/03/19	9:30	14/03/19	17:30	ODB	POWERGRID ER-	AMP WORK		
335	Tie Bay of Purnea 1 & Future (438 Bay) AT Biharsarif	14/03/19	10:00	14/03/19	18:00	ODB	POWERGRID ER-	Bay AMP		
336	400KV Bus -I At Patna	14/03/19	9:30	15/03/19	17:30	ODB	POWERGRID ER-	Dismantling and erection of Bus isolator of Dia of Patna Nabinagar D/C	BSEB	
337	220Kv Bus 1 At Patna	14/03/19	9:30	15/03/19	17:30	ODB	POWERGRID ER-	AMP	BSEB	
338	220kV WBSETCL - I Bay at Alipurduar	15/03/19	8:00	15/03/19	18:00	ODB	POWERGRID,ER-II	Associated Bay AMP	WB	
339	220KV CESC CKT#2 (Bay No.203) at Powergrid,Subhasgram	15/03/19	9:00	15/03/19	17:00	ODB	POWERGRID,ER-II	AMP work	WB	
340	400 KV Farakka- Berhampur- II	15/03/19	9:00	16/03/19	18:00	ODB	POWERGRID,ER-II	For Event logger commissioning work under ERSS-XV projects		

341	220 kv bus coupler bay at Binaguri	15/03/19	9:00	15/03/19	16:00	ODB	POWERGRID,ER-II	AMP works		
342	220 KV BUS-II at Malda	15/03/19	8:00	15/03/19	17:00	ODB	POWERGRID,ER-II	AMP	**WB**	
343	220KV D/C BIRPARA -Chukha FEEDER II	15/03/19	8:00	16/03/19	17:30	ODB	POWERGRID,ER-II	Placement of New A/H at all Tension Tower	NLDC	
344	400 KV ICT 1 & 2 Tie Bay (Bay No-408)	15/03/19	9:00	15/03/19	17:00	ODB	ER-II/Odisha/Rengali	AMP Work		
345	400KV Balangir-Angul Line TIE BAY(40102BAY)	15/03/19	9:00	15/03/19	18:00	ODB	ER-II/Odisha/Balangir	AMP for 40102 52 CB and 40102 CT		**CONSENT GIVEN**
346	400 kV 408 Tie Bay of Baripada-Duburi & Baripada-Jamshedpur line	15/03/19	9:00	16/03/19	17:30	ODB	ER-II/Odisha/BARIPADA S/S	Gasket replacement		
347	400 kV Jeypore-Indravati S/C Line	15/03/19	8:00	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**	
348	400 KV BUS-II	15/03/19	9:00	15/03/19	18:00	ODB	ER-II/ODISHA/ROURKELA	AMP WORK	GRIDCO	
349	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	
350	765 KV DC Sundargarh - Dharamjaygarh Ckt-I	15/03/19	8:00	19/03/19	18:00	ODB	ER-II/ODISHA/SUNDERGARH	TL Maintenance works	NLDC	
351	Tie Bay-708 of 765KV Angul Ckt-4 & Future	15/03/19	8:00	15/03/19	18:00	ODB	R-II/Odisha/Sunderga	AMP Work	NLDC	
352	BAY NO. 409 (ICT-1 MAIN BAY) AT DALTONGANJ	15/03/19	9:30	15/03/19	17:30	ODB	POWERGRID	AMP		
353	At JRT: 400 kv Main Bus-2 & Div of Sgtpp#,400 kv B/C,Trans Bus.	15/03/19	6:00	15/03/19	15:00	ODB	WBSEDCL	AMP		
354	400 kV Jeypore-Indravati S/C Line	15/03/19	8:00	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	
355	315 MVA ICT3 AT JAMSHEDPUR S/S	15/03/19	9:30	15/03/19	17:30	ODB	POWERGRID ER-	AMP TESTING of 220kV side equipment at JUSNL end	JSEB	
356	765kV Gaya-Varanasi-2 line	15/03/19	9:00	15/03/19	18:00	ODB	POWERGRID ER-	replacement of insulators damaged by miscreant	NLDC	
357	Main Bay of 125 MVAr Bus Recator-I (Bay no. 415) at New Purnea	15/03/19	9:30	15/03/19	18:00	ODB	POWERGRID ER-	For AMP Work		
358	413 BAY (MAIN BAY OF KHARAGPUR-I LINE) AT CHAIBASA	15/03/19	9:30	15/03/19	11:00	ODB	POWERGRID ER-	CT OIL SAMPLING		
359	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-	CT OIL SAMPLING		
360	416 BAY (MAIN BAY OF KHARAGPUR-II LINE) AT CHAIBASA	15/03/19	13:30	15/03/19	15:00	ODB	POWERGRID ER-	CT OIL SAMPLING		
361	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-	CT OIL SAMPLING		

