

Minutes of 164th OCC Meeting

Date: 31.12.2019 Eastern Regional Power Committee 14, Golf Club Road, Tollygunge Kolkata: 700 033

Minutes of 164th OCC Meeting held on 23rd December, 2019 at ERPC, Kolkata

List of participants is at Annexure-A.

Member Secretary, ERPC chaired the meeting. He welcomed all the participants to the meeting. He informed that 165th OCC Meeting would be held at ERPC, Kolkata in January 2019 and 166th OCC Meeting would be held at Bhubaneswar on 20th February 2019 (tentatively). He added that the following workshop/training sessions are scheduled to be held during last week of December 2019 and January 2019:

- Workshop on Draft CERC (Sharing of Inter-State Transmission Charges & Losses) Regulations, 2019 on 30th December 2019
- National Conference by NPTI, ERPC and ERLDC on 9th & 10th January, 2020
- 3rd Module Training Programme at AIPM, Kolkata from 13th to 17th January, 2020

The details are available at ERPC website.

He advised all the members to kindly note and send the nominations to ERPC Secretariat.

Item no. 1: Confirmation of minutes of 163rd OCC meeting of ERPC held on 15.11.2019

The minutes of 163rd OCC meeting were uploaded in ERPC website and circulated vide letter dated 04.12.2019 to all the constituents.

Members may confirm the minutes.

Deliberation in the meeting

Members confirmed the minutes of 163rd OCC meeting.

PART A : ER GRID PERFORMANCE

Item no. A1: ER Grid performance during November, 2019

The average consumption of Eastern Region for November - 2019 was 360.3 Mu. Eastern Region energy consumption reached a monthly maximum of 394 Mu on 01st November - 2019. Total Export schedule of Eastern region for November - 2019 was 3020.6 Mu, whereas actual export was 2972.1 Mu.

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

- 1. Frequency profile
- 2. Over drawal/under injection by ER Entities
- 3. Performance of Hydro Power Stations during peak hours
- 4. Performance of ISGS during RRAS
- 5. Reactive Power performance of Generators
- 6. Over Voltage issue in ER substations

High voltage is observed at different nodes in Eastern Region during the month of November and first week of December. Some of the nodes where voltage is beyond IEGC upper limit for significant amount of time during the first week of December are shown below:



Deliberation in the meeting

ERLDC presented the performance of the Eastern Regional Grid during November 2019. The presentation is enclosed at **Annexure-A1**.

ERLDC presented a detailed analysis of the drawl pattern of the Eastern Regional constituents. It emerged from the presentation that West Bengal had overdrawn from the Grid for significant times. ERLDC explained that during morning hours both the pumps of PPSP pumped storage station were being switched OFF almost simultaneously. Due to this, sudden load throw-off of 500 MW was observed which is creating sudden jerk on Grid.

OCC advised West Bengal to plan their availability according to the demand and advised to purchase power from market, if necessary. OCC also advised SLDC, West Bengal to avoid switching OFF of both PPSP pumps simultaneously to avoid sudden jerk on Grid.

ERLDC informed that high voltage had been observed at 400kV Adhunik and Patna buses. ERLDC added that the reactive power performance of Adhunik and Barh STPS is not satisfactory during high voltage. Adhunik units are injecting VAR to Grid during the high voltage. The performance can be improved as the margin is available for absorbing more VAR during high voltage.

NTPC informed that they would change the GT tap of unit 4 and 5 to improve the performance of Barh STPS.

OCC advised APNRL to take necessary action within a week to improve the reactive power performance.

7. Restricted Governor /Free Governor Mode Operation of generators in ER

To review the performance of FGMO/RGMO of ER generating units, the event of 1644 MW load loss due to fault at Akal S/S on 01st November 2019 at 11:16hrs is analyzed. During the event frequency decreased from 50.03 Hz to 49.91 Hz. As per SCADA data recorded at ERLDC, actual FRC of ER was around only 21% of the ideal response, which is non-satisfactory.

Table 1: performance of FGMO/RGMO of regional units and FRC of states during the event

of frequency drop event on 01st November 2019

Satisfactory (>70% of	Below Satisfactory (30%	Non Satisfactory (<30% of ideal response)
ideal response)	to 70% of ideal response)	

GMR (ram	oing du	uring	KhSTPP s	stage		and	FSTPP Stage I, II & III, KhSTPP stage I,
governor	respo	onse	TSTPP Stag	ge II.			Barh, BRBCL, MPL, JITPL and APNRL.
needs	to	be	GRIDCO control area FRC		FRC	WB, Jharkhand and DVC control area	
increased)			was below s	satisfa	ctor	у	FRC was non-satisfactory

 Generation end data from NTPC Farakka, NTPC Kahalgaon, NTPC Talcher, NTPC Barh, BRBCL & JITPL and FRC data from SLDC Jharkhand and SLDC GRIDCO are yet to be received (as on 03-12-19). ERLDC SCADA data and PMU data are used to analyze the performance.

The detailed Report on poor governor response from the generators in the Eastern Region for the event in November 2019 is attached in **Annexure-A1.6**.

A two day Training on Frequency Control and Reserves scheduled to be organized at ERLDC on 16th and 17th January 2020. All SLDCs are requested to nominate one or two executives involved in dealing with frequency response performances.

Deliberation in the meeting

ERLDC presented the performance of the generators for a case of 1644 MW load loss on 1st November 2019. The presentation is enclosed at **Annexure-A1**.

OCC observed that the governor performance of the ER generators is not satisfactory and some constituents had not submitted the relevant details to ERLDC for detail analysis. During deliberation it was also emerged that there was a confusion in understanding the CERC regulation by the Generators.

DVC informed that they had already taken corrective action for Andal unit 1 and Mejia unit 7 & 8 in consultation with BHEL and ERLDC.

DVC added that the performance of the units would be reviewed and further action would be taken to improve the performance of other units of DVC.

After detailed deliberation, OCC decided the following:

- All the Generators and SLDCs shall formulate a systematic procedure to submit the relevant details to ERLDC for necessary analysis.
- The performance of the Generators shall be submitted to CERC for further necessary action
- ERLDC shall convene a separate meeting with IPPs, ISGS and state wise generators for better understanding of CERC regulations on RGMO/FGMO.

ERLDC informed that a workshop on "Calculation of FRC" would be held at ERLDC, Kolkata on 16th & 17th January 2020.

OCC advised all the SLDCs and Generating utilities to attend the workshop.

PART B: ITEMS FOR DISCUSSION

Item No. B.1: Review of implementation of PSDF approved projects of Eastern Region.

NLDC (POSOCO) being the Nodal Agency for PSDF schemes, is carrying out PSDF Secretariat function under directions of MoP. Recently NLDC is directed by MoP to disburse the PSDF sanctioned funds as early as possible as its non-utilization is being viewed seriously by MoP on various fora.

In view of the above, status review of the projects being executed under PSDF funding in Eastern Region, is required to be carried out on regular basis for expediting the projects.

A Detailed statement of the Eastern Region project entities approved in PSDF is enclosed as **Annexure-B1**.

All the constituents are requested to furnish/update the status of their respective project in every OCC and also requested to submit requisition for disbursement to NLDC at the earliest by 1st February 2020, so that amount may be released by 31st March 2020.

Members may update.

Deliberation in the meeting

House was informed that the progress made by the constituents in some of the projects funded by PSDF was not satisfactory. This was viewed seriously by MoP as the funds were blocked for those projects. If necessary, the funds allocated for the projects whose progress was not satisfactory might be diverted to other deserving projects.

OCC advised all the concerned constituents to take necessary action to accelerate the progress and also to submit the latest status to ERPC Secretariat by 31st December 2019.

Item No. B.2: Automatic Under Frequency Load Shedding (AUFLS) Scheme

In the 2nd meeting of NPC held on 16th July 2013, the following AUFLS scheme with 4 stages of frequency viz. 49.2 Hz, 49.0 Hz, 48.8 Hz & 48.6 Hz had been decided to implement in all the regions:

AUFLS	Frequency]	Load relie	ef in MW	T	
1101 2.5	(Hz)	NR	WR	SR *	ER	NER	Total
Stage-I	49.2	2160	2060	2350	820	100	7490
Stage-II	49.0	2170	2070	2360	830	100	7530
Stage-III	48.8	2190	2080	2390	830	100	7590
Stage-IV	48.6	2200	2100	2400	840	100	7640
	Total (MW)	8720	8310	9500	3320	400	30250

*SR grid not integrated with NEW grid at that point of time.

The scheme had been implemented throughout the country.

In 7th NPC meeting held on 08thSeptember 2017, it was agreed that there is need for review of the quantum of load shedding. The RPCs were to deliberate on additional slabs of frequency as well as raising the set frequency for UFR operation and inform the outcome to NPC.

In 8thNPC meeting, held on 30.11.2018, members agreed for the AUFLS scheme with 4 stages and raising the frequency by 0.2 Hz viz. 49.4, 49.2, 49.0 & 48.8 Hz. It was further decided that the Minutes of 164th OCC Meeting Page 4

quantum for AUFLS would be reworked by NPC Secretariat considering the requirement of load shedding to increase the frequency to 50 Hz in each stage of AUFLS operation.

In 9th NPC meeting held on 22.11.2019, it was decided to implement the AUFLS scheme with 4 stages and raising the frequency by 0.2 Hz viz. 49.4, 49.2, 49.0 & 48.8 Hz by keeping the quantum for AUFLS same as decided in 2nd NPC Meeting. It was also decided that a committee with all RPCs and NLDC would study and review the required quantum for each slab of AUFLS and submit a report to NPC. Minutes of the meeting are awaited.

Control Area	Stage –I (49.4 Hz) (MW)	Stage –II (49.2 Hz) (MW)	Stage–III (49.0Hz) (MW)	Stage–IV (48.8Hz) (MW)	Total Relief by Control Area
Bihar	98	99	99	101	397
Jharkhand	61	62	61	62	246
DVC	134	135.5	136	137	542.5
Odisha	181.5	183.5	184	186	735
WB & CESC	345.5	350	350	354	1399.5
Total	820	830	830	840	3320

The total load quantum for ER constituents is given below:

In 42nd TCC, all the constituents were advised to implement the revised AUFLS scheme as per the NPC decision within a month and submit a report to ERPC Secretariat and ERLDC.

TCC decided to review the implementation status in the next OCC Meeting.

Members may update.

Deliberation in the meeting

OCC advised all the SLDCs and STUs to implement the revised AUFLS scheme by 1st week of January 2020 and submit a report to ERPC Secretariat and ERLDC.

Item No. B.3: Implementation of Automatic Generation Control in Eastern Region

In compliance to CERC's direction in order dated 06/12/2017 in petition no 79/RC/2017, AGC was commissioned in NTPC Barh on 01st August 2019 and operationalized since 23rd August, 2019.

Vide order dated 28th August 2019, CERC in Petition No.: 319/RC/2018 directed that all the ISGS stations whose tariff is determined or adopted by CERC shall be AGC-enabled and the ancillary services including secondary control through AGC be implemented as per the following direction:

- I. All thermal ISGS stations with installed capacity of 200 MW and above and all hydro stations having capacity exceeding 25 MW excluding the Run-of-River Hydro Projects irrespective of size of the generating station and whose tariff is determined or adopted by CERC are directed to install equipment at the unit control rooms for transferring the required data for AGC as per the requirement to be notified by NLDC. NLDC shall notify the said requirements within one month of this order.
- II. All such ISGS stations whose tariff is determined or adopted by CERC shall have communication from the nearest wide band node to the RTU in the unit control room.
- III. The Central Transmission Utility (CTU) is directed to have communication availability from NLDC/ RLDCs to the nearest wide band node/ switchyard for the generating stations in a redundant and alternate path ensuring route diversity and dual communication.
- IV. The NLDC is also directed to commission the required communication infrastructure.
- V. The expenditure as a result of compliance of the above directions may be claimed as per relevant regulations or provisions of the PPA.

- VI. The NLDC is directed to monitor implementation of the above directions so that all the ISGS stations whose tariff is determined or adopted by CERC are AGC-enabled within six months of this order.
- VII. The framework regarding compensation for AGC support and deviation charges as stipulated in the Commission's Order in Petition no. 79/RC/2017 dated 06.12.2017 shall apply to the five pilot projects as also to other ISGS as and when they are AGC enabled. This arrangement shall remain in place till the relevant regulations inter alia on compensation for AGC services are framed by the Commission.
- VIII. NLDC/RLDCs are allowed to operate the AGC system for enabling the signals to the power plants at the earliest.
- IX. All new thermal ISGS stations with installed capacity of 200 MW and above and hydro stations having capacity exceeding 25 MW excluding the Run-of-River Hydro Projects irrespective of size of the generating station and whose tariff is determined or adopted by CERC shall mandatorily have the capability to provide AGC support.

All concerned plants may please ensure taking necessary action for arranging the communication (through redundant and alternate paths) from the existing nearest wideband communication node to their unit control rooms through two fiber optic cables, in coordination with CTU. It may please be noted that all the ISGS stations whose tariff is determined by or adopted by CERC should be AGC-enabled before 28th February 2020, as per order of CERC.

A. Status of implementation of AGC for ISGS stations

S. No.	Power Plant	Thermal/Hydro	Cap (MW)
1	Farakka STPS – I & II	Thermal	1600
2	Kahalgaon STPS – II	Thermal	1500
3	Barh STPS	Thermal	1320
4	Maithon Power Limited	Thermal	1050
5	Talcher STPS – I	Thermal	1000
6	Kahalgaon STPS – I	Thermal	840
7	Nabinagar Thermal Power Project	Thermal	750
8	Teesta – V	Hydro	510
9	Farakka STPS – III	Thermal	500
10	MTPS Stage - II	Thermal	390
11	Rangit	Hydro	60

The list of plants identified for AGC operation by NLDC in Eastern Region are as given below:

In 161st OCC, all the ISGS stations were advised to implement the AGC within 6 months as per the above CERC order.

In 163rd OCC, NHPC and NTPC informed that they are in process of implementation of AGC at their stations in coordination with NLDC. The technical specifications have been prepared.

This issue was further deliberated in the 2nd TeST meeting held on 26.11.2019 at ERPC, Kolkata.

MS, ERPC raised concerns about the present reporting of AGC data signal from generating stations to NLDC and concerned RLDC is getting data through NLDC over ICCP protocol.

NLDC informed that, as a part of pilot project of AGC, all generating stations' AGC data would be directly reporting to NLDC for first 3 years and the same would be diverted to respective RLDCs after SCADA upgradation.

NTPC raised the concern about the bandwidth requirement, list of signals and cable requirement for implementation of AGC.

NLDC informed that all generating stations must make arrangement for extending the AGC data signals to the nearest POWERGRID node and POWERGRID shall make available two Ethernet ports (main & its redundant) so that AGC signal from generating stations should reach to NLDC.

NLDC further informed that requirement for AGC implementation like list of signals, bandwidth requirement, hardware, software & cable requirement etc. are made available at POSOCO website (https://posoco.in/spinning-reserves/).

ERLDC suggested that firewalls should be available at both end i.e. at Generator end as well as NLDC end. NLDC informed that they have a firewall at their end in their system.

All generating stations agreed to install adequate level of firewall at their end for extending the AGC signals.

ERLDC raised concern about AGC implementation of Nabinagar (BRBCL) as OPGW communication link from generating station to nearest POWERGRID S/S i.e. 400 kV Sasaram is not available.

ERPC advised NLDC to add NPGC, Nabinagar (2x660 MW) in AGC implementation list as this station is commissioned in November 2019. NLDC agreed for the same.

It was decided to take the above issue to the next TCC/ERPC meeting for further deliberation.

In 42nd TCC, NTPC and NHPC informed that they would place the order by March 2020 and implement the AGC by June 2020. MPL informed that AGC would be implemented by February 2020.

Powergrid informed that only single communication connectivity is available at MPL, Teesta V and Rangit. Other generating stations are having dual communication connectivity.

TCC advised all generating stations to make arrangement for extending the AGC data signals to the nearest POWERGRID node.

It was decided to include Darlipalli STPS and NPGC in list of the plants for implementation of AGC.

B. Status of implementation of AGC as a pilot project in states

In 162nd OCC, WBPDCL submitted that Bakreswar TPP is planning to implement AGC but there is no clarity on the source from where to receive the AGC control signal (from SLDC/ERLDC). This aspect needed to be clarified first.

In the meeting, it was clarified that AGC signal for intra-state generating stations would be generated by the concerned SLDC and the relevant communication path is to be established between SLDC to plant. For ISGS stations, the AGC signal would be sent from NLDC.

OCC advised SLDC, WB to establish the required hardware for generating AGC signal at SLDC.

In 163rd OCC, OPGC and SLDC, Odisha were advised to formulate the plan jointly for implementation of AGC. OCC advised them to submit the schedule of implementation of AGC to ERPC and ERLDC within a week.

All SLDCs and their respective state sector generators were advised to visit Barh STPS as well as to NLDC to have a first-hand knowledge on the implementation and functioning of AGC at control centre level as well as at generating station level.

Summary of status of implementation:

State	Station/Unit	Action plan		
DVC	Mejia unit#8	 Finalization of technical specification, vendors and estimation: 30th November 2019 NIT 31st January 2020 Order placement 30th March 2020 Commissioning of AGC 31st July 2020 		
West Bengal	Unit-5 of Bakreswar TPP	SLDC, WB to establish the required hardware for generating AGC signal at SLDC.		
Odisha	Unit#3 of OPGC	SLDC, Odisha and OPGC agreed to submit their plan by 1 st week of November 2019		

In 42nd TCC, DVC intimated that AGC shall be implemented in unit 7 and 8 of Mejia as per the given schedule by 31st July 2020.

Odisha informed that SLDC and OPGC will sit together and finalise the scheme.

WBPDCL informed that they have already collected offer from Siemens for implementation of AGC and they are awaiting the concurrence from SLDC.

SLDC, WB informed that they are not in a position to implement AGC unless a clear direction is given by WBERC. Further, implementation of intra state DSM is a prerequisite for implementation of AGC in the state.

It was decided to request CERC to include this as an issue in the Agenda for discussion in the meeting of Forum of Regulators.

C. Issues related to AGC at Barh Stage-II (both units)

NTPC informed that AGC at Barh Stage-II (both units) had been implemented on 23rd August 2019. But they are facing following issues related to AGC Implementation:

- 1. AGC Down schedule during Technical Minimum SG (Effective Ex Bus Schedule less than Technical Minimum- 680.63 MW)
- 2. AGC UP Schedule during full SG (Effective Ex Bus Schedule more than full capacity-1237.5 MW)
- 3. Ramp Rate more than declared Ramp Rate (90 MW in a 15 Min block) due to AGC Schedule.
- 4. Violation of sign change regulation due to AGC schedule

In 42nd TCC, NLDC confirmed that ramping issue has already been addressed.

NTPC and NLDC agreed to interact and settle the remaining issues.

Members may update.

Deliberation in the meeting

OCC advised all the concerned generators to implement AGC as per the schedule.

NTPC informed that they were facing violation of sign change issue due to AGC schedule. Moreover, the AGC schedule is given for 5 min and DSM time block is computed for 15 min. In view of above they are unable to follow the sign change regulation of DSM.

OCC advised NTPC to submit the relevant details to ERPC Secretariat to pursue with NLDC.

Item No. B.4: Cold Spare transformer requirement for Eastern Region

CERC had set up a Committee on dated 15.03.2018 consisting of representatives from CERC, NLDC, CEA & POWERGRID under the Chairmanship of the Chief (Engineering) of the CERC to assess the requirement of regional spares including bus reactors, line reactors, ICTs, etc. This would ensure reliability of the grid and reduce downtime in case of any failure/outage. Based on CERC Committee recommendation, following spare transformers will be needed for Eastern Region:

MVA Rating and Phase	Voltage Rating	Qty Required as per norms	Available Regional Spare	Qty proposed for procurement	Spare requirement
3Ø-500MVA	400/220	3	0	3	Bihar, Odissa and West Bengal
3Ø-160MVA	220/132	4	2	2	Jharkhand and Odissa
3Ø-100MVA	220/132	2	0	0**	
Total		9	2	5	

**As per CERC committee recommendation, for 3-phase,220KV and below rated equipment, one 3-phase transformer is needed with highest MVA rating in each state.

OCC may consider for approval of 05 nos of cold spare transformers of various ratings as per CERC committee recommendation as mentioned above. The Tariff for the investment made is to be shared by all constituents as per CERC notification.

Members may discuss.

Deliberation in the meeting

Powergrid informed that earlier they used to keep the regional spare ICTs and the spare ICTs were transported to necessary location as and when required for early restoration during any contingency. Powergrid explained that, with the present tax regime, they are facing difficulty in transporting the ICT from one state to other state.

In view of above, they are planning to keep one spare ICT for each state.

OCC viewed that cold spare transformers are required for early restoration of defective transformer during the contingencies.

OCC in principle approved the requirement of 5 nos of cold spare transformers and referred the issue to CCM for further deliberation.

Item No. B.5: Outage of important transmission lines

1. 400 kV Kishenganj-Patna D/C lines:

In 162nd OCC, Powergrid informed that one circuit of 400 kV Kishenganj-Patna D/C line would be restored through ERS by December 2019. Powergrid added that permanent restoration of both the circuits of 400 kV Kishenganj-Patna D/C lines would be completed by March 2020.

MS, ERPC submitted that Powergrid had repeatedly changed their schedule of restoration of the line. He advised Powergrid to give a report on restoration schedule committed till date in chronological order along with the reason for changing the scheduled dates.

He added that a Committee would visit the site once again in 2nd week of November 2019 to assess the situation.

In 163rd OCC, Powergrid informed that both circuits of 400 kV Kishenganj-Patna D/C line would be restored through ERS by December 2019. Powergrid added that permanent restoration of both the circuits of 400 kV Kishenganj-Patna D/C lines would be completed by March 2020.

Deliberation in the meeting

Powergrid ER-I representative was not present in the meeting.

It was informed that Powergrid would restore the lines as per the given schedule.

2. 400 kV Purnea-Biharshariff D/c lines:

In 161st OCC, ENCIL informed that they were planning for the permanent restoration of the line using special high-performance conductor (HPC with ACCC conductor) between tower AP46/9A and AP47/1. 400 kV Purnea-Biharshariff D/c would be restored by end of November 2019.

In 162nd OCC, ENICL informed that 400 kV Purnea-Biharshariff D/c would be restored by 30th November 2019.

MS, ERPC submitted that ENICL had repeatedly changed their schedule of restoration of the line. He advised ENICL to give a report on restoration schedule committed till date in chronological order along with the reason for changing the scheduled dates.

He added that a Committee would visit the site once again in 2nd week of November 2019 to assess the situation.

In 163rd OCC, ENICL informed that 400 kV Purnea-Biharshariff D/c would be restored by 30th November 2019.

Deliberation in the meeting

ENICL informed that stringing of the conductor had been completed and stringing of OPGW is in progress.

ENICL added that they would charge 400 kV Purnea-Biharshariff D/c line by 27th December 2019.

3. 400 kV Barh-Motihari D/C and 400 kV Barh-Gorahkpur D/C lines

In 161st OCC, ERLDC informed that 400 KV Gorakhpur –Motihari(DMTCL) –D/C were out since 13/08/2019 on tower collapse at LOC 27/0 and 400 KV Barh–Motihari(DMTCL) –D/C were out since 04/09/2019 on tower collapse at LOC 26/0.

After detailed deliberation, it was emerged that one circuit of 400 KV Barh–Motihari(DMTCL) –D/C line could be restored as 400 KV Barh–Motihari(DMTCL) line and other circuit could be directly connected to Gorakhpur as 400 KV Barh-Gorakhpur line so that Barh STPS generation could be evacuated safely.

Subsequently it has been reported that on 7th Oct 2019 tower no 25/5 of Motihari-Barh got collapsed due to which temporary restoration of 400kV Barh-Motihari line as planned, now seems in-feasible.

Under the circumstances POWERGRID is requested to furnish a detailed plan for restoration of 400kV Barh – Gorakhpur D/C (by passing the LILO point) on urgent basis to maintain reliability of ER – NR inter regional corridor and safe evacuation of Barh STPS power.

Restoration plan submitted by DMTCL as follows:

Activity	Start Date	End Date	Days
Design for foundation including all studies	Initiated	30-Sep-19	Completed
Vendor for foundation work	Initiated	15-Nov -19	Final Negotiation
Access road preparation [#] & Mobilization	15-Nov-19	15-Dec-19	
Foundation Work completion (Motihari- Gorakhpur -3 Foundations)	15-Dec-19	30-April -20	120
Tower Erection (3 tower erection)	5-May-20	20-June-20	45
Foundation Work completion (Motihari- Barh – 3 foundations)	25-Jan-20	25-May-20	120
Tower Erection (3 tower erection)	30-May-20	15-July-20	45
Stringing (Motihari- Gorakhpur) 2.8 kms	21-June-20	31-July-20	40
Stringing* (Motihari- Barh) 2.7 kms	16-July-20	25-Aug-20	40

Note:

1. Above Schedule is subject to safe and favorable working conditions especially water depth in river; any changes from the above shall be intimated to ERPC and ERLDC

2. # Access road preparation and readiness is very critical for mobilization of Hydraulic rigs 3. Support from RLDC required for ensuring that the Motihari SS (which is Available) is back charged on periodic basis to ensure that there is no need for refiltration and resulting delays once the lines are ready for commissioning

In 163rd OCC, DMTCL informed that the restoration work would start from 15th December 2019 after completion of approach road for carrying the construction material and mobilization of gangs.

DMTCL added that restoration of 400 kV Barh-Motihari D/C line would take five months and restoration of 400 kV Motihari -Gorahkpur D/C line would take six months.

OCC agreed for charging of elements at Motihari S/s on periodic basis. OCC advised DMTCL to interact with ERLDC and Bihar for necessary charging code.

OCC advised Powergrid to make direct connectivity i.e. 400 kV Barh- Gorahkpur D/C line, till restoration of the LILO portion of Motihari.

Powergrid agreed to make direct connectivity with Twin Moose conductor but DMTCL has to do the necessary destringing of the conductor of the LILO section with the original line to enable PGCIL to establish the direct connectivity.

OCC advised DMTCL to complete the destringing work at the earliest so that Powergrid could start the bypass arrangement.

Bihar informed that they are facing severe power shortage at Motihari due to outage of above lines and requested DMTCL to accelerate the restoration work. Bihar requested DMTCL to complete the restoration work before summer.

Members may update.

Deliberation in the meeting

Powergrid ER-I and DMTCL representatives were not present in the meeting.

Member Secretary, ERPC informed that a separate meeting with the concerned utilities would be conducted at Patna, Bihar in January 2020.

Item No. B.6: Evacuation of Dikchu HEP Generation during any Transmission Constraint--Dikchu

Teesta Urja Limited (TUL) vide letter dated 23rd September 2019 informed that LILO of one circuit of 400kV D/C Teesta III-Kishanganj line at Dikchu was allowed by CERC as an interim arrangement depending upon margin available in the transmission system. TUL added that the construction of permanent evacuation path for Dikchu HEP was not yet awarded.

TUL requested ERPC Secretariat to take up the issue of construction of permanent evacuation path for Dikchu HEP with Sneha Kinetic Power Projects Pvt. Ltd. TUL also requested to ensure evacuation Teesta III HEP generation over Dikchu HEP generation during any transmission constraint.

The issue was communicated to Dikchu vide letter dated 3rd October 2019 and Dikchu was advised to attend 162nd OCC Meeting.

In 162nd OCC Meeting, Dikchu was not present in the meeting.

OCC agreed to accord higher priority to scheduling of generation from Teesta-III HEP of TUL than scheduling of generation from Dikchu in the event of any transmission constraint in ISTS corridor of Sikkim.

In 163rd OCC, Dikchu submitted that they did not receive the communication from ERPC. Hence they could not attend 162nd OCC Meeting.

Dikchu requested to place their views in this meeting.

OCC agreed.

Dikchu informed that 400kV Teesta III-Rangpo and 400kV Rangpo-Kishanganj lines are ISTS lines and not the dedicated transmission lines. The power flow in these lines shall be governed by CERC regulations of connectivity and regulations governing open access. Therefore the decision of OCC in prioritizing the evacuation of power from TUL might be violating CERC regulations.

Dikchu added that the connectivity was granted to Dikchu as an interim arrangement till Govt. of Sikkim make 132kV system from Dikchu to Rangpo as per CERC order.

TUL informed that the 132kV system was planned around 3 years back and construction work of 132kV bays at Dikchu power station was not yet started.

After detailed deliberation, OCC agreed to keep the decision taken in the 162nd OCC Meeting at abeyance and scrutinize the issue raised by Dikchu in light of CERC regulations.

Member Secretary, ERPC informed that the issue would be discussed once again in details with ERLDC and CTU. The details will be placed in next OCC Meeting.

Dikchu was advised give a detail schedule of construction of 132kV bays at Dikchu along with the 132kV connectivity.

Members may discuss.

Deliberation in the meeting

After detailed deliberation, OCC opined that, since 400kV Teesta III-Rangpo and 400kV Rangpo-Kishanganj lines are ISTS lines, scheduling priority in case of evacuation constraints shall be decided as per the CERC regulations. As such, the request of TUL for according preference to Teesta III over Dikchu for evacuation of generation under constrained condition would not be allowed as per the CERC regulations.

OCC advised TUL to approach CERC for redressal of grievances, if any, in this regard.

Regarding construction of dedicated transmission system of Dikchu, it was informed that the issue was already discussed in a separate meeting with concerned utilities at CEA. The issue is also placed in ERPC Transmission Planning meeting.

Item No. B.7: Implementation of Automatic Demand Management Scheme (ADMS)-ERLDC

SI No	State/Utility	Logic for ADMS operation	Implementation status/target	Proposed logic (if different from under implementation logic)
1	West Bengal	F <49.7 AND deviation > 12 % or 150 MW	Implemented on 25.11.16	F <49.9 AND deviation > 12 % or 150 MW
2	DVC	F <49.7 AND deviation > 12 % or 150 MW	Implemented on 17.06.2016	
3	Bihar	F <49.7 AND deviation > 12 % or 150 MW	They would place the order to Chemtrol for implementation.	F <49.9 AND deviation > 12 % or 150 MW
4	Jharkhand	 System Frequency < 49.9 Hz AND deviation > 12 % or 25 MW System Frequency < 49.9 Hz AND deviation > 12 % or 50 MW System Frequency < 49.9 Hz AND deviation > 12 % or 75 MW 	In service from 21 st August 2019.	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	 System Frequency < 49.9 Hz Odisha over-drawl > 150 MW DISCOM over-drawl > (40 MW) 	10 Months Sent for PSDF approval. It was informed that tender for the work has been floated.	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.

The latest status along with proposed logic as follows:

In 42nd TCC, Bihar informed that the testing of ADMS would be done by end of December 2019.

Odisha informed that ADMS would be implemented by May 2020.

Sikkim informed that installation of OPGW is in progress, ADMS would be implemented after the installation of OPGW & renovation of sub-station tentatively by 2020.

TCC advised Odisha and Sikkim to implement ADMS at the earliest.

After detailed deliberation, TCC opined that uniform logic and settings are to be implemented for all the states. TCC advised to discuss the issue in next OCC Meeting to formulate uniform logic and setting of ADMS.

Members may discuss.

Deliberation in the meeting

Bihar informed that the testing of ADMS would be done by end of December 2019.

ERLDC informed that they would prepare a draft regarding uniform logic and settings for ADMS and would give a presentation on this in next OCC Meeting.

Item No. B.8: Testing and Calibration of Special type Energy Meter

Availability Based Tariff, Interface Meters (Special Energy Meters) have been installed by CTU at the points of interconnection with Inter-State Transmission System (ISTS) for energy accounting and billing. As per Central Electricity Authority (CEA) notification no. 502/70/CEA/DP & D dated 17.03.2006, all interface meters shall have to be tested at least once in five years using NABL accredited mobile laboratory or at any accredited laboratory. In this regard Clause 18(1) (b) of CEA (Installation and Operation of Meters) Regulations, 2006 state that:

Quote.....

All interface meters shall be tested at least once in five years. These meters shall also be tested whenever the energy and other quantities recorded by the meter are abnormal or inconsistent with electrically adjacent meters. Whenever there is unreasonable difference between the quantity recorded by interface meter and the corresponding value monitored at the billing center via communication network, the communication system and terminal equipment shall be tested and rectified. The meters may be tested using NABL accredited mobile laboratory or at any accredited laboratory and recalibrated if required at manufacturer's works.

.....Unquote

Presently, POWERGRID have installed about 1310 nos. of Special Energy meters of 0.2 class accuracy in 765/400/220/132kV substations at about 189nos of locations in Eastern Region covering states of Orissa, West Bengal, Sikkim, Bihar and Jharkhand.

Out of 1310 no of meters installed in ER, around 768 meters (all L&T make) at 157 locations are more than five years old. Moreover, Testing and calibration of around 307 Interface meters in ER was last carried out in year 2013 i.e. more than 6 years ago. A list of 140 no of meters which are severely drifted in time is already communicated to POWERGRID for replacement and accordingly, replacement work has started. In view of the above, remaining 628 meters may be tested and calibrated as per the provision of aforesaid regulation. Further Time correction of meters of drifted meters may also be done (under testing and calibration).

In 162nd OCC, Powergrid submitted that out of 768 L&T meters, 140 would be removed from service by November 2019. Testing will be done for the remaining meters and the detailed plan for

the same including cost of testing would be submitted in the upcoming OCC. Powergrid clarified that in case of any abnormal results found during the testing, those L&T meters would be replaced by Genus meters and the defective L&T meters would be sent for calibration.

In 163rd OCC Meeting held on 15.11.19, POWERGRID informed that they received the offer of 68 Lakhs (approx.) for testing and calibration of said 628 L&T meters.

OCC referred the issue to Commercial Sub-Committee for concurrence.

In 41st CCM, POWERGRID representative informed that the testing and calibration of 628 L&T meters is required as per the provisions of existing metering regulation since they were tested and calibrated a long back. Further, if any, time correction is necessary that would also be done.

However, ERPC and ERLDC opined that CEA is coming up with new metering regulation along with technical specifications (5 min & 15 min provision) of meters for future requirement of grid. Since the testing and calibration of the proposed meters has cost implication, it was agreed that the same may kept in abeyance till issuance of further guidelines or regulations by competent authority.

The Matter was referred to forthcoming TCC/ERPC meeting.

In 42nd TCC, TCC decided the followings:

- 50 % of total old L&T Meters shall be tested and calibrated.
- ERLDC shall prepare the priority list for SEMs to be tested which are old and highly time drifted.
- Powergrid shall carry out testing and calibration for the old L&T meters as per the list.

ERLDC and Powergrid may update.

Deliberation in the meeting

ERLDC submitted the priority list of meters to be tested & calibrated. The list is enclosed at **Annexure-B8**.

Powergrid should take necessary action expeditiously on receipt of requisite information from ERLDC and inform the progress made in the next OCC Meeting.

Item No. B.9: Splitting of peak hours generation of Teesta V HEP -- NHPC

NHPC vide letter dated 19th December 2019 informed that during lean season, Teesta-V Power Station generates minimum 3 hrs peaking during evening peak hours since after commissioning of the project. During the unprecedented flash flood occurred in the month of June 2019, the Highway passing along the upstream of the reservoir tail end was damaged badly, which is the only Highway to the North Sikkim. The local administration was continuously asking Teesta-V Power Station to restore the Highway so that connectivity to the people of North Sikkim is maintained throughout the year. NHPC has assured that the work of reservoir rim treatment of damaged portion for protection of Highway in reservoir area shall be carried out during lean season when water in the river remains minimum.

It is clarified that the work will be carried out during day hours from first week of January 2020 till April 2020. During execution of the work, reservoir level of Teesta-V Power Station will have to be lowered down up to MDDL, i.e. 568.50M at 09:00 hrs. after making possible generation during morning peak hours. Simultaneously, Teesta-V Power Station has requested Teesta-III Power Station through District Administration, not to generate any power during 09:00 hrs. to 16:00 hrs. Since Teesta-III is also requested not to generate during day hours, therefore, sufficient reservoir level of Teesta-V will not be built up. Consequently, Teesta-V Power Station may not be able to generate 3 hrs continuous peaking during evening peak hours.

In such a situation, 3 hrs evening peaking hours of Teesta-V Power Station may be splitted suitably for morning peak as well as for evening peak as the restoration of the road is highly essential for mass people travelling to North Sikkim side. During splitting of peaking hours, Teesta- V Power Station may be given full PAF on the basis of availability of Generating Units.

Members may discuss.

Deliberation in the meeting

Member Secretary, ERPC apprised the OCC members regarding the criticality of the issue and the action plan drawn by NHPC for early restoration of the highway which is vital link for maintaining the security of the country. The early restoration shall not only help NHPC but also the beneficiaries of Teesta-V who would otherwise be deprived of the cheap hydro power.

OCC unanimously agreed with the proposal of NHPC for splitting of 3 hour evening peak scheduling into 2 hours of evening peak scheduling and one hour of morning peak scheduling for the purpose of recovery of fixed charges for the period from 1st January,2020 to 30th April,2020.

OCC advised NHPC to adhere to this time schedule for completion of the work.

NHPC shall furnish the progress made in every OCC Meeting.

OCC advised Teesta Urja Limited to coordinate with NHPC for necessary action at their end to maintain the reservoir level for the construction work.

Item No. B.10: Regarding Auxiliary Power Consumption by Powergrid Substations --GRIDCO

As per decision of Commercial sub-committee meeting of ERPC , Kolkata held on 02.08.2017 against agenda item No. 17 "Accounting of Tertiary Loading Arrangement at PGCIL Grid Substation in ER" and subsequent rectification in 36th TCC & ERPC meeting held on 13th & 14th September 2017 against item No. 20 it was decided that the drawl of Auxiliary Power from tertiary winding of different Power grid and the States would make back to back commercial arrangements for this power.

In this regard a special meeting was held at ERPC, Kolkata on 10.07.2018 to resolve this issue where the decisions taken were as follows:

- 1. Drawl of auxiliary power through tertiary winding by powergrid substations shall be treated as drawl by powergrid from the DISCOMs.
- 2. For this, Powergrid shall approach the concerned DISCOMs and shall complete all the necessary formalities to become a consumer of the concerned DISCOM.
- 3. For Odisha system, Power Grid may approach GRIDCO for necessary help in completing the formalities.
- 4. For Odisha system, while calculating the DSM liability, drawl of auxiliary power by Powergrid substations shall be treated as drawl by GRIDCO. Total power drawn in a month as auxiliary power shall be treated as drawl by DISCOM from GRIDCO and shall be accordingly commercially settled between DISCOM and GRIDCO.
- 5. This methodology of settlement shall be effective from 23rd October,2017.
- 6. This procedure of settlement shall be continued for the coming few months. Therefore, if necessary, this methodology of settlement shall be review at ERPC.

In compliance to the above decision Powergrid did not become the consumer of Odisha DISCOMs observing all sorts of formalities as per OERC Supply Code, 2004.

This matter was again put forth in 161st OCC meeting, where Powergrid informed that Odisha DISCOMs are charging for registration and security fees. These fees are not payable by Powergrid as DISCOMs don't have to construct any infrastructure for this power. In other States, Powergrid had not paid these charges.

GRIDCO informed that DISCOMs were raising the bills as per the OERC regulations.

To the above submission of GRIDCO, it was decided to resolve this issue in 163rd OCC meeting to be held on 15.11.2019 in Odisha in presence of Powergrid and Odisha DISCOMs.

Again the above issue was deliberated in 163rd OCC meeting held at Puri, Odisha on 15.11.2019, wherein Powergrid informed that DISCOMS (WESCO & CESU) are asking POWERGRID to pay for the Security Deposit, Maximum Demand charges and Meter rent etc. Powergrid stressed that, as the entire infrastructure for auxiliary power consumption through tertiary was provided by POWERGRID only and not by the DISCOMs, these charges are not applicable in this case. Powergrid further informed that they are not paying such charges for other states.

DISCOMs informed that they are requesting for the payment of Security Deposit, Maximum Demand charges and Meter rent etc. in line with the OERC regulations.

DISCOMs informed that they would not have any objection in case OERC allows any exemption to Powergrid in this matter.

After detailed deliberation, OCC advised Powergrid to file a petition before OERC for exemption of Security Deposit, Maximum Demand charges and Meter rent etc.

Now WESCO Utility (DISCOM) vide letter dated 16/11.2019/ 12.12.2019 requested GRIDCO to withdraw the quantum of energy billed to DISCOM towards auxiliary power consumption of Powergrid through its tertiary winding of ICT till finalization of Petition to be filed by PGCIL in OERC.

In view of the above, GRIDCO suggest that DISCOMs need to raise the bill to Powergrid on the quantum of energy billed to DISCOMs by GRIDCO on monthly basis till finalization of the issue of Security deposit, Maximum demand charges & Meter rent. A copy of the bill should be marked to GRIDCO every month.

GRIDCO may explain.

Deliberation in the meeting

Powergrid informed that they were in process of filing the petition before OERC.

OCC decided to continue with the existing practice till OERC decision is available.

Item No. B.11: Conversion of Line Reactor as Bus reactor with NGR bypass Scheme - ERLDC

A mail was circulated by ERLDC for collecting the switchability information of the Line reactors and the availability of the required NGR bypass arrangement for converting the line reactor to Bus reactor. So far following response received from the corresponding owner:

- 1. 400 kV Kishanganj-Darbhanga D/C at Darbhanga end (owned by ATL) Switchable but no NGR by pass arrangement.
- 2. 400 kV Barh-Motihari D/C at Barh end (Owned by Barh) Switchable but no NGR by pass arrangement.

All the other utilities are requested to submit the details at the earliest so that RLDC can do operational planning for better reactive power management.

Also, Barh and ATL are request to do necessary by pass arrangement of NGR as early as possible so that during winter season these resources could be used for maintaining better voltage profile in the grid.

In 163rd OCC, OCC advised all the utilities to submit the details to ERLDC and ERPC at the earliest (not later than 30/11/2019) so that ERLDC can do operational planning for better reactive power management.

OCC advised Barh and ATL to do the necessary by pass arrangement of NGR at the earliest.

Members may discuss.

Deliberation in the meeting

NTPC requested to provide the scheme for NGR bypass arrangement.

OCC advised NTPC to interact with Powergrid for the scheme and advised submit the plan for implementation of NGR bypass arrangement at Barh STPS, NTPC.

Item No. B.12: Additional agenda

1. Operation of RTAMC Odisha from 1st Jan 2020 --- Powergrid

Powergrid informed that RTAMC Odisha has been established for remote operation of 11 substations under Odisha Projects. The 11 substations are 765/400KV Angul, 400/220KV Bolangir, 400/220/132KV Baripada, 400KV Indravati, 400/220KV Jeypore, 400KV Keonjhar, 400/220KV Rengali, 400/220KV Rourkela, ±500KV Kaniha HVDC, 400/220KV Pandiabili GIS and 765/400KV Sundargarh. Henceforth all the correspondences being done with RTAMC ER-II Kolkata for these substations may be done with RTAMC Odisha. The address for correspondence is as follows:

RTAMC Odisha POWERGRID CORPORATION OF INDIA LTD Odisha Projects Plot No-4, Unit-41, Niladrivihar Chandrasekharpur Bhubaneswar-751021 Email Id: <u>rtamcodisha@powergrid.co.in</u> Land Line:**0674-2720622** VOIP(Orange):**20330075**

Deliberation in the meeting

Members noted.

PART C: ITEMS FOR UPDATE

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

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

Members may note.

Deliberation in the meeting

Members noted.

UFR Inspection Report of BSPTCL substations on 22.08.2019:

The ERPC UFR inspection group visited 132/33kV Digha, 132/33kV Mithapur and 132/33kV Gaighat substations of BSPTCL for UFR Audit on 22.08.2019. The team physically inspected the feeders which are connected with UFRs at the above sub-stations. The report of the inspection is furnished below:

SI.	Name of the	Feeder	Voltage	Adopted	Tested	UFR
No	substations	connected	rating	UFR	initiated	make
•		with UFR		setting	frequency	
			(kV)	(Hz)	(Hz)	
1		Pataliputra	22	49.0	49.0	AREVA
						Micom P127
0		Excise Colony	22	49.2	-	RMS
2	132/3341/					2H34K2
	Diaba	Digha-I		48.6	-	RMS
3	Digita	0	33			2H34K2
		D'alta II		40.0		DMO
4		Digna-II	33	48.6	-	RMS
			00			2H34K2
5		Pesu-IV	22	48.8	48.8	AREVA
5	132/33kV					Micom P142
6	Mithapur	Pesu-V	22	48.8	48.8	AREVA
6	•		33			Micom P142
7	132/33kV	Saidpur	22	48.6	48.59	SEL-351A
1	Gaighat					
8	2 a.g. at	City Feeder	33	48.6	48.59	SEL-351A
0			- 55			

The above UFR setting were tested with help of Secondary injection Kit owned by BSPTCL. During the inspection, the followings were observed:

Substation	Observation
132/33 kV Digha	For 33 kV Pataliputra feeder, the UFR is provided with direct trip
	wiring and the relay tripped at desired frequency. For all other three
	feeders, The UFR relays were not working as the relays got
	burned due to some DC fault in substation.
	33 kV Excise colony feeder consists of emergency loads like
	supply to Airport & Hospital etc.
132/33 kV Mithapur	The UFRs are provided with direct trip wiring and tripped at desired
	frequency.
	33 kV Pesu-V feeder was charged on no-load. It was found that
	the feeder was being used only in case of contingency.
132/33 kV Gaighat	The UFRs are provided with direct trip wiring and tripped at desired
	frequency

In 161st OCC, Bihar was advised to review the UFR feeders as per the revised system configuration and suggested to shift the UFRs to unimportant radial loads.

In 42nd TCC, BSPTCL informed that they had already replaced the defective UFR. BSPTCL added that they are in process of reviewing the UFR list.

Bihar may explain.

Deliberation in the meeting

OCC advised Bihar to submit the revised list of UFR feeders.

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

At present, the following islanding schemes are in service:

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

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

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

In 163rd OCC, DVC informed that since all units of CTPS-A would be retired shortly, instead of Chandrapura TPS islanding scheme, they are planning to implement an islanding scheme with units 5 & 6 of Mejia TPS (old).

OCC advised DVC to submit the detailed draft plan of the islanding scheme to ERPC and ERLDC.

DVC may update.

Deliberation in the meeting

Members noted.

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

The Status of healthiness certificate for November, 2019 is given below:

SI. No.	Name of the SPS	Healthiness certificate received from	Healthiness certificate not received from
1.	Talcher HVDC	NTPC,GMR, Powergrid,	JITPL,
2.	SPS in CESC system	CESC	Nil

Members may update.

Deliberation in the meeting

Members noted.

Item no. C.4: Review of the PSS Tuning of Generators in Eastern Region --ERLDC

On 31st January 2019, PSS Tuning Meeting was held at ERPC. All generating utilities were advised to complete the PSS tuning of their plant at earliest for improvement of damping in the grid during transients. In addition, the tuning reports have also to be submitted to ERLDC/ERPC for their validation.

In line with this ERLDC has communicated to following utilities in view of the recent oscillation observed during various events.

Generating Power Plant	Observation	Status of Action Plan to be informed to OCC
All Units of DVC Generating Plant	Oscillation Observed at DSTPS on 24th April 2019 and other Oscillation events in the past.	DVC gave consolidated plan for its units in 162nd OCC
All Units of OPGC and OHPC, Sterlite	PSS are tuned long back and in many units PSS have not been tuned but are in service.	OPGC units—Feb 2020 OHPC informed that they will submit the plan in January 2020.
		Teesta-III: PSS Tuned on 21 Oct. 2019.
Sikkim Hydro Complex (Teesta-III, Teesta-V, Chuiachen Dikchu	In view of Oscillation during the 16th April 2019 events and changes in Network configuration in Sikkim	Dikchu: Done on 23 rd Nov. 2019.
Tashiding, Jorethang)	hydro Complex with augmentation of lines	Jorethang: Jan. 2020 Chujachen and Tashiding: Feb 2020 Teesta-V: March 2020
MPL Plant	Due to Change in Network configuration during to bus splitting at Maithon.	MPL Unit-2: 14th June-2019 during AOH. MPL Unit-1: Planned during AOH in Jan-2020.
APNRL Plant	Oscillation with Low Damping during transient and switching observed at the plant.	APNRL attempted in Nov 2019 but not successful.
Farakka NTPC Power Plant	With Augmentation of new lines and changes in network configuration with upcoming bus split at Kahalgaon.	PSS Tuning of Unit 4, 5 and 6 has been done. Unit 1&2 are planned in December 2019. Unit 3 after overhauling.
NPGC/BRBCL/KBUNL NTPC Power Plant	The new units have been commissioned however there are no details on the PSS tuning activity in line with Indian Electricity Grid Code and CEA Grid Connectivity Standards	NPGC: December 2019 BRBCL: Unit 2 completed.
GMR	Was done in 2013 and retuning is required with change in the network at Angul.	During overhauling in Dec 2020
Sterlite 4 X 600 MW	Due to network changes.	Plan not yet submitted (Orissa SLDC)

In 42nd TCC, members updated the status as follows:

TCC advised all the concerned generating stations to take appropriate action to carry out PSS tuning of their units as per the schedule and submit the report to ERPC and ERLDC.

Members may update.

Deliberation in the meeting

ERLDC placed the detail list of generators where the PSS tuning is yet to be done and PSS tuning details received from the generators. Details are enclosed at **Annexure-C4**.

ERLDC also placed the details of PSS tuning of Teesta III and Dikchu HEP for the benefit of other generating utilities. Details are enclosed at **Annexure-C4.1**.

OCC advised all the concerned generators to submit the plan to carry out the PSS tuning.

Item no. C.5: Transfer capability determination by the states

SI	State/Utility	TT import	ГС t (MW)	; MW) RM(MW)		ATC Import (MW)		Remark
INU	_	Import	Export	Import	Export	Import	Export	
1	BSPTCL	5300		100		5200		Jan-20
2	JUSNL	1168		36		1132		Mar-20
3	DVC	1465	2873	63	50	1402	2850	Apr-20
4	OPTCL	3107	818	87	62	3020	756	Mar-20
5	WBSETCL	4086		400		3686		Jan-20
6	Sikkim	295		2.5		292.5		Dec-19

Latest status of State ATC/TTC declared by states for the month of April-2020

As per the "Detailed Procedure for Relieving Congestion in Real Time Operation" Following has also been mandated for monitoring of Congestion in Real Time :

 As all SLDCs of Eastern region are now declaring ATC/TTC, so, now it would be desirable to have the display for Eastern region where ATC/TTC calculated by states will be monitored in real time with actual drawal. Status of ATC/TTC Weblinks maintained by SLDCs is given below :

SLDC	ATC/TTC Weblink
Orissa	Dynamic Link for each month (Static Location for All
	months ATC/TTC to be kept for easy access)
Jharkhand	Web Link to be prepared by SLDC
Sikkim	Web Link to be prepared by SLDC

2. Utility wise present status of declaration of assumptions and LGBR used for ATC/TTC calculation and constraints in arriving at the TTC/ATC value based on the available online information are as follows:

SLDC	ATC/TTC Review
West Bengal	Constraints and Load/gen Assumption needs to be mentioned
Bihar	Constraints and Load/gen Assumption needs to be mentioned
Sikkim	Constraints and Load/gen Assumption needs to be mentioned

In 162nd OCC, OCC advised all the SLDCs to provide/display the ATC/TTC figures in their respective websites along with the actual flows in their websites import / export in real time. The assumptions for TTC/ATC calculations and limiting constraint details should also be made available.

