Minutes

of

150th OCC Meeting

Date: 30.10.2018

Eastern Regional Power Committee

14, Golf Club Road, Tollygunge

Kolkata: 700 033

Eastern Regional Power Committee

Minutes of 150th OCC Meeting held on 11th October, 2018 at ERPC, Kolkata

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

Member Secretary, ERPC chaired the meeting. He welcomed ED, ERLDC and all the other participants to the meeting. He informed that due to Titli Cyclone in Odisha, the representatives from Odisha could not attend this meeting. He added that a meeting on Augmentation of Coal Supply and its transportation to various Power Stations in the Eastern Region before Puja Festivals, 2018 was held on 04.10.2018 wherein CIL had agreed to improve the coal stock position. He highlighted the major agenda points of the meeting. He informed that 151st OCC Meeting would be held at Farakka STPS, NTPC on 27th November 2018. He advised all the members to make it convenient to attend the meeting.

Item no. 1: Confirmation of minutes of 149th OCC meeting of ERPC held on 18.09.2018

The minutes of 149th OCC meeting were uploaded in ERPC website and circulated vide letter dated 24.09.2018 to all the constituents.

Members may confirm the minutes.

Deliberation in the meeting

Members confirmed the minutes of 149th OCC meeting.

PART A : ER GRID PERFORMANCE

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

The average consumption of Eastern Region for September- 2018 was 441.4 Mu. Eastern Region achieved maximum energy consumption of 478 Mu on 29thSep - 2018. Total Export schedule of Eastern region for September - 2018 was 1205 Mu, whereas actual export was 809Mu. The under export of Eastern Region is mainly due to over drawl of DVC, West Bengal and Odisha.

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

1. **Frequency profile**
2. **Over drawal/under injection by ER Entities**

Over drawl figure of West Bengal and Odisha from 01-10-2018 to 07-10-2018 are shown below:

	DVC		Odisha		West Bengal	
	OD (MU)	Max OD (MW)	OD (MU)	Max OD (MW)	OD (MU)	Max OD (MW)
01-10-2018	3.66	435.40	8.35	794.12	1.59	564.38
02-10-2018	7.05	602.08	7.16	921.24	3.70	528.83
03-10-2018	5.66	568.76	9.30	832.40	3.38	459.42
04-10-2018	6.20	562.21	8.70	926.09	4.66	622.79
05-10-2018	10.06	622.93	10.26	791.06	0.13	440.95

06-10-2018	7.98	784.57	2.87	614.76	0.83	373.14
07-10-2018	1.29	271.92	3.60	675.19	1.88	693.69

It may be seen that for the month of the October till date,

- West Bengal over drawl was in the range of 1 to 5mu on daily basis while maximum over drawl touched 4.66 mu on 04-10-18 and 693 mw maximum deviation on 07-10-18.
- Odisha over drawl was in the range of 3 to 11mu while maximum over drawl touched 10.26mu on 05-10-18 and 926 mw maximum deviation on 04-10-18.
- DVC over drawl was in the range of 1 to 10mu while maximum over drawl touched 10.06 mu on 05-10-18 and 785 mw maximum deviation on 06-10-18.

In 149th OCC persistent overdraw matter of West Bengal, Odisha and DVC was discussed, where in all parties were agreed to take corrective measures to avoid such persistent over-drawl. During the meeting, DVC expressed during October month their over drawl shall reduce substantially due to change on STOA sell profile and expected improvement in coal supply. Odisha also informed that due to increase in hydro generation, they would manage their drawl as per schedule during October month and west Bengal also assured to improved their internal generation and purchase profile in coming month to avoid such huge over drawl. However, for the month of September and till date October-2018 as shown above, appreciable improvement to avoid over drawal of West Bengal, DVC and Odisha was not observed.

West Bengal, DVC and Odisha may please deliberate the reason of continuous overdrawal and future action plan to mitigate such contingency situation.

DVC may please furnish action plan taken for improvement of coal supply issues and schedule date for restoration of plants out on coal shortage.

Beneficiaries are also advised to maximize their internal generation and increase their power purchase quantum in STOA/Power Exchange or from any other source to maintain their drawl as per schedule.

In case of repetitive non-compliance of ERLDC instruction to curtail overdrawal during real time operation continues in future, ERLDC will have no other option but to approach appropriate commission with respect to erring 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

Deliberation in the meeting

*ERLDC presented the performance of the Eastern Region grid during September 2018. Presentation is enclosed at **Annexure- A1**. ERLDC highlighted that maximum demand of 23030 MW was met in Eastern Region on 3rd October 2018.*

ERLDC presented a detailed analysis of the drawal pattern of the Eastern Regional constituents during September,2018 and October,2018(till date). It emerged from the presentation that Odisha, West Bengal and DVC had overdrawn from the Grid for significant times during September,2018 and October,2018.

DVC informed that they are facing coal shortage issues in every monsoon season but this year coal shortage problem was much predominant. DVC added that the coal shortage problems had been addressed and assured that they would not overdraw from Grid from 13th October 2018.

SLDC, West Bengal informed that the quantum of overdrawal had been reduced and they would take appropriate measures to avoid the overdrawal from Grid.

Member Secretary, ERPC informed that DVC, Odisha and West Bengal should not lean on the regional grid to bridge the difference between demand and supply. The utility constituents should meticulously plan to meet their respective system loads at all the time by taking into consideration the availability of generation from their own sources, from ISGS share, from long term and medium term bilateral arrangements and short term procurement of power.

ED, ERLDC informed that continuous overdrawal is a gross violation of grid discipline and if the trend continues in future, ERLDC would have no alternative but to file petition before CERC to highlight the issue.

ERLDC highlighted that some IPPs in Eastern Region were continuously under generating w.r.t. their schedule. The IPPs were getting benefit by selling power in exchange at higher cost and paying DSM charges at lower rate.

ED, ERLDC informed that such gaming is a gross violation of grid discipline and if the trend continues in future, ERLDC would file petition before CERC to highlight the issue.

OCC advised all the concerned IPPs to adhere to the regulation. OCC advised ERLDC to submit the relevant details to ERPC.

ERLDC highlighted that Bhutan hydro generators are not following the schedule and are not providing the peaking support.

OCC advised Bhutan to bring one more machine into service during peak hours and reduce the generation during off peak hours.

OCC advised ERLDC to give a presentation on this issue in workshop at Bhutan scheduled to be held during 23rd to 25th October 2018.

It was informed that the issue of consistent overdrawal by Indian Railways in DVC control area was discussed at ERPC on 24.09.2018. Minutes of the meeting are enclosed at Annexure-A1.1.

DVC informed that there was some improvement in the drawal pattern of the Railways after the meeting.

PART B: ITEMS FOR DISCUSSION

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

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

A. Projects approved:

SN	Name of Constituent	Name of Project	Date of approval from PSDF	Target Date of Completion	PSDF grant approved (in Rs.)	Amount drawn till date (inRs.)	Latest status
1	WBSETCL	Renovation & up-gradation of protection system of 220 kV & 400 kV Substations in W. Bengal	31-12-14	April 2018	108.6 Cr	37 Cr.	100 % Supply is Completed 98 % Erection is completed Work would be completed by October 2018
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 for 96.44 Cr. 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 has 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 implementation would be completed by July 2018.*
5		Upgradation of Protection and SAS			23.48	2.348 Cr	Bid opened and order has been placed.
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-March 19 Balimela-Feb 2019 U.Indravati-Jan 19 Burla-Nov 2018, Chiplima Dec 2018*	*22.35 Cr.*	2.235 Cr	Placed work order for Balimela.
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 October 2018.
11		Installation of capacitor bank at different 35 nos. of GSS under BSPTCL	5/9/2016	12th March 2019	18.88 crore	Nil	Work awarded for all GSS.

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*	*2 years*	*138.13 crores*		LOA placed 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 6.45 Cr. Price bid opened for West Bengal portion and technical bid opened for Jharkhand portion.
16	POWERGRID	Installation of STATCOM in ER		June 2018	*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 of leftover substations with State Load Despatch Centre, Sikkim	09-08-17	25.36 Cr	Scheme was approved by Appraisal Committee. It was sent to CERC for concurrence.
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	22-12-17	25.96 Cr	Scheme examined by TSEG on

		Scheduling, Accounting, Metering and Settlement of Transactions (SAMAST) system in West Bengal			20.03.2018. Inputs received on 24.05.2018. This scheme again reviewed by sub group meeting held on 24.07.2018.The entity was asked to provide the Interface meter details by depiction of interface points on grid network map with each intra-state entity.
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.	Scheme examined by TSEG on 20.03.2018. Inputs received on 22.05.2018. Shall be examined in the next TESG meeting.
8		Project for establishment of reliable communication and data acquisition at different substation at WBSETCL.	10-05-18	80.39 Cr.	Scheme examined by TSEG on 24.07.2018. Inputs sought from entity.
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

Respective constituents updated the status as mentioned in above table.

Item No. B.2: Coal stock position of ER Generators

A meeting on issues related to augmentation of coal supply and its transportation to various power stations in the Eastern Region for Puja festival 2018 held on 04.10.2018 at Kolkata.

The action plan of rake dispatch of coal from different subsidiaries of Coal India Ltd. Were formulated which is enclosed at **Annexure-B2**.

The respective constituents are requested to furnish the Coal stock position of their power station in the OCC Meeting.

Members may update.

Deliberation in the meeting

It was informed that coal stock position of Eastern Region generators had been improved after the meeting held on 04.10.2018 except Farakka, NTPC and DSTPS & Raghunathpur of DVC.

OCC advised concern generators to take up the issue with CIL and Railways.

Item No. B.3: Charging of 132kV Purnea(PG)-Kishanganj(old)-Baisi-Dalkhola line in Synchronous mode-BSPTCL

In view of providing reliable power to Nepal and to resolve low voltage issues at Kishanganj, BSPTCL requested for charging of 132kV Purnea(PG)-Kishanganj(old)-Baisi-Dalkhola line in Synchronous mode. Details are given in **Annexure-B3**.

In 149th OCC, WBSETCL informed that increasing power flow through 132kV Baisi-Dalkhola line during any contingency in Bihar network would cause overloading of ICTs at Dalkhola.

OCC opined that power flow through 132kV Baisi-Dalkhola line can be restricted with proper over current relay setting and the line can be automatically disconnected immediately to avoid overloading of ICTs at Dalkhola.

OCC advised WBSETCL to go through the proposal and send their comments to BSPTCL with a copy to ERPC and ERLDC.

BSPTCL and WBSETCL may update.

Deliberation in the meeting

WBSETCL agreed to allow 132kV Baisi-Dalkhola line connectivity in synchronous mode after Puja.

OCC advised BSPTCL to coordinate with WBSETCL for charging the line synchronous mode.

Item No. B.4: Request for drawal of 715 MW from Gaya(PG) festival season-BSPTCL

Presently,the maximum demand of BSPTCL from the ICTs of Gaya (PG) are as follows:

1.220 kv Gaya(PG)-Bodhgaya ckt. (D/C) -300 MW
2.220 kv Gaya(PG)-Sonenagar(new) (D/C) -215 MW
3.220 Gaya(PG)-Dehri ckt.(D/C)-200 MW

So, Total Load in peak hr at Gaya (PG) comes out to 715 MW.

*Total load of Dehri is 215 MW & out of this 15 MW load is drawn in peak hours through 220 kv Pusauli (PG)-Dehri (S/C) line.

Load of 215 MW at 220/132 Dehri end cannot be met through 220 kv Pusauli(PG)-Dehri single ckt. transmission line so Dehri GSS is operated in synchronous mode with Gaya(PG) and Pusauli(PG).

Also,it may be noted here that Gaya(PG) has ICTs of capacity (1X500+1X315) MVA through which Gaya (PG) allow only 652 MW maximum.
In the aforesaid circumstances, it is hereby requested to kindly instruct Gaya (PG) to allow load drawal max up to 725 MW so that uninterrupted/unrestricted power supply can be supplied to all concerned GSS. It is very much necessary in light of coming festivals of Durga Puja, Deepawali & Chath.

BSPTCL may explain. Members may discuss.

Deliberation in the meeting

Powergrid apprehended that loading on ICTs at its maximum level would lead to inadvertent loading on other ICT in case of tripping of one ICT. However, Powergrid agreed for loading upto 700 MW for a short duration.

Bihar informed that they need 700 MW power for 4 to 5 hrs during peak hours on festival dates i.e. 16th to 19th October 2018, 7th November 2018, 13th & 14th November 2018.

OCC agreed for drawal up to 700 MW from Gaya (PG) for 4 to 5 hrs during peak hours on above mentioned dates.

OCC advised BSPTCL and SLDC, Bihar keep constant vigilance on power flow and maintain the power flow within 700 MW. OCC advised to take appropriate action immediately to control the power flow in case of any contingency.

Item No. B.5: 40/45 MW power assistance from Sahupuri (UP) (NR) to BSPTCL GSS Karmnasa-BSPTCL

Kindly allow 40/45 MW power assistance from Sahupuri (UP) (NR) to BSPTCL GSS Karmnasa (presently Karmnasa is availing power from GSS [Pusauli (BSPTCL)]. Due to this operation Pusouli (BSPTCL) load will be offloaded, resulting meeting same 40 MW load of Dehri grid.

This will reduce load on Gaya (PG), which presently facing power transmission constraint during peak hour.

Gaya (PG) capacity augumentation work by addition of one 500 MVA will be completed by December 2018 end and by that time this operation will allow BSPTCL to meet its demand in this region during peak hrs. It will remain much helpful in meeting demand during coming festivals of Durga Puja, Deepawal & Chath.

BSPTCL may explain. Members may discuss.

Deliberation in the meeting

OCC advised BSPTCL to take up the issue with Utter Pradesh.

Item No. B.6: Bypassing arrangement of LILO of 400kV Lines at Angul-OPTCL

LILO of Meramundali-Bolangir/Jeypore 400 kV S/C line and LILO of one Ckt of Talcher-Meramundali 400 kV D/C line has been done at Angul 765/400kV Sub-station.

In 18th Standing Committee it was decided that Power grid would establish a switching arrangement at Angul substation such that, the above 400 kV LILO may be operated either by-passing Angul substation or terminating at Angul substation as and when required depending upon the power flow condition.

In 19th Standing Committee, it was inferred that LILOs of the above two lines needs to be by-passed to maintain the fault level at Meramundali S/S under normal operating conditions.

The necessary arrangement to be done by Powergrid for by-pass arrangement is under implementation and will be commissioned shortly.

The fault level at Meramundali will further increase after the commissionning of Meramundali- Mendhasal 2ndckt of D/C line.

Odisha wants for Normally closed arrangement at Angul so as to relieve the fault level problem at Meramundali. Odisha further agrees that as and when the situation demands the isolator may be put in open condition.

The following standard operating procedure may be approved by the OCC for implementation of bypass arrangement.

- The isolator will be normally closed so as to ensure the fault level at Meramundali stays within the permissible limits of 40 kA.
- Under severe contingencies like line outage or generator outage ERLDC in consultation with SLDC will open the isolator i.e. to restore the LILO of the above two lines.

OPTCL may explain. Members may discuss.

Deliberation in the meeting

Powergrid informed that bypass arrangement would be completed by December 2018.

ERLDC observed that every time line shutdown is required for changing the configuration.

Since OPTCL representative was not available in the meeting, OCC decided to discuss the issue in next OCC Meeting.

Item No. B.7: Establishment of Renewable Energy Management Centre (REMC) in Eastern Region---GRIDCO

Implementation of the state-of-the-art Renewable Energy forecasting & monitormg systems is now a global best praclice. For the same, it is proposed by Ministry of Power, Govt of India to establish Renewable Energy Management Centres (REMC) to address the intermittency, variability and uncertainty issues of Renewable power integration to the grid. Renewable Energy Management Centre (REMC) is part of the 'Green Energy Corridor scheme dealt by MNRE, Gol.

In order to facilitate integration of the targeted 175 GW of Renewable capacity by 2022, a comprehensive transmission plan is chalked out comprising of intra-state and 1nter-state transmission system strengthening infrastructure as well as Control infrastructure 1.e. establishment of REMCs at SLDC/RLDC/NLDC level.

The REMC scheme will help the grid operator to effectively manage power system operations with economy , reliability & security with an objective to forecast of RE generation on different levels such as State/ reg1on aggregated. pooling station wise etc. based on information from Forecast Service Provider {FSP) as well as Weather Service Prov1der (WSP), Renewable Generation Scheduling, real time tracking of generation of RE sources , integration with REMC SCADA & its Visualization & close coordination with respective LDC for RE generation & integration with existing SCADA. Owner of REMC will be the existing SLDCs, RLDCs & NLDC.

At present, the REMC scheme is proposed for the Renewable rich States I regions i.e. Tamil Nadu, Andhra Pradesh & Karnataka in Southern Region. GuJrat, Madhya Pradesh & Maharastra in Western Region and Rajasthan in Northern Region co-located w1th SRLDC, WRLDC. NRLDC & NLDC. No REMC has been decided yet for Eastern Region & North Eastern Region. The Scheme is proposed to be financed from 100 % Gross Budgetary Support . No financial component I support is involved from the State Govts. I State Discoms.

PGCIL, the CTU will be implementing the scheme and will hand over the REMC to respective states I POSOCO upon commissioning. From the tentative State wise break up of RE generation by 2022, it can be seen that in Eastern Reg1on also, there will be RE capacity addition of around 12, 500 MW by 2022 in Bihar, Jharkhand, Odisha, West Bengal & Sikkim.

To address the issues of RE power integration. commissioning of REMC is a necessary step. GRIDCO is proposing REMC under the 'Green Energy Corridor scheme' for Eastern Reg1on States (to be established in ER state LDCs & at ERLDC), which need to be placed before MNRE, Govt. of India through ERPC In a relevant forum, GRIDCO has already appealed to MNRE for establishment of REMC in Odisha and MNRE has also confirmed the concern of Odisha. A combined proposal is to be submitted from ERPC to MNRE for the ER states.

Members may discuss.

Deliberation in the meeting

Member Secretary, ERPC informed that 13.82 GW Renewable Energy Power in Eastern Region would be integrated to the Grid. He informed that REMCs are being established by MNRE.

OCC opined that REMC is required to be established in Eastern Region also.

Member Secretary, ERPC informed that he would take up the issue with CEA and MNRE for further course of action and place the outcome in next TCC Meeting.

Item No. B.8: Certification of OPTCL lines as non-ISTS lines carrying ISTS power.

OPTCL vide no. RT&C-NON-ISTS/2017/281 dated 21.08.2018 had sought the Certification of non-ISTS line carrying ISTS power as per the direction of CERC in ROP dated 08.08.2018 under Petition No. 25/TT/2018.

Accordingly, in line with 34th TCC decision, ERPC Secretariat and ERLDC conducted the load flow study using WebNet software for all the quarters of 2014-15, 2015-16, 2016-17, 2017-18 & 2018-19 (upto Q2).

Also, in 129th OCC held on 17.01.2017 it was decided that STU lines carrying ISTS power greater than 50% of the total power as per the WebNet software of the validated data for each quarter will be considered as non-ISTS line carrying ISTS power. The same was also approved by 35th TCC/ERPC.

Accordingly, as per the study result it is clear that the following OPTCL lines are mostly being utilized more than 50% for carrying ISTS power, hence these elements may be considered as non-ISTS line carrying ISTS power for the tariff period 2014-19.

SN	Name of Line	Remarks
1	400 kV Indravati-Indravati S/C	
2	400 kV Rengali-Keonjhar S/C	
3	400 kV Keonjhar-Baripada	
4	400 kV Baripada-Kharagpur S/C	Natural ISTS
5	220 kV Jeypore-Jaynagar D/C	
6	220 kV Rengali-Rengali D/C	
7	220 kV Balimela-U.Sileru S/C	Natural ISTS
8	220 Joda-Jindal S/C	
9	132 kV Joda-Kenduposi S/C	Natural ISTS

Members may discuss.

Deliberation in the meeting

OCC approved and referred to Commercial Committee Meeting for approval.

Item No. B.9: Shut-down/ outage related issue of HVDC back to back station at Pusauli--Powergrid

The ± 500 MW HVDC back to back station was taken on shut down from 20.03.18 (at 11.50 hrs) up to 28.04.18 (till 12.09 hrs) for over hauling of Converter Transformer at HVDC station, Pusauli. The need to take these transformers for Over-haul had mainly arisen due to frequent faults taking place in the state- owned down-stream 220kV as also the 132 kV system. These fault caused transient disturbance in HVDC back to back system and adversely affected its performance causing aging effect, mainly witnessed in the Converter Transformer. This also affects the insulation parameter of oil in the Converter transformer , requiring an over- haul of oil and Oil-flow system due to which the converter transformer were taken on shut-down / outage

Further, the auxiliary power is availed through the 132 kV line of the state which was having frequent faults and interruptions/ voltage dip since its Commissioning. This resulted in unreliable supply of power to the auxiliary system feeding the control and protection of the HVDC scheme which resulted in frequent tripping/interruption in service of the HVDC back to back scheme causing switching-on and switching-off of the Converter transformer.
Both these above causes necessitated a preventive action and required that the Converter transformer be taken up for a suitable Over-haul. It is important to note that had these Converter transformer not been taken on such maintenance , it may have led to a major disturbance / outage.

However the Power-flow on AC-by pass was maintained and these shut-down / outage [of the HVDC back to back system] has not compromised in any way , with the overall power system performance, within or across the region.

The outage / shut-down of HVDC back to back link was mainly caused due to faults arising in 220 kV down-stream system owned by other utilities and also due to frequent tripping/failure of the 132 kV state-owned feeder supplying the auxiliary power. Both these are entirely beyond the scope / jurisdiction of POWERGRID and therefore the above shut-down period may be considered as a Force majeure for the calculation of availability

Powergrid may explain. Members may decide.

Deliberation in the meeting

*Powergrid gave a detailed presentation highlighting the reasons for taking shutdown of Pusauli HVDC back to back link. The presentation is enclosed at **Annexure-B9**. Powergrid requested to consider the shutdown period as a force majeure for the calculation of availability.*

OCC opined that since ± 500 MW HVDC back to back station of Pusauli falls under the jurisdiction of Northern Region, the deemed availability could not be discussed in this forum unless NRPC referred the issue to ERPC.

Item No. B.10: Replacement of old RTUs in Eastern Region for reporting of RTU/SAS to backup Control Centre: Inclusion of Chandwa, Kishenganj & Daltonganj S/s in said project -Powergrid

"Replacement of old RTUs in Eastern Region for reporting of RTU/SAS to backup Control Centre" pertaining to POWERGRID Sub-stations was approved by ERPC in the 37th TCC/ ERPC meeting.

It is to inform that while 16 Nos. Sub-stations of POWERGRID/ER-1 were slated to be upgraded under the aforementioned project , as per ERLDC's "Report on Replacement of Old RTUs in Eastern Region for reporting of RTU/SAS to backup Control Centre" dtd. 23.08.2017, the Nos. of Substations of POWERGRID/ER-1 considered in the approved list of ERPC comes out to be 15 only. It is to inform that the name of Kishenganj S/s of ER-1 has been missed out inadvertently , which may be added, thus totaling to 16 nos.

Further, 400 kV Chandwa GIS S/s (SAS based) is also missed out inadvertently in the list of Sub-stations approved in the 37'h ERPC for Replacement/ Up gradation of SAS.

Moreover , when the said report was being prepared by ERLDC, Daltonganj S/s of POWERGRID/ER-1 was still under construction. The said S/s has been commissioned in Mar 2018. Hence, Daltonganj S/s of POWERGRID/ER-1 may also please be included in the RTU Replacement project, in line with the requirement of reporting of RTU/SAS to backup Control Centre.

All the above three (03) Sub-station of POWERGRID/ER-1 are SAS based Sub-stations and Hardware/ License Upgradation shall be required to be carried out in the said Sub-stations , subsequently .

By including Chandwa , Kishenganj & Daltonganj Substations , the total nos. of Sub-station of POWERGRID/ER -1 for RTU/SAS Upgradation under the aforementioned project shall become 18 (namely Biharsharif, Jamshedpur , Purnea 400 , Purnea 220, Sasaram HVDC, Muzaffarpur , Patna, Banka, Lakhisarai, Ranchi, New Ranchi, Chaibasa , Gaya , Sasaram 765, Ara, Chandwa, Kishenganj & Daltonganj).

Powergrid may explain. Members may decide.

Deliberation in the meeting

OCC in principle agreed to include Chandwa , Kishenganj & Daltonganj Substations in the project.

OCC advised Powergrid to give a detailed presentation on scope of work of the project along with cost implication in 39th TCC Meeting.

Item No. B.11: Long Outage of transmission elements in Eastern Region

a) **400 kV Barh – Motihari – D/C :**

Line was out of service since 28/06/18 due to reduced clearance as water level in Gandak river has increased.

In 149th OCC, DMTCL informed that the line would be restored by 25th September 2018.

DMTCL may please update.

Deliberation in the meeting

DMTCL informed that the line was restored on 3rd October 2018.

DMTCL gave a detailed presentation on restoration of the line highlighting the issues faced during restoration. The presentation is enclosed at ***Annexure-B11.a****.*

It was decided to accept the deemed availability of the above shut down under force majeure condition subject to prudence check by Member Secretary, ERPC.

b) **400 kV Rangpo – Dikchu :**

Line was out of service from 06/07/18 due to ROW issue.

TPTL may please update restoration plan

Deliberation in the meeting

TUL informed that the line would be restored by 20th October 2018.

c) **400kV Purnea-Biharsariff-DC**:

Line was out of service from 10/08/18 due to tower collapse as Ganga River has changed its course. ENICL informed that restoration of the line is in progress using a temporary arrangement and the restoration of the line would take 50 days approximately. ENICL

may please update the current status and also submit fortnight status report to ERLDC/ERPC through mail.

In 149th OCC, ENCIL informed that one more tower of 400 kV Purnea-Biharsharif D/C line had collapsed and restoration of the line using interim arrangement is not possible now. They are planning for permanent restoration of the line, which would take long time. ENCIL agreed to communicate the schedule to ERPC and ERLDC.

ENICL may update.

Deliberation in the meeting

ENICL informed that the line would be restored by June 2019.

d) 400 KV Patna – Kisanganj - D/C

Line was out of service from 01/09/18 due to tower collapse as Ganga River has changed its course. Powergrid ER-I may please update the current status and also submit fortnight status report to ERLDC/ERPC through mail.

In 149th OCC, Powergrid informed that they would put all the efforts to bring the line by March 2019.

Powergrid may update.

Deliberation in the meeting

Powergrid informed that they would put all the efforts to bring the line by March 2019.

Powergrid added that they were planning for erection of twin moose conductor instead of quad moose as a temporary arrangement for early restoration of the line with reduced capacity. Powergrid agreed to place the details after detailed study.

e) Breakers at 400/220kV Indravati (OHPC) S/s

In 141st OCC, it was explained that 3x105 MVA 400/220kV ICT-I tie breaker, 220kV Bus coupler and transfer bus breakers are not in service at 400/220kV Indravati (OHPC) S/s.

In 142nd OCC,OHPC submitted the action plan as follows:

1. 220kV Bus Coupler: CB and CT needed to be replaced. They would restore the Bus coupler by August 2018.
2. 220kV Bus tie: CB and CT needed to be replaced. They would restore the Bus Tie by November 2018.
3. 400kV Tie-1 Breaker: CB and CT needed to be replaced. They would restore the 400kV Tie-I by January 2019.

In 148th OCC, OHPC informed that 220kV Bus Coupler would be restored by end of August 2018.

In 149th OCC, OHPC informed that 220kV Bus Coupler had been installed and the same would be put in service in September 2018.

OHPC may please update.

Deliberation in the meeting

OHPC informed that 220kV Bus Coupler had been installed and the same would be put in service in November 2018.

Item No. B.12: Guidelines for the charging of Transmission line connecting two generating plants after tripping on fault or outage

There is a prevailing issue on the charging of transmission line connecting two generating complex after its outage/tripping. It has been observed sometimes that either of the utility is not ready for charging of the line from their end after its tripping on fault/outage. This results in the delay in the restoration of line and thus affecting the reliability of both the generating station. In view of this, there is a need of guideline on charging of such transmission lines.

List of such transmission lines is given below:

I. 400 kV Farakka-Kahalgaon Q/C.
II. 400 kV Kahalgaon-Barh D/C.

As a general guideline following may be considered

- If voltage difference between two system is more than 5 kV system which have lower voltage should charge the line
- In case voltage difference is less than 5 kV system which have higher fault level should charge
- If only one end has line reactor than the end which is not having the line reactor should attempt to charge first.

In 149th OCC, NTPC informed that they had communicated the issue to their Corporate Office and awaiting for the reply.

NTPC may update.

Deliberation in the meeting

NTPC agreed to follow the above procedure.

Item No. B.13: Review of Cyber Security Works/Activities- CEA

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

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

In 148th OCC, all the constituents were advised to send the latest status to mserpc-power@nic.in within a week.

The same has been received from WBSETCL only.

Members may comply.

Deliberation in the meeting

OCC advised all the other constituents to send the details to mserpc-power@nic.in within a week.

Item No. B.14: Data for preparation Load Generation Balance Report (LGBR) of ER for the year 2019-20

As per the IEGC, RPC Secretariat is responsible for finalization of the Annual Load Generation Balance Report (LGBR) for Peak as well as Off-peak scenarios and the annual outage plan for the respective region

To facilitate the preparation of LGBR of Eastern Region by ERPC Secretariat within the schedule period, the following data/information for the year **2019-20** in respect of the constituents/utilities of Eastern Region is urgently required:

i) The unit wise and station wise monthly energy generation proposed from existing units during 2019-20 (thermal/hydro/RES).
ii) Annual maintenance programme for each of the generating units (thermal and hydro both).
iii) Generating units under R&M / long outage indicating date of outage and reasons of outage and expected date of return (thermal and hydro both).
iv) Partial and forced outage figures (in %) of generating units for the last 3 years.
v) Month wise peak demand (MW) – restricted and unrestricted peak demand.
vi) Month wise off-peak demand (MW).
vii) Month wise energy requirement (in MU).
viii) Month wise & source wise power (both MU & MW) purchase and/or sale plan.
ix) Schedule of commissioning of new generating units during 2019-20 and unit-wise monthly generation programme (in MU).
x) Allocation of power from new generating units.
xi) Month wise and annual planned outage of transmission system (Transmission lines 220kV and above / ICTs / Reactors/ other elements.

Information may please also be submitted in the form of soft copy through email (mail ID: **mserpc-power@nic.in / erpcjha@yahoo.co.in**).

In 149th OCC, all the constituents were advised to submit the relevant information in the form of soft copy through email (mail ID: mserpc-power@nic.in / erpcjha@yahoo.co.in) by 31st October 2018.

Members may furnish the above data at the earliest.

Deliberation in the meeting

All the constituents were advised to submit the relevant information in the form of soft copy through email (mail ID: mserpc-power@nic.in / erpcjha@yahoo.co.in) by 31st October 2018.

Item No. B.15: Installation of PMU for observation of the dynamic performance of STATCOMs--ERLDC

Four STATCOMs (Rourkela, Jeypore, Kishenganj, New Ranchi) are being commissioned in the Eastern Region to improve the dynamic var compensation in the grid and for the improvement of the transient stability. STATCOM is a dynamic VAR compensation device and provides the fast reactive support to the grid during transient as well steady state operation. In order to analyze the dynamic performance of STATCOM (STATCOM+ MSR /MSC) during day-to-day operation, it is desired to install PMU on the Coupling Transformer of the STATCOM as a part of the URTDSM project.