362	400KV MUZ-DBG-2 MAIN BAY AT MUZAFFARPUR	15/03/19	9:30	15/03/19	17:30	ODB	POWERGRID ER-	AMP WORK		
363	400 KV Bus -4 AT Biharsarif	15/03/19	10:00	15/03/19	19:00	ODB	POWERGRID ER-	For construction of ICT -4 Bay	BSEB	
364	Tie Bay of Koderma 2 & ICT-4 (future) (426 Bay) AT Biharsarif	15/03/19	10:00	30/03/19	18:00	OCB	POWERGRID ER-	For construction of ICT -4 Bay		CONSENT GIVEN
365	400 kV Barh-Patna Ckt III	15/03/19	9:30	15/03/19	17:30	ODB	POWERGRID ER-	for replacement of porcelain insulator with polymer insulator		
366	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	
367	400kV SAGARDIGHI-JEERAT	16/03/19	9:00	16/03/19	17:00	ODB	POWERGRID,ER-II	A/R Relay retrofitting at WBSETCL Jeerat end.	WB	
368	220KV NEWTOWN LINE (Bay No.205) at Powergrid,Subhasgram	16/03/19	9:00	16/03/19	17:00	ODB	POWERGRID,ER-II	AMP work	WB	
369	400KV Binaguri Rangpo Ckt-2	16/03/19	9:00	30/03/19	17:00	OCB	POWERGRID,ER-II	Line reconductoring job under ERSS-XX.		
370	66 KV Gangtok-Bulbulay Line	16/03/19	9:00	18/12/18	12:00	ODB	POWERGRID,ER-II	For AnnualAMp Works	**SIKKIM**	
371	220\132 Kv 100 MVA ICT-2 -at Rangpo	16/03/19	8:00	19/03/19	17:00	OCB	POWERGRID,ER-II	For rectification of SF6 gas leakage repair work,		CONSENT GIVEN
372	400 KV MALA-NEW PURNEA-I	16/03/19	8:00	17/03/19	17:00	ODB	POWERGRID,ER-II	S/D required for rectification of OPGW Peak Bend	AFTER RESTORATION OF 400KV NEW PURNEA-	
373	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	
374	220KV JEYNAGAR-I Line	16/03/19	8:00	16/03/19	18:00	ODB	ER-II/Odisha /Jeypore	For Isolator Retrofitting works (220KV Jeynagar-I TBC Isolator) & AMP Works	GRIDCO	
375	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**	
376	765 KV DC Sundargarh - Dharamjaygarh Ckt-II	16/03/19	8:00	20/03/19	18:00	ODB	ER-II/ODISHA/SUNDERGARH	TL Maintenance works	NLDC	
377	Main Bay-710 of 765KV Angul Ckt-3	16/03/19	8:00	16/03/19	18:00	ODB	R-II/Odisha/Sunderga	AMP Work	NLDC	
378	BAY NO. 410 (MAIN BAY SASARAM LINE-2) AT DALTONGANJ	16/03/19	9:30	16/03/19	17:30	ODB	POWERGRID	AMP		
379	400 kv Arambag-Durgapur s/c	16/03/19	7:00	16/03/19	15:00	ODB	WBSEDCL	AMP		
380	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	6:00	16/03/19	15:00	ODB	WBSEDCL	AMP		
381	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-	For AMP Work		
382	Main Bay of 400 kV LKR-BSF Line -1 at Lakhisarai	16/03/19	10:00	16/03/19	14:00	ODB	POWERGRID ER-	AMP of Main Bay of 400 kV LKR-BSF Line -1		

383	220 KV CHAIBASA- CHAIBASA(JUSNL)-I LINE	16/03/19	9:30	16/03/19	11:00	ODB	POWERGRID ER-	CT OIL SAMPLING	JSEB	
384	220 KV CHAIBASA- CHAIBASA(JUSNL)-II LINE	16/03/19	11:30	16/03/19	13:00	ODB	POWERGRID ER-	CT OIL SAMPLING	JSEB	
385	201 BAY (BUS COUPLER BAY) AT CHAIBASA	16/03/19	17:30	16/03/19	19:00	ODB	POWERGRID ER-	CT OIL SAMPLING	JSEB	
386	400KV 125 MVA BUS REACTOR-2 MAIN BAY AT MUZAFFARPUR	16/03/19	9:30	16/03/19	17:30	ODB	POWERGRID ER-	AMP WORK		
387	400 kV Barh-Patna Ckt IV	16/03/19	9:30	16/03/19	17:30	ODB	POWERGRID ER-	for replacement of porcelain insulator with polymer insulator		
388	400KV Bus 2 At Patna	16/03/19	9:30	17/03/19	17:30	ODB	POWERGRID ER-	Dismantling and erection of Bus isolator of Dia of Patna Nabinagar D/C	BSEB	
389	417 Tie bay Ballia 2 & Barh 2 At Patna	16/03/19	9:30	18/03/19	17:30	OCB	POWERGRID ER-	AMP & CB Overhauling		
390	412 Main bay Of ICT - 1 At Patna	16/03/19	9:30	28/03/19	17:30	OCB	POWERGRID ER-	Equipment uprating under SS03 package for Patna Nabinagar Bay		
391	220KV Bus 2 At Patna	16/03/19	9:30	17/03/19	17:30	ODB	POWERGRID ER-	AMP	BSEB	
392	220KV KLC Bantala Line (Bay No.206) at Powergrid,Subhasgram	17/03/19	9:00	17/03/19	17:00	ODB	POWERGRID,ER-II	AMP work	WB	
393	400 kV 410 main Bay of Baripada-Pandiabili line	17/03/19	9:00	18/03/19	17:30	ODB	ER-II/Odisha/BARIPADA S/S	AMP & Gasket replacement		
394	220KV JEYNAGAR-II Line	17/03/19	8:00	17/03/19	18:00	ODB	ER-II/Odisha /Jeypore	For Isolator Retrofitting works (220KV Jeynagar-II TBC Isolator) & AMP Works	GRIDCO	
395	Tie Bay-711 of 765KV Angul ckt-3 & future	17/03/19	8:00	17/03/19	18:00	ODB	R-II/Odisha/Sunderga	AMP Work	NLDC	
396	At Durgapur :50 MVAR Bus Reactor.	17/03/19	7:00	17/03/19	15:00	ODB	WBSEDCL	AMP		
397	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	6:00	17/03/19	15:00	ODB	WBSEDCL	AMP		
398	400 KV Rengali-Indravati Line S/C Line	17/03/19	9:00	18/03/19	17:00	ODB	ER-II/Odisha/Rengali	AMP Work and replacement of PID defect Insulator with Polymer long rod insulator	NLDC	
399	400 KV BUS-I at Gaya S/S	17/03/19	9:00	19/03/19	18:00	ODB	POWERGRID ER-	For uprating of bay equipment under Nabinagar -2 Project.	BSEB	
400	125MVAR BUS REACTOR at Baharampore	18/03/19	9:00	18/03/19	17:00	ODB	POWERGRID,ER-II	For balance construction activity (Fire fighting ring modification) pertaining to ERSS-XV.		
401	220KV Subhasgram Ckt#1 (Bay No.207) at Powergrid,Subhasgram	18/03/19	9:00	18/03/19	17:00	ODB	POWERGRID,ER-II	AMP work	WB	
402	132KV Rangpo Melli	18/03/19	9:00	21/03/19	18:00	ODB	POWERGRID,ER-II	Sag adjustment work in Span LILO 84 - LILO85 - LILO86 under Sikkim Govt. jurisdiction	SIKKIM	
403	400kV Farakka-Durgapur S/C-I	18/03/19	9:00	19/03/19	17:00	ODB	POWERGRID,ER-II	Insulator replacement damaged by miscreants, Jumper tightening etc		

