Minutes

of

161st OCC Meeting

Date: 01.10.2019

Eastern Regional Power Committee

14, Golf Club Road, Tollygunge

Kolkata: 700 033

Eastern Regional Power Committee

Minutes of 161st OCC Meeting held on 20th September, 2019 at Barh STPS, NTPC

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

Item no. 1: Confirmation of minutes of 160th OCC meeting of ERPC held on 09.08.2019

The minutes of 160th OCC meeting were uploaded in ERPC website and circulated vide letter dated 29.08.2019 to all the constituents.

Members may confirm the minutes.

Deliberation in the meeting

Members confirmed the minutes of 160th OCC meeting.

PART A : ER GRID PERFORMANCE

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

The average consumption of Eastern Region for August- 2019 was 464 Mu. Eastern Region energy consumption reached a monthly maximum of 506 Mu on 22th August - 2019. Total Export schedule of Eastern region for August – 2019 was 438 Mu, whereas actual export was 365 Mu.

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

1. **Frequency profile**
2. **Over drawal/under injection by ER Entities**
3. **Performance of Hydro Power Stations during peak hours**
4. **Performance of ISGS during RRAS**
5. **Reactive Power performance of Generators**
6. **Restricted Governor /Free Governor Mode Operation of generators in ER**

Member may discuss.

Deliberation in the meeting

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

ERLDC informed that Eastern Region had met the highest demand of 23.45 GW on 21st August 2019. Bihar highest demand so far was 5972 MW. It was met on 3rd September, 2019.

ERLDC presented a detailed analysis of the drawal pattern of the Eastern Regional constituents. It emerged from the presentation that Odisha and West Bengal had overdrawn from the Grid for significant times.

OCC advised Odisha and West Bengal to maintain the drawal within the schedule.

ERLDC added that NTPC, Farakka and GMR had been continuously under generating w.r.t. their schedule. Farakka is not following the RRAS meticulously.

NTPC and GMR informed that due to wet and poor quality of coal they were unable to maintain the generation as per DC.

MS, ERPC informed that, from the definite pattern of generation, it emerged that Farakka and GMR were not generating as per the DC. He informed that such generation pattern against schedule could be construed as gaming and is a gross violation of grid discipline. Farakka and GMR should revise the DC well in advance, if they felt they would not be able to generate as per the schedule.

OCC advised Farakka and GMR to declare the DC faithfully. OCC decided to review the status in next OCC Meeting.

ERLDC informed that Bhutan had been maintaining the actual generation as per the schedule.

ERLDC explained that, due to low generation at Talcher NTPC, the power flow in 400kV Angul-Meramundali was quite high. At times, the HVDC Gajuwaka-Jeypore flow was getting reversed.

NTPC informed that they were not getting sufficient coal from Coal Companies due to strike. The issue had been taken up with CEA and Ministry of Power, GoI.

Item no. A2: Effect of cyclone FANI on Odisha system

In 159th OCC, Odishawas advised to give a presentation in next OCC Meeting on effect of FANI cyclone on transmission and distribution system in Odisha along with the restoration status.

Odisha agreed to give the presentation in next OCC Meeting.

Odisha may give a presentation.

Deliberation in the meeting

OPTCL gave a brief presentation on devastation of OPTCL transmission system during FANI cyclone and the restoration of the transmission lines. The presentation is enclosed at ***Annexure-A2****.*

OCC highly appreciated the efforts made by Odisha in normalizing the system. This has set an example for the other to follow.

OCC advised OPTCL give a detailed presentation on restoration of OPTCL transmission system in next OCC Meeting for the benefit of other constituents.

PART B: ITEMS FOR DISCUSSION

Item No. B.1: Operationalization of 400 kV Durgapur Bus Splitting Scheme

In 41st ERPC Meeting held on 27th August 2019 it was decided that:

i. The split bus scheme of Durgapur PG shall be put in operation.
ii. DVC shall approach Standing Committee for necessary approval for shifting of 3rd ICT to some other location.

Regarding operationalization of 3rd ICT at Durgapur, it was decided by ERPC that the 3rd ICT shall be kept in standby mode (charged from one end) for a period of fifteen(15) days. ERLDC, West Bengal & DVC shall present their observations in the next OCC meeting scheduled to be held on 20.09.2019 wherein OCC forum shall decide the next course of action. However, during the intervening period, on real time basis, if the necessity arises for the safety, security & stability of the grid, ERLDC shall take action in operationalizing the 3rd ICT.

Accordingly, ERLDC commenced the split bus operation at Durgapur PG with 3rd 315 MVA, 400/220kV ICT in standby mode.

Thereafter, ERLDC vide latter dated 10th September 2019 and mail dated 11th September 2019 informed that in view of sustained high loading on other 400/220kV ICTs at Durgapur PG, 3rd 315 MVA, 400/220kV ICT at Durgapur PG was taken into service.

ERLDC may place the details. Members may decide.

Deliberation in the meeting

DVC informed that they had already submitted the proposal to standing Committee for shifting of 3rd ICT at Durgapur (PG) to some other location.

ERLDC informed that hotspot at 220kV Jumper of 400/220kV ICT-II at Durgapur PG was reported on 4th September due to high loading and they had taken 3rd ICT into service keeping 2nd ICT as stand by. One circuit of 220kV Waria-Bidhannagar D/C line was taken out of service to control the power flow in 220kV Durgapur(PG)-Parulia(DVC) D/C line. ERLDC added that, in view of sustained high loading on 3rd 400/220kV ICT at Durgapur PG, 2nd 315 MVA, 400/220kV ICT at Durgapur PG was also taken into service on 10th September 2019. Details are enclosed at Annexure-B1.

ERLDC stressed that all the ICTs at Durgapur PG should be in service for the safety and reliability of the Grid.

DVC informed that loading on 1st 315 MVA, 400/220kV ICT at Durgapur PG is very low (50 MW approx), sometimes reverse power flow was also observed. DVC suggested that 1st 315 MVA, 400/220kV ICT at Durgapur PG be taken out of service.

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

- *As suggested by ERLDC, all the ICTs at Durgapur PG shall be kept in service to meet the Puja demand.*
- *However, ERLDC shall take necessary decision on real time basis keeping in view the security and reliability of the grid.*
- *DVC shall carry out a detailed study on power flow pattern through the ICTs with present and future network condition and submit the details to ERPC and ERLDC for further deliberation.*
- *Separate meeting with representatives from Powergrid, CTU, DVC, WBSETCL, ERLDC and ERPC shall be convened at ERPC for further course of action.*

Item No. B.2: 400 kV Split Bus operation of 400 kV Kahalgaon Substation --ERLDC

In the 158th OCC meeting, Bus split operation of 400 kV Kahalgaon substation has been discussed. NTPC has informed that the 400 kV Bus split is ready for operationalization in all aspects. NTPC and PGCIL have informed that the group setting for revised protection setting has been implemented w.r.t. Bus split arrangement at remote ends. OCC decided to monitor the power flows after putting the Durgapur bus splitting in service and further decision on putting the Kahalgaon bus splitting scheme in operation would be reviewed in next OCC Meeting.

The Durgapur Bus split trial has been demonstrated in 159th and 160th OCC meeting and results and power flow was presented to the members. It was observed that there is no constraint on the 400 kV network during normal bus split operation of Durgapur substation.

With these experiences of 400 kV Durgapur Bus split, it is desired that 400 kV Kahalgaon Bus split may be operationalized.

Members may discuss.

Deliberation in the meeting

NTPC has informed that the 400 kV Bus split is ready for operationalization at 400 kV Kahalgaon. But two ICTs are to be erected at 400 kV Kahalgaon and the ICTs are yet to be delivered.

NTPC requested other constituents to spare the ICTs temporarily for an interim arrangement at 400 kV Kahalgaon.

OCC advised NTPC to submit the details to ERPC and ERLDC.

Item No. B.3: Implementation of 400 kV Rangpo-Binaguri SPS Scheme for Contingent Measures --ERLDC

400 kV Rangpo-Kishanganj and 400 kV Teesta3-Kishanganj circuit from TVTPL have shown poor availability due to multiple forced outage over the last few months. Under such condition 400 kV Rangpo-Bingauri D/C with power flow limitation of 1700 MW had been used for evacuation of Sikkim Hydro complex. The old SPS on these lines in the mean time was used for 400kV Rangpo-Kishanganj line (with a different logic)to avoid loading of one Rangpo-Binaguri line beyond its thermal limit in the event of outage of the other circuit of Teesta III – Kisanganj. Last month during contingency of 400 kV Rangpo-Kishanganj and 400 kV Teesta3-Kishanganj Power from 400kV Rangpo towards Binaguri was evacuated in split-bus mode due to unavailability of old SPS at Rangpo. Subsequently, as a precautionary measure, to operate the system under contingency of 400 kV Rangpo-Kishanganj and 400 kV Teesta3-Kishanganj, SPS for Rangpo-Binguri line has been re-wired with bus coupled at Rangpo to evacuate 1700 MW power. The SPS will remain disabled in case the 400 kV Rangpo-Kishanganj S/C, 400 kV Teesta3-Kishanganj S/C and 400 kV Rangpo-Bingauri D/C are in service. The SPS will be enabled under contingency of both circuits of TVTPL.

TUL vide letter dated 21st August 2019 informed that there was huge loss of hydro generation because of power flow restriction at 850 MW in each circuit of 400kV Rangpo-Binaguri D/C line during the shutdown of 400 kV Teesta3-Kishanganj S/C and Dikchu-Kishanganj section.

TUL requested enhance the power flow limit to 1100 MW in each circuit of 400kV Rangpo-Binaguri D/C line. Copy of the letter is encloased at **Annexure-B3**.

ERLDC and TUL may explain. Members may decide.

Deliberation in the meeting

Powergrid informed that SPS at Rangpo is ready and it can be put in service as and when required.

TVTPL informed that they would need 8 hrs shutdown to unbundle the conductor.

OCC decided to keep the SPS in standby mode and the SPS shall be in service under any outage of TVTPL lines. Details of SPS is enclosed at ***Annexure-B3.1****.*

Regarding the power flow limit in each circuit of 400kV Rangpo-Binaguri D/C line, it was informed that power flow in the line would be allowed as per the CERC guidelines.

Item No. B.4: Outage of important transmission lines

In 160th OCC, Powergrid informed that 400 kV Kishenganj-Patna D/C lines would be restored by end of December 2019.

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.

Members may update.

Deliberation in the meeting

Powergrid informed that 400 kV Kishenganj-Patna D/C lines would be restored by end of March 2020.

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.

DMTCL has given detailed presentation on tower collapse and site conditions. Presentation is enclosed at ***Annexure-B4****.*

After detailed deliberation, it was emerged that once 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.

Item No. B.5: Strengthening of Tower Near to River to Avoid Frequent Tower Collapse -- ERLDC

Frequent Tower Collapse have been observed in the Eastern Region due to change in river course of Gandak and Kosi river. This has endangered the reliability of power supply to Bihar as well as to the region as a whole. It has been observed that the towers which have collapsed during most of the tower collapse events due to change in river course are not of pile type foundation recommended for river basin areas.

Report of the standing committee of experts on failure of EHV transmission line towers (October 2016 – march 2018) Recommends the following for such transmission lines:

Pile type foundation may be considered for towers in flood prone area based on soil investigation report and latest high flood data. In case of damage of foundation of towers, the foundation design is required to be examined. The material test report of failed towers should be examined to ascertain the quality of the material. Providing proper revetment & use of geo-synthetic

material in foundation, concrete encasing & painting of stub in water logging areas etc. may also be considered, wherever required.

In view of the above, all transmission licensees whose lines are prone to flooding may immediately take above remedial action as suggested by the committee. It is suggested to have all the towers in the flood-prone zone on pile foundation along with nearby tower should be provided with revetment to avoid soil erosion.

Members may discuss.

Deliberation in the meeting

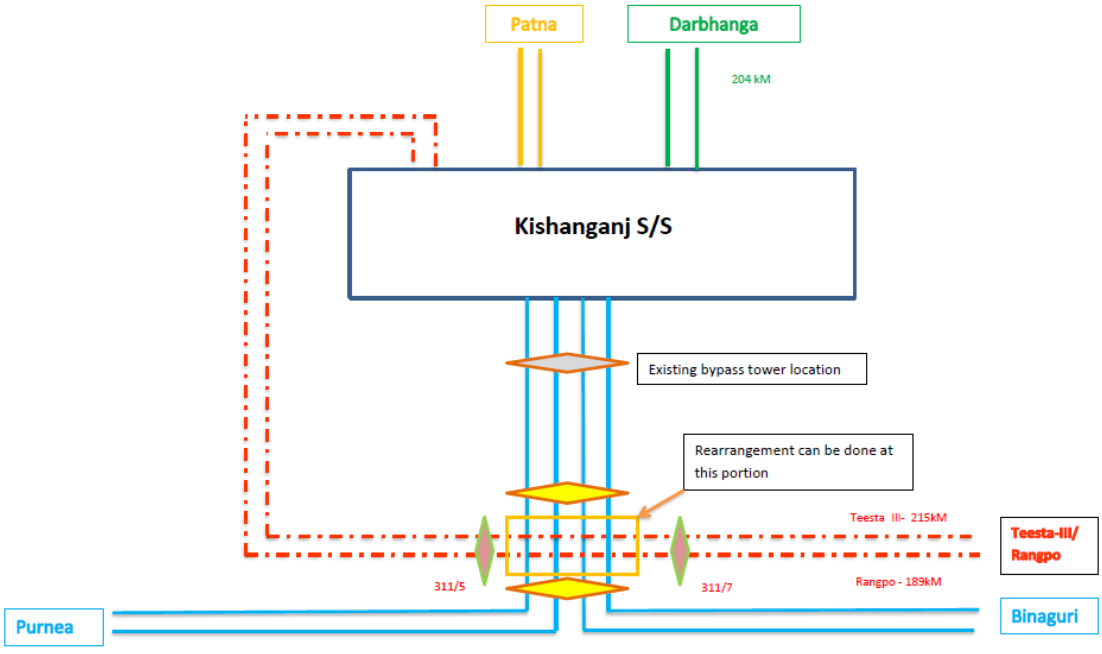
OCC appreciated the ERLDC proposal and advised ERLDC to give the list of such lines to ERPC for detailed discussion.

Member Secretary, ERPC informed that investment made in strengthening of towers should be recovered through tariff. Clear guidelines need to be formulated by the competent authorities for this. It was decided by OCC to raise this issue in the TCC and ERPC meetings so that a definite proposal could be forwarded to CEA and CERC.

OCC agreed to the ERLDC proposal and referred to TCC for further discussion.

Item No. B.6: Bypassing arrangement of 400 kV Kishanganj S/S due to recent flood in North Bihar area—ERLDC

Due to heavy rain in North Bengal and North Bihar for last 2 weeks, flood like situation has arisen in different districts like Kishanganj, East Champaran, Madhubani, Sitamari, Supaul, Araria of Bihar and North Dinajpur of W. Bengal. On 13/07/19 it was gathered that water had accumulated in 400/220kV Kishanganj GIS substation & its adjacent areas had risen to alarming levels.



Earlier during 2017, Kishanganj(PG) S/Stn had to be completely shut down for a couple of days, on account of water-logging. To avoid such type of situation in future, after discussion in different OCC meetings, temporary arrangement was made to keep the major outgoing/incoming lines in service by making bypass arrangement outside of the Kisanganj S/s. Accordingly arrangement for reconfiguring 400kV Binaguri-Kishanganj D/C & 400 KV Purnea-Kishanganj D/C at Kishanganj S/S as 400 kV Binaguri –Purnea – III & IV was planned & commissioned by cross jumpering above two lines at the LILO portion during March-2018.Subsequently, 400kV

Teesta_III-Kishanganj& 400 KV Rangpo-Kishanganj were commissioned on 04/01/2019 & 11/02/2019 respectively and with their commissioning, restriction on generation by the hydro station in Sikkim was withdrawn. At present, 2300MW of Sikkim hydro generation is being evacuated through Kishanganj and Binaguri S/S. Bypassing arrangement of these lines were not envisaged during that period due to non-commissioning of these lines during that period.

In the event of recurrence of a similar emergency flood like situation, for facilitating evacuation of bulk hydro generation of Sikkim it is necessary to explore some methodology to interconnect 400kV Teesta – III – Kishanganj&Rangpo –Kishanganj lines, with other lines of adjacent S/Stns . A new re-configuration scheme needs to be explored instead of the existing Kisanganj S/S bypass scheme In the event of recurrence of a similar emergency.