In the 37th ERPC meeting, the followings were decided:

i) Power Grid shall first explore the possibilities by diverting the unutilized PMUs under URTDSM project and would complete the work on urgent basis.
ii) If adequate no. of PMUs are not available under URTDSM project, balance PMUs will be implemented under project "Upgradation of SCADA / RTUs / SAS in the Central sector stations and strengthening of OPGW network".

In 147th OCC, ERLDC informed that spare connection was available at 765kV Ranchi S/s which could be used for integration of Ranchi STATCOM. Since PMUs available at Ind Bharat and Monnet S/s could not be shifted due prevailing administrative issues, PMUs at Tenughat and Patratu might be diverted for STATCOM integration at Rourkela, Jeypore and Kishanganj S/s.

In 149th OCC, Powergrid informed that URTDSM project is at final stage of implementation and no spare PMU, no spare channel is available to provide PMU on the Coupling Transformer of the STATCOM.

OCC once again advised Powergrid to explore the possibilities to provide PMU on the coupling Transformer and submit a written report to ERPC and ERLDC covering the following points:

- Availability of spare PMUs in URDTSM project
- Availability of spare channels in PMUs installed at Rourkela, Jeypore, Kishenganj and New Ranchi
- Diverting PMUs at Tenughat and Patratu to Rourkela, Jeypore, Kishenganj and New Ranchi

Members may update.

Deliberation in the meeting

Powergrid informed that GE representative would visit the respective substations on 23rd October 2018 to assess the possibilities to provide PMU on the coupling Transformer of STATCOM.

OCC advised Powergrid to give a detailed presentation on implementation along with cost implication details, if any, in the 39th TCC Meeting.

Item No. B.16: 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 given below:

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 .**

Transmission Licencees may submit the details as per the format.

Deliberation in the meeting

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) within 7 days.

Item No. B.17: Delay in furnishing information to ERLDC/ERPC regarding of Commissioning of new Transmission Elements/ Generating Units within State

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

For the Month of September-2018,states and transmission licensees did not submit their List of Transmission element and generators synchronised **in the previous Month** and List of Transmission element and generators expected to be synchronised during next Month.

Members may please note.

Deliberation in the meeting

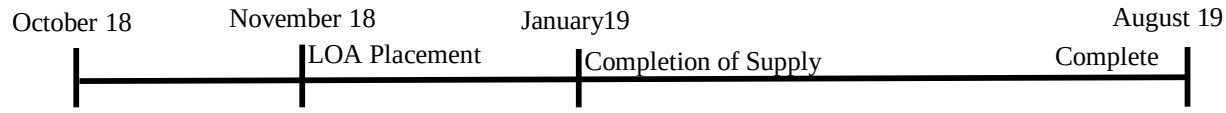
OCC advised all the constituents to submit the requisite information to ERLDC on monthly basis.

Item No. B.18: Additional agenda

1. Implementation of 4th Phase AMR in ER-II including integration of Energy Meter Data in SCADA--Powergrid

As decided earlier and in different OCC meetings, 4th Phase AMR implementation taken up with M/s Tata Consultancy Services. M/s Tata Consultancy Services has submitted offer for the implementation of 4th Phase AMR, including SCADA integration of energy meter data as per ERLDC requirement.

As per timeline provided, supply of the items will take two months and further implementation will be completed within 10 months from the LOA. Revised timeline given below for reference:



Total financial implication as per revision of work received as INR 1.75 Crore only. The breakup of the same is mentioned in the table given below:

Total Cost of Supply [X]	Total Cost of Erection [Y]	Total cost of AMC [Z]	Total Cost [X+Y+Z]
52,48,225.50	60,34,422.00	62,20,800.00	1,75,03,447.50
Note: - The above given figures are excluding GST.			

However, after placement of LOA final figures will be provided.

This is for information & further discussion among members.

Deliberation in the meeting

ERLDC clarified that they need AMR data dump at ERLDC in a specified format to compare with SCADA data. The relevant format had been given to M/s TCS for necessary changes AMR software.

OCC approved and referred to Commercial Committee Meeting.

2. Presentation on "Short term Demand Forecast" by DVC

Deliberation in the meeting

DVC informed that they have formulated a "Short term Demand Forecast" mechanism using block wise monthly average data of last year and average deviation data of last four time blocks. DVC added that the proposed methodology is giving 98-99% accuracy in 90% time of the Day. Detailed presentation is enclosed at ***Annexure-B18.2****.*

OCC appreciated the presentation and thanked DVC for sharing the knowledge on new methodology for Short term Demand Forecast.

OCC advised other SLDCs to present their forecasting methodologies in OCC Meetings.

PART C: ITEMS FOR UPDATE

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

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

OPTCL may update.

Deliberation in the meeting

OPTCL submitted the healthiness certificate.

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

At present, the following islanding schemes are in service:

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

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

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

Members may note.

Deliberation in the meeting

Members noted.

Item no. C.3: Status of Implementation of islanding schemes in ER

1. Islanding scheme at Bandel TPS-WBPDCL

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

In 38th TCC Meeting, WBPDCL informed that the implementation at Power station has been completed.

In 147th OCC, WBSETCL informed that implementation part at Substation end for load segregation would be completed by end of July 2018.

In 148th OCC, WBPDCL and WBSETCL informed that islanding scheme had been implemented and it can be put in service.

In 149th OCC, OCC decided to put the islanding scheme in service after Puja.

Members may decide.

Deliberation in the meeting

OCC decided to put the islanding scheme in service from 1st week of November 2018.

2. Islanding scheme at IbTPS- OPGC

The islanding scheme was discussed in 68th PCC Meeting held on 18-06-2018. PCC opined that the draft scheme submitted by Odisha was three years old and the draft scheme is needed to be reviewed with existing network configuration.

In 69th PCC Meeting, it was decided that ERLDC and ERPC would study and finalize the islanding scheme in next PCC Meeting.

Members may note.

Deliberation in the meeting

Members noted.

Item no. C.4: Healthiness of SPS existing in Eastern Region

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

Sl. No.	Name of the SPS	Healthiness certificate received from	Healthiness certificate not received from
1.	*Talcher HVDC*	*NTPC, GMR, & JITPL*	*Powergrid,*
2.	*Rangpo*	*Chuzachen,*	*Dikchu, Dansenergy, Powergrid, Teesta-III*
3.	SPS of 220 kV Muzaffarpur-Dhalkebar D/C	*Nil*	*Powergrid*
4.	SPS in CESC system	*CESC*	*Nil*
5.	SPS for Power Export to Bangladesh	*Nil*	*Powergrid*
6.	SPS at Chuzachen	*Chuzachen*	*Nil*

Members may update.

Deliberation in the meeting

Powergrid submitted the healthiness certificate for Talcher HVDC and Rangpo SPS.

Powergrid informed that SPS for Power Export to Bangladesh would be modified after the detailed study carried out by POSOCO and Powergrid. SPS of 220 kV Muzaffarpur-Dhalkebar D/C would be modified as per the transformation capacity available at Nepal end.

Item no. C.5: Implementation of Automatic Demand Management Scheme (ADMS)-ERLDC

The latest status along with proposed logic as follows:

Sl No	State/Utility	Logic for ADMS operation	Implementation status/target	Proposed logic (if different from under implementation logic)
1	West Bengal	F <49.7 AND deviation > 12 % or 150 MW	Implemented on 25.11.16	F <49.9 AND deviation > 12 % or 150 MW
2	DVC	F <49.7 AND deviation > 12 % or 150 MW	Implemented on 17.06.2016	
3	Bihar	F <49.7 AND deviation > 12 % or 150 MW	3 months Feeders identified. Implemented by June 2018	F <49.9 AND deviation > 12 % or 150 MW

4	Jharkhand	1. System Frequency < 49.9 Hz AND deviation > 12 % or 25 MW 2. System Frequency < 49.9 Hz AND deviation > 12 % or 50 MW 3. System Frequency < 49.9 Hz AND deviation > 12 % or 75 MW	9 Months Tendering for RTU installation is in progress. Implemented by December 2018	Condition 1: Block I feeders will be selected for load shedding Condition 2: Block I & II feeders will be selected for load shedding Condition 3: Block I, II & III feeders will be selected for load shedding
5	Odisha	1. System Frequency < 49.9 Hz 2. Odisha over-drawl > 150 MW 3. DISCOM over-drawl > (40 MW)	10 Months Sent for PSDF approval.	Logic 2 and 3 is AND or OR, in case it is AND then ADMS may not operated when discom are in schedule but GRIDCO is overdrawing due to less generation at state embedded generators
6.	Sikkim			Sikkim informed that they have submitted a proposal to PSDF Committee for installation of OPGW cables which is under approval stage. Sikkim added that ADMS scheme would be implemented after installation of OPGW.

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

During the Month of September'18, several number of times ADMS criteria for the state got satisfied. The details for each state are given at **Annexure-C5.**

Members may update.

Deliberation in the meeting

DVC submitted the relevant details. WBSETCL informed that ADMS had operated for two cases on 28th September 2018.

OCC advised WBSETCL to verify the reason for non-operation of ADMS in other cases.

It was informed that issues related to implementation of ADMS in Bihar had been referred to SCADA Meeting scheduled to be held on 30th October, 2018.

OCC advised BSPTCL to submit the details to ERLDC for detailed discussion in the meeting.

It was informed that Bihar is implementing Load Shedding Scheme instead of ADMS.

OCC advised Bihar submit the details of their scheme to ERLDC and ERPC.

Item no. C.6: Repair/Rectification of tower at location 79 of 132kV Rangpo-Melli D/c line and Chuzachen(Rangpo)-Gangtok transmission lines - Powergrid

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

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

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

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

In 38th TCC, Sikkim informed that State Govt. for approval is pending.

Powergrid and Sikkim may update.

Deliberation in the meeting

Sikkim representative was not available in the meeting.

OCC referred the issue to 39th TCC Meeting for guidance.

Item no. C.7: Status of Installation of STATCOM in Eastern Region

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

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

Powergrid updated the latest status as follows:

Sl No	Location /Sub-Station of POWERGRID in ER	STATCOM - Dynamic Shunt Controller (MVAr)	Mechanically Switched Compensation Sl. (MVAr)		Latest status
			Reactor (MSR)	Capacitor (MSC)	
1	Rourkela	±300	2x125		*In service from March 2018.*
2	Kishanganj	±200	2x125		*70% civil work completed. 30% switchyard equipment supplied. Expected to complete by December 2018*
3	Ranchi(New)	±300	2x125		*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 at Kishanganj would be commissioned by December 2018 as per the schedule.

Item no. C.8: 220 kV inter-connecting lines of OPTCL with 400/220 kV Bolangir (PG), Keonjhar&Pandiabil S/s

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

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

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

OPTCL may update.

Deliberation in the meeting

OPTCL updated the status as mentioned in above table.

Item no. C.9: 220 kV inter-connecting lines of JUSNL with 2x315 MVA, 400/220 kV sub-stations at Chaibasa, Daltonganj&Dhanbad

In lastOCC, JUSNL updated the latest status as follows:

Sl. No.	Name of the transmission line	Completion schedule
1.	**Daltonganj 400/220/132kV S/s:**	
a.	Daltonganj(POWERGRID)–Latehar220kVD/c	By April, 2019.
b.	Daltonganj (POWERGRID) – Garhwa 220kV D/c	The line expected to be completed by May, 2018 but – Garhwa 220kV is expected to be completed by Dec 2018.
C	Daltonganj (POWERGRID) – Daltonganj (JUSNL) 132kV D/c	The line charged as per original configuration on 26th July 2018.
D	Daltonganj (POWERGRID) – Chatarpur/Lesliganj 132kV D/c	Tendering is in progress. Expected to be completed by October 2019
2	**Chaibasa400/220kVS/s**	
A	Chaibasa(POWERGRID)–Noamundi220kVD/c	Not yet started
3	**Dhanbad400/220kVS/s**	
A	LILO of Govindpur–Jainamore/TTPS 220kVD/c at Dhanbad	ROW issues.Target date November 2018.

JUSNL may update.

Deliberation in the meeting

JUSNL updated the status as mentioned in above table.

Item no. C.10: 220 kV inter-connecting lines of WBSETCL with 400/220 kV, 2x315 MVA Alipurduar & 2x500 MVA Rajarhat sub-stations

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

Sl. No.	Name of the transmission line	Completion schedule
1.	**2x500MVA, 400/220kV Rajarhat---**	

a.	Rajarhat-N. Town-3 (WBSETCL) 220 kV D/C line	Matching, ROW problem
b.	Rajarhat-N. Town-2 (WBSETCL) 220 kV D/C line	ROW problem
c.	Rajarhat- Barasat (WBSETCL) 220 kV D/C line	ROW problem
2	**Subashgram400/220kVS/s**	
a	Subashgram–Baraipur220kVD/cline	Mar 2019, 50% of work has been completed.

WBSETCL may update.

Deliberation in the meeting

WBSETCL updated the status as mentioned in above table.

Item no. C.11: Update on status of telemetry

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

ERLDC may present. Members may update.

Deliberation in the meeting

ERLDC presented the latest status.

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

Item no. C.12: 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 January -2019

Sl No	State/Utility	TTC import(MW)		RM(MW)		ATC (Import) MW		Remark
		Import	Export	Import	Export	Import	Export	
1	BSPTCL	--	--	--	--	--	--	Last available for Jan-18
2	JUSNL	1270	--	170	--	1100	--	Dec-18
3	DVC	1359	3438	61	47	1298	3391	
4	OPTCL	1835	--	82	--	1753	--	Nov-18
5	WBSETCL	3820	--	300	--	3520	--	Nov-18
6	Sikkim	--	--	--	--	--	--	

BSPTCL has provided updated base case.

BSPTCL and Sikkim may update the status.

Deliberation in the meeting

Bihar informed that they had submitted ATC/TTC figures for November 2018.

OCC advised Bihar to compute and submit ATC/TTC figures for next three months.

Item no. C.13: 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 147th OCC, POWERGRID informed that the replacement of GPRS communication of the Remaining 34 locations would be completed by August 2018.

POWERGRID may please update the progress.

Deliberation in the meeting

POWERGRID informed that the replacement of GPRS communication of the Remaining 34 locations would be completed by December 2018.

Item no. C.14: Accounting of state drawl from Substation of PGCIL/ISTS Licensee in ER

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

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

In 146th OCC, Powergrid informed that the SEM installation in ER-I stations has been completed and the same at ER-II stations would be completed by June 2018. Powergrid(Odisha) informed they will complete the SEM installation by July,2018.

However locations in ER-I for ex, Purnea, Banka, Lakhisarai, and Ranchi are still pending.

A List of Time drifted Meters installed at ICTs at PGCIL S/station in ER was prepared by ERLDC from AMR system and vide letter dated 04.07.18, PGCIL was requested for replacement of the same.

In 147th OCC, Powergrid informed that the list had been received from ERLDC and the replacement of SEMs is in progress.

However Meter at either side of ICTs at Purnea(2 nos of 220/132 ICT), Birpara (1 no of 220/132 ICT) and Baripada(2 nos of 400/220 ICT) is yet to be installed. Further Meters installation at IV side of many ICTs is also pending.

Powergrid may update.

Deliberation in the meeting

Powergrid informed that total work would be completed by November 2018.

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	*In 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	
4	U. Indarvati	3rdweek ofJune 2018	*Planned in Oct,2018.*	2ndweek of February2019	
5	Subarnarekha	1stweek of October 2018	*Done on 10th August,2018.*	1stweek of January2019	
6	Balimela	3rdweek of October 2018		1stweek of March 2019	
7	Teesta-V	2ndweek of Nov 2018	Done on 3rd May 2018	Last week of February2019	
8	Chuzachen	Last Week of May2018	In May 2018	2nd week of January2019	
9	Burla	Last Week of June 2018	*Completed on 7th June,2018*	Last week of February2019	
10	TLDP-III	1st Week of June 2018	After Monsoon	2ndWeek of January2019	
11	TLDP-IV	Last Week of June 2018	After Monsoon	1st Week of February2019	
12	Teesta-III	Last week of Oct 2018		First Week of March 2019	
13	Jorthang	First Week of May 2018		First Week of Feb 2019	
14	Tasheding	2nd Week of May 2018		2nd Week of Feb 2019	
15	Dikchu	3rd Week of May 2018		3rd Week of Feb 2019	

Members may update.

Deliberation in the meeting

Members updated the status as mentioned in above table.

Item no. C.16: Implementation of Web based PSP report in ERLDC

Aftersuccessful parallel testing of Web based PSP and with continuous support from ER beneficiaries and generators, the web based PSP hassuccessfully migrated from excel based PSP reporting to Web based PSP reporting portal on 07th September 2018. However, some utilities are still not filling-in data in Web based portal regularly during night hours.It is once again requested to the parties to fill the 24hrs generated energy, energy exchange data in ERLDC portal by 02:00hrs on daily basis regularly for error free and in time publication of the report during night hour.

Members may comply.

Deliberation in the meeting

Members noted for compliance.

Item no. C.17: Flexible Operation of thermal power stations- Identification of pilot projects--CEA

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

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

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

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

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

In 146th OCC, DVC informed that they could bring down their machine up to 60 % without oil support and with the available quality of coal.

In 38th TCC, DVC assured that the necessary demonstration to bring down their machine up to 55% would be done by July 2018.

DVC may update.

Deliberation in the meeting

DVC informed that they could not demonstrate the capability of 55% minimum load operation due to coal issues.

Item no. C.18: Issuance of TOC for DSTPS-RTPS OPGW link by DVC

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

to TL construction. OPGW work in this link could not be completed due to ROW/Compensation issues since September-2013.

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

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

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

In 38th TCC, DVC assured that the issue would be resolved by July 2018. In case the issue is not resolved MS, ERPC will take up the matter with DVC for early resolution of the issue.

In 147th OCC, DVC informed that they had taken up the issue with appropriate administration and the issue would be resolved soon.

DVC may update.

Deliberation in the meeting

DVC informed that they had taken up the issue with appropriate administration and the issue would be resolved soon.

OCC referred the issue to 39th TCC Meeting.

Item no. C.19: PSS tuning of Generators in Eastern region

Several Cases of Low frequency Oscillations have been observed in the Eastern Region. In view of this, it is desirable to have the PSS tuning of Generators in Eastern region to improve the system damping. It is mandatory as per existing CERC and CEA regulation to tune 100 MW and above generating units.

In view of that, Generating station may kindly update the following details to ERLDC/ERPC:

Name of Generating Power Plant:

Unit No	Type of Excitation System (Static/ Brushless /Other)	IEEE Model (IEEET1/ ESST1A/ Other)	Name of Excitation System Vendor (ABB/GE /Hitachi/ other)	Whether PSS is Tuned of not (If tuned Date of tuning	Whether Report of tuning Submitted or not.

In line with regulations, all generating power plant to take up the PSS tuning activities at earliest with their vendors and submit the report after PSS tuning for verification. The response data with PSS tuning also to be shared with ERLDC/ERPC for validation in either excel or .csv format. This will be monitored in OCC on regular basis.

OCC advised all the generators to submit the relevant data as per the format to ERLDC and ERPC.

Generators may kindly submit the details and inform the tentative plan for PSS Tuning.

Deliberation in the meeting

OCC advised all the generators to submit the relevant data as per the format to ERLDC and ERPC.

Item no. C.20: 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

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

Item no. C.21: FLEXIBILITY IN GENERATION & SCHEDULING OF THERMAL POWER STATIONS TO REDUCE EMISSIONS-MOP, GOI ORDER

CEA vide letter dated 18th July 2018 informed that a committee has been constituted in CEA under Chief Engineer (TPRM) to develop a road map to enable flexible operation of thermal power stations for smooth integration of intermittent RES generation.

CEA requested for plant performance data as per the format enclosed at **Annexure-C21**. CEA requested to submit the hard copy and softcopy (in excel) to cetrmcea@yahoo.com.

OCC advised all the Generators to submit the plant performance data as per the format to CEA.

Members may note and comply.

Deliberation in the meeting

Members noted for compliance.

Item no. C.22: 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 long term measures may be planned.

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

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

BSPTCL and DMTCL may update.

Deliberation in the meeting

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

PART D:: OPERATIONAL PLANNING

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

The abstract of peak demand (MW) vis-à-vis availability and energy requirement vis-à-vis availability (MU) for the month of November 18 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 November 2018 after incorporating constituents' observations is given at **Annexure-D.1***.*

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

Members may finalize the Shutdown proposals of transmission lines and generating stations for the month of November 18.

Shutdown proposals of generating stations:

System	Station	Unit	Size (MW)	Period		No. of Days	Reason
				From	To		
Bihar	MTPS (KBUNL)	3	195	15.11.18	14.12.18	30	Boiler Overhauling
WBPDCL	Kolaghat TPS	4	210	01.11.18	10.11.18	10	Boiler License
	Santaldih TPS	5	250	12.11.18	22.11.18	11	Boiler License
CESC	BUDGE-BUDGE	3	250	12.11.18	29.11.18	18	Not Specified

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

Deliberation in the meeting

Approved Shutdown proposals of generating stations:

System	Station	Unit	Size (MW)	Period		No. of Days	Reason
				From	To		
WBPDCL	Kolaghat TPS	5	210	25.11.18	24.01.19	60	ESP R&M Work
	Bakreswar TPS	3	210	18.11.18	07.12.18	20	Boiler License
CESC	BUDGE-BUDGE	1	250	12.11.18	29.11.18	18	Not Specified
NTPC	Farakka	6	500	01.12.18	25.12.18	25	Maint.

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

1. Shutdown of 400kV Main Bus Darbhanga

Alipurduar Transmission Limited vide mail informed that ATL/KPTL is executing the bay extension work at 400 KV GIS Darbhanga S/S. To integrate the new system with the existing system require shut down as mentioned below:

1. 400KV Main bus I (DMTCL): 10th October to 17th October 2018 – 8 days , 192 Hrs. For integration of Main Bus –I. Substation will remain charged on Main Bus – II
2. 400KV Main bus II (DMTCL): 19th October to 26th October 2018 – 8 days, 192 Hrs. For integration of Main Bus –II. Substation will remain charged on Main Bus - I
3. 400KV Main bus I (DMTCL) & 400KV Main bus II (DMTCL) : 28th October 2018 to 29th October 2018- 2 days , 48 Hrs. For integration of Bus Bar protection . Substation will remain in shut down for two days.

The detailed procedure which will be followed during the shutdown is mentioned below:

Work plan for connection of DMTCL's & KPTL's Main BUS I & II		
Step wise activity for connection of Main Bus I & II between DMTCL & KPTL by TBEA, ZONFA.		
Sr. No	**Duration**	**400KV Main bus I must be in de-energised condition**
		R phase
1	3 days	Reduce SF6 gas pressure for last section of Main bus I (DMTCL side) till zero MPA(Mega paskal).
2		Reduce SF6 gas pressure for second last section of Main bus I (from DMTCL side) till 0.1 MPA.
3		Extention bellow to be connected between DMTCL & KPTL main Bus I
4		Vacuuming of complete portion. (3 sections)
5		SF6 Gas filling of up to 0.4 MPA (3 sections)
6		SF6 Gas filling in second last section of DMTCL & KPTL to be increased till 0.4 MPA.
7	2 days	Repeat Activity no 1 to 6 for Y Phase
8	2 days	Repeat Activity no 1 to 6 for B Phase
9	1 days	**Testing of Main Bus I**
10		Gas quality test By Zonfa .
11		Contact resistance measurement by Zonfa.
12		Stability test by voltech
13		Primary injection test by voltech.
Sr. No	**Duration**	**400KV Main Bus II must be in de-energised condition**
		R Phase
1	3 days	Reduce SF6 gas pressure of last section of Main bus I till zero MPA(Mega paskal)
2		Reduce SF6 gas pressure of second last section of Main bus I till 0.1 MPA.
3		Extention bellow to be connected between last section of DMTCL & first section of KPTL's main Bus
4		vacuuming of complete
5		SF6 Gas filling of up to 0.4 MPA
6		SF6 Gas filling in second last section & 2nd section of KPTL to be increased till 0.4 MPA.
7	2 days	repeat Activity no 1 to 6 for Y Phase
8	2 days	repeat Activity no 1 to 6 for B Phase
9	1 days	**Testing of Main Bus I**
10		Gas quality test By Zonfa .
11		Contact resistance measurement by Zonfa.
12		Stability test by voltech
13		Primary injection test by voltech.
Stepwise activity for BB augmentation By Siemens		

Sr.No	Duration	Both Main bus I & II must be in de-energised condition
1	No	Outdoor CT circuit wiring from LCC to BB panels TBs 1). 412LCC & 2). 414 LCC
2	No	Mounting and termination of the Test block for the present scope
3	No	Outdoor cabling from respective LCC to BB panel TB (for BI/BO)
4	No	Mounting of CMR relay for present scope
5	Yes, 2 days	Mounting of new modules in both the panels
6		All internal wiring from Panel TBS to Relay modules
7		All internal wiring for CMR relay, from Test blocks to IO modules
8		Relay configuration for new added bays
9		Testing of Relays for all the bays

Alipurduar Transmission Limited may explain. Members may approve.

Deliberation in the meeting

Alipurduar Transmission Limited representative and Bihar agreed for the shutdown of 400KV Main bus I (DMTCL) & 400KV Main bus II (DMTCL) from 15th November 2018 to 16th November 2018 for 2 days.

OCC advised Alipurduar Transmission Limited to submit the revised shutdown proposal to ERLDC.

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

(i) Thermal Generating units:

S.No	Station	Owner	Unit	Capacity	Reason(s)	Outage	Expected date
			No	(MW)		Date	of revival
1	FSTPP	NTPC	5	500	HP TURBINE LEAKAGE	30-Sep-18	
2	KOLAGHAT	WBPDCL	1	210	POLLUTION CONTROL PROBLEM	10-May-18	
3	KOLAGHAT	WBPDCL	3	210	POLLUTION CONTROL PROBLEM	23-Feb-17	
4	CTPS	DVC	3	130	TURBINE BLADE DAMAGE	30-Jul-17	
5	KODARMA	DVC	2	500	ANNUAL OVERHAULING	9-Sep-18	
6	WARIA	DVC	4	210	BOILER TUBE LEAKAGE	24-Sep-18	
7	VEDANTA	GRIDCO	2	600	PROBLEM IN BOILER	8-Feb-18	
8	VEDANTA	GRIDCO	4	600	LEAKAGE IN LUBE OIL SYSTEM	2-Oct-18	
9	JITPL	JITPL	2	600	COAL SHORTAGE	26-Jun-18	
10	KBUNL STG-I	BSPHCL	2	110	COAL SHORTAGE	21-Aug-18	
11	TENUGHAT	JUVNL	2	210	COAL SHORTAGE	17-Jul-18	
12	RAGHUNATHPUR	DVC	1	600	COAL SHORTAGE	1-Jun-18	
13	MEJIA	DVC	4	210	COAL SHORTAGE	13-Sep-18	
14	MEJIA	DVC	8	500	COAL SHORTAGE	4-Oct-18	

15	MEJIA	DVC	7	500	COAL SHORTAGE	1-Sep-18	
16	DSTPS	DVC	1	500	COAL SHORTAGE	16-Sep-18	

(ii) Hydro Generating units:

SL NO	Station	Owner	Unit No	Capacity	Reason(s)	Outage
1	BURLA	OHPC	1	37.5	R & M WORK	25.10.16
2	BURLA	OHPC	2	37.5	R & M WORK	16.10.15
3	BURLA	OHPC	5	37.5	R & M WORK	25.10.16
4	BURLA	OHPC	6	37.5	R & M WORK	16.10.15
5	BALIMELA	OHPC	1	60	R & M WORK	05.08.16
6	BALIMELA	OHPC	2	60	R & M WORK	20.11.17
7	U.KOLAB	OHPC	2	80	Repair of MIV & Draft tube gate leakage	28.05.17
8	CHIPLIMA	OHPC	1	24	FLOOD CONTROL	21.7.18
9	CHIPLIMA	OHPC	2	24	FLOOD CONTROL	21.7.18
10	CHIPLIMA	OHPC	3	24	FLOOD CONTROL	21.7.18

It is therefore seen that about 422 MW hydro capacity in Odisha is under forced outage / planned outage and therefore not available for providing the much needed peaking support during evening peak. SLDC / OHPC may please indicate restoration plan of the units.

(iii) Transmission elements

SL NO	Transmission Element / ICT	Owner	Outage From	Reasons for Outage
1	220 KV BALIMELA - U' SILERU	Odisha/AP	10.03.18	LINE ANTITHEFT CHARGED FROM UPPER SILERU ON 17-04-18
4	400 KV IBEUL-JHARSAGUDAD/C	IBEUL	29.04.18	TOWER COLLAPSE AT LOC 44,45
5	400 KV DIKCHU-RANGPO	TPTL	6.07.18	INITIALLY S/D AVAILED BY TVTPL/LINE COULD NOT BE CLOSED AFTER S/D DUE TO LOCAL ISSUES.
6	220 KV BUDHIPADAR – RAIGARH(Chhattisgarh)	OPTCL	24-08-18	UNDER SHUTDOWN FO LILO WORK AT RAIGARH PG.
7	400KV NEW PURNEA-BIHARSARIFF-D/C	ENICL	10.8.18	TOWER COLLAPSE AT LOC 47/0
8	400 KV PATNA-KISHANGANJ D/C	POWERGRID	1.9.18	TOWER COLLAPSE AT LOC 129. PILING DAMAGED
10	MAIN BAY OF MEJIA – MAITHON – III AND MEJIA U-8 AT MEJIA	DVC	8.9.18	LINE CB VACCUM INTERRUPTER PROBLEM IN MEJIA SIDE AND TRANSFER BUS USED TO CHARGE MEJIA – MAITHON - III

(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: Restricted Governor /Free Governor Mode Operation of generators in ER

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

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

Generators may update.

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: DATA FOR GEOSPATIAL ENERGY PORTAL OF NEETI AAYOG--CEA

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

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

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

Members may comply.

Item No. E.8: 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.

Members may comply.

Item No. E.9: Commissioning of new transmission elements in Eastern Region

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

Monthly commissioning List of Tansmission element and generators: September - 2018					
SL NO	Element Name	Owner	Charging Date	Charging Time	Remarks
1	400kV Farakka-Baharampur-I	Powergrid	01-09-2018	18:28	
2	400kV Farakka-Baharampur-II	Powergrid	01-09-2018	18:34	
3	125MVAR Bus Reator at Banka	Powergrid	27-09-2018	11:32	
4	50MVAR Line reactor of 400kV Sasaram-Daltonganj-I at Daltonganj	Powergrid	27-09-2018	17:09	
5	125MVAR Bus Reator at Bolangir	Powergrid	28-09-2018	23:29	5

The following elements would commission during October 2018:

1. 400kV DC line from Ib to Lapanga and 400kV LILO of Vedanta-Meramundali line at 400/220/132/33kV Lapanga S/s in Multi Circuit Tower.

2. 2X20 MVA, 220/33kV Keonjhar GIS S/s with 220kV DC line from Keonjhar (PGCIL S/s) to Keonjhar (OPTCL S/s).

Item No. E.10: Checklist for submission of updated data for Protection Database

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

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

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

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

Constituents may comply.

Item No. E.11: UFR operation during the month of September'18

System frequency touched a maximum of 50.20 Hz at 13:03 Hrs of 22/09/18 and a minimum of 49.57 Hz at 18:23Hrs of 24/09/18. Hence, no report of operation of UFR has been received from any of the constituents.

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

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

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

No report from any constituent has yet received. Hence, ERLDC would be considering 'Nil' report for all constituents for September 18.