404	220KV Side, 315MVA ICT-1 BAY (208 BAY)	18/03/19	9:00	18/03/19	18:00	ODB	ER-II/Odisha/Balangir	AMP for 208 52 CB and 208 CT		
405	220 kV Bus -I at Jeypore & 220 kV Bus Coupler CB(202 52)	18/03/19	8:00	20/03/19	18:00	OCB	ER-II/Odisha /Jeypore	Isolator Retrofitting Works of Bus-I side Isolators of Jeynagar I, Jeynagar-2 & ICT-I & Bus Coupler Bay		
406	400 KV ROURKELA-TALCHER#1	18/03/19	9:00	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		
407	400 KV Indravati-Jeypore Main Bay (401)	18/03/19	9:00	18/03/19	18:00	ODB	ER-II/Odisha /Indravati	AMP work of 400 KV Indravati-Jeypore Main Bay (401)		
408	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	
409	Main Bay-713 of 765KV Angul Ckt-2	18/03/19	8:00	18/03/19	18:00	ODB	R-II/Odisha/Sunderga	AMP Work	NLDC	
410	BAY NO. 411 (SASARAM LINE-2 & 80 MVAR B/R TIE BAY) AT DALTONGANJ	18/03/19	9:30	18/03/19	17:30	ODB	POWERGRID	AMP		
411	At JRT :400 kv Main Bus-1 &Div of100 mvar bus-reactor, Ict-4, o.a.a to 400 kv Trans Bus.	18/03/19	6:00	18/03/19	15:00	ODB	WBSEDCL	AMP		
412	220KV RANCHI- HATIA LINE-II	18/03/19	10:00	18/03/19	17:00	ODB	POWERGRID ER-	AMP	JSEB	
413	220KV RANCHI- HATIA LINE-II	18/03/19	10:00	18/03/19	17:00	ODB	POWERGRID ER-	AMP	**JSEB**	
414	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-	For AMP Work		
415	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-	AMP of Tie Bay of 400 kV LKR-BSF-1 & 200 MVA ICT-1		
416	400kV Varanasi Main Bay (East Side) at Pusauli	18/03/19	9:00	18/03/19	18:00	ODB	POWERGRID ER-	AMP work		
417	400KV MUZ-DBG-1 MAIN BAY AT MUZAFFARPUR	18/03/19	9:30	18/03/19	17:30	ODB	POWERGRID ER-	AMP WORK		
418	400 KV Bus -1 AT Biharsarif	18/03/19	10:00	18/03/19	16:00	ODB	POWERGRID ER-	AMP work	BSEB	S/D TO BE TAKEN AFTER RETURN OF 400KV BIHARSHARIF-SASARAM D/C
419	500 MVA ICT 3 At Patna	18/03/19	9:30	18/03/19	17:30	ODB	POWERGRID ER-	AMP	BSEB	
420	765 kV Sasaram - Fatehpur	18/03/19	8:00	22/03/19	16:00	ODB	POWERGRID/NR-	Strengthing of balance suspension towers delta configuration (419 Nos)	NLDC	
421	220KV TSTPS-Rengali (220 KV Bay -7)	18/03/19	8:00	20/03/19	18:00	Continuous	TALCHER	Line LA replacement,AMP jobs		
422	80 Mvar BUS REACTOR at Baharampore	19/03/19	9:00	19/03/19	17:00	ODB	POWERGRID,ER-II	For Reactor AMP		
423	220KV Subhasgram Ckt#2 (Bay No.209) at Powergrid,Subhasgram	19/03/19	9:00	19/03/19	17:00	ODB	POWERGRID,ER-II	AMP work	WB	
424	66 KV Gangtok-LLHP Line	19/03/19	9:00	20/12/18	12:00	ODB	POWERGRID,ER-II	For AnnualAMp Works	**SIKKIM**	**CONSENT GIVEN**