West Bengal and Bihar informed that they are placing the details of constraints and load/gen assumption details for recent months.

ERLDC may explain. Members may update.

Deliberation in the meeting

ERLDC informed that Jharkhand is now placing the details in their website.

ERLDC added that Bihar has mentioned the Constraints and Load/gen Assumption but West Bengal is not placing the details of node wise generation and load details.

OCC advised concerned constituents to comply the ERLDC observations.

Item no. C.6: Mock Black start exercises in Eastern Region - ERLDC

Mock black start date for financial year 2019-20 is as follows:

SI no	Name of Hydro	Schedule	Tentative Date	Schedule	Tentative
<u> </u>	Station	Test-I		Test-II	Date
1	U Kolab	Last week of	Done on	Last Week of	
1.		May 2019	19 th July 2019	Last Week of	
2	Maithon	1 st week of	Taken un only	1st Week of	
		June 2019	after replacing	February 2020	
			the governing		
			systems of the		
			units		
3	Rengali	2 nd week of June	Done on 27 th	Last week of	
		2019	June 2019	November 2020	
4	U. Indarvati	3 rd week	Done on 7 th	2nd week of	
		ofJune 2019	November 2019	February 2020	
5	Subarnarekha	1 st week of	Done 20 th	1st week of	
_		October 2019	August 2019	January 2020	
6	Balimela	3 rd week of		1st week of	Dec 2019
		October 2019		March 2020	
7	leesta-V	2 nd week of	Done on 28 th	Last week of	
		May 2019	Nov 2019	February 2020	
8	Chuzachen	Last Week of Dec	Done on 5" December	Last week of	
		2019	2019		
9	Burla	Last Week of	Done on 20 th	Last week of	December 2019
		June 2019	July 2019	February 2020	
10	TLDP-III	1st Week of	November-19	2nd Week of	
		June 2019		January 2020	
11	TLDP-IV	Last Week of	December-19	1st Week of	
		June 2019		February 2020	
12	Teesta-III	Last Week of		First Week of	
		Oct 2019		March 2020	
13	Jorthang	First Week of		First Week of	
		May 2019		Feb 2020	
14	lasheding	2nd Week of		2nd Week of	
		May 2019		Feb 2020	
15	Dikchu	Sep 2019		3rd Week of	
				Feb 2020	

Members may update.

Deliberation in the meeting

Members updated the status as mentioned in above table.

Item no. C.7: Mock Blackstart and controlled separation exercise at Teesta III--ERLDC

As per IEGC each blackstart capable power plant needs to demonstrate its blackstart capability twice every year. Further as per the schedule the mock black start of Teesta-III is scheduled in the end of October 2019. Thus to carryout mock black start exercise with radial load of Bihar at Kishanganj and nearby substations a two steps procedure is proposed.

Step-1:- Controlled separation of one running unit at Teesta-III with loads at Kishanganj (Bihar) for formation of Island

A controlled island will be formed in first step by taking some local load at 220 kV Kishanganj (Bihar), this requires bus split arrangement at Teesta-III, 400 kV/220 kV Kishanganj (PG) and 220 kV Kishanganj(Bihar). Once island is formed, system is expected to run in islanded mode for 15-20 minutes. After Tessta-III unit will be switched off resulting in collapse of island.

Step-2:- Blackstart of one unit at Teesta-III and extension of power to Kishanganj

Then after tripping the machine blackstart needs to be initiated from DG set and after successful synchronisation of one of the unit power will be extended to the loads of already created island, the island may be operated with the loads for 15-20mins, before synchronising with grid at 400 kV Kishanganj(PG)

Teesta III is a pelton turbine so it may operate on any load. However, Minimum requirement of 20 MW has been known by telephonic conversation with station personnel.

In 162nd OCC, ERLDC informed that it is a preliminary scheme, the detailed scheme would be prepared and it will be circulated to concerned utilities. The scheme would be finalized after receiving the suggestions from concerned utilities.

Members may discuss.

Deliberation in the meeting

ERLDC informed that they had received the relevant details. They would conduct a meeting with the concerned constituents through VC for finalization of scheme.

Item no. C.8: Summary of Status Update on Previous agenda items in OCC

000	Agenda	Decision	Status Update
152	Item No. B3:	Powergrid informed that M/s GE	In 159 th OCC Meeting
	Installation of PMUs for	had agreed to supply and install	Powergrid informed that
	observation of the	of 4 no's PMUs for 4 STATCOMs	the work would be
	dynamic performance	in the Eastern Region within the	completed by 15th August
	of STATCOMs	quantity variation clause under	2019.
		the existing URTDSM Project.	
			Powergrid informed that material supplied at Ranchi and Kishanganj were damaged. New material would be supplied by November 2019.

			Powergrid May update
155	C.22: Collection of	OCC advised all the constituents	157 th OCC advised all the
	modeling data from	to submit the details of renewable	SIDCs to submit the
	Bonowable as well as	nower plants of E MW and above	details to EBBC and
	Reliewable as well as	power plants of 5 line and above.	
			ERLDC.
	generators: ERLDC		Format along with an
			explanation for collection
			of Wind and Solar Data
			has been shared by
			ERLDC to all SLDC.
			Bihar/ West Bengal and
			Orissa are having Solar
			Plant with more than 5
			MW capacity. However.
			details were recived
			only from some of the
			plants in Odisha
156	Low froquency	OCC Advised EPTS 2 to submit	150th OCC Poworarid
150	Consillation of MTDC	the englysic report to	informed that the issue
	Oscillation at MIDC		informed that the issue
	BNC-ALP-Agra	ERLDC/ERPC	was referred to ABB,
			Sweden. The report is yet
			to be received from ABB.
			PGCIL may update on
			Report submission to
			OCC.
156	Item no. C.20: Updated	Bihar, Jharkhand, DVC, West	Restoration procedure
	Black Start and	Bengal and Orissa have	form Sikkim is yet to be
	Restoration procedure	submitted the updated restoration	received. Mail has been
	of StateERLDC	procedure.	aiven by ERLDC to SLDC
			for early submission.
156	Item No. B 12: Status of	DGPC informed that an Expert	In 159 th OCC meeting
	Auto-Reclosure on	Committee was constituted to	DGPC informed that they
	Lines from Tala and	enable the autorecloser for	are
	Chukha Hydra Bowar	transmission lines connected to	
	Chukha Hydro Power	Tale and Chuke hudre stations	The A/D is implemented at
	Plant (Bhutan)		The A/R is implemented at
		The Committee had	Binaguri end and there
		recommended for implementation	have been various cases
		of the autorecloser at Tala and	where successful A/R has
		Chuka.	occurred at Binaguri but
			due to no A/R attempt
		DGPC added that they are	Tala has a blackout in
		planning to implement the	June 2019. In addition, in
		autorecloser scheme for the	month of Aug also many
		transmission lines connected at	times 400 kV lines
		Chuka by May 2019. Based on	successfully reclosed
		the experience gained they	from Binaguri end
		would implement the autorecloser	
		scheme for the transmission lines	The experience on 220 KV
			Chukha Bimara
		connected at Tala.	Chukha-Birpara in the
			torm of successful A/R
			has been observed on
			25 th June 2019.

			DGPC has informed that after the deliberation in their group, they would be implementing the A/R at Tala by the end on August 2019.
			DGPC may kindly appraise the status of A/R on lines from Tala and Malbase.
160 OCC	Bypassing arrangement of LILO of 400kV Lines at Angul	Powergrid informed that bypass arrangement would be completed by end of August 2019. OPTCL informed that 2nd circuit of 400kV Meramundali- Mendhasal line would be commissioned by end of August 2019.	Powergrid informed that the bypassing arrangement would be completed by November 2019.

Members may update.

Deliberation in the meeting

DGPC informed that they are still analyzing the performance of autorecloser at Chuka end.

OCC advised Bhutan representatives to submit the relevant details (DR and relay settings) of autorecloser at Chuka end to ERLDC. The issue would be placed in next PCC Meeting for fruitful discussion.

Powergrid placed the scheme of Bypassing arrangement of LILO of 400kV Lines at Angul and explained the scheme in detail. Details are given in **Annexure-C8**.

Powergrid informed that two group settings have to be adopted at Bolagir, Talcher and Meramundali. Powergrid added that they received confirmation for the same from Bolangir and Talcher.

OCC advised OPTCL to implement the settings and send the confirmation to Powergrid, ERPC and ERLDC.

Powergrid informed that they need shutdown to complete the bypassing arrangement.

OCC advised Powergrid submit the shutdown request to ERLDC.

Item no. C.9: Transmission Constraint in the 220 kV System in Eastern Region—ERLDC

Constituents	Constraint list	Issues based on ATC/TTC case submission by States	Action Plan by Utilities/ SLDC
West Bengal, DVC	220 kV Waria-Bidhan Nagar D/C	N-1 Contingency	3 rd ICT at Bidhan Nagar would be installed.
CESC, PGCIL	220 kV Shubhasgram- EMSS D/C	N-1 Contingency	

WBSETCL, PGCIL	220 kV Newtown-Rajarhat D/C	N-1 Contingency	
WBSETCL	220 kV Howrah-New- Chanditala D/C	N-1 Contingency	
DVC, PGCIL	220 kV Durgapur (PG)- Parulia D/C	N-1 Contingency	Discussed in State Standing Committee Meeting
Jharkhand, PGCIL	220 kV Hatia-Ranchi D/C	N-1 Contingency	3 rd ckt of 220 kV Hatia- Ranchi has been commissioned.
Bihar	220 kV Mujaffarpur-Hazipur D/C	N-1 Contingency	A New 400/220/132 kV sub-station at Chhapra(2x500+2x20 0 MVA) has been proposed to meet the nearby growing power demand. The 220 kV connectivity of the proposed GSS as
Bihar	220 kV Hazipur-Amnour D/C	N-1 Contingency	follow:- • Chapra(new)- Amnour DCDS • Chhapra(new)- Goplaganj DCDS
Bihar, PGCIL	220 kV Patna-Sipara T/C	N-1 Contingency	Two nos. of 400/220/132 kv Jakkanpur GSS and Naubarpur GSS are proposed in nearby area which is already approved in 13 th Plan
Bihar, PGCIL	220 kV Khagaul-Sipara S/C	Overlaod of 220 kV Khagaul- Sipara	Already resolved by addition of 02 mor lines i.e. 220 kV Khagaul-Patna(PG) D/C (Ckt 2 &3)
Bihar	220 kV Bodhgaya-Gaya D/C	N-1 Contingency	A new 400/220/132 kV sub-station at Chandauti has been proposed with connectivity at 220 kV by LILO of both circuits of Gaya(PG)- Sonenagar(new)

OCC advised all the utilities to share their short term and long term action plans to remove the constraint to ERLDC. However till date action plan from none of the constituent is received.

Input received from BSPTCL vide letter dated 06-November-2019 are as shown above. All proposed action plans are long term in nature. Further the time line for the implementation of action plan is missing.

In 163rd OCC, DVC and WBSETCL agreed to submit the action plan by next month.

OCC advised other constituents to submit the action plan at the earliest.

DVC, JUSNL, WBSETCL and CESC may update.

Deliberation in the meeting

Members updated the status as mentioned in above table.

OCC advised CESC and WBSETCL to submit the action plan for pending lines.

Item no. C.10: Monitoring of Next Six-Month New Element Integration in OCC and Its Update on Monthly Basis --ERLDC

It has been observed that many elements are getting interconnected into the system and beforehand details are not available with the system operator resulting in difficulty in carrying our operational planning activity. In view of this, as a regular agenda all ISTS and ISGS/IPP to update the OCC regarding any new elements at 220 kV and above which will be integrated in next six month with the grid. For State Grid, SLDC will be submitting the details on behalf of its intrastate Generation and transmission system. The format is given below:

Transmission Elements	Agency/ Owner	Scheme TBCB/ Committee	(ERSS/ Standing e/State	Schedule Completion	Projected Month for Completion	lssue Being Faced

In previous several OCC, Transmission licensees and SLDCs are requested to submit RLDC/RPC following details on monthly basis

- List of transmission element /generators of State and ISTS licensees synchronised in the last month.
- List of transmission element /generators expected to be synchronised during next month or in near future

Some SLDCs are submitting the list of intrastate and interstate line on regular basis, however transmission element /generators expected to be synchronised during next month or in near future is not submitted by any SLSC/Transmission licensee to RLDC/RPC.

In 162nd OCC, OCC advised all the constituents, SLDCs and ISTS licensees to submit the details the list of transmission elements / generators already synchronized / charged in the previous month as well as those expected to be commissioned in the near future (as per the format specified) to ERLDC

In 163rd OCC, OCC advised all the constituents, SLDCs and ISTS licensees to submit the details to <u>erldcprotection@posoco.co.in</u> as per the format.

Members may update.

Deliberation in the meeting

OCC advised all the constituents, SLDCs and ISTS licensees to submit the details to <u>erldcprotection@posoco.co.in</u> as per the format.

Item no. C.11: Reconductoring work of 400 kV Rangpo-Binaguri D/C lines

In 162nd OCC, Powergrid informed that SPS at Rangpo is ready and it can be put in service as and when required.

Powergrid explained that reconductoring work of both 400 kV Rangpo-Binaguri D/C lines would take 1 year time approximately and they are ready to take shutdown of both the circuits from 01.11.2019.

ED, ERLDC advised Powergrid to complete the reconductoring work of one circuit by end of February 2019. He added that after February 2019, shutdown of both lines is not possible in view of the likelihood of rise in hydro generation in Sikkim.

MS, ERPC submitted that there is a need for reviewing the progress of the work by field visit. In this regard a Committee shall be formed comprising the members from ERPC Secretariat, ERLDC, WBSETCL, PGCIL, TVTPL etc. The Committee will visit the site and check the preparedness of the work. Also, periodic inspection will be done to assess the progress of the work.

In 42nd TCC, Powergrid updated that reconductoring of 11 km of both the circuits out of 110 km line had been completed (9.3 km in West Bengal and 1.7 km in Sikkim).

Powergrid further informed that they are facing severe ROW issues in Sikkim and requested Power and Energy Department, Govt. of Sikkim to support in resolving the ROW issues.

Powergrid added that they are putting all the efforts to complete the reconductoring work of both 400 kV Rangpo-Binaguri D/C lines by April 2020.

TCC advised Powergrid to complete the work as per the schedule so that evacuation of hydro power from Sikkim would not get affected in the coming monsoon season.

TCC requested Sikkim to help Powergrid in resolving the ROW issues for smooth completion of the reconductoring work.

ERPC Secretariat informed that a Committee with members from ERPC Secretariat, WBSETCL, PGCIL, TVPTL has been formed to monitor the progress of the work and the Committee would visit the site in every two months.

PGCIL was requested to furnish the status of progress to ERPC Secretariat every month for discussion in the OCC meeting.

Powergrid may update.

Deliberation in the meeting

It was informed that the Committee would visit the site in January 2020 to monitor the progress.

Item no. C.12: Submission of Thermal Loading of Transmission line and associated terminal equipment by ISTS licensee

Thermal Loading of Transmission line and associated terminal equipment is one of the most vital data which is utilized for Operation Purpose, calculation of ATC/TTC and various other studies. This information has to be submitted by the transmission utilities. However even after regular follow-up in past several OCC meetings, significant delay has been observed in submission. Status of submission of data upto first week of December 2019 is as follows:

Name of Utility	Whether End Equipment Rating Submitted or Not?
PGCIL ERTS-1 and ERTS-2	Partial Details (Final Complete details yet to be received)
DMTCL	NA
POWERLINKS	NA
Sterlite (ENICL, OGPTL, PKTCL)	NA

TVPTL	NA
Alipurduar Transmission Limited	NA
Powerlink	NA
CBPTCL	NA
OPTCL	Submitted (Revised list given to
	OPTCL for submission)
WBSETCL	Submitted
BSPTCL	Submitted
DVC	Submitted
JUSNL	NA

Members may update.

Deliberation in the meeting

OCC advised all the concerned transmission licensees to send the pending information to ERLDC at the earliest.

PART D:: OPERATIONAL PLANNING

Item no. D.1: Anticipated power supply position during January 20

The abstract of peak demand (MW) vis-à-vis availability and energy requirement vis-à-vis availability (MU) for the month of January 20 were prepared by ERPC Secretariat on the basis of LGBR for 2019-20 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 January 2020 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 January 20

System	Station	Unit	Capacity (MW)	Period		No. of Days	Reason
				From	То		
CESC	Southern TPS	1	67.5	01.01.20	15.01.20	15	Not Specified
		2	67.5	17.01.20 to	o 20.01.20	4	
	Titagarh TPS	1	60	02.01.20 to	o 05.01.20	4	
NTPC	Farakka	3	200	23.12.19 to 05.02.20		45	Boiler (Acid Cleaning) R&M+RLA
	Talcher	1	500	15.01.20 to	o 28.02.20	45	Annual Maint
WBPDCL	Sagardighi	3	500	10.01.20 to	o 07.02.20	28	Annual Maint

Generator shutdown for January 20:

Chuzachen vide mail dated 18th December 2019 informed that 2X55 MW Chuzachen HEP will be under periodical maintenance of the Dam and turbine components& remain unavailable to the Grid with effect from 04/02/20 to 18/02/20.

DPL vide mail informed that DPL #8, will be taken out of bus at 0000 Hrs of 20/12/19 as per schedule shutdown programme for necessary Overhauling of Boiler and Turbine for a period of 30 days.

ERLDC may place the list transmission line shutdown discussed on 19th December 2019 through VC.

Members may confirm.

Deliberation in the meeting

OCC approved the generator shutdown as mentioned above.

The approved list of shutdown of transmission elements is enclosed at Annexure-D2.

TPTL requested for shutdown of 400kV Teesta III-Rangpo and 400kV Rangpo-Kishanganj lines for cutting the bamboo trees.

OCC advised TPTL to submit the shutdown requisition to ERLDC.

It was informed that the shutdown would be allowed subjected to consent from concerned utilities and real time grid conditions.

Item no. D.3: Prolonged outage of Power System elements in Eastern Region as on 12-12-2019

S.No	Station	Owner	Unit No	Capacity	Reason(s)	Outage Date
1	BARH	NTPC	4	660	ANNUAL OVERHAULING	26-Nov-19
2	KOLAGHAT	WBPDCL	1	210	POLLUTION CONTROL PROBLEM	10-May-18
3	CTPS	DVC	3	130	TURBINE BLADE DAMAGE	30-Jul-17
4	BARAUNI	BSPHCL	7	110	MAINTENANCE WORK	3-Nov-19
5	SANTALDIH	WBPDCL	5	250	ANNUAL OVERHAULING	03-Dec-19
6	BUDGE BUDGE	WBPDCL	2	250	ANNUAL OVERHAULING	04-Dec-19
7	TTPS	GRIDCO	5	110	ANNUAL OVERHAULING	9-Nov-19
8	JITPL	JITPL	2	600	DESYNCHRONISED DUE TO PA FAN LUBE OIL PUMP ABNORMAL SOUND	06-Dec-19
9	KOLAGHAT	WBPDCL	3	210	Bottom ash evacuation problem	24-Nov-19
10	KOLAGHAT	WBPDCL	4	210	HIGH DRAFT PRESSURE	17-Nov-19
11	KOLAGHAT	WBPDCL	5	210	OVER VOLTAGE PROTECTION TRIP	1-Oct-19
12	KOLAGHAT	WBPDCL	6	210	LOW SYSTEM DEMAND	24-Oct-19
13	BAKRESWAR	WBPDCL	1	210	COAL SHORTAGE	1-Nov-19
14	DPL	WBPDCL	7	300	COAL SHORTAGE	6-Nov-19
15	BOKARO A	DVC	1	500	PROBLEM IN ASH POND	15-Oct-19
16	BOKARO B	DVC	3	210	PROBLEM IN ASH POND 12-Se	
17	MUZAFFARPUR TPS ST-1	BSPHCL	2	110	LOW SYSTEM DEMAND	19-Oct-19
18	MEJIA	DVC	4	210	LOW SYSTEM DEMAND	26-Oct-19
19	MEJIA	DVC	1	210	LOW SYSTEM DEMAND	31-Oct-19
20	MEJIA 'B'	DVC	8	500	Rotor Earth Fault	19-Nov-19
21	KODERMA	DVC	1	500	PROBLEM IN ASH POND	25-Oct-19
22	STERLITE	GRIDCO	2	600	DUE TO PROBLEM IN OLTC SYSTEM OF Unit Transformer	10-Apr-19

(i) Thermal Generating units:

23	STERLITE	GRIDCO	1	600	MAINTENANCE WORK	19-Nov-19
24	OPGC	DVC	4	660	ASH HANDLING PROBLEM	09-Dec-19
	Sub Total (SS)			7770		

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

(ii) Hydro Generating units:

SI. No.	Station	Unit No.	Capacity (MW)	Reason (s) of outage	Outage date
1	Palimala	Unit- 1	60	Renovation & Modernization work (Planned)	05-08-2016
7 Balimela Unit- 2 60 Renovation & modernization		Renovation & modernization work (Planned).	20-11-2017		
		Unit- 4	60	ANNUAL MAINTENANCE	14-09-19
		Unit-1	49.5	Turbine & Generator coupling cover water leakage (Forced)	14-03-2018
2	Burla	Unit-5	37.5	Renovation. Modernization & up rating work (Planned)	25-10-2016
Unit-6 3		37.5	Renovation, Modernization & up rating work (Planned)	16-10-2016	
3	Chiplima	Unit-3	24	Renovation & Modernization work (Planned)	15-10-2015
4	Rengali	Unit-2	50	Capital Maintenance (Planned) 12-12-2018	
5	U.KOLAB	Unit-4	80	Repair of MIV & Draft tube gate leakage 01-02-2019	

It is seen that about 468.5 MW hydro capacities in Odisha is under forced outage / planned outage in the period of peak monsoon 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	Agency	Outage DATE	Reasons for Outage
1	220 KV BALIMELA - U' SILERU	OPTCL / APSEB	10-03-2018	LINE ANTITHEFT CHARGED FROM UPPER SILERU ON 17-04-18
2	400 KV IBEUL JHARSUGUDA D/C	IBEUL	29-04-2018	TOWER COLLAPSE AT LOC 44,45
3	400KV NEW PURNEA- BIHARSARIFF(PG)-D/C	ENICL	10-08-2018	TOWER COLLAPSE AT LOC 47/0
4	400 KV PATNA KISHANGANJ- I	POWERG RID	01-09-2018	TOWER COLLAPSE AT LOC 129. PILING DAMAGED
5	400 KV PATNA KISHANGANJ- II	POWERG RID	06-07-2019	EMERGENCY HAND TRIPPED DUE TO FRUSTUM OF LOCATION NO: 129A/0 (A LEG) HAS BEEN EXPOSED ON SOIL EROSION.

6	220 KV PANDIABILI - SAMANGARA D/C	OPTCL	03-05-2019	49 NOS OF TOWER COLLAPSED.AS REPORTED BY SLDC OPTCL, TOTAL 60 NOS OF TOWER IN BETWEEN 220KV PANDIABILI – SAMANGARA LINE IN WHICH 48 NOS TOWERS FULLY DAMAGED AND 12 NOS TOWERS PARTIALLY DAMAGED. WORK UNDER PROGRESS.
7	400/132 KV, ICT II (200 MVA) AT KAHALGAON	NTPC	02-08-2019	Y PHASE BUSHING BURSTED
8	132 KV KhSTPP- KAHALGAON(BSPTCL)	BSPHCL	23-09-2019	TO RESTRICT LOADING ON 400/132 KV KAHALGAON(NTPC) ICT 1 /LOAD OF KAHALGAON SHIFTED TO NEW SABOUR(GORADIH).
9	400 KV MOTIHARI(DMTCL)- GORAKHPUR-I	POWERG RID/DMTC L	13-08-2019	LINE SWITHED OFF DUE TO ANTICIPATED TOWER COLLAPSE AT LOC 27/0(132) DUE TO CHANGE OF COURSE OF GANDAK RIVER.TOWER COLLAPSED REPORTED AT LOC 27/0(132) ON 15/08/19 AT 07:00 HRS.
10	400 KV MOTIHARI(DMTCL)- GORAKHPUR-II	POWERG RID/DMTC L	13-08-2019	
11	400 KV BARH- MOTIHARI(DMTCL) -I	POWERG RID/DMTC L	04-09-2019	TOWER COLLAPSE AT LOCATION 26/0 AND 25/5
12	400 KV BARH- MOTIHARI(DMTCL) -II	POWERG RID/DMTC L	04-09-2019	TOWER COLLAPSE AT LOCATION 26/0 AND 25/5
13	220KV BEGUSARAI-NEW PURNEA-I	BSPTCL	13-10-2019	Repeated Earth Fault. Line will not to be charged till: 1)sag/clearance issue is resoved 2)Healthiness certificate from
14	220KV BEGUSARAI-NEW PURNEA-II	BSPTCL	14-10-2019	independent third party obtained 3)ensure auto reclosure healthiness.
15	400 KV BINAGURI-RANGPO- 1	POWERG RID	01-11-2019	
16	400 KV BINAGURI-RANGPO- 2	POWERG RID	01-11-2019	31/12/19
17	400 KV MPL-MAITHON II	POWERG RID	20-11-2019	RECONDUCTORING WORK
18	400 KV TALA - BINAGURI -IV	POWERG RID/BHUT AN	26-11-2019	Approved S/D till 05.01.2020
19	400KV-NEW PPSP- ARAMBAGH-D/C	WBSETCL	13-12-2019	Tower collapse reported at TL NO 285/286

(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

WBPDCL informed that the following units are available but kept in out of service due to less demand:

S.No	Station	Owner	Unit No	Capacity
1	KOLAGHAT	WBPDCL	3	210
2	KOLAGHAT	WBPDCL	4	210
3	KOLAGHAT	WBPDCL	5	210
4	KOLAGHAT	WBPDCL	6	210
5	BAKRESWAR	WBPDCL	1	210
PART E::ITEMS FOR INFORMATION

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

Item No. E.1: Submission of data in MERIT Order portal--CEA

CEA vide mail dated 9th July 2019 informed that the MERIT Order portal had been launched on 23rd June, 2017 by Honourable Minister of Power. One of the most important advantages of "Merit" Portal is Transparent information dissemination pertaining to marginal variable cost and source wise purchase of electricity and indication of supply side reliability, adequacy, and cost of power procurement.

However, it has been observed that many of the states are not filling the data regularly and sometimes the data filled varies widely from the data available on the respective RLDCs daily reports.

It is requested that the states may be advised to fill the data regularly and check that correct data is filled on the MERIT Portal.

In 159th OCC, all the SLDCs were advised to fill the correct data in MERIT portal on regular basis.

Item No. E.2: 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.

Item No. E.3: Commissioning of new transmission elements in Eastern Region

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

SL NO	Element Name	Owner	Charging Date	Charging Time	Remarks
1	765 KV Bus Sectionalizer I (Bus I & Bus III) at Jharsuguda	PGCIL	07-11-2019	12:58	
2	400KV New Purnea-Gokarno S/C	PGCIL	10-11-2019	11:56	

3	400 KV Farakka -New Purnea S/C	PGCIL	10-11-2019	14:34	
4	765 kV Main Bay (725) of ICT #3 at Jharsuguda	PGCIL	18-11-2019	17:20	
5	400kV Tie bay of Darbhanga II and Future II (Bay no 433) at Kishangunj	PGCIL	18-11-2019	18:28	
6	Main Bay of future II (Bay no 434) at Kishangunj	PGCIL	18-11-2019	18:52	
7	765 kv Main bay (727) of future 1 at Jharsuguda	PGCIL	19-11-2019	13:20	
8	765kV Tie bay (726) of future 1 and ICT 3 at Jharsuguda	PGCIL	19-11-2019	13:21	
9	765kv tie bay (729) of 765/400kv 1500MVA ICT-4 & Future-2 at Jharsuguda	PGCIL	19-11-2019	15:19	
10	765kv main bay (728) of 765/400kv 1500MVA ICT- 4 at Jhasuguda	PGCIL	19-11-2019	15:20	
11	765kv main bay (730) of Future-2 at Jhasuguda	PGCIL	19-11-2019	15:30	
12	765kV/400/33 kV, 1500 MVA ICT3 at Jharsuguda	PGCIL	27-11-2019	12:55	
13	765KV/400/33KV, 1500 MVA ICT4 at Jharsuguda	PGCIL	23-11-2019	14:02	

Item No. E.4: UFR operation during the month of November'19

System frequency touched a maximum of 50.27 Hz at 22:00hrs of 26/11/19 and a minimum of 49.65 Hz at 06:21hrs of 18/11/19. Hence, no report of operation of UFR has been received from any of the constituents.

nnexuse -A

Participants in 164th OCC Meeting

Venue: ERPC Conference Hall, Kolkata

Time: 10:30 hrs

Date: 20.12.2019 (Monday)

Sl No	Name	Designation/ Organization	Contact Number	Email	Signature
1	J. Bandyopadhyay	Member Secretary ERPC	9432326351	mserpc-power@gov.in	Jande his
2	D. K. Jain	Executive Director, ERLDC	9910344127	dk.jain@posoco.in	
3	G. Mihr.	SI. GMI ERLPC	9831297392	-gopalinha@ posoco.n'	67607
4	S. koner	SV-DGM FRIDC	9936335370	Kover s c posoo, i	do
5	S.K. HAZRA	Sr Gm Powercall	9433041809	Skhazne puverini - com	hom
6	P.W. Aas.	CE-1, SLDE	9831444272	praves das adrego	v Bilm, 1
7	S. K. Sharma	ER-IHQ, NTPC	9471008359	skstama 06@ntp. a in	8-8
8	Jitendra Varna	GH (Ekd)	9596330077	DITENDRA KUMAR. NHPC @ GMAIL COM	am
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10	Rabten	A.E/CHP	+97517685358	5. rabten 302 @drnkgreens	1 5/
11	S.K. Choudhary	AVP	8294633412	Sanjivchoudhary Badhunik group. co. in.	(14)
12	Biplab Chalenje	Head - opn	9204857100	biplab. Carlyie Atampover. Con	Iral
13	Maheah Bhagat	Ex-Expiner Sterlik	Q06682424	Mahosh. bhogat C. Sterlitoway	Notey
14	KARTHIKEYAN	MANAGER STERLITE	8966903034	Vivek.karthikeyar@ Sterlite.com	Vinel
15	D P Bhargava	TUL	9958833995	DPBHARGAVA @ Teesta Urja. com	top
16	Pallari Kansal	TPTL	989859688	3 pallan. K@tvptl.	Pallous
17	M.P. Joshi	Dikchuhep	9083675999	makazandprakash je greenko group. com	melosli
18	D.Majumber	Manager VERIDO	9903593500	debajyoti.ti Equail.com	det
19	So K. Sahay	Manager ERLDe	9432013175	Saway Sahan Q	आहे.
20	Chandan Mallick	by, manager ERLDC	9007059660	Chandan, mainice @ Posoco in	RJalone

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

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Participants in 164th OCC Meeting

Venue: ERPC Conference Hall, Kolkata

Time: 10:30 hrs

Date: 29.12.2019 (Monday)

Sl No	Name	Designation/ Organization	Contact Number	Email	Signature
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26	RILUMAR	DVC, OSPU Kolkots	9434480	skyeshikuman@dvc.	12
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38	Saumen Chalis	25BPDCL	8336913772	S. Challen @ Wopd. 10. 14	Maleso
39	D. Ahettecherg	- LASSES'C	9434910265	Wholde. coac Qqui	1. D. A2.05
40	SUDHER KUMAR	AEE SLDC	8507-242895	- Budtindaciolesta	Sudit.
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Participants in 164th OCC Meeting

Venue: ERPC Conference Hall, Kolkata

Time: 10:30 hrs

Date: 20.12.2019 (Monday)

Sl No	Name	Designation/ Organization	Contact Number	Email	Signature	
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45	Shivon Asati	AD-II, ERPC	8253035332	shiw amasati 78 agmail.	Slivan	-
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51	SIKESMANAC	SE, ERPC			Ste	
52	Albhishell Kunwa	A.B., Managana	866086043	abhi konvan alegun zeneg	fr	
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NO	Element Name	Owner	Charging Date	Charging Time	Remar
1	400KV New Purnea-Gokarno S/C	PGCIL	10-11-2019	11:56	
	400 KV Farakka -New Purnea S/C	PGCIL	10-11-2019	14:34	
	765kV/400/33 kV, 1500 MVA ICT3 at Jharsuguda	PGCIL	27-11-2019	12:55	
4	765KV/400/33KV, 1500 MVA ICT4 at Jharsuguda	PGCIL	23-11-2019	14:02	



So Far Highest Demand						
Constitute	Demand (in MW)	Date	Dmd met (M) on 04 th Nov' ² <u>(max dmd met</u> MW		vIW) v'19 et day) Time	
Bihar	5972	03-Sep-19	20:07	4353	19:22	
DVC	3322	24-Jun-19	20:01	2788	18:58	
Jharkhand	1348	21-May-19	20:45	1196	18:30	
Odisha	5558	23-Aug-18	20:21	4338	18:22	
W. Bengal	9362	28-May-19	14:27	6849	17:46	
Sikkim	129	22-Nov-19	19:22	92	17:27	
ER	23476	20-May-19	22:45	19768	18:22	
	So Far	Highest Energy Co	onsumption			
Constitute	Energy consumption (i MUs)	n Dat	e	Energy met on ((max dmd n	04 th Nov'19 net day)	
DVC	75.8	02-Sep 12-Ju	19 -19	79.2		
Jharkhand	27.8	19-Ma	y-19	22.6		
Odisha	123.5	02-Oc	t-18	75.2		
West Bengal	199.9	28-Ma	y-19	126.6		
Sikkim	2.2	22-No	v-19	1.2		
ER	506.0	25-Jur	n-19	378		





November 2019 Schedule vs Actual Status								
	Schedule (MU)	Actual (MU)	OD (MU)	Daily Avg OD (MU)	% Deviation			
Bihar	2105	2086	-19	-0.6	-0.9			
Jharkhand	496	488	-9	-0.3	-1.7			
DVC	-891	-887	4	0.1	0.5			
Odisha	190	188	-2	-0.1	-1.1			
West Bengal	1075	1121	45	1.5	4.2			
Sikkim	44	46	1	0.0	3.2			
FSTPP I & II	620	614	-6	-0.2	-1.0			
FSTPP III	266	267	1	0.0	0.0			
KHSTPP I	393	396	3	0.1	0.8			
KHSTPP II	905	895	-11	-0.3	-1.2			
TSTPP I	489	486	-3	-0.1	-0.6			
BARH II	655	657	2	0.1	0.4			
NPGC	377	373	-4	-0.1	-1.2			
GMR	344	342	-2	-0.1	-0.5			
MPL	512	514	2	0.1	0.4			
APRNL	159	154	-4	-0.1	-2.8			
JITPL	366	363	-3	-0.1	-0.8			

























10

Elements long outages leading to transmission constraint

- 400KV main bay of Indravati(GR)-Indravati (PG) out of service since last 2 years for breaker problem at Indravati(PG). Line was charged through main bay of 125 MVASR B/R breaker on Bus II. Breaker to be replaced by OPTCL. Timeline of restoration is uncertain may be updated by OPTCL?
- 400 Kv Purnea Biharsariff D/C were out since 10/08/18 on tower collapse at 47/0. ENICL submitted annexure B2 (protection settings confirmation) & B5 (undertaking about clearance from several statutory body) on 21st December 2019. Protection settings confirmation from Powergrid is pending)
- 400 kV Patna Kisanganj I&II were out since 01/09/18 & 06/07/19 respectively on tower collapse.
- 400 KV Gorakhpur Motihari (DMTCL) D/C were out since 13/08/2019 on tower collapse at LOC 27/0.

Performance of FGMO/RGMO of ER generating units

- Generation loss event at Akal on 01st November 2019 at 11:16hrs is analyzed
- Frequency changed from 50.03 Hz to 49.91 Hz
- Actual FRC of ER was around only **21%** of the ideal response, which is **non-satisfactory**.
- As per tariff regulation 2019, ROE of 1% may be deducted if generating units are commissioned/run without RGMO/FGMO with MI.

 CERC may initiate action under 142 in case of non Satisfactory performance

Performance of FGMO/RGMO of ER
generating units

Satisfactory Below		Non Satisfactory
(>70% of	Satisfactory	(<30% of ideal
ideal	(30% to 70% of	response)
response)	ideal response)	
GMR	KhSTPP stage II	FSTPP Stage I, II & III,
(ramping	and TSTPP Stage	KhSTPP stage I, Barh,
during	П.	BRBCL, MPL, JITPL
governor	GRIDCO control	and APNRL .
response	area FRC was	WB, Jharkhand and
needs to be	below satisfactory	DVC control area FRC
increased)		was non-satisfactory

Performance of FGMO/RGMO of ER generating units

- Generation end data and FRC data yet to be received from
 - NTPC Farakka
 - NTPC Kahalgaon
 - NTPC Talcher
 - NTPC Barh
 - BRBCL
 - JITPL
 - SLDC Jharkhand
 - SLDC GRIDCO









Report on poor governor response from the generators in the Eastern Region for the event in November 2019

(For submission in 164th OCC meeting)

<u>Objective</u>: Analysis of Governor Response (RGMO/FGMO) of Eastern Region Generators for FRC reported events in Indian Grid **for the Month of November 2019**.

<u>Reference</u>: In the 38th TCC/ERPC meeting, it was decided that ERLDC would analyze the governor response of generators and submit a report on the performance of RGMO/FGMO in the Units to ERPC/TCC committee for deliberation.

Relevant Regulatory Provision:

- IEGC 5.2.f. i: All Coal/lignite based thermal generating units of 200 MW and above, Open Cycle Gas Turbine/Combined Cycle generating stations having gas turbines of capacity more than 50 MW each and all hydro units of 25 MW and above shall be operated under restricted governor mode of operation.
- IEGC 5.2.g: Facilities available with/in load limiters, Automatic Turbine Run-up System (ATRS), Turbine supervisory control, coordinated control system, etc., shall not be used to suppress the normal governor action in any manner and no dead bands and/or time delays shall be deliberately introduced. Provided that periodic checkups by third party should be conducted at regular interval once in two years through independent agencies selected by RLDCs or SLDCs as the case may be. The cost of such tests shall be recovered by the RLDCs or SLDCs from the Generators. If deemed necessary by RLDCs/SLDCs, the test may be conducted more than once in two years.
- IEGC 5.2.i: The recommended rate for changing the governor setting, i.e., supplementary control for increasing or decreasing the output (generation level) for all generating units, irrespective of their type and size, would be one (1.0) per cent per minute or as per manufacturer's limits. However, if frequency falls below 49.8 Hz, all partly loaded generating units shall pick up additional load at a faster rate, according to their capability
- CERC order in 84/MP/2015 dated 31st July 2017 : Para 23 (a) of the order state that "the Commission, starting from the month of September, 2017 shall be closely watching the primary response of ISGSs as reported by POSOCO/NLDCs. At the State level, SLDCs shall report the frequency response of intra-State generators to the concerned SERCs."

Para 23 (c) of the order state that "All ISGSs are directed to provide primary response compulsorily in terms of Regulation 5.2 (f), (g), (h) and (i) of the Grid Code failing which we would not hesitate in initiating action under Section 142 of Electricity Act, 2003 for not providing desired RGMO/FGMO response without any valid reasons."

• CERC Terms and conditions of Tariff regulation 2019:

Regulation 30(2)-(i): In case of a new project, the rate of return on equity shall be reduced by 1.00% for such period as may be decided by the Commission, if the generating station or transmission system is found to be declared under commercial operation without commissioning of any of the Restricted Governor Mode Operation (RGMO) or Free Governor Mode Operation (FGMO), data telemetry, communication system up to load dispatch centre or protection system based on the report submitted by the respective RLDC; Regulation 30(2)-(ii): in case of existing generating station, as and when any of the requirements under (i) above of this Regulation are found lacking based on the report submitted by the concerned RLDC, rate of return on equity shall be reduced by 1.00% for the period for which the deficiency continues;

• Decision taken in OCC meeting:

As per decision taken in 145th OCC meeting, generating station is to send 1 sec or higher resolution data to ERLDC/SLDC as the case may be.

 Decision taken in special meeting on RGMO/FGMO on 31st January 2019 at ERPC and 12th July 2019:

All the ISGS and state generating stations eligible for RGMO/FGMO as per IEGC 5.2 (f) are to take action in order to provide satisfactory primary response in line with IEGC 5.2 (f), (g), (h) and (i). **Details of action plans to be taken by generating stations and SLDCs are summarized in Table 2 & 3**.

Introduction: During the Month of November 2019, <u>one</u> event has occurred for which Frequency Response Characteristic has been analyzed pan India. The details of the event and the overall response of Eastern region have been summarized in the below Table 1.

Event	Frequency Change	ER FRC
On 01st November 2019, at 11:16hrs 1644 MW load loss occurred due to	50.03 Hz to	21%
tripping of all connected 220 kV transmission lines in Akal S/S	49.91 Hz	

Table 1: Region Wise Frequency Response Characteristic (FRC) for the event

The Frequency Plot for the event is given in Annexure-I for reference. It can be observed from the above table that during the event, the FRC of Eastern Region was unsatisfactory.

Despite of repeated reminders to generating stations in previous OCC meetings, generation output data recorded at generating end are yet to be received from many generating stations

like NTPC Farakka, NTPC Kahalgaon, NTPC Talcher, NTPC Barh, BRBCL & GMR for the event occurred in November 2019. It has been observed response was not satisfactory for FSTPP stage I, II & III, KhSTPP stage I & II, TSTPP stage II, Barh stage II, BRBCL, MPL, JITPL and APNRL. Though response was satisfactory for GMR, ramping during governor response needs to be increased. As per FRC received from WB SLDC and DVC SLDC, response was not satisfactory. FRC is yet to be received from Jharkhand and GRIDCO SLDC.

		Action plans to be taken by generating
		stations/SLDCs as per decision taken in special
Generating		meeting on 12-07-19 at ERLDC and the meeting
Station	Remarks	on 31-01-19 at ERPC
		Stage I : Old system to be replaced with new BHEL make
		MAX DNA DCS system during the AOH, as per latest
		LGBR. RGMO tuning to be completed after such up
		gradation.
FSTPP	Non-Satisfactory	Stage II & III: Further fine-tuning to be carried out.
		The performance of Unit 4 is not good due to the
		control valve issue. During the next AOH, issue of Unit
		4to be rectified for better response.
		Unit 6 and 7 will be tuned by mid of August 2019, for
	Below-satisfactory for stage II	which no shutdown would be required.
	and Non-Satisfactory for stage	Other than unit 3 & unit 7, response was not
KhSTPP	1	satisfactory for KhSTPP units.
		There are plans to attend to the governor problems of
		unit II during the next overhauling in November 2019.
		The oscillatory response observed for unit III to be
	No generation at stage I.	rectified in the AOH. Unit IV, V and VI response will be
TSTPP	Below-satisfactory for stage II	tuned by the end of Mid Sept 2019.
		NTPC Barh intimated RGMO logic has been tuned
		during AGC commissioning in Aug'19. Its response is
		being observed and deviations are being taken up with
		NTPC CC- Engg and with OEM.
		The planned modification in Boiler will be done during
Barh	Non-Satisfactory	annual overhauling starting from 10-Nov-19.
		BRBCL to implement the new logic for RGMO within 2
DDDOI		weeks and to share the response with high-quality data
BRBCL	Non Satisfactory	for analysis.
		GRIDCO SLDC to calculate FRC observed at the
		boundary of the control area and reason for non-
		satisfactory response. Format for calculation of FRC has
GRIDCO	Below-satisfactory	been circulated.
		JNARKNANG SLUC TO CAICULATE FRC Observed at the
		boundary of the control area and reason for non-
		satisfactory response. Format for calculation of FRC has
Lunarkhand	I INON- SATISTACTORY	i peen circulated.

 Table 2: Response Based on ERLDC SCADA Data for the events in the month of November

 2019

Table 3: Response from High-Resolution Data recorded at generating stations/SLDCs /ERLDC for the events in the month of November 2019*

Generating Station/ SLDC	Responses observed	Action plans to be taken by generating stations/SLDCs as per decision taken in special meeting on 12-07-19 at ERLDC the meeting on 31-01-19 at ERPC
MPL	Below Satisfactory , response did not last for more than 1 min	MPL intimated that they have changed the settings for sliding pressure curve which has provided better response and the units are being operated in throttled valve condition rather than VWO to give the response as per IEGC.
GMR	Satisfactory , But ramping during governor response needs to be increased.	GMR to fine-tune and improve the logic for detection of frequency event.
JITPL	Non satisfactory , duration of governor response need to be increased.	JITPL representative was not present in both the meetings. From the response, it is suspected JITPL units are kept in FGMO mode rather than RGMO condition as RGMO influence was high prior to the event. JITPL to put their units in RGMO and run their units not in VWO condition.
Teesta V	Sufficient margin was not available during the event	Teesta V to check the RGMO software and remove any delay in the governor control to provide an adequate response.
APNRL	Non Satisfactory , ramping during governor response needs to be increased	APNRL intimated that frequency influence detection and associated action were intentionally having a delay to check the RGMO logic. The delay has now been removed and better response can be observed from now onwards.
WB	Non-Satisfactory	WB SLDC to take action to improve the frequency response characteristics of state control area.
DVC	Non-Satisfactory	DVC SLDC to take action to improve the frequency response characteristics of state control area.

* Based on data received on or before 03-12-2019

In view of the above Generating Power Plants of Eastern Region and SLDC may kindly explain the following points:

- 1. Inadequate RGMO/FGMO response for such critical Contingency and Large Frequency Drop in the grid in line with IEGC5.2.f to 5.2.i.
- 2. Non-submission of data for RGMO Response in line with IEGC 5.2.r , IEGC 5.9.4.b, CEA Technical standards for connectivity to the Grid Regulation 6.4.d, CEA Grid Standard 15.3. Generation data/FRC is only received from Adhunik, MPL, Budge Budge and DVC SLDC. Other regional generating stations/SLDCs may furnish the reason for not sharing high resolution generation data/FRC at their control area. Even resolution of shared data may be increased in order to improve analysis of governor operation. In case of data shared by APNRL, no oscillatory response has not been observed, which is clearly visible in PMU data.
- 3. Non-Receipt of Computed FRC from SLDC for their Control Areas as per the Approved FRC procedure by CERC (In line with CERC order 84/MP/2015 dated 31-07-17)

the meeting, ov	remaining has been taken for h
Unit Name	Overhauling date
CTPS #7	09-02-19
KhSTPP #1	12-03-19
Barh #4	17-02-19
Mejia #2	08-05-19
KhSTPP #7	21-04-19
GMR #1	26-05-19
FSTPP #6	07-06-19
MPL #2	20-06-19
KhSTPP #4	11-07-19
Mejia #7	03-07-19
DSTPS #1	26-08-19
SEL #4	31-07-19
KhSTPP #2	10-11-19
Barh #4	25-11-19

4. Status of action plans taken as per decision taken in special meeting on 31-01-19. After the meeting, overhauling has been taken for following units:

In Addition, many units are kept out for Low Demand/RSD for longer duration and for these also the governor response can be tuned. In view of this, ERPC may kindly enforce the tuning of the Governor in line with IEGC FGMO/RGMO regulations.

Even after so many discussions over Governor Response in the OCC and ERPC board meeting, there has not been any significant improvement of performance of Eastern Region Generating Station which resulted non-satisfactory primary frequency response at regional boundary of ER grid.