For finalizing the above scheme an emergency meeting was held at ERLDC with concerned Transmission licenses on 16-07-2019. Transmission licensees viz. TPTL, ATL, ER-II (PGCIL) are present in the meeting and ER-I (PGCIL), NLDC participated the meeting through VC.

In 159th OCC, Powergrid informed that since 400kV Teesta III-Rangpo lines crossing the LILO portion of 400kV Purna-Kishangaj-Binaguri line perpendicularly with vertical line configuration, it is not possible to make the bypass arrangement.

OCC opined that site visit with the concerned transmission licensees is required to find out a plan for bypass arrangement.

In 160th OCC, OCC advised Teesta III representative present in the meeting to coordinate with TPTL and Powerlinks to do the detail survey of 400kVTeesta III-Rangpo line and 400kV Purna-Kishangaj-Binaguri line and submit the line crossing details to ERLDC.

Members may discuss.

Deliberation in the meeting

It was informed by Powergrid that bypassing arrangement of 400kV Kishanganj S/s is not feasible with existing configuration. Separate towers needed to be erected to bypass 400kV Kishanganj S/s.

Powergrid further informed that they had already taken sufficient measures to avoid the flooding of 400kV Kishanganj S/. With this, the chances of flooding in 400kV Kishanganj S/s is expected to be rare in future.

Item No. B.7: Cancellation/termination of Power Purchase Agreements with NTPC and its subsidiaries—Sikkim

Sikkim vide letter dated 6th September 2019 informed that chances of reallocation to other beneficiaries is very rare and till such time the state has to bear the fixed cost which shall be in excess of rupees 100 Crores annually. Sikkim decided to terminate/cancel the Power Purchase Agreements of thermal power. Copy of the Sikkim letter is enclosed at **Annexure-B7**.

Members may note.

Deliberation in the meeting

Member Secretary, ERPC requested the ER constituents to approach Ministry of Power, Govt. of India in case they need additional power from the proposed surrender of power by Sikkim.

Item No. B.8: Implementation of Automatic Generation Control in Eastern Region--ERLDC

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.

Member may discuss

Deliberation in the meeting

OCC congratulated NTPC-Barh for successfully implementing the AGC in the Eastern Region.

OCC advised all the ISGS stations to implement the AGC within 6 months as per the above CERC order.

NTPC informed that AGC had been successfully implemented at Barh, NTPC. However some technical issues (like the net effective schedule (Base Schedule+AGC+RGMO) and ramp rates were crossing the technical limits of the generating units etc.) need to be addressed. Otherwise, this might hamper the healthiness of the units.

OCC decided to take up issue with NLDC and CERC for necessary action and advised NTPC to submit the details to ERPC and ERLDC.

Item No. B.9: Clarification regarding load flow direction in 400 KV JP_GZW_FSC to 400 KV JP_GZW_HVDC Bus vis-a-vis loading PoC charges of these lines to Odisha --GRIDCO

As per the PoC data uploaded by NLDC, although the direction of power flow shows from 400 KV JP_GZW_FSC Bus to 400 KV JP_GZW_HVDC bus for both the Circuits; significant portion of the cost of the said Lines has been allocated to Odisha in various quarters. Gridco has studied the load flow for four quarters of FY 2017-18 for the aforesaid lines & the comprehensive report regarding flow direction, quantum & allocated cost from 2017-18 Q1 to 2017-18 Q4 is mentioned below from which it is evident that although the load flow direction has always been towards Southern Region from Eastern Region for 2017-18, Odisha has been allocated significant portions of the transmission charge of these two lines. Such gross incongruity is against the CERC Regulation for sharing of Transmission charges as far as PoC calculation methodology is concerned. Such calculation has burdened the Odisha consumer with additional Transmission charge allocation to the tune of 15.89 Cr (i.e. 80% of the line cost) during 2017-18. Load flow study for the other quarters are also being carried out.

Direction &Quantum of flow in JeyporeGajuwakaHVDC line :

CKT-1 :Jeypore FSC to Gajuwaka HVDC ckt -1 : JP_GZW_FSC1-JP_GZW_HVDC:1

CKT-2 :Jeypore FSC to Gajuwaka HVDC ckt -2 : JP_GZW_FSC1-JP_GZW_HVDC:2

Period	CKT	Flow	Cost allocation (in %)	Cost allocation (inRs. Cr)
17-18 Q1	CKT-1	329.6 MW	71%	2.035
	Ckt-2	329.6 MW	71%	2.035
17-18 Q2	CKT-1	329.6 MW	82%	2.434
	Ckt-2	329.6 MW	82%	2.434
17-18 Q3	CKT-1	329.6 MW	85%	1.737
	Ckt-2	329.6 MW	85%	1.737
17-18 Q4	CKT-1	329.6 MW	85%	1.737
	Ckt-2	329.6 MW	85%	1.737

Total Burdern for FY 2017-18 = 15.89 Cr

GRIDCO may explain. Members may discuss.

Deliberation in the meeting

GRIDCO informed that the same issue had been observed for the years 2018-19 and 2019-20.

OCC noted the issue and opined that the issue needed to be placed before CERC by Odisha through a petition to obtain necessary relief.

Item No. B.10: Auxiliary power consumption by Powergrid Substations--GRIDCO

As per decision of Special meeting on this issue held at ERPC on 10.07.2018, drawal of auxiliary power through tertiary winding by Powergrid substations shall be treated as drawal by Powergrid from the DISCOM (s). For this, Powergrid shall approach the concerned DISCOM(s) and shall complete all the necessary formalities to become a consumer of the concerned DISCOM.

Powergrid is not becoming the consumer of DISCOM Utility as a result of which, GRIDCO/DISCOM(s) are unable to realize the revenue from Powergrid , where as GRIDCO is paying for the said quantum of energy consumed by Powergrid since October, 2017.

This issue has already been discussed in the monthly Power System Operational Co- ordination Committee (PSOC) meeting convened by SLDC, Odisha several times. Powergrid did not attend these meetings. DISCOMs stated that that they are not receiving proper response from the Powergrid to regularize the consumer issue.

Powergrid may explain.

Deliberation in the meeting

Powergrid informed that Odisha DISCOMs are charging for registration and security fees. Powergrid observed that 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.

After detailed deliberation, it was decided that the issue would be discussed with DISCOMs in Odisha in November 2019 OCC meeting wherein the Discoms of Odisha would be invited to attend.

Item No. B.11: Modification of 132 kV lines at Kahalgaon(BSEB) and Lalmatia—ERLDC

It has been observed that the configuration of 132 kV Khahlagaon(BSEB) to lalmaitia has been changed as 132 kV Sabour – Lalmatia with transfer bus arrangement at Kahalgaon(BSEB) without intimating ERLDC.

132 kV Kahlagaon (BSEB) – Lalmatia is an interstate tie line between Bihar and Jharkhand. Necessary commercial SEM has been installed at suitable location. Interstate line configuration change needs prior consent from ERLDC, ERPC and Jharkhand.

SLDC, Bihar may please deliberate.

Deliberation in the meeting

After detailed deliberation, Bihar was advised to give the details of power being drawn at Sabour, Lamatia and Kahalgaon along with circuit diagrams and meter details to ERLDC.

OCC advised Bihar to take prior consent from ERLDC before making any changes in the configuration of interstate lines.

Item No. B.12: Data for preparation Load Generation Balance Report (LGBR) of ER for the year 2020-21

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

To facilitate the preparation of LGBR of Eastern Region by ERPC Secretariat within the schedule period, the following data/information for the year **2020-21** in respect of the constituents/utilities of Eastern Region is urgently required:

i) The unit wise and station wise monthly energy generation proposed from existing units during 2020-21 (thermal/hydro/RES).
ii) Annual maintenance programme for each of the generating units (thermal and hydro both).

iii) Generating units under R&M / long outage indicating date of outage and reasons of outage and expected date of return (thermal and hydro both).
iv) Partial and forced outage figures (in %) of generating units for the last 3 years.
v) Month wise peak demand (MW) – restricted and unrestricted peak demand.
vi) Month wise off-peak demand (MW).
vii) Month wise energy requirement (in MU).
viii) Month wise & source wise power (both MU & MW) purchase and/or sale plan.
ix) Schedule of commissioning of new generating units during 2020-21 and unit-wise monthly generation programme (in MU).
x) Allocation of power from new generating units.
xi) Month wise and annual planned outage of transmission system (Transmission lines 220kV and above / ICTs / Reactors/ other elements.

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

Members may furnish the above data.

Deliberation in the meeting

OCC advised all the utilities to plan the load and generation properly for peak & off-peak of the year 2020-21 and submit the plan to ERPC.

NTPC requested to decide off peak months for better planning of their unit shutdown.

Based on the past few years data demand is less during November to March.

OCC advised NTPC to plan the overhauling of their units accordingly.

Item No. B.13: Submission of state tie-line wise daily energy exchange (in mu) for preparation of Daily Power Supply Position.--ERLDC

ERLDC prepares the daily Power Supply Position (PSP) of Eastern Region during night hour for the previous day based on the actual energy data provided by ISGS, IPP, Transmission Licensees and SLDCs(for state drawl and intra state generation). To facilitate the data submission & data collection for preparation of daily PSP, POSOCO has developed an online portal and shared the credentials with all the stakeholders. The online reporting portal of ERLDC was operationalized on 7th September 2018, in which the following are being furnished by 02:00hrs by:

1. ISGS/IPPs: – Plant wise generation (mu)
2. SLDCs: – Net exchange of the state (mu) through the state tie line
   - Plant wise generation of the state (mu)
   - CPP wise net injection (mu)
3. Transmission licence: Energy transferred through IR & Transnational lines (mu)

During finalization of the PSP report, night shift operators of ERLDC verify the energy data submitted by the stake holders with respective energy data recorded by ERLDC SCADA as a process of data validation. It is being observed, the energy data submitted by the SLDCs for state drawl at times differs significantly from the state drawl obtained from SCADA data. Under such situation, it is very difficult for the night shift operator to identify the source or reason of mismatch between SCADA data and data furnished by states unless tie-line wise breakup of energy exchange is available.

In view of above, to make the data validation process robust and ensure accuracy of the daily PSP report, it is necessary for all the states and transmission licensees to submit following details during night hour in addition to existing data provided by them

1. All SLDCs to provide state tie-line wise break up of actual state energy exchange in Mu

2. Transmission licensee control centers (Powergrid ER-I & ER-II, DMTCL) to provide state interconnection point ICT/line wise break up of actual energy exchange in Mu

Necessary provision in WEB reporting software shall be made available to SLDCs and Transmission licensees to fill the drawl/injection energy data as mentioned above in the reporting portal w.e.f. 15th October, 2019.

ERLDC may explain.

Deliberation in the meeting

OCC advised to submit the tie line energy data in the on-line portal w.e.f. 15th October 2019. .

Item No. B.14: Status of projects funded under PSDF schemes

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

A. Projects approved:

SN	Name of Constituent	Name of Project	Date of approval from PSDF	Target Date of Completion	PSDF grant approved (in Rs.)	Amount drawn till date (inRs.)	Latest status
1	WBSETCL	Renovation & up-gradation of protection system of 220 kV & 400 kV Substations in W. Bengal	31-12-14	April 2018 Extended till March 2019	108.6 Cr	37 Cr.	Project has been completed. Final value of the project is 51.22 Cr.
2		Renovation & modernisation of transmission system for relieving congestion in Intra-State Transmission System.	22-05-17	March 2020	70.13	63.12 Cr	Order has been placed . Work is in progress.
3		Installation of switchable reactor at 400kV & shunt capacitors at 33kV	22-05-17	November 2019	43.37	11.69 Cr	Order had been placed and work is in progress.
4		Installation of Bus Reactors at different 400kV Substation within the state of West Bengal for reactive power management of the Grid			71.74 Cr		
5		Project for establishment of reliable communication and data acquisition at different substation at WBSETCL.			31.19 Cr		
6	WBPDCL	Implementation of Islanding scheme at Bandel Thermal Power Station	*10.04.17*	*March 2018*	1.39 Cr	1.25 Cr	*The islanding scheme had been implemented and in operation wef**15.11.2018***
7		Upgradation of Protection and SAS		April 2020	23.48	2.348 Cr	Bid opened and order has been placed. Work started.
8	OPTCL	Renovation & Up-gradation of protection and control systems of Sub-stations in the State of Odisha in order to rectify protection related deficiencies.	11.05.15	31.03.19	162.5 Cr.	37.79 Cr	90% work has been completed. Total expenditure may not exceed 68 Cr.
9		Implementation of OPGW based reliable communication at 132kV and above substations	15.11.17		25.61 Cr.	2.56 Cr	Agreement signed on 03.01.2018. Tender has been floated.
10		Installation of 125 MVAR Bus Reactor along with construction of associated bay each at 400kV Grid S/S of Mendhasal, Meramundali& New Duburi for VAR control &stabilisation of system voltage	27.07.18		27.23 Cr	2.72 Cr	Tender has been floated.
11	OHPC	Renovation and up-gradation of protection and control system of 4		*U.Kolab, Balimela,*	*22.35 Cr.*	2.235 Cr	Placed the work order.

		nos.OHPC substations.		*U.Indravati, Burla, Chiplima March 2019*			
12	BSPTCL	Renovation and up-gradation of 220/132/33 KV GSS Biharshariff, Bodhgaya, Fatuha, Khagaul, Dehri -on-sone& 132/33 kV GSS Kataiya	11/5/15	31.07.2018	64.02 crore	56.04 crore	90% of work has been completed. The work would be completed by Dec 2019.
13		Installation of capacitor bank at different 35 nos. of GSS under BSPTCL	5/9/2016	31st March 2019	18.88 crore	Nil	Work awarded for all GSS. Work had been completed for 27 substations
14		Renovation & up-gradation of protection and control system of 12 nos. 132/33 KV GSS under BSPTCL.	02.01.17	31st March 2018	49.22 Cr.		75% work completed for seven no. GSS as part of R & M work. Revised DPR is to be submitted for rest 5 no. GSS.
15	JUSNL	Renovation and up-gradation of protection system	*September 2017*	*15 Months*	*138.13 crores*	*39.02 Cr*	LOA placed to Siemens on 28th Sep 2018.
16	DVC	Renovation and upgradation of control & protection system and replacement of Substation Equipment of 220/132/33 kV Ramgarh Substation	02.01.17	01.06.2019	25.96 Cr	2.596 Crore on 01.06.2017	Work awarded for 28.07 Cr. Work would be completed by May 2019.
17		Renovation and upgradation of control & protection system including replacement of substation equipment at Parulia, Durgapur, Kalyaneshwari, Jamshedpur, Giridih, Barjora, Burnpur, Dhanbad and Burdwan Substation of DVC	27.11.17	24 Months from the date of release of fund.	140.5 Cr.	1st installment of 14.05 Cr. received on 21.12.2017	Work awarded for 77.97 Cr.
18	POWERGRID	Installation of STATCOM in ER		June 2018	*160.28 Cr*	*16.028 Cr*	Completed
19	ERPC	Creation & Maintenance of web based protection database and desktop based protection calculation tool for Eastern Regional Grid	17.03.16	Project is alive from 30th October 2017	20 Cr.	4.94 Cr. + 9.88 Cr.	1) Protection Database Project has been declared 'Go live' w.e.f. 31.10.17. 2) Pending training on PDMS at Sikkim and 3rd training on PSCT has been also completed at ERPC Kolkata.
20a	ERPC	Training for Power System Engineers	*27.07.18*		0.61 Cr.	Nil	Approved
20b		Training on Power market trading at NORD POOL Academy for Power System Engineers of Eastern Regional Constituents	*27.07.18*		5.46 Cr.	Nil	

B. Projects under process of approval:

SN	Name of Constituent	Name of Project	Date of Submission	Estimated cost (in Rs.)	Latest status
1	Sikkim	Renovation &Upgradation of Protection System of Energy and Power Department, Sikkim.	09-08-17	68.95 Cr	The proposal requires third party protection audit. Issue was discussed in the Monitoring Group meeting in Siliguri on 8.6.2018. Sikkim was asked to coordinate with ERPC.
2		Drawing of optical ground wire (OPGW) cables on existing 132kV & 66kV transmission lines and integration of leftover substations with State Load Despatch Centre, Sikkim	09-08-17	25.36 Cr	Scheme was approved by Appraisal Committee. It was sent to CERC for concurrence.
3	JUSNL	Reliable Communication & Data Acquisition System upto 132kV Substations.	23-08-17	102.31 Cr	Scheme was approved by Appraisal Committee. It was sent to CERC for concurrence.