Item No. E.13: Grid incidences during the month of September, 2018

Sr No	GD/ GI	Date	Time	S/S involved	Summary	Load loss (MW)	Gen loss (MW)
1	GD-I	04-09-2018	12:00	JLHEP	At 12:00 hrs , 220 kV Jorethang - New Melli D/C tripped on RYBN fault resulting tripping of all running units of Jorethang due to loss of evacuation path. 220 Kv Tashiding New Melli S/C tripped at same time on R-Y-B-N fault.	0	97
2	GD-I	16-09-2018	11:13	JLHEP	220 kV Jorethang - New Melli D/C & 220 Kv Tashiding New Melli S/C tripped at 11:13 hrs resulting tripping of all running units of Jorethang due to loss of evacuation path.	0	97
3	GD-I	16-09-2018	15:38	Purnea	220 kV Purnea - Purnea D/C tripped from New Purnea end along with 220/132 kV ICTs and 132 kV Purnea - Purnea T/C at Old Purnea (PG) S/S. Failure of Y phase CT of 132 kV Purnea - Tribenigunj S/C at Tribenigunj reported at same time.	178	0
4	GD-I	16-09-2018	20:52	Purnea	220 kV Purnea - Purnea D/C tripped from New Purnea end along with 220/132 kV ICTs and 132 kV Purnea - Purnea T/C at Old Purnea (PG) S/S. At the same time, 220/132 Kv ICTs at Kishangunj tripped leading to a load loss around 212 MW at Kishangunj and its surrounding area	407	0
5	GD-I	17-09-2018	10:59	Sadaipalli	At 10:52 hrs 220 kV Katapalli Sadaipalli S/C tripped. While taking charging attempt of this line, 220 kV Bolangir-Sadaipalli S/C tripped resulting load loss at Sadaipalli.	121	0
6	GD-I	22-09-2018	14:38	Dikchu	400 kV Teesta III Dikchu S/C tripped at 14:38 hrs on B-N fault. Relay indication at Teesta III: B-N, F/C 9.1 KA, 15.6 km from Teesta III; at Dikchu: B-N, Z-IV, E/F, F/C 9.195 KA, -700 m from Dikchu. On Investigation it was found some of the bushes/plantation came in to contact with B phase conductor in the out yard between ICT & GIS at Dikchu. Both units at Dikchu tripped on differential protection though overvoltage and over speed protection operated correctly. O/C earth fault protection of 400/132 kv ICT picked up but did not tripped as time delay (1.2 s) was more than fault	0	96

					clearing time.		
7	GI-II	25-09-2018	14:40	Alipurduar	400 KV Alipurduar- Binaguri I and 400 KV Alipurduar- Bongaigaon II are on a multi circuit tower. R phase conductor of 400 KV Alipurduar - Binaguri I broke and fell on 400 KV Alipurduar - Bongaigaon II (between loc. 8 & 9, 3 KM from Alipurduar) resulting tripping of both the circuits at same time.	0	0
8	GD-I	27-09-2018	13:14	Tenughat	220 kV TVNL - PTPS S/C and 220 kV TVNL - Biharshariff S/C tripped on same time resulting tripping running unit (unit #1) at Tenughat end.	0	159

Meeting ended with vote of thanks to the chair.

****

Annexure - A

Participants in 150th OCC Meeting of ERPC

Venue: ERPC Conference Room, Kolkata Time: 10:30 hrs Date: 11.10.2018 (Thursday)

Sl No	Name	Designation/ Organization	Contact Number	Email	Signature
1	J. Bandyopadhyay	Member Secretary ERPC	9432326351	mserpc-power@gov.in	
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8	S.P. Rath	TEESTA-V PS NHPC Ltd	8170005662	shaktirathnhpc@gmail.com	
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11	A.K. Datta	NTPC, Farakka	9431215364	dattaak@ntpc.co.in	
12	UK Gautam	(MPL) GH-OPN.	9263639728	umesh.gautam@tatapower.com	
13	VIVEK KARTHIKEYAN	Dy Manager- STERLITE POWER	8966903034	vivek.karthikeyan@sterlite.com	
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17	Saurav K Sahay	Dy. Mgr, ERLDC	9432013172	saurav.sahay@posoco	
18	Chandan mallick	Snr. Engr (POSOCO)	9800705766	chandan.mallick@posoco.in	
19	B. B. Bhui	Mgr (POSOCO)	9432351830	bbbhui@posoco.in	
20	J.P. Mallik	Mgr (GMR)	9777456737	jitendra.malik@gmrgroup.in	

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

Participants in 150th OCC Meeting of ERPC

Venue: ERPC Conference Room, Kolkata Time: 10:30 hrs Date: 11.10.2018 (Thursday)

Sl No	Name	Designation/ Organization	Contact Number	Email	Signature
21	Dorji Wangchuk	SO/THP	17510805 02	d.wangchuk1044 @drukgreen.bt	
22	Nidup Dendup	EE/CHP/DGPC	17616305	n-dendup805 @drukgreen.bt	
23	Jangchub Dorji	Sr. SO (CHP)	17453607	j.dorji1789@drukgreen.bt	
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25	S.K. SAHU	Chief manager/ DGCIL, Odisha	9078883643	SKSahu@powergridindia.com	
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29	Santosh Pande	SLDC, DVC	9438692827	santosh.pande@dvc.gov.in	
30	P. GHOSH	ER-II	9434748...		
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38	P. P. Jena	AEE, ERPC	9776198991	ppjena-erpc@gov.in	
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40	D. K. Bauri	EE, ERPC	9883617236	eeop.erpc@gov.in	

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Participants in 150th OCC Meeting of ERPC

Venue: ERPC Conference Room, Kolkata Time: 10:30 hrs Date: 11.10.2018 (Thursday)

Sl No	Name	Designation/ Organization	Contact Number	Email	Signature
41	T. G. Rao	EE, ERPC	954789 1353	eseb-tca@yahoo.co.in	
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46	S. Konar	GM (WBSPTCL)	8336902540	skonar@wbpdcl.co.in	
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50	Yogesh Singla	DGM(CE&EMD) MTPS KANTI	9650991627	yogeshSingla@ntpc.co.in	
51	P. K. Gupta	DGM(OS) WBSPDCL	8336903960	pgupta@wbpdcl.co.in	
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56	Satish Sahare	Chief Mgr/Power	9434748244	satishkumarsahare@powergrid.com	
57					
58					
59					
60					

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Power System Operation Corporation Ltd.

150th OCC Meeting


At ERPC, Kolkata

11th October, 2018

ER Grid Performances

ERLDC POSOCO

Highlights for the month of Sep-18

Frequency Profile

Average Freq:- 49.97 Hz

Avg FVI: - 0.050

Lowest FVI:- 0.018

Max- 50.20Hz on 22nd Sep' 18

Min- 49.57 Hz on 24th Sep' 18

80.23% of the time freq was with in IEGC Band

Peak Demand

ER: 22190 MW on 28th Sep 2018 at 21:49 hrs

% Growth in Average Demand Met w.r.t. last year: 9.56%

BSPHCL : 5000 MW ; ON 28/09/18
JUVNL: 1133 MW; ON 30/09/18
DVC: 2941 MW; ON 09/09/18
GRIDCO: 5209 MW; ON 25/09/18
WB: 8722 MW; ON 28/09/18
SIKKIM: 98.6 MW; ON 20/09/18

Energy met

Max. 479 MU on 29th Sep 2018

%Growth w.r.t. last year on Max energy 3.79%

Avg. 441 MU in Sep 2018

%Growth w.r.t. last year on Avg. energy : 1.4%

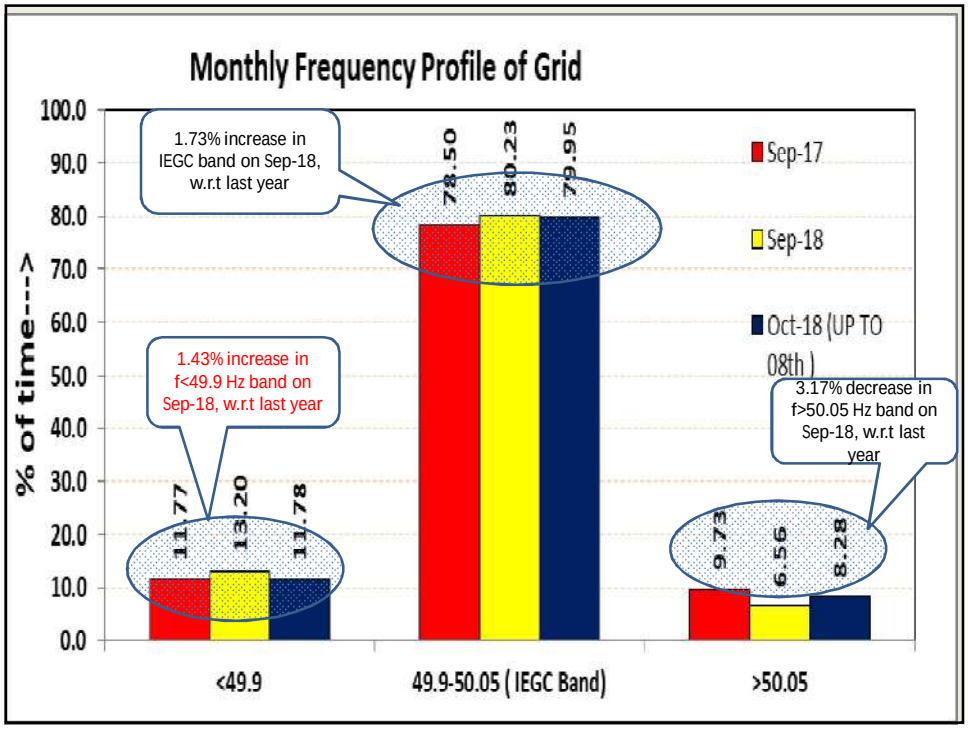
New Element

Generating Units-NIL

Open Access

STOA transactions approved -230 nos.

Energy Approved- 1161.49 MUs



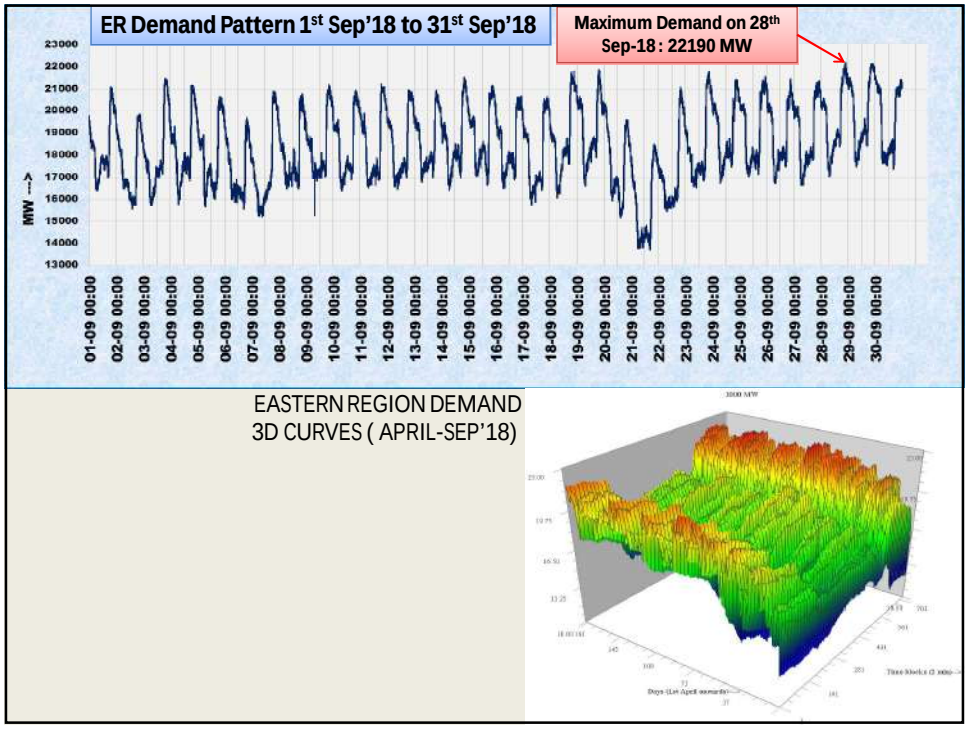
Monthly commissioning List of Transmission element and generators: September 2018

SL NO	Element Name	Owner	Charging Date	Charging Time	Remarks
1	400kV Farakka-Baharampur-I	Powergrid	01-09-2018	18:28	
2	400kV Farakka-Baharampur-II	Powergrid	01-09-2018	18:34	
3	125MVAR Bus Reator II at Banka	Powergrid	27-09-2018	11:32	
4	50MVAR Line reactor of 400kV Sasaram-Daltonganj-I at Daltonganj	Powergrid	27-09-2018	17:09	Non switchable
5	125MVAR Bus Reator II at Bolangir	Powergrid	28-09-2018	23:29	

So Far Highest Demand					
Constitute	Demand (in MW)	Date	Time	Dmd met (MW) on 28th Sep'18 (Max dmd met day)	
				MW	Time
Bihar	5011	12-July-18	0:05	4932	19:23
DVC	3536	12-July-18	8:55	2825	21:49
Jharkhand	1319	19-May-18	21:02	1086	22:22
Odisha	5558	23-Aug-18	20:21	4553	20:01
W. Bengal	8896	18-June-18	19:51	8722	18:52
Sikkim	117	28-Oct-16	19:22	88	18:19
ER	23030	03-Oct-18	20:43	22201	21:48

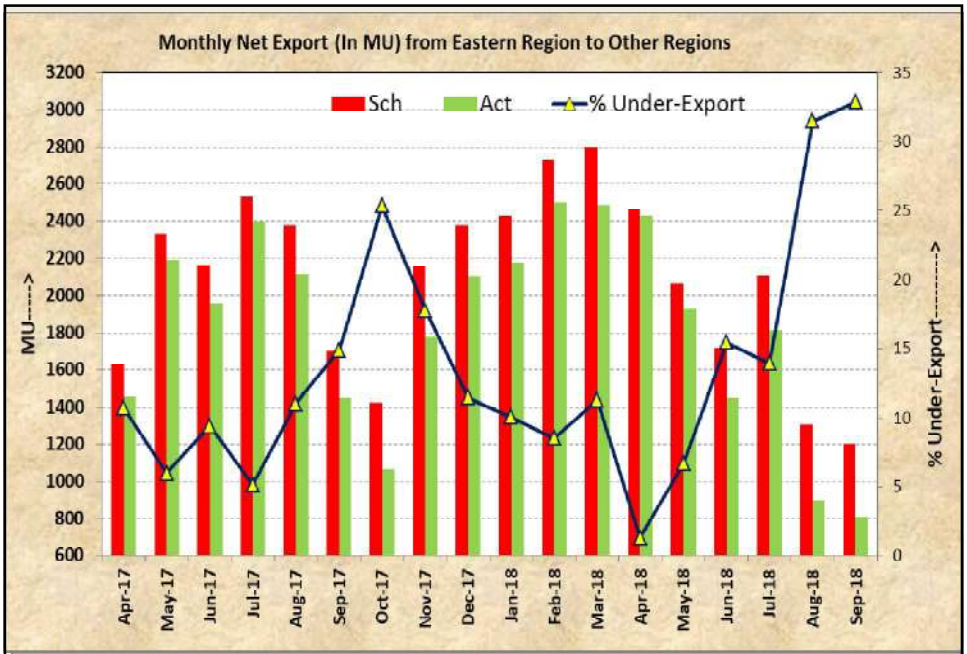
So Far Highest Energy Consumption			
Constitute	Energy consumption (in MUs)	Date	Energy met on 28th Sep'18 (max dmd met day)
Bihar	101.7	20-July-18	100.8
DVC	75.8	12-July-18	60.7
Jharkhand	27.8	19-May-18	22.9
Odisha	115.9	02-Oct-18	95.2
West Bengal	188.5	19-Jun-18	177.7
Sikkim	2.1	07-Dec-17	1.4
ER	499.8	18-Aug-18	469

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



Over Drawl / Under Injection by ER Entities

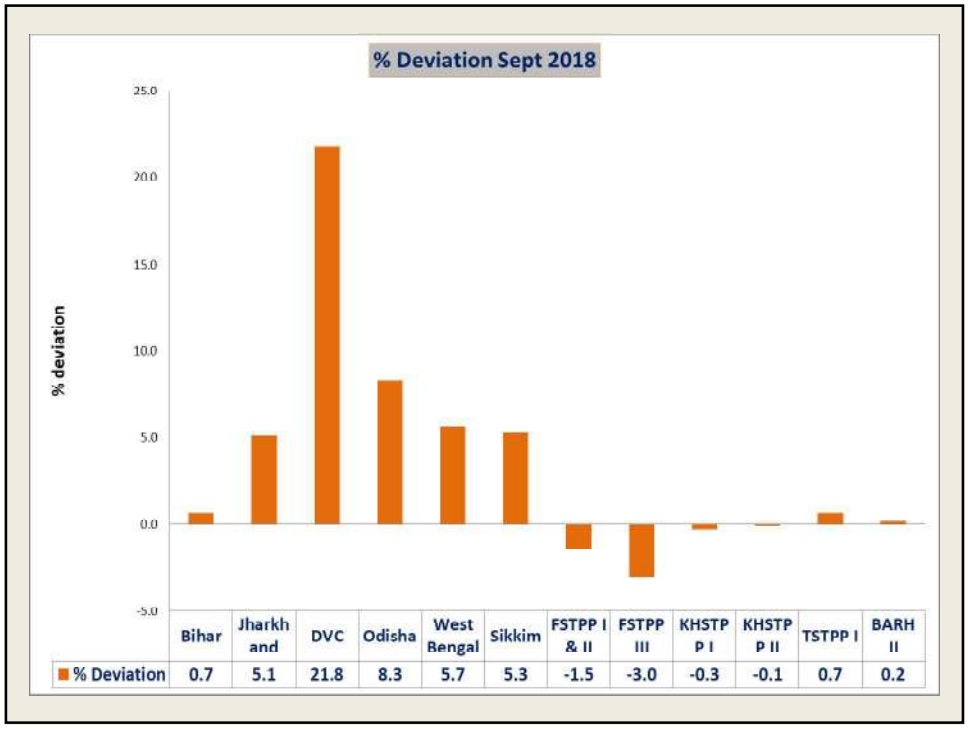
Non-compliance of direction issued by SLDC

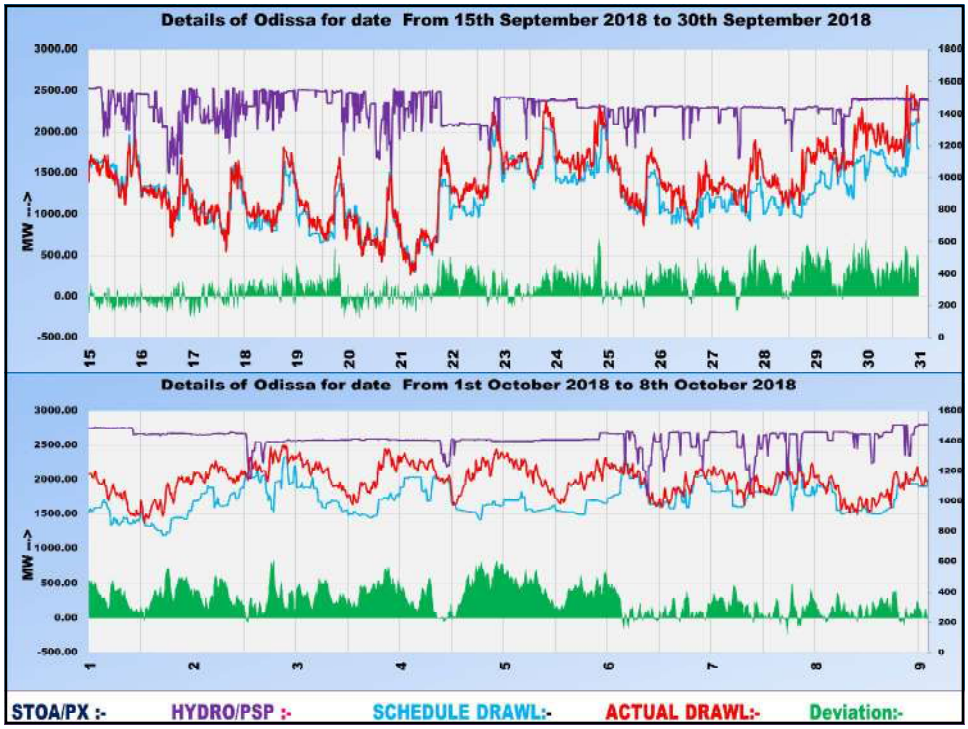


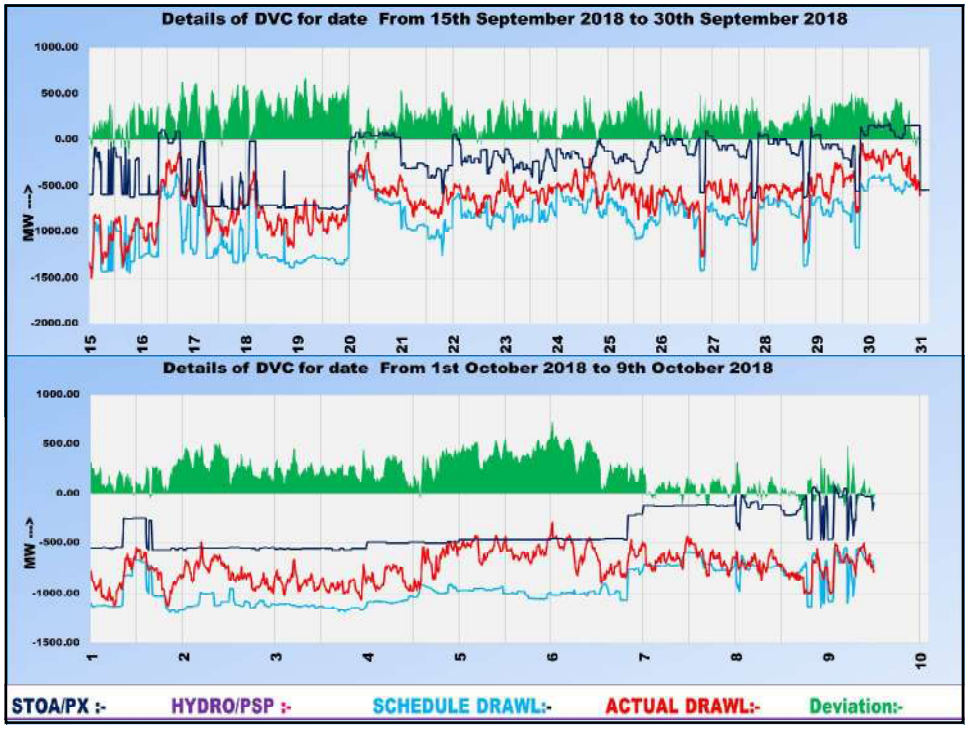
Actual Export schedule for Sep-18 was 1205 Mu, whereas actual export was 809 Mu
Total Under export was 396 **Mu** for the month

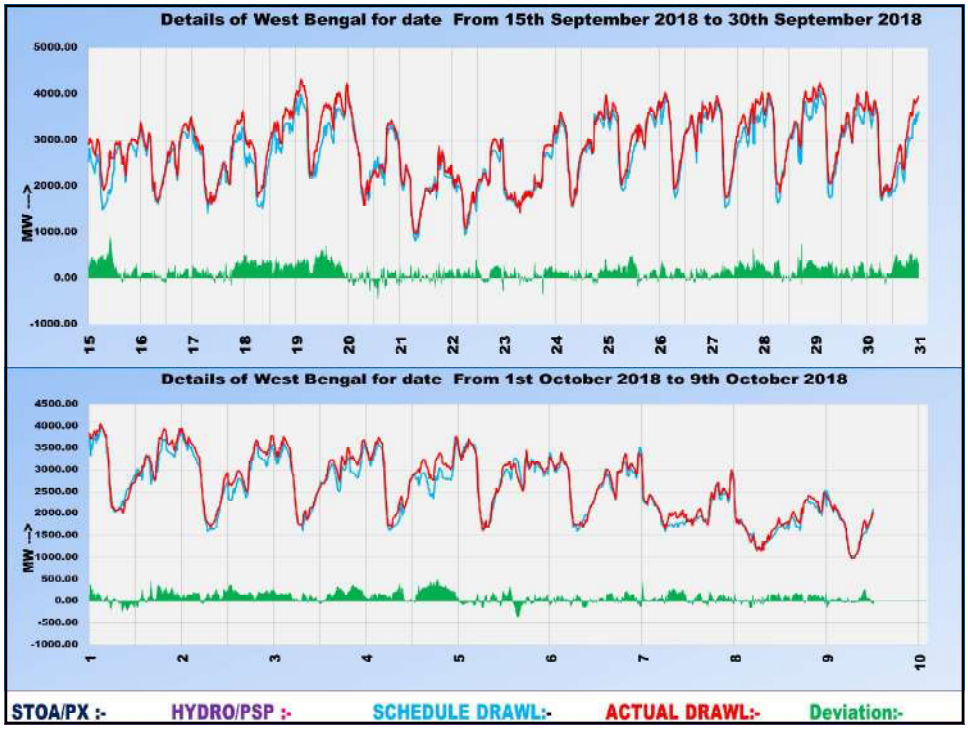
September - 2018 Schedule Vs Actual Drawl

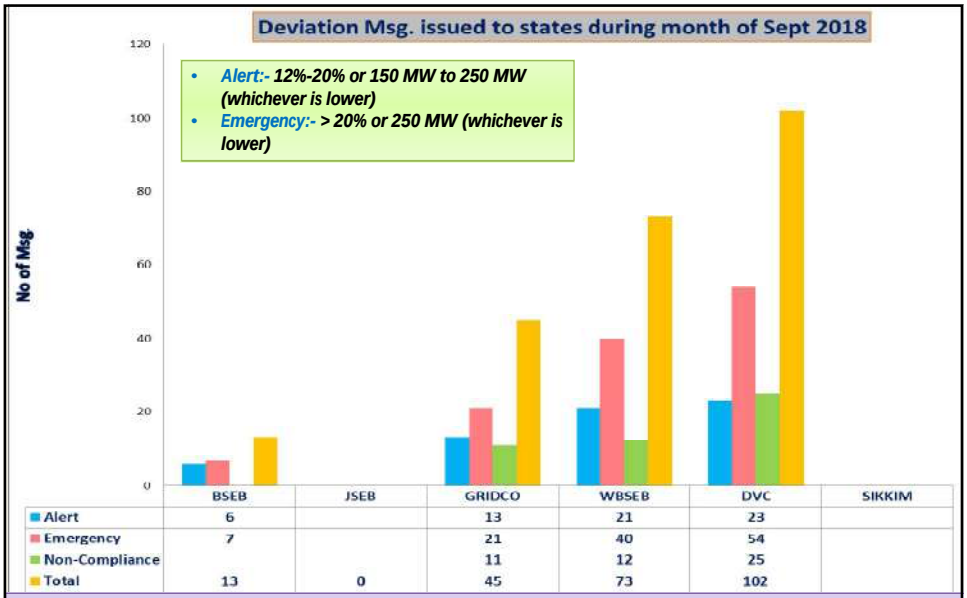
	Schedule (Mu)	Actual (Mu)	Deviation (Mu)	Daily Avg. Dev. (Mu)	% Daily Avg. Deviation
Bihar	2749	2768	19	0.6	0.7
Jharkhand	511	537	26	0.8	5.1
DVC	**-717**	**-561**	**157**	**5.0**	**21.8**
Odisha	**928**	**1005**	**77**	**2.5**	**8.3**
West Bengal	**1897**	**2004**	**107**	**3.5**	**5.7**
Sikkim	34	36	2	0.1	5.3
FSTPP I & II	971	957	-14	-0.5	-1.5
FSTPP III	**294**	**285**	**-9**	**-0.3**	**-3.0**
KHSTPP I	467	466	-1	0.0	-0.3
KHSTPP II	701	700	-1	0.0	-0.1
TSTPP I	549	553	4	0.1	0.7
BARH II	677	678	1	0.0	0.2


% Deviation Sept 2018
% deviation
25.0
20.0
15.0
10.0
5.0
0.0
-5.0
Bihar
Jharkhand
DVC
Odisha
West Bengal
Sikkim
FSTPP I & II
FSTPP III
KHSTPP I
KHSTPP II
TSTPP I
BARH II
% Deviation
0.7
5.1
21.8
8.3
5.7
5.3
-1.5
-3.0
-0.3
-0.1
0.7
0.2


Details of Odissa for date From 15th September 2018 to 30th September 2018
MW
Details of Odissa for date From 1st October 2018 to 8th October 2018
MW
STOA/PX :-
HYDRO/PSP :-
SCHEDULE DRAWL:-
ACTUAL DRAWL:-
Deviation:-

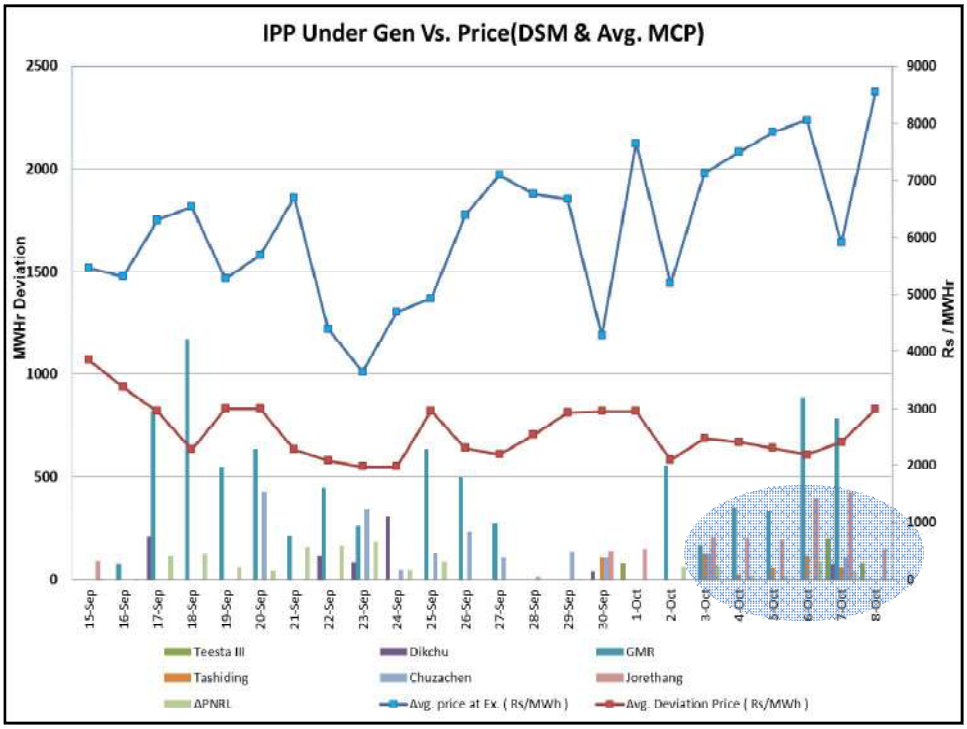

Details of DVC for date From 15th September 2018 to 30th September 2018
MW --->
Details of DVC for date From 1st October 2018 to 9th October 2018
MW --->
STOA/PX :-
HYDRO/PSP :-
SCHEDULE DRAWL:-
ACTUAL DRAWL:-
Deviation:-