425	160 MVAR ICT-II at Malda	19/03/19	8:00	19/03/19	17:00	ODB	POWERGRID,ER-II	AMP	WB	
426	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	
427	400 KV Rengali-Talcher Line # 2	19/03/19	9:00	19/03/19	17:00	ODB	ER-II/Odisha/Rengali	AMP Work		
428	400 kV 403 Baripada-Duburi Line Main Bay at Duburi SS	19/03/19	9:00	19/03/19	17:30	ODB	ER-II/Odisha/BARIPADA S/S	AMP works		
429	765KVANGUL-SUNDERGARH S/C LINE-1	19/03/19	8:00	19/03/19	18:00	ODB	ER-II/Odisha/Angul TL	LINE MAINTENANCE WORK	NLDC	
430	765 KV DC Sundargarh - Angul Ckt-I	19/03/19	8:00	19/03/19	18:00	ODB	ER-II/ODISHA/SUNDERGARH	TL Maintenance works	NLDC	
431	Tie Bay-714 of 765KV Angul ckt-2 & Dharamjaygarh Ckt-3	19/03/19	8:00	19/03/19	18:00	ODB	R-II/Odisha/Sunderga	AMP Work	NLDC	
432	At JRT : 315 mva ICT-2	19/03/19	6:00	19/03/19	15:00	ODB	WBSEDCL	AMP		
433	400KV RANCHI - RAGHUNATHPUR-I MAIN BAY (404) AT RANCHI	19/03/19	10:00	19/03/19	17:00	ODB	POWERGRID ER-	AMP		
434	41852 CB Main Bay of JSR-Baripada line at JAMSHEDPUR	19/03/19	9:30	19/03/19	17:30	ODB	POWERGRID ER-	Maintenance of CB Catch gear unit		
435	400KV RANCHI - RAGHUNATHPUR-I MAIN BAY (404) AT RANCHI	19/03/19	10:00	19/03/19	17:00	ODB	POWERGRID ER-	AMP		
436	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-	For AMP Work		
437	125MVAR Bus Reactor Main Bay @ Pusauli	19/03/19	9:00	19/03/19	18:00	ODB	POWERGRID ER-	AMP work		
438	400KV MUZ-DBG-1_FUTURE TIE BAY AT MUZAFFARPUR	19/03/19	9:30	19/03/19	17:30	ODB	POWERGRID ER-	AMP WORK		
439	400 KV Bus -2 AT Biharsarif	19/03/19	10:00	19/03/19	17:00	ODB	POWERGRID ER-	AMP work	BSEB	
440	220 Kv Patna Sipara 3	19/03/19	9:30	19/03/19	17:30	ODB	POWERGRID ER-I	AMP	BSEB	
441	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	
442	400\220kV 315 MVAICT -4 - -at Rangpo	20/03/19	8:00	24/03/19	17:00	OCB	POWERGRID,ER-II	For rectification of SF6 gas leakage repair work,		
443	400kV Farakka-Durgapur S/C-II	20/03/19	9:00	21/03/19	17:00	ODB	POWERGRID,ER-II	Jumper tightening, replacement of damage CC ring, Arcing horn, VD etc		
444	400 KV ICT # 1 Main Bay (Bay No-407)	20/03/19	9:00	20/03/19	17:00	ODB	ER-II/Odisha/Rengali	AMP Work		
445	400 KV ROURKELA-TALCHER#2	20/03/19	9:00	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		