Frequency



1. Response observed in ERLDC PMU data and DCS data for MPL



2. Response observed in DCS data for Teesta V



3. Response observed in ERLDC PMU data and DCS data for APNRL



4. Response observed in ERLDC PMU data and DCS data for GMR



5. Response observed in ERLDC PMU data for JITPL



6. Response observed in ERLDC SCADA data





					POW	ER SYSTE	M DEVELO	PMENT FUN	D					
				•	Status o	of the Projec	cts approved i	n Eastern Re	gion	•				
SI No	State	Entity	Name of the Proposal & No	Date of Sanction	Approved DPR cost	Sanctioned Grant	Date of signing of Agreement	Date of First Disbursment	Completion Schedule (in months)	Grant Disbusre d till date	% Grant disbursed	Under process of disbusrement	Total Awards amount placed till date	Remarks
1			Renovation and Upgradation of protection system of substations. (18)	11-May-15	71.35	64.22	3-Dec-15	16-May-16	24	56.04	87.26%		69.20	Final 10% not yet claimed
2	Bihar	BSPTCL	Installation of Capacitor bank in 20 Nos of Grid Sub Station. (74)	5-Sep-16	20.98	18.88	14-Mar-18	26-Mar-19	24	16.99	89.98%		20.98	Final 10% not yet claimed
3			Renovation and Upgradation of the protection and control system of 12nos 132/33 Grid Sub Station. (73)	2-Jan-17	54.69	49.22	Agreement not signed		24	0.00	0.00%			Agreement not signed
			Total		147.02	132.32				73.03	55.19%		90.18	
4	Ibarkhand	ILISNI	Renovation & Upradation of protection system of Jharkhnad. (161)	15-Nov-17	153.48	138.13	3-Jul-18	28-Mar-19	16	39.03	28.26%	75.65	140.09	60% grant under process of disbusrement
5		JUSINE	Reliable Communication & data acquisition system upto 132kV Substations ER. (177)	24-May-19	46.82	22.36	Agreement not signed				0.00%			Agreement not signed
			Total		200.3	160.49				39.03	24.32%	75.65	140.09	
6			Renovation and Upgradation of protection system of substaions. (08)	11-May-15	180.56	162.50	5-Aug-15	22-Mar-16	24	46.04	28.33%		60.26	Final 10% not yet claimed
7			Implementation of OPGW based reliable communication at 132 kv and above substations.	15-Nov-17	51.22	25.61	3-Jan-18	29-Mar-19	36	7.68	29.99%		51.22	60% grant not yet requested
8		OPTCL	Installation of 125 MVAR Bus Reactor along with construction of associated by each at 400kV Grid S/S of Mendhasal, Meramundali & New Duburi for VAR control & stabilisation of system voltage. (179)	27-Jul-18	30.26	27.23	21-Sep-18	1-Apr-19	18	2.72	9.99%			Awards not yet placed & 20% not yet requested
9	Odisha		Implementation of Automatic Demand Management System (ADMS) in SLDC, Odisha. (196)	24-May-19	3.26	2.93	Agreement not signed		10		0.00%			Agreement not signed
10			Protection Upgradation and installation os Substation Automatic System (SAS) for seven nos of 220/132/33kV Substations (Balasore, Bidanasi, Budhipadar, Katapali, Narendrapur, New-Bolangir & Paradeep) (209)	24-May-19	40.7	36.63			18		0.00%			Agreement is under execution
11		OHPCL	Renovation and Upgradation of protection and control system of OHPC. (109)	22-May-17	24.83	22.35	19-Sep-17	25-May-18	24	2.67	11.95%		10.17	60% grant not yet requested
			Total		330.83	277.25				59.11	21.32%		121.66	
12			Renovation and Upgradation of protection system of substations. (07)	31-Dec-14	120.67	108.60	10-Feb-15	4-Feb-16	15	46.10	42.45%		51.23	Project Completed. Short closed
13			Installation of switchable reactor & shunt capacitor for voltage improvement. (88)	22-May-17	48.19	43.37	10-Aug-17	22-Jun-18	19	11.69	26.95%		28.30	60% not yet claimed
14		WBSET	Renovation & Modernisation of Transmission System. (87)	22-May-17	93.51	70.13	10-Aug-17	25-Jun-18	25	63.12	90.00%		93.51	Final 10% not yet claimed
15		CL	Installation of Bus Reactors at different 400kV Substation within the state of West Bengal for reactive power management of the Grid. (210)	24-May-19	79.71	71.74	24-Jun-19	23-Oct-19	19		0.00%	7.17		10% under process of disurement
16	West Bengal		Project for establishment of reliable communication and data acquisition at different substation at WBSWTCL. (222)	24-May-19	62.39	31.19	24-Jun-19	23-Oct-19	25	3.12	10.00%			Awards not yet placed & 20% not yet requested

					POW	VER SYSTE	M DEVELO	PMENT FUN	D					
					Status o	of the Projec	ts approved i	n Eastern Re	gion	•				
SI No	State	Entity	Name of the Proposal & No	Date of Sanction	Approved DPR cost	Sanctioned Grant	Date of signing of Agreement	Date of First Disbursment	Completion Schedule (in months)	Grant Disbusre d till date	% Grant disbursed	Under process of disbusrement	Total Awards amount placed till date	Remarks
17			Renovation and Modernization of 220/132 kV STPS switch yard and implementation of Substaion Automation System. (72)	5-Sep-16	26.09	23.48	29-Dec-16	18-May-17	18	7.05	30.02%			60% not yet claimed
18		WBPDC	Implementation of Islanding scheme at Bandel Thermal Power Station. (97)	16-May-17	1.54	1.39	10-Aug-17	14-Dec-17	8	1.39	100.00%			Project Completed
19		L	Renovation and Modernization of switchyard and related protection system of different power stations (BTPS, BKTPS and KTPS) of WBPDCL (155)	27-Jul-18	50.18	45.16	20-Dec-18	27-Mar-19	12	4.52	10.01%			60% not yet claimed
			Total		482.28	395.06				136.99	34.68%		173.04	
20			Renovation and Upgradation of the protection and control system of Ramgarh Sub Station. (81)	2-Jan-17	28.85	25.96	11-Apr-17	31-May-17	24	22.95	88.41%		28.27	Final 10% not yet claimed
21	DVC	DVC	Renovation and Modernization of control and protection system and replecement of equipment at Parulia, Durgapur, Kalyanewari, Giridhi Jamsedpur, Barjora, Burnpur, Dhanbad and Bundwan substation. (106)	16-May-17	156.11	140.50	21-Jun-17	14-Dec-17	24	36.06	25.67%		122.75	60% not yet claimed
			Total		184.96	166.46				59.01	35.45%		151.03	
22	Sikkim	ENPD, Sikkim	Drawing of optical ground wire (OPGW) cables on existing 132kV & 66kV transmission lines and integration of leftover substations with State Load Despatch Centre, Sikkim. (173)	24-May-19	20.00	10.00	4-Dec-19				0.00%			Initla 10% not yet claimed
					20.00	10.00				0.00	0.00%		0.00	
23	PGCIL	PGCIL	Installation of STATCOMs in ER at Ranchi- New, Rourkela, Kishanganj and Jeypore substations of POWERGRID. (56)	5-Jan-16	700.31	630.28	29-Sep-16	31-Mar-17	30	571.69	90.70%		651.52	Project Completed
24			Creation and Maintenance of web based protection database management. (67)	17-Mar-16	20	20.00	26-Apr-16	28-Jun-16	18	14.83	74.15%		16.48	Final 10% not yet claimed
25	ERPC	ERPC	Study Programme on power trading at NORD POOL Academy for Power System Engineers of Eastern Region. (122)	27-Jul-18	5.46	5.46	21-Sep-18	27-Mar-19	60	4.61	84.43%		5.37	Final 10% not yet claimed
26			Traning Program for Power system Engineers of various constituents of Eastern Region. (117)	27-Jul-18	0.61	0.61	21-Sep-18	11-Apr-19	60	0.18	29.51%		0.61	60% not yet claimed
$\left \right $			Total		726.38	656.35				591.31	90.09%		673.98	
			GrandTotal		2,091.77	1,797.94				958.48	53.31%	75.65	1349.96	

					Annexure-B8
		List of	Meter for Testing	& calibration in Eastern Region	
S. NO.	Make	ERLDC ID	STATION	BAY	Meter No.
1	L&T	BI-09	KAHALGAON(BSPHCL)	132 KV LALMATIA(JUVNL)	NP-6071-A
2	L&T	BI-10	KAHALGAON(BSPHCL)	132KV KAHALGAON (NTPC)	NP-6076-A
3	L&T	RG-08	RANGIT(NHPC)	66KV/11 KV TRANSFORMER	NP-5918-A
4	L&T	RG-01	RANGIT(NHPC)	RANGIT GT-1	NP-5919-A
5	L&T	RG-02	RANGIT(NHPC)	RANGIT GT-2	NP-5920-A
6	L&I	RG-03		RANGII GI-3	NP-5921-A
7	LAI	RG-10 RG-07		132KV SAGDARI (SIKKIN) (IVIAIN) 66KV RAVANGLA (SIKKIM) (MAIN)	NP-5925-Α NP-5926-Δ
9	L&T	DV-06	DSTPS(DVC)	400 KV JAMSHEDPUR (PG)-II (MAIN)	NP-6522-A
10	L&T	DV-07	DSTPS(DVC)	400 KV JAMSHEDPUR (PG)-II (CHECK)	NP-6523-A
11	L&T	DV-10	DSTPS(DVC)	400 KV JAMSHEDPUR-Ì (MÁIN)	NP-6524-A
12	L&T	DV-11	DSTPS(DVC)	400 KV JAMSHEDPUR-I (CHECK)	NP-6525-A
13	L&T	FK-31	FARAKKA(NTPC)	FARAKKA ST-5	NP-5215-A
14	L&T	FK-30	FARAKKA(NTPC)	FARAKKA GT-6	NP-5216-A
15	L&I	FK-09		400KV KAHALGAON (NTPC) -2	NP-5200-A
10		FK-08	FARAKKA(NTPC)	400KV KAHALGAON (NTPC) -2	NP-5201-A NP-5202-A
18	L&T	FK-25	FARAKKA(NTPC)	400KV KAHALGAON (NTPC) -1	NP-5203-A
19	L&T	FK-12	FARAKKA(NTPC)	400KV MALDA (PG) -1	NP-5204-A
20	L&T	FK-11	FARAKKA(NTPC)	400KV DURGAPUR (PG) -2	NP-5208-A
21	L&T	FK-24	FARAKKA(NTPC)	400KV DURGAPUR (PG) -2	NP-5209-A
22	L&T	FK-14			NP-5211-A
23	L& I & T	FK-10 FK-22			NP-5213-A
24	L&T	FK-21	FARAKKA(NTPC)	400KV SAGARDIGHI (WB)-2 (CHECK)	NP-5220-A
26	L&T	FK-15	FARAKKA(NTPC)	400KV SAGARDIGHI (WB)-2 (MAIN)	NP-5221-A
27	L&T	FK-23	FARAKKA(NTPC)	400KV DURGAPUR (PG) -1	NP-5222-A
28	L&T	FK-13	FARAKKA(NTPC)	400KV MALDA (PG) -2	NP-5223-A
29	L&T	FK-29	FARAKKA(NTPC)	400KV MALDA (PG) -2	NP-5224-A
30		FK-10		400KV DURGAPUR (PG) -1	NP-5228-A
31	L&I	FK-28			NP-5229-A
33		DV-20	MEJIA (DVC)	400 KV MEJIA(DVC)-MAITHON(PG)-7(CHECK)	NP-7494-A NP-7495-A
34	L&T	WB-14	SAGARDIGHI(WBSETCL)	400 KV DURGAPUR (PG) -1 (MAIN)	NP-6546-A
35	L&T	WB-15	SAGARDIGHI(WBSETCL)	400 KV DURGAPUR (PG) -1 (CHECK)	NP-6547-A
36	L&T	DV-35	TISCO(DVC)	400 KV JAMSHEDPUR(PG)	NP-7406-A
37	L&T	DV-34	TISCO(DVC)	400 KV BARIPADA(PG)	NP-7408-A
38	L&T	DV-20	KODERMA (DVC)	400 KV - BIHARSHARIFF (PG)-1(MAIN)	NP-7831-A
39	L&T	GM-10	GMR (GRIDCO)	400 KV M'MUNDLI(GRIDCO)(MAIN)	NP-7483-A
40	L&I	EM-93			NP-6545-A
41	LAT	MR-03		400 KV MAITHON (PG)-1 (CHECK)	NP-0349-A NP-6550-Δ
43	L&T	MR-07	MAITHON RB (MPL)	400 KV SIDE OF MAITHON RB STN TRF-1	NP-6552-A
44	L&T	BI-22	KHAGAUL(BSPHCL)	220 KV PATNA (PG)	NP-5833-A
45	L&T	BI-14	KHAGAUL(BSPHCL)	220KV ARAH (PG)-2	NP-6060-A
46	L&T	BH-06	BARH(NTPC)	400 KV PATNA-1(MAIN)	NP-6080-A
47	L&T	BH-04	BARH(NTPC)	400 KV KAHALGAON-1(MAIN)	NP-6111-A
48	L&T	BH-12	BARH(NTPC)	400 KV SIDE OF ICT -I	NP-6531-A
49	L&I	KH-39			NP-7826-A
50	LQ 1	LK-40 TS-07			NP-5805-A
52	L&T	TS-08	TEESTA(NHPC)	400KV RANGPO-2 (CHECK)	NP-5897-A
53	L&T	TS-06	TEESTA(NHPC)	400KV RANGPO-2 (MAIN)	NP-5898-A
54	L&T	TS-01	TEESTA(NHPC)	TEESTA GT-1	NP-5899-A
55	L&T	TS-02	TEESTA(NHPC)	TEESTA GT-2	NP-5900-A
56	L&T	TS-03	TEESTA(NHPC)	TEESTA GT-3	NP-5901-A
57	L&T	EM-82	RANCHI(PG)	400KV ROURKELLA (PG)-1	NP-5876-A
58	L&T	EM-83		400KV ROURKELLA (PG)-2	NP-6530-A
59 60	L&I	FK-32			NP-5207-A
61	L&1 &T	FK-33			NP-5218-A
62	L&T	FK-34	FARAKKA(NTPC)	400KV KAHALGAON (NTPC) -4 (MAIN)	NP-5219-A
63	L&T	MR-12	MAITHON RB (MPL)	400 KV RANCHI (PG)-2 (CHECK)	NP-5252-A
64	L&T	DV-17	MEJIA (DVC)	400KV JAMSHEDPUR (PG) (CHECK)	NP-7493-A
65	L&T	SM-01	RAVANGLA (SIKKIM)	66 KV RANGIT (NHPC)	NP-6481-A
66	L&T	ER-14	PUSAULI(PG)	220KV NADHOKHAR(BSPHCL) -2	NP-6511-A
67	L&T	ER-13	PUSAULI(PG)	220KV NADHOKHAR(BSPHCL) -1	NP-6512-A
68	L&T	ER-97	PUSAULI(PG)	400/220KV ICT-1	NP-6513-A
69 70	LČI	EK-94		400/220KV ICT-2 400KV/ SASARAM (PC) EAST RUS 4	NP-6516-A
70	LQ 1	ER-82		400KV SASARAM (PG) FAST BUS-1	NP-6515-A
72	L&T	BI-12	DUMRAON(BSPHCI)	132KV ARAH (PG)	NP-6067-A
•	-~ '	2			

73	L&T	BI-17	DEHRI (BSPHCL)	220 KV GAYA (PG) -1	NP-7449-A
74	L&T	TL-18	TALCHER(NTPC)	400KV MIRAMUNDALI(GRIDCO) (MAIN)	NP-5970-A
75	L&T	ER-79	PUSAULI(PG)	132KV MOHANIA(BSPHCL)	NP-6094-A
76	L&T	ER-78	PUSAULI(PG)	132KV KUDRA(BSPHCL)	NP-6095-A
77	L&T	WB-59	KALIMPONG (WBSETCL)	66 KV MELLI (SIKKIM)	NP-5994-A
78	L&T	SM-51	MELLI (SIKKIŇ)	66 KV KALIMPONG (WBSETCL)	NP-5849-A
79	L&T	EP-08	PUSAULI(PG)	400 KV ALLAHABAD (NR)	NP-6091-A
80	L&T	JS-06	HATIA(JUVNI)	220 KV RANCHI (PG)-2	NP-6121-A
81		JS-07		220 KV RANCHI (PG)-1	NP-6122-A
82		JS-51			NP-6102-A
83	LAT	15-01			NP-6103-A
84	LQT	WB-06	MALDA (WBSETCL)	132 KV MALDA (PG) -2	NP-6472-A
95		WB-00			ND 6490 A
86		PL 62			ND 6007 A
87		DI-02			NF-0097-A
07		BI-00			NF-0013-D
00	LQI	DI-00			NP-0010-D
89 00	LQI	JS-55		132RV PATRATU (DVC) TRANSFER BUS	NF-0003-D
90	L&I	JS-54			NP-6004-B
91	L&I	JS-40	PATRATU (JUVNL)		NP-6005-B
92	L&I	BI-63	KARAMNASA(BSPHCL)	132KV CHANDAULI (UPSEB)	NP-6017-B
93	L&I	BI-64	KARAMNASA(BSPHCL)	132KV SAHUPURI(UPSEB)	NP-6018-B
94	L&T	BI-49	MOHANIA (BSPHCL)	132KV PUSAULI (PG)	NP-6099-A
95	L&T	DV-53	PATRATU (DVC)	132KV PATRATU(JUVNL)-1&2(SUM)	NP-6006-B
96	L&T	DV-18	DHANBAD (DVC)	220 KV MAITHON (PG)-2	NP-6541-A
97	L&T	DV-19	DHANBAD (DVC)	220 KV MAITHON (PG)-1	NP-6542-A
98	L&T	OR-09	MIRAMUNDALI(GRIDCO)	220KV TSTPP (NTPC) -1	NP-5981-A
99	L&T	OR-10	MIRAMUNDALI(GRIDCO)	220KV TSTPP (NTPC) -2	NP-5982-A
100	L&T	ER-62	PURNEA(PG)	132KV PURNEA (BSPHCL) -1	NP-6081-A
101	L&T	ER-63	PURNEA(PG)	132KV PURNEA (BSPHCL) -2	NP-6082-A
102	L&T	ER-48	PURNEA(PG)	132KV PURNEA (BSPHCL) -3	NP-6083-A
103	L&T	ER-49	PURNEA(PG)	132KV KISHANGANJ (BSPHCL)	NP-6084-A
104	L&T	EM-50	PURNEA(PG)	400/220 KV ICT-2	NP-6086-A
105	L&T	ER-04	PURNEA(PG)	400 KV SIDE 500 MVA ICT-1	NP-6087-A
106	L&T	RG-04	RANGIT(NHPC)	132KV KURSEONG(WBSETCL) (MAIN)	NP-6503-A
107	1.&T	RG-06	RANGIT(NHPC)	132KV RAMMAM (WBSETCL) (MAIN)	NP-6504-A
108		RG-11	RANGIT(NHPC)	132KV RANGPO (PG) (MAIN)	NP-6506-A
100		OR-04	RENGALL (GRIDCO)	220KV RENGALL(PG) -2	NP-5985-A
100	LQT	OR 04			NP-5086-A
111	LAT			220 KV WARA (DVC) 1	
		V// B-51			
112	LQT	WB-51 WB-07	BIDHANNAGAR (WBSETCL)		NP-0404-A
112	L&T	WB-51 WB-07	BIDHANNAGAR (WBSETCL) BIDHANNAGAR (WBSETCL)	220 KV PARULIA (DG) 220 KV PARULIA (PG) 122KV PULIPNEA (PG)	NP-6486-A
112 113	L&T L&T	WB-07 BI-03	BIDHANNAGAR (WBSETCL) BIDHANNAGAR (WBSETCL) PURNEA (BSPHCL)	220 KV PARULIA (PG) 132KV PURNEA (PG) -1 132KV PURNEA (PG) -2	NP-6484-A NP-6486-A NP-6088-A
112 113 114	L&T L&T L&T L&T	WB-51 WB-07 BI-03 BI-04	BIDHAINIAGAR (WBSETCL) BIDHANNAGAR (WBSETCL) PURNEA (BSPHCL) PURNEA (BSPHCL)	220 KV VARIA (DVC)-1 220 KV PARULIA (PG) 132KV PURNEA (PG) -1 132KV PURNEA (PG) -2	NP-6484-A NP-6486-A NP-6088-A NP-6089-A
112 113 114 115	L&T L&T L&T L&T L&T	WB-51 WB-07 BI-03 BI-04 BI-51	BIDHAINIAGAR (WBSETCL) BIDHANNAGAR (WBSETCL) PURNEA (BSPHCL) PURNEA (BSPHCL) PURNEA (BSPHCL)	220 KV WARIA (DVC)-1 220 KV PARULIA (PG) 132KV PURNEA (PG) -1 132KV PURNEA (PG) -2 132KV PURNEA (PG)-3 132KV PURNEA (PG)-3	NP-6486-A NP-6486-A NP-6088-A NP-6089-A NP-6090-A
112 113 114 115 116	L&T L&T L&T L&T L&T L&T	WB-51 WB-07 BI-03 BI-04 BI-51 WB-57	BIDHAINIAGAR (WBSETCL) BIDHANNAGAR (WBSETCL) PURNEA (BSPHCL) PURNEA (BSPHCL) PURNEA (BSPHCL) KURSEONG(WBSETCL)	220 KV WARIA (DVC)-1 220 KV PARULIA (PG) 132KV PURNEA (PG) -1 132KV PURNEA (PG) -2 132KV PURNEA (PG)-3 132 KV RANGIT(NHPC)	NP-6486-A NP-6486-A NP-6088-A NP-6089-A NP-6090-A NP-7541-A
112 113 114 115 116 117	L&T L&T L&T L&T L&T L&T L&T	WB-51 WB-07 BI-03 BI-04 BI-51 WB-57 WB-58	BIDHAINIAGAR (WBSETCL) BIDHANNAGAR (WBSETCL) PURNEA (BSPHCL) PURNEA (BSPHCL) PURNEA (BSPHCL) KURSEONG(WBSETCL) KURSEONG(WBSETCL)	220 KV WARIA (DVC)-1 220 KV PARULIA (PG) 132KV PURNEA (PG) -1 132KV PURNEA (PG) -2 132KV PURNEA (PG)-3 132 KV RANGIT(NHPC) 132 KV SILIGURI(PG)	NP-6486-A NP-6486-A NP-6088-A NP-6089-A NP-6090-A NP-7541-A NP-7542-A
112 113 114 115 116 117 118	L&T L&T L&T L&T L&T L&T L&T L&T	WB-51 WB-07 BI-03 BI-04 BI-51 WB-57 WB-58 DV-04	BIDHAINIAGAR (WBSETCL) BIDHANNAGAR (WBSETCL) PURNEA (BSPHCL) PURNEA (BSPHCL) PURNEA (BSPHCL) KURSEONG(WBSETCL) KURSEONG(WBSETCL) MEJIA(DVC)	220 KV WARIA (DVC)-1 220 KV PARULIA (PG) 132KV PURNEA (PG) -1 132KV PURNEA (PG) -2 132KV PURNEA (PG)-3 132 KV RANGIT(NHPC) 132 KV SILIGURI(PG) 400KV MAITHON (PG) (MAIN)	NP-6486-A NP-6486-A NP-6088-A NP-6089-A NP-7541-A NP-7542-A NP-6557-A
112 113 114 115 116 117 118 119	L&T L&T L&T L&T L&T L&T L&T L&T L&T	WB-51 WB-07 BI-03 BI-04 BI-51 WB-57 WB-58 DV-04 BI-21	BIDHAINIAGAR (WBSETCL) BIDHANNAGAR (WBSETCL) PURNEA (BSPHCL) PURNEA (BSPHCL) PURNEA (BSPHCL) KURSEONG(WBSETCL) KURSEONG(WBSETCL) MEJIA(DVC) BAISI (BSPHCL)	220 KV WARIA (DVC)-1 220 KV PARULIA (PG) 132KV PURNEA (PG) -1 132KV PURNEA (PG) -2 132KV PURNEA (PG)-3 132 KV RANGIT(NHPC) 132 KV SILIGURI(PG) 400KV MAITHON (PG) (MAIN) 132 KV DALKHOLA (WBSETCL)	NP-6486-A NP-6486-A NP-6088-A NP-6090-A NP-7541-A NP-7542-A NP-6557-A NP-6085-A
112 113 114 115 116 117 118 119 120	L&T L&T L&T L&T L&T L&T L&T L&T	WB-51 WB-07 BI-03 BI-04 BI-51 WB-57 WB-58 DV-04 BI-21 BI-20	BIDHAINIAGAR (WBSETCL) BIDHANNAGAR (WBSETCL) PURNEA (BSPHCL) PURNEA (BSPHCL) PURNEA (BSPHCL) KURSEONG(WBSETCL) KURSEONG(WBSETCL) MEJIA(DVC) BAISI (BSPHCL) KISHANGANJ (BSPHCL)	220 KV WARIA (DVC)-1 220 KV PARULIA (PG) 132KV PURNEA (PG) -1 132KV PURNEA (PG) -2 132KV PURNEA (PG)-3 132 KV RANGIT(NHPC) 132 KV SILIGURI(PG) 400KV MAITHON (PG) (MAIN) 132 KV DALKHOLA (WBSETCL) 132 KV PURNEA (PG) 132 KV PURNEA (PG)	NP-6486-A NP-6486-A NP-6088-A NP-6090-A NP-7541-A NP-7542-A NP-6557-A NP-6085-A NP-5236-A
112 113 114 115 116 117 118 119 120 121	L&T L&T L&T L&T L&T L&T L&T L&T L&T L&T	WB-51 WB-07 BI-03 BI-04 BI-51 WB-57 WB-58 DV-04 BI-21 BI-20 TL-24	BIDHAINIAGAR (WBSETCL) BIDHAINIAGAR (WBSETCL) PURNEA (BSPHCL) PURNEA (BSPHCL) PURNEA (BSPHCL) KURSEONG(WBSETCL) KURSEONG(WBSETCL) MEJIA(DVC) BAISI (BSPHCL) KISHANGANJ (BSPHCL) TALCHER(NTPC)	220 KV WARIA (DVC)-1 220 KV PARULIA (PG) 132KV PURNEA (PG) -1 132KV PURNEA (PG) -2 132KV PURNEA (PG)-3 132 KV RANGIT(NHPC) 132 KV SILIGURI(PG) 400KV MAITHON (PG) (MAIN) 132 KV DALKHOLA (WBSETCL) 132 KV PURNEA (PG) 400KV RENGALI (PG) -2	NP-6486-A NP-6486-A NP-6088-A NP-6090-A NP-7541-A NP-7542-A NP-6557-A NP-6085-A NP-5236-A NP-5972-A
112 113 114 115 116 117 118 119 120 121 122	L&T L&T L&T L&T L&T L&T L&T L&T L&T L&T	WB-51 WB-07 BI-03 BI-04 BI-51 WB-57 WB-58 DV-04 BI-21 BI-20 TL-24 OR-61	BIDHAINIAGAR (WBSETCL) BIDHAINIAGAR (WBSETCL) PURNEA (BSPHCL) PURNEA (BSPHCL) PURNEA (BSPHCL) KURSEONG(WBSETCL) KURSEONG(WBSETCL) MEJIA(DVC) BAISI (BSPHCL) KISHANGANJ (BSPHCL) TALCHER(NTPC) BARIPADA(GRIDCO)	220 KV WARIA (DVC)-1 220 KV PARULIA (PG) 132KV PURNEA (PG) -1 132KV PURNEA (PG) -2 132KV PURNEA (PG)-3 132 KV RANGIT(NHPC) 132 KV SILIGURI(PG) 400KV MAITHON (PG) (MAIN) 132 KV DALKHOLA (WBSETCL) 132 KV PURNEA (PG) 400KV RENGALI (PG) -2 132KV BARIPADA(PG)	NP-6486-A NP-6486-A NP-6088-A NP-6090-A NP-7541-A NP-7542-A NP-6085-A NP-5236-A NP-5908-A
112 113 114 115 116 117 118 119 120 121 122 123	L&T L&T L&T L&T L&T L&T L&T L&T L&T L&T	WB-51 WB-07 BI-03 BI-04 BI-51 WB-57 WB-58 DV-04 BI-21 BI-20 TL-24 OR-61 OR-62	BIDHAINIAGAR (WBSETCL) BIDHAINIAGAR (WBSETCL) PURNEA (BSPHCL) PURNEA (BSPHCL) PURNEA (BSPHCL) KURSEONG(WBSETCL) KURSEONG(WBSETCL) MEJIA(DVC) BAISI (BSPHCL) KISHANGANJ (BSPHCL) TALCHER(NTPC) BARIPADA(GRIDCO) BANGRIPOSI(GRIDCO)	220 KV WARIA (DVC)-1 220 KV PARULIA (PG) 132KV PURNEA (PG) -1 132KV PURNEA (PG) -2 132KV PURNEA (PG)-3 132 KV RANGIT(NHPC) 132 KV SILIGURI(PG) 400KV MAITHON (PG) (MAIN) 132 KV DALKHOLA (WBSETCL) 132 KV PURNEA (PG) 400KV RENGALI (PG) -2 132KV BARIPADA(PG) 132KV BARIPADA(PG)	NP-6486-A NP-6486-A NP-6088-A NP-6090-A NP-7541-A NP-7542-A NP-6085-A NP-6085-A NP-5236-A NP-5908-A NP-5907-A
112 113 114 115 116 117 118 119 120 121 122 123 124	L&T L&T L&T L&T L&T L&T L&T L&T L&T L&T	WB-51 WB-07 BI-03 BI-04 BI-51 WB-57 WB-58 DV-04 BI-21 BI-20 TL-24 OR-61 OR-62 EM-59	BIDHAINIAGAR (WBSETCL) BIDHAINIAGAR (WBSETCL) PURNEA (BSPHCL) PURNEA (BSPHCL) PURNEA (BSPHCL) KURSEONG(WBSETCL) KURSEONG(WBSETCL) MEJIA(DVC) BAISI (BSPHCL) KISHANGANJ (BSPHCL) TALCHER(NTPC) BARIPADA(GRIDCO) BANGRIPOSI(GRIDCO) BARIPADA(PG)	220 KV WARIA (DVC)-1 220 KV PARULIA (PG) 132KV PURNEA (PG) -1 132KV PURNEA (PG) -2 132KV PURNEA (PG)-3 132 KV RANGIT(NHPC) 132 KV SILIGURI(PG) 400KV MAITHON (PG) (MAIN) 132 KV DALKHOLA (WBSETCL) 132 KV PURNEA (PG) 400KV RENGALI (PG) -2 132KV BARIPADA(PG) 132KV BARIPADA(PG) 220KV SIDE OF BARIPADA 220/132 KV ICT	NP-6486-A NP-6486-A NP-6088-A NP-6090-A NP-7541-A NP-7542-A NP-6085-A NP-5236-A NP-5972-A NP-5908-A NP-5901-A
112 113 114 115 116 117 118 119 120 121 122 123 124 125	L&T L&T L&T L&T L&T L&T L&T L&T L&T L&T	WB-51 WB-07 BI-03 BI-04 BI-51 WB-57 WB-58 DV-04 BI-21 BI-20 TL-24 OR-61 OR-62 EM-59 DV-55	BIDHAINIAGAR (WBSETCL) BIDHAINIAGAR (WBSETCL) PURNEA (BSPHCL) PURNEA (BSPHCL) PURNEA (BSPHCL) KURSEONG(WBSETCL) KURSEONG(WBSETCL) MEJIA(DVC) BAISI (BSPHCL) KISHANGANJ (BSPHCL) TALCHER(NTPC) BARIPADA(GRIDCO) BARIPADA(GRIDCO) BARIPADA(PG) MANIQUE (DVC)	220 KV WARIA (DVC)-1 220 KV PARULIA (PG) 132KV PURNEA (PG) -1 132KV PURNEA (PG) -2 132KV PURNEA (PG)-3 132 KV SILIGURI(PG) 400KV MAITHON (PG) (MAIN) 132 KV DALKHOLA (WBSETCL) 132 KV PURNEA (PG) 400KV RENGALI (PG) 400KV RENGALI (PG) 132KV BARIPADA(PG) 132KV SIDE OF BARIPADA 220/132 KV ICT 132KV CHANDIL (JUVNL)	NP-6486-A NP-6486-A NP-6088-A NP-6090-A NP-7541-A NP-7542-A NP-6085-A NP-5236-A NP-5972-A NP-5908-A NP-5901-A NP-5911-A NP-6011-B
112 113 114 115 116 117 118 119 120 121 122 123 124 125 126	L&T L&T L&T L&T L&T L&T L&T L&T	WB-51 WB-07 BI-03 BI-04 BI-51 WB-57 WB-58 DV-04 BI-21 BI-20 TL-24 OR-61 OR-62 EM-59 DV-55 OR-63	BIDHAINIAGAR (WBSETCL) BIDHAINIAGAR (WBSETCL) PURNEA (BSPHCL) PURNEA (BSPHCL) PURNEA (BSPHCL) KURSEONG(WBSETCL) KURSEONG(WBSETCL) MEJIA(DVC) BAISI (BSPHCL) KISHANGANJ (BSPHCL) TALCHER(NTPC) BARIPADA(GRIDCO) BANGRIPOSI(GRIDCO) BARIPADA(PG) MANIQUE (DVC) BALASORE(GRIDCO)	220 KV WARIA (DVC)-1 220 KV PARULIA (PG) 132KV PURNEA (PG) -1 132KV PURNEA (PG) -2 132KV PURNEA (PG)-3 132 KV SLIGURI(PG) 400KV MAITHON (PG) (MAIN) 132 KV DALKHOLA (WBSETCL) 132 KV PURNEA (PG) 400KV RENGALI (PG) 400KV RENGALI (PG) 132KV BARIPADA(PG) 132KV SIDE OF BARIPADA 220/132 KV ICT 132KV CHANDIL (JUVNL) 220KV BARIPADA(PG)-2	NP-6486-A NP-6486-A NP-6088-A NP-6090-A NP-7541-A NP-7542-A NP-6085-A NP-5236-A NP-5972-A NP-5908-A NP-5901-A NP-5911-A NP-6011-B NP-5904-A
112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127	L&T L&T L&T L&T L&T L&T L&T L&T	WB-51 WB-07 BI-03 BI-04 BI-51 WB-57 WB-58 DV-04 BI-21 BI-20 TL-24 OR-61 OR-62 EM-59 DV-55 OR-63 OR-60	BIDHAINIAGAR (WBSETCL) BIDHAINIAGAR (WBSETCL) PURNEA (BSPHCL) PURNEA (BSPHCL) FURNEA (BSPHCL) KURSEONG(WBSETCL) KURSEONG(WBSETCL) MEJIA(DVC) BAISI (BSPHCL) KISHANGANJ (BSPHCL) TALCHER(NTPC) BARIPADA(GRIDCO) BANGRIPOSI(GRIDCO) BARIPADA(PG) MANIQUE (DVC) BALASORE(GRIDCO) BALASORE(GRIDCO)	220 KV WARIA (DVG)-1 220 KV PARULIA (PG) 132KV PURNEA (PG) -1 132KV PURNEA (PG) -2 132KV PURNEA (PG)-3 132 KV SILIGURI(PG) 400KV MAITHON (PG) (MAIN) 132 KV DALKHOLA (WBSETCL) 132 KV PURNEA (PG) 400KV RENGALI (PG) 400KV RENGALI (PG) 132KV BARIPADA(PG) 132KV CHANDIL (JUVNL) 220KV BARIPADA(PG)-2 220KV BARIPADA(PG)-2 220KV BARIPADA(PG)-2 220KV BARIPADA(PG)-2	NP-6486-A NP-6486-A NP-6088-A NP-6090-A NP-7541-A NP-7542-A NP-6085-A NP-5236-A NP-5972-A NP-5908-A NP-5901-A NP-5904-A NP-5906-A
112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128	L&T L&T L&T L&T L&T L&T L&T L&T	WB-51 WB-07 BI-03 BI-04 BI-51 WB-57 WB-58 DV-04 BI-21 BI-20 TL-24 OR-61 OR-62 EM-59 DV-55 OR-63 OR-60 BI-19	BIDHANNAGAR (WBSETCL) BIDHANNAGAR (WBSETCL) PURNEA (BSPHCL) PURNEA (BSPHCL) PURNEA (BSPHCL) KURSEONG(WBSETCL) KURSEONG(WBSETCL) MEJIA(DVC) BAISI (BSPHCL) KISHANGANJ (BSPHCL) TALCHER(NTPC) BARIPADA(GRIDCO) BANGRIPOSI(GRIDCO) BANIQUE (DVC) BALASORE(GRIDCO) BALASORE(GRIDCO) JAGDISHPUR(BSPHCL)	220 KV WARIA (DVC)-1 220 KV PARULIA (PG) 132KV PURNEA (PG) -1 132KV PURNEA (PG) -2 132KV PURNEA (PG)-3 132 KV RANGIT(NHPC) 132 KV SILIGURI(PG) 400KV MAITHON (PG) (MAIN) 132 KV DALKHOLA (WBSETCL) 132 KV PURNEA (PG) 400KV RENGALI (PG) -2 132KV BARIPADA(PG) 220KV SIDE OF BARIPADA 220/132 KV ICT 132KV CHANDIL (JUVNL) 220KV BARIPADA(PG)-2 220KV BARIPADA(PG)-1 132 KV ARAH(PG)-2	NP-6486-A NP-6486-A NP-6088-A NP-6090-A NP-7541-A NP-7542-A NP-6085-A NP-5236-A NP-5908-A NP-5907-A NP-5911-A NP-6011-B NP-5906-A NP-5906-A
112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129	L&T L&T L&T L&T L&T L&T L&T L&T	WB-51 WB-07 BI-03 BI-04 BI-51 WB-57 WB-58 DV-04 BI-21 BI-20 TL-24 OR-61 OR-62 EM-59 DV-55 OR-63 OR-60 BI-19 ER-08	BIDHANNAGAR (WBSETCL) BIDHANNAGAR (WBSETCL) PURNEA (BSPHCL) PURNEA (BSPHCL) FURNEA (BSPHCL) KURSEONG(WBSETCL) KURSEONG(WBSETCL) MEJIA(DVC) BAISI (BSPHCL) KISHANGANJ (BSPHCL) TALCHER(NTPC) BARIPADA(GRIDCO) BANGRIPOSI(GRIDCO) BARIPADA(PG) MANIQUE (DVC) BALASORE(GRIDCO) BALASORE(GRIDCO) JAGDISHPUR(BSPHCL) DURGAPUR(PG)	220 KV WARIA (DVG)-1 220 KV PARULIA (PG) 132KV PURNEA (PG) -1 132KV PURNEA (PG) -2 132KV PURNEA (PG)-3 132 KV RANGIT(NHPC) 132 KV SILIGURI(PG) 400KV MAITHON (PG) (MAIN) 132 KV PURNEA (PG) 400KV RENGALI (PG) -2 132KV BARIPADA(PG) 220KV SIDE OF BARIPADA 220/132 KV ICT 132KV CHANDIL (JUVNL) 220KV BARIPADA(PG)-2	NP-6486-A NP-6486-A NP-6088-A NP-6090-A NP-7541-A NP-7542-A NP-6085-A NP-5036-A NP-5908-A NP-5907-A NP-5911-A NP-5904-A NP-5906-A NP-5906-A NP-7689-A
112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130	L&T L&T L&T L&T L&T L&T L&T L&T	WB-51 WB-07 BI-03 BI-04 BI-51 WB-57 WB-58 DV-04 BI-21 BI-20 TL-24 OR-61 OR-62 EM-59 DV-55 OR-63 OR-60 BI-19 ER-08 ER-07	BIDHANNAGAR (WBSETCL) BIDHANNAGAR (WBSETCL) PURNEA (BSPHCL) PURNEA (BSPHCL) FURNEA (BSPHCL) KURSEONG(WBSETCL) KURSEONG(WBSETCL) MEJIA(DVC) BAISI (BSPHCL) KISHANGANJ (BSPHCL) TALCHER(NTPC) BARIPADA(GRIDCO) BANGRIPOSI(GRIDCO) BARIPADA(PG) MANIQUE (DVC) BALASORE(GRIDCO) BALASORE(GRIDCO) JAGDISHPUR(BSPHCL) DURGAPUR(PG)	220 KV WARIA (DVC)-1 220 KV PARULIA (PG) 132KV PURNEA (PG) -1 132KV PURNEA (PG) -2 132KV PURNEA (PG)-3 132 KV RANGIT(NHPC) 132 KV SILIGURI(PG) 400KV MAITHON (PG) (MAIN) 132 KV PURNEA (PG) 400KV RENGALI (PG) -2 132KV BARIPADA(PG) 220KV SIDE OF BARIPADA 220/132 KV ICT 132KV CHANDIL (JUVNL) 220KV BARIPADA(PG)-2 220KV BARIPADA(PG)-2 220KV BARIPADA(PG)-2 220KV BARIPADA(PG)-2 20KV BARIPADA(PG)-2 400KV BIDHANAGAR(WB)-2 400 KV JAMSHEDPUR(PG)	NP-6486-A NP-6486-A NP-6088-A NP-6090-A NP-7541-A NP-7542-A NP-6085-A NP-5236-A NP-5907-A NP-5907-A NP-5904-A NP-5904-A NP-5906-A NP-7689-A NP-6659-A
112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131	L&T L&T L&T L&T L&T L&T L&T L&T	WB-51 WB-07 BI-03 BI-04 BI-51 WB-57 WB-58 DV-04 BI-20 TL-24 OR-61 OR-62 EM-59 DV-55 OR-63 OR-60 BI-19 ER-08 ER-07 OR-54	BIDHAINIAGAR (WBSETCL) BIDHAINIAGAR (WBSETCL) PURNEA (BSPHCL) PURNEA (BSPHCL) FURNEA (BSPHCL) KURSEONG(WBSETCL) KURSEONG(WBSETCL) MEJIA(DVC) BAISI (BSPHCL) KISHANGANJ (BSPHCL) TALCHER(NTPC) BARIPADA(GRIDCO) BARIPADA(PG) MANIQUE (DVC) BALASORE(GRIDCO) BALASORE(GRIDCO) BALASORE(GRIDCO) JAGDISHPUR(BSPHCL) DURGAPUR(PG) JINDAL (GRIDCO)	220 KV WARIA (DVC)-1 220 KV PARULIA (PG) 132KV PURNEA (PG) -1 132KV PURNEA (PG) -2 132KV PURNEA (PG)-3 132 KV RANGIT (NHPC) 132 KV SILIGURI (PG) 400KV MAITHON (PG) (MAIN) 132 KV PURNEA (PG) 132 KV SILIGURI (PG) 400KV MAITHON (PG) (MAIN) 132 KV PURNEA (PG) 132 KV PURNEA (PG) 132 KV PURNEA (PG) 220KV SIDE OF BARIPADA (PG) 220KV SIDE OF BARIPADA 220/132 KV ICT 132KV CHANDIL (JUVNL) 220KV BARIPADA(PG)-2 220KV BARIPADA(PG)-1 132 KV ARAH(PG)-2 400KV BIDHANAGAR(WB)-2 400 KV JAMSHEDPUR (PG)	NP-6486-A NP-6486-A NP-6088-A NP-6090-A NP-7541-A NP-7542-A NP-6085-A NP-5236-A NP-5908-A NP-6011-B NP-5906-A NP-5906-A NP-7689-A NP-6459-A NP-6459-A NP-6459-A NP-6450-A
112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132	L&T L&T L&T L&T L&T L&T L&T L&T	WB-51 WB-07 BI-03 BI-04 BI-51 WB-57 WB-58 DV-04 BI-20 TL-24 OR-61 OR-62 EM-59 DV-55 OR-63 OR-60 BI-19 ER-08 ER-07 OR-54 DV-51	BIDHANNAGAR (WBSETCL) BIDHANNAGAR (WBSETCL) PURNEA (BSPHCL) PURNEA (BSPHCL) FURNEA (BSPHCL) KURSEONG(WBSETCL) KURSEONG(WBSETCL) KURSEONG(WBSETCL) MEJIA(DVC) BAISI (BSPHCL) KISHANGANJ (BSPHCL) TALCHER(NTPC) BARIPADA(GRIDCO) BARIPADA(PG) MANIQUE (DVC) BALASORE(GRIDCO) BALASORE(GRIDCO) BALASORE(GRIDCO) BALASORE(GRIDCO) BALASORE(GRIDCO) JAGDISHPUR(BSPHCL) DURGAPUR(PG) JINDAL (GRIDCO) BARHI (DVC)	220 KV WARIA (DVC)-1 220 KV PARULIA (PG) 132KV PURNEA (PG) -1 132KV PURNEA (PG) -2 132KV PURNEA (PG) 132 KV RANGIT(NHPC) 132 KV SILIGURI(PG) 400KV MAITHON (PG) (MAIN) 132 KV PURNEA (PG) 400KV MAITHON (PG) (MAIN) 132 KV PURNEA (PG) 132 KV PURNEA (PG) 132 KV PURNEA (PG) 132 KV BARIPADA(PG) 132KV BARIPADA(PG) 220KV SIDE OF BARIPADA 220/132 KV ICT 132KV CHANDIL (JUVNL) 220KV BARIPADA(PG)-2 220KV BARIPADA(PG)-1 132 KV ARAH(PG)-2 400KV BIDHANAGAR(WB)-2 400 KV JAMSHEDPUR(PG) 220KV ARAH(PG)-2 132 KV RAJGIR/BSF (BSPHCL)	NP-6486-A NP-6088-A NP-6089-A NP-7541-A NP-7542-A NP-6085-A NP-5236-A NP-5908-A NP-5908-A NP-5908-A NP-5904-A NP-5906-A NP-5906-A NP-7890-A NP-689-A NP-689-A NP-6459-A NP-6459-A NP-6461-A NP-6502-A NP-6007-B
112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 130 131 132 133	L&T L&T L&T L&T L&T L&T L&T L&T	WB-51 WB-07 BI-03 BI-04 BI-51 WB-57 WB-58 DV-04 BI-21 BI-20 TL-24 OR-61 OR-62 EM-59 DV-55 OR-63 OR-63 OR-60 BI-19 ER-08 ER-07 OR-54 DV-51 JS-62	BIDHAINIAGAR (WBSETCL) BIDHAINIAGAR (WBSETCL) PURNEA (BSPHCL) PURNEA (BSPHCL) KURSEONG(WBSETCL) KURSEONG(WBSETCL) KURSEONG(WBSETCL) KURSEONG(WBSETCL) MEJIA(DVC) BAISI (BSPHCL) KISHANGANJ (BSPHCL) TALCHER(NTPC) BARIPADA(GRIDCO) BARIPADA(GRIDCO) BALASORE(GRIDCO) BALASORE(GRIDCO) BALASORE(GRIDCO) BALASORE(GRIDCO) BALASORE(GRIDCO) BALASORE(GRIDCO) JAGDISHPUR(BSPHCL) DURGAPUR(PG) JINDAL (GRIDCO) BARHI (DVC) TENUGHAT (JUVNL)	220 KV WARIA (DVC)-1 220 KV PARULIA (PG) 132KV PURNEA (PG) -1 132KV PURNEA (PG) -2 132KV PURNEA (PG) 132 KV RANGIT(NHPC) 132 KV SILIGURI(PG) 400KV MAITHON (PG) (MAIN) 132 KV DALKHOLA (WBSETCL) 132 KV PURNEA (PG) 400KV RENGALI (PG) -2 132KV BARIPADA(PG) 220KV SIDE OF BARIPADA 220/132 KV ICT 132KV CHANDIL (JUVNL) 220KV BARIPADA(PG)-2 220KV BARIPADA(PG)-1 132 KV ARAH(PG)-2 400KV BIDHANAGAR(WB)-2 400 KV JAMSHEDPUR(PG) 220KV JAMSHEDPUR (DVC) 132KV RAJGIR/BSF (BSPHCL)	NP-6486-A NP-6088-A NP-6089-A NP-7541-A NP-7542-A NP-6085-A NP-5236-A NP-5908-A NP-6011-B NP-6011-B NP-6014-A NP-60502-A NP-6007-B NP-60115-A
112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 130 131 132 133 134	L&T L&T L&T L&T L&T L&T L&T L&T	WB-51 WB-07 BI-03 BI-04 BI-51 WB-57 WB-58 DV-04 BI-21 BI-20 TL-24 OR-61 OR-62 EM-59 DV-55 OR-63 OR-60 BI-19 ER-08 ER-07 OR-54 DV-51 JS-62 JS-57	BIDHAINIAGAR (WBSETCL) BIDHAINIAGAR (WBSETCL) PURNEA (BSPHCL) PURNEA (BSPHCL) KURSEONG(WBSETCL) KURSEONG(WBSETCL) KURSEONG(WBSETCL) KISHANGANJ (BSPHCL) TALCHER(NTPC) BARIPADA(GRIDCO) BARIPADA(GRIDCO) BARIPADA(PG) MANIQUE (DVC) BALASORE(GRIDCO) BALASORE(GRIDCO) BALASORE(GRIDCO) JAGDISHPUR(BSPHCL) DURGAPUR(PG) JINDAL (GRIDCO) BARHI (DVC) TENUGHAT (JUVNL) CHANDIL (JUVNL)	220 KV WARIA (DVC)-1 220 KV PARULIA (PG) 132KV PURNEA (PG) -1 132KV PURNEA (PG) -2 132KV PURNEA (PG) 132 KV RANGIT(NHPC) 132 KV SILIGURI(PG) 400KV MAITHON (PG) (MAIN) 132 KV DALKHOLA (WBSETCL) 132 KV PURNEA (PG) 400KV RENGALI (PG) -2 132KV BARIPADA(PG) 220KV SIDE OF BARIPADA 220/132 KV ICT 132KV CHANDIL (JUVNL) 220KV BARIPADA(PG)-2 220KV BARIPADA(PG)-2 220KV BARIPADA(PG)-1 132 KV ARAH(PG)-2 400 KV JAMSHEDPUR(PG) 220KV JAMSHEDPUR (DVC) 132KV RAJGIR/BSF (BSPHCL) 220KV SINTALDIH (WBSETCL)	NP-6486-A NP-6088-A NP-6089-A NP-7541-A NP-7542-A NP-6085-A NP-5236-A NP-5908-A NP-6011-B NP-6011-B NP-6014-A NP-6459-A NP-6459-A NP-6407-B NP-6007-B NP-6115-A NP-7436-A
112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135	L&T L&T L&T L&T L&T L&T L&T L&T	WB-51 WB-07 BI-03 BI-04 BI-51 WB-57 WB-58 DV-04 BI-21 BI-20 TL-24 OR-61 OR-62 EM-59 DV-55 OR-63 OR-60 BI-19 ER-08 ER-07 OR-54 DV-51 JS-62 JS-57 JS-05	BIDHANNAGAR (WBSETCL) BIDHANNAGAR (WBSETCL) PURNEA (BSPHCL) PURNEA (BSPHCL) FURNEA (BSPHCL) KURSEONG(WBSETCL) KURSEONG(WBSETCL) KURSEONG(WBSETCL) MEJIA(DVC) BAISI (BSPHCL) KISHANGANJ (BSPHCL) TALCHER(NTPC) BARIPADA(GRIDCO) BARIPADA(GRIDCO) BALASORE(GRIDCO) BALASORE(GRIDCO) BALASORE(GRIDCO) BALASORE(GRIDCO) BALASORE(GRIDCO) DURGAPUR(PG) DURGAPUR(PG) JINDAL (GRIDCO) BARHI (DVC) TENUGHAT (JUVNL) CHANDIL (JUVNL)	220 KV WARIA (DVC)-1 220 KV PARULIA (PG) 132KV PURNEA (PG) -1 132KV PURNEA (PG) -2 132KV PURNEA (PG) 132 KV RANGIT(NHPC) 132 KV SILIGURI(PG) 400KV MAITHON (PG) (MAIN) 132 KV DALKHOLA (WBSETCL) 132 KV PURNEA (PG) 400KV RENGALI (PG) -2 132KV BARIPADA(PG) 220KV SIDE OF BARIPADA 220/132 KV ICT 132KV CHANDIL (JUVNL) 220KV BARIPADA(PG)-2 220KV BARIPADA(PG)-1 132 KV ARAH(PG)-2 400KV BIDHANAGAR(WB)-2 400 KV JAMSHEDPUR(PG) 220KV JAMSHEDPUR (DVC) 132KV RAJGIR/BSF (BSPHCL) 220KV SANTALDIH (WBSETCL)	NP-6486-A NP-6088-A NP-6089-A NP-7541-A NP-7542-A NP-6085-A NP-5236-A NP-5908-A NP-6011-B NP-6011-B NP-6014 NP-6459-A NP-6459-A NP-6459-A NP-6407-B NP-6007-B NP-6115-A NP-7436-A NP-7434-A
112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136	L&T L&T L&T L&T L&T L&T L&T L&T	WB-51 WB-07 BI-03 BI-04 BI-51 WB-57 WB-58 DV-04 BI-21 BI-20 TL-24 OR-61 OR-62 EM-59 DV-55 OR-63 OR-63 OR-63 OR-63 OR-63 OR-63 OR-63 OR-63 OR-63 OR-63 OR-63 OR-63 OR-64 DV-51 JS-62 JS-57 JS-05 ER-05	BIDHANNAGAR (WBSETCL) BIDHANNAGAR (WBSETCL) PURNEA (BSPHCL) PURNEA (BSPHCL) FURNEA (BSPHCL) KURSEONG(WBSETCL) KURSEONG(WBSETCL) KURSEONG(WBSETCL) MEJIA(DVC) BAISI (BSPHCL) KISHANGANJ (BSPHCL) TALCHER(NTPC) BARIPADA(GRIDCO) BARIPADA(GRIDCO) BARIPADA(PG) MANIQUE (DVC) BALASORE(GRIDCO) BALASORE(GRIDCO) BALASORE(GRIDCO) DURGAPUR(PG) DURGAPUR(PG) JINDAL (GRIDCO) BARHI (DVC) TENUGHAT (JUVNL) CHANDIL (JUVNL) DURGAPUR(PG)	220 KV WARIA (DVC)-1 220 KV PARULIA (PG) 132KV PURNEA (PG) -1 132KV PURNEA (PG) -2 132KV PURNEA (PG) 132 KV RANGIT(NHPC) 132 KV SILIGURI(PG) 400KV MAITHON (PG) (MAIN) 132 KV DALKHOLA (WBSETCL) 132 KV PURNEA (PG) 400KV RENGALI (PG) -2 132KV BARIPADA(PG) 220KV SIDE OF BARIPADA 220/132 KV ICT 132KV CHANDIL (JUVNL) 220KV BARIPADA(PG)-2 220KV BARIPADA(PG)-1 132 KV ARAH(PG)-2 400 KV BIDHANAGAR(WB)-2 400 KV JAMSHEDPUR (PG) 220KV JAMSHEDPUR (DVC) 132KV RAJGIR/BSF (BSPHCL) 220KV SANTALDIH (WBSETCL) 220KV PARULIA (DVC) -1	NP-6486-A NP-6088-A NP-6089-A NP-7541-A NP-7542-A NP-6085-A NP-5236-A NP-5908-A NP-6011-B NP-6011-B NP-6459-A NP-6459-A NP-6459-A NP-6407-B NP-6115-A NP-7436-A NP-7434-A NP-6456-A
112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137	L&T L&T L&T L&T L&T L&T L&T L&T	WB-51 WB-07 BI-03 BI-04 BI-51 WB-57 WB-58 DV-04 BI-21 BI-20 TL-24 OR-61 OR-62 EM-59 DV-55 OR-63 OR-63 OR-63 OR-63 OR-63 OR-63 OR-63 OR-63 OR-63 OR-64 DV-51 JS-62 JS-57 JS-05 ER-05 ER-05 ER-08	BIDHAINIAGAR (WBSETCL) BIDHAINIAGAR (WBSETCL) PURNEA (BSPHCL) PURNEA (BSPHCL) KURSEONG(WBSETCL) KURSEONG(WBSETCL) KURSEONG(WBSETCL) KURSEONG(WBSETCL) MEJIA(DVC) BAISI (BSPHCL) KISHANGANJ (BSPHCL) TALCHER(NTPC) BARIPADA(GRIDCO) BARIPADA(GRIDCO) BARIPADA(PG) MANIQUE (DVC) BALASORE(GRIDCO) BALASORE(GRIDCO) BALASORE(GRIDCO) BALASORE(GRIDCO) DURGAPUR(PG) DURGAPUR(PG) JINDAL (GRIDCO) BARHI (DVC) TENUGHAT (JUVNL) CHANDIL (JUVNL) CHANDIL (JUVNL) DURGAPUR(PG) BINAGURI(PG)	220 KV WARIA (DVC)-1 220 KV PARULIA (PG) 132KV PURNEA (PG) -1 132KV PURNEA (PG) -2 132KV PURNEA (PG) 132 KV RANGIT(NHPC) 132 KV SILIGURI(PG) 400KV MAITHON (PG) (MAIN) 132 KV DALKHOLA (WBSETCL) 132 KV PURNEA (PG) 400KV RENGALI (PG) -2 132KV BARIPADA(PG) 220KV SIDE OF BARIPADA 220/132 KV ICT 132KV BARIPADA(PG) 220KV BARIPADA(PG)-2 220KV BARIPADA(PG)-1 132 KV ARAH(PG)-2 400 KV JAMSHEDPUR(PG) 220KV BARIPADA(PG)-1 132 KV ARAH(PG)-2 400 KV JAMSHEDPUR (DVC) 132KV RAJGIR/BSF (BSPHCL) 220KV SANTALDIH (WBSETCL) 220KV SANTALDIH (WBSETCL) 220KV PARULIA (DVC) -1	NP-6486-A NP-6088-A NP-6089-A NP-7541-A NP-7542-A NP-6085-A NP-5236-A NP-5908-A NP-5908-A NP-5908-A NP-5908-A NP-5908-A NP-5911-A NP-5904-A NP-5906-A NP-7689-A NP-6459-A NP-6459-A NP-6407-B NP-6115-A NP-7436-A NP-7434-A NP-6456-A NP-5087-A
112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138	L&T L&T L&T L&T L&T L&T L&T L&T	WB-51 WB-07 BI-03 BI-04 BI-51 WB-57 WB-58 DV-04 BI-21 BI-20 TL-24 OR-61 OR-62 EM-59 DV-55 OR-63 OR-60 BI-19 ER-08 ER-07 OR-54 DV-51 JS-62 JS-57 JS-05 ER-05 ER-08 ER-05 EM-08 EM-14	BIDHANNAGAR (WBSETCL) BIDHANNAGAR (WBSETCL) PURNEA (BSPHCL) PURNEA (BSPHCL) PURNEA (BSPHCL) KURSEONG(WBSETCL) KURSEONG(WBSETCL) MEJIA(DVC) BAISI (BSPHCL) KISHANGANJ (BSPHCL) TALCHER(NTPC) BARIPADA(GRIDCO) BARIPADA(GRIDCO) BARIPADA(PG) MANIQUE (DVC) BALASORE(GRIDCO) BALASORE(GRIDCO) BALASORE(GRIDCO) BALASORE(GRIDCO) JAGDISHPUR(BSPHCL) DURGAPUR(PG) JINDAL (GRIDCO) BARHI (DVC) TENUGHAT (JUVNL) CHANDIL (JUVNL) CHANDIL (JUVNL) DURGAPUR(PG) BINAGURI(PG) BINAGURI(PG)	220 KV WARIA (DVC)-1 220 KV PARULIA (PG) 132KV PURNEA (PG) -1 132KV PURNEA (PG) -2 132KV PURNEA (PG) 132 KV SILIGURI(PG) 400KV MAITHON (PG) (MAIN) 132 KV DALKHOLA (WBSETCL) 132 KV PURNEA (PG) 400KV RENGALI (PG) -2 132KV BARIPADA(PG) 132KV BARIPADA(PG) 220KV SIDE OF BARIPADA 220/132 KV ICT 132KV CHANDIL (JUVNL) 220KV BARIPADA(PG)-2 220KV BARIPADA(PG)-2 220KV BARIPADA(PG)-2 220KV BARIPADA(PG)-2 200KV BARIPADA(PG)-2 200KV BARIPADA(PG)-2 200KV BARIPADA(PG)-2 200KV BIDHANAGAR(WB)-2 400 KV JAMSHEDPUR (DVC) 132KV RAJGIR/BSF (BSPHCL) 220KV SANTALDIH (WBSETCL) 220KV RANCHI (PG)-1 220KV PARULIA (DVC) -1 400KV TALA (THP)-2 400KV KISHANGANJ(PG)-2	NP-6486-A NP-6486-A NP-6088-A NP-6090-A NP-7541-A NP-7542-A NP-6085-A NP-55236-A NP-5972-A NP-5908-A NP-5907-A NP-5904-A NP-5904-A NP-5904-A NP-5904-A NP-5904-A NP-5904-A NP-6011-B NP-6014-B NP-6459-A NP-6459-A NP-6459-A NP-6459-A NP-6450-A NP-6450-A NP-6450-A NP-7436-A NP-7434-A NP-5087-A NP-5087-A
112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139	L&T L&T L&T L&T L&T L&T L&T L&T	WB-51 WB-07 BI-03 BI-04 BI-51 WB-57 WB-58 DV-04 BI-21 BI-20 TL-24 OR-61 OR-62 EM-59 DV-55 OR-63 OR-60 BI-19 ER-08 ER-07 OR-54 DV-51 JS-62 JS-57 JS-05 ER-05 ER-05 EM-08 EM-14 JS-52	BIDHAINIAGAR (WBSETCL) BIDHAINIAGAR (WBSETCL) PURNEA (BSPHCL) PURNEA (BSPHCL) FURNEA (BSPHCL) KURSEONG(WBSETCL) KURSEONG(WBSETCL) MEJIA(DVC) BAISI (BSPHCL) KISHANGANJ (BSPHCL) TALCHER(NTPC) BARIPADA(GRIDCO) BARIPADA(GRIDCO) BARIPADA(PG) MANIQUE (DVC) BALASORE(GRIDCO) BALASORE(GRIDCO) BALASORE(GRIDCO) JAGDISHPUR(BSPHCL) DURGAPUR(PG) JINDAL (GRIDCO) BARHI (DVC) TENUGHAT (JUVNL) CHANDIL (JUVNL) CHANDIL (JUVNL) DURGAPUR(PG) BINAGURI(PG) BINAGURI(PG) KENDOPOSI (JUVNL)	220 NV WARIA (DVC)-1 220 KV PARULIA (PG) 132KV PURNEA (PG) -1 132KV PURNEA (PG) -2 132KV PURNEA (PG) 132 KV SLIGURI(PG) 400KV MAITHON (PG) (MAIN) 132 KV DALKHOLA (WBSETCL) 132 KV PURNEA (PG) 400KV RENGALI (PG) -2 132KV BARIPADA(PG) 220KV SIDE OF BARIPADA 220/132 KV ICT 132KV CHANDIL (JUVNL) 220KV BARIPADA(PG)-2 220KV BARIPADA(PG)-2 220KV BARIPADA(PG)-2 220KV BARIPADA(PG)-2 220KV BARIPADA(PG)-2 220KV BARIPADA(PG)-2 20KV BARIPADA(PG)-2 20KV BARIPADA(PG)-1 132 KV ARAH(PG)-2 400KV JAMSHEDPUR (DVC) 132KV RAJGIR/BSF (BSPHCL) 220KV SANTALDIH (WBSETCL) 220KV PARULIA (DVC) -1 400KV TALA (THP)-2 400KV KISHANGANJ(PG)-2 132KV JODA (GRIDCO)	NP-6486-A NP-6486-A NP-6088-A NP-6090-A NP-7541-A NP-7542-A NP-6085-A NP-55236-A NP-5908-A NP-5908-A NP-5907-A NP-5907-A NP-5904-A NP-5904-A NP-5904-A NP-5904-A NP-5904-A NP-6011-B NP-6601-A NP-66502-A NP-6459-A NP-6459-A NP-6407-B NP-6115-A NP-7436-A NP-7436-A NP-5087-A NP-5087-A NP-5087-A NP-5087-A NP-5087-A NP-5087-A NP-5093-A NP-6117-A
112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140	L&T L&T L&T L&T L&T L&T L&T L&T	WB-51 WB-07 BI-03 BI-04 BI-51 WB-57 WB-58 DV-04 BI-21 BI-20 TL-24 OR-61 OR-62 EM-59 DV-55 OR-63 OR-60 BI-19 ER-08 ER-07 OR-54 DV-51 JS-62 JS-62 JS-57 JS-05 ER-05 ER-05 EM-08 EM-14 JS-52 OR-53	BIDHANNAGAR (WBSETCL) BIDHANNAGAR (WBSETCL) PURNEA (BSPHCL) PURNEA (BSPHCL) FURNEA (BSPHCL) KURSEONG(WBSETCL) KURSEONG(WBSETCL) MEJIA(DVC) BAISI (BSPHCL) KISHANGANJ (BSPHCL) TALCHER(NTPC) BARIPADA(GRIDCO) BARIPADA(GRIDCO) BARIPADA(PG) MANIQUE (DVC) BALASORE(GRIDCO) BALASORE(GRIDCO) BALASORE(GRIDCO) JAGDISHPUR(BSPHCL) DURGAPUR(PG) JINDAL (GRIDCO) BARHI (DVC) TENUGHAT (JUVNL) CHANDIL (JUVNL) CHANDIL (JUVNL) DURGAPUR(PG) BINAGURI(PG) BINAGURI(PG) BINAGURI(PG) KENDOPOSI (JUVNL)	220 NV WARIA (DVC)-1 220 KV PARULIA (PG) 132KV PURNEA (PG) -1 132KV PURNEA (PG) -2 132KV PURNEA (PG) 132 KV SILIGURI(PG) 400KV MAITHON (PG) (MAIN) 132 KV PURNEA (PG) 400KV MAITHON (PG) (MAIN) 132 KV PURNEA (PG) 400KV RENGALI (PG) -2 132KV BARIPADA(PG) 220KV SIDE OF BARIPADA 220/132 KV ICT 132KV CHANDIL (JUVNL) 220KV BARIPADA(PG)-2 220KV BARIPADA(PG)-2 220KV BARIPADA(PG)-2 220KV BARIPADA(PG)-2 20KV BARIPADA(PG)-2 20KV BARIPADA(PG)-2 20KV BARIPADA(PG)-2 20KV BARIPADA(PG)-2 400 KV JAMSHEDPUR (DVC) 132KV RAJGIR/BSF (BSPHCL) 220KV JAMSHEDPUR (DVC) 132KV RAJGIR/BSF (BSPHCL) 220KV SANTALDIH (WBSETCL) 220KV PARULIA (DVC) -1 400KV TALA (THP)-2 400KV KISHANGANJ(PG)-2 132KV JODA (GRIDCO) 220KV RAMCHANDRAPUR (JUVNL)	NP-6486-A NP-6486-A NP-6088-A NP-6090-A NP-7541-A NP-7542-A NP-6085-A NP-5036-A NP-5972-A NP-5908-A NP-5907-A NP-5907-A NP-5904-A NP-5904-A NP-5904-A NP-5906-A NP-7689-A NP-6459-A NP-6450-A NP-6450-A NP-6456-A NP-5087-A NP-5093-A NP-5093-A NP-5037-A
112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141	L&T L&T L&T L&T L&T L&T L&T L&T	WB-51 WB-07 BI-03 BI-04 BI-51 WB-57 WB-58 DV-04 BI-21 BI-20 TL-24 OR-61 OR-62 EM-59 DV-55 OR-63 OR-60 BI-19 ER-08 ER-07 OR-54 DV-51 JS-62 JS-57 JS-05 ER-05	BIDHANNAGAR (WBSETCL) BIDHANNAGAR (WBSETCL) PURNEA (BSPHCL) PURNEA (BSPHCL) PURNEA (BSPHCL) KURSEONG(WBSETCL) KURSEONG(WBSETCL) KISHANGANJ (BSPHCL) TALCHER(NTPC) BARIPADA(GRIDCO) BARIPADA(GRIDCO) BARIPADA(PG) MANIQUE (DVC) BALASORE(GRIDCO) BALASORE(GRIDCO) BALASORE(GRIDCO) JAGDISHPUR(BSPHCL) DURGAPUR(PG) DURGAPUR(PG) JINDAL (GRIDCO) BARHI (DVC) TENUGHAT (JUVNL) CHANDIL (JUVNL) CHANDIL (JUVNL) DURGAPUR(PG) BINAGURI(PG) BINAGURI(PG) BINAGURI(PG) BINAGURI(PG) CHANDIC (GRIDCO) BALASORE(GRIDCO) BINAGURI(PG) BINAGURI(PG) BINAGURI(PG) BINAGURI(PG) CHANDIC (GRIDCO) CHANDIC (GRIDCO)	220 NV WARIA (DVC)-1 220 KV PARULIA (PG) 132KV PURNEA (PG) -1 132KV PURNEA (PG) -2 132KV PURNEA (PG) 132 KV RANGIT(NHPC) 132 KV SILIGURI(PG) 400KV MAITHON (PG) (MAIN) 132 KV PURNEA (PG) 400KV MAITHON (PG) (MAIN) 132 KV PURNEA (PG) 400KV RENGALI (PG) -2 132KV BARIPADA(PG) 220KV SIDE OF BARIPADA 220/132 KV ICT 132KV CHANDIL (JUVNL) 220KV BARIPADA(PG)-2 220KV BARIPADA(PG)-2 220KV BARIPADA(PG)-2 20KV BARIPADA(PG)-2 20KV BARIPADA(PG)-2 20KV BARIPADA(PG)-2 20KV BARIPADA(PG)-2 20KV BARIPADA(PG)-2 20KV JAMSHEDPUR (DVC) 132KV RAJGIR/BSF (BSPHCL) 220KV JAMSHEDPUR (DVC) 132KV RAJGIR/BSF (BSPHCL) 220KV SANTALDIH (WBSETCL) 220KV PARULIA (DVC) -1 400KV TALA (THP)-2 400KV KISHANGANJ(PG)-2 132KV JODA (GRIDCO) 220KV RAMCHANDRAPUR (JUVNL) 132KV KENDPOSI (JUVNL)	NP-6486-A NP-6486-A NP-6088-A NP-6090-A NP-7541-A NP-7542-A NP-6085-A NP-5236-A NP-5972-A NP-5908-A NP-5907-A NP-5907-A NP-5904-A NP-5904-A NP-5906-A NP-7689-A NP-6611-B NP-6607-B NP-6115-A NP-7436-A NP-7434-A NP-5093-A NP-5093-A NP-5093-A NP-5093-A
112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141	L&T L&T L&T L&T L&T L&T L&T L&T	WB-51 WB-07 BI-03 BI-04 BI-51 WB-57 WB-58 DV-04 BI-21 BI-20 TL-24 OR-61 OR-62 EM-59 DV-55 OR-63 OR-60 BI-19 ER-08 ER-07 OR-54 DV-51 JS-62 JS-57 JS-05 ER-05	BIDHANNAGAR (WBSETCL) BIDHANNAGAR (WBSETCL) PURNEA (BSPHCL) PURNEA (BSPHCL) FURNEA (BSPHCL) KURSEONG(WBSETCL) KURSEONG(WBSETCL) MEJIA(DVC) BAISI (BSPHCL) KISHANGANJ (BSPHCL) TALCHER(NTPC) BARIPADA(GRIDCO) BARIPADA(GRIDCO) BARIPADA(PG) MANIQUE (DVC) BALASORE(GRIDCO) BALASORE(GRIDCO) BALASORE(GRIDCO) BALASORE(GRIDCO) JAGDISHPUR(BSPHCL) DURGAPUR(PG) DURGAPUR(PG) JINDAL (GRIDCO) BARHI (DVC) TENUGHAT (JUVNL) CHANDIL (JUVNL) CHANDIL (JUVNL) CHANDIL (JUVNL) DURGAPUR(PG) BINAGURI(PG) BINAGURI(PG) BINAGURI(PG) SUBHASGRAM(PG)	220 NV WARIA (DVC)-1 220 KV PARULIA (PG) 132KV PURNEA (PG) -1 132KV PURNEA (PG) -2 132KV PURNEA (PG) 132 KV RANGIT(NHPC) 132 KV SILIGURI(PG) 400KV MAITHON (PG) (MAIN) 132 KV PURNEA (PG) 400KV MAITHON (PG) (MAIN) 132 KV PURNEA (PG) 400KV RENGALI (PG) -2 132KV BARIPADA(PG) 220KV SIDE OF BARIPADA 220/132 KV ICT 132KV CHANDIL (JUVNL) 220KV BARIPADA(PG)-2 220KV JAMSHEDPUR (DVC) 132KV RAJGIR/BSF (BSPHCL) 220KV JAMSHEDPUR (DVC) 132KV RAJGIR/BSF (BSPHCL) 220KV SANTALDIH (WBSETCL) 220KV PARULIA (DVC) -1 400KV KISHANGANJ(PG)-2 132KV JODA (GRIDCO) 220KV RAMCHANDRAPUR (JUVNL) 132KV KENDPOSI (JUVNL) 400KV KAGARDIGHI(WBSETCL)	NP-6486-A NP-6486-A NP-6088-A NP-6089-A NP-7541-A NP-7542-A NP-6085-A NP-5972-A NP-5908-A NP-5907-A NP-5907-A NP-5904-A NP-5904-A NP-5906-A NP-7689-A NP-6652-A NP-6011-B NP-5906-A NP-6618-A NP-6459-A NP-6459-A NP-6459-A NP-6459-A NP-6459-A NP-6459-A NP-6459-A NP-6459-A NP-6459-A NP-6450-A NP-6450-A NP-6456-A NP-5093-A NP-5093-A NP-5093-A NP-5937-A NP-5939-A NP-5846-A
112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143	L&T L&T L&T L&T L&T L&T L&T L&T	WB-51 WB-07 BI-03 BI-04 BI-51 WB-57 WB-58 DV-04 BI-21 BI-20 TL-24 OR-61 OR-62 EM-59 DV-55 OR-63 OR-60 BI-19 ER-08 ER-07 OR-54 DV-51 JS-62 JS-57 JS-05 ER-05	BIDHANNAGAR (WBSETCL) BIDHANNAGAR (WBSETCL) PURNEA (BSPHCL) PURNEA (BSPHCL) FURNEA (BSPHCL) KURSEONG(WBSETCL) KURSEONG(WBSETCL) KURSEONG(WBSETCL) KISHANGANJ (BSPHCL) TALCHER(NTPC) BARIPADA(GRIDCO) BARIPADA(GRIDCO) BARIPADA(PG) MANIQUE (DVC) BALASORE(GRIDCO) BALASORE(GRIDCO) BALASORE(GRIDCO) BALASORE(GRIDCO) BALASORE(GRIDCO) JAGDISHPUR(BSPHCL) DURGAPUR(PG) JINDAL (GRIDCO) BARHI (DVC) TENUGHAT (JUVNL) CHANDIL (JUVNL) CHANDIL (JUVNL) CHANDIL (JUVNL) DURGAPUR(PG) BINAGURI(PG) BIDHANNAGAR (WBSETCL)	220 NV WARIA (DVC)-1 220 KV PARULIA (PG) 132KV PURNEA (PG) -1 132KV PURNEA (PG) -2 132KV PURNEA (PG) 132 KV RANGIT(NHPC) 132 KV SILIGURI(PG) 400KV MAITHON (PG) (MAIN) 132 KV DALKHOLA (WBSETCL) 132 KV PURNEA (PG) 400KV RENGALI (PG) -2 132 KV DALKHOLA (WBSETCL) 132 KV PURNEA (PG) 400KV RENGALI (PG) -2 132 KV BARIPADA(PG) 220KV SIDE OF BARIPADA 220/132 KV ICT 132KV CHANDIL (JUVNL) 220KV BARIPADA(PG)-2 220KV BARIPADA(PG)-2 220KV BARIPADA(PG)-2 20KV BARIPADA(PG)-2 400KV ABAH(PG)-2 400KV JAMSHEDPUR (PG)-2 20KV JAMSHEDPUR (DVC) 132KV RAJGIR/BSF (BSPHCL) 220KV SANTALDIH (WBSETCL) 220KV SANTALDIH (WBSETCL) 220KV RANCHI (PG)-1 220KV RANCHI (PG)-2 400KV KISHANGANJ(PG)-2 132KV KENDPOSI (JUVNL) 132KV KENDPOSI (JUVNL) 132KV KENDPOSI (JUVNL)	NP-6486-A NP-6486-A NP-6088-A NP-6089-A NP-7541-A NP-7542-A NP-6085-A NP-6085-A NP-5972-A NP-5908-A NP-5907-A NP-5907-A NP-5907-A NP-5906-A NP-5906-A NP-5906-A NP-6659-A NP-6611-B NP-6614 NP-6629-A NP-6630-A NP-6461-A NP-6461-A NP-6461-A NP-6461-A NP-6461-A NP-6502-A NP-6007-B NP-7434-A NP-75087-A NP-5087-A NP-5093-A NP-5937-A NP-5937-A NP-5939-A NP-5846-A NP-6499-A
112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143	L&T L&T L&T L&T L&T L&T L&T L&T	WB-51 WB-07 BI-03 BI-04 BI-51 WB-57 WB-58 DV-04 BI-21 BI-20 TL-24 OR-61 OR-62 EM-59 DV-55 OR-63 OR-60 BI-19 ER-08 ER-07 OR-54 DV-51 JS-62 JS-57 JS-05 ER-05	BIDHANNAGAR (WBSETCL) BIDHANNAGAR (WBSETCL) PURNEA (BSPHCL) PURNEA (BSPHCL) FURNEA (BSPHCL) KURSEONG(WBSETCL) KURSEONG(WBSETCL) KURSEONG(WBSETCL) KISHANGANJ (BSPHCL) TALCHER(NTPC) BARIPADA(GRIDCO) BARIPADA(GRIDCO) BARIPADA(PG) MANIQUE (DVC) BALASORE(GRIDCO) BALASORE(GRIDCO) BALASORE(GRIDCO) BALASORE(GRIDCO) BALASORE(GRIDCO) JAGDISHPUR(BSPHCL) DURGAPUR(PG) JINDAL (GRIDCO) BARHI (DVC) TENUGHAT (JUVNL) CHANDIL (JUVNL) CHANDIL (JUVNL) CHANDIL (JUVNL) CHANDIL (JUVNL) DURGAPUR(PG) BINAGURI(PG) BINAGURI(PG) BINAGURI(PG) BINAGURI(PG) BINAGURI(PG) BINAGURI(PG) BINAGURI(PG) BINAGURI(PG) BINAGURI(PG) BINAGURI(PG) BINAGURI(PG) BINAGURI(PG) BINAGURI(PG) BIDHANNAGAR (WBSETCL) GARWA(JUVNL)	220 KV WARIA (DVC)-1 220 KV PARULIA (PG) 132KV PURNEA (PG) -1 132KV PURNEA (PG) -2 132KV PURNEA (PG) 132 KV RANGIT(NHPC) 132 KV SILIGURI(PG) 400KV MAITHON (PG) (MAIN) 132 KV DALKHOLA (WBSETCL) 132 KV PURNEA (PG) 400KV RENGALI (PG) -2 132 KV DALKHOLA (WBSETCL) 132 KV PURNEA (PG) 132 KV BARIPADA(PG) 220KV SIDE OF BARIPADA 220/132 KV ICT 132KV CHANDIL (JUVNL) 220KV BARIPADA(PG)-2 220KV BARIPADA(PG)-2 220KV BARIPADA(PG)-2 20KV BARIPADA(PG)-2 20KV BARIPADA(PG)-2 20KV BARIPADA(PG)-2 20KV BARIPADA(PG)-2 400KV JAMSHEDPUR (PG) 220KV JAMSHEDPUR (DVC) 132KV RAJGIR/BSF (BSPHCL) 220KV SANTALDIH (WBSETCL) 220KV SANTALDIH (WBSETCL) 220KV RANCHI (PG)-1 400KV TALA (THP)-2 400KV KISHANGANJ(PG)-2 132KV KENDPOSI (JUVNL) 132KV KENDPOSI (JUVNL) 132KV KENDPOSI (JUVNL) 132KV KENDPOSI (JUVNL)	NP-6486-A NP-6088-A NP-6089-A NP-7541-A NP-7542-A NP-6085-A NP-6085-A NP-5972-A NP-5908-A NP-5907-A NP-5907-A NP-5906-A NP-5906-A NP-5906-A NP-5906-A NP-5906-A NP-6659-A NP-6611-B NP-5906-A NP-6906-A NP-6650-A NP-6461-A NP-6461-A NP-6502-A NP-6461-A NP-6502-A NP-6007-B NP-6115-A NP-7434-A NP-5087-A NP-5093-A NP-5937-A NP-5939-A NP-5939-A NP-5846-A NP-6499-A NP-6113-A
112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144	L&T L&T L&T L&T L&T L&T L&T L&T	WB-51 WB-07 BI-03 BI-04 BI-51 WB-57 WB-58 DV-04 BI-21 BI-20 TL-24 OR-61 OR-62 EM-59 DV-55 OR-63 OR-60 BI-19 ER-08 ER-07 OR-54 DV-51 JS-62 JS-57 JS-05 ER-05	BIDHANNAGAR (WBSETCL) BIDHANNAGAR (WBSETCL) PURNEA (BSPHCL) PURNEA (BSPHCL) KURSEONG(WBSETCL) KURSEONG(WBSETCL) KURSEONG(WBSETCL) MEJIA(DVC) BAISI (BSPHCL) KISHANGANJ (BSPHCL) TALCHER(NTPC) BARIPADA(GRIDCO) BARIPADA(GRIDCO) BARIPADA(PG) MANIQUE (DVC) BALASORE(GRIDCO) BALASORE(GRIDCO) BALASORE(GRIDCO) BALASORE(GRIDCO) BALASORE(GRIDCO) JAGDISHPUR(BSPHCL) DURGAPUR(PG) JINDAL (GRIDCO) BARHI (DVC) TENUGHAT (JUVNL) CHANDIL (JUVNL) CHANDIL (JUVNL) CHANDIL (JUVNL) CHANDIL (JUVNL) CHANDIL (JUVNL) GOELKERA (JUVNL) GOELKERA (JUVNL)	220 KV WARIA (DVG)-1 220 KV PARULIA (PG) 132KV PURNEA (PG) -1 132KV PURNEA (PG) -2 132KV PURNEA (PG) 132 KV RANGIT(NHPC) 132 KV SILIGURI(PG) 400KV MAITHON (PG) (MAIN) 132 KV DALKHOLA (WBSETCL) 132 KV PURNEA (PG) 400KV RENGALI (PG) -2 132 KV DALKHOLA (WBSETCL) 132 KV PURNEA (PG) 132 KV BARIPADA(PG) 220KV SIDE OF BARIPADA 220/132 KV ICT 132KV CHANDIL (JUVNL) 220KV BARIPADA(PG)-2 220KV BARIPADA(PG)-2 220KV BARIPADA(PG)-2 20KV BARIPADA(PG)-2 20KV BARIPADA(PG)-2 20KV BARIPADA(PG)-2 20KV BARIPADA(PG)-2 400KV JAMSHEDPUR (DVC) 132KV RAJGIR/BSF (BSPHCL) 220KV SANTALDIH (WBSETCL) 220KV SANTALDIH (WBSETCL) 220KV RANCHI (PG)-1 20KV RANCHI (PG)-2 400KV KISHANGANJ(PG)-2 132KV KENDPOSI (JUVNL) 132KV KENDPOSI (JUVNL) 132KV KENDPOSI (JUVNL) 132KV ROURKELA (GRIDCO)	NP-6486-A NP-6088-A NP-6089-A NP-7541-A NP-7542-A NP-6085-A NP-6085-A NP-5236-A NP-5908-A NP-5907-A NP-5907-A NP-5906-A NP-5906-A NP-5906-A NP-7689-A NP-6650-A NP-6650-A NP-66007-B NP-6115-A NP-7434-A NP-6502-A NP-6007-B NP-6115-A NP-6115-A NP-6456-A NP-5903-A NP-5937-A NP-5937-A NP-5939-A NP-5939-A NP-5939-A NP-5939-A NP-5939-A NP-6117-A NP-5939-A NP-6499-A NP-6009-B
112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146	L&T L&T L&T L&T L&T L&T L&T L&T	WB-51 WB-07 BI-03 BI-04 BI-51 WB-57 WB-58 DV-04 BI-21 BI-20 TL-24 OR-61 OR-62 EM-59 DV-55 OR-63 OR-60 BI-19 ER-08 ER-07 OR-54 DV-51 JS-62 JS-57 JS-05 ER-05	BIDHANNAGAR (WBSETCL) BIDHANNAGAR (WBSETCL) PURNEA (BSPHCL) PURNEA (BSPHCL) KURSEONG(WBSETCL) KURSEONG(WBSETCL) KURSEONG(WBSETCL) MEJIA(DVC) BAISI (BSPHCL) KISHANGANJ (BSPHCL) TALCHER(NTPC) BARIPADA(GRIDCO) BARIPADA(GRIDCO) BARIPADA(FG) MANIQUE (DVC) BALASORE(GRIDCO) BALASORE(GRIDCO) BALASORE(GRIDCO) BALASORE(GRIDCO) JAGDISHPUR(BSPHCL) DURGAPUR(PG) JINDAL (GRIDCO) BARHI (DVC) TENUGHAT (JUVNL) CHANDIL (JUVNL) CHANDIL (JUVNL) CHANDIL (JUVNL) CHANDIL (JUVNL) DURGAPUR(PG) BINAGURI(PG) BINAGURI(PG) BINAGURI(PG) SUBHASGRAM(PG) BIDHANNAGAR (WBSETCL) GOELKERA (JUVNL) JAPLA (JUVNL)	220 KV WARIA (DVC)-1 220 KV PARULIA (PG) 132KV PURNEA (PG) -1 132KV PURNEA (PG) -2 132KV PURNEA (PG) 132 KV RANGIT(NHPC) 132 KV SILIGURI(PG) 400KV MAITHON (PG) (MAIN) 132 KV PURNEA (PG) 400KV RENGALI (PG) -2 132 KV PURNEA (PG) 132 KV PURNEA (PG) 132 KV PURNEA (PG) 132 KV PURNEA (PG) 132 KV BARIPADA(PG) 132 KV BARIPADA(PG) 220 KV SIDE OF BARIPADA 220/132 KV ICT 132 KV CHANDIL (JUVNL) 220 KV BARIPADA(PG)-2 220 KV BARIPADA(PG)-2 20 KV BARIPADA(PG)-2 20 KV BARIPADA(PG)-2 400 KV JAMSHEDPUR (PG) 220 KV ARAH(PG)-2 400 KV JAMSHEDPUR (DVC) 132 KV RAJGIR/BSF (BSPHCL) 220 KV SANTALDIH (WBSETCL) 220 KV RANCHI (PG)-1 200 KV RANCHI (PG)-1 200 KV RANCHI (PG)-2 132 KV JODA (GRIDCO) 220 KV RAMCHANDRAPUR (JUVNL) 132 KV KENDPOSI (JUVNL) 400 KV SAGARDIGHI(WBSETCL) 400 KV SAGARDIGHI(WBSETCL) 400 KV DURGAPUR (PG)-2 <	NP-6486-A NP-6088-A NP-6089-A NP-7541-A NP-7541-A NP-7542-A NP-6085-A NP-5236-A NP-5907-A NP-5907-A NP-5907-A NP-5904-A NP-5904-A NP-6689-A NP-5906-A NP-7689-A NP-6007-B NP-66007-B NP-6115-A NP-7434-A NP-6007-B NP-6115-A NP-6007-B NP-6115-A NP-6007-B NP-6115-A NP-6393-A NP-5937-A NP-5937-A NP-5939-A NP-5939-A NP-5939-A NP-5939-A NP-5939-A NP-6413-A NP-6009-B NP-6009-B NP-6009-B NP-6009-B NP-6009-B NP-6009-B NP-6009-B NP-6009-B NP-6009-B <t< td=""></t<>
112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147	L&T L&T L&T L&T L&T L&T L&T L&T	WB-51 WB-07 BI-03 BI-04 BI-51 WB-57 WB-58 DV-04 BI-21 BI-20 TL-24 OR-61 OR-62 EM-59 DV-55 OR-63 OR-60 BI-19 ER-08 ER-07 OR-54 DV-55 OR-63 OR-60 BI-19 ER-08 ER-07 OR-54 DV-51 JS-62 JS-57 JS-05 ER-05 ER-05 ER-05 ER-05 ER-05 ER-05 ER-05 ER-05 ER-05 ER-05 ER-14 JS-52 OR-52 EM-74 WB-20 JS-58 JS-53 JS-64 ER-06	BIDHANNAGAR (WBSETCL) BIDHANNAGAR (WBSETCL) PURNEA (BSPHCL) PURNEA (BSPHCL) KURSEONG(WBSETCL) KURSEONG(WBSETCL) KURSEONG(WBSETCL) MEJIA(DVC) BAISI (BSPHCL) KISHANGANJ (BSPHCL) TALCHER(NTPC) BARIPADA(GRIDCO) BARIPADA(GG) MANIQUE (DVC) BALASORE(GRIDCO) BALASORE(GRIDCO) BALASORE(GRIDCO) BALASORE(GRIDCO) BALASORE(GRIDCO) BALASORE(GRIDCO) JAGDISHPUR(BSPHCL) DURGAPUR(PG) JINDAL (GRIDCO) BARHI (DVC) TENUGHAT (JUVNL) CHANDIL (JUVNL) CHANDIL (JUVNL) CHANDIL (JUVNL) CHANDIL (JUVNL) CHANDIL (JUVNL) DURGAPUR(PG) BINAGURI(PG) BINAGURI(PG) BINAGURI(PG) BIDHANNAGAR (WBSETCL) GARWA(JUVNL) GOELKERA (JUVNL) DURGAPUR(PG) BIDHANNAGAR (WBSETCL) GARWA(JUVNL)	220 KV WARIA (DVC)-1 220 KV PARULIA (PG) 132KV PURNEA (PG) -1 132KV PURNEA (PG) -2 132KV PURNEA (PG) 132 KV RANGIT(NHPC) 132 KV SILIGURI(PG) 400KV MAITHON (PG) (MAIN) 132 KV PURNEA (PG) 400KV RENGALI (PG) -2 132KV BARIPADA(PG) 132KV BARIPADA(PG) 132KV CHANDIL (JUVNL) 220KV SIDE OF BARIPADA 220/132 KV ICT 132KV CHANDIL (JUVNL) 220KV BARIPADA(PG)-2 220KV BARIPADA(PG)-2 220KV BARIPADA(PG)-2 220KV BARIPADA(PG)-2 20KV BARIPADA(PG)-2 20KV BARIPADA(PG)-2 20KV BARIPADA(PG)-2 20KV JAMSHEDPUR (PG) 220KV JAMSHEDPUR (DVC) 132KV RAJGIR/BSF (BSPHCL) 220KV SANTALDIH (WBSETCL) 220KV SANTALDIH (WBSETCL) 220KV RANCHI (PG)-1 400KV KISHANGANJ(PG)-2 132KV RAMCHANDRAPUR (JUVNL) 132KV RAMCHANDRAPUR (JUVNL) 132KV RAMCHANDRAPUR (JUVNL) 132KV RAMCHANDRAPUR (PG) -2 132KV RAMCHANDRAPUR (PG) -2 132KV RAMCHANDRAPUR (PG) -2 132KV RAMCHANDRAPUR	NP-6486-A NP-6088-A NP-6089-A NP-7541-A NP-7541-A NP-7542-A NP-6085-A NP-6085-A NP-5972-A NP-5908-A NP-5908-A NP-5908-A NP-5908-A NP-5904-A NP-5906-A NP-5906-A NP-6689-A NP-6011-B NP-6007-B NP-6459-A NP-6459-A NP-6450-A NP-6450-A NP-6450-A NP-6007-B NP-6115-A NP-7436-A NP-75093-A NP-5903-A NP-5903-A NP-5937-A NP-5937-A NP-5939-A NP-64113-A NP-6409-A NP-6113-A NP-6009-B NP-6112-A NP-6458-A