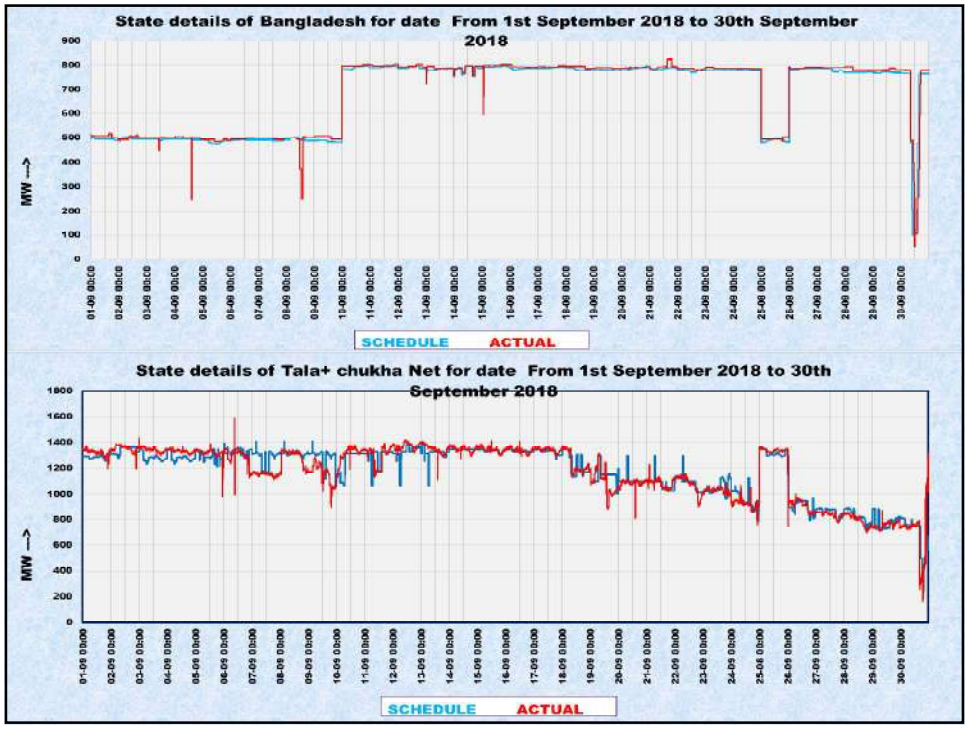

Details of West Bengal for date From 15th September 2018 to 30th September 2018
MW --->
Details of West Bengal for date From 1st October 2018 to 9th October 2018
MW --->
STOA/PX :-
HYDRO/PSP :-
SCHEDULE DRAWL:-
ACTUAL DRAWL:-
Deviation:-

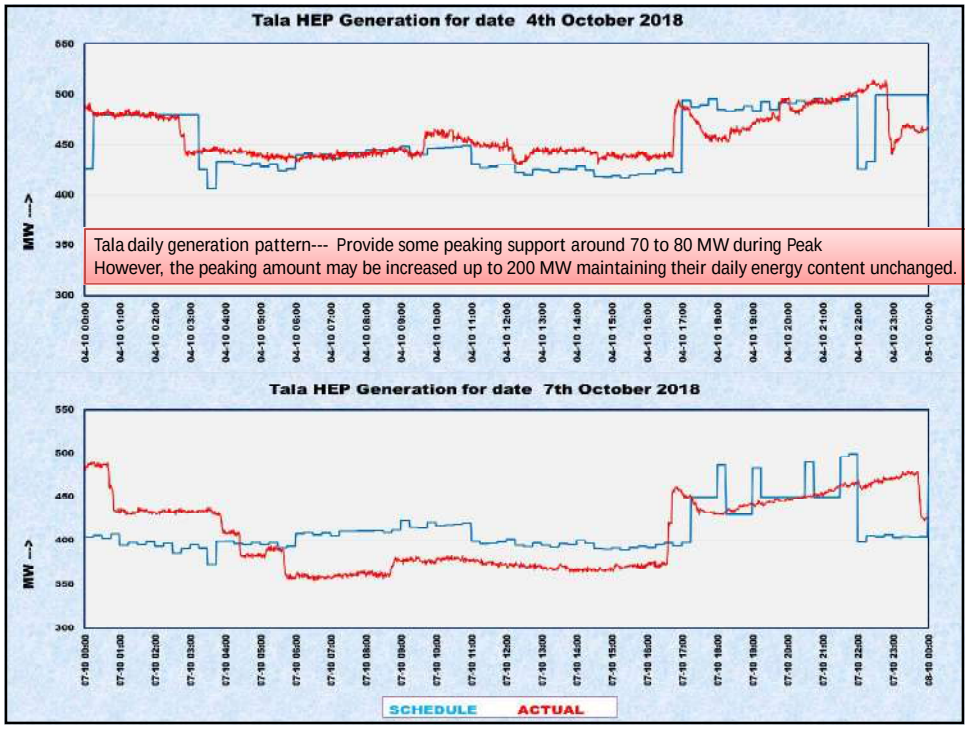


	BSEB	JSEB	GRIDCO	WBSEB	DVC	SIKKIM
Alert	6		13	21	23	
Emergency	7		21	40	54	
Non-Compliance			11	12	25	
Total	13	0	45	73	102	

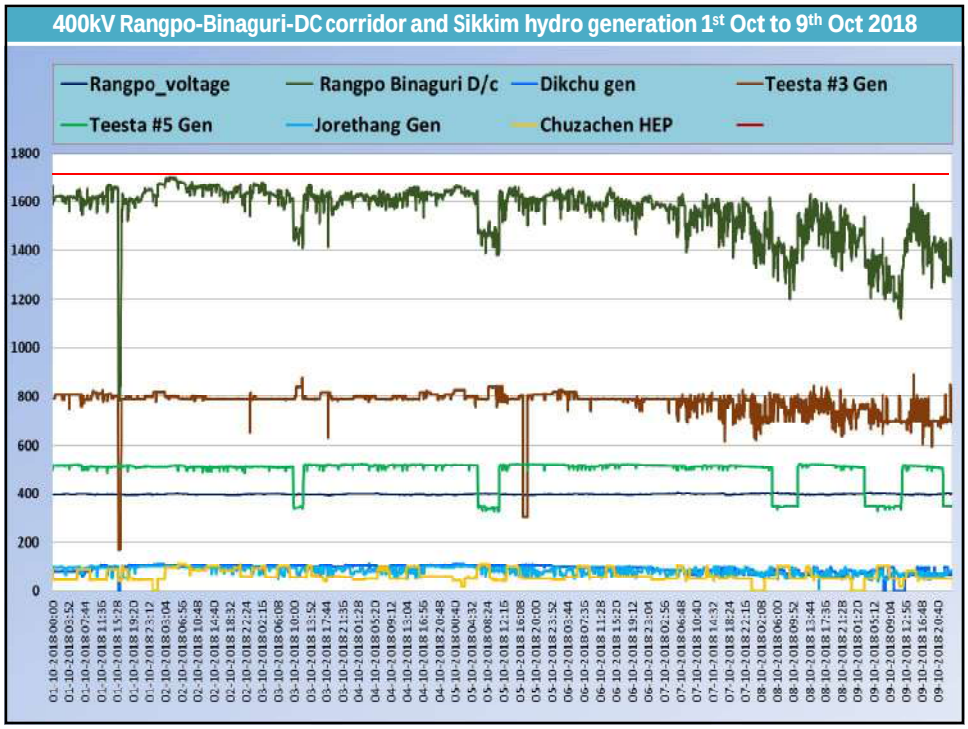
- **Total Number of Deviation violation and zero crossing violation messages issued during sEP-2018 :- 312**
- **Deviation Violation Messages :- 238 & Zero Crossing Violation :- 74**



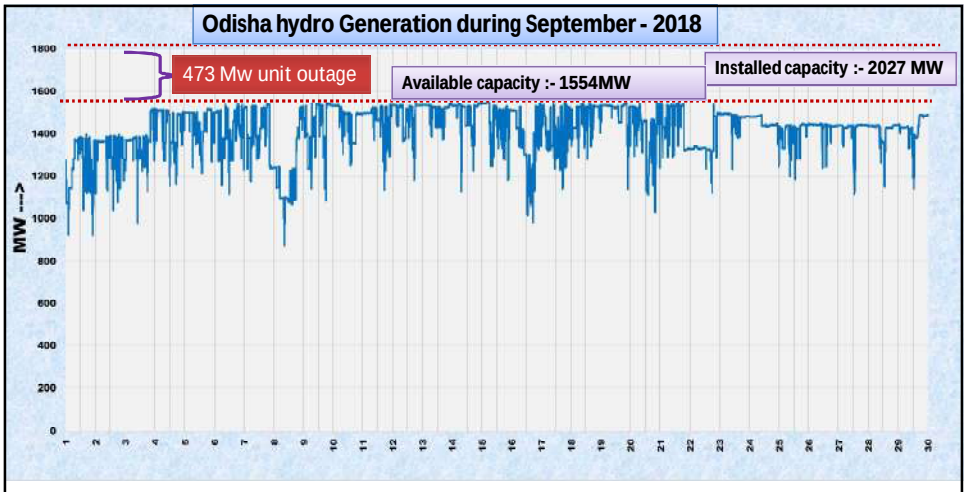

State details of Bangladesh for date From 1st September 2018 to 30th September 2018
MW
SCHEDULE
ACTUAL
State details of Tala+ chukha Net for date From 1st September 2018 to 30th September 2018
MW
SCHEDULE
ACTUAL


Tala HEP Generation for date 4th October 2018
MW
Tala daily generation pattern--- Provide some peaking support around 70 to 80 MW during Peak
However, the peaking amount may be increased up to 200 MW maintaining their daily energy content unchanged.
Tala HEP Generation for date 7th October 2018
MW
SCHEDULE
ACTUAL

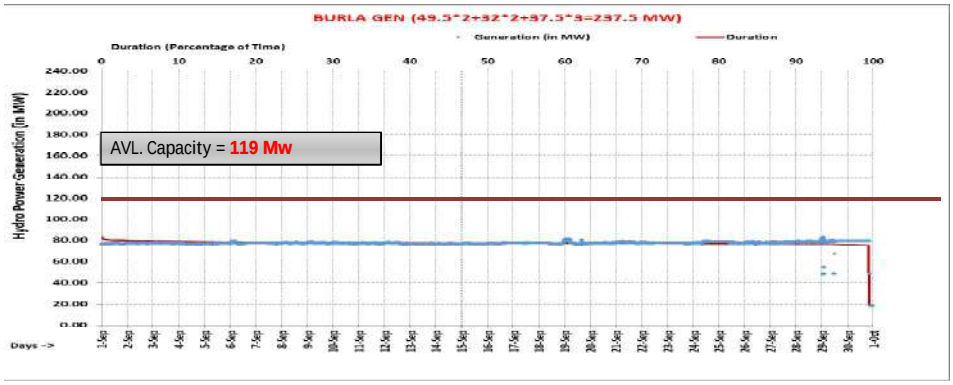
Teesta – III & Teesta – V Dispatch Pattern during lean hydro inflow

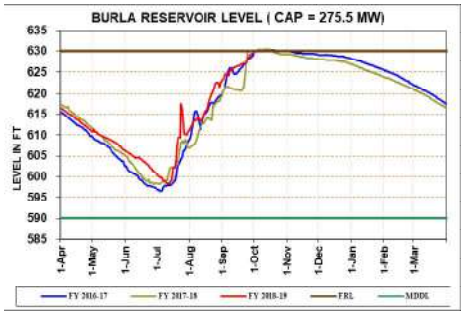


State Hydro Generators Performance

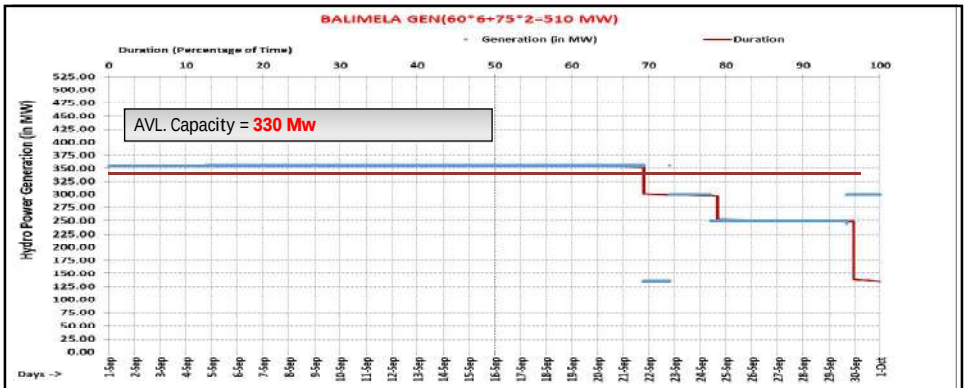


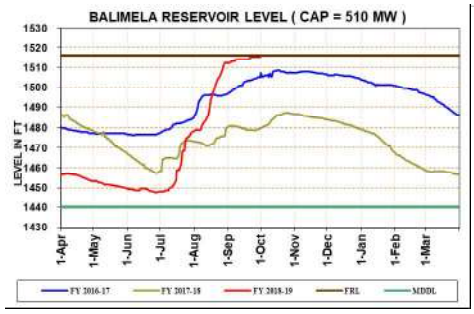
	Long Outage	Forced Outage
Burla	75 : U-5(37.5 mw), U-6(37.5 mw)	90: U-1(49.5 mw), U-2(49.5 mw)
Chipilima	48 :U-1,3 (24Mw)	
Balimela	120 : U-1(60 mw) U-2(60Mw)	60 : U-5(60 mw)
Up Kolab	80 : U-2(80 Mw)	
	323	150



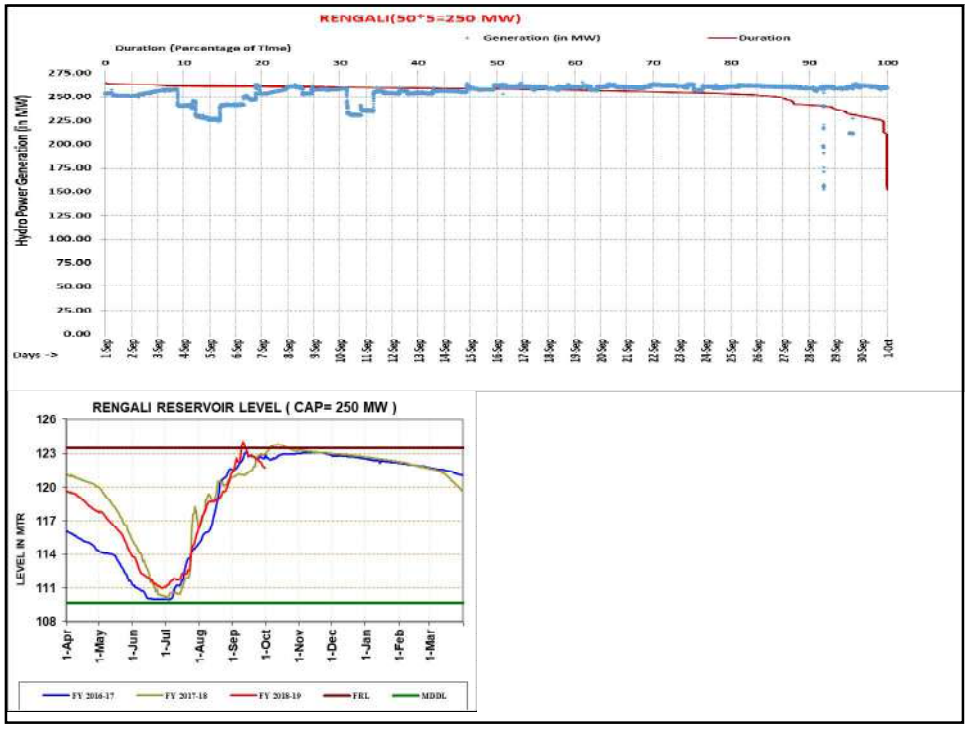


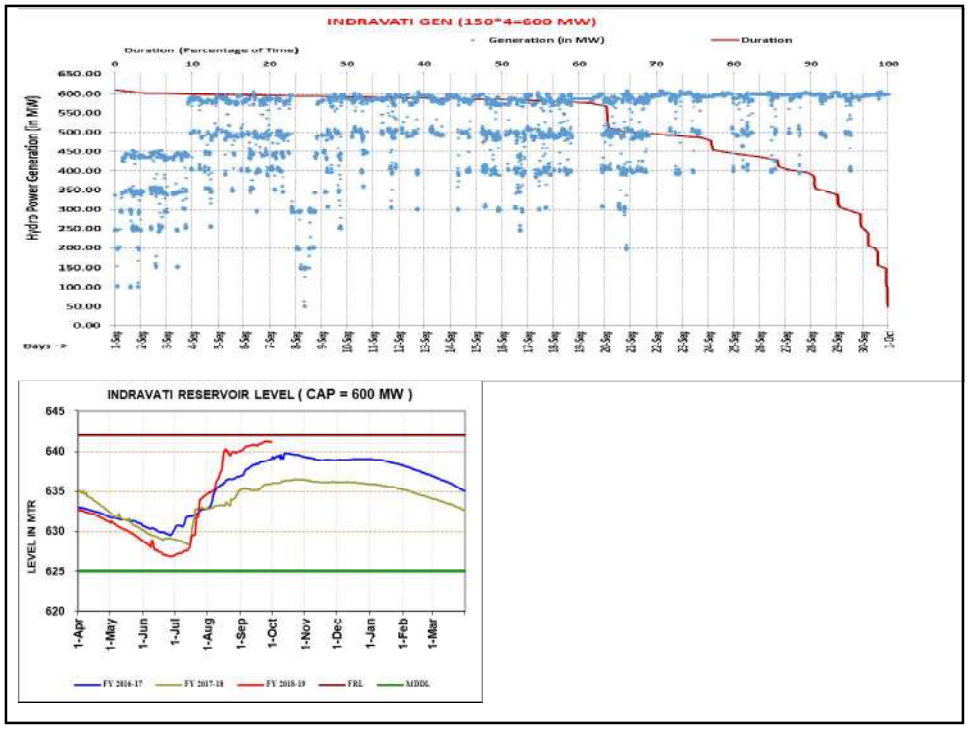
Unit No	Date of Outage	Reason
U - 1	19.11.17(19:00)	Gen. UGB oil temp high
U - 2	01.12.17(08:30)	Annual Maint.
U - 5	25.10.2016	R & M Work
U - 6	16.10.2015	R & M Work

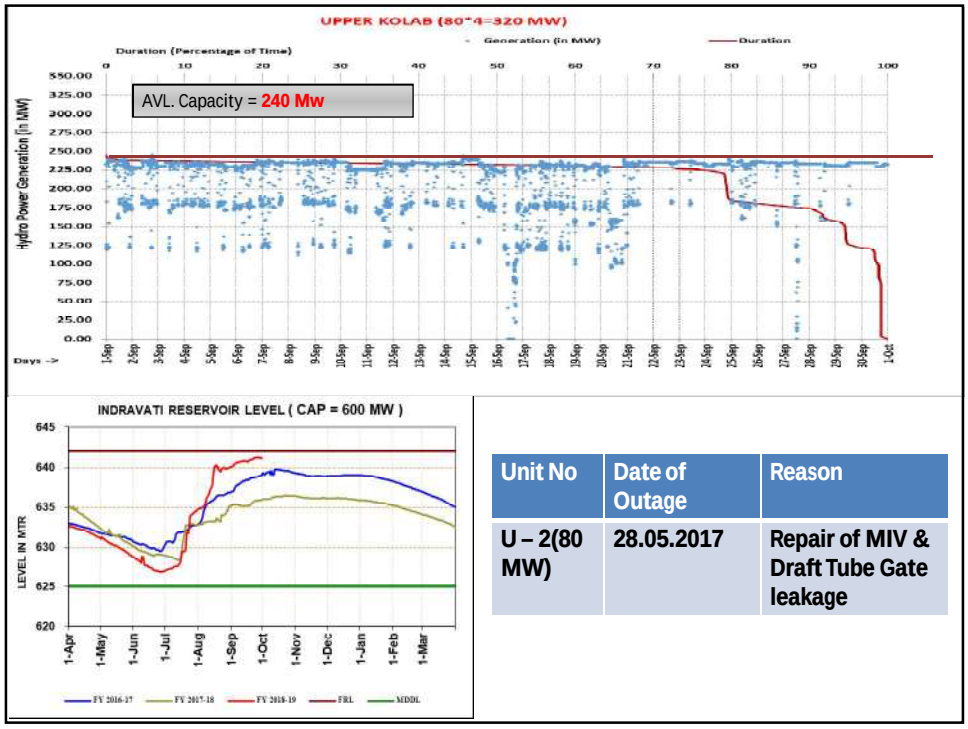




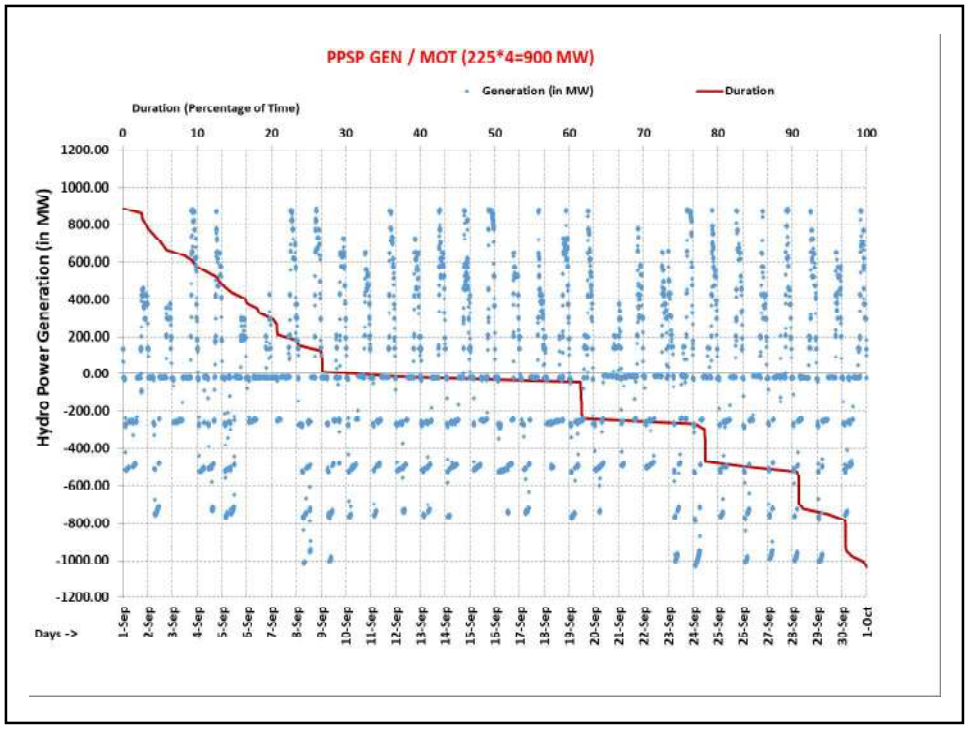
Unit No	Date of Outage	Reason
U – 1(60 MW)	05.08.16	R & M Work
U – 5 (60 MW)	12.10.17(17:30)	Vibration problem
U – 2(60 MW)	20.11.17	R & M Work


RENGALI(50*5=250 MW)
Generation (in MW)
Duration
Duration (Percentage of Time)
Hydro Power Generation (in MW)
Days ->
RENGALI RESERVOIR LEVEL (CAP= 250 MW)
LEVEL IN MTR
FY 2016-17
FY 2017-18
FY 2018-19
FRL
MDDL


INDRAVATI GEN (150*4=600 MW)
Generation (in MW)
Duration
Duration (Percentage of Time)
Hydro Power Generation (in MW)
Days ->
INDRAVATI RESERVOIR LEVEL (CAP = 600 MW)
LEVEL IN MTR
FY 2016-17
FY 2017-18
FY 2018-19
FRL
MDDL



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



Eastern Regional Power Committee, Kolkata

Minutes of Special Meeting to discuss consistent over drawl by Indian Railways in DVC Control Area under open access transaction held on 24.09.2018 at ERPC Kolkata.

List of participants is given in **Annexure-I**.

Member Secretary, ERPC welcomed all the participants in the meeting. He informed that the special meeting has been convened to discuss consistent over drawl by Indian Railways in DVC Control Area under open access transaction. He also briefly highlighted the implications of consistent over drawl by Indian Railways in DVC Control Area.

DVC gave a detailed presentation on the pattern of over drawl by Indian Railways in DVC Control Area under open access transaction. The presentation captured the whole over drawl scenario of Indian Railways starting from August-2017.

Executive Director, ERLDC stressed the need to adhere to the schedule in the interest of smooth operation of the grid. He noted that consistent overdrawal, besides creating security and stability issues in the grid, is a violation of CERC regulation. Therefore he advised Railways to take immediate action for curtailing the over drawal.

Railways admitted that there had been over drawal by Railways from the grid. Railways attributed a number of reasons like low DC of BRBCL etc. to the over drawal from the grid. They are also equally concerned about this and would like to take corrective action in this regard. Railways informed that they have a standby agreement with DVC for supply to Railways. Railways proposed to hold a bilateral meeting with DVC to revisit the existing agreement to have a standby arrangement wherein any power required by Railways in DVC command area in excess of the entitled quantum from BRBCL would be treated as DVC supply to Railways and would be accordingly scheduled and settled.

Participants present in the meeting welcomed the suggestions made by Railways and hoped that the proposed meeting with DVC would be able to address the over drawal issue successfully, keeping into consideration stability and security of the grid.

DVC and Railways both agreed to meet on 27.09.2018 at Rail Bhawan, Delhi to settle the issue.

MS, ERPC finally thanked the participants in the meeting and appreciated the approach taken by Railways in this matter and hoped that the matter would be resolved as early as possible.

Jayadeva Bandyopadhyay 24/9/18

(J. Bandyopadhyay)
Member Secretary

Annexure-B2

COAL INDIA LIMITED
MARKETING & SALES
Coal Bhawan, Premises No. 4 MAR, Plot no. AF-III,
Action Area 1A, New Town, Rajarhat, Kolkata - 700 156
E-mail: gmsnm.cil@coalindia.in
Phone: 033 - 2324 6617 | Fax: 033 - 2324 4229

October 05, 2018

Ref.: CIL/M&S/ Power/301

The General Manager/HOD (M&S)
ECL, BCCL, CCL, MCL.

Dear Sir,

A meeting was conveyed by Eastern Regional Power Committee (ERPC) with different stake holders consisting of representatives of different power plants of NTPC, DVC, IPPs, Railways, CIL and its subsidiary companies etc. on 04.10.2018 for enhancement of supply of coal to power plants during the festival season of October 2018. It was observed that number of power plants are having the stock of less than 3 three days and require a special contingent plan for the dispatch of coal to them to sustain the enhanced requirement during the festive month.

The requirement of the plants was discussed in details and in light of the previous meeting taken by Govt. of West Bengal during last fortnight, the following plan of rake dispatch of coal from different subsidiaries were formulated which is to be adhere during the month:

Power House	MGR/Road (In Tonne)	ECL	BCCL	CCL	MCL	Total	Remarks
		No of Rakes					
Farakka	ECL:16000	4.5	0.5			5	
Kahalgaon	ECL:22000	4				4	
KANTI Muzfr		0.5		2		2.5	
Talcher Kaniha	MCL:12000				10	10	
WBPDCL		7	4	1	4	16	8 rakes from ECL btw 10th to 18th Oct. (including supply under Auction)
DPL		0.5	0.75		0.5	1.75	
CESC		1	0.25			1.25	
HALDIA					2	2	Requested for resumption of supply from Sardega siding
TVNL	CCL:3000			1		1	
MPL	CCL:3000 BCCL:4500			0.75		0.75	
CTPS	CCL:6000		0.25			0.25	
BTPS	CCL:5000			1		1	
Koderma				2		2	
DSTPS		1	1.5		1	3.5	To divert the coal Of Koderma to DSTPS from BCCL
Mejia		1	5		1	7	To supply under B/L on best effort basis
Raghunathpur	Through Road from BCCL & CCL		0.5			0.5	

It is requested that coal supply may be done accordingly so that no power plant come under stress during festive period.

Yours faithfully,

General Manager(M&S) 5/10/18.

CC : Director(Marketing),CIL
GM(Operations/M&S), CIL
HoD(M&S), New Delhi

BIHAR STATE POWER TRANSMISSION COMPANY LTD., PATNA
A subsidiary company of Bihar State Power (Holding) Company Ltd., Patna
CIN – U40102BR2012SGC018889
[SAVE ENERGY FOR BENEFIT OF SELF AND NATION]
Head Office, Vidyut Bhawan, Bailey Road, Patna – 800021

Letter No .....171...../ Dated 10/09/2018

From

G. K. Choubey;
Chief Engineer (System Operation)
BSPTCL, Patna

To

Sri Surojit Banerjee;
DGM (Operation);
ERLDC

Subject:- Synchronisation of 132 kV Purnea (PG) - Kishanganj (old) – Baisi – Dalkola (WB) transmission line.

Sir,

Presently BSPTCL GSS Baisi (2X20) MVA is drawing 4 MW radial power from 220/132/33 kV Dalkola station of West Bengal.

(2X160+2X50) MVA, 220/132/33 kV Kishanganj (new) is the source of power for BSPTCL & have four 132 kV circuits feed power to 132/33 kV Forbesganj GSS – two directly & two via 132/33 kV Kishanganj (old). Finally from 132/33 kV Forbesganj GSS power supply to 132/33 kV Kataiya GSS by three 132 KV circuits (SLD of this area enclosed).

Besides other loads, GSS Kataiya also feed power (max up to 132 MW) to Duhabi by 132 kV Kataiya - Duhabi (S/C) (ACCR conductor). Nepal also get power from GSS Kataya by 132 kV Kataya – Kusaha (S/C) (ACSR Panther conductor) – loading max. upto 80 MW. This power is drawn from GSS Supoul through 132 kV TB of Kataya GSS.

Presently out of the two circuits of 132 KV Kishanganj (new) - Kishanganj (old), one circuit feed power only to Kishanganj (old) & other circuit goes bypassing GSS kishanganj by ERS arrangement. Installed near Kishanganj (old) GSS. Due to this only three 132 kV circuit is left for Forbesganj. This reduces availability of power for Nepal. Power flow scenario from Kishanganj (new) is listed below:-

Sl No	Name of GSS	Peak Load (in MW)	Remarks
1	Kishanganj (old)	46	*
2	Forbisganj	55	
3	Baisi	4	*
4	Kataiya	27	
5	Kishnaganj (New)	11	33 kV load.

6	Nepal (Duhabi +Rajbiraj)	(120+12)=132	**Duhabi on 132 kV & Rajbiraj on 33 kV.**
7	Araria	11	
8	Barsoi	28	*
	Total	**314**	**Out of the 314 MW, except *89 MW power rest goes to Farbisganj.**

So (314-89*) i.e. 225 MW power flow through three 132 kV circuits – more than its capacity. It leads to load shedding in BSPTCL GSS for allowing full load to Nepal. Support from 132 kV Purnea – Triveniganj – Farbisganj at GSS Farbisganj remain very less (10/15 MW).

132 kV Purnea (PG) – Kishanganj (old) line is kept open as power received on very low voltage & on synchornising with Kishanganj (new) power flows towards Purnea (PG) side leading to reducing power availability at Kishanganj (old).

If power is drawn at Kishanganj (old) from 132 kV Purnea (PG) - Kishanganj (old) (S/C) line & this line is synchronised with 132 KV Dalkola (WB) – Baisi - Kishanganj (old) line then, one circuit of 132 kV Kishanganj (new) - Kishanganj (old) will be free, resulting optimum power supply to Nepal as well as BSPTCL GSS (Forbesganj, Kataiya).