446	765KVANGUL-SUNDERGARH S/C LINE-2	20/03/19	8:00	20/03/19	18:00	ODB	ER-II/Odisha/Angul TL	LINE MAINTENANCE WORK	NLDC	
447	765 KV DC Sundargarh - Angul Ckt-II	20/03/19	8:00	20/03/19	18:00	ODB	ER-II/ODISHA/SUNDERGARH	TL Maintenance works	NLDC	
448	765KV Sundargarh-Angul Ckt #1 with LR	20/03/19	8:00	20/03/19	18:00	ODB	R-II/Odisha/Sunderga	AMP Work	NLDC	
449	AT JRT : 315 mva ICT-3 & 400 kv Trans. Bus	20/03/19	6:00	20/03/19	15:00	ODB	WBSEDCL	AMP		
450	400kV New Purnea-Siliguri Line- 2	20/03/19	9:30	20/03/19	18:00	ODB	POWERGRID ER-	Testing of retrofitted Auto Reclose Relay.		
451	Main Bay of 200 MVA ICT-1 at Lakhisarai	20/03/19	10:00	20/03/19	14:00	ODB	POWERGRID ER-	AMP of Main Bay of 200 MVA ICT-1		
452	204 bay Main Sipra 3 At Patna	20/03/19	9:30	20/03/19	17:30	ODB	POWERGRID ER-I	AMP	BSEB	
453	400 KV Rourkela-Talcher Line # 1	21/03/19	9:00	21/03/19	17:00	ODB	ER-II/Odisha/Rengali	AMP Work		
454	400 kV 4034 Tie Bay of Baripada Line & Bus Reactor at Duburi SS	21/03/19	9:00	21/03/19	17:30	ODB	ER-II/Odisha/BARIPADA S/S	AMP works		
455	220 kV Bus -II at Jeypore & 220 kV Bus Coupler CB(202 52)	21/03/19	8:00	23/03/19	18:00	OCB	ER-II/Odisha /Jeypore	Isolator Retrofitting Works of Bus-II side Isolators of Jeynagar I, Jeynagar-2 & ICT-I & Bus Coupler Bay		
456	765 KV DC Sundargarh - Dharamjaygarh Ckt-III	21/03/19	8:00	21/03/19	18:00	ODB	ER-II/ODISHA/SUNDERGARH	TL Maintenance works	**NLDC**	
457	765KV Sundargarh-Angul Ckt #2 with LR	21/03/19	8:00	21/03/19	18:00	ODB	R-II/Odisha/Sunderga	AMP Work	NLDC	
458	213 main bay 220KV Fatuha line At Patna	21/03/19	9:30	23/03/19	17:30	OCB	POWERGRID ER-I	AMP & CB Overhauling	BSEB	
459	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-	WB	
460	400 kV 404 Main Bay of 80 MVAR Bus Reactor at Duburi SS	22/03/19	9:00	22/03/19	17:30	ODB	ER-II/Odisha/BARIPADA S/S	AMP works		
461	413 MAIN BAY (JEYPORE-GAZ II MAIN BAY)	22/03/19	9:00	25/03/19	17:00	OCB	ER-II/Odisha /Jeypore	Overhauling of 41352 (CB)(JEYPORE-GAZ II MAIN BAY)		
462	ICT-II Main Bay (205)	22/03/19	9:00	22/03/19	18:00	ODB	ER-II/Odisha /Indravati	AMP work of ICT-II Main Bay (205) at OHPC S/Y.		
463	ICT-II Main Bay (403)	22/03/19	9:00	22/03/19	18:00	ODB	ER-II/Odisha /Indravati	AMP work of ICT-II Main Bay (403) at OHPC S/Y.		
464	400KV RANCHI - SIPAT-I MAIN BAY (421) AT RANCHI	22/03/19	10:00	22/03/19	17:00	ODB	POWERGRID ER-	AMP		
465	400kV New Purnea- Kishanganj Line- 1	22/03/19	9:30	22/03/19	18:00	ODB	POWERGRID ER-	Testing of retrofitted Auto Reclose Relay.		
466	400KV Bus -I At Patna	22/03/19	9:30	23/03/19	17:30	ODB	POWERGRID ER-I	Jumper connection of Bus isolaor and Bus stability	BSEB	

467	413 Main Bay Ballia 1 At Patna	22/03/19	9:30	23/03/19	17:30	OCB	POWERGRID ER-I	AMP & CB Overhauling		
468	400 KV Subhasgram Rajarhat Line.	23/03/19	9:00	25/03/19	17:00	ODB	POWERGRID,ER-II	R-Ph LA Rlacement, A/R Relay retrofitting at Subhasgram end and live line defects attending and	WB	
469	220KV,Future Line-IV BAY (209 BAY)	23/03/19	9:00	23/03/19	18:00	ODB	ER-II/Odisha/Balangir	AMP for 209 52 CB and 209 CT		
470	400 kV 402 Main Bay of Duburi-Pandiabili Line at Duburi SS	23/03/19	9:00	23/03/19	17:30	ODB	ER-II/Odisha/BARIPADA S/S	AMP works		
471	Main Bay-716 of 765KV Angul Ckt-1	23/03/19	8:00	23/03/19	18:00	ODB	ER-II/Odisha/Sundergar	AMP Work	NLDC	
472	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.		
473	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		
474	400 kV 4012 Tie Bay of Duburi-Pandiabili Line at Duburi SS	24/03/19	9:00	24/03/19	17:30	ODB	ER-II/Odisha/BARIPADA S/S	AMP works		
475	400KV Bus 2 At Patna	24/03/19	9:30	25/03/19	17:30	ODB	POWERGRID ER-I	Jumper connection of Bus isolaor and Bus stability	BSEB	**TO BE TAKEN ON ACTUAL BASIS WITH CONSENT OF BANGLADESH.**
476	412 Main bay ICT 1 At Patna	24/03/19	9:30	25/03/19	17:30	OCB	POWERGRID ER-I	AMP & CB Overhauling		
477	400kV Berhampore-Bheramara-1	25/03/19	9:00	25/03/19	17:00	ODB	POWERGRID,ER-II	Modified SPS scheme implementation	NLDC	
478	400\220kV 315 MVAICT -3 --at Rangpo	25/03/19	8:00	29/03/19	17:00	OCB	POWERGRID,ER-II	For rectification of SF6 gas leakage repair work,		
479	400 KV Rourkela-Talcher Line # 2	25/03/19	9:00	25/03/19	17:00	ODB	ER-II/Odisha/Rengali	AMP Work		
480	80 MVAR Bus Reactor at Duburi SS	25/03/19	9:00	25/03/19	17:30	ODB	ER-II/Odisha/BARIPADA S/S	AMP works		
481	125 MVAR BUS REACTOR-I	25/03/19	9:00	25/03/19	18:00	ODB	ER-II/ODISHA/ROURKE LA	COMMISSIONING OF CSD IN ITS TIE BAY CB (42352 CB)		
482	765 KV DC Sundargarh - Dharamjaygarh Ckt-IV	25/03/19	8:00	25/03/19	18:00	ODB	ER-II/ODISHA/SUNDER GARH	TL Maintenance works	NLDC	
483	Tie Bay-720 of 765KV Darlipali Ckt-2 & Dharamjaygarh Ckt-1	25/03/19	8:00	25/03/19	18:00	ODB	ER-II/Odisha/Sundergar	AMP Work	NLDC	
484	220kV BUS-1 AT DALTONGANJ	25/03/19	9:30	25/03/19	17:30	ODB	POWERGRID	AMP	JSEB	
485	400KV BUS-BAR-I AT RANCHI	25/03/19	10:00	25/03/19	17:00	ODB	POWERGRID ER-I	Errection & Commisssioning of Jack bus for Tie Bay of Ranchi-New Ranchi-I & II) & fixing of CVT Stool	JSEB	
486	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	