149	L&T	BH-13	BARH(NTPC)	400 KV SIDE OF ICT -II	NP-7481-A
150	L&T	OR-56	BUDHIPADAR (GRIDCO)	220KV RAIGARH (MPEB)	NP-5940-A
151	L&T	OR-57	BUDHIPADAR (GRIDCO)	220KK KORBA (MPEB) -2	NP-5941-A
152	L&T	OR-59	BUDHIPADAR (GRIDCO)	220KK KORBA (MPEB) -3	NP-5944-A
152	LQT	OR-01		220KV/ROURKELA(PG) -1	NP-5034-A
154		OR-02	TARKERA (GRIDCO)	220KV ROURKELA (PG) -2	NP-5035-A
154					ND 5047 A
155		ER 50			NF-3947-A
100		EK-50			NP-3949-A
157	L&I	DV-60			NP-0504-B
158	L&I	JS-63	LALMATIA (JUVNL)	132KV KAHALGAON (BSPHCL)	NP-6107-A
159	L&I	JS-03	LALMATIA (JUVNL)	132KV KAHALGAON (NTPC)	NP-6108-A
160	L&T	JS-04	LALMATIA (JUVNL)	220KV FARAKKA (NTPC)	NP-6109-A
161	L&T	ER-30	RENGALI(PG)	220KV RENGALI (GRIDCO) -1	NP-5989-A
162	L&T	ER-31	RENGALI(PG)	220KV RENGALI (GRIDCO) -2	NP-5990-A
163	L&T	DV-01	PARULIA (DVC)	220KV PARULIA (PG) -1&2(SUM)	NP-6563-B
164	L&T	ER-53	SILIGURI(PG)	132KV NJP(WBSETCL)	NP-5946-A
165	L&T	ER-76	SILIGURI(PG)	220/132 KV ICT -1	NP-5951-A
166	L&T	WB-11	RAMMAM (WBSETCL)	132 KV RANGIT (NHPC)	NP-5917-A
167	L&T	JS-65	DEOGARH (JUVNL)	132KV SULTANGANJ (BSPHCL)	NP-6048-B
168	L&T	ER-29	RENGALI(PG)	400KV INDRAVATI (PG)	NP-5987-A
169	L&T	WB-04	NBU(WBSETCL)	132KV SILIGURI(PG)	NP-5953-A
170	L&T	WB-03	NJP(WBSETCL)	132KV SILIGURI(PG)	NP-5952-A
171	L&T	JS-66	JAMTARA (JUVNI)	132KV MAITHON (DVC	NP-6110-A
172	L&T	OR-05	JEYNAGAR (GRIDCO)	220KV JEYPORE (PG) -1	NP-5963-A
173	_~- &T	OR-06	JEYNAGAR (GRIDCO)	220KV JEYPORE (PG) -2	NP-5964-A
174	1 &T	FR-30	BIRPARA(PG)	220KV CHUKHA (CHPC) -1	NP-6465-A
175		EM_0/	RANCHI(PG)		NP-7830-A
176				220/132 KV ICT-2	NP-6050-A
170		00.04			ND 5020 A
170		EM 04			ND 6061 A
1/0					
179	LÄI	ER-90		1400/220 K/ / CT 4	
180	L&I	ER-01	BIHARSHARIFF(PG)		NP-6063-A
181	L&I	EP-74	BIHARSHARIFF(PG)	400 KV KAHALGAON(NTPC) LINE-1	NP-6064-A
182	L&T	EM-22	BIHARSHARIFF(PG)	400KV BALIA (NR)-2	NP-6065-A
183	L&T	ER-03	BIHARSHARIFF(PG)	400/220 KV ICT-3	NP-6068-A
184	L&T	ER-02	BIHARSHARIFF(PG)	400/220 KV ICT-2	NP-6069-A
185	L&T	DV-05	MEJIA(DVC)	400KV JAMSHEDPUR (PG) (MAIN)	NP-6508-A
186	L&T	OR-13	INDRAVATI P/H (GRIDCO)	400KV INDRAVATI (PG)	NP-5967-A
187	L&T	WB-02	BIRPARA (WBSETCL)	132KV BIRPARA(PG)-2	NP-5893-A
188	L&T	ER-18	JAMSHEDPUR(PG)	400/220 KV ICT-2	NP-6105-A
189	L&T	ER-17	JAMSHEDPUR(PG)	400/220 KV ICT-1	NP-6106-A
190	L&T	BI-48	BIHARSHARIFF (BSPHCL)	132KV RAJGIR (BSPHCL)	NP-6070-A
191	L&T	BI-55	RAJGIR(BSPHCL)	132KV BARHI (DVC)	NP-6066-A
192	L&T	BI-11	ARAH(BSPHCL)	132KV ARAH (PG)	NP-6052-A
193	L&T	ER-09	ARAH(PG)	132KV ARAH (BSPHCL)	NP-6051-A
194	L&T	ER-10	ARAH(PG)	132KV DUMRAO (BSPHCL)	NP-6054-A
195	L&T	ER-65	PURNEA(PG)	220KV DALKHOLA (PG) -2	NP-7419-A
196	I &T	FR-64	PURNEA(PG)	220KV DALKHOLA (PG) -1	NP-7420-A
197	L&T	BI-02	BIHARSHARIFF(BSPHCL)	220KV BIHARSHARIF(PG)-2	NP-5840-A
108		BI-01	BIHARSHARIFF(BSPHCL)	220KV/BIHARSHARIE(PG)-1	NP-5841-A
100		BI-67	BIHARSHARIFF(BSPHCL)	220KV BIHARSHARIF(PG)-3	NP-5843-A
200	1.27	BI-57	BIHARSHARIFF(BSDHCL)		NP-5844-4
200		ED /0			ND_7684 A
201					ND 7695 A
202		DI 10			ND 7207 A
203		DI-10			
204					NF-1409-A
200					NF-04/U-A
200		EP-32			NF-1000A
207	LÄI				NP-3900-A
208	L&I	EI-10		1430 V SIDE OF TEKTIARY TRF(PG)	NP-5965-A
209	L&T	KG-01	KAHALGAON(NTPC)	KAHALGAUN GT-5	NP-5116-A
210	L&T	KH-32	KAHALGAON(NTPC)		NP-5117-A
211	L&F	KH-33	KAHALGAON(NTPC)		NP-5235-A
212	L&T	KH-13	KAHALGAON(NTPC)	132KV SABOUR (BSPHCL)	NP-5239-A
213	L&T	KH-23	KAHALGAON(NTPC)	400KV MAITHON (PG) -1	NP-5242-A
214	L&T	KH-14	KAHALGAON(NTPC)	132KV LALMATIA (BSPHCL)	NP-5244-A
215	L&T	KH-31	KAHALGAON(NTPC)	400KV BANKA-1(MAIN)	NP-5245-A
216	L&T	KH-11	KAHALGAON(NTPC)	400KV LAKHISARAI(PG)-1	NP-5246-A
217	L&T	KH-09	KAHALGAON(NTPC)	400KV MAITHON (PG) -1	NP-5247-A
218	L&T	KH-25	KAHALGAON(NTPC)	400KV LAKHISARAI(PG)-1	NP-5248-A
219	L&T	KH-02	KAHALGAON(NTPC)	KAHALGAON GT-2	NP-5250-A
220	L&T	KH-16	KAHALGAON(NTPC)	K'GAON 400/132 ATR-II	NP-5251-A
221	L&T	KH-24	KAHALGAON(NTPC)	400KV MAITHON (PG) -2	NP-5253-A
222	L&T	KH-08	KAHALGAON(NTPC)	400KV FARAKKA (NTPC) -2	NP-5254-A
223	L&T	KH-17	KAHALGAON(NTPC)	COLONY TRANSFORMER-I	NP-5255-A
224	L&T	KH-06	KAHALGAON(NTPC)	KAHALGAON STN TRANS-2	NP-5256-A
			- , -/	-	
225	L&T	KH-10	KAHALGAON(NTPC)	400KV MAITHON (PG) -2	NP-5257-A
225 226	L&T L&T	KH-10 KH-07	KAHALGAON(NTPC) KAHALGAON(NTPC)	400KV MAITHON (PG) -2 400KV FARAKKA (NTPC) -1	NP-5257-A NP-5258-A