Load flow study result in PSS@E on synchronising 132 kV Dalkola – Baisi – Kishanganj (old) with Purnea (PG) is detailed below (study result enclosed):-

Sl No	Line	Power flow (in MW)
1	132 kV Dalkola-Kishanganj transmission line	16
2	132 kV Purnea (PG)-Kishanganj transmission line	35

The study reveals that on synchronising 132 kV Purnea (PG) – Kishanganj (old) – Baisi - Dalkola transmission line, 15-16 MW power will be fed to BSPTCL system from Baisi through 132 kV Dalkola (WB) - Baisi transmission line & 35 MW power will be fed to Kishanganj (old) through 132 kV Purnea (PG) - Kishanganj transmission line. This power is less than the power (25-30 MW) agreed by WBSPTCL in last meeting. By this arrangement voltage at Kishanganj remains 129 kV & besides 132 kV Purnea (PG) – Kishanganj (old) also utilised.

WBSPTCL is requested to allow the above synchronisation.

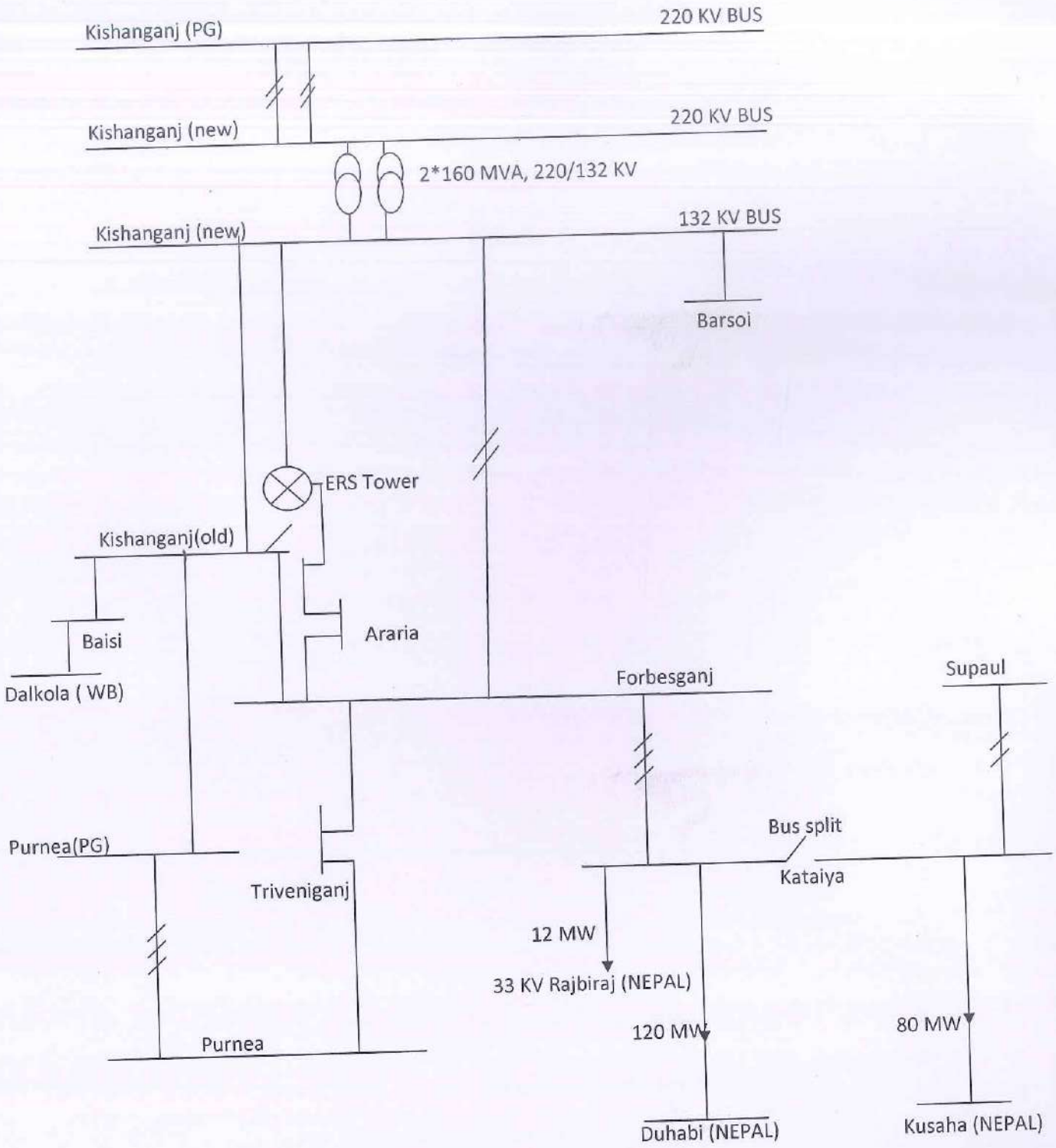
Encl:- As mentioned above.

G K Choubey
10.9.2018

(G. K. Choubey)
Chief Engineer
(System Operation)

CC:- Member Secretary, ERPC
For inclusion in 149th OCC meeting as an agenda item.

SYNCHRONISATION OF 132 KV PURNEA(PG) - KISHANGANJ (OLD) - BAISI - DALKOLA(WB) TRANSMISSION LINE

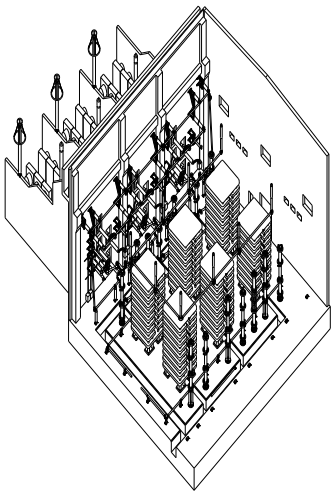


Complete overhauling of 06 nos. 234 MVAR Converter Transformer from 20th March-18 to 26th April-18

At ± 500 MW HVDC Back to Back Pusauli S/S

Brief Description: Pusauli Converter transformer

- Six nos. convertor transformers for the Sasaram Back-to-Back HVDC scheme.
- Comprise two sets of three identical, single phase units.
- Rating is **234 MVA 400/93/93 kV single phase 50 Hz OFAF** cooled.
- With on-load tap-changer and associated control gear.
- Manufactured by ALSTOM T&D Ltd.
- Commissioned on 01.12.2002



Brief Description contd...

- Converter Transformer is one of the most important and costliest equipment for the HVDC system.
- After almost 15 years of continuous service, the condition of Converter Transformer was degrading and its overhauling was necessary for its healthiness.

Condition of Converter Transformer

OLTC Top View

Neutral Bushing

Secondary Turret

OLTC Chamber

BOTTOM COOLER PIPE LINE LEAKAGE

Leakages from different flanges

HV BUSHING FLANGE LEAKAGE

COOLER PIPELINE AND PUMP LEAKAGE

Reason of Converter Transformer degraded condition:

- Frequent faults taking place in 220kV state owned down stream system.
- Frequent faults and Interruptions / Voltage dip in auxiliary power availed through 132kV feeder for HVDC.
- Frequent operations of On Load Tap Changer of Converter Transformer due to grid condition.

Summary of Downstream faults of last 3 years

YEAR	No. of down stream faults in which tripping occurred
2015-16	19
2016-17	30
2017-18	14

- These fault caused transient disturbance in HVDC Back to Back system / Converter Transformer and adversely affected its performance causing aging effect. This also affects the insulation parameter of oil in the Converter Transformer.
- Such no. of disturbances in downstream Lines also changes the grid parameters and thus have increased no. of OLTC operations of Converter Transformer occurred as per system requirement.

CONVERTER TRANSFORMER- NOS. OF OLTC OPERATION

SIDE	R-PH	Y-PH	B-PH
NORTH SIDE	1,29,213	1,29,070	1,29,131
EAST SIDE	2,55,034	2,54,745	2,54,715

Note: 220 KV is connected with Eastern Side.

OLTC gasket replacement and cleaning

Before

After

Auxiliary Power supply

- One of the Station auxiliary power supply is from SEB sub station, in which frequent fault and tripping occurred in previous years.
- Caused frequent disturbances in ACDB and power supply of HVDC main integral parts like Converter Control and Protection (CCP), Valve Cooling, Cooling Compressors and motors/pumps/ fans of Converter Transformer etc.
- Many times above disturbances lead to tripping of HVDC system, resulting frequent switching in and switching out of Converter Transformers lead to leakages from various places and excessive operation/stress on OLTCs.

Summary of trippings of HVDC due to Auxiliary Supply

YEAR	No. of HVDC trippings
2003	9
2004	8
2005	10
2006	4
2007	7
2008	4

Consequences of not attending problems of over stressed Converter Transformer:

- Failure of OLTC,
- Oil loss,
- Oil degraded parameters
- may cause outage of converter transformer for long time.
- may cause fire hazards,
- lead to more leakages in future.

Overhauling was necessary for the healthiness of transformers and hence complete HVDC Station.

All 06 nos. converter transformer (North & East bank) successfully energized on 27.04.2018, 14:31 Hrs & loaded on 28.04.2018, 12:09 Hrs.

EAST SIDE CONVERTER

NORTH SIDE CONVERTER

Pictures after successful overhauling

- Outage of HVDC due to Overhauling works of Converter Transformers:

20.03.2018 (11:50 hrs) to 28.04.2018 (12:09 hrs)

- During this outage period of HVDC, power flow through AC by pass was maintained and this outage has not compromised with the overall power system performance, within or across the region.

Conclusion:

- The outage/ shut down of HVDC Back to Back Link was mainly due to faults arising in connected 220 KV down stream system owned by other utilities and also due to frequent tripping / failure/ voltage fluctuations due to connected traction load in the 132 KV feeder supplying the auxiliary power.
- Excessive OLTC operation due to grid condition.

Reasons of wear and tears are beyond the POWERGRID Jurisdiction, hence may please consider as a force measure for the calculation of availability.





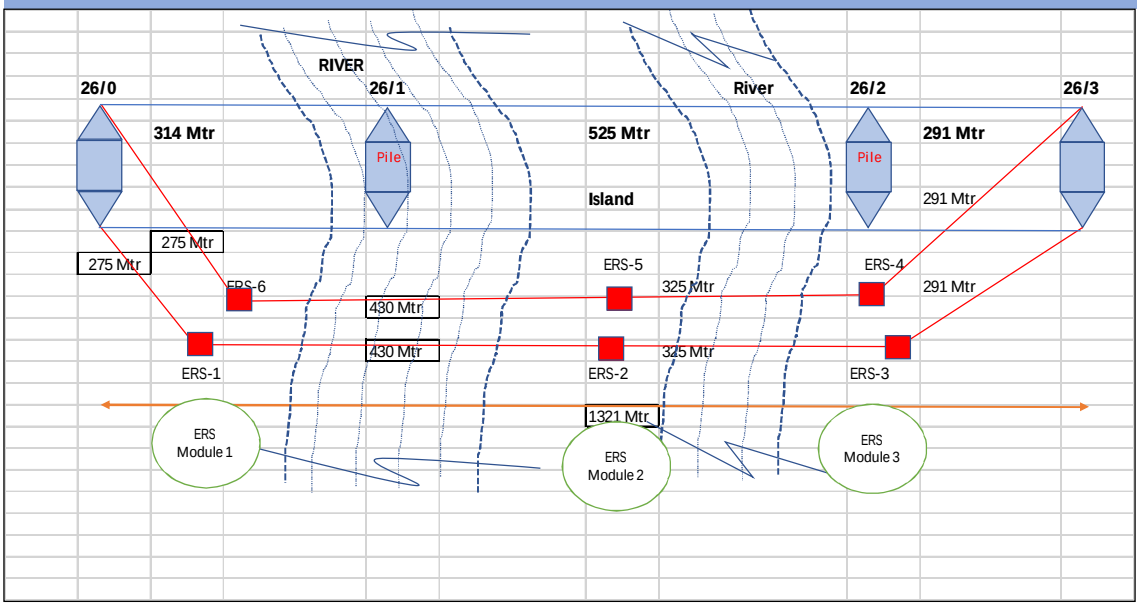
Thank you

DARBHANGA MOTIHARI TRANSMISSION COMPANY LIMITED

ERS failure and challenges faced during restoration of Barh-Motihari Lines

New & Old Pile Position:

Typical ERS arrangement considering existing situation:



ERS module erection arrangement – commissioned on 9th Jan 2018

ERS module 1 at Gopalganj end

ERS module erection arrangement

ERS module 2 between two streams with 27 MT base frame

River Bank Erosion Protection for ERS Module 2:

Video1 Video2

- Heavy water current was eroding river bank and to protect ERS Module 2 (which is most vulnerable as it is just installed between main stream and branch stream of Gandak) approx. 3.0 lacs sand bags have been used.
- Video attached describe the exact positioning of ERS 2 and it's proximity to river bank.

ERS module erection arrangement


ERS module 3 at Areraj End

Clearances from water in main stream:


- Clearances maintained between ERS modules 1 & 2 was more than 6 mtr
- Barh Ckt 1 & 2 restored through ERS on 9.01.2018

Scenario at ERS Module 2 on 15.06.2018:

- On 15.06.2018, first major discharge of water from Valmiki dam has been experience – 17500 cusec
- Water surged from main stream and reached to ERS 2 module
- Clearances between bottom conductor and water flowing has got reduced below 3 mtr
- Barh-Motihari circuit -2 at 10.57 AM and Barh-Motihari circuit -1 at 11.09 AM tripped respectively.

Cross Jumper arrangement done on 20.06.2018

- Both Barh 1 & 2 line got tripped due to clearance issue
- After review of existing scenario on locations, DMTCL proposed to have cross jumper from Barh- 1 bottom conductor to Barh-2 top conductor at 25/5 and 26/3 on 18.06.2018
- Cross Jumper arrangement got completed on 20.06.2018
- Barh Ckt – 2 got charged with cross jumper arrangement on 20.06.2018 at 12-00 hrs.

Water Discharge details June 2017 v/s 2018

Date	Discharge(in Cusec) in 2017	Discharge(in Cusec) In 2018
15-Jun		17500
16-Jun	10000	19750
17-Jun	9800	29700
18-Jun	9000	33000
19-Jun	9000	24200
20-Jun	9600	19000
21-Jun	75500	20500
22-Jun	17500	21250
23-Jun	14050	24200
24-Jun	10900	19000
25-Jun	11350	19750
26-Jun	11350	30800
27-Jun	12250	57800
28-Jun	40000	65000
29-Jun	38600	50600
30-Jun	33000	45600

It is evident that discharge from Valmiki dam is continuously increasing and situation at ERS Module 2 getting critical due to surge in water level on daily basis

ERS system facing problem due to continuous surge of water at ERS Module 2

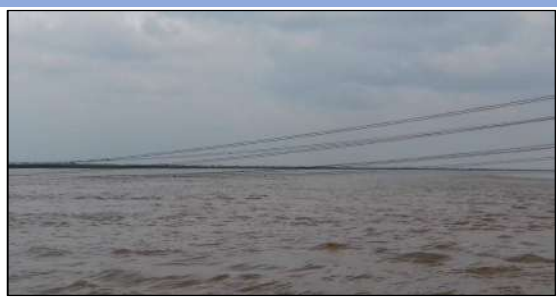
Base frame of ERS got settled due to water surge and erosion of soil below base

Sequence of Events between 27.06.2018 and 29.06.2018 morning:

- DMTCL has communicated to ERLDC vide mail dated 27.06.2018 at 6.05am for providing shutdown of Barh-Motihari circuit-2, after observing spark on conductor due to clearance issue at mid stream. Shut down of Barh-2 ckt. was applied.
- On 28.06.2017 After obtaining shut down code line was tripped from substation at 6.26 AM. It was observed that water level drastically increased and clearance between conductors reduced.
- At 1.20 PM on 28.06.2018 - line was charged after water level reduced.
- On 29.06.2018 at mid night 1.19 am, Barh-Motihari circuit -2 tripped. Unsuccessful trial taken at 1.42 AM. Later in morning hours it was found that ERS System collapsed due to high water discharge at Gandak River.
- Onward 29.06.2018 to 03.10.2018 till 03.10.2018 19.41 hrs. Both Barh-Motihari circuit-1 &2 were in shutdown**.**
- Alternative arrangement was suggested to have Barh-1 to Gorakhpur-2
- Power restored of Both Circuit at 20.00 on 3.10.2018 hrs.

Photographs explaining the situation on 28.06.2018 & 29.06.2018 are as follows

Scenario of ERS and Clearance on 28.06.2018:

ERS collapsed on 29.06.2018 morning:




Status of Pile at 26/0 as on 29th June 2018


3 Piles were casted and 4th pile in advance stage of completion

Work progress in July, Aug & Sept 2018 against challenge from nature:




Heavy current due to increase in water discharge has hampered the progress
Shifting of platform for tower erection and stay arrangement for tower erection were the key challenges faced

Water Discharge in July 2018

Date	Discharge(in Cusec) in 2017	Discharge(in Cusec) In 2018	Date	Discharge(in Cusec) in 2017	Discharge(in Cusec) In 2018
01-Jul	45600	42800	17-Jul	71300	126500
02-Jul	99800	119000	18-Jul	59600	88300
03-Jul	109000	121500	19-Jul	50600	99800
04-Jul	86000	86000	20-Jul	44200	99800
05-Jul	86000	71300	21-Jul	44200	79700
06-Jul	114000	65000	22-Jul	56000	81800
07-Jul	83900	48800	23-Jul	99800	99800
08-Jul	63200	86000	24-Jul	88300	92900
09-Jul	104400	75500	25-Jul	69200	102100
10-Jul	139400	134000	26-Jul	81800	114000
11-Jul	131500	104400	27-Jul	73400	111500
12-Jul	97500	109000	28-Jul	71300	97500
13-Jul	97500	106600	29-Jul	67100	106600
14-Jul	75000	121500	30-Jul	99800	109000
15-Jul	88300	129000	31-Jul	114000	102100
16-Jul	75500	114000			

Pontoon Shifting for Tower Erection at 26/0

It took 10 days to shift pontoon for tower erection due to huge current. Pontoon was drawn in flow, however, it got stuck with conductor which were lying in water due to ERS failure. From their it was dragged with help of Winch machine to location on 17.07.2018

Water Discharge in Aug 2018

Date	Discharge(in Cusec) in 2017	Discharge(in Cusec) In 2018	Date	Discharge(in Cusec) in 2017	Discharge(in Cusec) In 2018
01-Aug	88300	129000	17-Aug	142100	169400
02-Aug	97500	147500	18-Aug	152900	144800
03-Aug	147500	161000	19-Aug	139400	142100
04-Aug	200600	142100	20-Aug	139400	121500
05-Aug	177800	177800	21-Aug	131500	109000
06-Aug	155600	177800	22-Aug	124000	116500
07-Aug	139400	175000	23-Aug	121500	136700
08-Aug	147500	147500	24-Aug	116500	142100
09-Aug	131500	131500	25-Aug	121500	163800
10-Aug	139400	114000	26-Aug	102100	163800
11-Aug	172200	116500	27-Aug	99800	150200
12-Aug	203500	121500	28-Aug	106600	144800
13-Aug	372800	136700	29-Aug	109000	158900
14-Aug	440750	142100	30-Aug	92900	131500
15-Aug	218000	161000	31-Aug	104400	150200
16-Aug	172200	172200			

Water Discharge in Sept 2018

Date	Discharge(in Cusec) in 2017	Discharge(in Cusec) In 2018	Date	Discharge(in Cusec) in 2017	Discharge(in Cusec) In 2018
01-Sep	119000	166600	16-Sep	47000	131500
02-Sep	124000	147500	17-Sep	47000	97500
03-Sep	139400	172200	18-Sep	45600	77600
04-Sep	136700	150200	19-Sep	48800	57800
05-Sep	104400	150200	20-Sep	47000	52400
06-Sep	90600	121500	21-Sep	109000	52400
07-Sep	86000	116500	22-Sep	95200	57800
08-Sep	90600	104400	23-Sep	65000	52400
09-Sep	71300	97500	24-Sep	54200	44200
10-Sep	61400	109000	25-Sep	42800	40000
11-Sep	77600	169000	26-Sep	41400	44200
12-Sep	86000	150200	27-Sep	34400	44200
13-Sep	166600	166600	28-Sep	31900	38600
14-Sep	71300	121500	29-Sep	31900	29700
15-Sep	57800	116500	30-Sep	63200	25300

Access to location and shifting of materials becomes difficult in Aug & Sept 2019 due to continuous heavy discharge of water from Valmiki Dam

- Due to continuous increase in discharge access to location became very challenging
- Manpower engaged has to travel to & fro 7 Kms on ground, in creek and boat.
- Material shifting to location became more challenging as only location available to load the materials in boat was Sangrampur Ghat which is 12 kms away from the location in downstream.
- Boat has to travel against huge water current and it took approximately 4-5 hours to shift the materials in day light.
- Work could commence at around 11-00 am and stopped by 5-00 pm as all has to vacate the site to avoid any mishap in dark
- Location 26/0, 26/2 and 26/3 also got surrounded by water which has resulted in limited progress against planned output.

Difficulties faced in accessing site location

Work progress snap shots Aug & Sept 2018

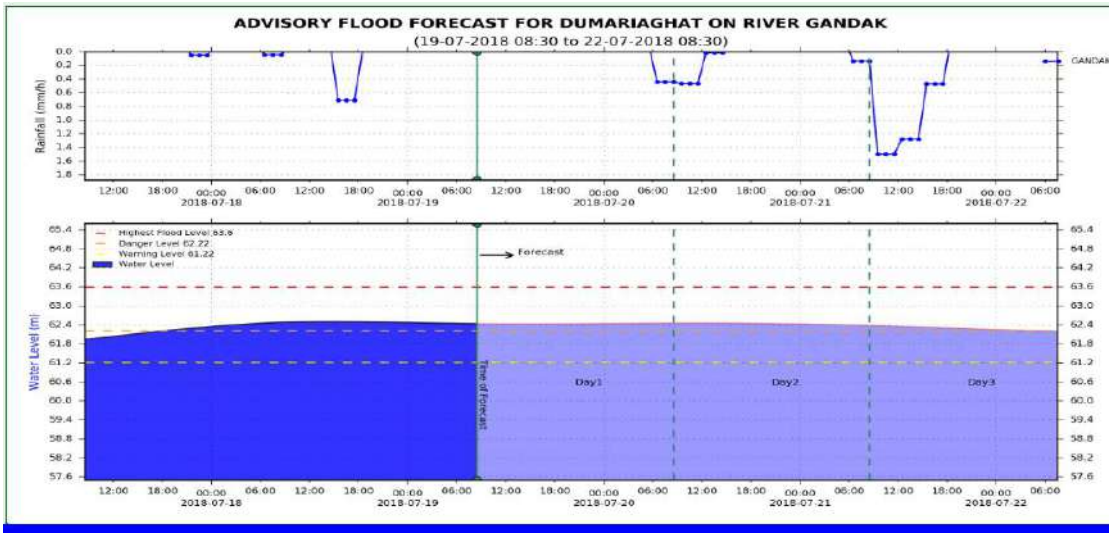
Tower Erection in huge current at mid stream from 19th July to 17th Aug 2018

Snapshots of Stringing activities commenced from 10th Aug to 3rd Oct 2018 illustrating difficulties during execution (26/0 to 26/3 – Length 1130 – 3 spans)

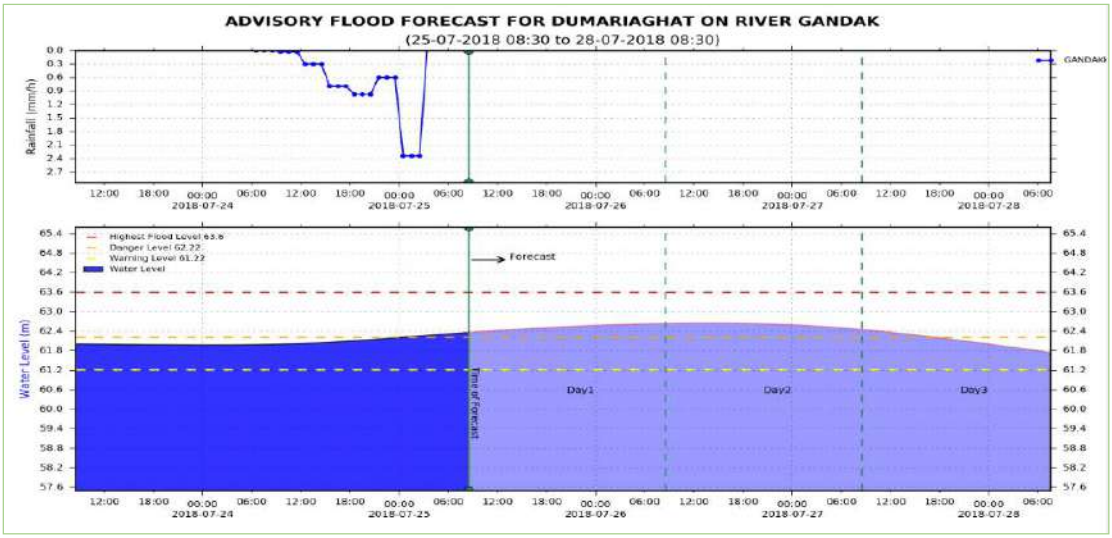
Stringing activities snap shots:

Stringing work completed in all aspects 3.10.2018

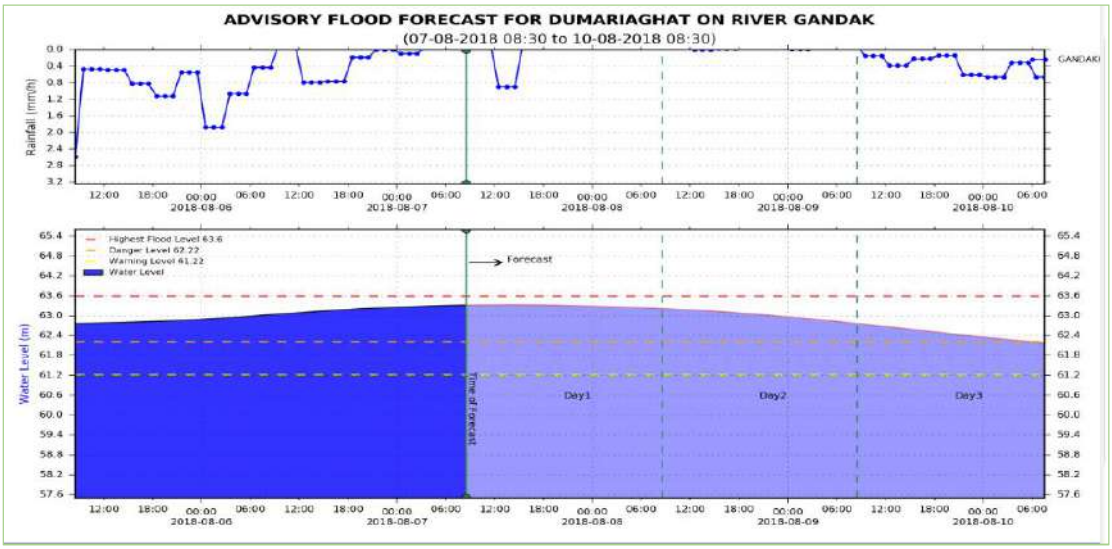
Flood advisory published by CWC



Flood advisory published by CWC



Flood advisory published by CWC



It is evident that the failure of ERS is due to surge of water in Gandak River, which is beyond our control & is a clear evidence of force majeure event. As seen, there was no other alternative to restore both ckts of Barh-Motihari. Tower erection and Stringing works were carried out in most adverse conditions i.e flood like situation with limited working window and difficult access to site.

Short term Demand Forecast:

Presentation by SLDC,DVC, Howrah

Inputs:

- Block Wise Monthly Average Data of Last Yr. for a Particular Month. --This will be Treated as **Raw Data**.

- Average Deviation Data(+/-) (i.e. Block Wise Difference between Actual and Forecast Value) of Last 4-T/B of the Current Hr. of a Day.

Mechanism:

- The Block Wise Average Demand Data for a Particular Month of Last Yr. is Calculated. Keeping in View of Load Growth(5%) Due to Increase in Consumer Demand in the Valley Area, This Average Data is Weighted by **1.05 Times** to Obtain the Block Wise Forecast Data of 1st Day of that Month.

- For Each Subsequent Day, i.e. 2nd Day and Onwards of that Month, the Forecast Data will be Calculated Based on the Moving Average Method Considering the First Day Forecast and Passed Days' Actual Value of the Running Month.

- This Data after Moving Avg. for the Day Gives us **The Primary Data.**

Mechanism: Cont.....

- For Each Hour, the Average Deviation (+/-) Data (Actual Demand Data - Forecast Data) for the Last One Hour is Calculated in MW.

- Next, this Average Deviation Data (in MW) is Added with the Forecast Data of Rest of the Time Blocks for the Entire Day Starting from that Particular T/B(T_i).

- This Data after Adjustment for the Day Gives us **The Actual Block Wise Forecast Data.**

An Illustration:

For the Day **09th Oct,2018**; the Forecast Data of **11:00-12:00 Hrs** will be Obtained as Follows:

- Raw Data:: The Block Wise Average Demand Data of 31days for Oct-17. Let for Block 45-48 (11:00-12:00Hrs) These Values are **X1,X2,X3,X4 MW.**

- Primary Data:: Considering 5% Increment in Demand the New Forecast Values for T/B-45 To 48 will be **Y1,Y2,Y3 & Y4 MW** Respectively for Each Block.(Where, **Yi=1.05*Xi, i=T/B No.).**

Illustration: Cont....

Now on **09th Oct-18**, for **T/B-45 To 48**, These Forecast Values will be as **$FD_9(i)=(Yi+\sum ADj(i)(i=45 \text{ to } 48, j=1 \text{ to } 8))/9$ in MW**, for Where ADj(i)=Actual Avg. Demand Data in MW for i^{th} T/B of j^{th} Day, i=45-48 T/B.

- Actual Block Wise Forecast Data = Let the One Hour Average Deviation Value for Past Hour(10:00-11:00hrs in This Case) Prior to **T/B 45=Z MW** (may Be +/-).

  Next, This Z Value will be Added with the Rest of the Forecast Data(11:00hrs Onwards) of the Entire Day(i.e. 9th Oct-18).

  Thus for T/B-45 to 48(i.e. 11:00-12:00hrs) the Actual Forecast Data will be **$(FD_9(i)+Z)$** in MW.

- This Process will update Data Hourly basis and Continue for the entire Day.

Achievements :

It has been observed that this method gives 98-99% accuracy in 90% time of the Day.

Way forward:

Here in this Case the Raw Data has been Taken on Monthly Basis for Forecast Calculation. But for Further Accuracy, Season Wise Historical Demand Data may be Considered as Raw Data.