4	OPTCL	Implementation of Automatic Demand Management System (ADMS) in SLDC, Odisha	22-12-17	3.26 Cr	Scheme was approved by Appraisal Committee. It was sent to CERC for concurrence.
5		Protection upgradation and installation of SAS for seven numbers of 220/132/33kV Grid substations (Balasore, Bidanasi, Budhipadar, Katapalli, Narendrapur, New-Bolangir&Paradeep).	12-03-18	41.1 Cr.	Scheme examined by TSEG on 20.03.2018. Inputs sought from the entity are awaited.
6	WBSETCL	Implementation of Integated system for Scheduling, Accounting, Metering and Settlement of Transactions (SAMAST) system in West Bengal	22-12-17	25.96 Cr	Proposal recommended for approval of Appraisal committee
7	BSPTCL	Implementation of Schedulling, Accounting, Metering and settlement of Transcation in Electricity (SAMAST)in SLDC Bihar.	27-02-18	93.76 Cr.	Scheme examined by TSEG on 20.03.2018 & 31.05.2018. Further inputs furnished by BSPTCL on 1.8.2018. Shall be examined in the next meeting of TESG.

Respective constituents may update the status.

Deliberation in the meeting

Members updated the latest status as mentioned in above table.

Item No. B.15: Modification/Extension of time period for complete implementation of AMR 4th Phase---Powergrid

Against LOA ref no: - ER-II/KOL/CS/I-1947/P-2014/1148 Dated: 28-12-2018, a LOA placed to M/S. TCS for implementation of 4th Phase AMR. This includes integration of 200 New SEM, including 25 new Location. Data transfer through OPGW from 40 Locations & SCADA data integration.

As per original LOA, the completion schedule of the package was 27-October-2019. In subject contract new DCU also envisaged as 25 new locations are there in LOA. Since inception of the AMR implementation, the DCU taken as imported item (Earlier: VIOLA/Finland, afterwards taken over by ABB). However, recently ABB has confirmed end of life of the subject product (DCU), which creates a problem for the supply items and subsequent completion of the package. Although the other items like Optical fiber connectivity & SCADA data integration is under implementation, but due to non-availability of new DCU, further integration of new SEM & DCU has not been started yet.

Alternatively, after many testing, one vendor found who has technically complied all the requirements of existing system and can replace ABB make DCU technically. Right now M/S. TCS is on the verge of placing further PO the sub-vendor for supply of new DCU. As such, the process will take some more time and as indicated earlier the completion period as defined in LOA (October-19) is not possible practically. The vendor has already integrated recently with GENUS make SEM in other utility and performance is found satisfactory.

In view of above, the completion schedule of the 4th phase implementation of MAR may be extended upto 31-03-2020.

Members may discuss please.

Deliberation in the meeting

Members noted.

Item No. B.16: Replacement of defective Porcelain Insulators with Polymer Insulators-- Powergrid

A. 400kV D/C Malda-Purnea line:

- 400kV D/C Malda-Purnea TL is part of original 400kV D/C Malda-Bongaigaon TL commissioned in the year 1992.
- The mother portion of 400kV D/C Malda-Purnea TL is already around 27 years in service.
- From last 3(Three) years, it has been observed that tripping & A/R have drastically increased in the line and in maximum cases Insulator De-capping have been reported mostly during winter season & monsoon.
- In order to assess the condition of Insulators, PID Testing was carried out & it has been found that more than 50% disc in a particular string are defective at most of the locations.
- Similar situation we were facing in 400kV D/C Binaguri-Purnea TL(Mother line 400kV D/C Malda-Bongaigaon TL) where upon replacing the Porcelain Insulators with Polymer Insulators in the mother line, this year there is NIL A/R and Tripping.
- We are planning to replace the Porcelain Insulators with Polymer Insulators in 400kV D/C Malda-Purnea TL in the old portion of the line(excluding Purnea LILO) for which we require S/D of 400kV Malda-Purnea TL in month of November-19 as per following tentative schedule:

Sl No.	Name of TL	From	To	Remarks
1	400 kV Malda-Purnea Ckt-1	01.11.2019	14.11.2019	Ckt wise S/d shall be taken on alternate days
2	400 kV Malda-Purnea Ckt-2	15.11.2019	30.11.2019	

The details of Insulator strings to be replaced in the line are as per the following:-

Name of TL	Location No.	120kN	160kN
400kV D/C Malda-Purnea TL(ExclLILo) (102 KM)	1140-870	1302 strings	1296 Strings

B. 400kV D/C Andal-Jamshedpur

- 400kV D/C Andal-Jamshedpur TL is one of the important link connected with DVC Andal plant.
- It has been observed that tripping & A/R incidents are quite high in this line creating disturbance in the DVC's Andal Plant generation evacuation paths well due to repeated tripping occurrence equipment's at both ends are getting stressed out.
- In order to assess the condition of Insulators, PID Testing was carried out & it has been found that more than 50% disc in a particular string are defective at most of the locations.
- We have been able to replace 50% of defective porcelain Insulators last year and already this year it has been observed that tripping & A/R has got reduced.
- As such, in order to further minimize the tripping,we are planning to replace the Porcelain Insulators with Polymer Insulators in 400kV D/C Andal-Jamshedpur TL for which we require S/D of 400kV D/C Andal-Jamshedpur TL in month of November-19 as per following tentative schedule:
-

Sl No.	Name of TL	From	To	Remarks
1	400 kV Andal-Jamshedpur Ckt-1	01.11.2019	14.11.2019	Ckt wise S/d shall be taken on alternate dyas
2	400 kV Andal-Jamshedpur Ckt-2	15.11.2019	30.11.2019	

The details of Insulator strings to be replaced in the line are as per the following:

Name of TL	Location No.	120kN	160kN
400kV D/C Andal-Jamshedpur(157 KM)	16-445	200 strings	1180 Strings

As this is an activity carried out for system improvement, it is requested to consider the outages for above activities as per CERC regulations non-attributable to POWERGRID.

Powergrid may explain. Members may discuss.

Deliberation in the meeting

Members noted.

Item No. B.17: Rectification of Tower at Loc 24(DC+0) of 132kV Rangit-Kurseong & 132kV Rangit-Rangpo line.--Powergrid

Leg-A of Double Circuit Tower Loc -24 carrying 132kV Rangit-Kurseong TL & 132kV Rangit-Rangpo have got bend due to hill sinking. Due to hill sinking, the centre position of the tower is getting tilted gradually resulting in stress on the connecting conductors on both sides and in the tower Cross Arms. Due to the stress, bend has been noticed in tower leg as well as in cross-arms. In order to attend the defect we require S/D of both the ckts tentatively as per following schedule:

- 132kV Rangit-Kurseong& 132kV Rangit-Rangpo TL from 15.10.2019 to 17.10.2019 from 08:00 Hours to 17:00 Hours on OCB Basis

As this work has to be carried out only due to natural affect, it is requested to consider the outages during carrying out above activities as per CERC regulations non-attributable to POWERGRID.

Powergrid may explain. Members may discuss.

Deliberation in the meeting

Members noted.

Item No. B.18: Flash Report by SLDC in Real Time --ERLDC

In line with IEGC Grid 5.9.4, IEGC 5.9.5 and CEA grid Standard Clause 12.2, SLDC and USER must report the grid event to ERLDC in written report. However, during real time operation the user and SLDC are not furnishing the written flash report to the ERLDC. A list of events from July and Aug-2019 is provided below where utilities have not shared the written information report and thus violating the above regulation by CERC and CEA.

Sr No	GD/ GI	Date	Time	SLDC and USER Affected	Flash report received
1	GD-I	14-07-2019	10:35	Jorethang, Melli (New) and Tashiding	No
2	GI-I	22-07-2019	03:57	Siliguri (PGCIL ERTS-2)	No
3	GI-II	26-07-2019	10:30	Kahalgaon (NTPC)	No
4	GI-II	05-08-2019	10:14	Talcher HVDC, JITPL	POWERGRID, JITPL
5	GI-I	08-08-2019	21:23	CTPS B	DVC (STU)
6	GD-I	13-08-2019	05:53	Sadaipalli	No
7	GD-I	16-08-2019	16:22	EMSS (CESC)	No
8	GD-I	16-08-2019	22:23	Darbhanga (DMTCL, BIHAR SLDC)	No
9	GD-I	18-08-2019	17:24	Dehri (Bihar SLDC)	No
10	GD-I	21-08-2019	00:02	Teesta III & Dikchu	No
11	GD-I	22-08-2019	12:22	Jorethang	No
12	GI-II	29-08-2019	08:08	New Purnea (PGCIL ERTS-1)	No

All Utilities are hereby thus advised that a written report in real-time after the event may kindly be submitted in line with above regulation and ensure proper reporting of events. All USERS and SLDC are advised to circulate the soft copy of the Flash Report to their respective control rooms and include the same as a part of SOP.

ERLDC may explain. Members may discuss.

Deliberation in the meeting

OCC advised all the SLDCs to circulate the soft copy of the Flash Report to their respective control rooms and submit the flash report to ERLDC as per the regulation.

Powergrid informed that 220 kV Begusarai-New Purnea D/C line had tripped multiple times (69 times) during June 2019 to September 2019 and requested for immediate action.

OCC opined that frequent tripping of the line would deteriorate the health of power system equipment of nearby substations. OCC advised BSPTCL to take immediate action to ensure the healthiness of the 220 kV Begusarai-New Purnea D/C line. OCC also suggested that if necessary, the line may be kept out of service for the safety of the grid till the sag issues of the line resolved.

Powergrid added that 220kV New Purnea-Madhepura D/C line is also tripping frequently.

OCC advised Bihar to take the necessary action to avoid frequent tripping of the line.

Item No. B.19: 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	
CESC, PGCIL	220 kV Shubhasgram-EMSS D/C	N-1 Contingency	
WBSETCL,	220 kV Newtown-Rajarhat D/C	N-1 Contingency	

PGCIL			
WBSETCL	220 kV Howrah-New-Chanditala D/C	N-1 Contingency	
DVC, PGCIL	220 kV Durgapur (PG)-Parulia D/C	N-1 Contingency	
Jharkhand, PGCIL	220 kV Hatia-Ranchi D/C	N-1 Contingency	
Bihar	220 kV Mujaffarpur-Hazipur D/C	N-1 Contingency	
Bihar,PGCIL	220 kV Patna-Sipara T/C	N-1 Contingency	
Bihar,PGCIL	220 kV Khagaul-Sipara S/C	Overlaod of 220 kV Khagaul-Sipara	
Bihar	220 kV Bodhgaya-Gaya D/C	N-1 Contingency	
Bihar	220 kV Hazipur-Amnour D/C	N-1 Contingency	

All Utilities may kindly share their short term and long term action plans to handle the aforesaid insecure situations.

ERLDC may explain.

Deliberation in the meeting

OCC advised all the utilities to share their short term and long term action plans to remove the constraint to ERLDC.

Item No. B.20: Protection System Outage Intimation to ERLDC--ERLDC

Any outage or non-functioning of protective equipment or protection system function has a serious impact on system security and reliability and system operator need to be informed about any such outages. This helps operator in taking decision regarding

1. Taking preventive measures for avoiding any delayed fault clearance and cascade tripping in the system.
2. Transmission element outage coordination
3. Protection coordination

During the recent visit by protection audit team to 220 kV Sipara Substation for auditing the protection systems installed at the substation, it was informed that Bus Bar protection at 220 kV Sipara has been kept out due to mal-operation. However, ERLDC does not have any information regarding this. In addition, it was observed that any bus fault if not cleared will cause tripping of all 400/220 kV Patna ICTs as the Patna-Sipara ckts do not have provision of distance zone-2 forward / zone 4 reverse zone protection features at present. Also, as per Decision taken in 69th PCC meeting of ER, some measures have to be taken in the absence of bus bar protection at substation level. However, these measures are also not implemented at the substation.

The above use case signifies that information for any 220 kV and above protection outage, protection firmware up-gradation and Online relay replacement activity should be included as a part of Outage Procedure to ensure system reliability and security.

ERLDC may explain.

Deliberation in the meeting

Members noted.

Item No. B.21: 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 (ERSS/ TBCB/ Standing Committee/State	Schedule Completion	Projected Month for Completion	Issue 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.

ERLDC may explain.

Deliberation in the meeting

OCC advised all the constituents to submit the details to ERLDC.

Item No. B.22: Finalization Outage Request and processing timeline--ERLDC

The procedure for timeline regarding submission of outage request till approval of the outage formulated by ERLDC has been circulated and discussed in 156th OCC meeting held at NTPC, Kahalgaon. The same had also been presented in 157th OCC meeting held at ERPC, Kolkata for beneficiary's comments/suggestion. The procedure mentioned through a flow chart in **Annexure-B22** may be approved and minute unless any modification/suggestion recommended.

In 158th OCC, all the constituents were advised to submit their comments on outage procedure within a week.

OCC decided to finalize the procedure in next OCC Meeting.

Members may decide.

Deliberation in the meeting

It was informed that Powergrid had submitted their comments.

OCC advised all the other constituents to submit their comments to ERLDC at the earliest.

Item No. B.23: Additional agenda

PART C: ITEMS FOR UPDATE

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

UFR Healthiness Certification for the month of August, 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:

Sl. No.	Name of the substations	Feeder connected with UFR	Voltage rating	Adopted UFR setting	Tested initiated frequency	UFR make
			(kV)	(Hz)	(Hz)	
1	132/33kV Digha	Pataliputra	33	49.0	49.0	AREVA Micom P127
2		Excise Colony	33	49.2	-	RMS 2H34K2
3		Digha-I	33	48.6	-	RMS 2H34K2
4		Digha-II	33	48.6	-	RMS 2H34K2
5	132/33kV Mithapur	Pesu-IV	33	48.8	48.8	AREVA Micom P142
6		Pesu-V	33	48.8	48.8	AREVA Micom P142
7	132/33kV Gaighat	Saidpur	33	48.6	48.59	SEL-351A
8		City Feeder	33	48.6	48.59	SEL-351A

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

Bihar may explain.

Deliberation in the meeting

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

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 August, 2019 has been received from CTPS, DVC,NTPC, West Bengal,JUSNL, WBPDCLand CESC.

Members may note.

Deliberation in the meeting

Members noted.

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

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

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

SPS at Chuzachen

Local SPS of has been disabled with charging of 132 KV Chuzachen-Rangpo D/C.

Members may update.

Deliberation in the meeting

Members noted.

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

The latest status along with proposed logic as follows:

Sl No	State/Utility	Logic for ADMS operation	Implementation status/target	Proposed logic (if different from under implementation logic)

1	West Bengal	F <49.7 AND deviation > 12 % or 150 MW	Implemented on 25.11.16	F <49.9 AND deviation > 12 % or 150 MW
2	DVC	F <49.7 AND deviation > 12 % or 150 MW	Implemented on 17.06.2016	
3	Bihar	F <49.7 AND deviation > 12 % or 150 MW	They would place the order to Chemtrol for implementation.	F <49.9 AND deviation > 12 % or 150 MW
4	Jharkhand	1. System Frequency < 49.9 Hz AND deviation > 12 % or 25 MW 2. System Frequency < 49.9 Hz AND deviation > 12 % or 50 MW 3. System Frequency < 49.9 Hz AND deviation > 12 % or 75 MW	9 Months Tendering for RTU installation is in progress. Offer received from Chemtrol for implementation.	Condition 1: Block I feeders will be selected for load shedding Condition 2: Block I & II feeders will be selected for load shedding Condition 3: Block I, II & III feeders will be selected for load shedding
5	Odisha	1. System Frequency < 49.9 Hz 2. Odisha over-drawl > 150 MW 3. DISCOM over-drawl > (40 MW)	10 Months Sent for PSDF approval.	Logic 2 and 3 is AND or OR, in case it is AND then ADMS may not operated when discom are in schedule but GRIDCO is overdrawing due to less generation at state embedded generators
6.	Sikkim			Sikkim informed that they have submitted a proposal to PSDF Committee for installation of OPGW cables which is under approval stage. Sikkim added that ADMS scheme would be implemented after installation of OPGW.