227	L&T	KH-21	KAHALGAON(NTPC)	400KV FARAKKA (NTPC) -1	NP-5259-A
228	I &T	KH-22	KAHAI GAON(NTPC)	400KV FARAKKA (NTPC) -2	NP-5260-A
220	LAT	KH_10			NP-5261-A
220					ND 5261 A
230		KH-03		AAALGAON STINTRANS-T	NF-3202-A
231		KH-27			NP-5263-A
232	LaT	KH-37			NP-5204-A
233	L&I	KH-28	KAHALGAON(NTPC)	400/132 ATR-II	NP-5265-A
234	L&T	KH-36	KAHALGAON(NTPC)	400KV BARH-2 (MAIN)	NP-5266-A
235	L&T	KH-18	KAHALGAON(NTPC)	COLONY TRANSFORMER-II	NP-5267-A
236	L&T	KH-38	KAHALGAON(NTPC)	400KV BARH-2 (CHECK)	NP-5268-A
237	L&T	KH-35	KAHALGAON(NTPC)	400KV BARH-1 (MAIN)	NP-5269-A
238	L&T	KH-15	KAHALGAON(NTPC)	K'GAON 400/132 ATR-I	NP-5837-A
239	L&T	KH-03	KAHALGAON(NTPC)	KAHALGAON GT-3	NP-5850-A
240	L&T	KH-01	KAHALGAON(NTPC)	KAHALGAON GT-1	NP-5851-A
241	L&T	KG-02	KAHALGAON(NTPC)	KAHALGAON GT-6	NP-5852-A
242	I &T	KG-06	KAHAI GAON(NTPC)	132KV STN TRANS-5	NP-5856-A
243		KG-03		KAHALGAON GT-7	NP-5857-A
240	LAT	KH-04		KAHALGAON GT-4	NP-5859-A
244					ND 5861 A
240	LQI	KH-34			NF-3001-A
240		KG-04		132RV STN TRANG 4	NP-3002-A
247	L&I	KG-05	KAHALGAON(NTPC)	132KV STN TRANS-4	NP-5863-A
248	L&I	EI-11	KEONJHAR(PG)	33 KV SIDE OF TERTIARY TRF(PG)	NP-7921-A
249	L&T	DV-65	KHARAGPUR (DVC)	132KV KHARAGPUR (WBSETCL)	NP-6559-B
250	L&T	ES-46	KISHANAGNJ(PG)	400 KV SIDE OF 500 MVA ICT-1	NP-7413-A
251	L&T	DV-09	K'NESWARI (DVC)	220KV MAITHON (PG) -4	NP-6493-A
252	L&T	WB-10	KOLAGHAT (WBSETCL)	400 KV KHARAGPUR (WBSETCL)	NP-6487-A
253	L&T	DV-61	KOLAGHAT(DVC)	132KV KOLAGHAT (WBSETCL)	NP-6558-B
254	L&T	ER-15	MAITHON(PG)	400KV DSTPS ANDAL (DVC)	NP-6521-A
255	L&T	DV-16	MEJIA (DVC)	400 KV MAITHON(DVC) (CHECK)	NP-6776-A
256	L&T	EM-23	MUZAFFARPUR(PG)	400KV BIHARSARIFF-1	NP-5071-A
257	&T	EM-25	MUZAFFARPUR(PG)	400KV GORAKHPUR(NR)-1	NP-5074-A
258	L &T	EM-27	MUZAFFARPUR(PG)	400KV/PLIRNEA-1	NP-5075-4
250		EM 26			NP-3073-A
259				400/200KV JCT 1	NF-9901-A
200	LaT	EIVI-30			NP-9963-A
261	L&I	BI-56	NALANDA(BSPHCL)	132KV BARHI (DVC)	NP-7690-A
262	L&I	EN-86	NEW MELLI(PG)	220 KV TASHIDING	NP-8740-A
263	L&T	EN-85	NEW MELLI(PG)	220 KV RANGPO(PG)-2	NP-8746-A
264	L&T	ES-39	PANDIABILI(PG)	415 V SIDE OF TERTIRAY AT PANDIABIL	NP-7462-A
265	L&T	FM-71	PATNA(PG)	400KV BARH-2	NP-5838-A
					NI 3030 A
266	L&T	EP-41	PATNA(PG)	400 KV BARH(NTPC)-4	NP-8632-A
266 267	L&T L&T	EP-41 DV-62	PATNA(PG) PURULIA (DVC)	400 KV BARH(NTPC)-4 132KV PURULIA (WBSETCL)	NP-8632-A NP-6560-B
266 267 268	L&T L&T L&T	EP-41 DV-62 EG-66	PATNA(PG) PURULIA (DVC) PUSAULI(PG)	400 KV BARH(NTPC)-4 132KV PURULIA (WBSETCL) 415 V SIDE OF PUSAULI 11/0.415 ST LIGHT TF-1	NP-8632-A NP-6560-B NP-6016-B
266 267 268 269	L&T L&T L&T L&T L&T	EP-41 DV-62 EG-66 JS-02	PATNA(PG) PURULIA (DVC) PUSAULI(PG) RAMCHANDRAPUR(JUVNL)	400 KV BARH(NTPC)-4 132KV PURULIA (WBSETCL) 415 V SIDE OF PUSAULI 11/0.415 ST LIGHT TF-1 220KV JAMSHEDPUR(PG)-2	NP-8632-A NP-6560-B NP-6016-B NP-5119-A
266 267 268 269 270	L&T L&T L&T L&T L&T	EP-41 DV-62 EG-66 JS-02 EG-89	PATNA(PG) PURULIA (DVC) PUSAULI(PG) RAMCHANDRAPUR(JUVNL) RANCHI NEW(PG)	400 KV BARH(NTPC)-4 132KV PURULIA (WBSETCL) 415 V SIDE OF PUSAULI 11/0.415 ST LIGHT TF-1 220KV JAMSHEDPUR(PG)-2 765 KV SIDE OF 765/400 KV ICT-1	NP-8632-A NP-8632-A NP-6560-B NP-65016-B NP-5119-A NP-7848-A
266 267 268 269 270 271	L&T L&T L&T L&T L&T L&T L&T	EP-41 DV-62 EG-66 JS-02 EG-89 EG-90	PATNA(PG) PURULIA (DVC) PUSAULI(PG) RAMCHANDRAPUR(JUVNL) RANCHI NEW(PG) RANCHI NEW(PG)	400 KV BARH(NTPC)-4 132KV PURULIA (WBSETCL) 415 V SIDE OF PUSAULI 11/0.415 ST LIGHT TF-1 220KV JAMSHEDPUR(PG)-2 765 KV SIDE OF 765/400 KV ICT-1 400 KV SIDE OF 765/400 KV ICT-1	NP-8632-A NP-6560-B NP-6016-B NP-5119-A NP-7848-A NP-7848-A NP-8756-A
266 267 268 269 270 271 272	L&T L&T L&T L&T L&T L&T L&T L&T	EP-41 DV-62 EG-66 JS-02 EG-89 EG-90 EM-47	PATNA(PG) PURULIA (DVC) PUSAULI(PG) RAMCHANDRAPUR(JUVNL) RANCHI NEW(PG) RANCHI NEW(PG) RANCHI(PG)	400 KV BARH(NTPC)-4 132KV PURULIA (WBSETCL) 415 V SIDE OF PUSAULI 11/0.415 ST LIGHT TF-1 220KV JAMSHEDPUR(PG)-2 765 KV SIDE OF 765/400 KV ICT-1 400 KV SIDE OF 765/400 KV ICT-1 400 KV SIDE OF 765/400 KV ICT-1	NP-8632-A NP-6560-B NP-6016-B NP-5119-A NP-7848-A NP-8756-A NP-5835-A
266 267 268 269 270 271 272 272	L&T L&T L&T L&T L&T L&T L&T L&T L&T	EP-41 DV-62 EG-66 JS-02 EG-89 EG-90 EM-47 EM-48	PATNA(PG) PURULIA (DVC) PUSAULI(PG) RAMCHANDRAPUR(JUVNL) RANCHI NEW(PG) RANCHI NEW(PG) RANCHI(PG) PANCHI(PG)	400 KV BARH(NTPC)-4 132KV PURULIA (WBSETCL) 415 V SIDE OF PUSAULI 11/0.415 ST LIGHT TF-1 220KV JAMSHEDPUR(PG)-2 765 KV SIDE OF 765/400 KV ICT-1 400 KV SIDE OF 765/400 KV ICT-1 400 KV SIPAT(WR)-1 400 KV SIPAT(WR)-2	NP-8632-A NP-6560-B NP-6016-B NP-5119-A NP-7848-A NP-8756-A NP-5835-A NP-5836-A
266 267 268 269 270 271 272 273 273	L&T L&T L&T L&T L&T L&T L&T L&T	EP-41 DV-62 EG-66 JS-02 EG-89 EG-90 EM-47 EM-48 EM-41	PATNA(PG) PURULIA (DVC) PUSAULI(PG) RAMCHANDRAPUR(JUVNL) RANCHI NEW(PG) RANCHI NEW(PG) RANCHI(PG) RANCHI(PG) PANCHI(PG)	400 KV BARH(NTPC)-4 132KV PURULIA (WBSETCL) 415 V SIDE OF PUSAULI 11/0.415 ST LIGHT TF-1 220KV JAMSHEDPUR(PG)-2 765 KV SIDE OF 765/400 KV ICT-1 400 KV SIDE OF 765/400 KV ICT-1 400 KV SIPAT(WR)-1 400 KV SIPAT(WR)-2 220 KV SIPE OE PANICHUCT 1	NP-8632-A NP-6560-B NP-6016-B NP-5119-A NP-7848-A NP-8756-A NP-5835-A NP-5835-A NP-5835-A
266 267 268 269 270 271 272 273 274 274	L&T L&T L&T L&T L&T L&T L&T L&T L&T	EP-41 DV-62 EG-66 JS-02 EG-89 EG-90 EM-47 EM-48 EM-61	PATNA(PG) PURULIA (DVC) PUSAULI(PG) RAMCHANDRAPUR(JUVNL) RANCHI NEW(PG) RANCHI NEW(PG) RANCHI(PG) RANCHI(PG) RANCHI(PG)	400 KV BARH(NTPC)-4 132KV PURULIA (WBSETCL) 415 V SIDE OF PUSAULI 11/0.415 ST LIGHT TF-1 220KV JAMSHEDPUR(PG)-2 765 KV SIDE OF 765/400 KV ICT-1 400 KV SIPAT(WR)-1 400 KV SIDE OF FASHWARK 220KV SIDE OF ABARANCHI ICT-1	NP-8632-A NP-8632-A NP-6560-B NP-6016-B NP-5119-A NP-7848-A NP-8756-A NP-5835-A NP-5836-A NP-5836-A NP-58370-A ND 5971-A
266 267 268 269 270 271 272 273 274 275 276	L&T L&T L&T L&T L&T L&T L&T L&T L&T L&T	EP-41 DV-62 EG-66 JS-02 EG-89 EG-90 EM-47 EM-48 EM-61 EM-41	PATNA(PG) PURULIA (DVC) PUSAULI(PG) RAMCHANDRAPUR(JUVNL) RANCHI NEW(PG) RANCHI NEW(PG) RANCHI(PG) RANCHI(PG) RANCHI(PG) RANCHI(PG) RANCHI(PG)	400 KV BARH(NTPC)-4 132KV PURULIA (WBSETCL) 415 V SIDE OF PUSAULI 11/0.415 ST LIGHT TF-1 220KV JAMSHEDPUR(PG)-2 765 KV SIDE OF 765/400 KV ICT-1 400 KV SIDE OF 765/400 KV ICT-1 400KV SIPAT(WR)-1 400KV SIPAT(WR)-2 220KV SIDE OF RANCHI ICT-1 400KV RAGHUNATHPUR(DVC)-II 400KV RAGHUNATHPUR(DVC)-II	NP-8632-A NP-6560-B NP-6560-B NP-5119-A NP-7848-A NP-7848-A NP-7848-A NP-7848-A NP-5835-A NP-5835-A NP-5836-A NP-5871-A NP-5871-A NP-5871-A
266 267 268 269 270 271 272 273 274 275 276 276	L&T L&T L&T L&T L&T L&T L&T L&T L&T L&T	EP-41 DV-62 EG-66 JS-02 EG-89 EG-90 EM-47 EM-48 EM-41 EM-41 EM-43	PATNA(PG) PURULIA (DVC) PUSAULI(PG) RAMCHANDRAPUR(JUVNL) RANCHI NEW(PG) RANCHI NEW(PG) RANCHI(PG) RANCHI(PG) RANCHI(PG) RANCHI(PG) RANCHI(PG)	400 KV BARH(NTPC)-4 132KV PURULIA (WBSETCL) 415 V SIDE OF PUSAULI 11/0.415 ST LIGHT TF-1 220KV JAMSHEDPUR(PG)-2 765 KV SIDE OF 765/400 KV ICT-1 400 KV SIDE OF 765/400 KV ICT-1 400 KV SIPAT(WR)-1 400 KV SIPAT(WR)-2 220 KV SIDE OF RANCHI ICT-1 400 KV RAGHUNATHPUR(DVC)-II 220 KV SIDE ICT-2 400 KV SIDE ICT-2	NP-8632-A NP-6560-B NP-65119-A NP-5119-A NP-7848-A NP-7848-A NP-7848-A NP-7848-A NP-5835-A NP-5835-A NP-5836-A NP-5836-A NP-5871-A NP-5871-A NP-5872-A
266 267 268 269 270 271 272 273 274 275 276 277 276 277	L&T L&T L&T L&T L&T L&T L&T L&T L&T L&T	EP-41 DV-62 EG-66 JS-02 EG-89 EG-90 EM-47 EM-48 EM-41 EM-41 EM-43 EM-42	PATNA(PG) PURULIA (DVC) PUSAULI(PG) RAMCHANDRAPUR(JUVNL) RANCHI NEW(PG) RANCHI NEW(PG) RANCHI(PG) RANCHI(PG) RANCHI(PG) RANCHI(PG) RANCHI(PG) RANCHI(PG) RANCHI(PG) RANCHI(PG)	400 KV BARH(NTPC)-4 132KV PURULIA (WBSETCL) 415 V SIDE OF PUSAULI 11/0.415 ST LIGHT TF-1 220KV JAMSHEDPUR(PG)-2 765 KV SIDE OF 765/400 KV ICT-1 400 KV SIDE OF 765/400 KV ICT-1 400 KV SIPAT(WR)-1 400 KV SIPAT(WR)-1 400 KV SIPAT(WR)-2 220 KV SIDE OF RANCHI ICT-1 400 KV RAGHUNATHPUR(DVC)-II 220 KV SIDE ICT-2 400 KV SIDE ICT-2 400 KV SIDE ICT-2	NP-8632-A NP-8632-A NP-6560-B NP-5119-A NP-7848-A NP-7848-A NP-7848-A NP-8756-A NP-5835-A NP-5836-A NP-5870-A NP-5872-A NP-5873-A NP-5873-A
266 267 268 269 270 271 272 273 274 275 276 277 278 278	L&T L&T L&T L&T L&T L&T L&T L&T L&T L&T	EP-41 DV-62 EG-66 JS-02 EG-89 EG-90 EM-47 EM-48 EM-61 EM-41 EM-43 EM-43 EM-42 EM-45	PATNA(PG) PURULIA (DVC) PUSAULI(PG) RAMCHANDRAPUR(JUVNL) RANCHI NEW(PG) RANCHI NEW(PG) RANCHI(PG) RANCHI(PG) RANCHI(PG) RANCHI(PG) RANCHI(PG) RANCHI(PG) RANCHI(PG) RANCHI(PG) RANCHI(PG)	400 KV BARH(NTPC)-4 132KV PURULIA (WBSETCL) 415 V SIDE OF PUSAULI 11/0.415 ST LIGHT TF-1 220KV JAMSHEDPUR(PG)-2 765 KV SIDE OF 765/400 KV ICT-1 400 KV SIDE OF 765/400 KV ICT-1 400 KV SIDE OF 765/400 KV ICT-1 400 KV SIPAT(WR)-1 400KV SIPAT(WR)-2 220KV SIDE OF RANCHI ICT-1 400KV SIDE ICT-2 400KV SIDE ICT-2 400KV SIDE ICT-2 220KV CHANDIL (JUVNL)-1	NP-8632-A NP-8632-A NP-6560-B NP-5119-A NP-7848-A NP-7848-A NP-7848-A NP-8756-A NP-5835-A NP-5836-A NP-5870-A NP-5871-A NP-5872-A NP-5873-A NP-5874-A
266 267 268 269 270 271 272 273 274 275 276 277 278 279	L&T L&T L&T L&T L&T L&T L&T L&T L&T L&T	EP-41 DV-62 EG-66 JS-02 EG-89 EG-90 EM-47 EM-48 EM-61 EM-41 EM-43 EM-42 EM-45 EM-46	PATNA(PG) PURULIA (DVC) PUSAULI(PG) RAMCHANDRAPUR(JUVNL) RANCHI NEW(PG) RANCHI NEW(PG) RANCHI(PG) RANCHI(PG) RANCHI(PG) RANCHI(PG) RANCHI(PG) RANCHI(PG) RANCHI(PG) RANCHI(PG) RANCHI(PG) RANCHI(PG)	400 KV BARH(NTPC)-4 132KV PURULIA (WBSETCL) 415 V SIDE OF PUSAULI 11/0.415 ST LIGHT TF-1 220KV JAMSHEDPUR(PG)-2 765 KV SIDE OF 765/400 KV ICT-1 400 KV SIDE OF 765/400 KV ICT-1 400 KV SIDE OF 765/400 KV ICT-1 400 KV SIPAT(WR)-1 400 KV SIPAT(WR)-2 220 KV SIDE OF RANCHI ICT-1 400 KV SIDE OF RANCHI ICT-1 400 KV SIDE ICT-2 400 KV SIDE ICT-2 20 KV CHANDIL (JUVNL)-1 400 KV MAITHON-1	NP-8632-A NP-8632-A NP-6560-B NP-6016-B NP-7848-A NP-7848-A NP-7848-A NP-8756-A NP-5835-A NP-5836-A NP-5870-A NP-5871-A NP-5872-A NP-5873-A NP-5877-A NP-5877-A
266 267 268 269 270 271 272 273 274 275 276 277 278 279 280	L&T L&T L&T L&T L&T L&T L&T L&T L&T L&T	EP-41 DV-62 EG-66 JS-02 EG-89 EG-90 EM-47 EM-48 EM-61 EM-41 EM-43 EM-42 EM-45 EM-46 EM-60	PATNA(PG) PURULIA (DVC) PUSAULI(PG) RAMCHANDRAPUR(JUVNL) RANCHI NEW(PG) RANCHI NEW(PG) RANCHI(PG) RANCHI(PG) RANCHI(PG) RANCHI(PG) RANCHI(PG) RANCHI(PG) RANCHI(PG) RANCHI(PG) RANCHI(PG) RANCHI(PG) RANCHI(PG) RANCHI(PG)	400 KV BARH(NTPC)-4 132KV PURULIA (WBSETCL) 415 V SIDE OF PUSAULI 11/0.415 ST LIGHT TF-1 220KV JAMSHEDPUR(PG)-2 765 KV SIDE OF 765/400 KV ICT-1 400 KV SIPAT(WR)-1 400 KV SIPAT(WR)-2 220 KV SIDE OF RANCHI ICT-1 400 KV SIDE ICT-2 400 KV SIDE ICT-2 220 KV CHANDIL (JUVNL)-1 400 KV SIDE OF RANCHI ICT-1	NP-8632-A NP-8632-A NP-6560-B NP-6016-B NP-7848-A NP-7848-A NP-7848-A NP-8756-A NP-5835-A NP-5836-A NP-5870-A NP-5871-A NP-5873-A NP-5873-A NP-5877-A NP-5877-A NP-5877-A NP-5878-A
266 267 268 269 270 271 272 273 274 275 276 277 278 277 278 279 280 281	L&T L&T L&T L&T L&T L&T L&T L&T L&T L&T	EP-41 DV-62 EG-66 JS-02 EG-89 EG-90 EM-47 EM-48 EM-61 EM-41 EM-43 EM-42 EM-45 EM-46 EM-60 EM-44	PATNA(PG) PURULIA (DVC) PUSAULI(PG) RAMCHANDRAPUR(JUVNL) RANCHI NEW(PG) RANCHI NEW(PG) RANCHI(PG) RANCHI(PG) RANCHI(PG) RANCHI(PG) RANCHI(PG) RANCHI(PG) RANCHI(PG) RANCHI(PG) RANCHI(PG) RANCHI(PG) RANCHI(PG) RANCHI(PG) RANCHI(PG)	400 KV BARH(NTPC)-4 132KV PURULIA (WBSETCL) 415 V SIDE OF PUSAULI 11/0.415 ST LIGHT TF-1 220KV JAMSHEDPUR(PG)-2 765 KV SIDE OF 765/400 KV ICT-1 400 KV SIDE OF 765/400 KV ICT-1 400 KV SIDE OF 765/400 KV ICT-1 400 KV SIPAT(WR)-1 400 KV SIPAT(WR)-2 220 KV SIDE OF RANCHI ICT-1 400 KV SIDE OF RANCHI ICT-1 400 KV SIDE ICT-2 200 KV CHANDIL (JUVNL)-1 400 KV SIDE OF RANCHI ICT-1 220 KV PATRATU (JUVNL)	NP-8632-A NP-6560-B NP-6016-B NP-5119-A NP-7848-A NP-7848-A NP-8756-A NP-5835-A NP-5836-A NP-5870-A NP-5871-A NP-5873-A NP-5873-A NP-5877-A NP-5877-A NP-5877-A NP-5877-A NP-5878-A NP-5878-A NP-5878-A NP-5879-A
266 267 268 269 270 271 272 273 274 275 276 277 278 277 278 279 280 281 282	L&T L&T L&T L&T L&T L&T L&T L&T	EP-41 DV-62 EG-66 JS-02 EG-89 EG-90 EM-47 EM-48 EM-61 EM-43 EM-41 EM-43 EM-42 EM-45 EM-46 EM-60 EM-44 ER-28	PATNA(PG) PURULIA (DVC) PUSAULI(PG) RAMCHANDRAPUR(JUVNL) RANCHI NEW(PG) RANCHI NEW(PG) RANCHI(PG) RENGALI(PG)	400 KV BARH(NTPC)-4 132KV PURULIA (WBSETCL) 415 V SIDE OF PUSAULI 11/0.415 ST LIGHT TF-1 220KV JAMSHEDPUR(PG)-2 765 KV SIDE OF 765/400 KV ICT-1 400 KV SIDE OF 765/400 KV ICT-1 400 KV SIDE OF 765/400 KV ICT-1 400 KV SIPAT(WR)-1 400 KV SIPAT(WR)-2 220 KV SIDE OF RANCHI ICT-1 400 KV SIDE OF RANCHI ICT-1 400 KV SIDE ICT-2 400 KV SIDE ICT-2 20 KV CHANDIL (JUVNL)-1 400 KV SIDE OF RANCHI ICT-1 220 KV CHANDIL (JUVNL)-1 400 KV SIDE OF RANCHI ICT-1 20 KV SIDE OF RANCHI ICT-1	NP-8632-A NP-8632-A NP-6560-B NP-6016-B NP-5119-A NP-7848-A NP-7848-A NP-8756-A NP-5835-A NP-5836-A NP-5870-A NP-5871-A NP-5873-A NP-5873-A NP-5877-A NP-5877-A NP-5878-A NP-5879-A NP-5879-A NP-5991-A
266 267 268 269 270 271 272 273 274 275 276 276 277 278 279 280 281 282 283	L&T L&T L&T L&T L&T L&T L&T L&T	EP-41 DV-62 EG-66 JS-02 EG-89 EG-90 EM-47 EM-48 EM-41 EM-43 EM-43 EM-42 EM-45 EM-46 EM-60 EM-44 ER-28 WB-12	PATNA(PG) PURULIA (DVC) PUSAULI(PG) RAMCHANDRAPUR(JUVNL) RANCHI NEW(PG) RANCHI NEW(PG) RANCHI(PG	400 KV BARH(NTPC)-4 400 KV BARH(NTPC)-4 132KV PURULIA (WBSETCL) 415 V SIDE OF PUSAULI 11/0.415 ST LIGHT TF-1 220KV JAMSHEDPUR(PG)-2 765 KV SIDE OF 765/400 KV ICT-1 400 KV SIPAT(WR)-1 400 KV SIPAT(WR)-2 220 KV SIDE OF RANCHI ICT-1 400 KV RAGHUNATHPUR(DVC)-II 220 KV SIDE ICT-2 400 KV SIDE ICT-2 400 KV SIDE OF RANCHI ICT-1 400 KV SIDE OF RANCHI ICT-1 220 KV CHANDIL (JUVNL)-1 400 KV SIDE OF RANCHI ICT-1 220 KV MAITHON-1 400 KV SIDE OF RANCHI ICT-1 220 KV PATRATU (JUVNL) 400 KV BARIPADA (PG) 400 KV FARAKKA (NTPC)-1(MAIN)	NP-8632-A NP-8632-A NP-6560-B NP-5119-A NP-7848-A NP-7848-A NP-7848-A NP-7848-A NP-7848-A NP-7848-A NP-5875-A NP-5835-A NP-5870-A NP-5871-A NP-5872-A NP-5873-A NP-5877-A NP-5878-A NP-5878-A NP-5879-A NP-5991-A NP-6482-A
266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284	L&T L&T L&T L&T L&T L&T L&T L&T	EP-41 DV-62 EG-66 JS-02 EG-89 EG-90 EM-47 EM-48 EM-47 EM-48 EM-41 EM-43 EM-42 EM-43 EM-42 EM-45 EM-46 EM-44 ER-28 WB-12 WB-13	PATNA(PG) PURULIA (DVC) PUSAULI(PG) RAMCHANDRAPUR(JUVNL) RANCHI NEW(PG) RANCHI NEW(PG) RANCHI(PG	400 KV BARH(NTPC)-4 132KV PURULIA (WBSETCL) 415 V SIDE OF PUSAULI 11/0.415 ST LIGHT TF-1 220KV JAMSHEDPUR(PG)-2 765 KV SIDE OF 765/400 KV ICT-1 400 KV SIDE OF 765/400 KV ICT-1 400 KV SIDE OF 765/400 KV ICT-1 400 KV SIPAT(WR)-1 400KV SIPAT(WR)-2 220KV SIDE OF RANCHI ICT-1 400KV SIDE OF RANCHI ICT-1 400KV SIDE ICT-2 400KV SIDE ICT-2 220KV CHANDIL (JUVNL)-1 400KV SIDE OF RANCHI ICT-1 220KV SIDE OF RANCHI ICT-1 220KV SIDE ICT-2 400KV SIDE OF RANCHI ICT-1 220KV CHANDIL (JUVNL)-1 400KV SIDE OF RANCHI ICT-1 220KV PATRATU (JUVNL) 400KV SIDE OF RANCHI ICT-1 220KV PATRATU (JUVNL) 400KV SUBARIPADA (PG)	NP-8632-A NP-8632-A NP-6560-B NP-5119-A NP-7848-A NP-5876-A NP-5870-A NP-5872-A NP-5873-A NP-5878-A NP-5879-A NP-5879-A NP-5991-A NP-6482-A NP-6483-A
266 267 268 269 270 271 272 273 274 275 276 277 278 277 278 279 280 281 282 283 284 285	L&T L&T L&T L&T L&T L&T L&T L&T	EP-41 DV-62 EG-66 JS-02 EG-89 EG-90 EM-47 EM-48 EM-41 EM-43 EM-41 EM-43 EM-42 EM-45 EM-46 EM-46 EM-46 EM-44 ER-28 WB-12 WB-13 WB-21	PATNA(PG) PURULIA (DVC) PUSAULI(PG) RAMCHANDRAPUR(JUVNL) RANCHI NEW(PG) RANCHI NEW(PG) RANCHI(PG) RANCHI(PG) RANCHI(PG) RANCHI(PG) RANCHI(PG) RANCHI(PG) RANCHI(PG) RANCHI(PG) RANCHI(PG) RANCHI(PG) RANCHI(PG) RANCHI(PG) RANCHI(PG) RANCHI(PG) SAGARDIGHI(WBSETCL) SAGARDIGHI(WBSETCL)	400 KV BARH(NTPC)-4 132KV PURULIA (WBSETCL) 415 V SIDE OF PUSAULI 11/0.415 ST LIGHT TF-1 220KV JAMSHEDPUR(PG)-2 765 KV SIDE OF 765/400 KV ICT-1 400 KV SIPAT(WR)-1 400 KV SIPAT(WR)-2 220 KV SIDE OF RANCHI ICT-1 400 KV SIDE ICT-2 400 KV SIDE ICT-2 400 KV SIDE ICT-2 400 KV SIDE OF RANCHI ICT-1 220 KV CHANDIL (JUVNL)-1 400 KV SIDE OF RANCHI ICT-1 220 KV PATRATU (JUVNL)-1 400 KV SIDE OF RANCHI ICT-1 220 KV PATRATU (JUVNL) 400 KV SUBHASGRAM(PG) 400 KV DURGAPUR(PG)-1(MAIN)	NP-8632-A NP-8632-A NP-6560-B NP-5119-A NP-7848-A NP-7848-A NP-7848-A NP-7848-A NP-7848-A NP-7848-A NP-5835-A NP-5835-A NP-5836-A NP-5870-A NP-5871-A NP-5872-A NP-5873-A NP-5873-A NP-5878-A NP-5879-A NP-5991-A NP-6482-A NP-6483-A NP-7964-A
266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286	L&T L&T L&T L&T L&T L&T L&T L&T	EP-41 DV-62 EG-66 JS-02 EG-89 EG-90 EM-47 EM-48 EM-47 EM-48 EM-41 EM-43 EM-41 EM-43 EM-42 EM-45 EM-46 EM-46 EM-46 EM-40 EM-44 ER-28 WB-12 WB-13 WB-21 WB-22	PATNA(PG) PURULIA (DVC) PUSAULI(PG) RAMCHANDRAPUR(JUVNL) RANCHI NEW(PG) RANCHI NEW(PG) RANCHI NEW(PG) RANCHI(PG) RANCHI(PG) RANCHI(PG) RANCHI(PG) RANCHI(PG) RANCHI(PG) RANCHI(PG) RANCHI(PG) RANCHI(PG) RANCHI(PG) SAGARDIGH(WBSETCL) SAGARDIGHI(WBSETCL) SAGARDIGHI(WBSETCL)	100 KV BARH(NTPC)-4 132KV PURULIA (WBSETCL) 1415 V SIDE OF PUSAULI 11/0.415 ST LIGHT TF-1 220KV JAMSHEDPUR(PG)-2 765 KV SIDE OF 765/400 KV ICT-1 400 KV SIPAT(WR)-1 400 KV SIPAT(WR)-2 220 KV SIDE OF RANCHI ICT-1 400 KV RAGHUNATHPUR(DVC)-II 220 KV SIDE ICT-2 400 KV SIDE ICT-2 400 KV SIDE OF RANCHI ICT-1 220 KV CHANDIL (JUVNL)-1 400 KV SIDE OF RANCHI ICT-1 220 KV PATRATU (JUVNL) 400 KV FARAKKA (NTPC)-1(MAIN) 400 KV SUBHASGRAM(PG) 400 KV DURGAPUR(PG)-1(MAIN) 400 KV DURGAPUR(PG)-1(CHECK)	NP-8632-A NP-8632-A NP-6560-B NP-5119-A NP-7848-A NP-7848-A NP-7848-A NP-7848-A NP-7848-A NP-7848-A NP-5835-A NP-5835-A NP-5836-A NP-5870-A NP-5870-A NP-5872-A NP-5873-A NP-5873-A NP-5877-A NP-5877-A NP-5879-A NP-5991-A NP-6482-A NP-6483-A NP-790-A
266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 283 284 285 286 287	L&T L&T L&T L&T L&T L&T L&T L&T	EP-41 DV-62 EG-66 JS-02 EG-89 EG-90 EM-47 EM-48 EM-41 EM-43 EM-41 EM-43 EM-42 EM-45 EM-46 EM-46 EM-46 EM-46 EM-44 ER-28 WB-12 WB-13 WB-21 WB-22 ST-12	PATNA(PG) PURULIA (DVC) PUSAULI(PG) RAMCHANDRAPUR(JUVNL) RANCHI NEW(PG) RANCHI NEW(PG) RANCHI NEW(PG) RANCHI(PG) RANCHI(PG) RANCHI(PG) RANCHI(PG) RANCHI(PG) RANCHI(PG) RANCHI(PG) RANCHI(PG) RANCHI(PG) RANCHI(PG) SAGARDIGHI(WBSETCL) SAGARDIGHI(WBSETCL) SAGARDIGHI(WBSETCL) SAGARDIGHI(WBSETCL) SAGARDIGHI(WBSETCL) SAGARDIGHI(WBSETCL) SAGARDIGHI(WBSETCL)	100 KV BARH(NTPC)-4 400 KV BARH(NTPC)-4 132KV PURULIA (WBSETCL) 415 V SIDE OF PUSAULI 11/0.415 ST LIGHT TF-1 220KV JAMSHEDPUR(PG)-2 765 KV SIDE OF 765/400 KV ICT-1 400 KV SIPAT(WR)-1 400 KV SIPAT(WR)-2 220 KV SIDE OF RANCHI ICT-1 400 KV SIDE ICT-2 400 KV SIDE ICT-2 400 KV SIDE OF RANCHI ICT-1 400 KV SIDE OF RANCHI ICT-1 220 KV CHANDIL (JUVNL)-1 400 KV SIDE OF RANCHI ICT-1 220 KV CHANDIL (JUVNL) 400 KV SIDE OF RANCHI ICT-1 220 KV PATRATU (JUVNL) 400 KV SUBHASGRAM(PG) 400 KV SUBHASGRAM(PG) 400 KV DURGAPUR(PG)-1(MAIN) 400 KV DURGAPUR(PG)-1(CHECK) 400 KV SUNDERGARH (CHECK)-1	NP-8632-A NP-8632-A NP-6560-B NP-5119-A NP-7848-A NP-7848-A NP-78756-A NP-5835-A NP-5836-A NP-5870-A NP-5871-A NP-5873-A NP-5873-A NP-5873-A NP-5878-A NP-5878-A NP-5879-A NP-5991-A NP-6482-A NP-6483-A NP-790-A NP-790-A NP-790-A
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305	L&T	TL-28	TALCHER(NTPC)	400KV ANGUL (PG) (CHECK)	NP-5104-A
306	L&T	TL-02	TALCHER(NTPC)	TALCHER GT-2	NP-5105-A
307	L&T	TL-08	TALCHER(NTPC)	400KV RENGALI (PG) -2	NP-5106-A
308	L&T	TL-01	TALCHER(NTPC)	TALCHER GT-1	NP-5107-A
309	L&T	TL-03	TALCHER(NTPC)	400/220KV ATR-1	NP-5108-A
310	L&T	TL-04	TALCHER(NTPC)	400/220KV ATR-2	NP-5109-A
311	L&T	TL-23	TALCHER(NTPC)	400KV RENGALI (PG) -1	NP-5110-A
312	L&T	TL-11	TALCHER(NTPC)	220KV M'MUNDALI (GRIDCO) -1	NP-5112-A
313	L&T	TL-26	TALCHER(NTPC)	400/220KV ATR-2	NP-5113-A
314	L&T	TL-22	TALCHER(NTPC)	400KV ROURKELA (PG) -2	NP-5115-A

Precautions to be taken during accuracy check of Special Energy meters **Precautions applicable to all sub stations**

- Take One meter at a time for accuracy check for inservice meters 1
- Take 220 kV of ICT SEMS one after one on first day (All meter on 220 kv can be taken for calibration in one 2 day one after one)

Take 400 side of ICT SEMs one after one on Second day (All 400 kV side meters can be taken up for calibration in One day one after one)

- 3
- (One day gap should be allowed between 220 kV side and 400 kV side of ICT) While taking out 400 kV feeder SEM, ensure standby meter(Other meter) is in service. 4
- After Shorting CT circuits, and removing PT supply to SEM, Meter can be given for accuracy check. SEM meter need not be removed from the location Accuracy check of SEMs at SEB location is also to be carried out. Genus SEM meters need not be calibrated as they are new
- 56789

- Calibration of Main/Check meters and standby meter of same feeder should be avoided. Calibration plan may be shared with ERLDC.
- 10

PSS Tuning Status in Eastern Region

Power System Stabilizer (PSS) tuning is an ongoing exercise in Eastern regional grid after observation of various low frequency oscillation from time to time in the grid. In line with this, OCC has decided that all generating plants in eastern region will submit their PSS tuning plan to ERLDC/ERPC and the test reports for validation. During last 3 years, 36 Units PSS have been tuned whose details are given below in table 1. While the units where PSS have not been tuned in last three are given in table 2. It has been observed that utility such as OPGC, OHPC, WBSEDCL, NTPC, GMR and few others have yet not submitted their plan for PSS tuning to ERLDC/ERPC.

In view of the above, all generating utilities who have not yet submitted their PSS tuning plan are advised to submit the same to ERLDC/ERPC in compliance to CERC and CEA regulation on Power System stabilizer and associated tuning for reliability and security of the Grid.

Power Plant	Unit No	PSS tuned (Yes/No)	PSS in Service (Yes/No)	Last PSS Tuning Date
Kolaghat-WBPDCL	4-5	Yes	Yes	2019
Sagardighi-WBPDCL	3-4	Yes	Yes	2019
Santhaldih-WBPDCL	5-6	Yes	Yes	2019
Bandel-WBPDCL	5	Yes	Yes	2019
Bakreshwar-WBPDCL	1-5	Yes	Yes	2019
Budge Budge-CESC	3	Yes	Yes	2019
Durgapur-DVC	1-2	Yes	Yes	2019
Koderma-DVC	2	Yes	Yes	2019
Kahalgaon NTPC	1	Yes	Yes	2017
Kahalgaon NTPC	2-3	Yes	Yes	2016
BRBCL	2	Yes	Yes	2019
Teesta-III	1-6	Yes	Yes	2019
Tashiding	1-2	Yes	Yes	2017
Dikchu	1-2	yes	yes	2017
Maithon Power Limited	1	Yes	Yes	2019
Maithon Power Limited	2	Yes	Yes	2017
JITPL	1-2	Yes	Yes	2016
Tenughat	1-2	Yes	Yes	2017
Adhunik	2	Attempted	Yes	2019

Table 1: Unit Where PSS tuning Completed during last Three years (2016-2019)

(*Total 36 units PSS has been tuned, among these few Units may require re-tuning due to network changes and has been intimated)

Table 2 : Units Where PSS tuning is carried out prior to 2016 or No Information on
Tuning has been shared.

Power Plant	Unit No	Utility	Remarks from Utility on Tuning
DPL	7-8	WBPDCL (After takeover)	No Details
PPSP	1-4	WBSEDCL	No Details

TLDP III	1-4	WBSEDCL	No Details
TLDP IV	1-4	WBSEDCL	No Details
Budge Budge	1-2	CESC	No Details
Kahalgaon	4-7	NTPC	No Details
Farakka	1-6	NTPC	No Details
Talcher Stage 1	1-2	NTPC	No Details
Talcher Stage 2	3-6	NTPC	No Details
NPGC	1-1	NTPC	No Details
BRBCL	1-3	NTPC	No Details
KBUNL	1-4	NTPC	No Details
Rangit	1-3	NHPC	No Details
GMR	1-3	GMR	No Details
IB TPS	1-4	OPGC	No Details
Upper Indravati	1-4	OHPC	No Details
Balimela	1-8	OHPC	No Details
Upper Kolab	1-4	OHPC	No Details
Rengali	1-5	OHPC	No Details
Sterlite	1-4	Sterlite	No Details
Subarnrekha	1-2	JUUNL	No Details
Tala, Chukha	All Unite	RPC	No Dotails
Mangdechu	All Units	BFC	No Details
Chujachen	1-2	IPP	Planned In Feb 2020
Teesta 5	1-3	NHPC	Planned In March 2020
Waria	4-1	DVC	Planned in April 2020
Mejia	4-8	DVC	Planned in December 2019
Chandrapura B	1-2	DVC	Planned in December 2019
Raghunathpur	1-2	DVC	Planned in Feb 2021 for Unit 1 and June
			2021 for Unit 2
Jorethang	1-2	IPP	Planned In Jan 2020
Bokaro	A1,B	DVC	Planned in Jun 2020
Koderma	1-1	DVC	Planned in May 2020
Barh	4-5	NTPC	Planned in Nov 2019
Sagardighi	1-2	WBPDCL	PSS tuning Order Placed for one Unit
Kolaghat	1-3	WBPDCL	PSS tuning planned with DAVR Upgrade (Order placed)
Adhunik	1-2	APNRL	Unit 1 in Next AOH , Unit 2 in Dec 2019

(*Units need to submit their PSS tuning plan in line with IEGC and CEA standard Regulations to ERLDC/ERPC)
Report on "Dikchu HEP - PSS Performance Testing"

Background:

Sikkim Hydro complex (constituting Teesta-V, Teesta-III, Jorethang, Tashiding, Chuzachen and Dikchu) have been augmented with new circuits which are 400 kV Teesta III-Kishanganj and 400 kV Rangpo-Kishanganj Quad Moose circuit, moreover oscillations were observed during 16th April' 19 Rangpo-Kishanganj tripping incident. Hence it was directed by ERLDC for re-tuning of PSS of the generators in the complex.

This requirement has been communicated to Dikchu along with other generators in Sikkim by ED, ERLDC on 01.May.2019. (Letter attached as Annexure-1) and in 157th OCC (May 2019), Dikchu HEP agreed to do the PSS performance testing in lean season

Accordingly PSS performance testing was carried out on 22nd November, 2019 on both units of Dikchu HEP. Preliminary data recorded has already been sent. Detailed report of the same is placed below.

Preparatory works:

- 1. Planning & process to be followed for PSS performance testing was communicated to ERLDC by mail on 5th Nov' 19.
- Dikchu HEP has put up the matter of PSS performance testing in 163rd OCC held on 15th November' 2019 and it was approved in the OCC.
- Consent for intermittent switching of line was requested to ERLDC Outage team through mail on 20th Nov' 19 & the approval for the same was received on the same day.
- 4. Voltage step response testing was done on 21st Nov, 2019.

Testing activity on 22nd Nov, 2019 –

- 1. Checked step response in Unit-1 at various gain values KS1-8, 10, 12, 15 and 20.
- 2. Step response found better at gain value 20, so continued PSS performance testing at gain value 20.
- 3. Dikchu Teesta-III line breaker Opened/Closed at Dikchu end (Power flow was towards Teesta-III prior to breaker opening) for testing. (All the line breaker operations & the power flow in the respective line is tabulated)
- 4. PSS Performance test carried on both units separately when unit is running at 48 MW & response recorded with PSS ON & OFF condition by opening & closing of Dikchu Teesta-III line breaker.
- 5. PSS Performance test carried out while plant running at 96 MW (Unit-1: 48 MW & Unit-2: 48 MW), response recorded on Unit-2.

Note: All the values are recorded in percentage, where 100 % corresponds to the rated excitation parameters as shown below.

Generator Voltage	: 11 kV
Power	: 56.47 MVA
Field Voltage	: 115 V
Field Current	: 1177.5 A

All graphs of PSS performance test of both the units are as given below.

Unit-1 running at 48MW

Voltage Step response (5%), PSS OFF











Unit-2 running at 48MW

Voltage Step response (5%), PSS OFF









Voltage Step response (5%), PSS ON_KS1 – 20s



-MW_PSS_ON_CB_CL_KS1-20

PSS_OFF_ON Response during Line Breaker closing time (Gain KS1:20)



Unit-2 at Plant load 96MW



	P	ower Flow observation	s during line breaker operation fo	r PSS testing.										
<u>Unit #1</u>	Unit #1 running on 48 MW PSS Time													
PSS Status	Time (Hrs)	Work Description	Power Flow before operation	Power Flow after operation										
	13:12	403-52 Teesta Line breaker opened												
PSS OFF	13:15:05	402-52 Tie breaker opened	Power flow through Dikchu- Teesta line: 103.89 MW Power flow through Dikchu- Rangpo line: -55.89 MW	Power flow through Dikchu- Teesta line: 0 MW Power flow through Dikchu- Rangpo line: 48 MW										
PSS OFF	SS OFF 13:18:34 403-52 Teesta Line breaker closed		Power flow through Dikchu- Teesta line: 0 MW Power flow through Dikchu- Rangpo line: 48 MW	Power flow through Dikchu- Teesta line: 103.90 MW Power flow through Dikchu- Rangpo line: -55.90 MW										
PSS ON	13:22:23	403-52 Teesta Line breaker opened	Power flow through Dikchu- Teesta line: 103.90 MW Power flow through Dikchu- Rangpo line: -55.90 MW	Power flow through Dikchu- Teesta line: 0 MW Power flow through Dikchu- Rangpo line: 48 MW										
PSS ON	13:27:50	403-52 Teesta Line breaker closed	Power flow through Dikchu- Teesta line: 0 MW Power flow through Dikchu- Rangpo line: 48 MW	Power flow through Dikchu- Teesta line: 102.59 MW Power flow through Dikchu- Rangpo line: -54.59 MW										
<u>Unit #2</u>	running	on 48 MW												
PSS OFF	14:12:27	403-52 Teesta Line breaker opened	Power flow through Dikchu- Teesta line: 112.51 MW Power flow through Dikchu- Rangpo line: -64.51 MW	Power flow through Dikchu- Teesta line: MW Power flow through Dikchu- Rangpo line: 48 MW										
PSS OFF	14:15:04	403-52 Teesta Line breaker closed	Power flow through Dikchu- Teesta line: MW Power flow through Dikchu- Rangpo line: 48 MW	Power flow through Dikchu- Teesta line: 112.37 MW Power flow through Dikchu- Rangpo line: -64.37 MW										
PSS ON	14:17:11	403-52 Teesta Line breaker opened	Power flow through Dikchu- Teesta line: 112.37 MW Power flow through Dikchu- Rangpo line: -64.37 MW	Power flow through Dikchu- Teesta line: 0 MW Power flow through Dikchu- Rangpo line: 48 MW										
PSS ON	14:19:13	403-52 Teesta Line breaker closed	Power flow through Dikchu- Teesta line: 0 MW Power flow through Dikchu- Rangpo line: 48 MW	Power flow through Dikchu- Teesta line: 112.54 MW Power flow through Dikchu- Rangpo line: -64.54 MW										
<u>Unit # 1</u>	&2 runn	ing on 48 MW each,	Total Plant Load 96MW											
PSS graph	observed i	n Unit#2	1	1										
PSS ON	14:28:53	403-52 Teesta Line breaker opened	Power flow through Dikchu- Teesta line: 87.39 MWPower flow through Dikchu- Rangpo line: 8.61 MW	Power flow through Dikchu- Teesta line: 0 MWPower flow through Dikchu- Rangpo line: 96 MW										
PSS ON	14:31:13	403-52 Teesta Line breaker closed	Power flow through Dikchu- Teesta line: 0 MW Power flow through Dikchu- Rangpo line: 96 MW	Power flow through Dikchu- Teesta line: 87.68 MW Power flow through Dikchu- Rangpo line: 8.32 MW										

PSS OFF	14:35:56	403-52 Teesta Line breaker opened	Power flow through Dikchu- Teesta line: 87.68 MW Power flow through Dikchu- Rangpo line: 8.32 MW	Power flow through Dikchu- Teesta line: 0 MW Power flow through Dikchu- Rangpo line: 96 MW
PSS OFF	14:38:39	403-52 Teesta Line breaker closed	Power flow through Dikchu- Teesta line: 0 MW Power flow through Dikchu- Rangpo line: 96 MW	Power flow through Dikchu- Teesta line: 43.26 MW Power flow through Dikchu- Rangpo line: 52.74 MW
			Rangpo line: 96 MW	Rangpo line: 52.74 MW

PSS Tuning Experience for Hydro Power Plants

Date: 21-10-19 and 22-10-19

Generating Plant: Teesta 3

PSS Test Carried Out:

- 1. PSS Out/In at Various Voltage step (3-5 %)
- 2. PSS Out/In at Various PSS gain
- 3. PSS Out/In at with Line Trip/close at Various Gain

Step Response Test: For each unit, step response test with 5 % step to excitation voltage was given to check PSS response on active power variation. It was observed that PSS was acting satisfactorily for all the units.

Step Response Test with High Gain: It was found that higher gain of PSS has provided better damping during the testing.

Line Disturbance Test: With PSS tuning of generating unit, the damping has improved as observed from the test. It was further, observed that at higher generation PSS provided good damping however, at lower generation it is not that effective in damping of the oscillation.

During this PSS tuning procedure, following are the major factors have been found to be influencing the successful tuning and testing:

- 1. Impact of Number of Units In service during PSS tuning: Most effective way to test the PSS response for any power plant is by keeping only one unit in service and checking the response of that unit by step test or line outage test. In such condition, impact of PSS for that unit can be completely observed being a lone variable in the system. The reason behind this is explained in below points:
 - In case of Single unit, being in service at the plant, then it should be kept at around 80-100 % of its MW capacity for any testing. In addition, it is suitable to keep unit under VAR absorption mode, as this will provide unit response during any fault kind of scenario that can be simulated by means of step response.

- In case multiple units are in service with their PSS on/Off, then accessing of PSS response for individual units is difficult as other unit and depending on their PSS On/Off, status might affect the overall response.
- Step Test results in one Unit will be slightly affected (small contribution) by other units at the plants if they are in service. The response in Active power damping for the Unit on which step test is being performed can be easily observed and effectiveness of the PSS to damp local mode of the unit can be analyzed. This is due to the fact that the voltage step is provided to only one-unit excitation system which changes the terminal voltage of that unit itself and not other units of the plant.
- In case of Disturbance test (Unit trip, Line trip/close), Its always the complete plant
 performance rather than one-unit performance. The disturbance impacts the voltage of
 the entire bus thus rather than local it is global at Plant level thus impacting all the units.
 Based on the individual PSS tuning of Units and their status, the overall plant response
 will be observed rather than single unit during the test. Therefore, this test needs to be
 performed only after competition of satisfactory step response test of all units.
- 2. Impact of Lower Generation in Unit: PSS Control in Excitation controller of the Generating Unit are automatically switched ON/OFF depending on the minimum value of generation in the unit. In case of hydro unit, it can be set at 30-50 % of the Maximum generation capacity of the unit when the PSS comes into service. This issue can affect the PSS tuning process in case multiple units are in service at the plant with varying generation. Its impact can be majorly observed during the Line open/close test as if any one of the units PSS is OFF due to low generation, then it will oscillate quite more with low damping compared to units where PSS is tuned and in service. Thus over all response will be less damped compared to situation when PSS is ON for all units.
 - Observation in Teesta 3: In Teesta 3 Hydro plant, minimum generation at which PSS control is ON/OFF was kept at 50 % generation value of each unit. Therefore, when generation of 200 MW unit reduces below 100 MW, its PSS will not be in service and will not act. During Line opening and closing test at Teesta 3, one unit was generating 170 MW (PSS ON) while other two were generating 30 MW each (PSS OFF), it was found that even with PSS ON/OFF for 170 MW, damping was same and low as 30 MW unit responded more to the disturbances.

- 3. PSS tuning when multiple units are running simultaneously: The number of units, their respective generation and associated PSS status directly affects the PSS tuning. The Step response test of an individual unit is not directly impacted and can be accessed
- 4. Impact of Free governor/restricted Governor Mode of operation: The PSS tuning test like Step test, line open/close test has to be done keeping the generation at same level i.e. creating near to ideal condition. This helps in comparing the response of the system However, the governor is kept under free governor mode or restricted mode will respond as per the frequency influence, which will result in change in generation of individual units and thus will change the testing set points. Thus, to avoid this, frequency influence of Governor has to be kept out to keep the generation same.
 - Observation in Teesta 3: While testing the line switch off/on condition with PSS On/OFF condition, it was observed that due to frequency influence the generation ha varied a lot and thus whole purpose of that testing got failed and results were not comparable. After, this to create ideal condition, RGMO/FGMO for governor was kept off to continue with the test procedure.
- 5. Criteria for checking overall response of the PSS in power Plant: This is one of the major tests that need to be performed with all units (Maximum units possible) in service and each unit running at 80-100 % of their rated capacity. Under such condition, RGMO/FGMO of all units should be disabled so that generation is not affected by frequency. With this criteria. first all unit's PSS should be made OFF and selected line should be switched OFF (More effective) OR any bus reactor available at plant should be made OFF (will only provide the voltage step to all units and applicable only if reactor switching changes) to check the overall response of plant. This is followed by switching on the element. Thereafter at same condition, all PSSs are made active and line/reactor is made OFF to see the overall plant performance. These two are compared to check the PSS response on overall plant performance.
- 6. PSS Gain: PSS Gain plays an important role in damping of oscillation. In general vendor apprehend in increasing the PSS gain to improve PSS response during transient as with higher gain PSS respond for very small changes in voltage fluctuation also. However, it is always desired to have higher PSS gain for better response. It is observed that sometime due to lower gain, the step response test do not show appreciable variation and under such condition, the increase in PSS gain provide better response.

- **Observation at Teesta 3:** It was observed that vendor has kept PSS gain at 0.25 where damping observed was not adequate. Thereafter, PSs gain was first increased to 0.3 then to 0.4 where further improvement in damping from PSS was observed in active power.
- 7. PSS Effectiveness at Low generation: PSS is effective when the unit are generating on higher side compared to its rated capacity. It provides good damping to the system and unit. However, when the generation is lower i.e. (< 50%) then PSS may not be that effective in damping of the oscillation. So, it is desired to perform PSS tuning test at higher generation. In addition, PSS may not be required at lower generation level.</p>
 - **Observation at Teesta 3:** It was observed during line trip test that at lower generation (40-50 %), PSS performance was not having any impact on the damping of the oscillation.

Annexure:

A. Step response with increased PSS gain





B. PSS response with High Generation of the unit:



C. PSS Response with Low Generation of the unit:





D. PSS testing issues during generation fluctuation due to RGMO/FGMO

Simulation by ERLDC:

SMIB model for individual machine of Teesta III built based on manufacturer's data. For Teesta III following model is used:

Generator: GENSAL

Exciter: ST8C

PSS: PSS 2A



Figure 1: Comparison of Power output for 5 % step test with and without PSS (normal gain)



Figure 2 Comparison of Power output for 5 % step test with PSS gain 2 and with PSS gain 0.25

From the simulation it is seen that there is scope of increasing gain as PSS gain shall be set to between 1/3 and 1/2 of maximum practical gain.

NB:

1. From Plot of Terminal voltage and field voltage it is seen that there is slight mismatch between actual and simulation results:



There is slight oscillation in the terminal voltage for step test without PSS in simulation. This shows exciter model needs slight tuning.

2. Also both open loop and close loop frequency response of PSS loop needs to be submitted by OEM for verification of following condition:

"PSS shall be set to provide the measured, simulated, or calculated compensated Vt/Vref frequency response of the excitation system and synchronous machine such that the phase angle will not exceed ± 30 degrees through the frequency range from 0.1 Hertz to the lesser of 1.0 Hertz or the highest frequency at which the phase of the Vt/Vref frequency response does not exceed 90 degrees."

Bypassing arrangements of 400kV LILO Lines at Angul Substation, POWERGRID (Bolangir- Meramundali- 1 and Meramubdali -2 & Talcher Lines) Back ground:

LILO of Meramundali – Bolangir/Jeypore 400kV S/c line at Angul pooling station and LILO of one circuit of Talcher - Meramundali 400 kV D/c line at Angul pooling station has been implemented along with Orissa Phase-I transmission system. While agreeing with these LILOs, it was decided that the LILOs would be disconnected after commissioning of 765/400kV Angul pooling station. Now, 765/400kV Angul S/s and Angul-Jharsuguda 765kV 2xS/c lines have been commissioned.

The above mentioned 400kV LILO lines are feeding the load centers of Orissa at Meramundali and Mendhasal. Accordingly, it was decided that the above LILOs at Angul pooling station may not be disconnected, instead switching arrangements are to be made at Angul substation such that above 400kV LILOs may be operated either by-passing Angul substation and/or terminating at Angul sub-station as and when required, depending upon the power flow condition.