Annexure-C5

A. West Bengal

Sl No	Date & Time	West Bengal O/D (MW)	Frequency (Hz)	ADMS Optd (Y/N)	Relief (MW)
1	15-09-2018 22:08	294	49.6996		
2	15-09-2018 22:09	303	49.6947		
3	15-09-2018 22:10	294	49.6947		
4	15-09-2018 22:11	293	49.6751		
5	15-09-2018 22:12	286	49.6751		
6	15-09-2018 22:13	278	49.6996		
7	22-09-2018 18:23	189	49.6947		
8	22-09-2018 18:24	201	49.6996		
9	22-09-2018 18:25	211	49.6947		
10	28-09-2018 18:18	162	49.6947		
11	28-09-2018 18:19	167	49.6800		
12	28-09-2018 18:20	175	49.6556		
13	28-09-2018 18:21	165	49.6800		
14	28-09-2018 18:22	162	49.6849		
15	28-09-2018 18:23	190	49.6849		
16	28-09-2018 18:24	204	49.6947		
17	28-09-2018 18:38	267	49.6996		
18	28-09-2018 18:40	206	49.6752		
19	28-09-2018 18:41	190	49.6947		
20	28-09-2018 18:42	170	49.6458		
21	28-09-2018 18:43	179	49.6458		
22	28-09-2018 18:44	196	49.6556		
23	28-09-2018 18:45	199	49.6849		
24	29-09-2018 18:28	173	49.6947		
25	29-09-2018 18:29	209	49.6947		

B. DVC

Sl No	Date & Time	DVC O/D (MW)	Frequency (Hz)	ADMS Optd (Y/N)	Relief (MW)
1	11-09-2018 19:15	352	49.6702		
2	11-09-2018 19:16	320	49.6702		
3	11-09-2018 19:17	352	49.6849		
4	11-09-2018 19:18	347	49.6702		
5	11-09-2018 19:19	338	49.6702		
6	11-09-2018 19:20	377	49.6507		
7	11-09-2018 19:21	346	49.6702		
8	11-09-2018 19:22	349	49.6800		
9	14-09-2018 18:41	282	49.6849		
10	14-09-2018 18:42	269	49.6849		
11	14-09-2018 18:44	233	49.6996		
12	15-09-2018 18:58	386	49.6800		
13	15-09-2018 18:59	367	49.6849		
14	16-09-2018 00:16	206	49.6947		

15	16-09-2018 00:17	242	49.6947		
16	16-09-2018 00:18	293	49.6702		
17	16-09-2018 00:19	220	49.6996		
18	16-09-2018 00:20	217	49.6751		
19	16-09-2018 00:21	208	49.6996		
20	28-09-2018 18:18	298	49.6947		
21	28-09-2018 18:19	214	49.6800		
22	28-09-2018 18:20	234	49.6556		
23	28-09-2018 18:21	278	49.6800		
24	28-09-2018 18:22	252	49.6849		
25	28-09-2018 18:23	283	49.6849		
26	28-09-2018 18:24	239	49.6947		
27	28-09-2018 18:38	171	49.6996		
28	28-09-2018 18:40	198	49.6752		
29	28-09-2018 18:41	229	49.6947		
30	28-09-2018 18:42	226	49.6458		
31	28-09-2018 18:43	215	49.6458		
32	28-09-2018 18:44	221	49.6556		
33	28-09-2018 18:45	216	49.6849		
34	29-09-2018 18:28	339	49.6947		
35	29-09-2018 18:29	308	49.6947		
36	29-09-2018 18:30	345	49.6996		
37	29-09-2018 18:31	374	49.6751		
38	29-09-2018 18:32	305	49.6800		
39	29-09-2018 18:35	401	49.6947		
40	29-09-2018 18:36	403	49.6751		
41	29-09-2018 18:37	337	49.6360		
42	29-09-2018 18:38	327	49.6214		
43	29-09-2018 18:39	281	49.6214		
44	29-09-2018 18:40	332	49.6214		
45	29-09-2018 18:41	350	49.6312		
46	29-09-2018 18:42	322	49.6556		

C. Orisaa

Sl No	Date and Time	Orissa O/D (MW)	Frequency (Hz)
1	24-09-2018 18:15	509	49.67999268
2	24-09-2018 18:17	430	49.67999268
3	24-09-2018 18:18	388	49.64580536
4	24-09-2018 18:19	419	49.60673523
5	24-09-2018 18:20	380	49.59696579
6	24-09-2018 18:21	248	49.61161804
7	24-09-2018 18:22	305	49.57743073
8	24-09-2018 18:23	355	49.57743073
9	24-09-2018 18:24	363	49.58231354
10	24-09-2018 18:25	352	49.60185242
11	24-09-2018 18:26	324	49.60185242
12	24-09-2018 18:27	289	49.60673523
13	24-09-2018 18:42	202	49.69470215

14	24-09-2018 18:43	205	49.67510986
15	24-09-2018 18:44	278	49.66045761
16	24-09-2018 18:45	304	49.63115311
17	24-09-2018 18:46	379	49.59696579
18	24-09-2018 18:47	327	49.58720016
19	24-09-2018 18:48	374	49.58720016
20	24-09-2018 18:49	439	49.59696579
21	24-09-2018 18:50	315	49.63603973
22	24-09-2018 18:51	342	49.67510986
23	24-09-2018 19:12	349	49.69955444
24	24-09-2018 19:13	345	49.67512131
25	24-09-2018 19:14	287	49.68491364
26	24-09-2018 19:15	287	49.6604805
27	24-09-2018 19:16	319	49.67512131
28	24-09-2018 19:17	234	49.67512131
29	24-09-2018 19:18	206	49.69955444
30	28-09-2018 18:18	418	49.69467163
31	28-09-2018 18:19	453	49.68003082
32	28-09-2018 18:20	446	49.65558624
33	28-09-2018 18:21	546	49.68003082
34	28-09-2018 18:22	459	49.68490982
35	28-09-2018 18:23	338	49.68490982
36	28-09-2018 18:24	205	49.69467163
37	28-09-2018 18:45	161	49.68490982
38	29-09-2018 18:28	396	49.6946907
39	29-09-2018 18:29	357	49.6946907
40	29-09-2018 18:30	349	49.69957352
41	29-09-2018 18:31	288	49.67512512
42	29-09-2018 18:32	374	49.68000793
43	29-09-2018 18:35	443	49.6946907
44	29-09-2018 18:36	448	49.67512512
45	29-09-2018 18:37	411	49.63603973
46	29-09-2018 18:38	377	49.62139893
47	29-09-2018 18:39	287	49.62139893
48	29-09-2018 18:40	286	49.62139893
49	29-09-2018 18:41	296	49.63116074
50	29-09-2018 18:42	304	49.65560532

D. Bihar

Sl No	Date & Time	Bihar O/D (MW)	Frequency (Hz)
1	07-09-2018 18:49	208	49.69469452
2	07-09-2018 18:50	226	49.67025757
3	07-09-2018 18:51	255	49.67025757
4	07-09-2018 18:52	265	49.67025757
5	07-09-2018 18:53	291	49.6604805
6	07-09-2018 18:54	301	49.65559387
7	07-09-2018 18:55	291	49.68492126
8	24-09-2018 18:45	163	49.63115311

9	24-09-2018 18:46	166	49.59696579
10	24-09-2018 18:47	168	49.58720016
11	28-09-2018 18:22	159	49.68490982
12	28-09-2018 18:23	170	49.68490982
13	28-09-2018 18:24	185	49.69467163

E. Jharkhand

Sl No	Date & Time	Jharkhand O/D (MW)	Frequency (Hz)
1	24-09-2018 18:44	160	49.66045761
2	24-09-2018 18:45	168	49.63115311
3	24-09-2018 18:47	152	49.58720016

SLDC may kindly update on the ADMS Operation and implementation.

S.No.	Name of Utility	Location	Name of Station	Unit No.	Capacity (MW)	COD Date (DD/MM/YYYY)	Boiler Make	Turbine Make	Mills Type	Coal Source (s)	Grade of Coal	ECR (Rs./kWh)	Average PLF of last one year	Average Heat Rate (kcal/kWh)	Average APC (%)	Minimum Load (MW) capability	Minimum Load (%) capability	Maximum Ramp Rate (MW/min) capability
1																		
2																		
3																		
4																		
5																		
6																		
7																		
8																		
9																		
10																		

Annexure-D.1

Anticipated Power Supply Position for the month of
Nov-18

SL.NO		PARTICULARS	PEAK DEMAND MW	ENERGY MU
1		**BIHAR**		
	i)	NET MAX DEMAND	4500	2592
	ii)	NET POWER AVAILABILITY- Own Source (including bilateral)	371	239
		- Central Sector	3044	1721
	iii)	SURPLUS(+)/DEFICIT(-)	-1086	-631
2		**JHARKHAND**		
	i)	NET MAX DEMAND	1280	780
	ii)	NET POWER AVAILABILITY- Own Source (including bilateral)	341	161
		- Central Sector	806	427
	iii)	SURPLUS(+)/DEFICIT(-)	-133	-192
3		**DVC**		
	i)	NET MAX DEMAND (OWN)	2800	1745
	ii)	NET POWER AVAILABILITY- Own Source	4700	2778
		- Central Sector	323	176
		Long term Bi-lateral (Export)	1426	1027
	iii)	SURPLUS(+)/DEFICIT(-)	797	182
4		**ODISHA**		
	i)	NET MAX DEMAND	4100	2268
	ii)	NET POWER AVAILABILITY- Own Source	2961	1450
		- Central Sector	1143	624
	iii)	SURPLUS(+)/DEFICIT(-)	4	-194
5		**WEST BENGAL**		
5.1		**WBSEDCL**		
	i)	NET MAX DEMAND (OWN)	4950	2577
	ii)	CESC's DRAWAL	0	0
	iii)	TOTAL WBSEDCL's DEMAND	4950	2577
	iv)	NET POWER AVAILABILITY- Own Source	3255	1999
		- Import from DPL	151	0
		- Central Sector	1906	1038
	v)	SURPLUS(+)/DEFICIT(-)	362	460
	vi)	EXPORT (TO B'DESH & SIKKIM)	10	7
5.2		**DPL**		
	i)	NET MAX DEMAND	249	155
	ii)	NET POWER AVAILABILITY	400	187
	iii)	SURPLUS(+)/DEFICIT(-)	151	32
5.3		**CESC**		
	i)	NET MAX DEMAND	1700	742
	ii)	NET POWER AVAILABILITY - OWN SOURCE	460	394
		FROM HEL	540	337
		FROM CPL/PCBL	45	0
		Import Requirement	655	11
	iii)	TOTAL AVAILABILITY	1700	742
	iv)	SURPLUS(+)/DEFICIT(-)	0	0
6		**WEST BENGAL (WBSEDCL+DPL+CESC)** **(excluding DVC's supply to WBSEDCL's command area)**		
	i)	NET MAX DEMAND	6899	3474
	ii)	NET POWER AVAILABILITY- Own Source	4115	2579
		- Central Sector+Others	3146	1375
	iii)	SURPLUS(+)/DEFICIT(-)	362	480
7		**SIKKIM**		
	i)	NET MAX DEMAND	85	37
	ii)	NET POWER AVAILABILITY- Own Source	1	0
		- Central Sector+Others	151	63
	iii)	SURPLUS(+)/DEFICIT(-)	67	26
8		**EASTERN REGION** **At 1.03 AS DIVERSITY FACTOR**		
	i)	**NET MAX DEMAND**	19091	10896
		Long term Bi-lateral by DVC	1426	1027
		EXPORT BY WBSEDCL	10	7
	ii)	**NET TOTAL POWER AVAILABILITY OF ER (INCLUDING C/S ALLOCATION)**	21101	11594
	iii)	**PEAK SURPLUS(+)/DEFICIT(-) OF ER (ii)-(i)**	574	-336

EASTERN REGIONAL LOAD DESPATCH CENTRE
KOLKATA

TRANSMISSION ELEMENTS OUTAGE APPROVED IN 150TH OCC MEETING OF ERPC

		FROM		TO					
SL. No	**NAME OF THE ELEMENTS**	**DATE**	**TIME**	**DATE**	**TIME**	**REMARKS**	**S.D availed BY**	**Reason**	**SUBJECT TO CONSENT FROM AGENCY**
1	400KV ICT#1 at Binaguri	01/11/18	10:00	01/11/18	17:00	ODB	Powergrid, ER-II	AMP works	
2	50 MVAR B/R-I & 125 MVAR-BR-II at Durgapur	01/11/18	09:00	01/11/18	18:00	ODB	Powergrid, ER-II	FOR AMP WORK	
3	400 KV Farakka- Kahalgaon-III line	01/11/18	10:00	02/11/18	18:00	ODB	Powergrid, ER-II	For Jumper coonnection and Bay stability between Bay- 34 & 35 after upgradation of bay-34 under ERSS-XV projects.	
4	500MVA ICT #2 at Maithan	01/11/18	06:00	01/11/18	18:00	ODB	Powergrid, ER-II	AMP Works	**DVC**
5	400KV Maithon-Right Bank # 2	01/11/18	08:00	10/11/18	18:00	OCB	Powergrid, ER-II	Re conductoring work	
6	220KV TBC at Malda	01/11/18	08:00	30/11/18	17:00	OCB	Powergrid, ER-II	ERSS-XVII BAY UPGRADATION	
7	400KV Bus Coupler-BAY-405 at Rangpo	01/11/18	10:00	01/11/18	17:00	OCB	Powergrid, ER-II	For 405 Bay 400kV Bus Coupler Scheduled AMP	
8	400 KV BUS-1 at Subhasgram S/s	01/11/18	09:00	01/11/18	17:30	ODB	Powergrid, ER-II	400 KV BUS-1 Maintenance	**WB**
9	765kV, 3*80MVAR LR of Sundargarh Line-1 at Angul	01/11/18	10:00	01/11/18	14:00	ODB	ER-II/Odisha/Angul SS	R-Phase Reactor to be taken out of service for attending oil leakage problem by full gasket replacement by M/s TBEA.	**NLDC**
10	400 KV 401 keonjhar line main bay	01/11/18	09:00:00	01/11/18	17:30:00	ODB	ER-II/Odisha/BARIPADA S/S	AMP works	
11	400 KV Bus Reactor # 1 at Rengali	01/11/18	09:00	01/11/18	17:00	ODB	ER-II/Odisha/Rengali	AMP Work	
12	400KV RANCHI#2 & SUNDARGARH#3 TIE BAY (BAY NO.-420)	01/11/18	09:00	01/11/18	18:00	ODB	ER-II/ODISHA/ROURKELA	AMP OF TIE BAY (BAY NO.-420)	
13	Auto reclose of 400KV Rengali-Idrawati Line in non -auto mode	01/11/18	08:00:00	30/11/18	18:00:00	ODB	ER-II/Odisha/Balangir	For PID Scaning	**NLDC**
14	400KV 125MVAR Bus Reactor-1	01/11/18	09:00	01/11/18	18:00:00	ODB	ER-II/Odisha/Sundergarh	AMP Work	
15	400kV Sundargarh-Raigarh Ckt#1 Auto reclose to be non auto mode	01/11/18	08:00	15/11/18	17:00:00	ODB	ER-II/ODISHA/SUNDERGARH	For PID Testing of Porcelain Insulator. Only Auto reclose relay will be off. Line will be in service	**NLDC**
16	401 BAY (MAIN BAY OF 400KV BIHARSHARIF CKT-I) AT	01/11/18	09:30	01/11/18	16:30	ODB	POWERGRID ER1	AMP	
17	220KV HATIA-2 MAIN BAY AT RANCHI	01/11/18	10:00	01/11/18	17:00	ODB	POWERGRID ER1	AMP	
18	765 /400 kV ICT-I at Gaya ss	01/11/18	09:00	01/11/18	18:00	ODB	POWERGRID ER1	for Stringing & Isolator , BPI erection work for 765/400 kV ICT- IV under GE package	**NLDC**
19	Tie bay of 400KV B/R-I & Ranchi-III at NEW Ranchi	01/11/18	08:00	01/11/18	18:00	ODB	POWERGRID ER1	AMP	
20	400 kV Main Bus-1 AT LAKHISARAI	01/11/18	09:00	01/11/18	17:00	ODB	POWERGRID ER1	FOR BAY CONSTRUCTION WORK OF 125 MVAR B/R	
21	ICT 3 AT PATNA	01/11/18	08:00	01/11/18	10:00	ODB	POWERGRID ER1	220kv ct SAMPLING WORK	**BIHAR**
22	400KV BIHARSHARIF - KODERMA CKT -I	01/11/18	08:00	06/11/18	18:00	ODB	POWERGRID ER1	Auto recloser Put in Non Auto Mode for PID testing .	**DVC**
23	400KV BIHARSHARIF - KODERMA CKT -II	01/11/18	08:00	06/11/18	18:00	ODB	POWERGRID ER1	Auto recloser Put in Non Auto Mode for PID testing .	**DVC**
24	3*110MVAR 765kV Bus Reactor Bay@Pusauli	01/11/18	08:00	01/11/18	18:00	ODB	POWERGRID ER1	AMP work	**NLDC**
25	400KV Bus-I at TSTPP	01/11/18	06:00	01/11/18	18:00	ODB	TSTPP	isolator replacement	
26	400KV ICT#2 at Binaguri	02/11/18	10:00	02/11/18	17:00	ODB	Powergrid, ER-II	AMP works	
27	220 kV Maithon-Dhanbad 2 line	02/11/18	09:00	02/11/18	18:00	ODB	Powergrid, ER-II	Replacement of LINE CVT	**DVC**
28	400 KV BUS-2 at Subhasgram S/s	02/11/18	09:00	02/11/18	17:30	ODB	Powergrid, ER-II	400 KV BUS-2 Maintenance	**WB**
29	400kV 125MVAR Bus Reactor-1 at Angul	02/11/18	10:00	02/11/18	18:00	ODB	ER-II/Odisha/Angul SS	AMP Work.	
30	400 KV 403 Main Bay of 315 MVA ICT-I	02/11/18	09:00:00	02/11/18	17:30:00	ODB	ER-II/Odisha/BARIPADA S/S	AMP works	
31	400 kV GAJUWAKA-I LINE	02/11/18	08:00	03/11/18	18:00	ODB	ER-II/Odisha /Jeypore	For PID defect Insulator replacement work	**NLDC**
32	220KV BUS COUPLER (BAY NO.- 202)	02/11/18	09:00	02/11/18	18:00	ODB	ER-II/ODISHA/ROURKELA	AMP OF BUS-COUPLER BAY (BAY NO.-202)	
33	315 MVA, ICT-1 at Bolangir	02/11/18	09:00:00	02/11/18	18:00:00	ODB	ER-II/Odisha/Balangir	AMP For 315 MVA, ICT-1 .	**GRIDCO**
34	400KV 125MVAR Bus Reactor-2	02/11/18	09:00	02/11/18	18:00:00	ODB	ER-II/Odisha/Sundergarh	AMP Work	
35	400KV 80 MVAR Bus Reactor Main Bay(408)	02/11/18	00:00	02/11/18	00:00	ODB	ER-II/ODISHA/Keonjhar	AMP Activity	
36	404 BAY (MAIN BAY OF 400KV BIHARSHARIF CKT-II) AT BANKA	02/11/18	09:30	02/11/18	16:30	ODB	POWERGRID ER1	AMP	

37	765 /400 kV ICT-II at Gaya ss	02/11/18	09:00	02/11/18	18:00	ODB	POWERGRID ER1	for Stringing & Isolator , BPI erection work for 765/400 kV ICT- IV under GE package	**NLDC**
38	Main bay of 400 KV Ranchi-Ranchi-IV line at NEW Ranchi	02/11/18	08:00	02/11/18	18:00	ODB	POWERGRID ER1	AMP	
39	400kV JSR -Andal 1 line	02/11/18	09:30	02/11/18	17:30	ODB	POWERGRID ER1	AMP	**DVC**
40	ICT 2 AT PATNA	02/11/18	09:30	30/11/18	17:30	OCB	POWERGRID ER1	Replacment of ICT2 with 500MVA	**BIHAR**
41	315 MVA ICT-II AT CHAIBASA	02/11/18	09:30	02/11/18	17:30	ODB	POWERGRID ER1	AMP work	**JSEB**
42	3X 170.33 MVAR STATCOM Coupling Transformer at New Ranchi	02/11/18	08:00	05/11/18	18:00	ODB	POWERGRID ER1	Commissioning of 4th Copupling Transformer (B-Phase), Presently charged with spare unit	
43	400 KV BIHARSARIF - BALIA - D/C	02/11/18	08:00	03/11/18	18:00	ODB	POWERGRID ER1	FOR POWER LINE CROSSING WORK OF 400 KV PATNA - NABINAGAR LINE	**NLDC**
44	400KV Kahalgaon-Lakhisarai Line-1	02/11/18	09:30	02/11/18	17:30	ODB	KAHALGAON	PM works and Relay testing	
45	402 bay(S'Dighi-I & future Tie) at Durgapur	03/11/18	9.00 hrs	03/11/18	17.00 hrs	ODB	Powergrid, ER-II	FOR AMP WORK	
46	400 KV Farakka- Berhampur-I	03/11/18	10:00	04/11/18	18:00	ODB	Powergrid, ER-II	For Jumper connection and Bay stability between Bay- 34 & 33 after upgradation of bay-34 under ERSS-XV projects.	**NLDC**
47	400KV Maithon-DGP#2 Line	03/11/18	09:00	03/11/18	18:00	ODB	Powergrid, ER-II	Line and Main Bay AMP works	
48	220 KV MAIN BUS-1 at Subhasgram S/s	03/11/18	09:00	03/11/18	17:30	ODB	Powergrid, ER-II	220 KV MAIN BUS-1 Maintenance	**WB**
49	400kV Bus Reactor-2 Main Bay (410) at Angul	03/11/18	10:00	03/11/18	18:00	ODB	ER-II/Odisha/Angul SS	AMP Work.	
50	400 KV 404 Baripada-Kharagpur Line Main Bay	03/11/18	09:00:00	03/11/18	17:30:00	ODB	ER-II/Odisha/BARIPADA S/S	AMP works	
51	407 BAY (MAIN BAY OF 400KV KAHALGAON CKT-I) AT BANKA	03/11/18	09:30	03/11/18	16:30	ODB	POWERGRID ER1	AMP	
52	400 kV Main Bus-2 AT LAKHISARAI	03/11/18	09:00	03/11/18	17:00	ODB	POWERGRID ER1	FOR BAY CONSTRUCTION WORK OF 125 MVAR B/R AT LAKHISARAI	
53	220KV ICT 1 Bay no 214 AT PATNA	03/11/18	09:30	03/11/18	18:00	ODB	POWERGRID ER1	AMP	
54	400KV Rangpo-Teesta-III (408 bay at Rangpo)	04/11/18	08:00	08/11/18	17:00	OCB	Powergrid, ER-II	For rectification of SF6 gas leakage repair work.	**After restoration of 400kV Dikchu-Rangpo**
55	220 KV MAIN BUS-2 at Subhasgram S/s	04/11/18	09:00	04/11/18	17:30	ODB	Powergrid, ER-II	220 KV MAIN BUS-2 Maintenance	**WB**
56	220KV fatuha bay no 213 AT PATNA	04/11/18	09:30	04/11/18	18:00	ODB	POWERGRID ER1	AMP	
57	400KV BIHARSHARIF - LAKHISARAI-II	04/11/18	09:00	04/11/18	18:00	ODB	POWERGRID ER1	Jumper connection among Isolator to CB to Reactor to make switchable 50Mvar Lakhisara-2	
58	400 KV Maithon-RTPS Line	05/11/18	09:00	05/11/18	18:00	ODB	Powergrid, ER-II	Line and Main Bay AMP works	**DVC**
59	400kV B/R-2 & Meramundali Line-2 Tia Bay (411) at Angul	05/11/18	10:00	05/11/18	18:00	ODB	ER-II/Odisha/Angul SS	AMP Work.	
60	400 KV 406 Main Bay of 315 MVA ICT-II	05/11/18	09:00:00	05/11/18	17:30:00	ODB	ER-II/Odisha/BARIPADA S/S	AMP works	
61	400 kV GAJUWAKA-II LINE	05/11/18	08:00	06/11/18	18:00	ODB	ER-II/Odisha /Jeypore	For PID defect Insulator replacement work	**NLDC**
62	400 KV Bus Reactor # 2 at Rengali	05/11/18	09:00	05/11/18	17:00	ODB	ER-II/Odisha/Rengali	AMP Work	
63	400KV Bus-I at Keonjhar	05/11/18	00:00	10/11/18	00:00	ODB	ER-II/ODISHA/Keonjhar	Stringing of Jack Bus over Bus-I for 125 MVAR Reactor	
64	400KV MAITHAN RB-2 MAIN BAY (410 BAY) AT RANCHI	05/11/18	10:00	05/11/18	17:00	ODB	POWERGRID ER1	AMP	
65	765 /400 kV ICT-III at Gaya ss	05/11/18	09:00	05/11/18	18:00	ODB	POWERGRID ER1	for Stringing & Isolator , BPI erection work for 765/400 kV ICT- IV under GE package	**NLDC**
66	Main Bay of 400 KV Ranchi-NPPSP-I at NEW Ranchi	05/11/18	08:00	05/11/18	18:00	ODB	POWERGRID ER1	AMP	
67	400kV JSR -Andal 2 line	05/11/18	09:30	05/11/18	17:30	ODB	POWERGRID ER1	AMP	**DVC**
68	200 MVA ICT-1 AT LAKHISARAI	05/11/18	09:00	06/11/18	17:00	ODB	POWERGRID ER1	FOR BAY CONSTRUCTION WORK OF 125 MVAR B/R AT LAKHISARAI	**BIHAR**
69	400KV KAHALGAON- LAKHISARAI - I	05/11/18	08.00	05/11/18	18:00	ODB	POWERGRID ER1	Replacement of Insulator & Replacement of Jumper Nut & Bolts and other Misc. Shut down works	
70	400kV Biharsharif-I L/R Bay at Pusauli	05/11/18	08:00	05/11/18	18:00	ODB	POWERGRID ER1	AMP work	**Line SD is required or not?**
71	400kV Meramundali Line-2 Main Bay (412) at Angul	06/11/18	10:00	06/11/18	18:00	ODB	ER-II/Odisha/Angul SS	AMP Work.	

72	400KV 407 Baripada-Duburi Line Main Bay	06/11/18	09:00:00	06/11/18	17:30:00	ODB	ER-II/Odisha/BARIPADA S/S	AMP works	
73	765kV Sundargarh-Dharamjaygarh Ckt #4	06/11/18	09:00	06/11/18	18:00:00	ODB	ER-II/Odisha/Sundergarh	Modification of Line side Jumpering from quard to twin to reduce load on CVT under system improvement scheme. No power interruption due to this shutdown as the line is anti-theft charged	**NLDC**
74	400KV SIPAT LINE-2 MAIN BAY (424 BAY) AT RANCHI	06/11/18	10:00	06/11/18	17:00	ODB	POWERGRID ER1	AMP	
75	80 MVAr BUS REACTOR AT CHAIBASA	06/11/18	09:30	06/11/18	18:00	ODB	POWERGRID ER1	AMP work	
76	315MVA ICT-2 at TSTPP	06/11/18	09:00	06/11/18	18:00	ODB	TSTPP	Conductor replacement	
77	220KV 201 Main Bay of Balasore line I	07/11/18	09:00:00	07/11/18	17:30:00	ODB	ER-II/Odisha/BARIPADA S/S	AMP works	
78	400 kV Jeypore-Bolangir Line	07/11/18	08:00	08/11/18	18:00	ODB	ER-II/Odisha /Jeypore	For Rectification of Shut Down Nature of Defects	**NLDC**
79	315 MVA ICT # 1	07/11/18	09:00	07/11/18	17:00	ODB	ER-II/Odisha/Rengali	AMP Work	
80	400KV BIHARSHARIF- SASA CKT -I	07/11/18	08:00	14/11/18	18:00	OCB	POWERGRID ER1	Realingmnet works of 400KV Biharsharif - Varanasi & 400KV Biharsharif - Sasaram Line. (Diversion of line due to NH crossing)	**NLDC (Detail plan must be submitted)**
81	400KV BIHARSHARIF - SASA CKT -II	07/11/18	08:00	14/11/18	18:00	OCB	POWERGRID ER1	Realingmnet works of 400KV Biharsharif - Varanasi & 400KV Biharsharif - Sasaram Line. (Diversion of line due to NH crossing)	**NLDC (Detail plan must be submitted)**
82	220KV BC Along with Bus-1 at Malda	08/11/18	08:00	08/11/18	17:00	ODB	Powergrid, ER-II	ERSS-XVII BAY UPGRADATION	
83	220KV 202 Main Bay of Balasore Line II	08/11/18	09:00:00	08/11/18	17:30:00	ODB	ER-II/Odisha/BARIPADA S/S	AMP works	
84	400 KV Bus Reactor # 1 Main Bay (Bay No-410)	08/11/18	09:00	08/11/18	17:00	ODB	ER-II/Odisha/Rengali	AMP Work	
85	400KV ROURKELA-RANCHI#2	08/11/18	09:00	08/11/18	18:00	ODB	ER-II/ODISHA/ROURKELA	AMP OF LINE BAY	
86	765kV Sundargarh-Dharamjaygarh Ckt #3	08/11/18	09:00	08/11/18	18:00:00	ODB	ER-II/Odisha/Sundergarh	Modification of Line side Jumpering from quard to twin to reduce load on CVT under system	**NLDC**
87	330MVAR 765kV Bus-Reactor at Pusauli	08/11/18	08:00	08/11/18	18:00	ODB	POWERGRID ER1	AMP work	**NLDC**
88	400KV Maithon-DGP #1 line	09/11/18	09:00	09/11/18	18:00	ODB	Powergrid, ER-II	Construction work under ERSS-XVII	
89	220KV BUS-1 at Rangpo	09/11/18	08:00	11/11/18	17:00	OCB	Powergrid, ER-II	For rectification of SF6 gas leakage repair work(both Shutdown needed on same dates)	
90	220KV Rangpo-NEW MELLI line	09/11/18	08:00	11/11/18	17:00	OCB	Powergrid, ER-II	For rectification of SF6 gas leakage repair work(both Shutdown needed on same dates)	
91	400kV ICT-3 Main Bay (413) at Angul	09/11/18	10:00	09/11/18	18:00	ODB	ER-II/Odisha/Angul SS	AMP Work.	
92	220KV 203 Bus Coupler Bay	09/11/18	09:00:00	09/11/18	17:30:00	ODB	ER-II/Odisha/BARIPADA S/S	AMP works	
93	400 kV Jeypore-Indravati S/C Line	09/11/18	08:00	10/11/18	18:00	ODB	ER-II/Odisha /Jeypore	For replacement of defective insulator	**NLDC**
94	400KV ROURKELA-CHAIBASA#1	09/11/18	09:00	09/11/18	18:00	ODB	ER-II/ODISHA/ROURKELA	AMP OF LINE BAY	
95	400KV, Angul Line Main BAY(401 BAY)	09/11/18	09:00:00	09/11/18	18:00:00	ODB	ER-II/Odisha/Balangir	AMP for 401 52 CB and 401 CT	
96	765kV Sundargarh-Angul Ckt#1&2	09/11/18	08:00	10/11/18	17:00:00	OCB	ER-II/ODISHA/SUNDERGARH	Earth wire diamond crossing with 765 KV DC Angul-Jharsugida line Ckt-3 & 4	**NLDC**
97	765 KV Bay no -711 (Tie Bay of Gaya-VNS-I & Future) AT GAYA	09/11/18	09:00	10/11/18	18:00	ODB	POWERGRID ER1	for Stringing & Isolator , BPI erection work for 765/400 kV ICT- IV under GE package	
98	400kV JSR-APNRL2	09/11/18	09:30	09/11/18	17:30	ODB	POWERGRID ER1	AMP	
99	400kV Daltonganj- Sasaram-2 line	09/11/18	09:30	09/11/18	17:30	ODB	POWERGRID ER1	63 Mvar Line Reactor-2 dismantling work, For Bushing dismantling. 50 Mvar LR-2 is to be	
100	220kv khagaul bay no: 212 AT PATNA	09/11/18	09:30	09/11/18	18:00	ODB	POWERGRID ER1	AMP	
101	201 BAY (BUS COUPLER BAY) AT CHAIBASA	09/11/18	09:30	09/11/18	09:30	ODB	POWERGRID ER1	AMP work	
102	400 KV BUS-I at New Ranchi	09/11/18	08:00	10/11/18	18:00	ODB	POWERGRID ER1	Jumpering with 400KV Bus-I & Stability of bay 416 (STATCOM) for Bus-Bar integration	
103	500MVA ICT #1 at Maithan	10/11/18	06:00	10/11/18	18:00	ODB	Powergrid, ER-II	On load testing of CSD.	**DVC**
104	500 MVA ICT#5 at Subhasgram S/s	10/11/18	09:00	10/11/18	17:30	ODB	Powergrid, ER-II	Rectification and commissioning of CSD for ICT#5 Tie bay CB	**WB**
105	765/400kV, 3*500MVA ICT-2 at Angul	10/11/18	10:00	10/11/18	14:00	ODB	ER-II/Odisha/Angul SS	AMP Work.	**NLDC**
106	220KV 204 Bay of 315MVA ICT II	10/11/18	09:00:00	10/11/18	17:30:00	ODB	ER-II/Odisha/BARIPADA S/S	AMP works	
107	125 MVAr B/R at Jeypore	10/11/18	09:00	10/11/18	18:00	ODB	ER-II/Odisha /Jeypore	For AMP Works of 125 Mvar B/R & 409 Bay	
108	Talcher - Rourkela CTK # 1 Line	10/11/18	09:00	10/11/18	17:00	ODB	ER-II/Odisha/Rengali	PID Defective Insulator Replacement	
109	400KV ROURKELA-RANCHI#1 MAIN BAY (BAY NO.- 428)	10/11/18	09:00	10/11/18	18:00	ODB	ER-II/ODISHA/ROURKELA	AMP OF MAIN BAY (BAY NO.- 428)	
110	400 kV Main Bus-2 AT LAKHISARAI	10/11/18	10:00	10/11/18	14:00	ODB	POWERGRID ER1	AMP	
111	220kV ICT2 bay no:211 AT PATNA	10/11/18	09:30	10/11/18	18:00	ODB	POWERGRID ER1	AMP	
112	202 BAY (JUSNL-I LINE BAY) AT CHAIBASA	10/11/18	10:00	10/11/18	17:00	ODB	POWERGRID ER1	AMP work	
113	400KV Maithon-Right Bank # 1	11/11/18	08:00	25/11/18	18:00	OCB	Powergrid, ER-II	Re conductoring work	
114	400kV Sundargarh-Raigarh Ckt#2&4	11/11/18	07:00	12/11/18	18:00:00	ODB	ER-II/ODISHA/SUNDERGARH	OPGC Line diversion Clearance rectification work.	**NLDC**
115	220 KV Siliguri Kishanganj ckt 1	12/11/18	10:00	14/11/18	17:00	ODB	Powergrid, ER-II	Balance Insulator replacement work	