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

In 40th TCC, ERLDC informed that in SCADA O&M Meeting held on 6th March 2019, Chemtrol has agreed to implement ADMS in Bihar and Jharkhand system without any additional charges. However necessary consent for making payment of Rs 4 lakhs(excluding GST) for remaining period of maintenance contract shall be given before implementing the same.

In the TCC Meeting, both Bihar and Jharkhand gave consent for making necessary payment.

In 159th OCC, JUSNL informed that testing of ADMS had been completed and the ADMS would be kept in service in 1st week of August 2019.

In 160th OCC, BSPTCL informed that installation of ADMS had been completed and the testing would be done by 15th August 2019.

Members may update.

Deliberation in the meeting

JUSNL informed that ADMS had been kept in service from 21st August 2019.

Item no. C.5: Shut down plan of 400 KV Rangpo-Binaguri for Reconductoring work-- Powergrid

Under ERSS-XX, reconductoring work of 400 KV Rangpo-Binaguri-D/C from existing twin moose to Twin HTLS has been approved with scheduled completion target of May-2020. Previously, there are only Rangpo-Binaguri-D/C connectivity was present for transferring power from Sikkim to rest of the grid, accordingly, the S/D for reconductoring work was kept on hold till commissioning of 400 KV Rangpo-Kishanganj& 400 KV Teesta-3-Kishanganj circuit.

After commissioning of above links by M/S. TVPTL, both 400 KV Rangpo-Binaguri S/D was allowed but with a condition that, in case of any breakdown of available links, any one circuit required to be brought back within 24 Hours of intimation.

As all aware that Rangpo-Binaguri, line corridor is completely passing through hilly terrain (Almost 70% of the line) & mostly populated by angle towers. Height of the towers in the peaks also make the task double difficult as approach and carrying of T&P's are itself a gigantic task. Although the work commenced on 19.03.2019 after getting approval of S/D till 25.04.2019, but as the returning conditions are there, work cannot be speed up as in every span, respective gangs used to complete one after another circuit and moving for next span.

However, due to certain issues of generation back down, the double circuit S/D was asked to return and finally both the circuit again charged on 26.05.2019. Merely two month period of S/D was allowed in which due to condition of return of S/D the work could not take pace as envisaged.

After that numerous communications made from ER-II end for further S/D but citing system security & constraints the S/D deferred continuously. In this regard a letter from ED/ER-II dated 17.05.19 also given to POSOCO (Enclosed).It may be noted that, the work is very tedious and time taking activity as most of the work will be carried out at Hills. Again, entire work will take 10-12 months and allowing a small window in lean period will not serve the purpose.

As such again, the S/D for reconductoringis placed as below, for completion of scheduled scope:

SL NO	Name of Element	From	To	Nature	Remarks
01.	400 KV Rangpo-Binaguri-Circuit-I	01.09.2019	30.07.2020	OCB	Other Rangpo-Binaguri Circuit will be charged.
02.	400 KV Rangpo-Binaguri-Circuit-II.	01.11.2019	30.05.2020	OCB	Both the Rangpo-Binaguri D/C will be under shut down.

In continuation, it may be noted, that during S/D of circuits of Rangpo-Binaguri, SPS will be implemented at Rangpo end for maintaining safe operating limits, in case of any eventuality. S/D for both circuits asked in lean period only.

In 159th OCC, it was informed that the issue was discussed in shutdown meeting held on 18th July 2019 wherein it was opined that one circuit of 400 KV Rangpo-BinaguriD/C line could be allowed from September/October 2019 depending on the hydro generation availability in Sikkim.

In 160th OCC, ERLDC informed that it was not possible to give shutdown of one circuit of 400 KV Rangpo-BinaguriD/C line during September 2019 in view of full hydro generation in Sikkim.

OCC decided to review the shutdown proposal in next OCC Meeting.

Members may discuss.

Deliberation in the meeting

It was informed that the issue was discussed in shutdown meeting held on 16th September 2019, wherein it was decided that the shutdown of both circuits of 400 KV Rangpo-Binaguri D/C line would be allowed from 1st November 2019. Powergrid was advised to complete the reconductoring work in critical locations first during the shutdown of the both circuits.

It was decided that SPS at Rangpo shall be in service during the shutdown of 400 KV Rangpo-Binaguri D/C line for safe evacuation of Sikkim Hydro power during any contingency of TVTPL lines.

OCC advised TVTPL to ensure the healthiness of 400 KV Rangpo-Kishanganj& 400 KV Teesta-3-Kishanganj lines during this period.

Item no. C.6: Unavailability of Video Conference facility at Sikkim SLDC--Sikkim

Sikkim vide mail dated 15th May 2019 informed that their Video Conference unit was having problem of HDMI port since last two years and it was not attended by M/s Chemtrols until January 2019. After that they took entire VC unit for repair.

Sikkim added that they raised the issue in last SCADA meeting wherein M/s Chemtrol assured to get it repaired by 30.04.2019 but the same is not yet returned.

In 158th OCC, It was informed that the issue was discussed in SCADA meeting wherein Chemtrol was agreed to repair the VC and requested Sikkim to clear the pending dues.

OCC advised Sikkim to clear the dues and send a copy to ERPC and ERLDC. OCC decided to take up the issue with Chemtrol in monthly SCADA meeting.

In 159th OCC, Sikkim informed that they had cleared the dues.

In 160th OCC, it was informed that the issue was discussed in SCADA meeting wherein Chemtrol was agreed to repair the VC in August 2019.

Members may update.

Deliberation in the meeting

OCC referred the issue to SCADA O&M Meeting.

Item no. C.7: 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	Remarks	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 need to Give consolidated Plan. They have informed that it will be done during overhauling which will take a lot of time. **ERLDC View :In compliance to IEGC and CEA regulation, It is desired that for the Units which are planned for AOH in next six month will be done during AOH and for the rest units also the PSS tuning to be taken up with the vendor**

		and to be completed in six months itself.
Sikkim Hydro Complex (Teesta3, Teesta 5, Chujachen, Dikchu, Tashiding, Jorethang)	In view of Oscillation during the 16th April 2019 events and changes in Network configuration in Sikkim hydro Complex with augmentation of lines	Teesta3: Oct 2019. Other Plants yet to send their details. **ERLDC View: In view of Power swings and oscillation, all units are advised to go through PSS tuning in next three months.**
MPL Plant	Due to Change in Network configuration dur to bus splitting at Maithon.	MPL Unit-2: 14th June-2019 in the AOH. MPL Unit-1: Planned in the AOH on Nov-2019.
APNRL Plant	Oscillation with Low Damping during transient and switching observed at the plant.	APNRL has intimated that they will undergo tuning during AOH. **ERLDC View: It is observed that oscillation is severe at APNRL and they do not have any AOH in 2019-20 as per LGBR. So, APNRL is advised to comply with IEGC and CEA regulation on PSS tuning within next 3 months.**
Farakka NTPC Power Plant	With Augmentation of new lines and changes in network configuration with upcoming bus split at Kahalgaon.	NTPC has not yet submitted the details. **ERLDC View: They have informed that they will do during AOH however compliance of IEGC and CEA regulation must be ensured atearliest and PSS tuning of All Units must be completed within next 3 months.**
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	BRBCL has submitted PSS tuning details only for Unit 2. For other units' details to be submitted by NTPC.

Members may update.

Deliberation in the meeting

Members updated the status as mentioned in above table.

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

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

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

Sl. No.	Name of the transmission line	Completion schedule
1.	**2x315MVA 400/220kV Bolangir S/s**	
a.	LILO of one circuit of Sadeipalli-Kesinga220 kV D/C line at Bolangir S/S	*Only 7 towers left (Severe ROW problem).**By Mar,2020.***
2.	**400/220kV Pandiabil Grid S/s:**	
a.	Pratapsasan(OPTCL)-Pandiabil(PG) 220 kV D/C line	***By Mar,2020.***
3.	**400/220 kV Keonjhar S/S**	
a	Keonjhar (PG)-Turumunga(OPTCL) 220kV D/C line	By July 2021

OPTCL may update.

Deliberation in the meeting

OPTCL updated the latest status as mentioned in above table.

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

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

Sl. No.	Name of the transmission line	Completion schedule
1.	**Daltonganj 400/220/132kV S/s:**	
a.	Daltonganj(POWERGRID)–Latehar220kVD/c	By Dec, 2019.
b.	Daltonganj (POWERGRID) – Garhwa 220kV D/c	The line expected to be completed by May, 2018 but – Garhwa 220kV is expected to be completed by 31st Oct 2019.
c	Daltonganj (POWERGRID) – Chatarpur/Lesliganj 132kV D/c	Tendering is in progress. Expected to be completed by October 2019
2	**Chaibasa400/220kVS/s**	
A	Chaibasa(POWERGRID)–Noamundi220kVD/c	Not yet started
3	**Dhanbad400/220kVS/s**	
A	LILO of Govindpur–Jainamore/TTPS 220kVD/c at Dhanbad	ROW issues.Target date April 2020.

JUSNL may update.

Deliberation in the meeting

JUSNL updated the latest status as mentioned in above table.

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

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

Sl. No.	Name of the transmission line	Completion schedule
1.	**2x500MVA, 400/220kV Rajarhat---**	
a.	Rajarhat-N. Town-2 (WBSETCL) 220 kV D/C line	ROW problem, August 2020
b.	Rajarhat- Barasat (WBSETCL) 220 kV D/C line	The line is charged from Rajathat and Jeerat. The line would be chargedfrom Barasat end after completion of rest of the work by September 2020.
2	**Subashgram400/220kVS/s**	
a	Subashgram–Baraipur220kVD/cline	January 2020,80% of work has been completed. The line up to the cable is charged from Subashgram end on antitheft.

WBSETCL may update.

Deliberation in the meeting

WBSETCL updated the latest status as mentioned in above table.

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

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

Major issues are given below:

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

In 159th OCC, ERLDC informed that PMU data available at ERLDC is intermittent due to communication issues and PMU data reporting from PDCs at SLDCs is also intermittent.

ERLDC opined that alternate OPGW link is required for reliable communication.

OCC advised Powergrid to take the necessary action to resolve the issue.

Agenda submitted by ERLDC is enclosed at **Annexure-C11**.

Non-Availability of SCADA data from Subarnarekha Hydro Power Station (one of the Black Start Capable station in Jharkhand)

Members may update.

Deliberation in the meeting

ERLDC presented the latest status of telemetry.

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

Item no. C.12: Transfer capability determination by the states

In order to ensure, safe and secure operation of the grid, the states should carry out the power system study for operational planning and power transfer capability through their respective transmission links with the rest of the grid.

It was decided in the NPC meeting that to begin with, power system study for assessment of operational limits / power transfer capability for each state will be done by the concerned RLDC in association with concerned SLDC. Monthly TTC /ATC will be uploaded by the SLDCs at their respective websites and also communicated to concerned RLDC & NLDC subsequently.

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

Sl No	State/Utility	TTC import(MW)		RM(MW)		ATC (Import) MW		Remark
		Import	Export	Import	Export	Import	Export	
1	BSPTCL	5300	--	100	--	5200	--	Oct-19
2	JUSNL	1024	--	28	--	996	--	Dec-19
3	DVC	1194	3125	62	49	1132	3076	Dec-19
4	OPTCL	1434	--	83	--	2351	--	Dec-19
5	WBSETCL	3732	--	400	--	3332	--	Oct-19
6	Sikkim	295	--	2.5	--	292.5	--	Dec-19

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

1. *SLDCs/ RLDCs/ NLDC shall have a display available in their web-sites showing TTC, TRM, ATC declared in advance alongwith Real time power flow in the corridor for which TTC has been declared shall be displayed alongside for comparison. The voltage of the important nodes in the grid downstream/ upstream of the corridor shall also be displayed.* Presently the display available for RLDC/NLDC for real time monitoring is :http://wbs.nldc.in:82/Web_TTC_ATC.aspx.As all SLDCs of Eastern region are now declaring ATC/TTC, so, now it would be desired to have the display for Eastern region where states ATC/TTC calculated will be monitored with actual. In order to, harmonise the process a detailed view of ATC/TTC links is given below which ERLDC can utilize for web based monitoring.

SLDC	**ATC/TTC Weblink**
DVC	http://application.dvc.gov.in:8080/CLD/atcttcmenu.jsp
West Bengal	http://www.wbsldc.in/atc-ttc
Bihar	http://www.bsptcl.in/ViewATCTTCWeb.aspx?GL=12&PL=10
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

In addition , Each SLDC shall also show the same on their website for real time monitoring. Sample display for NLDC is given below.

Updated at : **29-07-2019 16:01:15**

S.No.	CORRIDOR / CONTROL AREA	TTC	ATC	ACTUAL FLOW (MW)
Import				
1	NR	17950	17150	12431
2	ER			-3218
3	NER	1150	1105	0
4	SR	10500	9750	3305
5	WR			-12714
6	Punjab	7000	6400	6206
7	DD&DNH	1300	1300	1111
8	S3 (Kerala)	2900	2810	2514
Export				
1	NR	4500	3800	-12431
2	ER			3218
3	NER	2695	2650	-482
4	SR	999999	999999	-3305
5	WR			12714
6	W3	999999	999999	12377

Fig : NLDC display for Real Time congestion

2. *State Load Despatch Centre (SLDC) shall assess the Total Transfer Capability (TTC), Transmission Reliability Margin (TRM) and Available Transfer Capability (ATC) on its inter-State transmission corridor considering the meshed intra State corridors for exchange (import/ export) of power with inter-State Transmission System (ISTS). The details of anticipated transmission constraints in the intra State system shall also be indicated separately.*Present Status of Mentioning about qassuptionaand LGBR used for ATC/TTC calculation based on the available online information are as follows**:**

SLDC	ATC/TTC Review
DVC	Contsraint and Load/gen Assumption needs to be mentioned
West Bengal	Contsraint and Load/gen Assumption needs to be mentioned
Orissa	No Issue, as ATC/TTC, Constraint and assumption are mentioned properly for both import as well as export TTC.
Bihar	Contsraint and Load/gen Assumption needs to be mentioned
Jharkhand	Contsraint and Load/gen Assumption needs to be mentioned
Sikkim	Contsraint and Load/gen Assumption needs to be mentioned

ERLDC may explain. Members may update.

Deliberation in the meeting

OCC advised all the SLDCs to provide the ATC/TTC figures along with the constraint details and actual flows in their websites.

Item no. C.13: Mock Black start exercises in Eastern Region – ERLDC

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

Sl no	Name of Hydro Station	Schedule	Tentative Date	Schedule	Tentative Date
		Test-I		Test-II	
1	U.Kolab	Last week of May, 2019	Done on 19th July 2019	Last Week of January 2020	
2	Maithon	1st week of June 2019		1st Week of February 2020	
3	Rengali	2nd week of June 2019	Done on 27th June 2019	Last week of November 2020	
4	U. Indarvati	3rd week ofJune 2019	Oct 2019	2nd week of February 2020	
5	Subarnarekha	1st week of October 2019	Done 20th August 2019	1st week of January 2020	
6	Balimela	3rd week of October 2019	Done on 17th July 2019	1st week of March 2020	*Dec 2019*
7	Teesta-V	2nd week of May 2019	During winter	Last week of February 2020	
8	Chuzachen	Last Week of Dec 2019		Last week of February 2020	
9	Burla	Last Week of June 2019	Done on 20th July 2019	Last week of February 2020	
10	TLDP-III	1st Week of June 2019		2nd Week of January 2020	
11	TLDP-IV	Last Week of June 2019		1st Week of February 2020	
12	Teesta-III	Last Week of Oct 2019		First Week of March 2020	
13	Jorthang	First Week of May 2019		First Week of Feb 2020	
14	Tasheding	2nd Week of May 2019		2nd Week of 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.14: Summary of Status Update on Previous agenda items in OCC

OCC	Agenda	Decision	Status Update
152	**Item No. B3: Installation of PMUs for observation of the dynamic performance of STATCOMs**	Powergrid informed that M/s GE had agreed to supply and install of 4 no's PMUs for 4 STATCOMs in the Eastern Region within the quantity variation clause under the existing URTDSM Project.	In 159th OCC Meeting Powergrid informed thatthe work would be completed by 15th August 2019. **PMU at Raurkela and Ranchi has been commissioned.**
155	**C.22: Collection of modeling data from Renewable as well as conventional energy generators: ERLDC**	OCC advised all the constituents to submit the details of renewable power plants of 5 MW and above.	157th OCC advised all the SLDCs to submit the details to ERPC and 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 have not yet been received in terms of modeling data.**
156	**Low frequency Oscillation at MTDC BNC-ALP-Agra**	OCC Advised ERTS-2 to submit the analysis report to ERLDC/ERPC	159th OCC Powergrid informed that the issue was referred to ABB, Sweden. The report is yet to be received from ABB. **PGCIL may update on Report submission to OCC. In the present scenario of High Hydro, the stability of HVDC and its controller is of major importance.**
156	**Item no. C.20: Updated Black Start and Restoration procedure of State--ERLDC**	Bihar, Jharkhand, DVC, West Bengal and Orissa have submitted the updated restoration procedure.	Restoration procedure form Sikkim is yet to be received. Mail has been given by ERLDC to SLDC for early submission.
156	**Item No. B.12: Status of Auto-Reclosure on Lines from Tala and Chukha Hydro Power Plant (Bhutan)**	DGPC informed that an Expert Committee was constituted to enable the autorecloser for transmission lines connected to Tala and Chuka hydro stations.	In 159th OCC meeting DGPC informed that they are implementing autorecloser at Tala also. The A/R isimplemented at

		The Committee had recommended for implementation of the autorecloser at Tala and Chuka. DGPC added that they are planning to implement the autorecloser scheme for the transmission lines connected at Chuka by May 2019. Based on the experience gained, they would implement the autorecloser scheme for the transmission lines connected at Tala.	Binaguri end and there have been various cases where successful A/R has occurred at Binaguri but due to no A/R attempt Tala has a blackout in June 2019. In addition, in month of Aug also many times 400 kV lines successfully reclosed from Binaguri end. The experience on 220 kVChukha-Birpara in the form of successful A/R has been observed on 25th 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.	