487	400kV New Purnea-Muzaffarpur Line - 1	25/03/19	9:30	25/03/19	18:00	ODB	POWERGRID ER-	Testing of retrofitted Auto Reclose Relay.	NLDC	
488	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-	AMP of Tie Bay of 400 kV LKR-BSF-2 & 200 MVA ICT-2		
489	400 KV BUS-2 AT MUZAFFARPUR	25/03/19	9:30	26/03/19	17:30	ODB	POWERGRID ER-	AMP WORK	**BSEB**	CONSENT GIVEN
490	Tie Bay of Tenughat & Lakhisarai 2 (417 Bay) AT Biharsarif	25/03/19	10:00	25/03/19	18:00	ODB	POWERGRID ER-	Bay AMP		
491	400 kV Patna-Ballia Ckt III	25/03/19	9:30	25/03/19	17:30	ODB	POWERGRID ER-I	for replacement of porcelain insulator with polymer insulator	NLDC	
492	400 KV /220KV ICT-1 TRANSFORMER in TSTPS(400 KV Bay – 1,2,3 and 220KV Bay no-5)	25/03/19	8:00	28/03/19	18:00	Continuous	TALCHER	Transformer LA replacement,AMP jobs		
493	400kV Berhampore-Bheramara-2	26/03/19	9:00	26/03/19	17:00	ODB	POWERGRID,ER-II	Modified SPS scheme implementation	NLDC	
494	400 KV Subhasgram Sagardighi Line.	26/03/19	9:00	28/03/19	17:00	ODB	POWERGRID,ER-II	A/R Relay retrofitting at Subhasgram end live line defects attending and defective isulator	WB	
495	220KV Side, 315MVA ICT-2 BAY (208 BAY)	26/03/19	9:00	26/03/19	18:00	ODB	ER-II/Odisha/Balangir	AMP for 212 52 CB and 212 CT		
496	220 kV Bus-1	26/03/19	9:00	26/03/19	17:30	ODB	ER-II/Odisha/BARIPADA S/S	Isolator Alignment works	GRIDCO	
497	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	
498	315 MVA ICT#1	26/03/19	9:00	26/03/19	18:00	ODB	ER-II/ODISHA/ROURKE LA	RETROFITTING OF EXISTING OLD ICT PROTECTION RELAYS WITH NEW NUMERICAL RELAYS	GRIDCO	
499	Bus bar-1	26/03/19	9:00	26/03/19	18:00	ODB	ER-II/Odisha /Indravati	AMP works -Bus-1	**GRIDCO**	
500	400kV Sundargarh-Rourkela Ckt #1	26/03/19	8:00	26/03/19	18:00	ODB	ER-II/ODISHA/SUNDER GARH	TL Maintenance works		
501	765KV 240 MVAR Bus Reactor-1	26/03/19	8:00	26/03/19	18:00	ODB	R-II/Odisha/Sunderga	AMP works and taking R-Ph Reactor in to service in place of Spare Reactor after attending oil leakage of R-Ph reactor	NLDC	
502	205 ICT-II Bay	26/03/19	9:00	26/03/19	18:00	ODB	ER-II/Odisha/Keonjhar	For CB timing & DCRM rectification job		
503	220kV BUS-2 AT DALTONGANJ	26/03/19	9:30	26/03/19	17:30	ODB	POWERGRID	AMP	JSEB	
504	Barh Kahalgaon LINE # 1	26/03/19	9:30	27/03/19	18:00	OCB	BARH	For Leveling of Land & Annual Maintenance & Testing of Bays Equipments		
505	220V BUS -BAR-II AT RANCHI	26/03/19	10:00	26/03/19	17:00	ODB	POWERGRID ER-	AMP	JSEB	
506	220 KV BUS-II at Gaya S/S	26/03/19	9:00	26/03/19	18:00	ODB	POWERGRID ER-	For uprating of bay equipment under Nabinagar -2 Project.	BSEB	
507	400kV New Purnea-Muzaffarpur Line - 2	26/03/19	9:30	26/03/19	18:00	ODB	POWERGRID ER-	Testing of retrofitted Auto Reclose Relay.	NLDC	