116	400 KV Binaguri Bongaigaon Ckt-1	12/11/18	10:00	12/11/18	14:00	ODB	Powergrid, ER-II	412 B Phase CVT replacement	**NLDC**
117	125MVAR B/R-III at Durgapur	12/11/18	09:00	12/11/18	17:00	ODB	Powergrid, ER-II	FOR AMP WORK	
118	132KV Rangpo-Gangtok line	12/11/18	08:00	12/11/18	17:00	ODB	Powergrid, ER-II	Line A/R implementation	**SIKKIM**
119	315 MVA ICT#1 at Subhasgram S/s	12/11/18	09:00	12/11/18	17:30	ODB	Powergrid, ER-II	Retrofitting of Numerical REF Relay	**WB**
120	220KV 208 Bay of 315MVA ICT I	12/11/18	09:00:00	12/11/18	17:30:00	ODB	ER-II/Odisha/BARIPADA S/S	AMP works	
121	3X166.67MVA coupling transformer	12/11/18	09:00	12/11/18	12:00	ODB	ER-II/Odisha /Jeypore	For unit change over from Unit-II,III, IV to Unit-I , III & IV for charging Unit-I (outage to be booked under Jeypore head)	
122	Talcher - Rengali CKT #2 Line	12/11/18	09:00	12/11/18	17:00	ODB	ER-II/Odisha/Rengali	Rectification of S/D Nature Defects	
123	400KV ROURKELA-CHAIBASA#2 MAIN BAY (BAY NO.- 409)	12/11/18	09:00	12/11/18	18:00	ODB	ER-II/ODISHA/ROURKELA	AMP OF MAIN BAY (BAY NO.- 409)	
124	Main Bay-401 of 400KV Raigarh Line-II	12/11/18	09:00	12/11/18	18:00:00	ODB	ER-II/Odisha/Sundergarh	AMP Work	
125	400KV Bus-II at Keonjhar	12/11/18	00:00	17/11/18	00:00	ODB	ER-II/ODISHA/Keonjhar	Stringing of Jack Bus over Bus-II for 125 MVAR Reactor	
126	Tie bay of 400kV Chaibasa 2 & Andal 1 (414 Bay) AT JAMSHEDPUR	12/11/18	09:30	12/11/18	17:30	ODB	POWERGRID ER1	AMP	
127	400 KV BUS - I AT CHANDAWA	12/11/18	09:00	14/11/18	18:00	OCB	POWERGRID ER1	HV & PD Test of Northkarnpura - I GIS Bay No. 403 with extended Bus-I. Removal of shield & fixing of	
128	400 KV PATNA - BALIA - 3	12/11/18	09:00	14/11/18	18:00	ODB	POWERGRID ER1	For replacement of porcelain insulator to polymer insulator for 60 nos. Tension Towers of Line under	**NLDC**
129	400 KV Bus -1 at Binaguri	13/11/18	10:00	14/11/18	17:00	ODB	Powergrid, ER-II	AMP works & SS03 construction works	
130	160MVA ICT-1 at Birpara	13/11/18	08:00 Hrs	13/11/18	17:30 Hrs	ODB	Powergrid, ER-II	Varibale frequency Tan-delta & Relay testing	**WB**
131	403 bay(S'Dighi-I main bay) at Durgapur	13/11/18	9.00 hrs	13/11/18	17.00 hrs	OCB	Powergrid, ER-II	FOR AMP WORK	
132	400KV Mejia #1 Line reactor at Maithan	13/11/18	09:00	13/11/18	18:00	ODB	Powergrid, ER-II	Fine tuning of CSD	
133	132KV Rangpo-Chuzachen line	13/11/18	08:00	13/11/18	17:00	ODB	Powergrid, ER-II	Line A/R implementation	**SIKKIM**
134	220KV 209 Main Bay of 160 MVA ICT I	13/11/18	09:00:00	13/11/18	17:30:00	ODB	ER-II/Odisha/BARIPADA S/S	AMP works	
135	315 MVA ICT#1 at Rourkela	13/11/18	09:00	16/11/18	18:00	OCB	ER-II/ODISHA/ROURKELA	AMP & ARRRESTING OIL LEAKAGE FROM TAN DELTA POINT OF Y-PH HV BUSHING.	**GRIDCO**
136	125 MVAR BR at Indravati	13/11/18	09:00:00	13/11/18	13:00:00	ODB	ER-II/Odisha /Indravati	To Replace Micro switch in terminal box PRD	
137	Tie Bay-402 of 400KV Raigarh Line-II & 765/400KV ICT-I	13/11/18	09:00	13/11/18	18:00:00	ODB	ER-II/Odisha/Sundergarh	AMP Work	
138	125MVAR Bus Reactor-II Main Bay at Pusauli	13/11/18	09:00	13/11/18	18:00	ODB	POWERGRID ER1	AMP work	
139	400KV FKK-Sagardighi Line-1	13/11/18	09:00	14/11/18	17:00	ODB	FSTPP	CT, CB & Relay Test	**WB**
140	160MVA ICT-2 at Birpara	14/11/18	08:00 Hrs	14/11/18	17:30 Hrs	ODB	Powergrid, ER-II	Varibale frequency Tan-delta & Relay testing	**WB**
141	400KV Malda -New Purnea # I	14/11/18	08:00	15/11/18	17:00	ODB	Powergrid, ER-II	A/R RELAY RETROFITTING.	**After restoration of 400kV Kishanganj-Patna-DC or**
142	404 bay (B, Nagar-II main bay) at Durgapur	14/11/18	9.00 hrs	14/11/18	17.00 hrs	OCB	Powergrid, ER-II	FOR AMP WORK	
143	400KV Gaya #1 Line reactor at Maithan	14/11/18	09:00	14/11/18	18:00	ODB	Powergrid, ER-II	Fine tuning of CSD	
144	Malda-WBSETCL-I	14/11/18	08:00	14/11/18	17:00	ODB	Powergrid, ER-II	OC/EF relay retrofitting	**WB**
145	220 kV 211 Bay of 500 MVA ICT#3	14/11/18	09:00:00	14/11/18	17:30:00	ODB	ER-II/Odisha/BARIPADA S/S	AMP works	
146	220KV JEYNAGAR-I Line	14/11/18	09:30	14/11/18	17:30	ODB	ER-II/Odisha /Jeypore	For Isolator Retrofitting works (220KV Jeynagar-I TBC Isolator)	**GRIDCO**
147	400 KV BUS # 1 at Rengali	14/11/18	09:00	14/11/18	17:00	ODB	ER-II/Odisha/Rengali	AMP Work	
148	500MVA ICT-2 at Pandiabili	14/11/18	10:00	14/11/18	18:00:00	ODB	ER-II/Odisha/Pandiabili SS	AMP Work.	**GRIDCO**
149	400KV Main Bay-403 of 765/400KV ICT-I	14/11/18	09:00	14/11/18	18:00:00	ODB	ER-II/Odisha/Sundergarh	AMP Work	
150	400kV Sundargarh-Rourkela Ckt#1	14/11/18	08:00	14/11/18	17:00:00	ODB	ER-II/ODISHA/SUNDERGARH	TL Maintenance works	
151	410 BAY (MAIN BAY OF 400KV KAHALGAON CKT-II) AT BANKA	14/11/18	09:30	14/11/18	16:30	ODB	POWERGRID ER1	AMP	
152	Tie bay of 315 MVA ICT3 (428Bay) AT JAMSHEDPUR	14/11/18	09:30	14/11/18	17:30	ODB	POWERGRID ER1	AMP	
153	765/400kV, 1500MVA, ICT for regular changeover in 06 month at Pusauli	14/11/18	09:00	16/11/18	18:00	OCB	POWERGRID ER1	02 days for stability test and changing of Delta connection in LV side and 01 day for idle charging	**NLDC**
154	63MVAR Saranath L/R Bay at Pusauli	14/11/18	10:00	20/11/18	19:00	OCB	POWERGRID ER1	Pole Overhauling of Breaker	**Line SD is required or not?**
155	400 KV Sagardighi-1 Main Bay (Bay No. 407) at Baharampore	15/11/18	09.00Hrs	15/11/18	17.00Hrs	ODB	Powergrid, ER-II	BAY AMP	
156	400 KV Bus -2 at Binaguri	15/11/18	10:00	16/11/18	17:00	ODB	Powergrid, ER-II	AMP works & SS03 construction works	
157	220 KV Siliguri Kishanganj ckt 2	15/11/18	10:00	17/11/18	17:00	ODB	Powergrid, ER-II	Balance Insulator replacement work	
158	400KV Gaya #2 Line reactor at Maithan	15/11/18	09:00	15/11/18	18:00	ODB	Powergrid, ER-II	Fine tuning of CSD	
159	Malda-WBSETCL-II	15/11/18	08:00	15/11/18	17:00	ODB	Powergrid, ER-II	OC/EF relay retrofitting	**WB**

160	132KV Rangpo-Melli line	15/11/18	08:00	18/11/18	18:00	ODB	Powergrid, ER-II	Balance insulator change work	**SIKKIM**
161	315 MVA ICT#2 at Subhasgram S/s	15/11/18	09:00	15/11/18	17:30	ODB	Powergrid, ER-II	Retrofitting of Numerical REF Relay	**WB**
162	765kV, 3*110MVAR Bus Reactor-2 at Angul	15/11/18	10:00	15/11/18	14:00	ODB	ER-II/Odisha/Angul SS	To take out spare rector & take in Y-phase Reactor after attending oil leakage by full gasket	**NLDC**
163	220KV JEYNAGAR-II Line	15/11/18	09:30	15/11/18	17:30	ODB	ER-II/Odisha /Jeypore	For Isolator Retrofitting works (220KV Jeynagar-II TBC Isolator)	**GRIDCO**
164	400 KV BUS # 2 at Rengali	15/11/18	09:00	15/11/18	17:00	ODB	ER-II/Odisha/Rengali	AMP Work	
165	Main Bay-404 of 400KV Rourkela Line-II	15/11/18	09:00	15/11/18	18:00:00	ODB	ER-II/Odisha/Sundergarh	AMP Work	
166	400kV Sundargarh-Rourkela Ckt#3	21/11/18	08:00	21/11/18	17:00:00	ODB	ER-II/ODISHA/SUNDERGARH	TL Maintenance works	
167	402 BAY (TIE BAY BIHARSHARIF-I & ICT-I) AT BANKA	15/11/18	09:30	15/11/18	16:30	ODB	POWERGRID ER1	AMP	
168	765 KV Bay no -714 (Tie Bay of Gaya-VNS Ckt-II Line & Future) AT GAYA	15/11/18	09:00	16/11/18	18:00	ODB	POWERGRID ER1	for Stringing & Isolator , BPI erection work for 765/400 kV ICT- IV under GE package	
169	80 MVAR Bus Reactor AT LAKHISARAI	15/11/18	09:00	16/11/18	17:00	ODB	POWERGRID ER1	FOR BAY CONSTRUCTION WORK OF 125 MVAR B/R AT LAKHISARAI	
170	400 KV BIHARSHARIF - VARANASI CKT- I	15/11/18	08:00	20/11/18	18:00	OCB	POWERGRID ER1	Realingmnet works of 400KV Biharsharif - Varanasi & 400KV Biharsharif - Sasaram Line. (Diversion of line due to NH crossing)	**NLDC (Detail plan must be submitted)**
171	400 KV BIHARSHARIF - VARANASI CKT- II	15/11/18	08:00	20/11/18	18:00	OCB	POWERGRID ER1	Realingmnet works of 400KV Biharsharif - Varanasi & 400KV Biharsharif - Sasaram Line. (Diversion of line due to NH crossing)	**NLDC (Detail plan must be submitted)**
172	203 BAY (JUSNL-II LINE BAY) AT CHAIBASA	15/11/18	10:00	15/11/18	17:00	ODB	POWERGRID ER1	AMP work	
173	400kV Varanasi Main Bay (East Side) at Pusauli	15/11/18	09:00	15/11/18	18:00	ODB	POWERGRID ER1	AMP work	
174	400 KV BUS - II AT CHANDAWA	15/11/18	09:00	17/11/18	18:00	OCB	POWERGRID ER1	HV & PD Test of Northkarnpura -II GIS Bay No. -406 extended Bus - II. Removal of shield & fixing of Main Bus - II section conductor, vacumming, gas filling & energizing.	
175	401 KV PATNA - BALIA - 4	15/11/18	09:00	17/11/18	18:00	ODB	POWERGRID ER1	For replacement of porcelain insulator to polymer insulator for 60 nos. Tension Towers of Line under Ballia T/L , at Balia	**NLDC**
176	400KV/220KV Auto Tr. FSTPP	15/11/18	09:00	17/11/18	17:00	OCB	FSTPP	CB Test; 400kV and 220kV side relay dismantling, retrofitting and commissioning	**JSEB**
177	400 KV Sagardighi-1/Farakka-1 Tie Bay (Bay No. 408) at Baharampore	16/11/18	09.00Hrs	16/11/18	17.00Hrs	ODB	Powergrid, ER-II	BAY AMP	
178	400KV Sagardighi Farakka-2 Line	16/11/18	09.00Hrs	16/11/18	17.00Hrs	ODB	Powergrid, ER-II	For completion of balance pending works under ERSS-XV	**WB**
179	220KV Birpara-Malbase Line	16/11/18	08:00 Hrs	16/11/18	17:30 Hrs	ODB	Powergrid, ER-II	A/R RELAY RETROFITTING.	**NLDC**
180	400KV Malda -New Purnea # II	16/11/18	08:00	17/11/18	17:00	ODB	Powergrid, ER-II	A/R RELAY RETROFITTING.	**After restoration of 400kV Kishanganj-Patna-DC or 400kV Biharsariff-New**
181	405 bay (B'Nagar-II & BR-I Tie bay) at Durgapur	16/11/18	9.00 hrs	16/11/18	17.00 hrs	OCB	Powergrid, ER-II	FOR AMP WORK	
182	50 MVAR Line Reactor at Subhasgram S/s	16/11/18	09:00	16/11/18	17:30	ODB	Powergrid, ER-II	Retrofitting of Numerical REF Relay	
183	765kV, 3*110MVAR Bus Reactor-1 at Angul	16/11/18	10:00	16/11/18	14:00	ODB	ER-II/Odisha/Angul SS	R-Phase Reactor to be taken out of service for attending oil leakage problem by full gasket	**NLDC**
184	132KV 109 Main Bay of Baripada Line	16/11/18	09:00:00	16/11/18	17:30:00	ODB	ER-II/Odisha/BARIPADA S/S	AMP works	
185	ICT-I (3x 105 MVA) at Jeypore	16/11/18	09:30	16/11/18	17:30	ODB	ER-II/Odisha /Jeypore	For Isolator Retrofitting works (220KV ICT I TBC Isolator)	**GRIDCO**
186	400 KV UIHEP-Indravati Main Bay (412)	16/11/18	09:00:00	16/11/18	18:00	ODB	ER-II/Odisha /Indravati	AMP work of 400 KV UIHEP-Indravati Main Bay (412)	
187	Tie Bay-405 of 400KV Rourkela Line-II & 765/400KV ICT-II	16/11/18	09:00	16/11/18	18:00:00	ODB	ER-II/Odisha/Sundergarh	AMP Work	
188	405 BAY (TIE BAY BIHARSHARIF-II & ICT-II) AT BANKA	16/11/18	09:30	16/11/18	16:30	ODB	POWERGRID ER1	AMP	
189	400 KV RANCHI - MAITHAN -1	16/11/18	10:00	16/11/18	17:00	ODB	POWERGRID ER1	Changing of falsh over Insulator	
190	400kV Maithon-Gaya-1 line	16/11/18	09:00	17/11/18	18:00	ODB	POWERGRID ER1	For replacement of insulators damaged by miscreant	
191	Tie bay of 400kV Baripada & Andal 2 (417Bay) AT JAMSHEDPUR	16/11/18	09:30	16/11/18	17:30	ODB	POWERGRID ER1	AMP	
192	50Mvar Sasaram-1 Line Reactor	16/11/18	09:00	27/11/18	18:00	OCB	POWERGRID ER1	New Reactor CB erection testing and commissioning to make Switchable of Reactor	
193	400/220kV 500MVA ICT-I at Pusauli	16/11/18	09:00	19/11/18	18:00	OCB	POWERGRID ER1	Shifting of transformer for Transformer Retrofitting Work	**BIHAR**
194	400KV Kahalgaon-Lakhisarai Line-2	16/11/18	09:30	16/11/18	17:30	ODB	KAHALGAON	PM works and Relay testing	
195	400KV Sagardighi Jeerat Line	17/11/18	09.00Hrs	17/11/18	17.00Hrs	ODB	Powergrid, ER-II	For completion of balance pending works under ERSS-XV and A/R Relay retrofitting at WBSETCL	**WB**
196	315 MVA ICT II	17/11/18	09:00:00	17/11/18	17:30:00	ODB	ER-II/Odisha/BARIPADA S/S	AMP works	**GRIDCO**
197	220 kV Bus -II at Jeypore	17/11/18	09:30	17/11/18	13:30	ODB	ER-II/Odisha /Jeypore	Isolator Retrofitting Works of Bus-II side Isolators of Jeynagar I	**GRIDCO**
198	400KV Main Bay-406 of 765/400KV ICT-II	17/11/18	09:00	17/11/18	18:00:00	ODB	ER-II/Odisha/Sundergarh	AMP Work	

199	408 BAY (TIE BAY KAHALGAON-I & BR-I) AT BANKA	17/11/18	09:30	17/11/18	16:30	ODB	POWERGRID ER1	AMP	
200	765 KV BUS-I at Gaya S/S	17/11/18	09:00	17/11/18	18:00	ODB	POWERGRID ER1	for Stringing & Isolator , BPI erection work for 765/400 kV ICT- IV under GE package	**NLDC**
201	400 /220 kV ICT-I at Gaya ss	17/11/18	09:00	17/11/18	18:00	ODB	POWERGRID ER1	for Stringing & Isolator , BPI erection work for 400/220 kV ICT- III under Techno package	**BIHAR**
202	400kV BIHARSHARIF-Sasaram-1	17/11/18	09:00	18/11/18	18:00	ODB	POWERGRID ER1	CB erection and existing protection scheme modifiaction to make switchable 50Mvar Sasaram-	
203	206 ICT-II BAY AT CHAIBASA	17/11/18	10:00	17/11/18	17:00	ODB	POWERGRID ER1	AMP work	
204	400KV Berhampore Farakka Ckt-I Main bay (Bay No-409) at Baharampore	18/11/18	09.00Hrs	18/11/18	13.00Hrs	ODB	Powergrid, ER-II	For collection of CTs oil sample	
205	400KV Berhampore Farakka Ckt-II Main bay (Bay No-412) at Baharampore	18/11/18	14.00Hrs	18/11/18	16.00Hrs	ODB	Powergrid, ER-II	For collection of CTs oil sample	
206	220 kV Bus -II at Jeypore	18/11/18	09:30	18/11/18	13:30	ODB	ER-II/Odisha /Jeypore	Isolator Retrofitting Works of Bus-II side Isolators of Jeynagar II	**GRIDCO**
207	406 bay(B/R-I &II Main Bay) at Durgapur	19/11/18	9.00 hrs	19/11/18	17.00 hrs	OCB	Powergrid, ER-II	FOR AMP WORK	
208	400 KV Subhasgram Jeerat Line	19/11/18	09:00	19/11/18	17:30	ODB	Powergrid, ER-II	A/R Relay retrofitting at Subhasgram end	**WB**
209	765kV ICT-2 & Sundargarh Line-1 Tie Bay (708) at Angul	19/11/18	10:00	19/11/18	14:00	ODB	ER-II/Odisha/Angul SS	AMP Work.	**NLDC**
210	132 KV Main Bus	19/11/18	09:00:00	19/11/18	17:30:00	ODB	ER-II/Odisha/BARIPADA S/S	CVT Junction Box Replacement	
211	220 kV Bus -II at Jeypore	19/11/18	09:30	19/11/18	13:30	ODB	ER-II/Odisha /Jeypore	Isolator Retrofitting Works of Bus-II side Isolators of ICT- I	**GRIDCO**
212	400 KV Indravati Line Reactor (412LR)	19/11/18	09:00	19/11/18	17:00	ODB	ER-II/Odisha/Rengali	AMP Work	
213	Main Bay-407 of 400KV Raigarh Line-I	19/11/18	09:00	19/11/18	18:00:00	ODB	ER-II/Odisha/Sundergarh	AMP Work	
214	411 BAY (TIE BAY KAHALGAON-II & BR-II) AT BANKA	19/11/18	09:30	19/11/18	16:30	ODB	POWERGRID ER1	AMP	
215	220KV Side Bay (205) OF ICT -1 AT RANCHI	19/11/18	10:00	19/11/18	17:00	ODB	POWERGRID ER1	AMP	
216	765 KV BUS-II at Gaya S/S	19/11/18	09:00	19/11/18	18:00	ODB	POWERGRID ER1	for Stringing & Isolator , BPI erection work for 765/400 kV ICT- IV under GE package	**NLDC**
217	400 /220 kV ICT-II at Gaya ss	19/11/18	09:00	19/11/18	18:00	ODB	POWERGRID ER1	for Stringing & Isolator , BPI erection work for 400/220 kV ICT- III under Techno package	**BIHAR**
218	400 KV GAYA-NABINAGAR -1 line	19/11/18	09:00	21/11/18	18:00	ODB	POWERGRID ER1	for Stringing & Isolator , CT erection work for 765/400 kV ICT- IV under GE package	
219	400 KV BUS-II at Gaya S/S	19/11/18	09:00	24/11/18	18:00	ODB	POWERGRID ER1	for Stringing & Isolator , CT erection work for 765/400 kV ICT- IV under GE package	**BIHAR**
220	400kV Maithon-Gaya-2 line	19/11/18	09:00	20/11/18	18:00	ODB	POWERGRID ER1	For replacement of insulators damaged by miscreant	
221	220 KV TBC BAY (204) AT PURNEA	19/11/18	09:00	19/11/18	17:00	ODB	POWERGRID ER1	AMP	
222	765 KV Tie bay of ICT-I & Future at NEW Ranchi	19/11/18	08:00	20/11/18	18:00	ODB	POWERGRID ER1	AMP	**NLDC**
223	Main Bay of 400kV Durgapur line(404 Bay) AT JAMSHEDPUR	19/11/18	09:30	20/11/18	17:30	OCB	POWERGRID ER1	Overhauling of drive unit of Pneumatic CB	
224	220 KV MUZ-MTPS -1	19/11/18	09:00	19/11/18	17:00	ODB	POWERGRID ER1	AMP work	**BIHAR**
225	400KV NEW PURNEA -SILIGURI LINE-I	19/11/18	10:00	19/11/18	18:00	ODB	POWERGRID ER1	Erection of BPI at Line Isolator.	**NLDC**
226	80 Mvar Bus Reactor-1 AT DALTONGANJ	19/11/18	09:30	19/11/18	17:30	ODB	POWERGRID ER1	CSD (Main & Tie) On load commissioning work.	
227	500 MVA ICT-2 AT KISHANGANJ	19/11/18	08:30 hrs	19/11/18	16:00	ODB	POWERGRID ER1	AMP	**BIHAR**
228	63MVAR Biharsharif-II L/R at Pusauli	19/11/18	09:00	19/11/18	18:00	ODB	POWERGRID ER1	AMP work	**Line SD is required or not?**
229	400 KV BUS - I & II AT CHANDAWA	19/11/18	09:00	19/11/18	18:00	ODB	POWERGRID ER1	HV & PD test of North Karnpura - II GIS Bay No. - 406.	**NLDC**
230	402 KV PATNA - BALIA - 1	19/11/18	09:00	20/11/18	18:00	ODB	POWERGRID ER1	For guy arrengment of Line Isolator & replacement of quard conductor to twin of line LA,CVT and BPI	**NLDC**
231	400KV FKK-DGP Line-1 Shunt Reactor at FSTPP	19/11/18	09:00	21/11/18	17:00	OCB	FSTPP	Shunt Reactor Relay dismantling, retrofitting and commissioning	**Line SD is required or not?**
232	400/220/33kv 315MVA ICT- I at Alipurduar	20/11/18	08:00	20/11/18	18:00	ODB	Powergrid, ER-II	NTAMC Adaptation work.	**NLDC**
233	400 KV Bharamore-Sagardighi-2 Line	20/11/18	09.00Hrs	20/11/18	17.00Hrs	ODB	Powergrid, ER-II	Bay AMP & Relay Checking	**WB**
234	132 KV Siliguri Melli	20/11/18	10:00	20/11/18	17:00	ODB	Powergrid, ER-II	Balance Insulator replacement work at NH crossing	**SIKKIM**
235	220KV DLK-MLD # I	20/11/18	08:00	20/11/18	17:00	ODB	Powergrid, ER-II	A/R RELAY RETROFITTING.	
236	400 KV Subhasgram Sagardighi Line	20/11/18	09:00	20/11/18	17:30	ODB	Powergrid, ER-II	A/R Relay retrofitting at Subhasgram end	**WB**
237	765kV Sundargarh Line-1 Main Bay (709) at Angul	20/11/18	10:00	20/11/18	14:00	ODB	ER-II/Odisha/Angul SS	AMP Work.	**NLDC**
238	500 MVA ICT	20/11/18	09:00:00	20/11/18	17:30:00	ODB	ER-II/Odisha/BARIPADA S/S	AMP works	**GRIDCO**
239	220 kV Bus -II at Jeypore	20/11/18	09:30	20/11/18	13:30	ODB	ER-II/Odisha /Jeypore	Isolator Retrofitting Works of Bus-II side Isolators of Bus Coupler	**GRIDCO**
240	315 MVA, ICT-2 Main BAY	20/11/18	09:00:00	20/11/18	18:00:00	ODB	ER-II/Odisha/Balangir	AMP for 404 52 CB and 404 CT	
241	ICT-II shutdown for AMP at OHPC S/Y	20/11/18	09:00:00	20/11/18	18:00	ODB	ER-II/Odisha /Indravati	AMP work of ICT-II 220KV Main Bay (205) and 400KV main Bay(403) at OHPC S/Y.	
242	Tie Bay-408 of 400KV Raigarh Line-I & Future	20/11/18	09:00	20/11/18	18:00:00	ODB	ER-II/Odisha/Sundergarh	AMP Work	
243	403 BAY (400KV ICT-I MAIN BAY) AT BANKA	20/11/18	09:30	20/11/18	16:30	ODB	POWERGRID ER1	AMP	
244	400 KV MAIN BAY OF MAITHAN RB-1 (407 BAY) AT RANCHI	20/11/18	10:00	20/11/18	17:00	ODB	POWERGRID ER1	AMP	
245	220 KV DLK-PRN-2 BAY NO-201 AT PURNEA	20/11/18	09:00	20/11/18	17:00	ODB	POWERGRID ER1	AMP	
246	200 MVA ICT-2 & 80 MVAR Bus Reactor AT LAKHISARAI	20/11/18	09:00	23/11/18	17:00	ODB	POWERGRID ER1	Fire wall Construction, Checking of Aircel of ICT-2	**BIHAR**