Deliberation in the meeting

Members updated the status as mentioned in above table.

PART D:: OPERATIONAL PLANNING

Item no. D.1: Anticipated power supply position during October 19

The abstract of peak demand (MW) vis-à-vis availability and energy requirement vis-à-vis availability (MU) for the month of October19 were prepared by ERPC Secretariat on the basis ofLGBR 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 October 2019 after incorporating constituents' observations is given at **Annexure-D.1***.*

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

Generator shutdown for October 19:

System	Station	Unit	Capacity (MW)	Period		No. of Days
				From	To	
DVC	Mezia TPS	2	210	29.10.19	03.12.19	3
ODISHA	Talcher TPS	6	110	09.10.19	28.10.19	20
WBPDCL	Kolaghat TPS	2	210	01.08.19	31.03.20	31

ERLDC may place the list transmission line shutdown discussed on 16th September 2019 through VC.

Members may confirm.

Deliberation in the meeting

No Generator is availing shutdown during October 2019.

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

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

(i) Thermal Generating units:

S.No	Station	Location	Owner	Unit No	Capacity	Reason(s)	Outage	
					(MW)		Date	Time
1	BRBCL	BIHAR	BRBCL	1	250	ANNUAL OVERHAULING	11-Aug-19	02:29
2	KOLAGHAT	WEST BENGAL	WBPDCL	1	210	POLLUTION CONTROL PROBLEM	10-May-18	23:05
3	KOLAGHAT	WEST BENGAL	WBPDCL	3	210	POLLUTION CONTROL PROBLEM	23-Feb-17	11:51

4	CTPS	JHARKHAND	DVC	3	130	TURBINE BLADE DAMAGE	30-Jul-17	00:00
5	DSTPS	WEST BENGAL	DVC	1	500	ANNUAL OVERHAUL	26-Aug-19	00:17
6	STERLITE	ODISHA	GRIDCO	4	600	CAPITAL OVERHAULING	31-Jul-19	23:22
7	MEJIA	WEST BENGAL	DVC	4	210	*BOILER LICENSE RENEWAL*	6-Sep-19	22:58
8	JITPL	ODISHA	JITPL	1	600	PA Fan Duct leakage	7-Jul-19	02:30
9	TALCHER	ODISHA	NTPC	1	500	COAL SHORTAGE	7-Sep-19	22:46
10	SAGARDIGHI	WEST BENGAL	WBPDCL	1	300	*COAL SHORTAGE*	20-Aug-19	23:59
11	BAKRESWAR	WEST BENGAL	WBPDCL	2	210	COAL SHORTAGE	7-Sep-19	09:16
12	DPL	WEST BENGAL	WBPDCL	7	300	*COAL SHORTAGE*	1-Aug-19	00:10
13	BANDEL	WEST BENGAL	WBPDCL	5	210	TURBINE VIBRATION	22-Jul-19	05:27
14	*WARIA TPS*	*WEST BENGAL*	*DVC*	*4*	*210*	*FLAME FAILURE*	9-Sep-19	22:14
15	TTPS	ODISHA	GRIDCO	5	110	*WET COAL/ COAL SHORTAGE*	11-Sep-19	19:32
16	GMR	ODISHA	GRIDCO	3	350	*COAL SHORTAGE*	27-Aug-19	11:20
17	KOLAGHAT	WEST BENGAL	WBPDCL	5	210	*COAL SHORTAGE*	11-Sep-19	00:13
18	MTPS STG I	BIHAR	BSPHCL	1	110	*TURBINE BEARING PROBLEM*	4-Sep-19	00:11

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

(ii) Hydro Generating units:

Sl. No.	Station	Unit No.	Capacity (MW)	Reason (s) of outage	Outage date	Expected Revival Date
1	Balimela	Unit- 1	60	Renovation & Modernization work (Planned)	05-08-2016	30-09-2019

		Unit- 2	60	Renovation & modernization work (Planned).	20-11-2017	30-09-2019
2	Burla	Unit-1	49.5	Turbine & Generator coupling cover water leakage (Forced)	14-03-2018	31-12-2019
		Unit-5	37.5	Renovation. Modernization & up rating work (Planned)	25-10-2016	09-12-2019
		Unit-6	37.5	Renovation, Modernization & up rating work (Planned)	16-10-2016	07-11-2019
3	Chiplima	Unit-3	24	Renovation & Modernization work (Planned)	15-10-2015	15-06-2019
4	Rengali	Unit-2	50	Capital Maintenance (Planned)	12-12-2018	30-07-2019
6	Upper Kolab	Unit-4	80	Capital Maintenance (Planned)	01-02-2019	31-07-2019

It is seen that about 688 MW hydro capacities in Odisha is under forced outage / planned outagein 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 From	Reasons for Outage
			DATE	
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	POWERGRID	01-09-2018	TOWER COLLAPSE AT LOC 129. PILING DAMAGED
5	400 KV PATNA KISHANGANJ- II	POWERGRID	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	765KV JHARSUGUDA-RAIPUR-I	POWERGRID	26-08-2019	OPENED ON OVER VOLTAGE AT JHARSUGUDA
8	765KV ANGUL-JHARSUGUDA IV	POWERGRID	08-09-2019	OPENED ON OVER VOLTAGE AT JHARSUGUDA
9	400/132 KV, ICT II (200 MVA) AT KAHALGAON	NTPC	02-08-2019	Y PHASE BUSHING BURSTED
10	132 KV LALMATIA KAHALGAON(NTPC)	JSEB/NTPC	02-08-2019	TO RESTRICT LOADING ON 220/132 KAHALGAON ICT 1
11	132KV KhSTPP-SABOUR-SC	BSPHCL	03-08-2019	TO RESTRICT LOADING ON 220/132 KAHALGAON ICT 1
12	400 KV MOTIHARI(DMTCL)-GORAKHPUR-I	POWERGRID/DMTCL	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.
13	400 KV MOTIHARI(DMTCL)-GORAKHPUR-II	POWERGRID/DMTCL	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.
14	400 KV BARH-MOTIHARI(DMTCL) -I	POWERGRID/DMTCL	04-09-2019	TOWER COLLAPSE AT LOCATION 26/0
15	400 KV BARH-MOTIHARI(DMTCL) -II	POWERGRID/DMTCL	04-09-2019	TOWER COLLAPSE AT LOCATION 26/0

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

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

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

Members may update.

Deliberation in the meeting

Members noted.

PART E::ITEMS FOR INFORMATION

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

Item No. E.1: Preparation of crisis management plan for Cyber Security in Power Sector in line with CERT-IN.

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

In 142nd OCC, ERLDC informed that, in line with Enquiry Committee Recommendation, cyber security audit is being conducted on regular basis for SCADA system installed at ERLDC and SLDC as well but cyber security audit for telecom infrastructure installed in Eastern Region is not being carried out.

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

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

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

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

As suggested by CEA, a format would be circulated among ER constituents for furnishing the information of the their respective systems for discussion in OCC Meeting. The format is enclosed at **Annexure-E1**.

OCC advised all the constituents to submit the information to ERPC as per Annexure-E1.

Item No. E.2: 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.3: 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.4: Commissioning of new transmission elements in Eastern Region

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

Monthly commissioning List of Tansmission element and generators: August 2019					
SL NO	**Element Name**	**Owner**	**Charging Date**	**Charging Time**	**Remarks**
1	220 KV Keonjhar-Keonjhar II	OPTCL	03-08-2019	13:49	
2	220 KV Patna khagaulckt 2	BGCL	08-08-2019	16:05	
3	220 KV Patna khagaulckt 3	BGCL	08-08-2019	16:09	
4	500MVA ICT II at Rajarhat	PGCIL	15-08-2019	18:28	
5	MangdhechuUint-I (180MW)	MHPA	28-06-2019	12:30	Information received on 31.08.2019
6	MangdhechuUint-II (180MW)	MHPA	08-07-2019	12:30	
7	MangdhechuUint-IV (180MW)	MHPA	14-08-2019	12:30	
8	132kV Goghat-Arambag	WBSETCL	27-08-2019	15:11	

Item No. E.5: UFR operation during the month of August'19

System frequency touched a maximum of 50.32 Hz at09:34hrs of 15/08/19and a minimum of 49.55 Hz at 09:19hrs of 20/08/19. Hence, no report of operation of UFR has been received from any of the constituents.

****

161st OCC Meeting of ERPC

Annexure-A

Venue: Barh STPP

Date: 20-Sep-19

S.N.	Name	Designation	Email	Signature
1	A K Mukherji	BD (Barh		
2	H P Joshi	GM (O&M)	hpjoshi@ntpc.co.in	
3	J. Bandyopadhyay	MS, ERPC	mserpc-power@nic.in	
4	S. Banerjee	GM (ERLDC)		
5	J. G. Rao	EE, ERPC	ganesh.jada@gov.in	
6	S.P. Panda	CGM, OHPC (Odisha)	spPanda.ohpc@gmail.com	
7	P.K. Pattanaik	DGM, OPTCL	ele.pkpattanaik@optcl.co.in	
8	D.K. Mishra	CLD, SLDC, Odisha	cld_sldc@sldcorissa.org.in	
9	Madhusudan Sahoo	DGM, GRIDCO	gridcoebc@gmail.com	M.S. Sahoo
10	Hasapriya Behera	AGM, GRIDCO	hp.gridco@gmail.com	
11	KAUSIK DATTA	GM (OS)	kdatta@wbpdcl.co.in	
12	PREETAM BANERJEE	SE/WBSEDCL	preeban72@gmail.com	
13	ARNAB MITRA	SE/DVC, SLDC	arnab.mitra@dvc.gov.in	
14	M. PRASAD	HEAD/PMD, DGPC	m.prasad1900@drukgreen.bt	
15	Anumon Roy	Sm(E), Teesta-V	anuman1975@gmail.com	Anuroy
16	Arunava Sengupta	AM(SO), CESC Ltd	arunava.gupta@rp-sg.in	
17	S. R. Saldar	AGM(O), MPL	srsaldar@tatapower.com	
18	H.C. YADAV	Dy. Mgr (EE/MS) NTPC	hkyadav01@ntpc.co.in	
19	Vivek Pushpakar	Manager (EMD) NTPC	Vivekpushpakar@ntpc.co.in	
20	KOUSHIK BANERJEE	Sr. MANAGER, SC	koushik.banerjee@rp-sg.in	6-20/9
21	Jangchuk Dorji	Sr. SO, DGPC	j.dorji1789@drukgreen.bt	
22	KRISHNA K. BHATTARAI	EE/CHP, DGPC	k.bhattarai266@drukgreen.bt	
23	KARMA NORBU	AE/THP, DGPC	Konorbu2412@drukgreen.bt	
24	S.K. Choudhary	AVP	Sanjivchoudhary@adhunikgroup.co.in	
25	Manoj Mishra	VP (O&M)	manoj.mishra@jsw.in	
26	PRAKASH KUMAR GUPTA	GM (OS)/WBSPDCL	pgupta@wbpdcl.co.in	
27	M.P. Samantaray	DGM (CE), SLDC	manas989@yahoo.co.in	
28	Jyoti Kumar	Dy. Manager, DMTCL	jyoti.kumar@sekura.in	
29	Nimish Sheth	Director, DMTCL	Nimish.sheth@sekura.in	
30	Vijayanand	DMTCL	Vijayanand.ponletty@	VBS.

161st OCC Meeting of ERPC

Venue: Barh STPP **Date: 20-Sep-19**

S.N.	Name	Designation	Email	Signature
31	CHANDAN KUMAR	Mgr. ERLDC POSOCO	chandan@posoco.in	[signature]
32	R.K. MANDAL	AGM (EEMG), NTPC KAHALGAON	rkmandal@ntpc.co.in	[signature]
33	G. C. Garnayak	AGM (EEMG), NTPC Farakka	gcgarnayak@ntpc.co.in	[signature]
34	S. S. Mishra	AGM (OS) NTPC/ER-II HQs	ssmishra03@ntpc.co.in	[signature]
35	S. K Sharma	AGM (OS) ER-I HQ NTPC	sksharma06@ntpc.co.in	[signature]
36	B. SRINIVASA RAO	GM (Optn) NTPC-BARH	SRBODANKI@NTPC.CO.IN ~~SBB~~	[signature]
37	J. DUTTA.	DCE (E) SPE and OS (SYS) DVC	jayanta.dutta@dvc.gov.in	[signature]
38	R.K. PANDEY	SM, SLDC, JUSNL	k.rajesh.p@gmail.com	[signature]
39	GAGAN KUMAR	E.Ex.E., SLDC	gagankmishra@gmail.com	[signature]
40	S.K. HAZRA	Sr GM / ER-I / POWERGRID	skhazra@powergridindia.com	[signature]
41	S.K. SINGH	Sr. GM (AM)/ER-I	singhsk@powergridindia.com	[signature]
42	S. KONAR	Sr. DGM (SO), ERLDC	konar_s@posoco.in	[signature]
43	J. KUMAR	DGM (Optn.) NTPC	jitendrakumar02@ntpc.co.in	[signature]
44	P. GHOSH	Ch. Mgr/ER-II	partha.ghosh@powergridindia.com	[signature]
45	Y. Ayyappa.	Dy. Manager	ayyappa.y@tpttl.com	[signature]
46	Nisit Kr. Gupta	A.Ex.E. (SLDC), Bihar	nkgupta.bsptcl@gmail.com	[signature]
47	Tushar Ranjan	Manager (SLDC), JUSNL	ranjtushar@gmail.com	[signature]
48	Sandip Ghosh.	Sr. Divn Engineer, DVC	sandip.ghosh@dvc.gov.in	[signature]
49	Chinmoy Sarkar	Addl. GM/NTPC/Kahalgaon.	csarkar@ntpc.co.in	[signature]
50	Rajesh Kumar	Sr. Mgr. NTPC Kanihar	rajeshkumar17@ntpc.co.in	[signature]
51	SUDIP DHAR	AM	sudipdhar@yahoo.co.in	[signature]
52	Yogesh Singla	DGM (EEMG) KBUNL-KANTI	yogeshsingla@ntpc.co.in	[signature]
53	Amit Chowdhury	AM, ERLDC	akchoudhury@posoco.in	[signature]
54	Nishant Kumar	Manager (O&M), DMTCL	nishant.kumar@sekuraind...	
55	Sanjay Kumar Sahu	DGM (AM/IT) PG-odisha	~~[illegible]~~ sksahu@powergridindia.com	
56	A. De	Asst. Director, ERPC	alik.erpc@gov.in	
57				
58				
59				
60				

Power System Operation Corporation Ltd.