508	208 BAY(220 KV FUTURE BAY) AT CHAIBASA	26/03/19	9:30	26/03/19	17:00	ODB	POWERGRID ER-	AMP OF 208 BAY		
509	Main Bay of Lakhisarai 2 (418 Bay) AT Biharsarif	26/03/19	10:00	26/03/19	18:00	ODB	POWERGRID ER-	Bay AMP		
510	400 kV Patna-Ballia Ckt IV	26/03/19	9:30	26/03/19	17:30	ODB	POWERGRID ER-I	for replacement of porcelain insulator with polymer insulator	NLDC	
511	214 Main bay ICT 1 At Patna	26/03/19	9:30	27/03/19	17:30	OCB	POWERGRID ER-I	AMP & CB Overhauling	BSEB	
512	400 kV Patna - Balia - IV	26/03/19	9:30	26/03/19	17:30	ODB	POWERGRID ER-I	for replacement of porecelain insulator with polymer insulator	NLDC	
513	220kV WBSETCL - II Bay at Alipurduar	27/03/19	8:00	27/03/19	18:00	ODB	POWERGRID,ER-II	Associated Bay AMP	WB	
514	400kV Berhampore-Sagardighi-1	27/03/19	9:00	27/03/19	17:00	ODB	POWERGRID,ER-II	Line Maintenace	WB	
515	400 KV D/C Maithan - 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-		
516	400 KV Indravati- BR # 2 Tie Bay (Bay No-411)	27/03/19	9:00	27/03/19	17:00	ODB	ER-II/Odisha/Rengali	for CT Replacemrnt		
517	220 kV Bus-2	27/03/19	9:00	27/03/19	17:30	ODB	ER-II/Odisha/BARIPADA S/S	Isolator Alignment works	GRIDCO	
518	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	
519	315 MVA ICT#2	27/03/19	9:00	27/03/19	18:00	ODB	ER-II/ODISHA/ROURKELA	RETROFITTING OF EXISTING OLD ICT PROTECTION RELAYS WITH NEW NUMERICAL RELAYS	GRIDCO	
520	Bus bar-2	27/03/19	9:00	27/03/19	18:00	ODB	ER-II/Odisha /Indravati	AMP works -Bus-2	GRIDCO	
521	400kV Sundargarh-Rourkela Ckt #2	27/03/19	8:00	27/03/19	18:00	ODB	ER-II/ODISHA/SUNDERGARH	TL Maintenance works		
522	765KV 240 MVAR Bus Reactor-2	27/03/19	8:00	27/03/19	18:00	ODB	R-II/Odisha/Sunderga	AMP Work	NLDC	
523	Main Bay-404 of 400KV Rourkela Line-II	27/03/19	9:00	28/02/19	18:00	ODB	R-II/Odisha/Sunderga	AMP Work		
524	207 bus coupler	27/03/19	9:00	27/03/19	18:00	ODB	ER-II/Odisha/Keonjhar	For CB timing & DCRM rectification job		
525	400KV Kahalgaon-Maithon Line-1	27/03/19	9:30	27/03/19	17:30	ODB	KAHALGAON	PM works and Relay Testing		
526	400KV BUS-BAR-II AT RANCHI	27/03/19	10:00	27/03/19	17:00	ODB	POWERGRID ER-	Fixing of stool on Bus CVT Yph	JSEB	
527	400kV New Purnea-Malda Line - 1	27/03/19	9:30	27/03/19	18:00	ODB	POWERGRID ER-	Testing of retrofitted Auto Reclose Relay.	AFTER RESTORATION OF 400KV NEW	
528	209 BAY(220 KV FUTURE BAY) AT CHAIBASA	27/03/19	9:30	27/03/19	17:00	ODB	POWERGRID ER-	AMP OF 209 BAY		

529	220KV MTPS-2 MAIN BAY AT MUZAFFARPUR	27/03/19	9:30	27/03/19	17:30	ODB	POWERGRID ER-	AMP WORK		
530	Main Bay of Bus Reactor -1 (421 Bay) AT Biharsarif	27/03/19	10:00	27/03/19	18:00	ODB	POWERGRID ER-	Bay AMP		
531	400kV Berhampore-Sagardighi-2	28/03/19	9:00	28/03/19	17:00	ODB	POWERGRID,ER-II	Line Maintenace	WB	
532	132kV Rangpo Chuzachen and 132kV Rangpo Melli ,	28/03/19	8:00	28/03/19	18:00	ODB	POWERGRID,ER-II	For new Chuzachen bays LILO (Construction works)	SIKKIM	
533	400/220 Kv 315MVA ICT II	28/03/19	9:00	28/03/19	17:30	ODB	ER-II/Odisha/BARIPADA S/S	Oil Leakage Arresting	GRIDCO	
534	315MVA ICT # II	28/03/19	9:00	28/03/19	18:00	ODB	ER-II/Odisha /Jeypore	AMP of ICT # II, 208 Bay and testing of Back up Impedance relay	**GRIDCO**	
535	220KV BUS-I	28/03/19	9:00	28/03/19	18:00	ODB	ER-II/ODISHA/ROURKE LA	AMP WORK	**GRIDCO**	
536	765/400KV 1500MVA ICT-1	28/03/19	8:00	28/03/19	18:00	ODB	R-II/Odisha/Sunderga	AMP Work	NLDC	
537	206 Bay	28/03/19	9:00	28/03/19	18:00	ODB	ER-II/Odisha/Keonjhar	For CB timing & DCRM rectification job		
538	315 MVA ICT-II MAIN BAY (406) AT RANCHI	28/03/19	10:00	27/03/19	17:00	ODB	POWERGRID ER-	AMP		
539	400kV New Purnea-Malda Line - 2	28/03/19	9:30	28/03/19	18:00	ODB	POWERGRID ER-	Testing of retrofitted Auto Reclose Relay.	AFTER RESTORATION OF 400KV NEW PURNEA-	
540	Main Bay of 200 MVA ICT-2 at Lakhisarai	28/03/19	10:00	28/03/19	14:00	ODB	POWERGRID ER-	AMP of Main Bay of 200 MVA ICT-2		
541	220KV MTPS-1MAIN BAY AT MUZAFFARPUR	28/03/19	9:30	28/03/19	17:30	ODB	POWERGRID ER-	AMP WORK		
542	Main Bay of Bus Reactor - 3(424 Bay) AT Biharsarif	28/03/19	10:00	28/03/19	18:00	ODB	POWERGRID ER-	Bay AMP		
543	212 Main bay Khagaul line At Patna	28/03/19	9:30	30/03/19	17:30	OCB	POWERGRID ER-I	AMP & CB Overhauling	BSEB	
544	125MVAR BR- I at Alipurduar	29/03/19	8:00	30/03/19	18:00	OCB	POWERGRID,ER-II	Oil leakage and Air Cell rectification		
545	400 KV Rajarhat Jeerat Line	29/03/19	9:00	31/03/19	17:00	ODB	POWERGRID,ER-II	A/R Relay retrofitting at WBSETCL Jeerat end and Live line defects attending and defective isulator	WB	
546	400 KV BUS-I of NTPC Farakka	29/03/19	9:00	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		
547	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-		
548	400 KV, 50 MVAR Rengali-Indravati Line Reactor (412LR)	29/03/19	9:00	29/03/19	17:00	ODB	ER-II/Odisha/Rengali	AMP Work		
549	400KV Balangir-Angul Line Main BAY(401BAY)	29/03/19	9:00	29/03/19	18:00	ODB	ER-II/Odisha/Balangir	AMP for 401 52 CB and 401 CT		