As per 18th SCM, it has been approved for Bypass arrangement of LILO of Meramundali – Bolangir/Jeypore 400kV S/c line and LILO of one circuit of Talcher – Meramundali 400 kV D/c line at 765/400KV Angul substation.

It was approved to establish a bypassing arrangement at Angul substation such that, the above 400kV LILOs may be operated either by-passing Angul substation or terminating at Angul sub-station as and when required depending upon the power flow condition.

Rereferral enclosures:

1. The above scheme has been agreed on 17th Standing committee meeting on Power system planning of Eastern Region held at NRPC, New Delhi on 25/5/2014 and 30th ERPC/TCC of 20-07-2015 and 34th ERPC/TCC of 18/19-11-2016.

2.Prior approval of Govt of India obtained vide 68(I)of Indian electricity act2003 for ERSS-XVII, vide no-1506 Dt07-07-2015 & 264Dt:16-10-2015.

3. The above scheme has been approved in 18th standing committee meeting(SCPSPER) on 13-06-2017

4. The 17th SCPSPER is already uploaded in CEA website on 01-01-2016.

5. Investment approval made by Board of Directors of POWERGRID in 337th meeting held on 09-02-2017 for implementing approved scheme under ERSS-XVII(Part-B) as per 17th & 18th SCM and 30th ERPC/TCC meeting of 20-07-2015.

Encl: as above sl.no 1 to 5

Bypass scheme.



Typical by-pass arrangement Scheme adopted at Angul SS

As part of above scheme, 400KV Talcher & Meramundali-2 lines will be bypassed through a by-pass Isolator at angul station without connecting to Angul Bus.

Similar arrangement has also been provided for by-pass of 400KV Bolnagir & Meramundali-1 lines.

Mode of Operations: The mode of operations shall be;

LILO bypass modeLILO mode

Upon successful commissioning of above envisaged LILO bypass arrangements of LILO Lines, the normal operations of the said transmission lines shall be generally in bypass mode only having NO connectivity with Angul 400KV Bus with the lines re-named as follows:

- > 400kV Meramundali Bolangir S/C Line (Line length 221 KM)
- > 400kV Meramundali Talcher Line (Ckt-1) (Line length 86 KM)

However, to meet the system requirements as & when basis as per the direction of the Grid Operator including system contingencies, if any, one (or) both lines can be switched back to their previous LILO mode, thereby re-establishing connectivity with 400kV Bus to facilitate power evacuation/ injection from/to Angul Bus.

It is pertinent to mention here that the process of switching back to LILO operation shall be adopted only after approval of Grid Operator and shall be executed in close coordination with respective substations (i.e. Meramunduli and Bolangir (or) talcher (or) both depending upon the LILO Line(s) to be restored).

The OPEN/ CLOSE operation of Isolators at Angul SS shall be done strictly adhering to all laid down Safety Norms only after getting confirmation regarding OPEN/TRIP of Breakers from respective Substations through Permit To Works (PTW) & other standard communication practices such as codes/messages/mails, etc. in vogue.

Depending upon the mode of operations (i.e. either LILO by-pass (or) LILO mode) of the transmission lines, the corresponding Line Protection settings (Group-1 (or) Group-2) shall be adopted/activated to ensure proper operations of all desired protections including transmission of PLCC Codes.

The philosophy of protections is summarized here-under;

Line Protection:

Following protection settings are to be implemented at Bolangir, Talcher & Meramundali Sub-stations.

- 1. Group -1 settings:- Operation in LILO Mode (i.e. Connectivity with Angul Bus)
- 2. Group -2 settings:- Operation in LILO bypass Mode (i.e. NO Connectivity with Angul Bus)

Present adopted Relay Settings at all 4 (four) Substations i.e. at Angul, Talcher, Bolangir & Meramundali shall be kept as Group-1 settings for operation of Lines in LILO Mode. For operation of Lines in LILO by-pass Mode, the Relay Settings configured as Group-2 settings considering following Line Lengths shall be activated/adopted at all 3 (three) connected substations namely Bolangir, Talcher and Meramundali^{**};

- 1. 400KV Bolangir Meramundali line with line length of 221KM i.e. 196KM (Bolangir-Angul) +25km(Angul-Meramundali-1).
- 2. 400KV Talcher Meramundali line with line length of 86KM i.e. 68KM (Bolangir-Angul) +18km(Angul-Meramundali-2).

** separate set of settings to be adopted at Meramundali SS for two different lines i.e. 400kV Bolangir-Meramundali Line and 400kV Talcher-meramundali line

Typical Scheme for PLCC Switching for transfer of PLCC Codes adopted at Angul:

 Permissive
 Permissive
 Meramundali

 Talcher
 Direct
 i
 Direct
 Meramundali

 Switching through auxiliary relays based on bypass isolator condition
 ------ During Bypass

adopted for both LILO bypass arrangement schemes

Annexure-D.1

Anticipated Power Supply Position for the month of Jan-20

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S. Construction Construction Construction 5. WEST BENGAL WEST BENGAL WEST BENGAL (NO KET ADVERAVIALABILITY - Own Source - Central Sector - Central Sect		iii)	SURPLUS(+)/DEFICIT(-)	250	-417		
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- Import from DPL - Central Sector 210 0 - Central Sector 2294 1176 SUPPLUS(-)/DEFIGIT(-) 1362 35 - W SURPLUS(-)/DEFIGIT(-) 1362 35 - NET MAX DEMAND 0 195 114 - III NET MAX DEMAND 0 195 - III NET MAX DEMAND 0 114 - IIII SURPLUS(-)/DEFICIT(-) 210 -81 - Cesc - - - - - III NET MAX DEMAND 1450 703 - - III NET MAX DEMAND 1450 703 - - IIII OTAL AVAILABILITY - OWN SOURCE 268 155 - - IIIIII SURPLUS(-)/DEFICIT(-) 0 0 0 - - IIIIIIIIII SURPLUS(-)/DEFICIT(-) 0		iv)	NET POWER AVAILABILITY- Own Source	4768	1858		
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		(iii)	PEAK SURPLUS(+)/DEFICIT(-) OF FR	2185	-1188		
		,	(ii)-(i)	2105	- 1100		

Annexure-D2

	ERLDC, KOLKATA													
		TRAN	ISMISSION	ELEMENTS OUT	AGE APPR	OVED IN 164th OCC	MEETING OF ERPC	1						
<u> </u>		FROM		то										
sı	NAME OF THE ELEMENTS	DATE	TIME	DATE	TIME	REMARKS	S.D availed BY	Reason	SUBJECT TO CONSENT FROM AGENCY					
1	132 kv Ramnagar -Valmikimnagar	25-12-2019	09:00	31-12-2019	16:00	ODB	BSPTCL	Maintenance work	 Power Supply to Surajpura (Nepal) will be completely off during the Shutdown period. so concent from NEA is required. arrangement of approx 05 MW power will be required to Valmikimnagar Hydal from Nepal side for Valmikimnagar PSS (Local Supply) and synchronisation of EGCHEP Valmikimnagar. 					
2	220 KV Madhepura -Purnea(PG) D/C T/L	25-12-2019	09:00	31-12-2019	17:00	ODB	BSPTCL	For maintenance	No Load Restriction					
3	No 2 Main Bus Shutdown	25-12-2019	08:00	27-12-2019	17:00	ОСВ	MBPCL	For Connecting of New Bus 2 to Main bus 2 of existing PGCIL bay						
4	400KV Maithon-Right Bank #II	25-12-2019	08:00	08-01-2020	18:00	OCB	POWERGRID, ER-II	Re conductoring work						
5	Non Autoreclose mode 400KV Maithon-Right Bank #I	25-12-2019	08:00	08-01-2020	18:00	ODB	POWERGRID, ER-II	MTN RB Ckt-I will be kept in NON-Auto during Re conductoring in MTN RB Ckt-II for safety measure.						
6	Main bay of 400kv Maithon-MPL Ckt#2,(Bay no 406)	25-12-2019	08:00	08-01-2020	18:00	OCB	POWERGRID, ER-II	Upgradation of Bay equipmenets under ERSS-XVII Project work. Shut down of Bays proposed in respect of line shut down for reconductoring work.						
7	220KV Meramundali -Kaniha Circuit - I	26-12-2019	08:00	10-01-2019	16:00	ОСВ	GRIDCO	For erection of 3 nos. of on line towers and stringing work between loc no 20 to 28 of MRDL-Kaniha line for the ongoing Angul-Sukinda railway work. The above line S/D required on urgent basis for the completion of the diversion work of railway project.						
8	765kv GAYA-BALIA-S/C	26-12-2019	09:30	29-12-2019	18:30	OCB	POWERGRID NR-III	For Diversion Work due to construction of purvanchal Expreway by UPEIDA	NLDC					
9	220KV Meramundali -Kaniha Circuit - II	28-12-2019	08:00	10-01-2019	16:00	ОСВ	GRIDCO	For erection of 3 nos. of on line towers and stringing work between loc no 20 to 28 of MRDL-Kaniha line for the ongoing Angul-Sukinda railway work. The above line S/D required on urgent basis for the completion of the diversion work of railway project.						
10	400 KV Rengali - Talcher # 1 Line (Non-Auto)	01-01-2020	08:00	10-01-2020	17:00	ODB	ER-II/Odisha/Rengali	For PID Measurement						
<u> 11</u>	400KV Main Bus-II	01-01-2020	09:00	01-01-2020	17:30	ODB	ER-II/Odisha/BARIPADA S/S	GIS Bus Duct and Bus isolator/earthswitch AMP works						
12	400KV Baripada-Kharagpur line	01-01-2020	09:00	01-01-2020	17:30	ODB	ER-II/Odisha/BARIPADA S/S	Online PID scanning work of porcelain insulator of concerned line	WB					
13	400KV Baripada-Keonjhar line	01-01-2020	09:00	01-01-2020	17:30	ODB	ER-II/Odisha/BARIPADA S/S	Line Auto-reclose switch is to be kept in Non-auto mode for Online PID scanning work of porcelain insulator of concerned line						
14	400 KV Rourkela-SUNDARGARH#1 LINE	01-01-2020	09:30	01-01-2020	10:30	ODB	ER-II/ODISHA/ROURKELA	LINE AMP WORKS/ FOR TAKING THE LINE REACTOR OUT OF SERVICE FOR GASKET REPLACEMENT & OVERHAULING WORKS TO ARREST OIL LEACKAGES						
15	A/R of 400 kV Baripada-Duburi Line	01-01-2020	07:00	31-01-2020	18:00	ODB	ER-II/Odisha	Line Auto-reclose switch is to be kept in Non-auto mode For stringing of OPGW under "EASTERN REGION FIBRE OPTIC EXPANSION PROJECT (Additional Requirement)"	GRIDCO					

16	A/R of 400 kV Dubur-Pandiabili Line	01-01-2020	07:00	31-01-2020	18:00	ODB	ER-II/Odisha	Line Auto-reclose switch is to be kept in Non-auto mode For stringing of OPGW under "EASTERN REGION FIBRE OPTIC EXPANSION PROJECT (Additional Requirement)"	GRIDCO
17	A/R of 400 kV Pandiabili-Mendhasal Ckt 2	01-01-2020	07:00	31-01-2020	18:00	ODB	ER-II/Odisha	Line Auto-reclose switch is to be kept in Non-auto mode For stringing of OPGW under "EASTERN REGION FIBRE OPTIC EXPANSION PROJECT (Additional Requirement)"	GRIDCO
18	A/R of 765 kV Angul-Srikakulam Ckt 1	01-01-2020	07:00	31-01-2020	18:00	ODB	ER-II/Odisha	Line Auto-reclose switch is to be kept in Non-auto mode For stringing of OPGW under "EASTERN REGION FIBRE OPTIC EXPANSION PROJECT (Reliable Requirement)"	NLDC
19	A/R of 400 kV Angul-GMR Ckt 1	01-01-2020	07:00	31-01-2020	18:00	ODB	ER-II/Odisha	Line Auto-reclose switch is to be kept in Non-auto mode For stringing of OPGW under "EASTERN REGION FIBRE OPTIC EXPANSION PROJECT (Reliable Requirement)"	GRIDCO
20	A/R of 400 kV Angul-JITPL Ckt 1	01-01-2020	07:00	31-01-2020	18:00	ODB	ER-II/Odisha	Line Auto-reclose switch is to be kept in Non-auto mode For stringing of OPGW under "EASTERN REGION FIBRE OPTIC EXPANSION PROJECT (Reliable Requirement)"	
21	A/R of 400k kV Angul-GMR Ckt 2	01-01-2020	07:00	07-01-2020	18:00	ODB	ER-II/Odisha	Line Auto-reclose switch is to be kept in Non-auto mode For stringing of OPGW under "EASTERN REGION FIBRE OPTIC EXPANSION PROJECT (Reliable Requirement)"	GRIDCO
22	A/R of 400 kV Angul-JITPL Ckt 2	01-01-2020	07:00	07-01-2020	18:00	ODB	ER-II/Odisha	Line Auto-reclose switch is to be kept in Non-auto mode For stringing of OPGW under "EASTERN REGION FIBRE OPTIC EXPANSION PROJECT (Reliable Requirement)"	
23	400KV BINAGURI-RANGPO-1 line	01-01-2020	09:00	31-01-2020	18:00	ОСВ	POWERGRID, ER-II	Upgradation of Main & Tie bay of Rangpo Line#1 & Reconductoring under ERSS -XX	
24	400KV BINAGURI-RANGPO-2 line	01-01-2020	09:00	31-01-2020	18:00	ОСВ	POWERGRID, ER-II	Upgradation of Main & Tie bay of Rangpo Line#2 &	
25	400KV at Rangpo-BINAGURI D/C & II LINE	01-01-2020	08:00	31-01-2020	18:00	OCB	POWERGRID. ER-II	For Reconductring work	
26	400KV Maithon-Kahalgaon I&II	01-01-2020	08:00	02-01-2020	18:.00	OCB	POWERGRID, ER-II	I. PL Crossing during Re-conductoring work of Maithon - Right Bank # II Line. 2. AMP work of line and LR. 3. Replacement of WSI CT in Line Bay	
27	400/132KV 200 MVA ICT -I AT LAKHISARAI	01-01-2020	09:30	15-01-2020	17:30	ODB	POWERGRID ER-I	Firewall construction	BSEB
28	A/R OF 400 KV BIHARSHARIF-BANKA-II	01-01-2020	07:00	31-01-2020	18:00	ODB	POWERGRID ER-I	OPGW WORK	
29	A/R OF 400 KV BIHARSHARIF-KODERMA-II	01-01-2020	07:00	31-01-2020	18:00	ODB	POWERGRID ER-I	OPGW WORK	DVC
30	A/R OF 400 KV RANCHI-MAITHON(RB)-II	01-01-2020	07:00	31-01-2020	18:00	ODB	POWERGRID ER-I	OPGW WORK	
31	A/R OF 400 KV BARH-MOTIHARI-II	01-01-2020	07:00	31-01-2020	18:00	ODB	POWERGRID ER-I	OPGW WORK	
32	A/R OF 400 KV MOTIHARI-GORKAHPUR-II	01-01-2020	07:00	31-01-2020	18:00	ODB	POWERGRID ER-I	OPGW WORK	NLDC
33	A/R OF 400 KV PATNA-KISANGANJ-II	01-01-2020	07:00	31-01-2020	18:00	ODB	POWERGRID ER-I	OPGW WORK	
34	A/R in non-auto mode in 400KV TeestallI-Kishanganj-I	01-01-2020	07:00	31-01-2020	18:00	ODB	POWERGRID (ER-II)	For OPGW installation Work	
35	A/R in non-auto mode in 400KV Malda-Farakka - II	01-01-2020	07:00	31-01-2020	18:00	ODB	POWERGRID (ER-II)	For OPGW installation Work	
36	A/R in non-auto mode in 220KV Binaguri-Siliguri-I & II	01-01-2020	07:00	31-01-2020	18:00	ODB	POWERGRID (ER-II)	For OPGW installation Work	
37	400KV TIE BAY OF KAHALGAON-1 & FUTURE (411) AT LAKHISARAI	01-01-2020	09:30	31-01-2020	17:30	OCB	POWERGRID ER-I	Construction works of ICT-3 UNDER ERSS XX PACKAGE	
38	132 KV Kahalgaon(NTPC)-Kahalgaon(BSPTCL) S/C T/L	02-01-2020	09:00	10-01-2020	17:00	ОСВ	BSPTCL	Reconductoring with HTLS conductor	Kahalgaon (BSPTCL) will avail power from Goradih GIS.Consent from SLDC Ranchi will be required.
39	765kV/400kV ,1500MVA ICT-3	02-01-2020	09:00	02-01-2020	20:00	ODB	ER-II/Odisha/Sundergarh	CSD tuning works,Spare changing overworks,LA clearence works by providing stool and jumpering modification works/(Multiple closing & opening of ICT through main & Tie CB (both 765 & 400kV) will be operated)	NLDC
40	400KV Sundergarh-Raigarh Ckt #1	02-01-2020	8:00	10-01-2020	18:00	ODB	ER- II/ODISHA/SUNDERGARH	For PID Testing of Porcelain Insulator/ Only Auto reclose	NLDC

41	160MVA ICT#1	02-01-2020	09:00	02-01-2020	17:30	ODB	ER-II/Odisha/BARIPADA S/S	AMP works	GRIDCO
42	400 KV Rourkela-SUNDARGARH#3 LINE	02-01-2020	16:00	02-01-2020	17:00	ODB	ER-II/ODISHA/ROURKELA	FOR TAKING THE LINE REACTOR INTO SERVICE AFTER OVERHAULING	
43	ICT-I (3x 105 MVA) at Jeypore	02-01-2020	09:00:00	02-01-2020	18:00:00	ODB	ER-II/Odisha /Jeypore	For changing ICT-I combination form Unit-I,II, IV to Unit-I, III & IV for charging Unit-III & Retrofitting works of Overcurrent, REF, Earth Fault Relay	GRIDCO
44	400kv Jeerat-BkTPP S/C	02-01-2020	09:00	12-01-2020	16:00	ОСВ	WB	OCB for modification of terminal arrangement (Erection of busduct and SF6 bushing) at JEERAT iro 400kv GIS construction	
45	220 KV Sonenagar(New)-Gaya(PG) ckt1	02-01-2020	11:00	02-01-2020	16:00	ODB	BSPTCL	For line maintenance work	Sonenagar(New) will avail power alternate sources
46	220 KV Binaguri- Siliguri Ckt-I	02-01-2020	08:00	02-01-2020	17:00	ODB	POWERGRID, ER-II	DTPC COMMISSIONING	
47	315 MVA ICT-III at Durgapur	02-01-2020	09:00	02-01-2020	17:00	ODB	POWERGRID, ER-II	Balance commissioning works	DVC
48	220kV Bus-coupler at Rangpo	02-01-2020	09:00	02-01-2020	18:00	ODB	POWERGRID, ER-II	AMP Works	
49	220KV BUS-1 at Rangpo	02-01-2020	08:00	04-01-2020	17:00	ОСВ	POWERGRID, ER-II	For rectification of SF6 gas leakage repair work(both Shutdown needed on same dates) &liquidation of Line defeats	
50	220KV Rangpo-NEW MELLI line	02-01-2020	08:00	07-01-2020	17:00	ОСВ	POWERGRID, ER-II	For rectification of SF6 gas leakage repair work(both Shutdown needed on same dates) &liquidation of Line defeats	
51	765KV BUS-I AT NEW RANCHI	02-01-2020	09:00	04-01-2020	17:00	ODB	POWERGRID ER-1	Commissioning of Medinipur bay	NLDC
52	400 Kv Kahalgaon-Lakhisarai-I	02-01-2020	09:30	02-01-2020	17:30	ODB	POWERGRID ER-I	Retrofitting of PLCC A/R OF OTHER CKT TO BE PUT INTO NON AUTO MODE	
53	703 Main bay of 765kV/400kV,1500MVA ICT-I	02-01-2020	09:00	05-01-2020	18:00	OCB	ER-II/Odisha/Sundergarh	Siemens CB modification work center guide valave and AMP works	NLDC
54	765KV SUNDARGARH CKT 4 TIE BAY 719	02-01-2020	09:00	02-01-2020	18:00	ODB	ER-II/Odisha/Angul SS	AMP work	NLDC
55	400KV TSTPS -Meramunduli line(bay no-17 & 18)	02-01-2020	08:00	04-01-2020	18:00	ОСВ	TSTPP	Attending 1789A isolator problem,Bay PM and testing ,protection relay testing,Multifunction meter fitting, AMP jobs	
56	220KV Main Bay of 400/220 kV ICT-I at Gaya ss	02-01-2020	09:00	02-01-2020	18:00	ODB	POWERGRID, ER1	For AMP work	
57	400kV 500 MVA ICT-2 Main Bay (403-52) at New Purnea	02-01-2020	10:00	02-01-2020	17:00	ODB	POWERGRID, ER1	CT AMP work	
58	400 kv Main Bay Balia 1 at Biharshariff	02-01-2020	10:00	02-01-2020	18:00	ODB	POWERGRID, ER1	AMP WORK	
59	400KV MAIN BAY OF 400/220KV 315MVA ICT-I AT RANCHI	02-01-2020	09:30	02-01-2020	17:00	ODB	POWERGRID, ER1	АМР	
60	765kV/400kV ,1500MVA ICT-4	03-01-2020	09:00	03-01-2020	20:00	ODB	ER-II/Odisha/Sundergarh	CSD tuning works,Spare changing overworks,LA clearence works by providing stool and jumpering modification works/(Multiple closing & opening of ICT through main & Tie CB (both 765 & 400kV) will be operated)	NLDC
61	220kV BUS-I at Jeypore SS	03-01-2020	08:00:00	03-01-2020	18:00:00	ODB	ER-II/Odisha /Jeypore	AMP Works & Isolator alignment of 220kV Bus-I Side of ICT-I, Bus-Coupler,TBC Bay, Jayanagar-I & II Line	GRIDCO
62	Jeerat: 315NVA ICT#2	03-01-2020	06:00	03-01-2020	15:00	ODB	WB	Winter maintenance	
63	BkTPP: 315MVA IBT#1	03-01-2020	06:00	05-01-2020	15:00	ODB	WB	Winter maintenance	
64	220 KV BSF(PG)-BSF ICT1	03-01-2020	11:00	03-01-2020	15:00	ODB	BSPTCL	For line & bay maintenance work	BSF will avail power from alternate sources
65	220 KV Binaguri- Siliguri Ckt-I	03-01-2020	08:00	03-01-2020	17:00	ODB	POWERGRID, ER-II	DTPC COMMISSIONING	
66	400KV Maithon-Durgapur I&II	03-01-2020	08:00	04-01-2020	18:00	OCB	POWERGRID, ER-II	PL Crossing during Re-conductoring work of Maithon - Right Bank # II Line	DVC AND WB CONSENT NEEDED
67	400kV Bus-IV at Maithan	03-01-2020	10:00	03-01-2020	18:00	ODB	POWERGRID, ER-II	Dismantlinh work of Bus isolator of 400kV RB-1 under ERSS-XVII project work	DVC
68	765KV GAYA-VARANASI-I	03-01-2020	09:00	10-01-2020	18:00	ODB	POWERGRID, ER1	765 KV Tower Strengthening works	NLDC
69	220KV Bus Coupler of 220 kV at Gaya ss	03-01-2020	09:00	03-01-2020	18:00	OCB	POWERGRID, ER1	For AMP work	BSEB
70	400 kv Biharshariff- Lakhisarai 2	03-01-2020	10:00	03-01-2020	18:00	ODB	POWERGRID, ER1	Replacement of flashed insulators A/R OF OTHER CKT TO BE PUT INTO NON AUTO MODE	
71	400/220KV 500 MVA ICT-2 at Patna	03-01-2020	09:30	04-01-2020	17:30	ODB	POWERGRID ER-1	CSD comissioning	AFTER PUSAULI ICT SHUTDOWN RETURN
72	500 MVA ICT-2 at Patna	03-01-2020	09:30	03-01-2020	17:30	ODB	POWERGRID ER-1	Comissioning of Backup impedancy relay	AFTER PUSAULI ICT SHUTDOWN RETURN

73	400 kV NEW RANCHI-CHANDWA-I & II	03-01-2020	09:00	04-01-2020	17:00	ODB	POWERGRID ER-I	Overhead powerline crossing of 400 KV ESSAR-Latehar T/L and 400 KV Patratu-Latehar T/L	NLDC
74	404 Main Bay of 400KV Sundargarh-Rourkela ckt-2	03-01-2020	09:00	03-01-2020	18:00	ODB	ER-II/Odisha/Sundergarh	АМР	
75	400 KV 406 Main Bay of 315 MVA ICT-II	03-01-2020	09:00	03-01-2020	17:30	ODB	ER-II/Odisha/BARIPADA S/S	AMP works	
76	400 KV MAIN BAY OF 125 MVAR BR#2 (425)	03-01-2020	09:00	03-01-2020	18:00	ODB	ER-II/ODISHA/ROURKELA	AMP WORKS	
77	404 bay (B; Nagar-II main bay)	03-01-2020	09:30	03-01-2020	17:00	ОСВ	POWERGRID, ER-II	AMP works	
78	400kV 500 MVA ICT-1 Main Bay (406-52) at New Purnea	03-01-2020	10:00	03-01-2020	18:00	ODB	POWERGRID, ER1	CB, CT AMP work	
79	400KV MAIN BAY OF RAGHUNATHPUR- 1 AT RANCHI	03-01-2020	09:30	03-01-2020	17:00	ODB	POWERGRID, ER1	AMP	
80	400 KV Rourkela-SUNDARGARH#1 LINE	04-01-2020	09:00	04-01-2020	18:00	ODB	ER-II/ODISHA/ROURKELA	FOR DISMANTALING OF REACTOR BUSHINGS (SHUTDOWN BEING AVAILED AS CLEARANCE IS LESS)	
81	220kV BUS-II at Jeypore SS	04-01-2020	08:00:00	04-01-2020	18:00:00	ODB	ER-II/Odisha /Jeypore	AMP Works & Isolator alignment of 220kV Bus-II Side of ICT-I, Bus-Coupler,TBC Bay, Jayanagar-I & II Line	GRIDCO
82	220 KV BSF(PG)-BSF ICT2	04-01-2020	11:00	04-01-2020	15:00	ODB	BSPTCL	For line & bay maintenance work	BSF will avail power from alternate sources
83	400kV Rengali - Baripada (Loc.316 to Loc.602)	04-01-2020	08:00	07-01-2020	16:00	ODB	GRIDCO	AMP	
84	400kV Rengali - Baripada (Loc.252 to Loc.316)	04-01-2020	08:00	04-01-2020	16:00	ODB	GRIDCO	AMP	
85	132 KV Siliguri Kursong	04-01-2020	08:00	04-01-2020	17:00	ODB	POWERGRID, ER-II	Identified defect liquidation and jumper tightening	WB
86	400 kV Main Bus-2 AT LAKHISARAI	04-01-2020	09:30	04-01-2020	17:30	ODB	POWERGRID ER-I	Construction works of ICT-3 UNDER ERSS XX PACKAGE	
87	405 Tie Bay of 400kv Sundargarh-Rourkela ckt-2	04-01-2020	09:00	04-01-2020	18:00	ODB	ER-II/Odisha/Sundergarh	AMP	
88	400 kV 407 main Bay of Baripada-Duburi line	04-01-2020	09:00	05-01-2020	17:30	OCB	ER-II/Odisha/BARIPADA S/S	AMP works & Gasket replacement	
89	400 KV BUS REACTOR 1 (125MVAR) & MONNET-2TIE BAY 417	04-01-2020	09:00	04-01-2020	18:00	ODB	ER-II/Odisha/Angul SS	AMP Work	
90	220KV Main Bay of 220 kV Gaya-Bodhgaya CKT-II at Gaya ss	04-01-2020	09:00	04-01-2020	18:00	ODB	POWERGRID, ER1	For AMP work	
91	765/400 KV 3*500 MVA ICT Main Bay(709-52)	04-01-2020	09:00	04-01-2020	18:00	ODB	POWERGRID, ER1	Retrofitting work of CSD Relay & AMP work	NLDC
92	419 bay Ballia -3 Main bay at Patna	04-01-2020	10:00	04-01-2020	17:30	ODB	POWERGRID ER-1	AMP	
93	411 Tie bay of ICT 1 & 80 MVAR Bus reactor at Patna	04-01-2020	09:30	18-01-2020	17:30	ОСВ	POWERGRID ER-1	AMP & CB Overhauling & BCU updration works under SS03 package	
94	220KV MUZ-DHALKEBAR (Nepal) -1 & 2 Line	05-01-2020	09:30	08-01-2020	17:30	ОСВ	POWERGRID ER-1	DE-STRINGING & RE-STRINING OF ONE SPAN OF 400KV LINE IN NEAR BY MUZAFFARPUR SUBSTATION. PLCC & DPC ERECTION, TESTING & COMMISSIO. FOTE PANEL SHIFTING & LINE TESTING ETC.	NLDC
95	BkTPP: 400kv Main bus#1	05-01-2020	06:00	06-01-2020	15:00	ODB	WB	Winter maintenance	
96	132 KV Banka(PG)-Sabour D/C T/L line	05-01-2020	09:00	05-01-2020	14:00	ODB	BSPTCL	for stringing work in 132KV Sabour sultangnaj LILO to jagdishpur line between (Ap 23/0- Ap24/0).	1.Sabour will avail power from Goradih(GIS) 2.No load restriction
97	132 KV Rajgir-Barhi S/C T/L	05-01-2020	08:00	05-01-2020	16:00	ODB	BSPTCL	For tower top patrolling and maintenance work	No Load Restriction
98	132 KV Nalanda-Barhi S/C T/L	05-01-2020	08:00	05-01-2020	16:00	ODB	BSPTCL	For tower top patrolling and maintenance work	No Load Restriction
99	400kV Maithan Durgapur-2 line	05-01-2020	10:00	06-01-2020	16:00	ODB	POWERGRID, ER-II	Internal inspection/Overhauling of interrupter of 400kV CB of Main Bay.	
100	220kV BUS-1 at Maithan	05-01-2020	10:00	05-01-2020	18:00	ODB	POWERGRID, ER-II	dismantling of bus jumper of 220kV Dumka-1&2 line	DVC
101	765/400 KV 3*500 MVA ICT AT SASARAM	05-01-2020	09:00	05-01-2020	18:00	ODB	POWERGRID, ER1	Retrofitting work of CSD Relay & AMP work	NLDC
102	+-800 KV HVDC BNC AGRA	05-01-2020	09:00	19-01-2020	18:00	OCB	POWERGRID ER-I	15 DAY SD REQUIRED SHIFTING OF LINE TO ERS TO RECTIFY VULNERABLE LOCATION 1619, 1618 WHOSE LEGS /MAIN BRACING HAVE BEEN CUT BY MISCREANTS. DATES TENTATIVE AND SHALL BE CONFIRMED BASED ON SITE CONDITION	NLDC
103	406 Main Bay of 400KV Side ICT-II	05-01-2020	09:00	05-01-2020	18:00	ODB	ER-II/Odisha/Sundergarh	AMP	
104	420 Tie bay of Barh 3 and ballia 3 at Patna	05-01-2020	13:00	05-01-2020	17:30	ODB	POWERGRID ER-1	AMP	
105	416 bay Ballia -II Main bay at Patna	05-01-2020	09:30	07-01-2020	17:30	ОСВ	POWERGRID ER-1	AMP & CB Overhauling & BCU updration works under SS03 package	

106	400 KV Muzaffarpur- Darbhanga line-2	06-01-2020	09:30	07-01-2020	17:30	ODB	POWERGRID ER-1	STRINGING OF ONE SPAN OF 400 KV MUZAFFARPUR-	AFTER RESTORATION OF 400KV
407		06.04.2020	00.00	06.04.2020	17:00	000		DHALKEBAR LINE.	NEW PURNEA-BIHARSARIFF-DC
107	400kV Berhampore Sagardighi-1 Line	06-01-2020	09:00	06-01-2020	17:00	ODB	POWERGRID, ER-II	For Line Construction work of Bheramara-3&4	WB
108	765kV /400 kV 1500MVA ICT-2	06-01-2020	09:00	06-01-2020	12:00	ODB	ER-II/Odisha/Sundergarh	For changing of ICT-I B ph with spare for oil lekage arresting works	NLDC
109	765 kV Sundergarh-Raipur-Ckt-I	06-01-2020	09:00	06-01-2020	18:00	ODB	ER-II/Odisha/Sundergarh	For erection of BPI at T-joint & AMP testing of relays	NLDC
110	315MVA, ICT-1	06/01/20	09:00 Hrs	06/01/20	18:00 Hrs	ODB	ER-II/Odisha/Balangir	AMP for 315MVA, ICT-1	GRIDCO
111	Jeerat: 315NVA ICT#3	06-01-2020	06:00	06-01-2020	15:00	ODB	WB	Winter maintenance	
112	BkTPP: 315MVA IBT#2	06-01-2020	06:00	08-01-2020	15:00	ODB	WB	Winter maintenance	
113	220kv NewTown AA3-Rajarhat(PGCL)#1	06-01-2020	06:00	06-01-2020	15:00	ODB	WB	Winter maintenance	
114	220KV STPS-Chandil S/C Line	06-01-2020	06:00	06-01-2020	15:00	ODB	WB	Winter maintenance	
115	220 KV DMTCL(Darbhanga)-Samastipur(New) S/C T/L	06-01-2020	09:00	07-01-2020	17:00	ODB	BSPTCL	For line maintenance work	Samastipur (New) will avail power from alternate sources.
116	220 KV Sonenagar(New)-Gaya(PG) ckt2	06-01-2020	11:00	06-01-2020	16:00	ODB	BSPTCL	For line maintenance work	Sonenagar(New) will avail power alternate sources
117	220 KV Patna(PG)-Khagaul ckt 1	06-01-2020	09:00	06-01-2020	16:00	ODB	BSPTCL	For line & bay maintenance work	Khagaul will avail power alternate sources
118	220kV PGCIL- Sadeipali Circuit-II	06-01-2020	08:00	06-01-2020	16:00	ODB	GRIDCO	AMP	
119	No1 Main Bus Shutdown	06-01-2020	08:00	08-01-2020	17:00	OCB	MBPCL	For HV Testing & Enegizing	
120	220 KV Siliguri Dalkola Ckt-I	06-01-2020	08:00	06-01-2020	17:00	ODB	POWERGRID, ER-II	DTPC COMMISSIONING	
121	400 KV Maithon-Durgapur Ckt-I	06-01-2020	08:00	19-01-2020	17:00	ODB	POWERGRID, ER-II	DTPC COMMISSIONING	DVC AND WB CONSENT NEEDED
122	400 KV Maithon-Durgapur Ckt-II	06-01-2020	08:00	19-01-2020	17:00	ODB	POWERGRID, ER-II	DTPC COMMISSIONING	DVC AND WB CONSENT NEEDED
123	400 kV Malda-Farakka-I	06-01-2020	08:00	06-01-2020	17:00	ODB	POWERGRID, ER-II	AMP	
124	220KV Maithon-Dumka I&II	06-01-2020	08:00	07-01-2020	18:.00	ODB	POWERGRID, ER-II	PL Crossing during Re-conductoring work of Maithon - Right Bank # II Line	LALMATIA,132KHSTPP- LALMATIA,132KV DEOGHAR SULTTANGANJ,132KV MAITHON JMATARA SHALL REMAIN IN SERVICE, POWER SHOULD BE ASSISTED TO JAMTARA FROM MAITHON
125	220kV BUS-2 ar Maithan	06-01-2020	10:00	08-01-2020	18:00	ODB	POWERGRID, ER-II	Stringing of 220kV JACK BUS	DVC
126	220kV Maithan DUMKA Line1&2	06-01-2020	10:00	08-01-2020	18:00	ODB	POWERGRID, ER-II	Stringing of 220kV JACK BUS. Bus jumper connection and stability checking for ICT-3	132 KH(BSEB)- LALMATIA,132KHSTPP- LALMATIA,132KV DEOGHAR SULTTANGAN,132KV MAITHON JMATARA SHALL REMAIN IN SERVICE, POWER SHOULD BE ASSISTED TO JAMTARA FROM MAITHON
127	400 KV Sasaram Allahabad Line	06-01-2020	09:00	11-01-2020	18:00	ODB	POWERGRID, ER1	Replacement of insulators at Road/Rail/River/Power Line Crossings and Relay Retrofitting A/R OF OTHER CKT TO BE PUT INTO NON AUTO MODE	NLDC
128	500MVA ICT-1 AT SASARAM	06-01-2020	09:00	09-01-2020	18:00	ОСВ	POWERGRID, ER1	For the movement of 315MVA Spare ICT . Load on 220kv sasaram-sahupur-s/c should be restricted to 100MW.	BSEB
129	400/220KV 315MVA ICT-2 AT RANCHI	06-01-2020	09:30	06-01-2020	17:00	ODB	POWERGRID, ER1	Backup impedance relay installation (GE),LOAD WILL BE RESTRICTED TO 250 MW TO JUSNL THROUGH 315 MVA ICT-1,	JSEB
130	400 kV Patna-Barh CKT 1	06-01-2020	09:00	06-01-2020	18:00	ODB	POWERGRID ER-1	Replacement of porcelain insulator by polmer A/R OF OTHER CKT TO BE PUT INTO NON AUTO MODE	
131	765KV BUS-II AT NEW RANCHI	06-01-2020	09:00	08-01-2020	17:00	ODB	POWERGRID ER-1	Commissioning of Medinipur bay	NLDC
132	400 kV Main Bus-I AT LAKHISARAI	06-01-2020	09:30	06-01-2020	17:30	ODB	POWERGRID ER-I	Construction works of ICT-3 UNDER ERSS XX PACKAGE	
133	132 KV PURNEA- KISHANGANJ-S/C	06-01-2020	09:00	06-01-2020	17:00	ODB	POWERGRID ER-I	AMP WORK	BSEB
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134	400kV DSTPS-RTPS Ckt#1	06-01-2020	08:30	11-01-2020	17:00	ОСВ	DVC	 1.O/H activities including testing on CTs,CVTs,CBs 2. Line ABT Meter calibration 3.Replacement of damaged/defective gland plates in CTJBs 	DVC
135	400kV TISCO-Jamshedpur S/C	06-01-2020	09:00	06-01-2020	17:30	ODB	DVC	for annual maintenance of Relay and CVT	
136	407 Main Bay of 400KV Sundargarh-Raigarh ckt-2	06-01-2020	09:00	06-01-2020	18:00	ODB	ER-II/Odisha/Sundergarh	AMP	
137	706 Main Bay of 765/400KV,1500MVA ICT-I	06-01-2020	09:00	09-01-2020	18:00	ОСВ	ER-II/Odisha/Sundergarh	Siemens CB modification work center guide valave and AMP works	NLDC
138	Jeypore- Rengali Tie Bay (402)	06-01-2020	09:00	06-01-2020	18:00	ODB	ER-II/Odisha/Indravati	AMP works of Jeypore- Rengali Tie Bay (402)/ Power flow will be Interrupted in 400KV Jeypore Line Due to temporary shutdown of UIHEP Main bay(412) at Indravati/	
139	400 kV 411 Tie Bay of Baripada-Pandiabili & Baripada-TISCO line	06-01-2020	09:00	07-01-2020	17:30	ОСВ	ER-II/Odisha/BARIPADA S/S	Gasket replacement	
140	400KV ICT 1 & BOLANGIR TIE BAY 402	06-01-2020	09:00	06-01-2020	18:00	ODB	ER-II/Odisha/Angul SS	AMP Work	
141	400 KV TIE BAY OF SNG#2 & RANCHI#1 (429)	06-01-2020	09:00	06-01-2020	18:00	ODB	ER-II/ODISHA/ROURKELA	AMP WORKS	
142	132KV Bus coupler (Bay-104) at Siliguri	06-01-2020	10.00	06-01-2020	14:00	ODB	POWERGRID, ER-II	Bay AMP work	
1/13	Main Bay of 50MV/AR BR-1 (412 Bay) AT IAMSHEDDUR	06-01-2020	00.30	06-01-2020	17:30	ODB	POW/ERGRID_ER1		
143	220KV Main Bay of 220 kV Gaya-Bodhgaya CKT-I at Gaya ss	06-01-2020	09:00	06-01-2020	18:00	ODB	POWERGRID, ER1	For AMP work	
			10.00		40.00	000	DOW/ED CDID ED4		
145	400kv TIE Bay of ICT-4 and Koderma 2 at BiharSharif	06-01-2020	10:00	06-01-2020	18:00	ODB	POWERGRID, ER1	AMP WORK	
146	132 kv Bettiah-Narkatiyaganj-Ramnagar T/L	07-01-2020	11:00	12-01-2020	15:00	ODB	BSPTCL	 (1) tree cutting and prunning of tree branches. (2) jumper tightenig of all tension tower in lilo portion of 132 kv transmissio line for gss narkatiyaganj. (3) 132kv ramagar bay maintenance at gss bettiah end. (4) 132kv bettiah:-01 & 02 bay maintenance at gss narkatiyaganj. (5) 132kv main bus and high level isolator maintenance at gss narkatiyaganj. (6) 33kv main bus isolator and high level isolator maintenance at gss narkatiyaganj. (7) 20 mva tr no:-01 & 02 bay maintenance along with 20 mva tr no:-01 & 02 maintenance. 	1) GSS Ramnagar may avail power from nepal end. (2) GSS Narkatiyaganj will remain power less. (3).consent from Nepal will be required.
147	400 KV BUS-2 AT MUZAFFARPUR	07-01-2020	09:30	08-01-2020	17:30	ODB	POWERGRID ER-1	BUS AMP WORK	BSEB
148	400kV Berhampore Sagardighi-2 Line	07-01-2020	09:00	07-01-2020	17:00	ODB	POWERGRID, ER-II	For Line Construction work of Bheramara-3&5	WB
149	765kV Sundergarh-Darmajayagahr-I line	07-01-2020	09:00	07-01-2020	18:00	ODB	ER-II/Odisha/Sundergarh	For erection of BPI at T-joint & signal testing	NLDC
150	400KV Sundergarh-Rourkela Ckt #1	07-01-2020	8:00	07-01-2020	18:00	ODB	ER- II/ODISHA/SUNDERGARH	TL Maintenance works	
151	400 KV Keonjhar Line	07-01-2020	09:00	07-01-2020	17:00	ODB	ER-II/Odisha/Rengali	AMP & MOM Box Retrofitting, Relay Retrofitting	
152	315MVA ICT # II	07-01-2020	09:00:00	07-01-2020	18:00:00	ODB	ER-II/Odisha /Jeypore	AMP of ICT # II and Retrofitting works of Overcurrent, REF, Earth Fault Relay	GRIDCO
153	220kv NewTown AA3-Rajarhat(PGCL)#2	07-01-2020	06:00	07-01-2020	15:00	ODB	WB	Winter maintenance	
154	220KV KLC- SUBHASHGRAM(PGCIL)	07-01-2020	06:00	07-01-2020	15:00	ODB	WB	Winter maintenance	
155	220kV Katapali- PGCIL Circuit-II	07-01-2020	08:00	07-01-2020	16:00	ODB	GRIDCO	AMP	
156	400KV Meramundali-Mendhasal line	07-01-2020	08.00	07-01-2020	16.00	ODB	GRIDCO	ΔΜΡ	
157	400KV Meramundali-Mendhasal line	07-01-2020	08:00	07-01-2020	16:00	ODB	GRIDCO		
150	230 KV Siliguri Balkala Ckt 2	07 01 2020	08:00	07 01 2020	17:00	ODP			
150	220 KV Siliguri Daikola CKL-2	07-01-2020	08.00	07-01-2020	17.00	UDB .			
159	400 KV BUS-I at Durgapur	07-01-2020	09:00	07-01-2020	17:00	ODB	POWERGRID, ER-II	Bus jumper tightness & AMP	DVC
160	400 kV Malda-Farakka-II	07-01-2020	08:00	07-01-2020	17:00	ODB	POWERGRID, ER-II	AMP	
161	400 kV Biharsharif-Balia-I	07-01-2020	08/00	08-01-2020	17/00	ODB	POWERGRID, ER1	Liquidation of all pending line defects (spacer cap, conductor cut, A/R OF OTHER CKT TO BE PUT INTO NON AUTO MODE	NLDC
162	400KV JSR-CHAIBASA-I	07-01-2020	09:30	07-01-2020	17:30	ODB	POWERGRID, ER1	Replacement of insulators damaged by miscreants. A/R OF OTHER CKT TO BE PUT INTO NON AUTO MODE	
163	400KV North Bus-2 at SASARAM	07-01-2020	09:00	07-01-2020	18:00	ODB	POWERGRID, ER1	AMP work	NLDC
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164	400/220KV 315MVA ICT-I AT RANCHI	07-01-2020	09:30	11-01-2020	17:00	ОСВ	POWERGRID, ER1	Backup impedance relay installation (GE) & Replacement of 01 No 220 KV (Y-Ph) & 3 Nos 33 KV (R, Y & BPh) Bushings,LOAD WILL BE RESTRICTED TO 250 MW TO JUSNL THROUGH 315 MVA ICT-1,	JSEB
165	220KV CHAIBASA-CHAIBASA-I	07-01-2020	09:30	07-01-2020	13:30	ODB	POWERGRID, ER1	AMP OF JUSNL LINE 1 BAY	JSEB
166	400 kV Patna-Barh CKT 2	07-01-2020	09:00	07-01-2020	18:00	ODB	POWERGRID ER-1	Replacement of porcelain insulator by polmer A/R OF OTHER CKT TO BE PUT INTO NON AUTO MODE	
167	400 KV KODERMA-BOKARO TL - 2	07-01-2020	08:00	11-01-2020	17:00	ODB	POWERGRID ER-1	Replacement of insulator damaged by miscreant A/R OF OTHER CKT TO BE PUT INTO NON AUTO MODE	DVC
168	400kv Sasaram-Allahabad-S/C	07-01-2020	08:00	08-01-2020	18:00	ODB	POWERGRID NR-III	For Insulator cleaning work A/R OF OTHER CKT TO BE PUT INTO NON AUTO MODE	NLDC
169	132 KV PURNEA-BSPTCL -1	07-01-2020	09:00	07-01-2020	17:00	ODB	POWERGRID ER-I	AMP WORK	BSEB
170	408 Tie Bay of 400KV Sundargarh-Raigarh ckt-2	07-01-2020	09:00	07-01-2020	18:00	ODB	ER-II/Odisha/Sundergarh	AMP	
171	400KV ANGL BLNGR MAIN BAY 403	07-01-2020	09:00	07-01-2020	18:00	ODB	ER-II/Odisha/Angul SS	AMP work	
172	400 kv Mendhasal -Pandiabili-1 main bay at Mendhasal sub- station/	07-01-2020	09:00:00	07-01-2020	18:00:00	ODB	ER-II/Odisha/ Pandiabili GIS	DCRM of main bay and tan delta test of CT/	
173	400KV TSTPS -ANGUL line(bay no-19,20,21)	07-01-2020	08:00	09-01-2020	18:00	ОСВ	тутрр	Attending wavetrap sector plate problem, Bay PM and testing , protection relay testing, Multifunction meter fitting, AMP jobs	
174	220KV Main Bay of 220 kV Gaya-Dehri CKT-II at Gaya ss	07-01-2020	09:00	07-01-2020	18:00	ODB	POWERGRID, ER1	For AMP work	
175	400kV Farakka Main Bay(419-52) at New Purnea	07-01-2020	10:00	07-01-2020	18:00	ODB	POWERGRID, ER1	CB, CT AMP work	
176	421 Main bay Barh-3 at Patna	07-01-2020	16:00	07-01-2020	17:30	ODB	POWERGRID ER-1	АМР	
177	408 Bay (B' nagar-I & ICT-I Tie bay) at Durgapur	08-01-2020	09:30	08-01-2020	17:30	ODB	POWERGRID, ER-II	AMP works	
178	Main Bay of 125 MVAR BR2 (401 Bay) AT JAMSHEDPUR	08-01-2020	09:30	08-01-2020	17:30	ODB	POWERGRID, ER1	AMP WORK	
179	765kV Sundergarh-Darmaiavagahr-II Line	08-01-2020	09:00	08-01-2020	18:00	ODB	ER-II/Odisha/Sundergarh	For erection of BPI at T-joint & signal testing	NLDC
180	400KV Sundergarh-Rourkela Ckt #2	08-01-2020	8:00	08-01-2020	18:00	ODB	ER- II/ODISHA/SUNDERGARH	TL Maintenance works	
181	leerat: 315NVA ICT#4	08-01-2020	06:00	08-01-2020	15:00	ODB	WB	Winter maintenance	
182	BkTPP: 400ky Main bus#2	08-01-2020	06:00	09-01-2020	15:00	ODB	WB	Winter maintenance	
102		00 01 2020	00.00	00 01 2020	15.00	000	11/D		
183		08-01-2020	06:00	08-01-2020	15:00	ODB	WB		
184	220KV KLC- SUBHASHGRAM(PGCIL)	08-01-2020	06:00	08-01-2020	15:00	ODB	VV B	winter maintenance	
185	400 KV Haldia Subhasgram Line-1	08-01-2020	06:00	09-01-2020	15:00	ODB	WB	O.D.BWinter maintenance	
186	HEL: 400kv MB#1	08-01-2020	06:00	08-01-2020	15:00	ODB	WB	Winter maintenance	
187	132 KV Lakhisari(PG)-Jamui D/C T/L	08-01-2020	11:00	08-01-2020	15:00	ODB	BSPTCL	For line & bay maintenance work	Jamui will avail power from alternate sources
188	220 KV Biharsharif-TTPS S/C T/L	08-01-2020	09:00	08-01-2020	17:00	ODB	BSPTCL	For line & bay maintenance work	Consent from TTPS & SLDC Ranchi will be required.
189	400KV Binaguri-Purnea-1 line	08-01-2020	08:00	08-01-2020	17:00	ODB	POWERGRID, ER-II	DTPC COMMISSIONING	
190	220 KV PG(Maithon)-Dhanbad I&II	08-01-2020	08:00	09-01-2020	18:.00	ODB	POWERGRID, ER-II	PL Crossing during Re-conductoring work of Maithon - Right Bank # I Line	DVC
191	500MVA ICT-1 at Maithan	08-01-2020	08:00	08-01-2020	18:00	ODB	POWERGRID, ER-II	Replacement of MOG and onload testing of CSD	DVC
192	400kV Bus-2 at MPL	08-01-2020	11:00	08-01-2020	19:00	ODB	POWERGRID, ER-II	connection of jumper of Bus isolator of 406 bay	MAY BE ALLOWED WHEN ONLY ONE UNIT IS IN SERVICE
193	400/220 KV 315 MVA ICT-3 at Malda Substation(associated Bays 403 and 205)	08-01-2020	08:00	09-03-2020	17:00	ОСВ	POWERGRID, ER-II	ERSS-XVII-B Constructional work	WB
194	400/220kv 500MVA ICT-4 at Biharshariff	08-01-2020	10:00	08-01-2020	18:00	ODB	POWERGRID, ER1	for CSD commissioning work in its main and tie Circuit Breaker	BSEB
195	400KV BUS-I AT BANKA	08-01-2020	09:00	08-01-2020	17:00	ODB	POWERGRID, ER1	BUSBAR TESTING	
196	400KV RANCHI-MAITHAN (RB)-1 TL	08-01-2020	09:00	08-01-2020	17:00	ODB	POWERGRID, ER1	FOR FLASHED INSULATOR REPLACEMENT AT LOCATION NO. 516, A/R OF OTHER CKT TO BE PLIT INTO NON AUTO MODE	AFTER RECONDUCTORING WORK OF 400KV MAITHON-MPL-DC
197	220KV CHAIBASA-CHAIBASA-I	08-01-2020	09.30	08-01-2020	13.30	ODB	POWERGRID, ER1		ISEB
1,		30 01 2020	05.50	20 01 2020	10.00	000		Part of Sourcemer Dri	