161st OCC Meeting

At Barh, NTPC

20th September, 2019

ER Grid Performances

Highlights for the month of August-19

Frequency Profile

Average Freq:- 50.00 Hz

Avg FVI: - 0.043

Lowest FVI:- 0.02

Max- 50.32 Hz on 15th August' 19

Min- 49.55 Hz on 20th August'19

72.69% of the time freq was with in IEGC Band

Peak Demand*

ER: 23451 MW on 21st August 2019 at 20:47 hrs

% Growth in Average Demand Met w.r.t. last year: 3.46%

BSPHCL : 5812 MW ; ON 22/08/19

JUVNL: 1277 MW; ON 22/08/19

DVC: 3038 MW; ON 23/08/19

GRIDCO: 5013 MW; ON 16/08/19

WB: 8872 MW; ON 21/08/19

SIKKIM: 98 MW; ON 09/08/19

**All data source are from SCADA*

Energy met

Max. 513 MU on 30th Aug *2019*

%Growth w.r.t. last year on Max energy : 2.58%

Avg. 475 MU in August *2019*

%Growth w.r.t. last year on Avg. energy : 2.5%

New Element

Generating Units-

OPGC #4 (660 MW)

Mangdechu # 4(180 MW)

Open Access

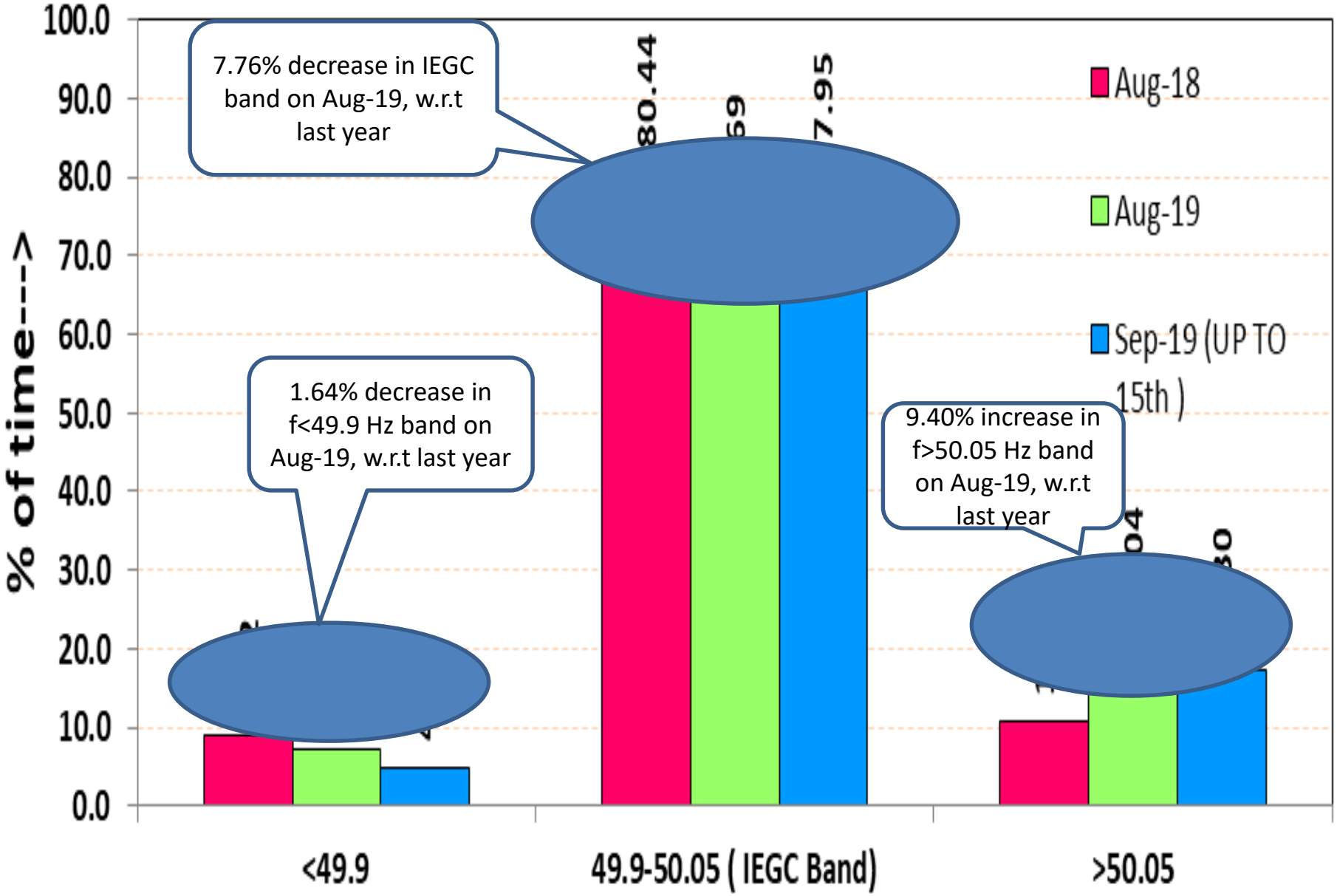
STOA transactions approved -352 nos.

Energy Approved- 1657.75 MUs

New Element addition during the month of August'19:

SL NO	Element Name	Owner	Charging Date	Charging Time	Remarks
1	220 KV Keonjhar(PG)-Keonjhar II	OPTCL	03-08-2019	13:49	
2	220 KV Patna-Khagaul ckt 2	BGCL	08-08-2019	16:05	
3	220 KV Patna-Khagaul ckt 3	BGCL	08-08-2019	16:09	
4	500MVA ICT-II at Rajarhat	PGCIL	15-08-2019	18:28	
5	OPGC-IV (660MW)	OPGCL	21-08-2019		COD
6	MANGDECHU (180 MW)	BHUTAN	14-08-2019		COD

Monthly Frequency Profile of Grid



So Far Highest Demand

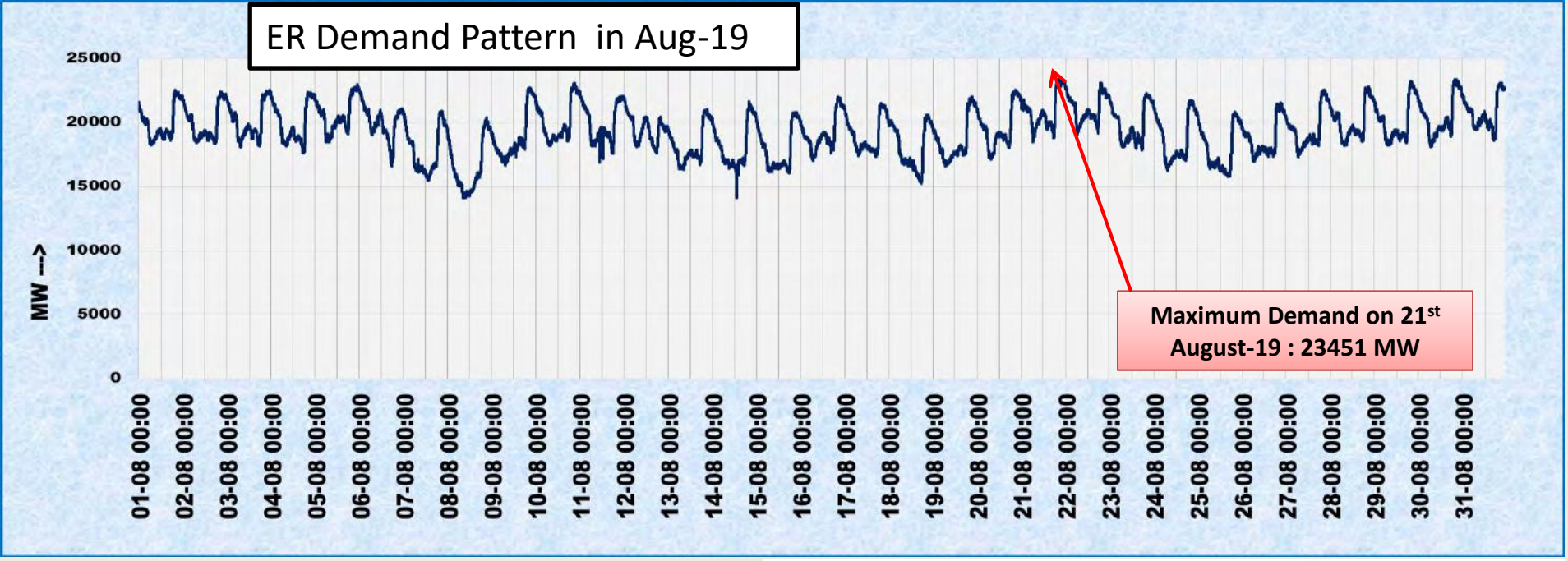
Constitute	Demand (in MW)	Date	Time	Dmd met (MW) on 21st Aug'19 (max dmd met day)	
				MW	Time
Bihar		03-Sep-19	20:07	5479	23:21
DVC	3322	24-Jun-19	20:01	2899	21:32
Jharkhand	1348	21-May-19	20:45	1228	20:08
Odisha	5558	23-Aug-18	20:21	4851	20:32
W. Bengal	9362	28-May-19	14:27	8889	23:25
Sikkim	117	28-Oct-16	19:22	89	19:03
ER	23476	20-May-19	22:45	23451	20:47

So Far Highest Energy Consumption

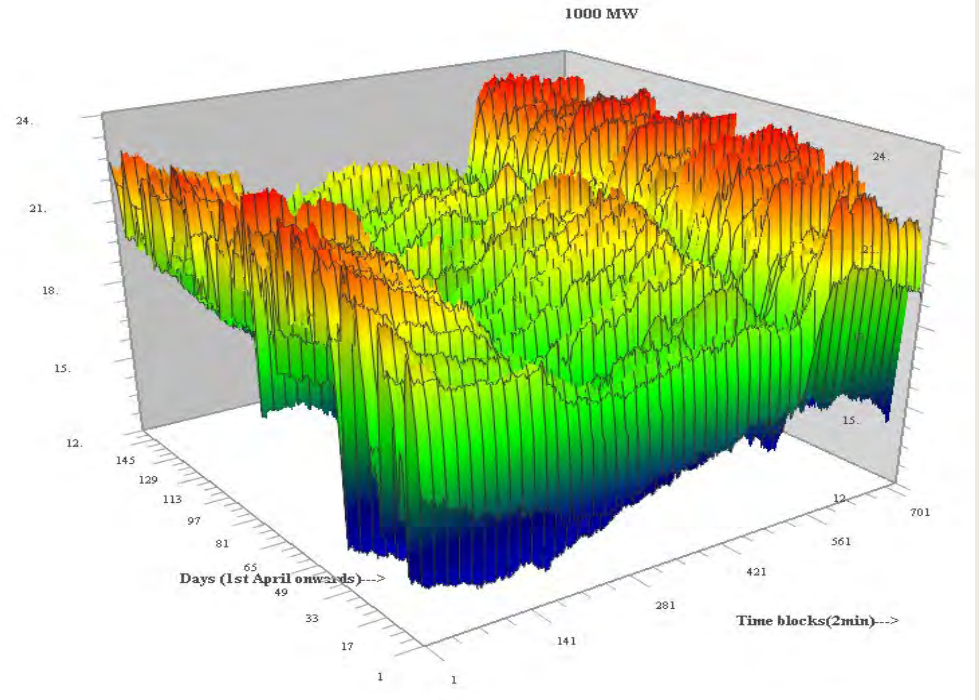
Constitute	Energy consumption (in MUs)	Date	Energy met on 21st Aug'19 (max dmd met day)
Bihar		02-Sep-19	111.1
DVC	75.8	12-Jul-18	63.2
Jharkhand	27.8	19-May-19	23.7
Odisha	123.5	02-Oct-18	105.5
West Bengal	199.9	28-May-19	186.3
Sikkim	2.1	07-Dec-17	1.2
ER	506.0	25-Jun-19	501

3D VIEW OF ER DEMAND PATTERN (APR-19 to AUG-19)