550	412 Main Bay (JEYPORE-GAZ I MAIN BAY)	29/03/19	9:00	03/04/19	18:00	OCB	ER-II/Odisha /Jeypore	Overhauling of R, Y, B of 41252 (CB)(JEYPORE-GAZ I MAIN BAY)		
551	220KV BUS-II	29/03/19	9:00	29/03/19	18:00	ODB	ER-II/ODISHA/ROURKELA	AMP WORK	GRIDCO	
552	765/400KV 1500MVA ICT-1	29/03/19	8:00	29/03/19	18:00	ODB	R-II/Odisha/Sundarga	AMP Work	**NLDC**	
553	208 bay	29/03/19	9:00	29/03/19	18:00	ODB	ER-II/Odisha/Keonjhar	For CB timing & DCRM rectification job		
554	400kV New Purnea-Siliguri Line - 1	29/03/19	9:30	29/03/19	18:00	ODB	POWERGRID ER-	Testing of retrofitted Auto Reclose Relay.		
555	220KV BUS-COUPLER AT MUZAFFARPUR	29/03/19	9:30	29/03/19	17:30	ODB	POWERGRID ER-	AMP WORK		
556	Main Bay of Purnea 1 (437 Bay) AT Biharsarif	29/03/19	10:00	29/03/19	18:00	ODB	POWERGRID ER-	Bay AMP		
557	400KV BARH- PATNA CKT - 3 & 4	29/03/19	8:00	29/03/19	18:00	ODB	POWERGRID ER-	Realingmnet works of 400KV Barh-Motihari Line due to Construction of Barh Bypass by NHAI		
558	400 KV Farakka- Kahalgaon-I line	30/03/19	9:00	30/03/19	18:00	ODB	POWERGRID,ER-II	For connecting bay-22 (Main Bay of 400 KV Farakka- Kahalgaon-I) after augmentation of Isolator & CT from		
559	765KV Sundargarh-Angul Ckt #4 with LR	30/03/19	9:30	30/03/19	11:30	ODB	R-II/Odisha/Sundarga	To take spare Reactor in to service in place of B-Ph Reactor for attending oil leakage in B-Ph reactor	NLDC	
560	Tie Bay-405 of 400KV Rourkela Line-II & 765/400KV ICT-II	30/03/19	9:00	30/03/19	18:00	ODB	R-II/Odisha/Sundarga	AMP Work		
561	Main Bay of 400 kV LKR-KHG Line -2 at Lakhisarai	30/03/19	10:00	30/03/19	14:00	ODB	POWERGRID ER-	AMP of Main Bay of 400 kV LKR-KHG Line -2		
562	400KV BARH - PATNA CKT 3 & 4	30/03/19	8:00	30/03/19	18:00	ODB	POWERGRID ER-	Realingmnet works of 400KV Barh-Motihari Line due to Construction of Barh Bypass by NHAI		
563	418 Main bay Barh 1	30/03/19	9:30	31/03/19	17:30	OCB	POWERGRID ER-I	AMP & CB Overhauling		
564	400 kV Muzaffarpur - Gorakhpur - II	30/03/19	9:00	30/03/19	18:00	ODB	POWERGRID ER-I	For AMP Work	NLDC	

Quarterly Preparedness Monitoring -AGENDA

(Status as on :)

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

Annexure – E.4

AVAILABILITY STATUS OF EVENT LOGGER, DISTURBANCE RECORDER & GPS

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

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

Eastern Regional Power Committee

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

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

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

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

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

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

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

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

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

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

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

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

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

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