198	400 kV Patna-Ballia CKT 3	08-01-2020	09:00	08-01-2020	18:00	ODB	POWERGRID ER-1	Replacement of porcelain insulator by polmer	NLDC
								For the replacement of Reactor Neutral Bushing at Ballia S/S	
199	400kv Biharsharif-Balia-I	08-01-2020	09:30	08-01-2020	18:00	ODB	POWERGRID NR-III	due violation of dan telta. A/R OF OTHER CKT TO BE PUT INTO	NLDC
200	132 KV PURNEA-BSPTCL -2	08-01-2020	09:00	08-01-2020	17:00	ODB	POWERGRID ER-I	AMP WORK	BSEB
201	410 Main Bay of 400ky Sundargarh-Rourkela ckt-1	08-01-2020	09:00	08-01-2020	17:30	ODB	ER-II/Odisha/Sundergarh	AMP	
202	80MVAR B/R-1 Main Bay (408 Bay)	08-01-2020	09:00 Hrs	08/01/20	18:00 Hrs	ODB	ER-II/Odisha/Balangir	AMP for 408 52CB and 408 CT	
203	400 kV 408 Tie Bay of Baripada-Duburi & Baripada-	08-01-2020	09:00	09-01-2020	17:30	ОСВ	ER-II/Odisha/BARIPADA S/S	Gasket replacement	
	Jamshedpur line						,		
204	400 kv Mendhasal -Pandiabili-2 main bay at Mendhasal sub- station/	08-01-2020	09:00:00	08-01-2020	18:00:00	ODB	ER-II/Odisha/ Pandiabili GIS	DCRM of main bay and tan delta test of CT/	
205	400kV Converter Trans. Main Bay at Alipurduar	08-01-2020	07:00	08-01-2020	17:00	ODB	POWERGRID, ER-II	Rectification of SF6 leakage from PIR Blanking Plate	
206	400\220kV 315 MVAICT -1 - (BAY 409)	08-01-2020	08:00	12-01-2020	17:00	OCB	POWERGRID, ER-II	For rectification of SF6 gas leakage repair work and AMP WORKS	
207	220KV Main Bay of 220 kV Gava-Dehri CKT-Lat Gava ss	08-01-2020	09:00	08-01-2020	18:00	ODB	POWERGRID. ER1	For AMP work	
208	400kV Gokarna Main Bay(422-52) at New Purnea	08-01-2020	10.00	08-01-2020	18.00	ODB	POWERGRID ER1	CB_CT_AMP work	
209	400ky Main Bay Koderma 2 at Biharsharif	08-01-2020	10:00	08-01-2020	18:00	ODB	POWERGRID ER1		
205	115 Main bay Barb 2 at Patna	08-01-2020	09:30	11-01-2020	17:30	OCB		AMP & CB Overhauling & BCU updration works under SS03	
210	415 Wall bay barn 2 at ratila	08-01-2020	05.50	11-01-2020	17.50	000		package	
211	765kV Sundergarh-Darmajayagahr-III line	09-01-2020	09:00	09-01-2020	18:00	ODB	ER-II/Odisha/Sundergarh	For erection of BPI at T-joint	NLDC
212	400KV Sundergarh-Rourkela Ckt # 3 & 4	09-01-2020	8:00	09-01-2020	18:00	ODB	ER- II/ODISHA/SUNDERGARH	TL Maintenance works (Due to Multi circuit in LILO portion, Shut down of both Ckts require together)	
213	Talcher-Kolar HVDC Pole-1	09-01-2020	07:00	12-01-2020	18:00	ОСВ	ER-II/Odisha/HVDC Talcher	Annual Shutdown of HVDC Talcher-Kolar Link for annual maintenance activity of HVDC Talcher-Kolar HVDC System & Maintenance Activity of HVDC Talcher-Kolar Transmission Line/ Already Approved in 161st OCC of SRPC/	NLDC
214	BkTPP: 315MVA IBT#1	09-01-2020	06:00	11-01-2020	15:00	ODB	WB	Winter maintenance	
215	No2 main Bus Shutdown	09-01-2020	08:00	11-01-2020	17:00	OCB	MBPCL	For HV Testing & Enegizing	
216	400KV Binaguri-Purnea-2 line	09-01-2020	08:00	09-01-2020	17:00	ODB	POWERGRID, ER-II	DTPC COMMISSIONING	
217	400 KV Durgapur-Maithon Line-I	09-01-2020	09:00	09-01-2020	17:00	ODB	POWERGRID, ER-II	Line Jumper replace	
218	400 kV TBC at Malda	09-01-2020	08:00	08-02-2020	17:00	OCB	POWERGRID, ER-II	ERSS-XVII-B Constructional work	WB
219	400KV Maithon-Right Bank #I	09-01-2020	08:00	23-01-2020	18:00	OCB	POWERGRID, ER-II	Re conductoring work	
220	Non Autoreclose mode 400KV Maithon-Right Bank #II	09-01-2020	08:00	23-01-2020	18:00	ODB	POWERGRID, ER-II	MTN RB Ckt-II will be kept in NON-Auto during Re conductoring	
								Liquidation of all ponding line defects (spacer cap, conductor	
221	400 kV Bibarsbarif Balia II	00 01 2020	08/00	10 01 2020	17/00			cut	NUDC
221		05-01-2020	00,00	10-01-2020	17/00	000	TOWERGRID, ERI	A/R OF OTHER CKT TO BE PLIT INTO NON ALITO MODE	NEDC
222	400KV JSR-CBS LINE-II	09-01-2020	09:30	09-01-2020	17:30	ODB	POWERGRID, ER1	To attend replacement of flash over jumper at loc no 41. A/R OF OTHER CKT TO BE PUT INTO NON AUTO MODE	
222	400KV BUS-II ΑΤ ΒΑΝΚΑ	09-01-2020	09.00	09-01-2020	17:00	ODB	POWERGRID, ER1	BUSBAR TESTING	
		00 01 2020	05100	05 01 2020				FOR FLASHED INSULATOR REPLACEMENT AT LOCATION NO	
224	400KV RANCHI-MAITHAN (RB)-2 TL	09-01-2020	09:00	09-01-2020	17:00	ODB	POWERGRID, ER1	414,495, A/R OF OTHER CKT TO BE PUT INTO NON AUTO MODE	AFTER RECONDUCTORING WORK OF 400KV MAITHON-MPL-DC
225	400 kV Patna-Ballia CKT 4	09-01-2020	09:00	09-01-2020	18:00	ODB	POWERGRID ER-1	Replacement of porcelain insulator by polmer A/R OF OTHER CKT TO BE PUT INTO NON AUTO MODE	NLDC
226	400 kV Main Bus-2 AT LAKHISARAI	09-01-2020	09:30	09-01-2020	17:30	ODB	POWERGRID ER-I	Construction works of ICT-3 UNDER ERSS XX PACKAGE	
227	132 KV PURNEA-BSPTCL -3	09-01-2020	09:00	09-01-2020	17:00	ODB	POWERGRID ER-I	AMP WORK	BSEB
228	411 Tie Bay of 400kv Sundargarh-Rourkela ckt-1	09-01-2020	09:00	09-01-2020	17:30	ODB	ER-II/Odisha/Sundergarh	AMP	
229	400KV ICT 1MAIN BAY 401	09-01-2020	09:00	09-01-2020	18:00	ODB	ER-II/Odisha/Angul SS	AMP Work	
230	400 KV tie bay of Mendhasal-Pandiabili -1 & Mendhasal	09-01-2020	09:00:00	09-01-2020	18:00:00	ODB	ER-II/Odisha/ Pandiabili GIS	DCRM of tie bay and tan delta test of CT/	
<u> </u>	Pandiabili -2 at Mendhasal sub-station/						,		
231	400kV Converter Trans. TIE Bay at Alipurduar	09-01-2020	07:00	09-01-2020	17:00	ODB	POWERGRID, ER-II	Rectification of SF6 leakage from PIR Blanking Plate	
232	Main bay of 400kv Maithon-MPL Ckt#1,(Bay no 403) at MPL	09-01-2020	09:00	23-01-2020	18:00	ОСВ	POWERGRID, ER-II	Upgradation of Bay equipmenets under ERSS-XVII Project work. Shut down of Bays proposed in respect of line shut down for reconductoring work	
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233	400KV Main Bay OF 400 kV Gaya-Nabinagar Ckt -II AT GAYA	09-01-2020	09:00	09-01-2020	18:00	ODB	POWERGRID, ER1	For AMP work	
234	400kV Muzaffarpur-2 Main Bay (409-52) at New Purnea	09-01-2020	09:00	09-01-2020	18:00	ODB	POWERGRID, ER1	To attend SF6 leakage from PIR	
235	765kV Sundergarh-Darmajayagahr-IV line	10-01-2020	09:00	10-01-2020	18:00	ODB	ER-II/Odisha/Sundergarh	For erection of BPI at T-joint	NLDC
236	400KV Sundergarh-Raigarh Ckt #2	10-01-2020	8:00	11-01-2020	18:00	ODB	ER- II/ODISHA/SUNDERGARH	TL Maintenance works	NLDC
237	Talcher-Kolar HVDC Pole-2	10-01-2020	07:00	13-01-2020	18:00	ОСВ	ER-II/Odisha/HVDC Talcher	Annual Shutdown of HVDC Talcher-Kolar Link for annual maintenance activity of HVDC Talcher-Kolar HVDC System & Maintenance Activity of HVDC Talcher-Kolar Transmission Line/ Already Approved in 161st OCC of SRPC/	NLDC
238	400kV NTPC-HVDC Feeders-1, 2, 3 & 4	10-01-2020	07:00	12-01-2020	18:00	ОСВ	ER-II/Odisha/HVDC Talcher	Shutdown to be availed during HVDC Bipole shutdown for, (Already Approved in 161st OCC of SRPC) 1) Busbar Stabilization Test 2) Testing of Busbar Protection System (Main & Redundant) 3) AMP of Feeder Isolators/	NLDC
239	400 KV Rengali-Indravati Line	10-01-2020	08:00	10-01-2020	08:00	ODB	ER-II/Odisha/Rengali	To attend S/D nature Defects	NLDC
240	500 MVA ICT-1 AT PANDIABILI	10-01-2020	09:00:00	10-01-2020	18:00:00	ODB	ER-II/Odisha/ Pandiabili GIS	MODIFICATION OF OSR RAIN CANOPY	GRIDCO
241	401 KV Haldia Subhasgram Line-2	10-01-2020	06:00	11-01-2020	15:00	ODB	WB	O.D.BWinter maintenance	
242	HEL: 400kv MB#2	10-01-2020	06:00	10-01-2020	15:00	ODB	WB	Winter maintenance	
243	220kV Khizersarai-Gaya PG ckt # 1	10-01-2020	08:00	11-01-2020	16:00	ODB	BGCL	For tower top patrolling and maintenance work	No Load Restriction
244	132 KV Sultanganj-Deoghar S/C T/L	10-01-2020	09:00	11-01-2020	16:00	ODB	BSPTCL	For tower top patrolling and maintenance work	No Load Restriction
245	400kV Baripada PG to Kharagpur PG, WBSETCL , Loc.602 to Loc.663. (Earlier Rengali - Baripada Line,)	10-01-2020	08:00	10-01-2020	16:00	ODB	GRIDCO	АМР	
246	400 KV S/C FARAKKA-DURGAPUR-II	10-01-2020	09:00	10-01-2020	17:00	ODB	POWERGRID, ER-II	Rectification of shut down nature defects in various locations in Transmission line.	
247	400KV Bus#1 at Binaguri substation (3 occasions)	10-01-2020	09:00	12-01-2020	17:00	ODB	POWERGRID, ER-II	Busbar stability and GIS connection, Rangpo Bay upgradation work (Bus isolator dismantling / erection)- 3 occasions under ERSS XVII	
248	315 MVA ICT-II at Durgapur	10-01-2020	09:00	10-01-2020	17:00	ODB	POWERGRID, ER-II	AMP works	DVC
249	400KV BUS-II at Malda	10-01-2020	08:00	10-01-2020	17:00	ODB	POWERGRID, ER-II	ERSS-XVII-B Constructional work	WB
250	132KV Rangpo-GANGTOK -1	10-01-2020	09:00	11-01-2020	18:00	OCB	POWERGRID, ER-II	For repair of conductor at loc 104.105 and AMP works	SIKKIM
251	400 KV Tala-Binaguri Ckt-l	10-01-2020	08:00	10-01-2020	17:30	ODB	POWERGRID, ER-II	Rectification of Broken Insulator and Jumper tightning.	NLDC
252	400KV RBTPS-Ranchi I&II	10-01-2020	08:00	11-01-2020	18:00	ОСВ	POWERGRID, ER-II	PL Crossing during Re-conductoring work of Maithon - Right Bank # I Line	MAY BE ALLOWED WHEN ONLY ONE UNIT IS IN SERVICE
253	HVDC SASARAM	10-01-2020	09:00	10-01-2020	15:00	ODB	POWERGRID, ER1	For the movement of 315MVA Spare ICT under East Side filter Bank (CWC 53, CWC54, CWC55, CWC56)	NLDC
254	400 Kv Kahalgaon-Lakhisarai-II	10-01-2020	09:30	10-01-2020	17:30	ODB	POWERGRID ER-I	Retrofitting of PLCC A/R OF OTHER CKT TO BE PUT INTO NON AUTO MODE	
255	132 KV BUS COUPLER PURNEA-	10-01-2020	09:00	10-01-2020	17:00	ODB	POWERGRID ER-I	AMP WORK	BSEB
256	713 Main bay of 765kV ANGUL -02 at Sundargarh	10-01-2020	09:00	13-01-2020	18:00	OCB	ER-II/Odisha/Sundergarh	Siemens CB modification work center guide valave and AMP works	NLDC
257	Rengali Main Bay (403)	10-01-2020	09:00	10-01-2020	18:00	ODB	ER-II/Odisha/Indravati	AMP works of Rengali Main Bay (403)/ Power flow will be Interrupted in 400KV Indravati-UIHEP Line Due to temporary shutdown of UIHEP Main bay(412) at Indravati/	
258	80MVAR B/R-1 TIE Bay (40708 Bay)	10-01-2020	09:00 Hrs	10/01/20	18:00 Hrs	ODB	ER-II/Odisha/Balangir	AMP for 40708 52CB and 40708 CT	
259	400 kV 410 main Bay of Baripada-Pandiabili line	10-01-2020	09:00	11-01-2020	17:30	OCB	ER-II/Odisha/BARIPADA S/S	Gasket replacement	
260	400 KV MAIN BAY OF ICT#2 (415)	10-01-2020	09:00	10-01-2020	18:00	ODB	ER-II/ODISHA/ROURKELA	AMP WORKS	
261	GOKARNA: 400KV BUS TRANSFER BAY	10-01-2020	06:00	10-01-2020	15:00	ODB	WB	Winter maintenance	
262	400KV Main Bay OF 400 kV Gaya-Nabinagar Ckt -I AT GAYA	10-01-2020	09:00	10-01-2020	18:00	ODB	POWERGRID, ER1	For AMP work	
263	Main Bay of 400kV Kishanganj-1 (410-52) at New Purnea	10-01-2020	09:00	10-01-2020	18:00	ODB	POWERGRID, ER1	To attend SF6 leakage from PIR	

	10.01.0000	1 40 00		40.00	000	DOWERCOUR FRA		
264 400kv TIE Bay Banka 1 and Banka 2 at Biharshariff	10-01-2020	10:00	10-01-2020	18:00	ODB	POWERGRID, ER1	AMP WORK	
265 400KV Main bay 400/220kv 500MVA ICT-L at Patna	10-01-2020	09:30	25-01-2020	17:30	ODB	POWERGRID ER-1	Uprating of isolator and CT	
266 423 bay Tie bay of Barh 4 and Ballia 4 at Patna	10-01-2020	13:00	10-01-2020	17:30	ODB	POWERGRID ER-1	AMP	
267 413 Main Bay Ballia 1 at Patna	10-01-2020	09:30	12-01-2020	17:30	ОСВ	POWERGRID ER-1	CB Overhauling & BCU updration works under SS03 package	
268 Main bay of PPSP CKT-I (Bay no-419) AT NEW RANCHI	10-01-2020	09:00	10-01-2020	17:00	ODB	POWERGRID ER-1	AMP	
269 400 KV GIS BUS-II	11-01-2020	09:00	11-01-2020	17:30	ODB	ER-II/Odisha/Sundergarh	AMP of Bus Sectionalizer Bay -425	
270 765kV ANGUL ckt 2 line	11-01-2020	09:00	11-01-2020	12:00	ODB	ER-II/Odisha/Sundergarh	For erection of BPI at T-joint	NLDC
271 400KV Sundergarh-Raigarh Ckt #2	11-01-2020	8:00	16-01-2020	18:00	ODB	ER- II/ODISHA/SUNDERGARH	For PID Testing of Porcelain Insulator/ Only Auto reclose	NLDC
272 400 KV Rengali - Talcher # 2 Line(Non-Auto)	11-01-2020	08:00	11-01-2020	17:00	ODB	ER-II/Odisha/Rengali	For PID Measurement	
273 GOKARNA: 400KV FARAKKA CKT BAY AND LINE	11-01-2020	06:00	11-01-2020	15:00	ODB	WB	Winter maintenance	
274 400KV BUS-Lat Malda	11-01-2020	08.00	11-01-2020	17:00	ODB	POWERGRID ER-II	ERSS-XVII-B Constructional work	WB
275 132KV Bangit-Bangno Line	11-01-2020	00:00	11-01-2020	16:00	ODB	POWERGRID ER-II	Damaged Conductor Mid Ph loc 43-44	SIKKIM
275 152KV Kangic Kangpo Line	11 01 2020	09:00	11 01 2020	17:20	ODR		Partification of Proken Insulator and Jumper tightning	
	11-01-2020	08.00	11-01-2020	17.50	UDB	POWERGRID, ER-II	Rectification of Broken insulator and Jumper Lightning.	NEDC
277 400 KV Pusauli -Biharsharif Line-2	11-01-2020	09:00	16-01-2020	18:00	ODB	POWERGRID, ER1	Crossings and Relay Retrofitting A/R OF OTHER CKT TO BE PUT INTO NON AUTO MODE	
				47.00	000		Construction works of ICT-3 UNDER ERSS XX PACKAGE, Entire	
278 132 kV Main Bus AT LAKHISARAI	11-01-2020	09:30	11-01-2020	17:30	ODB	POWERGRID ER-I	power in 132 KV LKR & Jamui lines will be zero.	BSEB
279 400 KV ICT # 2 Main Bay (Bay No-409)	11-01-2020	09:00	11-01-2020	17:00	ODB	ER-II/Odisha/Rengali	MOM Box Retrofitting	
280 400 KV ICT 2 & TALCHER TIE BAY 408	11-01-2020	09:00	11-01-2020	18.00	ODB	EB-II/Odisha/Angul SS	AMPwork	
400KV/ Tie, Bay OF 400 kV, North Karnanura Ckt-I & ICT-II AT	11-01-2020	05.00	11-01-2020	10.00	000			
281 GAYA	11-01-2020	09:00	11-01-2020	18:00	ODB	POWERGRID, ER1	For AMP work	
282 Main Bay of 400kV Malda-2 (413-52) at New Purnea	11-01-2020	09:00	11-01-2020	18:00	ODB	POWERGRID, ER1	To attend SF6 leakage from PIR	
283 424 Main bay Barh 4 at Patna	11-01-2020	16:00	11-01-2020	17:30	ODB	POWERGRID ER-1	AMP	
284 400 KV GIS BUS-I	12-01-2020	09:00	12-01-2020	18:00	ODB	ER-II/Odisha/Sundergarh	AMP of Bus Sectionalizer Bay -426	
285 400KV Main Bus-I	12-01-2020	09:00	12-01-2020	17:30	ODB	ER-II/Odisha/BARIPADA S/S	AMP works & Bus side isolator rectification works	
286 220kV Khizersarai-Gaya PG ck t# 2	12-01-2020	08:00	13-01-2020	16:00	ODB	BGCL	For tower top patrolling and maintenance work	No Load Restriction
287 220 KV Dehri-Pushauli(PG) S/C T/L	12-01-2020	09:00	12-01-2020	12:00	ODB	BSPTCL	220 KV Main Bus maintenance work	Dehri will avail power from Gaya(PG)
288 No1 Main Bus Shutdown	12-01-2020	08:00	12-01-2020	17:00	ODB	MBPCL	For Enegise	
289 132KV/ BUS-SECTIONALIZER-1 at Rangno	12-01-2020	09.00	12-01-2020	18:00	ODB	POWERGRID ER-II	AMP Works	
290 400 KV KODERMA-BOKARO TL - 1	12-01-2020	08:00	12-01-2020	17:00	ODB	POWERGRID ER-1	Replacement of insulator damaged by miscreant	DVC
291 205 bay Bus coupler at Patna	12-01-2020	09:30	15-01-2020	17:30	ODB	POWERGRID ER-1	AMP &CB Overhauling & BCU updration works under SS03	
292 418 Main bay Barh 1 at Patna	12-01-2020	09:30	15-01-2020	17:30	ОСВ	POWERGRID ER-1	CB Overhauling & BCU updration works under SS03 package	
293 400 KV Muzaffarpur- Darbhanga line-1	13-01-2020	09:30	13-01-2020	17:30	ODB	POWERGRID ER-1	LINE BAY AMP WORK	AFTER RESTORATION OF 400KV
								NEW PURNEA-BIHARSARIFF-DC
294 400KV Sundergarh-Raigarh Ckt #4	13-01-2020	8:00	13-01-2020	18:00	ODB	ER- II/ODISHA/SUNDERGARH	TL Maintenance works	NLDC
295 400KV Balangir-Angul Line	13/01/20	08:00 Hrs	15/01/20	18:00 Hrs	ODB	ER-II/Odisha/Balangir	Replacement of defective insulator by Polymer long Rod Insulator	NLDC
296 400 kV Jeypore-Indravati S/C Line	13-01-2020	08:00:00	13-01-2020	18:00:00	ODB	ER-II/Odisha /Jeypore	For PID defect insulator replacement work and for attending S/D nature defects	NLDC
297 BkTPP: 315MVA IBT#2	13-01-2020	06:00	15-01-2020	15:00	ODB	WB	Winter maintenance	
298 KTPP: 315MVA IBT#1	13-01-2020	06:00	14-01-2020	15:00	O.C.B.	WB	Winter maintenance	
299 GOKARNA: 400KV PURNEA BAY AND LINE	13-01-2020	06:00	13-01-2020	15:00	ODB	WB	Winter maintenance	
300 220 KV Gaya(PG)-Dehri ckt1	13-01-2020	09:00	13-01-2020	12:00	ODB	BSPTCL	220 KV Main Bus maintenance work	Dehri will avail power from Pushauli(PG)
301 220 KV Gaya(PG)-Dehri ckt2	13-01-2020	09:00	13-01-2020	12:00	ODB	BSPTCL	220 KV Main Bus maintenance work	Dehri will avail power from Pushauli(PG)
302 220 KV Alipurduar - Birpara Ckt I	13-01-2020	06.00	14-01-2020	17.00	ODB	POWERGRID, ER-II	Attending shut down nature of defects	
303 400kV BUS-1 at Babarampore	13-01-2020	09.00	13-01-2020	17:00	ODR	POWERGRID ER-II	Construction Activity	NLDC
304 400KV Bus#2 at Binaguri substation (3 occasions)	13-01-2020	09:00	15-01-2020	17:00	ODB	POWERGRID, ER-II	Busbar stability and GIS connection, Rangpo Bay upgradation work (Bus isolator dismantling / erection)- 3 occasions under	
305 400KV Binaguri-Kishanganj-1 line	13-01-2020	08:00	13-01-2020	18:00	ODB	POWERGRID, ER-II	ERSS XVII DTPC COMMISSIONING	
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306	220 kV Bus-I at Malda	13-01-2020	08:00	13-01-2020	17:00	ODB	POWERGRID, ER-II	ERSS-XVII-B Constructional work	WB
307	220kv Rangpo - Tashiding	13-01-2020	09:00	13-01-2020	18:00	ODB	POWERGRID, ER-II	AMP Works	TASIDING
308	400KV Maithon-Kahalgaon I&II	13-01-2020	08:00	14-01-2020	18:.00	ОСВ	POWERGRID, ER-II	PL Crossing during Re-conductoring work of Maithon - Right Bank # I Line	
309	50 MVA ICT-I 132/66 KV at Gangtok (BAY No101 & 603)	13-01-2020	09:00	13-01-2020	18:00	ODB	POWERGRID, ER-II	For Annual AMP Works	SIKKIM
310	315 MVA ICT 2 AT JAMSHEDPUR	13-01-2020	09:30	14-01-2020	17:30	ODB	POWERGRID, ER1	HV Bushing (Rph & Yph) replacement work	JSEB
311	765 KV GAYA-BALIA-S/C	13-01-2020	09:00	20-01-2020	18:00	ODB	POWERGRID, ER1	765 KV Tower Strengthening works	NLDC
312	132kV Pusauli-Kudra Line	13-01-2020	09:00	13-01-2020	18:00	ODB	POWERGRID, ER1	AMP work & Relay Retrofitting	BSEB
313	400 kV Barh-Kahalgaon CKT I	13-01-2020	09:00	13-01-2020	18:00	ODB	POWERGRID ER-1	Attending S/D nature defects e.g. fixing of spacer caps, tightening of jumpers A/R OF OTHER CKT TO BE PUT INTO NON AUTO MODE	
314	400kV DSTPS-RTPS Ckt#2	13-01-2020	08:30	18-01-2020	17:00	ОСВ	DVC	 1.O/H activities including testing on CTs,CVTs,CBs 2. Line ABT Meter calibration 3.Replacement of damaged/defective gland plates in CTJBs 	DVC
315	701 Main Bay of 765KV ,240MVAR BR-I	13-01-2020	08:30	13-01-2020	18:30	ODB	ER-II/Odisha/Sundergarh	AMP	NLDC
316	400KV 404 BAY AMP	13-01-2020	09:00	13-01-2020	18:00	ODB	ER-II/Odisha/Keonjhar	AMP WORKS/	
317	400 KV ICT # 1 & 2 Tie Bay (Bay No-408)	13-01-2020	09:00	13-01-2020	17:00	ODB	ER-II/Odisha/Rengali	MOM Box Retrofitting	
318	765 KV ICT -1 MAIN BAY 704	13-01-2020	09.00	15-01-2020	18.00	OCB	EB-II/Odisha/Angul SS	GUIDE VALVE MODIFICATION OF SIEMENS CB-Planned with	NLDC
510		15 01 2020	05.00	15 01 2020	10.00	000		Siemens Presence	
319	400 KV MAIN BAY OF ICT#1 (424)	13-01-2020	09:00	13-01-2020	18:00	ODB	ER-II/ODISHA/ROURKELA	AMP WORKS	
320	400\220kV 315 MVAICT -3 (BAY 411)	13-01-2020	08:00	18-01-2020	17:00	ОСВ	POWERGRID, ER-II	For rectification of SF6 gas leakage repair work,	
321	400KV Main Bay OF North Karnapura Ckt-I AT GAYA	13-01-2020	09:00	13-01-2020	18:00	ODB	POWERGRID, ER1	For AMP work	
322	Tie Bay of 400kV Malda-1 and B/R-I (417-52) at New Purnea	13-01-2020	09:00	13-01-2020	18:00	ODB	POWERGRID, ER1	To attend SF6 leakage from PIR	
323	400kv Main Bay of Banka 2 at Biharsharif 430 Bay	13-01-2020	10:00	13-01-2020	18:00	ODB	POWERGRID, ER1	AMP WORK	
324	400KV TIE BAY OF RGP 1 & ICT-2 AT RANCHI	13-01-2020	09:30	13-01-2020	17:00	ODB	POWERGRID, ER1	AMP	
325	Main bay of 400 KV NRNC-RNC - IV (Bay no-415) AT NEW RANCHI	13-01-2020	09:00	13-01-2020	17:00	ODB	POWERGRID ER-1	АМР	
326	400KV Sundergarh-Raigarh Ckt # 3 & 4	14-01-2020	8:00	14-01-2020	18:00	ODB	ER- II/ODISHA/SUNDERGARH	TL Maintenance works (Due to Multi circuit in LILO portion, Shut down of both Ckts require together)	NLDC
327	400 KV Rourkela-SUNDARGARH#1 LINE	14-01-2020	09:00	14-01-2020	18:00	ODB	ER-II/ODISHA/ROURKELA	LINE AMP WORKS / FOR ERECTION OF REACTOR BUSHINGS (SHUTDOWN BEING AVAILED AS CLEARANCE IS LESS)	
328	400kv Jeerat-SgTPP S/C	14-01-2020	09:00	25-01-2020	16:00	ОСВ	WB	OCB for modification of terminal arrangement (Erection of busduct and SF6 bushing) at JEERAT iro 400kv GIS construction	
329	Jeerat: 315NVA ICT#2	14-01-2020	06:00	14-01-2020	15:00	ODB	WB	Winter maintenance	
330	GOKARNA: 80MVAR REACTOR BAY	14-01-2020	06:00	14-01-2020	15:00	ODB	WB	Winter maintenance	
331	400kV BUS-2 at Baharampore	14-01-2020	09:00	14-01-2020	17:00	ODB	POWERGRID, ER-II	Construction Activity	NLDC
332	220 kV Bus-II at Malda	14-01-2020	08:00	14-01-2020	17:00	ODB	POWERGRID, ER-II	ERSS-XVII-B Constructional work	WB
333	400kV Bus-II at Maithan	14-01-2020	10:00	14-01-2020	17:00	ODB	POWERGRID, ER-II	Commissioning work like stability checking of ICT-3	DVC
334	400 kV Biharshariff- Muzzafarpur 2	14-01-2020	10:00	14-01-2020	18:00	ODB	POWERGRID, ER1	Distance Relay Retrofitment at Biharshariff A/R OF OTHER CKT TO BE PUT INTO NON AUTO MODE	
335	400 kV Barh-Kahalgaon CKT II	14-01-2020	09:00	14-01-2020	18:00	ODB	POWERGRID ER-1	Attending S/D nature defects e.g. fixing of spacer caps, tightening of jumpers A/R OF OTHER CKT TO BE PUT INTO NON AUTO MODE	
336	716 Main Bay of 765kV ANGUL ckt-I at Sundargarh	14-01-2020	09:00	17-01-2020	18:00	ОСВ	ER-II/Odisha/Sundergarh	Siemens CB modification work center guide valave and AMP works	NLDC
337	400 KV Indravati Line Main Bay (Bay No-412)	14-01-2020	09:00	14-01-2020	17:00	ODB	ER-II/Odisha/Rengali	MOM Box Retrofitting	
338	201 bay 220KV Baripada-Balasore Line -1	14-01-2020	09:00	14-01-2020	17:30	ODB	ER-II/Odisha/BARIPADA S/S	AMP works	
339	416 Bay (Main Bay of 63 MVAr B/R)	14-01-2020	08:00:00	14-01-2020	18:00:00	ODB	ER-II/Odisha /Jeypore	AMP of 416 Bay	
340	400KV Main Bay OF North Karnapura Ckt-II AT GAYA	14-01-2020	09:00	14-01-2020	18:00	ODB	POWERGRID, ER1	For AMP work	
341	400kV Siliguri-1 Main Bay (401-52) at New Purnea	14-01-2020	10:00	14-01-2020	18:00	ODB	POWERGRID, ER1	CB, CT AMP work	
342	208 bay main bay sipara 1 at Patna	14-01-2020	09:30	18-01-2020	17:30	ODB	POWERGRID ER-1	AMP &CB Overhauling & BCU updration works under SS03 package	

343	400 KV Muzaffarpur- Darbhanga line-2	15-01-2020	09:30	15-01-2020	17:30	ODB	POWERGRID ER-1	LINE BAY AMP WORK	AFTER RESTORATION OF 400KV NEW PURNEA-BIHARSARIFF-DC
344	400kV Angul-Bolangir Line	15-01-2020	09:00	15-01-2020	18:00	ODB	ER-II/Odisha/Angul SS	Commissioning of LILO Isolator	NLDC
345	400kV Angul-Meramunduli-1 Line	15-01-2020	09:00	15-01-2020	18:00	ODB	ER-II/Odisha/Angul SS	Commissioning of LILO Isolator	GRIDCO
346	220 KV INCOMMER#2 (208T)	15-01-2020	09:00	15-01-2020	18:00	ODB	ER-II/ODISHA/ROURKELA	AMP WORKS	
347	GOKARNA: 315MVA ICT-1 AND HV+IV BAY	15-01-2020	06:00	15-01-2020	15:00	ODB	WB	Winter maintenance	
348	220 KV DMTCL(Darbhanga)-Laukahi ckt1	15-01-2020	09:00	23-01-2020	16:00	ODB	BSPTCL	For line maintenance work	Laukahi will avail power from alternate sources
349	220 KV DMTCL(Darbhanga)-Laukahi ckt2	15-01-2020	09:00	23-01-2020	16:00	ODB	BSPTCL	For line maintenance work	Laukahi will avail power from alternate sources
350	220 KV Alipurduar - Birpara Ckt II	15-01-2020	06:00	16-01-2020	17:00	ODB	POWERGRID, ER-II	Attending shut down nature of defects	
351	400 KV D/C Farakka-Berhampore line CKT-1	15-01-2020	09:00	16-01-2020	17:00	ODB	POWERGRID, ER-II	Rectification of all shut down nature defects of whole line. (Both Berhampore & Farakka section.	
352	400 KV BUS-II at Durgapur	15-01-2020	09:00	15-01-2020	17:00	ODB	POWERGRID, ER-II	Bus jumper tightness & AMP	DVC
353	220KV Birpara-Chukha Ckt-I	15-01-2020	08:00	15-01-2020	17:30	ODB	POWERGRID, ER-II	Retrofitting of Numerical Distance Relay	NLDC
354	400KV Maithon-Durgapur I&II	15-01-2020	08:00	16-01-2020	18:00	ОСВ	POWERGRID, ER-II	PL Crossing during Re-conductoring work of Maithon - Right Bank # I Line	DVC AND WB CONSENT NEEDED
355	50 MVA ICT-II 132/66KV at Gangtok (BAY No102 & 602)	15-01-2020	09:00	15-01-2020	18:00	ODB	POWERGRID, ER-II	For Annual AMP Works	SIKKIM
356	400 kV BUS -I AT GAYA	15-01-2020	09:00	15-01-2020	18:00	ODB	POWERGRID, ER1	For AMP work	BSEB
357	132kV Pusauli-Mohania	15-01-2020	09:00	15-01-2020	18:00	ODB	POWERGRID, ER1	AMP work & Relay Retrofitting	BSEB
358	132 KV Motihari -Motipur(BSPTCL)-D/C	15-01-2020	08:00	15-01-2020	18:00	ODB	POWERGRID ER-I	forStringing of 400 KV D/C Sitamarhi-Motihari under TBCB	BSEB
359	400 KV Talcher # 1 Tie Bay (Bay No-406)	15-01-2020	08:00	18-01-2020	17:00	OCB	ER-II/Odisha/Rengali	CB Pole Overhauling	
360	211 bay(220KV side of 500MVA ICT #3)	15-01-2020	09:00	15-01-2020	17:30	ODB	ER-II/Odisha/BARIPADA S/S	AMP works	
361	409 Bay (Main Bay of Farakka-1) at Berhampore	15-01-2020	09:00	15-01-2020	17:00	OCB	POWERGRID, ER-II	Bay AMP	
362	400kV Kishanganj-1 & Muzaffarpur-2 Tie Bay (408-52) at New Purnea	15-01-2020	10:00	15-01-2020	18:00	ODB	POWERGRID, ER1	CB, CT AMP work	
363	400kv TIE Bay of Varansi-2 and Future at Biharsharif	15-01-2020	10:00	15-01-2020	18:00	ODB	POWERGRID, ER1	AMP WORK	
364	125 MVAR BUS RECATOR MAIN BAY (431) AT RANCHI	15-01-2020	09:30	15-01-2020	17:00	ODB	POWERGRID, ER1	AMP	
365	414 bay Tie of Ballia 1 & Barh 2 at Patna	15-01-2020	09:30	18-01-2020	17:30	OCB	POWERGRID ER-1	CB Overhauling & BCU updration works under SS03 package	
366	220 kv Kishanghanj (PG)- Kishanganj (new) line-3&4	16-01-2020	09:00	16-01-2020	16:00	ODB	BSPTCL	For maintenance	No Load Restriction
367	765kV /400 kV 1500MVA ICT-1	16-01-2020	09:00	16-01-2020	12:00	ODB	ER-II/Odisha/Sundergarh	For changing of ICT-I R ph with spare for oil lekage arresting works	NLDC
368	765KV Sundargarh-Angul Ckt #1	16-01-2020	8:00	16-01-2020	18:00	ODB	ER- II/ODISHA/SUNDERGARH	TL Maintenance works	NLDC
369	400KV Balangir-Jeypore Line	16/01/20	08:00 Hrs	17/01/20	18:00 Hrs	ODB	ER-II/Odisha/Balangir	Replacement of defective insulator by Polymer long Rod Insulator	NLDC
370	400kV Angul-Talcher Line	16-01-2020	09:00	16-01-2020	18:00	ODB	ER-II/Odisha/Angul SS	Commissioning of LILO Isolator	
371	400kV Angul-Meramunduli-2 Line	16-01-2020	09:00	16-01-2020	18:00	ODB	ER-II/Odisha/Angul SS	Commissioning of LILO Isolator	GRIDCO
372	400 KV Rourkela-SUNDARGARH#1 LINE	16-01-2020	11:30	16-01-2020	12:30	ODB	ER-II/ODISHA/ROURKELA	FOR TAKING THE LINE REACTOR INTO SERVICE AFTER OVERHAULING	
373	Jeerat: 315NVA ICT#3	16-01-2020	06:00	16-01-2020	15:00	ODB	WB	Winter maintenance	
374	GOKARNA: 315MVA ICT-2 AND HV+IV BAY	16-01-2020	06:00	16-01-2020	15:00	ODB	WB	Winter maintenance	
375	400KV Binaguri-Kishanganj-2 line	16-01-2020	08:00	16-01-2020	18:00	ODB	POWERGRID, ER-II	DTPC COMMISSIONING	
376	400KV Teesta-V-Rangpo Ckt-1	16-01-2020	09:00	16-01-2020	18:00	ODB	POWERGRID, ER-II	AMP Works	TEESTA-V
377	220KV Birpara-Chukha Ckt-II	16-01-2020	08:00	16-01-2020	17:30	ODB	POWERGRID, ER-II	Retrofitting of Numerical Distance Relay	NLDC
378	315 MVA ICT 1 AT JAMSHEDPUR	16-01-2020	09:30	16-01-2020	17:30	ODB	POWERGRID, ER1	Static REF relay will be replaced by numerical relay	JSEB
379	400 kV BUS -II AT GAYA	16-01-2020	09:00	17-01-2020	18:00	ODB	POWERGRID, ER1	For stringing work in North Karnpura Line Bay	BSEB
380	400 KV Pusauli-Biharsharif Line-1	16-01-2020	09:00	16-01-2020	18:00	ODB	POWERGRID, ER1	Relay retrofitting A/R OF OTHER CKT TO BE PUT INTO NON AUTO MODE	
381	220KV SIDE 400/220KV 315MVA ICT-2 AT RANCHI	16-01-2020	09:30	16-01-2020	17:00	ODB	POWERGRID, ER1	AMP	JSEB
382	400 KV Patna Barh 2	16-01-2020	09:30	21-01-2020	17:30	ODB	POWERGRID ER-1	Commissioning of 125 MVAR Switchable line reactor in Patna Barh line 2 at Patna SS under SS03 package and jumper connection and torting	
382		16-01-2020	00.30	31-01-2020	17:30	ODB		Eirewall construction	RSER
202		10-01-2020	05.50	31-01-2020	17.30	UDB		r ii ewaii construction	0500

384	765KV SASARAM-FATEHPUR	16-01-2020	09:00	17-01-2020	17:00	ОСВ	POWERGRID NR-III	For Power line Crossing of under construction 765 kV D/C vindhyachal-Varanasi transmission line (under TBCB)	NLDC
385	400KV 406 BAY AMP	16-01-2020	09:00	16-01-2020	18:00	ODB	ER-II/Odisha/Keonjhar	AMP WORKS/	
386	10852-132KV Bangriposi Line Main Bay	16-01-2020	09:00	16-01-2020	17:30	ODB	ER-II/Odisha/BARIPADA S/S	AMP works	
387	765 KV ICT -2 & SNG CKT-1 LR TIE BAY 708	16-01-2020	09:00	18-01-2020	18:00	ОСВ	ER-II/Odisha/Angul SS	GUIDE VALVE MODIFICATION OF SIEMENS CB-Planned with Siemens Presence	NLDC
388	410 Bay (S' Dighi-II Main bay) at Durgapur	16-01-2020	09:30	16-01-2020	17:30	ODB	POWERGRID, ER-II	AMP works	
389	400kV Kishanganj-1 Main Bay (407-52) at New Purnea	16-01-2020	10:00	16-01-2020	13:00	ODB	POWERGRID, ER1	CT AMP work	
390	400kv Main Bay Varansi 2 at BiharSharif	16-01-2020	10:00	16-01-2020	18:00	ODB	POWERGRID, ER1	AMP WORK	
391	Tie Bay of 400KV ICT-I & NRNC-RNC CKT-IV (Bay no 414) AT NEW RANCHI	16-01-2020	09:00	16-01-2020	17:00	ODB	POWERGRID ER-1	АМР	NLDC
392	220 kv Kishanghanj (PG)- Kishanganj (new) line-1 &2	17-01-2020	09:00	17-01-2020	16:00	ODB	BSPTCL	For maintenance	No Load Restriction
393	400KV Sundergarh-Raigarh Ckt #3	17-01-2020	8:00	25-01-2020	18:00	ODB	ER- II/ODISHA/SUNDERGARH	For PID Testing of Porcelain Insulator/ Only Auto reclose	NLDC
394	765KV Sundargarh-Angul Ckt #2	17-01-2020	8:00	17-01-2020	18:00	ODB	ER- II/ODISHA/SUNDERGARH	TL Maintenance works	NLDC
395	GOKARNA: 400KV MAIN BUS-1 & 400KV BUS COUPLER BAY	17-01-2020	06:00	17-01-2020	15:00	ODB	WB	Winter maintenance	
396	400 KV D/C Farakka-Berhampore line CKT-2	17-01-2020	09:00	18-01-2020	17:00	ODB	POWERGRID, ER-II	Rectification of all shut down nature defects of whole line. (Both Berhampore & Farakka section.	
397	400KV BINAGURI-BONGAIGAON-2	17-01-2020	09:00	17-01-2020	18:00	ODB	POWERGRID. ER-II	commissioning of travelling wave fault locator	NLDC
<u> </u>								Stringing b/w AP 22/0 to 23/0 of 765 KV D/C Medininur-leerat	-
398	220 KV D/C Arambagh-Medinipur Transmission line	17-01-2020	08:00	17-01-2020	17:00	ODB	POWERGRID, ER-II	TL Over existing 220 KV D/C Arambagh-Medinipur Transmission line (WBSETCL)	WB
399	220 KV Birpara-New Siliguri Ckt-I	17-01-2020	08:00	17-01-2020	17:30	ODB	POWERGRID, ER-II	Rectification of displaced VD and Loose A/H and Jumper tightning, damage conductor repair	
400	220KV Maithon-Dumka I&II	17-01-2020	08:00	18-01-2020	18:.00	ОСВ	POWERGRID, ER-II	PL Crossing during Re-conductoring work of Maithon - Right Bank # I Line	132 KH(BSEB)- LALMATIA,132KHSTPP- LALMATIA,132KV DEOGHAR SULTTANGANJ,132KV MAITHON JMATARA SHALL REMAIN IN SERVICE, POWER SHOULD BE ASSISTED TO JAMTARA FROM MAITHON
401	132KV Gangtok-Rangpo-II Line (BAY No104)	17-01-2020	09:00	17-01-2020	14:00	ODB	POWERGRID, ER-II	For Annual AMP Works	SIKKIM
402	400KV Ranchi-Rourkela, CKT-I	17-01-2020	09:00	17-01-2020	17:30	ODB	POWERGRID, ER1	Flashed over insulators replacement at loc no- 341. A/R OF OTHER CKT TO BE PUT INTO NON AUTO MODE	
403	400 KV MAIN BUS-2 AT RANCHI	17-01-2020	09:30	17-01-2020	17:00	ODB	POWERGRID, ER1	Fixing of Stool in Yph Bus-II CVT & AMP,During the S/D, all Lines and equipements will remain Chraged through Bus-I except 400 kv RNC-NRNC- 1 & 2 line	JSEB
404	400KV RANCHI-NEW RANCH-1 TL	17-01-2020	09:30	17-01-2020	17:00	ODB	POWERGRID, ER1	To faciliate shutdown of 400 kV BUS-2.	
405	400KV RANCHI-NEW RANCH-2 TL	17-01-2020	09:30	17-01-2020	17:00	ODB	POWERGRID, ER1	To faciliate shutdown of 400 kV BUS-2	
406	400KV Bus 2 & 500 MVA ICT 1 at Patna	17-01-2020	09:30	19-01-2020	17:30	ODB	POWERGRID ER-1	Replacement of Sky bus	AFTER RESTORATION OF 400KV BARH-MOTIHARI-DC
407	500 MVA ICT-1 at Patna	17-01-2020	09:30	17-01-2020	17:30	ODB	POWERGRID ER-1	Comissioning of Backup impedancy relay	BSEB
408	220KV Bus Coupler 207 Bay	17-01-2020	09:00	19-01-2020	18:00	ODB	ER-II/Odisha/Keonjhar	AMP Work and Rectification of CB found faulty timing & DCRM graphs/ Shutdown shall be taken if not availed in DEC'19/	
409	10952- 132KV Baripada Line Main bay	17-01-2020	09:00	17-01-2020	17:30	ODB	ER-II/Odisha/BARIPADA S/S	AMP works	
410	400 KV TALCHER#2 LINE BAY (407L)	17-01-2020	09:00	17-01-2020	18:00	ODB	ER-II/ODISHA/ROURKELA	AMP WORKS	
411	412 Bay (Main Bay of Farakka-2) at Berhampore	17-01-2020	09:00	17-01-2020	17:00	OCB	POWERGRID, ER-II	Bay AMP	
412	412 Bay (Farakka-I Main Bay) at Durgapur	17-01-2020	09:30	17-01-2020	17:30	ODB	POWERGRID, ER-II	AMP works	
413	220kV Bus Coupler Bay (204-52) at New Purnea	17-01-2020	10:00	17-01-2020	18:00	ODB	POWERGRID, ER1	CB. CT AMP work	1
414	500MVA ICT 1 along with its bay at Patna	17-01-2020	09:30	25-01-2020	17:30	ОСВ	POWERGRID ER-1	Construction of Firewall and equipment uprating & jumper connection	
415	207 bay 220kV_ICT 3 at Patna	17-01-2020	09:30	17-01-2020	17:30	ODB	POWERGRID ER-1	AMP	
416	Main bay of 400 KV RNC CKT-III (Bay no-409) AT NEW RANCHI	17-01-2020	09:00	17-01-2020	17:00	ODB	POWERGRID ER-1	АМР	