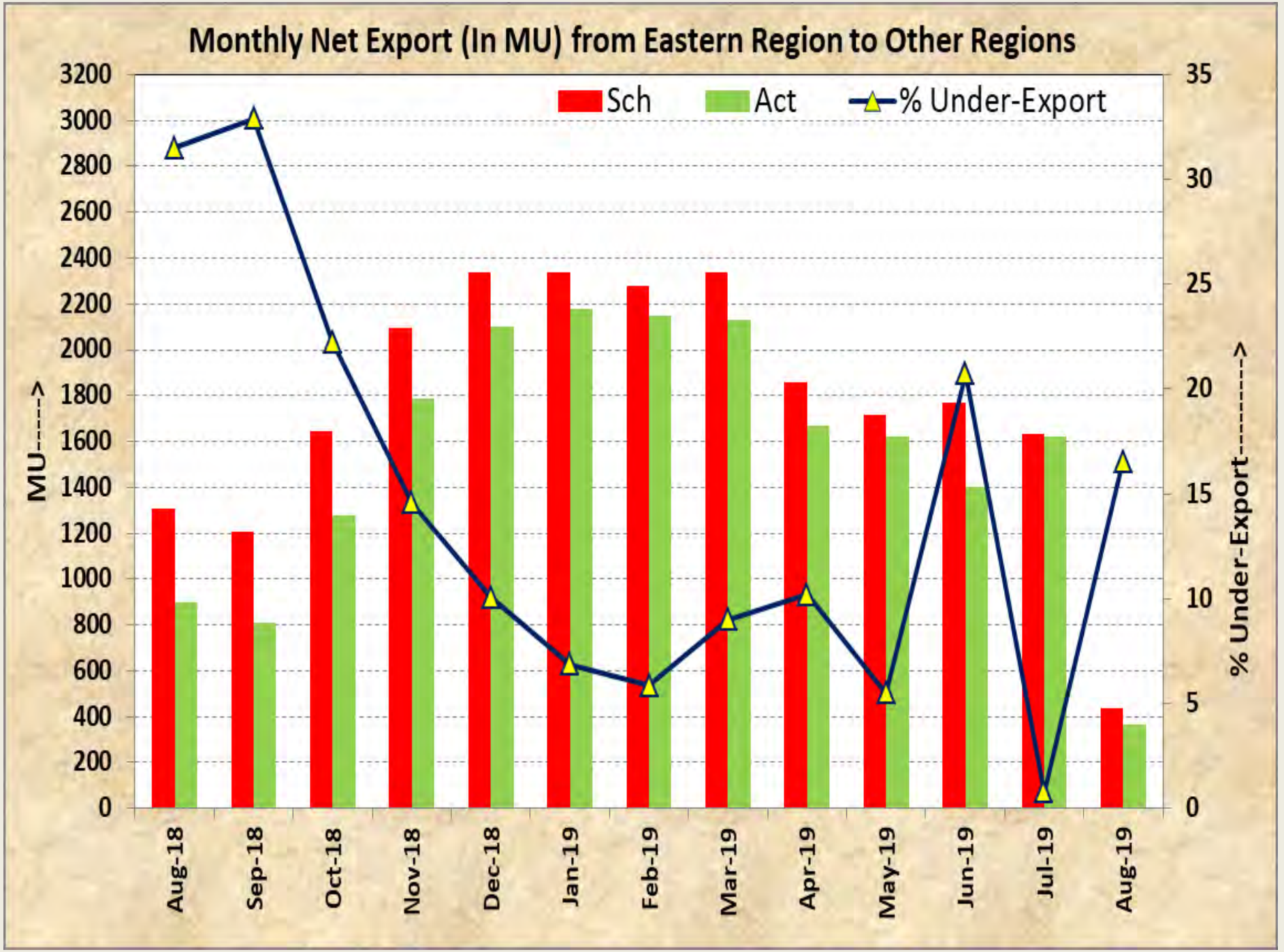
ER Demand Pattern in Aug-19



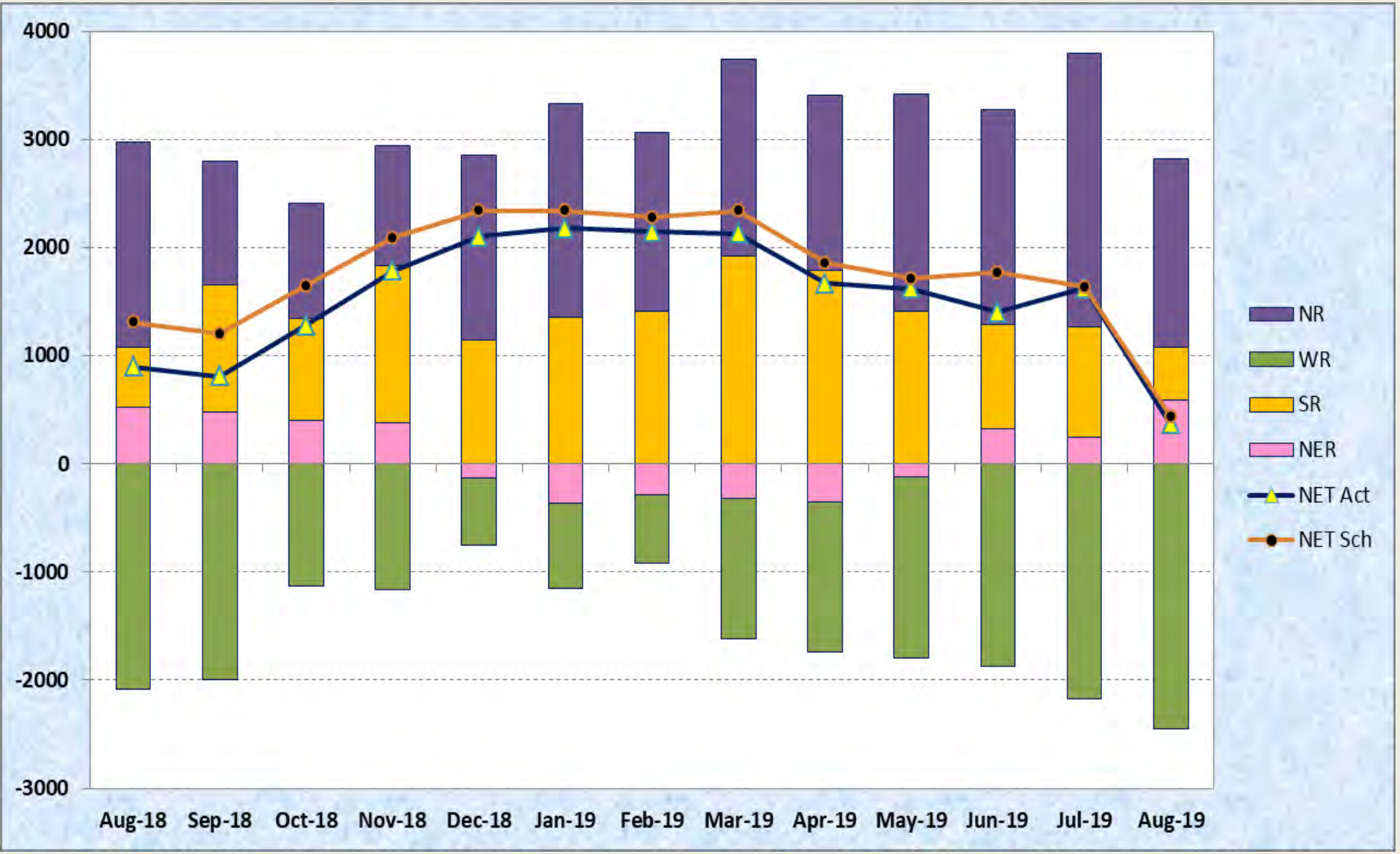
EASTERN REGION DEMAND
3D CURVES (APR'19-AUG'19)



Over Drawl / Under Injection by ER Entities
Non-compliance of direction issued by SLDC


Monthly Net Export (In MU) from Eastern Region to Other Regions
Sch
Act
% Under-Export
MU----->
% Under-Export-------->
3200
3000
2800
2600
2400
2200
2000
1800
1600
1400
1200
1000
800
600
400
200
0
35
30
25
20
15
10
5
0
Aug-18
Sep-18
Oct-18
Nov-18
Dec-18
Jan-19
Feb-19
Mar-19
Apr-19
May-19
Jun-19
Jul-19
Aug-19

Monthly Net Export (In MU) from Eastern Region to Other Regions



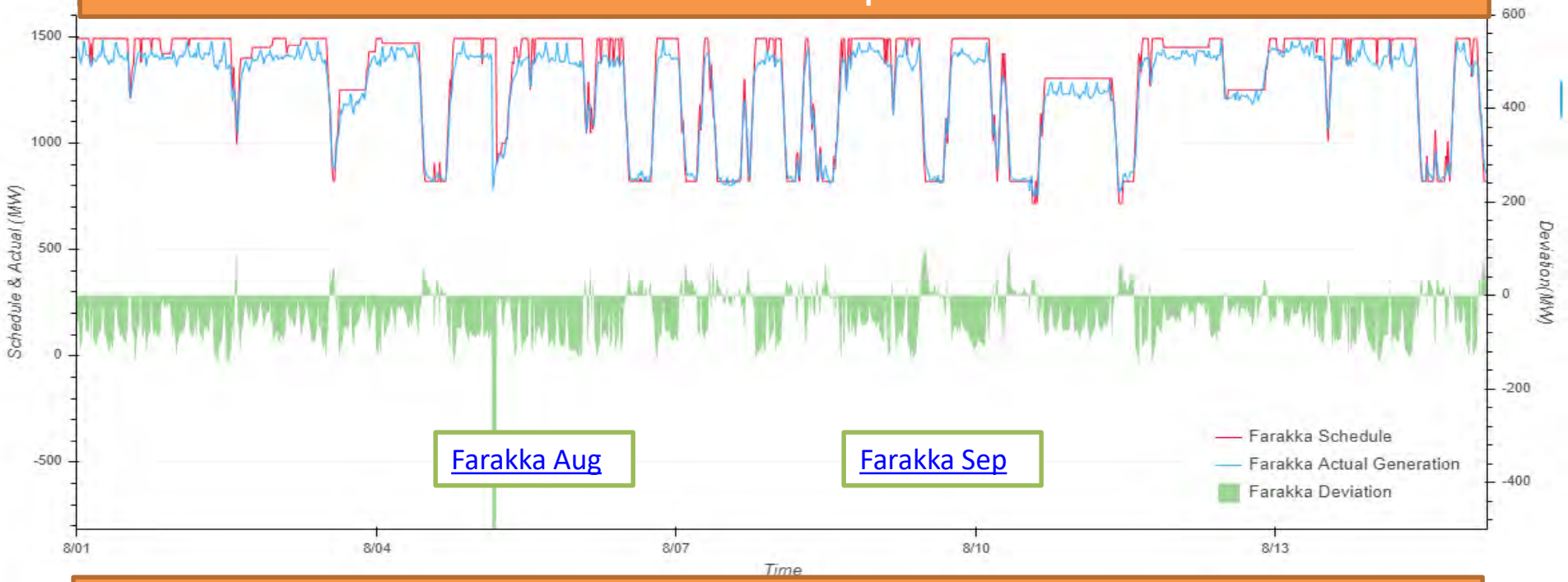
Schedule Export for Aug-19 was 438 Mu, where as Actual Export was 365 Mu

Total Under export was 73 Mu for the month.

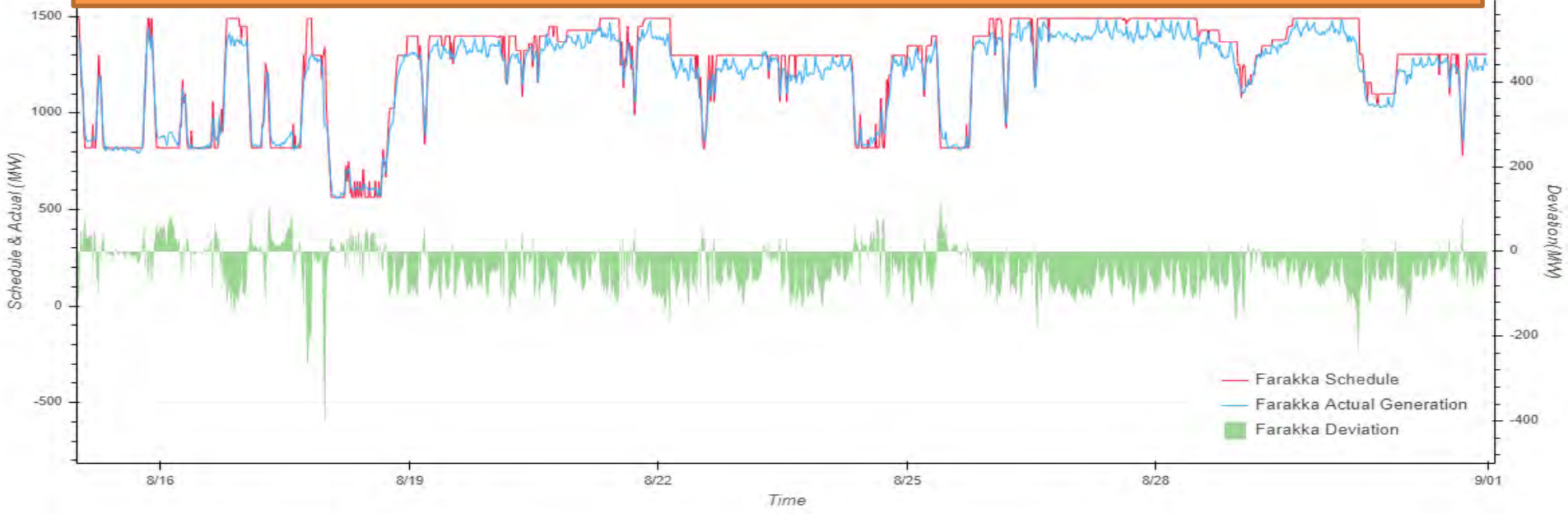
Schedule vs Actual Status - Aug 2019

	Schedule (Mu)	Actual (Mu)	OD (Mu)	Daily Avg OD (Mu)	% Deviation
Bihar	3198	3204	6	0.2	0.2
Jharkhand	496	505	9	0.3	1.8
DVC	-927	-930	-3	-0.1	-0.3
Odisha	1155	1305	150	4.8	**13.0**
West Bengal	**2508**	**2589**	**82**	**2.6**	**3.3**
Sikkim	40	40	0	0.0	0.2
FSTPP I & II	**946**	**911**	**-35**	**-1.1**	**-3.7**
FSTPP III	129	125	-4	-0.1	0.0
KHSTPP I	414	417	3	0.1	0.7
KHSTPP II	886	878	-8	-0.2	-0.9
TSTPP I	301	297	-4	-0.1	-1.3
BARH II	811	801	-10	-0.3	-1.2
GMR	**213**	**198**	**-15**	**-0.5**	**-6.9**
MPL	497	499	2	0.1	0.3
APRNL	279	272	-7	-0.2	-2.5
JITPL	342	342	-1	0.0	-0.2

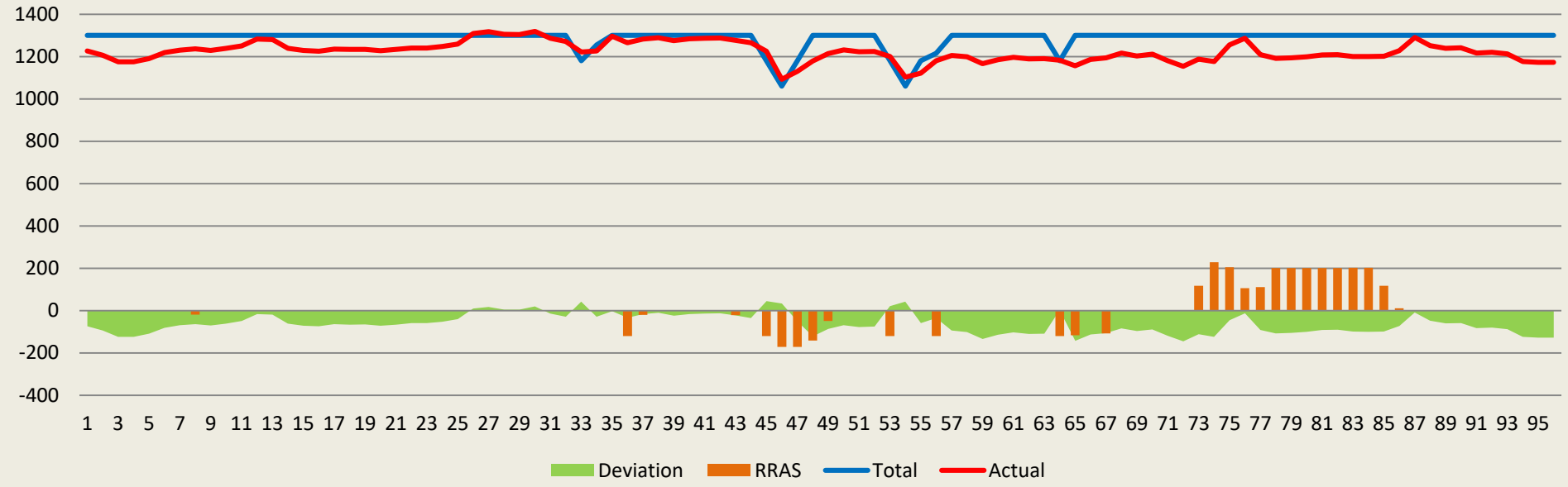
Farakka Schedule Actual & Deviation chart for period of 01-08-2019 to 15-08-2019



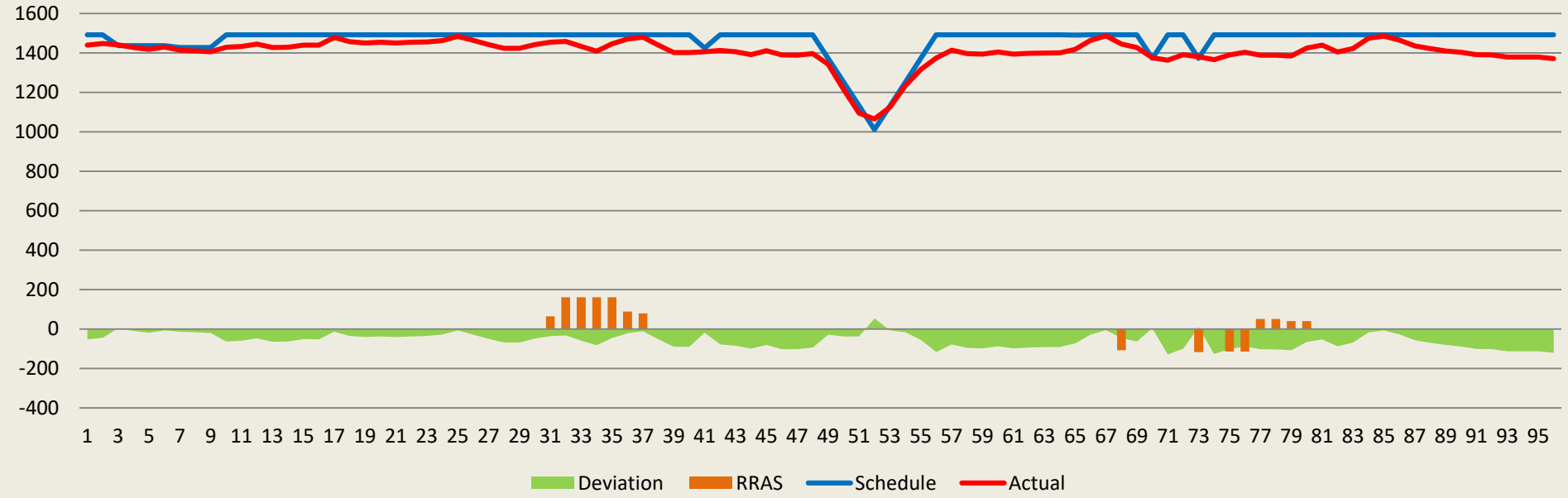
Farakka Schedule Actual & Deviation chart for period of 16-08-2019 to 31-08-2019