247	220 KV MUZ-MTPS -2	20/11/18	09:00	20/11/18	17:00	ODB	POWERGRID ER1	AMP work	**BIHAR**
248	400KV NEW PURNEA -SILIGURI LINE-II	20/11/18	10:00	20/11/18	18:00	ODB	POWERGRID ER1	Erection of BPI at Line Isolator.	**NLDC**
249	400 KV BIHARSHARIF - BALIA -1	20/11/18	09:00	21/11/18	17:00	ODB	POWERGRID ER1	REPLACEMENT OF PORCELAIN INSULATOR WITH POLYMER	**NLDC**
250	400kV Daltonganj- Sasaram-1 line	20/11/18	09:30	20/11/18	17:30	ODB	POWERGRID ER1	LINE REACTOR-1 CSD (Main & Tie) ON LOAD COMMISSIONING WORK.	
251	400kV Koderma - Gaya CKT -I	20/11/18	09:00	20/11/18	18:00	ODB	POWERGRID ER1	For replacement of insulators damaged by miscreant	**DVC**
252	400 kV PATNA-BALIA CKT 2	20/11/18	09:00	20/11/18	17:30	ODB	POWERGRID ER1	FOR REPLACEMENT OF PORCELAIN INSULATORS WITH POLYMER INSULATORS	**NLDC**
253	400 KV BUS I AT KISHANGANJ	20/11/18	10:00	23/11/18	20:00	OCB	POWERGRID ER1	BAY EXTN work (400 KV BUS EXTN under TBCB Project)	**After restoration of 400kV Kishanganj-Patna-DC**
254	315MVA ICT-II BIHARSARIF	20/11/18	09:00	20/11/18	17:00	ODB	POWERGRID ER1	AMP work	**BIHAR**
255	205 BAY (TBC BAY) AT CHAIBASA	20/11/18	10:00	20/11/18	17:00	ODB	POWERGRID ER1	AMP work	
256	400/220kV 315MVA ICT-II at Pusauli	20/11/18	09:00	25/12/18	18:00	OCB	POWERGRID ER1	For Transformer Retrofitting Work	**BIHAR**
257	132 KV D/C SONENAGAR - AURANGABAD AND U/C 132 KV D/C BARUN - AURANGABAD OF BSPTCL	20/11/18	08:00	21/11/18	18:00	ODB	POWERGRID ER1	FOR POWER LINE CROSSING WORK OF 400 KV PATNA - NABINAGAR LINE	**BIHAR**
258	400 KV 80MVAR Bus Reactor-1 at Baharampore	21/11/18	09.00Hrs	21/11/18	17.00Hrs	ODB	Powergrid, ER-II	Replacement/Checking of WTI/OTI	
259	132 KV Siliguri kurseong	21/11/18	10:00	21/11/18	17:00	ODB	Powergrid, ER-II	Balance Insulator replacement work at NH crossing	**WB**
260	132 KV PGCIL (Birpara) -WBSETCL (Birpara) -1 Line	21/11/18	08:00 Hrs	21/11/18	17:30 Hrs	ODB	Powergrid, ER-II	AMP Work For GIS Testing	**WB**
261	220KV DLK-MLD # II	21/11/18	08:00	21/11/18	17:00	ODB	Powergrid, ER-II	A/R RELAY RETROFITTING.	
262	407 bay(B' Nagar-I Main Bay) at Durgapur	21/11/18	9.00 hrs	21/11/18	17.00 hrs	OCB	Powergrid, ER-II	FOR AMP WORK	
263	400 KV Subhasgram Jeerat Line	21/11/18	09:00	21/11/18	17:30	ODB	Powergrid, ER-II	A/R Relay retrofitting at WBSETCL Jeerat End	**WB**
264	765kV Srikakulam Line-2 & Future Tie Bay (725) at Angul	21/11/18	10:00:00	21/11/18	14:00:00	ODB	ER-II/Odisha/Angul SS	AMP Work.	**NLDC**
265	132KV Bangriposi Line	21/11/18	09:00:00	21/11/18	17:30:00	ODB	ER-II/Odisha/BARIPADA S/S	CT Junction Box Replacement	**GRIDCO**
266	220 kV Bus -I at Jeypore	21/11/18	09:30	21/11/18	13:30	ODB	ER-II/Odisha /Jeypore	Isolator Retrofitting Works of Bus-I side Isolators of Jeynagar I	**GRIDCO**
267	Main Bay-410 of 400KV Rourkela Line-I	21/11/18	09:00	21/11/18	18:00:00	ODB	ER-II/Odisha/Sundergarh	AMP Work	
268	406 BAY (400KV ICT-II MAIN BAY) AT BANKA	21/11/18	09:30	21/11/18	16:30	ODB	POWERGRID ER1	AMP	
269	TIE BAY OF 400KV RKL-2 & MTN RB-2 (411 BAY) AT RANCHI	21/11/18	10:00	21/11/18	17:00	ODB	POWERGRID ER1	AMP	
270	220 KV DLK-PRN-1 BAY-202 AT PURNEA	21/11/18	09:00	21/11/18	17:00	ODB	POWERGRID ER1	AMP	
271	Main bay of 765 KV B/R-II at NEW Ranchi	21/11/18	08:00	22/11/18	18:00	ODB	POWERGRID ER1	AMP	**NLDC**
272	400KV NEW PURNEA -KISHANGANJ LINE-II	21/11/18	10:00	21/11/18	18:00	ODB	POWERGRID ER1	Erection of BPI at Line Isolator.	**NLDC**
273	400/220kV 315 MVA ICT-1 AT DALTONGANJ	21/11/18	09:30	21/11/18	17:30	ODB	POWERGRID ER1	CSD (Main & Tie) On load commissioning work.	**JSEB**
274	400 kV PATNA-BALIA CKT 3	21/11/18	09:00	21/11/18	17:30	ODB	POWERGRID ER1	FOR REPLACEMENT OF PORCELAIN INSULATORS WITH POLYMER INSULATORS	**NLDC**
275	400KV BIHARSHARIF - LAKHISARAI -I	21/11/18	08:00	21/11/18	18:00	ODB	POWERGRID ER1	Replacement of Insulator & Replacement of Jumper Nut & Bolts and other Misc. Shut down	
276	315MVA ICT-I AT BIHARSARIF	21/11/18	09:00	21/11/18	17:00	ODB	POWERGRID ER1	AMP work	**BIHAR**
277	63MVAR Allahabad L/R Bay at Pusauli	21/11/18	10:00	27/11/18	19:00	OCB	POWERGRID ER1	Pole Overhauling of Breaker	**Line SD is required or not?**
278	400kV Barh Patna Line-3	21/11/18	09:30	22/11/18	18:00	OCB	BARH	Attending defects of isolator & annual testing of Bay equipments	
279	400 KV 125MVAR Bus Reactor-2 at Baharampore	22/11/18	09.00Hrs	23/11/18	17.00Hrs	ODB	Powergrid, ER-II	For completion of balance pending works (BALANCE CONSTRUCTION ACTIVITIES).	
280	132 KV POWERGRID Birpara -WBSEB (Birpara) -2 Line	22/11/18	08:00 Hrs	22/11/18	17:30 Hrs	ODB	Powergrid, ER-II	AMP Work For GIS Testing	**WB**
281	315MVA ICT-III at Malda	22/11/18	08:00	22/11/18	11:00	ODB	Powergrid, ER-II	For changing of dropper under ERSS XVII	**WB**
282	765/400kV, 3*500MVA ICT-1 at Angul	22/11/18	10:00:00	22/11/18	18:00:00	ODB	ER-II/Odisha/Angul SS	AMP Work.	**NLDC**
283	315MVA ICT I	22/11/18	09:00:00	22/11/18	17:30:00	ODB	ER-II/Odisha/BARIPADA S/S	CT Junction Box Replacement	**GRIDCO**
284	220 kV Bus -I at Jeypore	22/11/18	09:30	22/11/18	13:30	ODB	ER-II/Odisha /Jeypore	Isolator Retrofitting Works of Bus-I side Isolators of Jeynagar II	**GRIDCO**
285	400KV RANCHI#1 & SUNDARGARH#2 TIE BAY (BAY NO.-420	22/11/18	09:00	22/11/18	18:00	ODB	ER-II/ODISHA/ROURKELA	RETROFITTING OF TIE BAY CONVENTIONAL A/R RELAY (VARM) BY NUMERICAL A/R RELAY.	
286	400KV ROURKELA-SUNDARGARH#2	22/11/18	16:00:00	22/11/18	18:00:00	ODB	ER-II/ODISHA/ROURKELA	TESTING OF A/R CIRCUIT AFTER A/R RELAY RETROFITTING IN ITS TIE BAY.	
287	Tie Bay-411 of 400KV Rourkela Line-I & Future	22/11/18	09:00	22/11/18	18:00:00	ODB	ER-II/Odisha/Sundergarh	AMP Work	
288	409 BAY (400KV BR-I MAIN BAY) AT BANKA	22/11/18	09:30	22/11/18	16:30	ODB	POWERGRID ER1	AMP	
289	400KV RANCHI - MAITHAN (RB)-I	22/11/18	10:00	22/11/18	17:00	ODB	POWERGRID ER1	Changing of falsh over Insulator	
290	400 KV GAYA-NABINAGAR -2 line	22/11/18	09:00	24/11/18	18:00	ODB	POWERGRID ER1	for Stringing & Isolator , CT erection work for 765/400 kV ICT- IV under GE package	
291	765kV S/C Gaya-Balia line	22/11/18	09:00	23/11/18	18:00	ODB	POWERGRID ER1	For replacement of insulators damaged by miscreant	**NLDC**
292	160 MVA ICT#2 (220 kV side) BAY NO-203 AT PURNEA	22/11/18	09:00	22/11/18	17:00	ODB	POWERGRID ER1	AMP	
293	400 kv Bus-2 AT MUZAFFARPUR	22/11/18	09:00	24/11/18	17:00	ODB	POWERGRID ER1	AMP work	**BIHAR**
294	MAIN BAY OF 500MVA ICT-II (403) AT NEW PURNEA	22/11/18	10:00	22/11/18	18:00	ODB	POWERGRID ER1	AMP	
295	400 KV BIHARSHARIF - BALIA -2	22/11/18	09:00	23/11/18	17:00	ODB	POWERGRID ER1	REPLACEMENT OF PORCELAIN INSULATOR WITH POLYMER	**NLDC**

296	400 KV Sasaram-Allahabad	22/11/18	09:00	22/11/18	18:00	ODB	POWERGRID ER1	for washing of polluted insulator strings	**NLDC**
297	400kV Daltonganj- Sasaram-2 line	22/11/18	09:30	22/11/18	17:30	ODB	POWERGRID ER1	LINE REACTOR-2 CSD (Main & Tie) ON LOAD COMMISSIONING WORK.	
298	400kV Koderma - Gaya CKT -II	22/11/18	09:00	22/11/18	18:00	ODB	POWERGRID ER1	For replacement of insulators damaged by miscreant	**DVC**
299	400 kV PATNA-BALIA CKT 4	22/11/18	09:00	22/11/18	17:30	ODB	POWERGRID ER1	FOR REPLACEMENT OF PORCELAIN INSULATORS WITH POLYMER INSULATORS	**NLDC**
300	220KV Sipara -2 bay 208 AT PATNA	22/11/18	09:30	22/11/18	18:00	ODB	POWERGRID ER1	AMP	
301	125MVAr Bus Reactor-3 BIHARSARIF	22/11/18	09:00	22/11/18	17:00	ODB	POWERGRID ER1	AMP work	
302	403 BAY(MAIN BAY OF ICT-1) AT CHAIBASA	22/11/18	10:00	22/11/18	17:00	ODB	POWERGRID ER1	AMP work	
303	400kV FKK-Bahrampore Line-2 Shunt Reactor at FSTPP	22/11/18	09:00	24/11/18	17:00	OCB	FSTPP	Reactor Relay dismantling, retrofitting and commissioning	**Line SD is required or not?**
304	220KV Bus Coupler Bay (Bay No.204) at Powergrid,Subhasgram	23/11/18	09:00	23/11/18	17:30	OCB	Powergrid, ER-II	CGL make CB Overhauling	**WB**
305	400 KV 413 Main Bay of 500 MVA ICT	23/11/18	09:00:00	23/11/18	17:30:00	ODB	ER-II/Odisha/BARIPADA S/S	AMP works	
306	220 kV Bus -I at Jeypore	23/11/18	09:30	23/11/18	13:30	ODB	ER-II/Odisha /Jeypore	Isolator Retrofitting Works of Bus-I side Isolators of ICT- I	**GRIDCO**
307	400KV SUNDARGARH#4 & 125MVAR BUS REACTOR#2 TIE BAY (BAY NO.-426) AT ROURKELA	23/11/18	09:00:00	23/11/18	18:00:00	ODB	ER-II/ODISHA/ROURKELA	RETROFITTING OF TIE BAY CONVENTIONAL A/R RELAY (VARM) BY NUMERICAL A/R RELAY.	
308	400KV ROURKELA-SUNDARGARH#4	23/11/18	16:00:00	23/11/18	18:00:00	ODB	ER-II/ODISHA/ROURKELA	TESTING OF A/R CIRCUIT AFTER A/R RELAY RETROFITTING IN ITS TIE BAY.	
309	Main Bay-413 of 400KV Bus Reactor-I	23/11/18	09:00	23/11/18	18:00:00	ODB	ER-II/Odisha/Sundergarh	AMP Work	
310	160 MVA ICT#1(220 Kv side) BAY NO-205 AT PURNEA	23/11/18	09:00	23/11/18	17:00	ODB	POWERGRID ER1	AMP	
311	400 KV, 125 MVAR B/R-I AT NEW RANCHI	23/11/18	08:00	23/11/18	18:00	ODB	POWERGRID ER1	AMP	
312	MAIN BAY OF KISHANGANJ-I (407) AT NEW PURNEA	23/11/18	10:00	23/11/18	18:00	ODB	POWERGRID ER1	AMP	
313	400 KV Sasaram-Varanasi	23/11/18	09:00	23/11/18	18:00	ODB	POWERGRID ER1	for washing of polluted insulator strings	**NLDC**
314	400KV BARH PATNA CKT-1	23/11/18	09:00	23/11/18	17:30	ODB	POWERGRID ER1	FOR REPLACEMENT OF PORCELAIN INSULATORS WITH POLYMER INSULATORS	
315	220KV Sipara -1 bay 210 AT PATNA	23/11/18	09:30	23/11/18	18:00	ODB	POWERGRID ER1	AMP	
316	MAIN BAY OF 80 MVAR B/R - II (Bay No.-412) AT BIHARSARIF	23/11/18	10:00	23/11/18	18:00	ODB	POWERGRID ER1	AMP work	
317	12 KV GAYA - SONENAGAR D/C	23/11/18	08:00	24/11/18	18:00	ODB	POWERGRID ER1	FOR POWER LINE CROSSING WORK OF 400 KV PATNA - NABINAGAR LINE	**BIHAR**
318	400KV Kahalgaon-Barh Line-2	23/11/18	09:30	23/11/18	17:30	ODB	KAHALGAON	PM works and Relay testing	
319	408 bay(B'Nagar-I & ICT-I Tie bay) at Durgapur	24/11/18	9.00 hrs	24/11/18	17.00 hrs	OCB	Powergrid, ER-II	FOR AMP WORK	
320	765kV, 3*80MVAR Sundargarh Line-1 Reactor at Angul	24/11/18	10:00:00	24/11/18	18:00:00	ODB	ER-II/Odisha/Angul SS	AMP Work.	**NLDC**
321	400 KV 414 Tie bay of 500 MVA ICT& 125 MVAR BUS REACT	24/11/18	09:00:00	24/11/18	17:30:00	ODB	ER-II/Odisha/BARIPADA S/S	AMP works	
322	220 kV Bus -I at Jeypore	24/11/18	09:30	24/11/18	13:30	ODB	ER-II/Odisha /Jeypore	Isolator Retrofitting Works of Bus-I side Isolators of Bus Coupler	**GRIDCO**
323	Tie Bay-414 of 400KV Bus Reactor-I& Sterlite#I	24/11/18	09:00	24/11/18	18:00:00	ODB	ER-II/Odisha/Sundergarh	AMP Work	
324	315MVA ICT-I AT RANCHI	24/11/18	10:00	24/11/18	17:00	ODB	POWERGRID ER1	AMP	**JSEB**
325	220 KV BUS COUPLER BAY NO-206 AT PURNEA	24/11/18	09:00	24/11/18	17:00	ODB	POWERGRID ER1	AMP	
326	TIE BAY OF KISHANGANJ-I & MUZ-II (408) AT NEW PURNEA	24/11/18	10:00	24/11/18	18:00	ODB	POWERGRID ER1	AMP	
327	765 KV SASARAM - FATEHPUR	24/11/18	09:00	25/11/18	18:00	ODB	POWERGRID ER1	FOR FIXING OF MISSING JUMPER BOLTS AND FIXING OF MISSING TOWER PARTS ABOVE X-ARM	**NLDC**
328	400KV Biharsarif - Koderma CKT -I	24/11/18	09:00	24/11/18	18:00	ODB	POWERGRID ER1	For replacement of insulators damaged by miscreant	**DVC**
329	400KV BARH PATNA CKT-2	24/11/18	09:00	24/11/18	17:30	ODB	POWERGRID ER1	FOR REPLACEMENT OF PORCELAIN INSULATORS WITH POLYMER INSULATORS	
330	220KV Bus coupler no 205 AT PATNA	24/11/18	09:30	24/11/18	18:00	ODB	POWERGRID ER1	AMP	
331	400 KV BUS II AT KISHANGANJ	24/11/18	10:00	26/11/18	20;00	OCB	POWERGRID ER1	BAY EXTN work (400 KV BUS EXTN under TBCB Project)	**After restoration of 400kV Kishanganj-Patna-DC**
332	MAIN BAY OF 400 KV BIHARSARIF - SASARAM - I (Bay No.-) AT BIHARSARIF	24/11/18	10:00	24/11/18	18:00	ODB	POWERGRID ER1	AMP work	
333	220 KV Birpara - Malbase Line	26/11/18	08:00 Hrs	26/11/18	17:30 Hrs	ODB	Powergrid, ER-II	Jumper Changing at LOC. 110	
334	400 KV New Siliguri - Tala Ckt. 1	26/11/18	08:00 Hrs	26/11/18	17:30 Hrs	ODB	Powergrid, ER-II	As LOC. 110 of Malbase is in Multi Ckt, hence for safety reason, 400 KV Tala ckt. 1 is also required to	**NLDC**
335	409 bay(ICT-I Main Bay) at Durgapur	26/11/18	9.00 hrs	26/11/18	17.00 hrs	OCB	Powergrid, ER-II	FOR AMP WORK	
336	400KV Maithon-Right Bank # 2	26/11/18	08:00	30/11/18	18:00	OCB	Powergrid, ER-II	Re conductoring work	
337	400 KV 415 Main bay of 125 MVAR REACTOR#1	26/11/18	09:00:00	26/11/18	17:30:00	ODB	ER-II/Odisha/BARIPADA S/S	AMP works	
338	220KV JEYNAGAR-I Line	26/11/18	09:30	26/11/18	17:00	ODB	ER-II/Odisha /Jeypore	For Isolator Retrofitting works (220KV Jeynagar-I 89C Isolator) & R-ph CVT replacement work	**GRIDCO**
339	Main Bay-415 of 400KV Sterlite#1	26/11/18	09:00	26/11/18	18:00:00	ODB	ER-II/Odisha/Sundergarh	AMP Work	
340	400 kv (Quad) D/C Bongaigaon - Alipurduar line CKT-1(BNG- ALIP #1)	26/11/18	08:00	26/11/18	18:00	ODB	ENICL	For AMP Work	**NLDC**
341	400KV BUS-BAR-I AT RANCHI	26/11/18	10:00	26/11/18	17:00	ODB	POWERGRID ER1	Errection & Commisssioning of Jack bus for Tie Bay of Ranchi-New Ranchi-I & II)	
342	400 KV BUS-I at Gaya S/S	26/11/18	09:00	26/11/18	18:00	ODB	POWERGRID ER1	for Stringing & Isolator , BPI erection work for 400/220 kV ICT- III under Techno package	**BIHAR**
343	160 MVA ICT#3 (220 kV side) BAY NO-207 AT PURNEA	26/11/18	09:00	26/11/18	17:00	ODB	POWERGRID ER1	AMP	

344	1500 MVA ICT-II AT NEW RANCHI	26/11/18	08:00	27/11/18	18:00	ODB	POWERGRID ER1	AMP	**NLDC**
345	Main Bay of 315MVA ICT1 (410 Bay) AT JAMSHEDPUR	26/11/18	09:30	27/11/18	17:30	OCB	POWERGRID ER1	Overhauling of drive unit of Pneumatic CB	
346	MAIN BAY OF MUZ-II (409) AT NEW PURNEA	26/11/18	10:00	26/11/18	18:00	ODB	POWERGRID ER1	AMP	
347	400 KV BIHARSHARIF - VARANASI -1	26/11/18	09:00	27/11/18	18:00	ODB	POWERGRID ER1	for washing of polluted insulator strings	**NLDC**
348	400KV BARH PATNA CKT-3	26/11/18	09:00	26/11/18	17:30	ODB	POWERGRID ER1	FOR REPLACEMENT OF PORCELAIN INSULATORS WITH POLYMER INSULATORS	
349	220KV Bus 1 AT PATNA	26/11/18	09:30	27/11/18	18:00	ODB	POWERGRID ER1	AMP	**BIHAR**
350	220 KV Birpara - New Siliguri Ckt. 1	27/11/18	08:00 Hrs	28/11/18	17:30 Hrs	ODB	Powergrid, ER-II	A/R RELAY RETROFITTING.	
351	220KV JEYNAGAR-II Line	27/11/18	09:30	27/11/18	13:30	ODB	ER-II/Odisha /Jeypore	For Isolator Retrofitting works (220KV Jeynagar-II 89C Isolator)	**GRIDCO**
352	125 MVAR BUS REACTOR#1	27/11/18	09:00:00	27/11/18	18:00:00	ODB	ER-II/ODISHA/ROURKELA	AMP OF BUS REACTOR & COMMISSIOINING OF CSD IN ITS TIE BAY CB (42352 CB).	
353	Main Bay-416 of 400KV Bus Reactor-II	27/11/18	09:00	27/11/18	18:00:00	ODB	ER-II/Odisha/Sundergarh	AMP Work	
354	400 kv (Quad) D/C Bongaigaon - Alipurduar line CKT-2(BNG- ALIP #2)	27/11/18	08:00	27/11/18	18:00	ODB	ENICL	For AMP Work	**NLDC**
355	400 KV 125 MVAR BR-I AT GAYA	27/11/18	09:00	27/11/18	18:00	ODB	POWERGRID ER1	for Stringing & Isolator , CT erection work for 765/400 kV ICT- IV under GE package	
356	220 KV PRN-NPRN-1 BAY NO-208 AT PURNEA	27/11/18	09:00	27/11/18	17:00	ODB	POWERGRID ER1	AMP	
357	REACTOR BAY OF MUZ-II (409R) AT NEW PURNEA	27/11/18	10:00	27/11/18	18:00	ODB	POWERGRID ER1	AMP	
358	400KV Biharsarif - Koderma CKT -II	27/11/18	09:00	27/11/18	18:00	ODB	POWERGRID ER1	For replacement of insulators damaged by miscreant	**DVC**
359	400KV BARH PATNA CKT-4	27/11/18	09:00	27/11/18	17:30	ODB	POWERGRID ER1	FOR REPLACEMENT OF PORCELAIN INSULATORS WITH POLYMER INSULATORS	
360	400kV BIHARSHARIF-Sasaram-1	27/11/18	09:00	27/11/18	18:00	ODB	POWERGRID ER1	Jumper connection among Isolator to CB to Reactor to make switchable make switchable 50Mvar Sasaram-1 Line Reactor.	
361	SgTPP: 315MVA ICT	27/11/18	08:00	27/11/18	15:00	ODB	WB	Maintenance work	
362	410 bay(Sagardighi-II Main Bay) at Durgapur	28/11/18	9.00 hrs	28/11/18	17.00 hrs	OCB	Powergrid, ER-II	FOR AMP WORK	
363	400 KV BUS-I of NTPC Farakka	28/11/18	09:00	28/11/18	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	
364	ICT-I (3x 105 MVA) at Jeypore	28/11/18	09:30	28/11/18	13:30	ODB	ER-II/Odisha /Jeypore	For Isolator Retrofitting works (220KV ICT I 89C Isolator)	**GRIDCO**
365	Tie Bay-417 of 400KV Bus Reactor-II & Sterlite#II	28/11/18	09:00	28/11/18	18:00:00	ODB	ER-II/Odisha/Sundergarh	AMP Work	
366	400KV BUS-BAR-II AT RANCHI	28/11/18	10:00	28/11/18	17:00	ODB	POWERGRID ER1	Fixing of stool on Bus CVT	
367	400 KV 125 MVAR BR-II AT GAYA	28/11/18	09:00	28/11/18	18:00	ODB	POWERGRID ER1	for Stringing & Isolator , CT erection work for 765/400 kV ICT- IV under GE package	
368	220 KV PRN-NPRN-2 BAY NO-209 AT PURNEA	28/11/18	09:00	28/11/18	17:00	ODB	POWERGRID ER1	AMP	
369	765 KV Bus-I AT NEW RANCHI	28/11/18	08:00	29/11/18	18:00	ODB	POWERGRID ER1	AMP	**NLDC**
370	MAIN BAY OF MUZ-I (412) AT NEW PURNEA	28/11/18	10:00	28/11/18	18:00	ODB	POWERGRID ER1	AMP	
371	400KV KAHALGAON BARH CKT 1	28/11/18	09:00	28/11/18	17:30	ODB	POWERGRID ER1	FOR REPLACEMENT OF PORCELAIN INSULATORS WITH POLYMER INSULATORS	
372	220Kv Bus 2AT PATNA	28/11/18	09:30	30/11/18	18:00	ODB	POWERGRID ER1	AMP	**BIHAR**
373	50Mvar Lakhisara-2 Line Reactor	28/11/18	09:00	28/11/18	18:00	ODB	POWERGRID ER1	For CSD commissioning	**Line SD is required or not?**
374	400 KV BERHAMPUR-BANGLADESH-I	29/11/18	09:00	29/11/18	16:00	ODB	ER-II	FOR SPS IMPLEMENTATION.	**NLDC**
375	406 bay(B/R-I &II Main Bay) at Durgapur	29/11/18	9.00 hrs	29/11/18	17.00 hrs	OCB	Powergrid, ER-II	FOR AMP WORK	
376	765kV BUS-2 at Sundargarh	29/11/18	08:00	30/11/18	18:00:00	OCB	ER-II/Odisha/Sundergarh	Erection of structure & busduct of 765KV GIS bus sectionalizer under construction head	**NLDC**
377	Main Bay-418 of 400KV Sterlite#II	29/11/18	09:00	29/11/18	18:00:00	ODB	ER-II/Odisha/Sundergarh	AMP Work	
378	400 kv (Quad) D/C Alipurduar - Siliguri line CKT- 1(ALIP-SLG #1)	29/11/18	10:00	29/11/18	16:00	ODB	ENICL	For AMP Work	
379	TIE BAY OF 400KV MTN RB-1 & FUTURE BAY (408 BAY) AT RANCHI	29/11/18	10:00	29/11/18	17:00	ODB	POWERGRID ER1	AMP	
380	220 KV BUS-I at Gaya S/S	29/11/18	09:00	29/11/18	18:00	ODB	POWERGRID ER1	for Stringing & Isolator , BPI erection work for 400/220 kV ICT- III under Techno package	**BIHAR**

381	220 KV DALKHOLA - PURNEA-2	29/11/18	09:00	29/11/18	17:00	ODB	POWERGRID ER1	REPLACEMENT OF AUTO- RECLOSE RELAY	
382	50 MVAR Line Reactor of PPSP Line-II at NEW Ranchi	29/11/18	08:00	29/11/18	18:00	ODB	POWERGRID ER1	AMP	**Line SD is required or not?**
383	REACTOR BAY OF MUZ-I (412R) AT NEW PURNEA	29/11/18	10:00	29/11/18	18:00	ODB	POWERGRID ER1	AMP	
384	400 KV BIHARSHARIF - VARANASI -2	29/11/18	09:00	30/11/18	18:00	ODB	POWERGRID ER1	for washing of polluted insulator strings	**NLDC**
385	400kV Koderma - Bokaro CKT -I	29/11/18	09:00	29/11/18	18:00	ODB	POWERGRID ER1	For replacement of insulators damaged by miscreant	**DVC**
386	400KV KAHALGAON BARH CKT 1	29/11/18	09:00	29/11/18	17:30	ODB	POWERGRID ER1	FOR REPLACEMENT OF PORCELAIN INSULATORS WITH POLYMER INSULATORS	
387	50Mvar Sasaram-1 Line Reactor	29/11/18	09:00	29/11/18	18:00	ODB	POWERGRID ER1	For CSD commissioning	**Line SD is required or not?**
388	400kv SgTPP-Subhasgram S/C	29/11/18	08:00	29/11/18	15:00	ODB	WB	Maintenance work	
389	400 KV BERHAMPUR-BANGLADESH-II	30/11/18	09:00	30/11/18	16:00	ODB	ER-II	FOR SPS IMPLEMENTATION.	**NLDC**
390	63 Mvar B/R at Jeypore	30/11/18	09:00	04/12/18	18:00	ODB	ER-II/Odisha /Jeypore	For renovation of new fire-fighting systems in 63 MVAr Bus Reactor. During the above period	
391	400 kv (Quad) D/C Alipurduar - Siliguri line CKT- 2(ALIP-SLG #2)	30/11/18	10:00	30/11/18	16:00	ODB	ENICL	For AMP Work	
392	220 KV BUS-II at Gaya S/S	30/11/18	09:00	30/11/18	18:00	ODB	POWERGRID ER1	for Stringing & Isolator , BPI erection work for 400/220 kV ICT- III under Techno package	**BIHAR**
393	220 KV DALKHOLA - PURNEA-1	30/11/18	09:00	30/11/18	17:00	ODB	POWERGRID ER1	REPLACEMENT OF AUTO- RECLOSE RELAY	
394	400kV Koderma - Bokaro CKT -II	30/11/18	09:00	30/11/18	18:00	ODB	POWERGRID ER1	For replacement of insulators damaged by miscreant	**DVC**
395	MAIN BAY OF 315 MVA ICT - II (Bay no.-422) AT BIHARSARIF	30/11/18	10:00	30/11/18	18:00	ODB	POWERGRID ER1	AMP work	
396	400kv SgTPP-Farakka#1	30/11/18	08:00	30/11/18	15:00	ODB	WB	Maintenance work	

* **Detail paln of insulator replacement must be submitted**

Outages approved in other RPCs requiring ERPC approval

Sl No	Name of Elements	From		To		Basis	outages proposed in	Reason	Remarks
		Date	Time	Date	Time				
1	GAYA-ER (765KV)-BALIA (765KV)	19-Nov-18	09:00	20-Nov-18	18:00	DAILY	NRPC	For guy arrangement of Line Isolator & replacement of quard conductor to twin of line LA,CVT and BPI jumper.	
2	BALIA(400KV)-PATNA-ER (400KV)3	12-Nov-18	09:00	14-Nov-18	18:00	DAILY	NRPC	For replacement of porcelain insulator to polymer insulator for 60 nos. Tension Towers of Line under Ballia T/L.	
3	BALIA(400KV)-PATNA-ER (400KV)4	15-Nov-18	09:00	17-Nov-18	18:00	DAILY	NRPC	For replacement of porcelain insulator to polymer insulator for 60 nos. Tension Towers of Line under Ballia T/L.	
4	MUZAFFARPUR-ER (400KV)-GORAKHPUR-PG (400KV)1	23-Oct-18	09:00	23-Oct-18	16:00	DAILY	NRPC	For testing of Autoreclose Protection Relay after Retrofitment of Obselete Siemens make AR relay with new numerical AR Relay.	
5	MUZAFFARPUR-ER (400KV)-GORAKHPUR-PG (400KV)2	25-Oct-18	09:00	25-Oct-18	16:00	DAILY	NRPC	For testing of Autoreclose Protection Relay after Retrofitment of Obselete Siemens make AR relay with new numerical AR Relay .	
6	Sipat-Ranchi-1 Line	15-Nov-18	07:30 hrs	17-Nov-18	18:00 Hrs.	Continuous	WRPC	For testing of Autoreclose Protection Relay after Retrofitment of Obselete Siemens make AR relay with new numerical AR Relay .	
7	400 RANCHI-SIPAT II	21-Nov-18	10:00	21-Nov-18	18:00	Daily	WRPC	For PMU Installation work at Sipat end.	
8	765 kV D/C Jharsuguda-Dharamjaygarh-I & II	2-Nov-18	09:00	6-Nov-18	18:00	Conti..	WRPC	For swapping with under construction 765 kV D/C Jharsugada-Dharamjaygarh Transmission line-2 (ckt-3&4).	
9	**765kV D'JAIGARH-RANCHI II**	14-Nov-18	09:00	15-Nov-18	18:00	Cont?	WRPC	**To facilitate Gantry & Equipment erection of under construction 765KV Bus Reactor bank#3 at Dharamjaigarh PS.**	

Annexure-E1

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

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

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

Quarterly Preparedness Monitoring -AGENDA

(Status as on :)

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

Annexure – E.4

AVAILABILITY STATUS OF EVENT LOGGER, DISTURBANCE RECORDER & GPS

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

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

Eastern Regional Power Committee

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

NAME OF ORGANISATION:
FOR THE MONTH OF:

SUBSTATION DETAIL:

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

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