417	765 KV DC Sundargarh - Dharamjaygarh Ckt #3	18-01-2020	8:00	19-01-2020	18:00	ODB	ER- II/ODISHA/SUNDERGARH	TL Maintenance works	NLDC
418	220 kV Bus-1	18-01-2020	09:00	18-01-2020	17:30	ODB	ER-II/Odisha/BARIPADA S/S	Isolator allignment work	GRIDCO
419	400kV Durgapur-New Chanditala S/C	18-01-2020	06:00	18-01-2020	15:00	ODB	WB	Winter maintenance	
420	GOKARNA: 400KV MAIN BUS-1 & 400KV BUS COUPLER BAY	18-01-2020	06:00	18-01-2020	15:00	ODB	WB	Winter maintenance	
421	132KV Siliguri-Melli Line	18-01-2020	09:00	18-01-2020	16:00	ODB	POWERGRID, ER-II	Insulator replacement at location 100	SIKKIM
422	220 KV D/C Arambagh-Medinipur Transmission line	18-01-2020	08:00	18-01-2020	17:00	ODB	POWERGRID, ER-II	Stringing b/w AP 22/0 to 23/0 of 765 KV D/C Medinipur-Jeerat TL Over existing 220 KV D/C Arambagh-Medinipur Transmission line (WBSETCL)	WB
423	220 KV Birpara-New Siliguri Ckt-II	18-01-2020	08:00	18-01-2020	17:30	ODB	POWERGRID, ER-II	Rectification of displaced VD and Loose A/H and Jumper tightning, damage conductor repair	
424	400KV Ranchi-Rourkela, CKT-II	18-01-2020	09:00	18-01-2020	17:30	ODB	POWERGRID, ER1	Insulators replacement at loc no- 337, 379 damaged by miscreants. A/R OF OTHER CKT TO BE PUT INTO NON AUTO MODE	
425	400 KV Pusauli-Varanasi Line	18-01-2020	09:00	23-01-2020	18:00	ODB	POWERGRID, ER1	Replacement of insulators at Road/Rail/River/Power Line Crossings and Relay Retrofitting Z A/R OF OTHER CKT TO BE PUT INTO NON AUTO MODE	NLDC
426	500 MVA ICT 3 at Patna	18-01-2020	09:30	18-01-2020	17:30	ODB	POWERGRID ER-1	Rectification of FO sensor under TR01 Package	AFTER PUSAULI ICT SHUTDOWN RETURN
427	720 Tie bay of 765kV Dharmjayagr ckt-I & Darlipalli -II	18-01-2020	09:00	21-01-2020	18:00	ОСВ	ER-II/Odisha/Sundergarh	Siemens CB modification work center guide valave and AMP works	NLDC
428	765KV ICT-3 BR-1 TIE BAY 711	18-01-2020	09:00	18-01-2020	18:00	ODB	ER-II/Odisha/Angul SS	AMP work	NLDC
429	765KV MAIN Bay OF Balia line AT GAYA	18-01-2020	09:00	18-01-2020	18:00	ODB	POWERGRID, ER1	For AMP work	
430	220kV Transfer Bus Bay (205-52) at New Purnea	18-01-2020	10:00	18-01-2020	18:00	ODB	POWERGRID, ER1	CB, CT AMP work	
431	220kV Budhipathar-Korba S/c Line	19-01-2020	08:00	30-01-2020	18:00	ОСВ	ER- II/ODISHA/SUNDERGARH	For Modification/diversion work associated with OPGC MGR Railway Diversion project/	NLDC
432	40kkV D/C Binaguri - Bongaigaon (Twin) Line (POWERGRID)	19-01-2020	06:00	22-01-2020	17:00	ODB	POWERGRID, ER-II	Stringing work of overhead crossing (in beteeen loc no 273-274) for under construction 400 KV D/C Jigmeling-Alipurduar TL .	NLDC
433	132KV Rangpo-CHUZACHEN-1	19-01-2020	09:00	19-01-2020	18:00	ODB	POWERGRID, ER-II	AMP Works	CHUZACHEN
434	400KV Teesta-V-Rangpo Ckt-2	19-01-2020	08:00	23-01-2020	17:00	OCB	POWERGRID, ER-II	For rectification of SF6 gas leakage repair work,	TEESTA-V
435	220 Kv Patna Sipara 3	19-01-2020	08:00	19-01-2020	16:00	ODB	POWERGRID ER-1	AMP	BSEB
436	210 bay main bay sipara 2 at Patna	19-01-2020	09:30	23-01-2020	17:30	ODB	POWERGRID ER-1	AMP &CB Overhauling & BCU updration works under SS03 package	
437	400/220 KV 315 MVA ICT-2 AT MUZAFFARPUR	20-01-2020	09:30	24-01-2020	17:30	OCB	POWERGRID ER-1	OLTC OVERHAULING	BSEB
438	400 KV DARBHNGA - KISHANGANJ CKT-2	20-01-2020	08:00	21-01-2020	18:00	ODB	POWERGRID ER-1	ERECTION OF 400 KV DARBHANGA-SITAMARHI CKT-2 GANTRY TOWER AT DARBHANGA	AFTER RESTORATION OF 400KV NEW PURNEA-BIHARSARIFF-DC
439	765 KV DC Sundargarh - Dharamjaygarh Ckt #4	20-01-2020	8:00	21-01-2020	18:00	ODB	ER- II/ODISHA/SUNDERGARH	TL Maintenance works	NLDC
440	400 Bus 1	20-01-2020	09:00	20-01-2020	18:00	ODB	ER-II/ODISHA/ROURKELA	AMP WORKS	
441	400kV Jeypore-Gazuwaka-I Line	20-01-2020	08:00:00	21-01-2020	18:00:00	ODB	ER-II/Odisha /Jeypore	Replacement of porcelain insulator with polymer insulator and for attending S/D nature defects	NLDC
442	Jeerat: 315NVA ICT#4	20-01-2020	06:00	20-01-2020	15:00	ODB	WB	Winter maintenance	
443	400kV Durgapur-PPSP ckt2	20-01-2020	06:00	20-01-2020	15:00	ODB	WB	Winter maintenance	
444	220KV Katapali-PGCIL Circuit-II	20-01-2020	08:00	20-01-2020	16:00	ODB	GRIDCO	AMP	
445	220KV PGCIL-Sadeipalli Ckt-2	20-01-2020	08:00	20-01-2020	16:00	ODB	GRIDCO	AMP	
446	220 KV TRANSFER BUS, New Duburi	20-01-2020	08:00	20-01-2020	16:00	ODB	GRIDCO	AMP	
447	220KV Meramundali-Mendhasal line	20-01-2020	08:00	20-01-2020	16:00	ODB	GRIDCO	AMP	
448	400 KV Durgapur -Jamshedpur S/C-I	20-01-2020	08:00	25-01-2020	17:00	ODB	POWERGRID, ER-II	DTPC COMMISSIONING	
449	220 KV PG(Maithon)-Dhanbad I&II	20-01-2020	08:00	21-01-2020	18:.00	ODB	POWERGRID, ER-II	PL Crossing during Re-conductoring work of Maithon - Right Bank # I Line	DVC
450	400kV Bus-III at Maithan	20-01-2020	11:00	20-01-2020	19:00	ODB	POWERGRID, ER-II	Dismantlinh work of Bus isolator of 400kV RB-2 under ERSS-XVII project work	DVC
451	132 KV Gangtok-Rangpo-I Line (BAY No105)	20-01-2020	09:00	20-01-2020	14:00	ODB	POWERGRID, ER-II	For Annual AMP Works	SIKKIM
452	220KV New Melli-Tashiding Line(Bay 212)	20-01-2020	10:00	20-01-2020	13:00	ODB	POWERGRID, ER-II	AMP BAY.	
453	220 KV MAIN BUS-1 AT RANCHI	20-01-2020	09:30	20-01-2020	17:00	ODB	POWERGRID, ER1	AMP and R-ph CVT replacement	JSEB

454	765 KV Ranchi-Dharmjaygarh TL(CKT-II)	20-01-2020	08:00	21-01-2020	18:00	ODB	POWERGRID ER-I	Power Line Crossing of 765 kV Ranchi Medinupur line under TBCB A/R OF OTHER CKT TO BE PUT INTO NON AUTO MODE	NLDC
455	400kV Koderma-Bokaro-A CkT#1	20-01-2020	11:00	21-01-2020	17:00	ODB	DVC	Relay maintenance at KTPS, DVC end	
456	125MVAR BUS REACTOR-2 Tie Bay(40506 Bay)	20-01-2020	09:00 Hrs	20/01/20	18:00 Hrs	ODB	ER-II/Odisha/Balangir	AMP for 40506 52CB & 40506 CT	
457	220KVTBC 201 Bay	20-01-2020	09:00	20-01-2020	18:00	ODB	ER-II/Odisha/Keonjhar	AMP Work and Rectification of CB found faulty timing / Shutdown shall be taken if not availed in DEC'19/	
458	404-main bay of 80MVAR Bus Reactor at Duburi SS	20-01-2020	09:00	20-01-2020	17:30	ODB	ER-II/Odisha/BARIPADA S/S	AMP works	
459	400KV MRMDL 1 MAIN BAY 406	20-01-2020	09:00	20-01-2020	18:00	ODB	ER-II/Odisha/Angul SS	AMP work	
460	765 KV TIE Bay Balia Line & 765 KV SIDE ICT-III AT GAYA	20-01-2020	09:00	20-01-2020	18:00	ODB	POWERGRID, ER1	For AMP work	
461	400kv TIE Bay Koderma1 and futureat Biharsharif	20-01-2020	10:00	20-01-2020	18:00	ODB	POWERGRID, ER1	AMP WORK	
462	400kV Main bay of AC filter East Side (CWD50Q52)	20-01-2020	09:00	20-01-2020	18:00	ODB	POWERGRID, ER1	AMP work	NLDC
463	Main Bay of 765KV 3*80MVAR B/R-2 (Bay no 707) AT NEW RANCHI	20-01-2020	09:00	20-01-2020	17:00	ODB	POWERGRID ER-1	АМР	NLDC
464	400kV DSTPS-RTPS Tie Bay	20-01-2020	08:30	25-01-2020	17:00	ОСВ	DVC	 O/H activities including testing on CTs,CVTs,CBs Line ABT Meter calibration Replacement of damaged/defective gland plates in CTJBs 	
465	765 KV DC Sundargarh - Angul Ckt #3	21-01-2020	8:00	24-01-2020	18:00	OCB	ER- II/ODISHA/SUNDERGARH	TP tower maintenance work	NLDC
466	400KV Talcher- Angul Line	21-01-2020	08:00	21-01-2020	17:00	ODB	ER-II/Odisha/HVDC Talcher	Annual S/D maintenance	
467	400 Bus 2	21-01-2020	09:00	21-01-2020	18:00	ODB	ER-II/ODISHA/ROURKELA	AMP WORKS	
468	400kV Durgapur-PPSP ckt1	21-01-2020	06:00	21-01-2020	15:00	ODB	WB	Winter maintenance	
469	KTPP: 315MVA IBT#2	21-01-2020	06:00	22-01-2020	15:00	O.C.B.	WB	Winter maintenance	
470	GOKARNA: 400KV MAIN BUS-2 & 400KV BUS COUPLER BAY	21-01-2020	06:00	21-01-2020	15:00	ODB	WB	Winter maintenance	
471	220 KV Patna(PG)-Gaurichak ck1	21-01-2020	11:00	21-01-2020	17:00	ODB	BSPTCL	For line & bay maintenance work	Gaurichak will avail power from alternate sources
472	400kV RTPS-DSTPS D/C	21-01-2020	10:00	22-01-2020	17:00	ODB	DVC	For resolving the A/R issue	
473	ICT-1- 200MVA- 400KV/132KV/33,HV& MV AUTO STAR ,LV DELTA	21-01-2020	09:00	24-01-2020	17:00	OCB	BRBCL	FOR OVERHAULLING & TESTING OF ICT-1	
474	220KV ICT-I 203 Bay	21-01-2020	09:00	21-01-2020	18:00	ODB	ER-II/Odisha/Keonjhar	AMP Work and Rectification of CB found faulty timing / Shutdown shall be taken if not availed in DEC'19/	
475	400 KV ICT # 1 Main Bay (Bay No-407)	21-01-2020	09:00	21-01-2020	17:00	ODB	ER-II/Odisha/Rengali	MOM Box Retrofitting	
476	40304-Tie bay of Duburi-BPD line & Bus Reactor at Duburi SS	21-01-2020	09:00	21-01-2020	17:30	ODB	ER-II/Odisha/BARIPADA S/S	AMP works	
477	220KV New Melli Bus Coupler(Bay 210)	21-01-2020	10:00	21-01-2020	17:00	ODB	POWERGRID, ER-II	CRM Testing,SF6 Dew Point measurement & Checking of DC Mixing	
478	765KV MAIN Bay 765 kV Side 765/400 KV ICT-III AT GAYA	21-01-2020	09:00	21-01-2020	18:00	ODB	POWERGRID, ER1	For AMP work	
479	Main Bay of 400kV Kishanganj-1 (407-52) at New Purnea	21-01-2020	09:00	21-01-2020	12:00	ODB	POWERGRID, ER1	CT Oil Sampling	
480	Tie Bay of 400kV Kishanganj-1 & Muzaffarpur-2 (408-52) at New Purnea	21-01-2020	12:00	21-01-2020	15:00	ODB	POWERGRID, ER1	CT Oil Sampling	
481	Main Bay of 400kV Muzaffarpur-2(409-52) at New Purnea	21-01-2020	15:00	21-01-2020	18:00	ODB	POWERGRID, ER1	CT Oil Sampling	
482	Main Bay of NRNC-DMG CKT-I (Bay no 704) AT NEW RANCHI	21-01-2020	09:00	21-01-2020	17:00	ODB	POWERGRID ER-1	АМР	NLDC
483	411 Bay (S,Dighi-II & FD-I tie bay) at Durgapur	21-01-2020	09:30	21-01-2020	17:30	ODB	POWERGRID, ER-II	AMP works	
484	766 KV DC Sundargarh - Angul Ckt #4	22-01-2020	8:01	25-01-2020	18:01	OCB	ER- II/ODISHA/SUNDERGARH	TP tower maintenance work	NLDC
485	220KV Balangir-Kantapali line	22/01/20	09:00 Hrs	22/01/20	18:00 Hrs	ODB	ER-II/Odisha/Balangir	AMP for 203 52CB & 203 CT	GRIDCO
486	400KV Talcher- Angul Line	22-01-2020	08:00	22-01-2020	17:00	ODB	ER-II/Odisha/HVDC Talcher	Annual S/D maintenance	
487	400kV Jeypore-Gazuwaka-II Line	22-01-2020	08:00:00	23-01-2020	18:00:00	ODB	ER-II/Odisha /Jeypore	Replacement of porcelain insulator with polymer insulator and for attending S/D nature defects	NLDC
488	400kV Durgapur-PGCIL ckt2	22-01-2020	06:00	22-01-2020	15:00	ODB	WB	Winter maintenance	
489	GOKARNA: 400KV MAIN BUS-2 & 400KV BUS COUPLER BAY	22-01-2020	06:00	22-01-2020	15:00	ODB	WB	Winter maintenance	
490	220 KV Patna(PG)-Gaurichak ck1	22-01-2020	11:00	22-01-2020	17:00	ODB	BSPTCL	For line & bay maintenance work	Gaurichak will avail power from alternate sources

101	132KV Kuchei-Bhograi Ckt-II (Loc 01 to 93)	22-01-2020	08.00	22-01-2020	16:00	ODB	GRIDCO	AMP	
402	132KV Kuchel Dhograi Ckt-II (Loc 01 to 33)	22-01-2020	08.00	22-01-2020	10.00	000	CRIDCO		
492		22-01-2020	08.00	22-01-2020	10.00	UDB ODB	GRIDCO	AMP	
493	315 MVA ICT-I at Durgapur	22-01-2020	09:00	22-01-2020	17:00	ODB	POWERGRID, ER-II	AMP works	DVC
494	132KV S/C Maithan Hydel - Jamtara	22-01-2020	08:00	23-01-2020	18:00	ОСВ	POWERGRID, ER-II	PL Crossing during Re-conductoring work of Maithon - Right Bank # I Line	JSEB
495	66 KV Gangtok-Lagyap(LLHP) Line (BAY No -606)	22-01-2020	09:00	22-01-2020	14:00	ODB	POWERGRID FR-II	For Annual AMP Works	SIKKIM
196	220KV New Melli-IHLEP Line-I(Bay 205)	22-01-2020	10.00	22-01-2020	13.00	ODB	POWERGRID ER-II	AMPBAY	
490	220KV New Melli-STILLF Line-I(Bay 203)	22-01-2020	10.00	22-01-2020	13.00	000		AWF DAT.	
497	400 KV Pusauli -Daltonganj- Ckt -II	22-01-2020	09:00	24-01-2020	18:00	ODB	POWERGRID, ER1	A/R OF OTHER CKT TO BE PUT INTO NON AUTO MODE	JSEB
498	400KV RANCHI-MTN-I TL	22-01-2020	09:00	22-01-2020	17:00	ODB	POWERGRID, ER1	FOR STRENTHENING OF TOWER PEAK AT LOCATION NO. 509, 510 & 511	
499	400KV RANCHI-RAGHUNATHPUR-I TL	22-01-2020	09:00	22-01-2020	17:00	ODB	POWERGRID, ER1	FOR STRENTHENING OF TOWER PEAK AT LOCATION NO. 509, 510 & 511	DVC
500	400 KV MAIN BUS-1 AT RANCHI	22-01-2020	09:00	22-01-2020	17:00	ODB	POWERGRID, ER1	STABILITY TEST FOR BUS BAR PROTECTION OF 426 BAY (TIE BAY	
								CTABLIEV TECT FOR BUG BAR PROTECTION OF 42C BAY (THE BAY	
					47.00	000		STABILITY TEST FOR BUS BAR PROTECTION OF 420 BAT (TE BAT	
501	400KV RANCHI-NEW RANCH-1 IL	22-01-2020	09:00	22-01-2020	17:00	ODB	POWERGRID, ER1	OF RNC-RNC-1 AS COMMISSIONING TEST)	
								A/R OF OTHER CKT TO BE PUT INTO NON AUTO MODE	
502	400kV Koderma-Bokaro-A CkT#2	22-01-2020	11:00	23-01-2020	17:00	ODB	DVC	Relay maintenance at KTPS, DVC end	
503	721 Main bay of 765kV Dharmjayagr ckt-l	22-01-2020	09:00	25-01-2020	18:00	ОСВ	ER-II/Odisha/Sundergarh	Siemens CB modification work center guide valave and AMP works	NLDC
504	220KV_204 Bay (Future line bay)	22-01-2020	09:00	22-01-2020	18:00	ODB	ER-II/Odisha/Keonihar	AMP Work and Rectification of CB found faulty timing /	
							, , ,	Shutdown shall be taken if not availed in DEC'19/	
505	220 KV ICT #2 Bay (Bay No/202)	22-01-2020	09:00	25-01-2020	17:00	OCB	ER-II/Odisha/Rengali	CB Pole Overhauling	
506	40852- Tie Bay of Duburi line & Jamshedpur line	22-01-2020	09:00	22-01-2020	17:30	ODB	ER-II/Odisha/BARIPADA S/S	AMP works	
507	400KV BUS REACTOR 3& MRMDL 1 TIE BAY 405	22-01-2020	09:00	22-01-2020	18:00	ODB	ER-II/Odisha/Angul SS	AMP work	
508	765KV MAIN Bay OF 765 kV Side 765/400 KV ICT-IV)	22-01-2020	09:00	22-01-2020	18:00	ODB	POWERGRID, ER1	For AMP work	
509	Main Bay of 400kV Kishanganj-1 (410-52) at New Purnea	22-01-2020	12:00	22-01-2020	15:00	ODB	POWERGRID, ER1	CT Oil Sampling	
510	Main Bay of 400kV Muzaffarpur-1(412-52) at New Purnea	22-01-2020	15:00	22-01-2020	18:00	ODB	POWERGRID, ER1	CT Oil Sampling	
511	400ky Main Bay Varanasi 1 at Biharsharif	22-01-2020	10:00	22-01-2020	18:00	ODB	POWERGRID, ER1	AMP WORK	
512	213 main bay 220KV Fatuha line at Patna	22-01-2020	09:30	24-01-2020	17:30	ОСВ	POWERGRID ER-1	CB Overhauling & BCU updration works under SS03 package	
512	400 kV Now Chandwa, Gava CKT, J	22 01 2020	08.00	22 01 2020	10.00	ODP		Replacement of inculators damaged by missreants	
515	400 KV New Chandwa- Gaya CK1-1	23-01-2020	00.00	23-01-2020	10.00	ODB			
514	400KV Sundargarn-Rourkela ckt-3	23-01-2020	09:00	23-01-2020	18:00	ODB	ER-II/Odisna/Sundergarn	AMP OF GIS Bays	0010.00
515	Bus bar-1	23-01-2020	09:00	23-01-2020	18:00	ODB	ER-II/Odisha/Indravati	AMP works of Bus-1	GRIDCO
516	400KV Talcher- Meramundali Line	23-01-2020	08:00	23-01-2020	17:00	ODB	ER-II/Odisha/HVDC Talcher	Annual S/D maintenance	GRIDCO
517	220KV Bus-II	23-01-2020	09:00	23-01-2020	17:30	ODB	ER-II/Odisha/BARIPADA S/S	Isolator allignment work	GRIDCO
								LINE AMP WORKS /FOR TAKING THE LINE REACTOR OUT OF	
518	400 KV Rourkela-SUNDARGARH#3 LINE	23-01-2020	09:00	23-01-2020	18:00	ODB	ER-II/ODISHA/ROURKELA	SERVICE FOR GASKET REPLACEMENT & OVERHAULING WORKS	
								TO ARREST OIL LEACKAGES	
519	220 KV Patna(PG)-Gaurichak ck1	23-01-2020	11:00	23-01-2020	17:00	ODB	BSPTCL	For line & bay maintenance work	Gaurichak will avail power from alternate sources
520	400KV BINAGURI-BONGAIGAON-1	23-01-2020	09:00	23-01-2020	18:00	ODB	POWERGRID, ER-II	commissioning of travelling wave fault locator	NLDC
521	220KV New Melli-JHLEP Line-II(Bay 206)	23-01-2020	10:00	23-01-2020	13:00	ODB	POWERGRID, ER-II	AMP BAY.	
		20 01 2020	10.00	20 01 2020				Rectification of Tower No:- 170 of Pusauli- Nabinagr D/C Line	
522	400K)/ Russuli, Daltangani Lina 1	22 01 2020	00.00	14 02 2020	10.00	OCP		having grighted log hand	
522		23-01-2020	09.00	14-02-2020	10.00	005			
								Rectification of Tower No:- 170 of Pusauli- Nabinagr D/C Line	
523	400KV Pusauli-Nabinagar Line-1	23-01-2020	09:00	26-02-2020	18:00	OCB	POWERGRID, ER1	having crictical leg bend	
							l	A/R OF OTHER CKT TO BE PUT INTO NON AUTO MODE	
5.24		22 01 2020	00.00	22 01 2020	17:00	000		STABILITY TEST FOR BUS BAR PROTECTION OF 429 BAY (TIE BAY	
524	400 KV IVIAIN BUS-1 AT KANCHI	23-01-2020	09:00	23-01-2020	17.00		FOWLRORID, ERI	OF RNC-RNC-2 AS COMMISSIONING TEST)	
						a		FOR RECTIFICAION OF EARTH WIRE OF 400KV RANCHI-RGP-I	
525	400KV RANCHI-MTN-I TL	23-01-2020	09:00	23-01-2020	17:00	ODB	POWERGRID, ER1	LINE AT LOCATION NO510 & 511	
						1	1	FOR RECTIFICATION OF FARTH WIRE OF 400KV RANCHI-RGP-I	
526	400KV RANCHI-RAGHUNATHPUR-I TL	23-01-2020	09:00	23-01-2020	17:00	ODB	POWERGRID, ER1	LINE AT LOCATION NO -510 & 511	DVC
						1			I

527	400KV RANCHI-NEW RANCH-1 TL	23-01-2020	09:00	23-01-2020	17:00	ODB	POWERGRID, ER1	FOR RECTIFICAION OF EARTH WIRE OF 400KV RANCHI-RGP-I LINE AT LOCATION NO510 & 511	
528	400KV RANCHI-NEW RANCH-2 TL	23-01-2020	09:00	23-01-2020	17:00	ODB	POWERGRID, ER1	FOR RECTIFICAION OF EARTH WIRE OF 400KV RANCHI-RGP-I LINE AT LOCATION NO510 & 511	
529	400KV RANCHI-NEW RANCH-3 TL	23-01-2020	09:00	23-01-2020	17:00	ODB	POWERGRID, ER1	FOR RECTIFICAION OF EARTH WIRE OF 400KV RANCHI-RGP-I LINE AT LOCATION NO510 & 511	
530	400KV RANCHI-NEW RANCH-4 TL	23-01-2020	09:00	23-01-2020	17:00	ODB	POWERGRID, ER1	FOR RECTIFICAION OF EARTH WIRE OF 400KV RANCHI-RGP-I LINE AT LOCATION NO510 & 511	
531	220KV ICT-II 205 Bay	23-01-2020	09:00	23-01-2020	18:00	ODB	ER-II/Odisha/Keonjhar	AMP Work and Rectification of CB found faulty timing / Shutdown shall be taken if not availed in DEC'19/	
532	413 Bay (FD Line-II main bay)) at Durgapur	23-01-2020	09:30	23-01-2020	17:30	ODB	POWERGRID, ER-II	AMP works	
533	765KV TIE Bay (765 Kv VNS CKT-II & 765 KV SIDE ICT-IV)	23-01-2020	09:00	23-01-2020	18:00	ODB	POWERGRID, ER1	For AMP work	
534	Tie Bay of 400kV Kishanganj-2 & Muzaffarpur-1 (411-52) at New Purnea	23-01-2020	09:00	23-01-2020	13:00	ODB	POWERGRID, ER1	CT Oil Sampling	
535	400kV Tie Bay of Varanasi Line (CWD30Q50)	23-01-2020	09:00	23-01-2020	18:00	ODB	POWERGRID, ER1	AMP work	NLDC
536	214 Main bay 400/220KV ICT 1 at Patna	23-01-2020	09:30	25-01-2020	17:30	ОСВ	POWERGRID ER-1	CB Overhauling & BCU updration works under SS03 package	
537	765KV Tie Bay of 765/400KV 1500MVA ICT-I & FUTURE AT NEW RANCHI	23-01-2020	09:00	23-01-2020	17:00	ODB	POWERGRID ER-1	АМР	NLDC
538	400 kV New Chandwa- Gaya CKT- II	24-01-2020	08:00	24-01-2020	18:00	ODB	POWERGRID ER-1	Replacement of insulators damaged by miscreants	
539	400KV Sundargarh-Raigarh ckt-4	24-01-2020	09:00	24-01-2020	19:00	ODB	ER-II/Odisha/Sundergarh	AMP OF GIS Bays	
540	400KV Talcher- Meramundali Line	24-01-2020	08:00	24-01-2020	17:00	ODB	ER-II/Odisha/HVDC Talcher	Annual S/D maintenance	GRIDCO
541	400 KV SUNDARGARH#2 LINE	24-01-2020	09:00	24-01-2020	18:00	ODB	ER-II/ODISHA/ROURKELA	LINE AMP WORKS	
542	COUP Transformer (3x 166.7 MVA) at Jeypore	24-01-2020	10:00:00	24-01-2020	13:00:00	ODB	ER-II/Odisha /Jeypore	For changing Coup. Transformer combination form Unit-I,II, IV to Unit-I , III & IV for charging Unit-III	
543	400kV Durgapur-PGCIL ckt1	24-01-2020	06:00	24-01-2020	15:00	ODB	WB	Winter maintenance	
544	Meramundali 400/220KV ICT-I for conditioning monitoring test of Transformer, equipment & Maintenance work.	24-01-2020	08:00	25-01-2020	16:00	ODB	GRIDCO	АМР	
545	400KV Maithon-Right Bank #II	24-01-2020	08:00	07-02-2020	18:00	OCB	POWERGRID, ER-II	Re conductoring work	
546	Non Autoreclose mode 400KV Maithon-Right Bank #I	24-01-2020	08:00	07-02-2020	18:00	ОСВ	POWERGRID, ER-II	MTN RB Ckt-I will be kept in NON-Auto during Re conductoring in MTN RB Ckt-II for safety measure.	
547	132KV S/C Maithan Hydel - Jamtara	24-01-2020	08:00	25-01-2020	18:00	ОСВ	POWERGRID, ER-II	PL Crossing during Re-conductoring work of Maithon - Right Bank # II Line	JSEB
548	66 KV Gangtok-Bulbulay Line (BAY No605)	24-01-2020	09:00	24-01-2020	14:00	ODB	POWERGRID, ER-II	For Annual AMP Works	SIKKIM
549	765KV GAYA-VARANASI-II	24-01-2020	09:00	30-01-2020	18:00	ODB	POWERGRID, ER1	765 KV Tower Strengthening works by M/s KPTL	NLDC
550	220KV OPTCL-II 206 Bay	24-01-2020	09:00	24-01-2020	18:00	ODB	ER-II/Odisha/Keonjhar	AMP Work and Rectification of CB found faulty timing / Shutdown shall be taken if not availed in DEC'19/	
551	41352-500MVA ICT#3 GIS Bay	24-01-2020	09:00	24-01-2020	17:30	ODB	ER-II/Odisha/BARIPADA S/S	AMP works	
552	414 Bay (FD-II Maithon-I Tie bay) at Durgapur	24-01-2020	09:30	24-01-2020	17:30	ODB	POWERGRID, ER-II	AMP works	
553	220/132 kV 100 MVA ICT -1 at Rangpo (BAY 211)	24-01-2020	08:00	28-01-2020	16:00	ОСВ	POWERGRID, ER-II	For rectification of SF6 gas leakage repair work,	
554	Tie bay of 400kv Maithon-MPL Ckt#2/ST-1,(Bay no 405) at MPL	24-01-2020	09:00	07-02-2020	19:00	OCB	POWERGRID, ER-II	Upgradation of Bay equipmenets under ERSS-XVII Project work. Shut down of Bays proposed in respect of line shut down for reconductoring work.	
555	765 MAIN Bay (765 kV Gaya- VNS CKT-II) at Gaya s/s	24-01-2020	09:00	24-01-2020	18:00	ODB	POWERGRID, ER1	For AMP work	
556	Main Bay of 400kV Malda-2 (413-52) at New Purnea	24-01-2020	09:00	24-01-2020	12:00	ODB	POWERGRID, ER1	CT Oil Sampling	
557	Tie Bay of 400kV Malda-2 & Bus Reactor-1 (414-52) at New Purnea	24-01-2020	12:00	24-01-2020	15:00	ODB	POWERGRID, ER1	CT Oil Sampling	
558	Main Bay of 400kV Bus Reactor-1 (415-52) at New Purnea	24-01-2020	15:00	24-01-2020	18:00	ODB	POWERGRID, ER1	CT Oil Sampling	
559	400kv TIE Bay of Varansi 1 and Future at Biharsharif	24-01-2020	10:00	24-01-2020	18:00	ODB	POWERGRID, ER1	AMP WORK	
560	400kV Tie Bay of Allahabad Line (CWD20Q50)	24-01-2020	09:00	24-01-2020	18:00	ODB	POWERGRID, ER1	AMP work	NLDC
561	400kV Bus-2 at MPL	24-01-2020	10:00	24-01-2020	18:00	ODB	POWERGRID, ER-II	Dismantling of Bus isolator of 406 bay	MAY BE ALLOWED WHEN ONLY ONE UNIT IS IN SERVICE
562	400KV Sundargarh-OPGC ckt-1	25-01-2020	09:00	25-01-2020	20:00	ODB	ER-II/Odisha/Sundergarh	AMP OF GIS Bays	

563	400/220KV ICT#2	25-01-2020	09:00	25-01-2020	18:00	ODB	ER-II/Odisha/Indravati	To topup the oil in ICT#2 Y-ph/ During this shutdown Power flow from ICT#2 will be Interrupted/	GRIDCO
564	400 KV Rourkela-SUNDARGARH#4 LINE	25-01-2020	09:00	25-01-2020	18:00	ODB	ER-II/ODISHA/ROURKELA	LINE AMP WORKS	
565	400kv DGP: 315 MVA, 400/220/33kV, ICT-1	25-01-2020	06:00	25-01-2020	15:00	ODB	WB	Winter maintenance	
566	400kv KTPP-Arambag S/C	25-01-2020	06:00	26-01-2020	15:00	O.C.B.	WB	Winter maintenance	
567	220 kV Atri- Pandiabil Ckt-I	25-01-2020	08:00	25-01-2020	16:00	ODB	GRIDCO	AMP	
568	400KV ICT#2 Main Bay (403) at OHPC S/Y	25-01-2020	09:00	25-01-2020	18:00	ODB	ER-II/Odisha/Indravati	AMP works of 400KV ICT#2 Main Bay (403) at OHPC S/Y/ During this shutdown Power flow from ICT#2 will be Interrupted/	
569	220KV ICT#2 Main Bay (205) at OHPC S/Y	25-01-2020	09:00	25-01-2020	18:00	ODB	ER-II/Odisha/Indravati	AMP works of 220KV ICT#2 Main Bay (205) at OHPC S/Y/ During this shutdown Power flow from ICT#2 will be Interrupted/	
570	41452 - GIS Tie bay of ICT #3 & Bus Reactor-1	25-01-2020	09:00	25-01-2020	13:30	ODB	ER-II/Odisha/BARIPADA S/S	AMP works	
571	400KV ICT 4 MAIN BAY 419	25-01-2020	09:00	25-01-2020	18:00	ODB	ER-II/Odisha/Angul SS	AMP work	
572	Main Bay of 400kV Malda-1 (416-52) at New Purnea	25-01-2020	09:00	25-01-2020	12:00	ODB	POWERGRID, ER1	CT Oil Sampling	
573	Tie Bay of 400kV Malda-1 & Bus Reactor-2 (417-52) at New Purnea	25-01-2020	12:00	25-01-2020	15:00	ODB	POWERGRID, ER1	CT Oil Sampling	
574	Main Bay of 400kV Farakka (419-52) at New Purnea	25-01-2020	15:00	25-01-2020	18:00	ODB	POWERGRID, ER1	CT Oil Sampling	
575	409 Main bay 400/220KV ICT 2 at Patna	25-01-2020	09:30	27-01-2020	17:30	ОСВ	POWERGRID ER-1	CB Overhauling & BCU updration works under SS03 package	
576	400kv Gorakhpur-Muzaffarpur-II	25-01-2020	09:00	25-01-2020	17:00	ODB	POWERGRID NR-III	AMP of Line Bay equipments at PGCIL Gorakhpur S/s	NLDC
577	724 Main Bay of 765kV Dhrmajayaghar CKT-II	26-01-2020	09:00	29-01-2020	18:00	ОСВ	ER-II/Odisha/Sundergarh	Siemens CB modification work center guide valave and AMP works	NLDC
578	41652-Future Line Bay GIS	26-01-2020	13:30	26-01-2020	17:30	ODB	ER-II/Odisha/BARIPADA S/S	AMP works	
579	417 Bay ((Tie Bay of 63MVAr B/R & ICT-2)	26-01-2020	09:00	26-01-2020	18:00	ODB	ER-II/Odisha /Jeypore	AMP of 417 Bay	
580	400KV MAIN bay Balia Line-2 at Patna	26-01-2020	09:30	29-01-2020	17:30	ОСВ	POWERGRID ER-1	CB Overhauling & BCU updration works under SS03 package	
581	220 KV BUS-1 AT MUZAFFARPUR	27-01-2020	09:30	28-01-2020	17:30	ODB	POWERGRID ER-1	BUS AMP WORK	BSEB
582	400KV Sundergarh-Raigarh Ckt #4	27-01-2020	8:00	31-01-2020	18:00	ODB	ER- II/ODISHA/SUNDERGARH	For PID Testing of Porcelain Insulator/ Only Auto reclose	NLDC
583	Bus bar-2	27-01-2020	09:00	27-01-2020	18:00	ODB	ER-II/Odisha/Indravati	AMP works of Bus-2	GRIDCO
584	315MVA ICT-I AMP	27-01-2020	09:00	27-01-2020	18:00	ODB	ER-II/Odisha/Keonjhar	WTI & OTI Calibration to be check	GRIDCO
585	400kvJEERAT-RAJARHAT(PGCL) S/C	27-01-2020	09:00	06-02-2020	16:00	ОСВ	WB	OCB for modification of terminal arrangement (Erection of busduct and SF6 bushing) at JEERAT iro 400kv GIS construction	
586	400kv DGP: (3X105)MVA, 400/220/33kV, ICT-2	27-01-2020	06:00	27-01-2020	15:00	ODB	WB	Winter maintenance	
587	400kV Rengali - Baripada (Loc.1 to Loc.252)	27-01-2020	08:00	29-01-2020	16:00	ODB	GRIDCO	AMP	
588	Meramundali 400/220 kV ICT-II for conditioning monitoring test of Transformer, equipment & Maintenance work.	27-01-2020	08:00	28-01-2020	16:00	ODB	GRIDCO	АМР	
589	400KV Maithon - Mejia # 1	27-01-2020	08:00	27-01-2020	18:00	ODB	POWERGRID, ER-II	AMP Work	DVC
590	66 KV Gangtok-Tadong Line (BAY No607)	27-01-2020	09:00	27-01-2020	14:00	ODB	POWERGRID, ER-II	For Annual AMP Works	SIKKIM
591	41752-Tie bay of GIS Bus Reactor-2 & Future line	27-01-2020	09:00	27-01-2020	13:30	ODB	ER-II/Odisha/BARIPADA S/S	AMP works	
592	765 KV ICT 4 MAIN BAY 713	27-01-2020	09:00	27-01-2020	18:00	ODB	ER-II/Odisha/Angul SS	AMP work	NLDC
593	409 Bay (Main Bay of 125 MVAr B/R)	27-01-2020	08:00:00	27-01-2020	18:00:00	ODB	ER-II/Odisha /Jeypore	AMP of 409 Bay	
594	220kV Side of ICT-2 Bay (206-52) at New Purnea	27-01-2020	09:00	27-01-2020	12:00	ODB	POWERGRID, ER1	CT Oil Sampling 220kV ICT-2 will remain out of service	
595	Main Bay of 400kV Gokarna (422-52) at New Purnea	27-01-2020	12:00	27-01-2020	15:00	ODB	POWERGRID, ER1	CT Oil Sampling	
596	Tie Bay of 400kV Farakka &Biharshariff-2 (420-52) at New Purnea	27-01-2020	15:00	27-01-2020	18:00	ODB	POWERGRID, ER1	CT Oil Sampling	
597	315MVA ICT-II AMP	28-01-2020	09:00	28-01-2020	18:00	ODB	ER-II/Odisha/Keonjhar	WTI & OTI Calibration to be check	GRIDCO
598	400kv DGP: 400KV TBC Bay	28-01-2020	06:00	28-01-2020	15:00	ODB	WB	Winter maintenance	
599	400kV D/C Alipurduar - Binaguri (QUAD) Line (STERLITE)	28-01-2020	06:00	31-01-2020	17:00	ODB	POWERGRID, ER-II	Stringing work of overhead crossing (in beteeen loc no 292-293) for under construction 400 KV D/C Jigmeling-Alipurduar TL .	
600	220 KV Bus #1 at Binaguri with Siliguri #1, ICT#1, Birpara#1 & Bus Section-I	28-01-2020	09:00	29-01-2020	17:00	ODB	POWERGRID, ER-II	Commissioning of Bus #1 Bus bar protection for ICT#3 ERSS-XVII	WB
601	400KV Maithon - Mejia # 3	28-01-2020	08:00	28-01-2020	18:00	ODB	POWERGRID, ER-II	AMP Work	DVC

								Rectification of Tower No:- 170 of Pusauli- Nabinagr D/C Line	
602	400KV Pusauli-Nabinagar Line-2	28-01-2020	09:00	11-02-2020	18:00	OCB	POWERGRID, ER1	having crictical leg bend	
								A/R OF OTHER CKT TO BE PUT INTO NON AUTO MODE	
603	400 KV SIPAT-I LINE AT RANCHI	28-01-2020	09:30	28-01-2020	09:45	ODB	POWERGRID, ER1	Isolation of 80 MVAR Line Reactor for AMP	NLDC
604	400 KV SIPAT-II LINE AT RANCHI	28-01-2020	17:15	28-01-2020	17:30	ODB	POWERGRID, ER1	Taking 80 MVAR Line Reactor into service	NLDC
605	400 KV SIPAT-II LINE AT RANCHI	28-01-2020	17:15	28-01-2020	17:30	ODB	POWERGRID, ER1	Taking 80 MVAR Line Reactor into service	NLDC
606	41852-main bay of 125MVAR GIS Bus Reactor-2	28-01-2020	13:30	28-01-2020	17:30	ODB	ER-II/Odisha/BARIPADA S/S	AMP works	
607	400KV BUS REACTOR 3 (125MVAR) MAIN BAY 404	28-01-2020	09:00	28-01-2020	18:00	ODB	ER-II/Odisha/Angul SS	AMP Work	
608	400kV Main bay of AC filter North Side (CWD10Q52)	28-01-2020	09:00	28-01-2020	18:00	ODB	POWERGRID, ER1	AMP work	NLDC
609	400KV Main bay Of 400/220KV 500MVA ICT 1 at Patna	28-01-2020	09:30	30-01-2020	17:30	OCB	POWERGRID ER-1	CB Overhauling & BCU updration works under SS03 package	
610	315 MVA ICT-2 BOLANGIR	28-01-2020	08:00	03-02-2020	18:00	ODB	POWERGRID, ER-II	INTERNAL INSPECTION OF BUSHING	
611	220 KV BUS-2 AT MUZAFFARPUR	29-01-2020	09:30	30-01-2020	17:30	ODB	POWERGRID ER-1	BUS AMP WORK	BSEB
612	500 MVA ICT III	29-01-2020	13:30	29-01-2020	17:30	ODB	ER-II/Odisha/BARIPADA S/S	AMP works	GRIDCO
613	400kv DGP: Bus Coupler along with Main Bus-1 & Durgapur- New Chanditala S/C.	29-01-2020	06:00	29-01-2020	15:00	ODB	WB	Winter maintenance	
614	400kv KTPP-Kharagpur#1	29-01-2020	06:00	30-01-2020	15:00	O.C.B.	WB	Winter maintenance	
615	220 kV Atri- Pandiabil Ckt-II	29-01-2020	08:00	29-01-2020	16:00	ODB	GRIDCO	AMP	
616	400KV Maithon - Durgapur # 2	29-01-2020	08:00	29-01-2020	18:00	ODB	POWERGRID, ER-II	AMP Work	
617	66 KV Gangtok-Sherathang Line (BAY No604)	29-01-2020	09:00	29-01-2020	14:00	ODB	POWERGRID, ER-II	For Annual AMP Works	SIKKIM
618	400 KV SIPAT-I LINE AT RANCHI	29-01-2020	09:30	29-01-2020	17:00	ODB	POWERGRID, ER1	Isolation of 80 MVAR Line Reactor for AMP	NLDC
619	400KV CHAIBASA- KGP LINE 1	29-01-2020	09:30	29-01-2020	13:30	ODB	POWERGRID, ER1	KGP1 LINE REACTOR RTD repalcement	WB
620	400KV 40708 BAY AMP	29-01-2020	09:00	29-01-2020	18:00	ODB	ER-II/Odisha/Keonjhar	AMP WORKS/	
621	765/400kV, 1500MVA ICT-2	30-01-2020	09:00	30-01-2020	18:00	ODB	ER-II/Odisha/Angul SS	AMP work	NLDC
622	220 KV Bus #2 at Binaguri with Siliguri #2, ICT#2, Birpara#2 & Bus Section-II	30-01-2020	09:00	31-01-2020	17:00	ODB	POWERGRID, ER-II	Commissioning of Bus #2 Bus bar protection for ICT#3 ERSS-XVII	WB
623	400KV RBTPS-Ranchi I&II	30-01-2020	08:00	31-01-2020	18:00	ОСВ	POWERGRID, ER-II	PL Crossing during Re-conductoring work of Maithon - Right Bank # II Line	MPL
624	704 Main Bay of 765KV ,240MVAR BR-II	30-01-2020	08:30	31-01-2020	18:30	ODB	ER-II/Odisha/Sundergarh	AMP works	NLDC
625	400KV 408 BAY AMP	30-01-2020	09:00	30-01-2020	18:00	ODB	ER-II/Odisha/Keonjhar	AMP WORKS/	
626	400 KV Rourkela-SUNDARGARH#3 LINE	31-01-2020	09:00	31-01-2020	18:00	ODB	ER-II/ODISHA/ROURKELA	FOR ERECTION OF REACTOR BUSHINGS (SHUTDOWN BEING AVAILED AS CLEARANCE IS LESS)	
627	400kV Main Bay of HVDC (CWD50Q51)	31-01-2020	09:00	31-01-2020	18:00	ODB	POWERGRID, ER1	AMP work	NLDC

	ERLDC, KOLKATA													
	1	TRANSMISS	ION ELEME	INTS OUTAGE	DEFFERED	IN 164th OC	C MEETING OF EF							
		FROI		10					SUBJECT TO CONSENT					
SI	NAME OF THE ELEMENTS	DATE	TIME	DATE	TIME	REMARKS	S.D availed BY	Reason	FROM AGENCY					
1	400kv Gorakhpur-Muzaffarpur-I	24-12-2019	09:00	24-12-2019	17:00	ODB	POWERGRID NR-III	AMP of Line Bay equipments & Relay Testing at PGCIL Gorakhpur S/s	AFTER RESTORATION OF 400KV BARH-MOTIHARI-DC					
2	400KV Bus 2 at Patna	14-01-2020	09:30	15-01-2020	17:30	ODB	POWERGRID ER-1	Commissioning of Bus isolator of bay 412	AFTER RESTORATION OF 400KV BARH-MOTIHARI-DC					
3	400KV Bus -I at Patna	01-01-2020	09:30	01-01-2020	17:30	ODB	POWERGRID ER-1	AMP, Jumper Tighting	AFTER RESTORATION OF 400KV BARH-MOTIHARI-DC					
4	400KV Bus 2 at Patna	03-01-2020	09:30	03-01-2020	17:30	ODB	POWERGRID ER-1	Dismantling of Bus isolator of bay 409	AFTER RESTORATION OF 400KV BARH-MOTIHARI-DC					
5	400KV Bus 2 at Patna	08-01-2020	09:30	09-01-2020	17:30	ODB	POWERGRID ER-1	Commissioning of Bus isolator of bay 409	AFTER RESTORATION OF 400KV BARH-MOTIHARI-DC					
6	400KV Bus 2 at Patna	10-01-2020	09:30	10-01-2020	17:30	ODB	POWERGRID ER-1	Dismantling of Bus isolator of bay 412	AFTER RESTORATION OF 400KV BARH-MOTIHARI-DC					
7	400 KV Bus 2 at Patna	16-01-2020	09:30	21-01-2020	17:30	ODB	POWERGRID ER-1	Commissioning of 125 MVAR Switchable line reactor in Patna Barh line 2 at Patna SS under SS03 package	AFTER RESTORATION OF 400KV BARH-MOTIHARI-DC					
8	400KV Bus 2 & 500 MVA ICT 1 at Patna	17-01-2020	09:30	19-01-2020	17:30	ODB	POWERGRID ER-1	Replacement of Sky bus	AFTER RESTORATION OF 400KV BARH-MOTIHARI-DC					
9	63 MVAr, 400 KV SUNDARGARH#1 LINE REACTOR	01-01-2020	09:30	16-01-2020	18:00	ОСВ	ER- II/ODISHA/ROURK ELA	GASKET REPLACEMENT & OVERHAULING WORKS TO ARREST OIL LEACKAGES	DEFFERD					
10	50MVAR JEYPORE LINE REACTOR	02/01/20	09:00 Hrs	02/01/20	18:00 Hrs	ODB	ER- II/Odisha/Balangir	AMP for 50MVAR Jeypore L/R and 403R 52 CB	DEFFERD					
11	50MVAR ANGUL LINE REACTOR	04/01/20	09:00 Hrs	04/01/20	18:00 Hrs	ODB	ER- II/Odisha/Balangir	AMP for 401R 52 CB	DEFFERD					
12	125MVAR Bus Reactor	06-01-2020	09:00	10-01-2020	18:00	ODB	ER- II/Odisha/Keonjhar	Repairing of conservator Aircel	DEFFERD					
13	125 MVAr Bus Reactor	06-01-2020	09:00	06-01-2020	18:00	ODB	ER-II/Odisha /Jeypore	AMP of 125 MVAr Bus Reactor	DEFFERD					
14	400 KV 125 MVAR BUS REACTOR#2	08-01-2020	09:00	08-01-2020	18:00	ODB	ER- II/ODISHA/ROURK ELA	AMP WORKS	DEFFERD					
15	50 MVAR LINE REACTOR of 400 KV MAITHAN RB-1 (SWITCHABLE) AT RANCHI	10-01-2020	09:30	10-01-2020	17:00	ODB	POWERGRID, ER1	AMP	DEFFERD					
16	3X16/67 MVAR KEONJHAR LINE REACTOR	11-01-2020	09:00	11-01-2020	17:30	ОСВ	ER- II/Odisha/BARIPAD A S/S	AMP works	DEFFERD					

17	401R Keonjhar Line Reactor	13-01-2020	09:00	13-01-2020	17:30	ODB	ER- II/Odisha/BARIPAD A S/S	AMP works	
18	50 MVAR LINE REACTOR of 400 KV MAITHAN RB-2 (SWITCHABLE) AT RANCHI	14-01-2020	09:30	14-01-2020	17:00	ODB	POWERGRID, ER1	АМР	DEFFERD
19	50MVAR Line Reactor	17-01-2020	09:00	17-01-2020	18:00	ODB	ER-II/Odisha /Indravati	For Arresting Oil Leakage from Turret CT Line Reactor /The Line reactor is not a Switchable One , for Which the Power Flow In the Indravati-Rengali Line will be Interrupt/	DEFFERD
20	400kv DGP: 400kV, 50MVAR Bus Reactor	17-01-2020	06:00	17-01-2020	15:00	ODB	WB	Winter maintenance	DEFFERD
21	765 KV 3*110 MVAR BUS REACTOR(703-52 BR)	17-01-2020	09:00	17-01-2020	18:00	ODB	POWERGRID, ER1	Retrofitting work of CSD Relay	DEFFERD
22	80 MVAR BUA REACTOR-1	18/01/20	09:00 Hrs	18/01/20	18:00 Hrs	ODB	ER- II/Odisha/Balangir	AMP for 80MVAR B/R-1	DEFFERD
23	80 MVAR Bus Reactor at Duburi SS	19-01-2020	09:00	19-01-2020	17:30	ODB	ER- II/Odisha/BARIPAD A S/S	AMP works	DEFFERD
24	63 MVAr, 400 KV SUNDARGARH#3 LINE REACTOR	23-01-2020	09:00	05-02-2020	18:00	ОСВ	ER- II/ODISHA/ROURK ELA	GASKET REPLACEMENT & OVERHAULING WORKS TO ARREST OIL LEACKAGES	DEFFERD
25	63 MVAr Bus Reactor	25-01-2020	09:00	25-01-2020	18:00	ODB	ER-II/Odisha /Jeypore	AMP of 63 MVAr Bus Reactor & CSD testing	DEFFERD
26	765 KV 3*110 MVAR LINE REACTOR(707-52LR)	25-01-2020	09:00	25-01-2020	19:00	ODB	POWERGRID, ER1	Retrofitting work of CSD Relay	NLDC
27	80 MVAR LINE REACTOR of 400 KV SIPAT-1 LINE (NON SWITCHABLE) AT RANCHI	28-01-2020	09:30	28-01-2020	17:00	ODB	POWERGRID, ER1	AMP OF Line Reactor	DEFFERD
28	80 MVAR LINE REACTOR of 400 KV SIPAT-2 LINE (NON SWITCHABLE) AT RANCHI	29-01-2020	09:30	29-01-2020	17:00	ODB	POWERGRID, ER1	AMP OF Line Reactor	DEFFERD
29	400KV RANGPO-KISHANGANJ LINE	01-01-2020	08:00	31-01-2020	18:00	ODB	POWERGRID, ER-II	For stringing work of 400kV LOOP OUT	
30	400KV DIKCHU-RANGPO LINE	01-01-2020	08:00	31-01-2020	18:00	ODB	POWERGRID, ER-II	For stringing work of 400kV LOOP OUT	
31	125 MVAR BR-III at Durgapur	13-01-2020	09:00	13-01-2020	17:00	ODB	POWERGRID, ER-II	AMP works	DEFFERD
32	125MVAR BR- I at Alipurduar	14-01-2020	07:00	17-01-2020	17:00	OCB	POWERGRID, ER-II	Oil leakage (from PRD & Main tank joint) and Air Cell rectification	DEFFERD
33	765 kV BR-I at Gaya ss	25-01-2020	09:00	25-01-2020	18:00	ODB	POWERGRID, ER1	For AMP work	DEFFERD
34	765 kV BR-II at Gaya ss	27-01-2020	09:00	27-01-2020	18:00	ODB	POWERGRID, ER1	For AMP work	DEFFERD
35	125 MVAR BR-IV at Durgapur	28-01-2020	09:00	28-01-2020	17:00	ODB	POWERGRID, ER-II	AMP works	DEFFERD
36	400kV, 125MVAR BR-1	29-01-2020	09:00	29-01-2020	18:00	ODB	ER- II/Odisha/Angul SS	AMP work	DEFFERD
37	125 MVAR BR-I&II at Durgapur	30-01-2020	09:00	30-01-2020	17:00	ODB	POWERGRID, ER-II	AMP works	DEFFERD
38	765kV, 330MVAR BR-1	31-01-2020	09:00	31-01-2020	18:00	ODB	ER- II/Odisha/Angul SS	AMP Work	DEFFERD