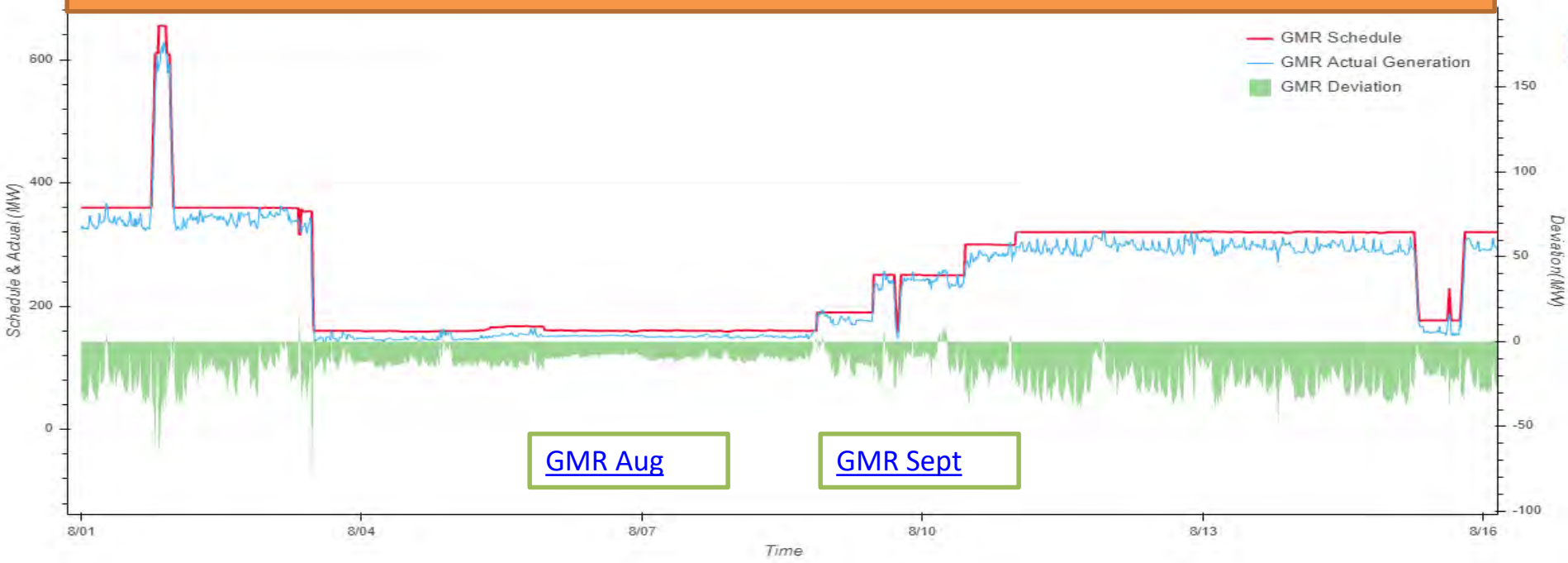
FSTPP I & II Schedule, Actual, Deviation & RRAS chart for date 23-08-19



FSTPP I & II Schedule, Actual, Deviation & RRAS chart for date 13-08-19



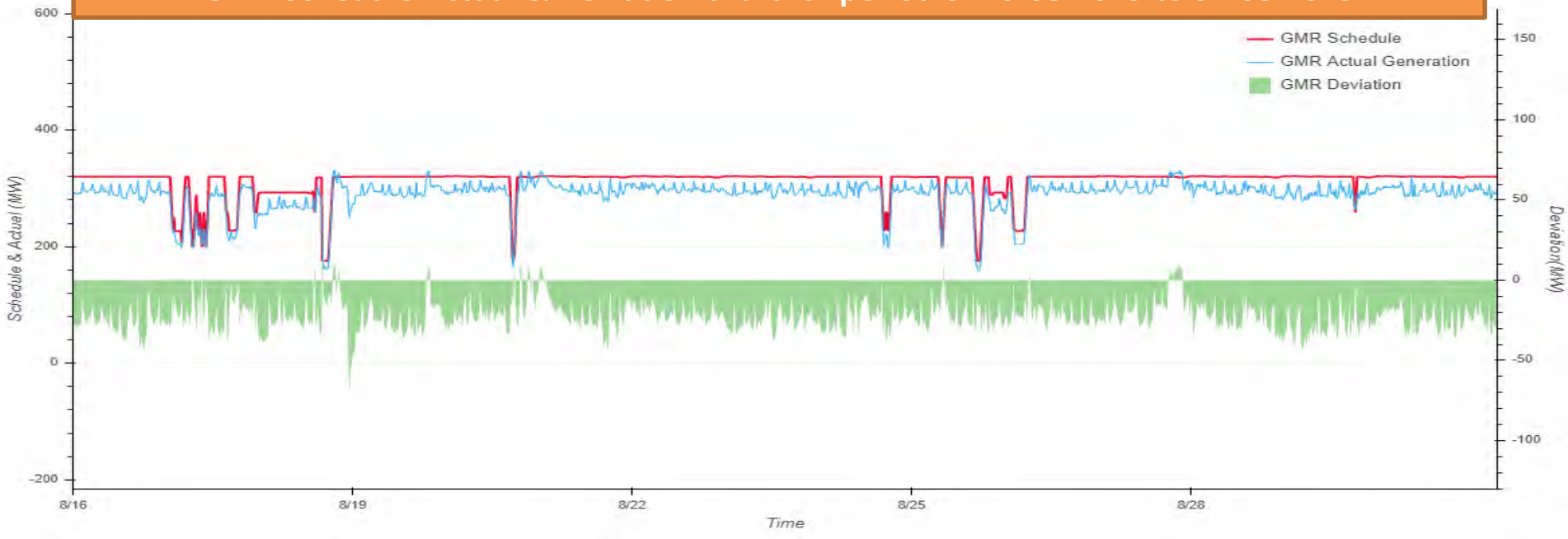
GMR Schedule Actual & Deviation chart for period of 01-08-2019 to 15-08-2019



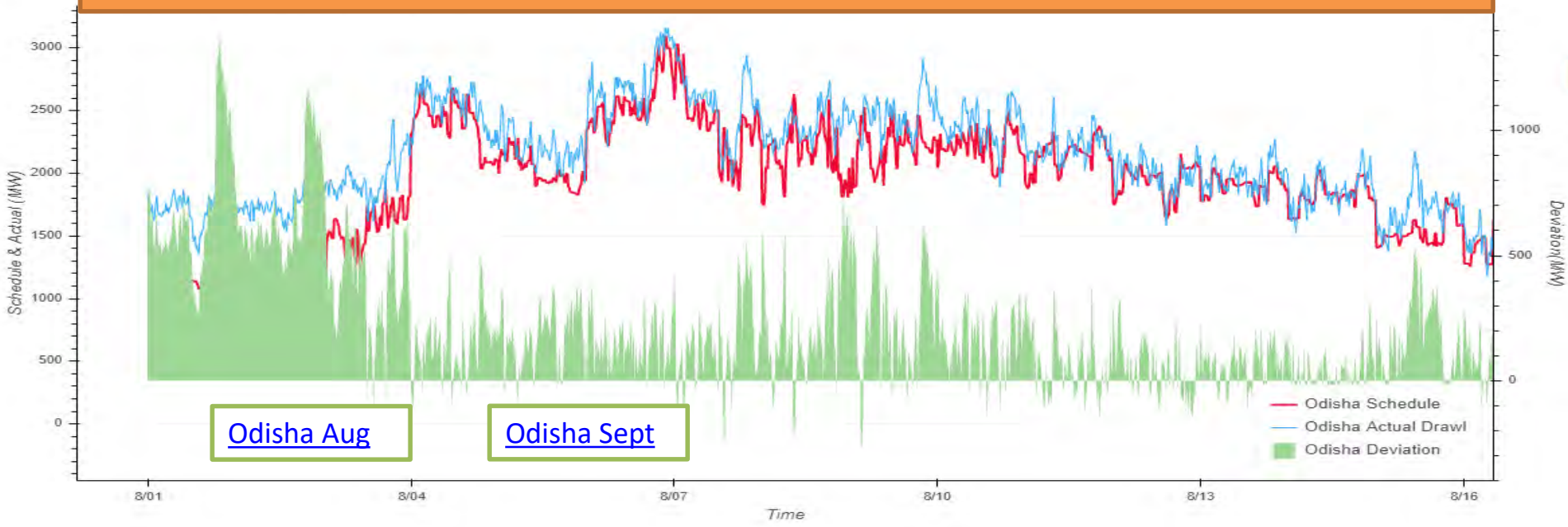
GMR Aug

GMR Sept

GMR Schedule Actual & Deviation chart for period of 16-08-2019 to 31-08-2019

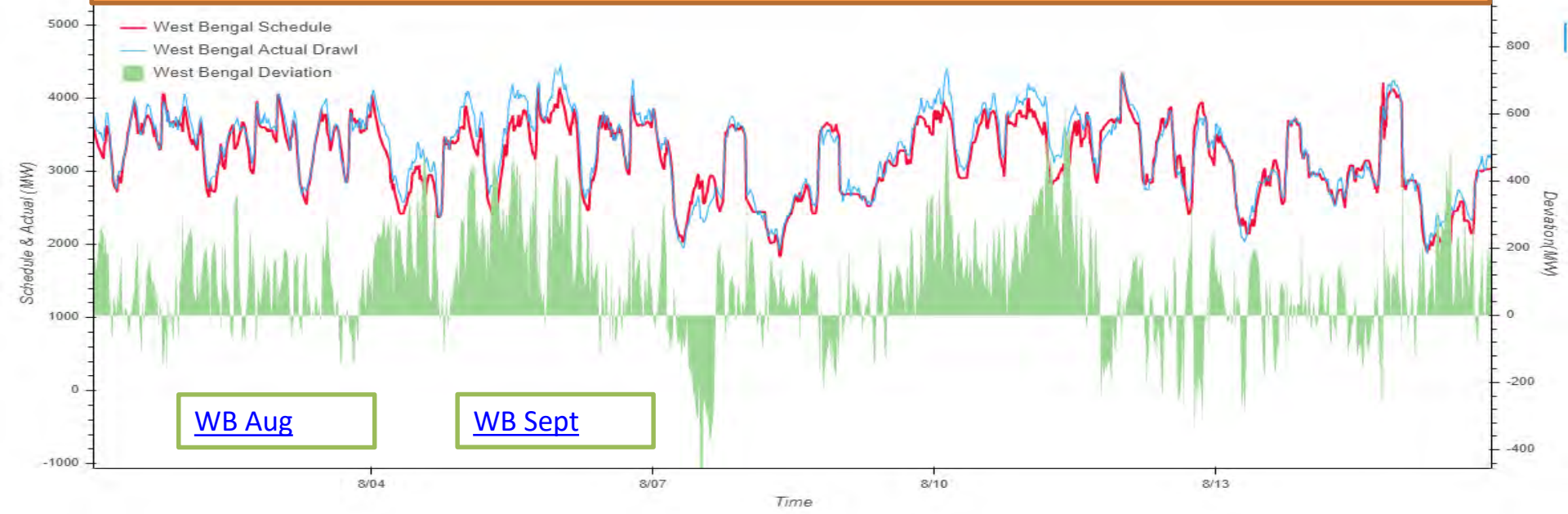


Odisha Schedule Actual & Deviation chart for period of 01-08-2019 to 15-08-2019



Odisha Schedule Actual & Deviation chart for period of 16-08-2019 to 31-08-2019

West Bengal Schedule Actual & Deviation chart for period of 01-08-2019 to 15-08-2019

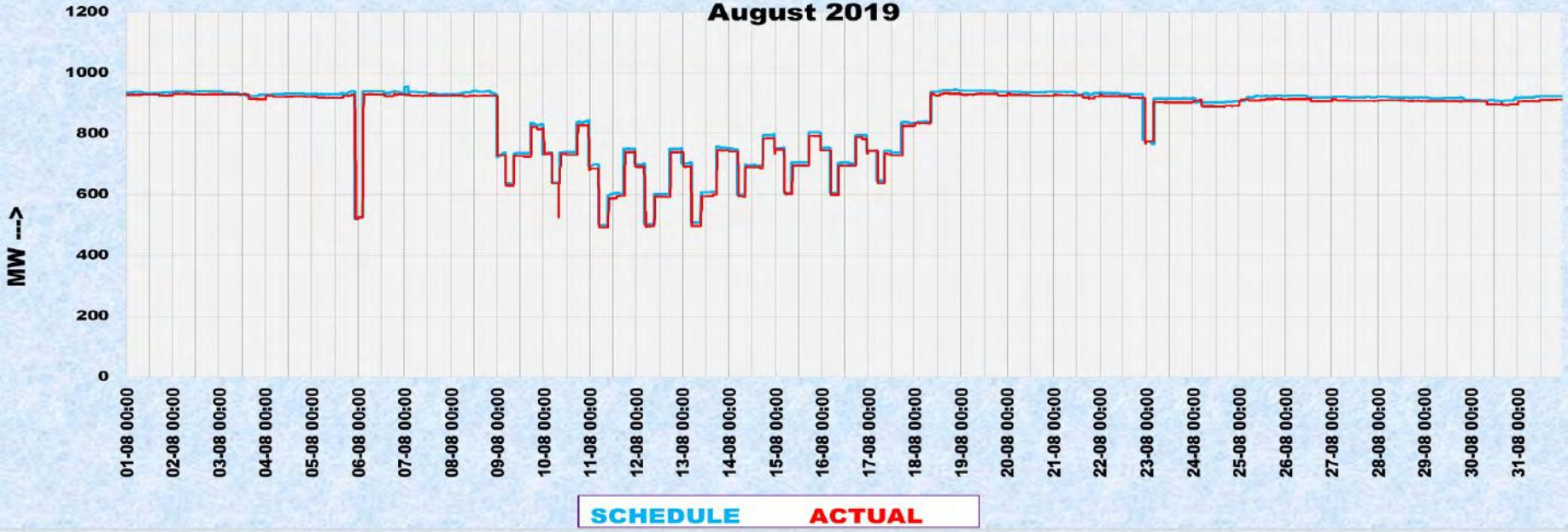


WB Aug

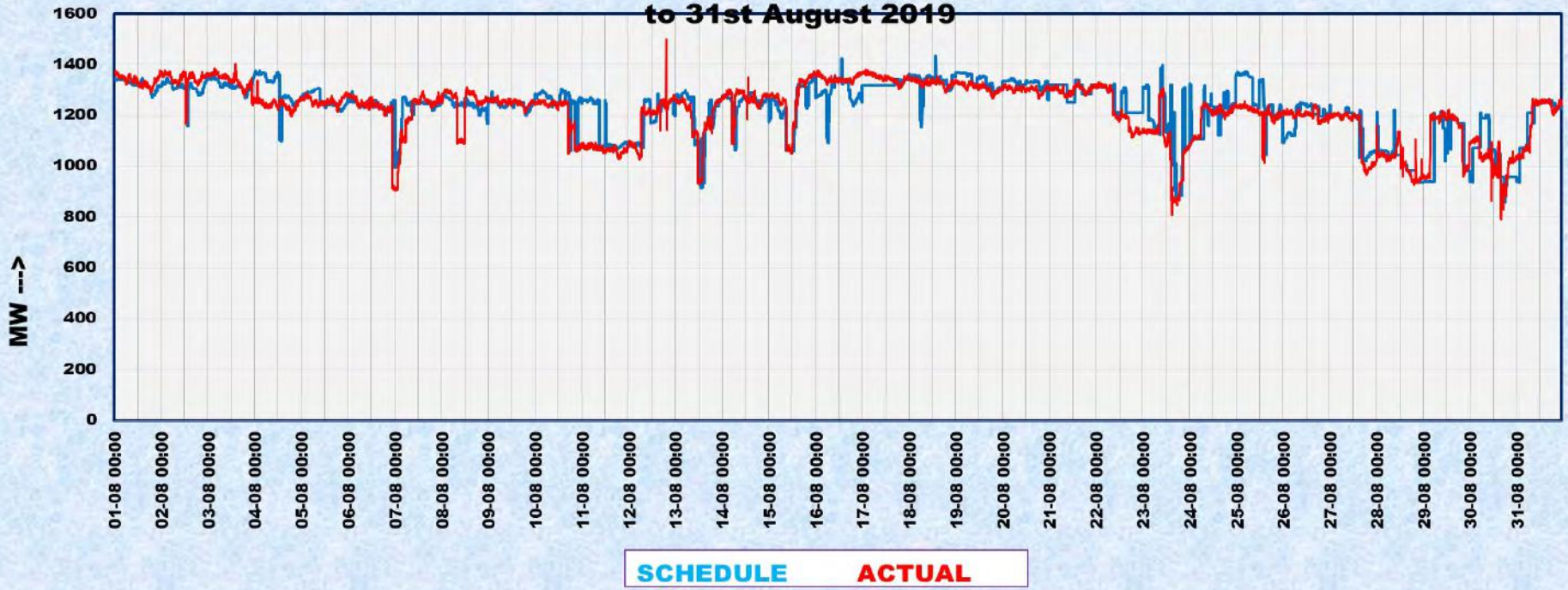
WB Sept

West Bengal Schedule Actual & Deviation chart for period of 16-08-2019 to 31-08-2019

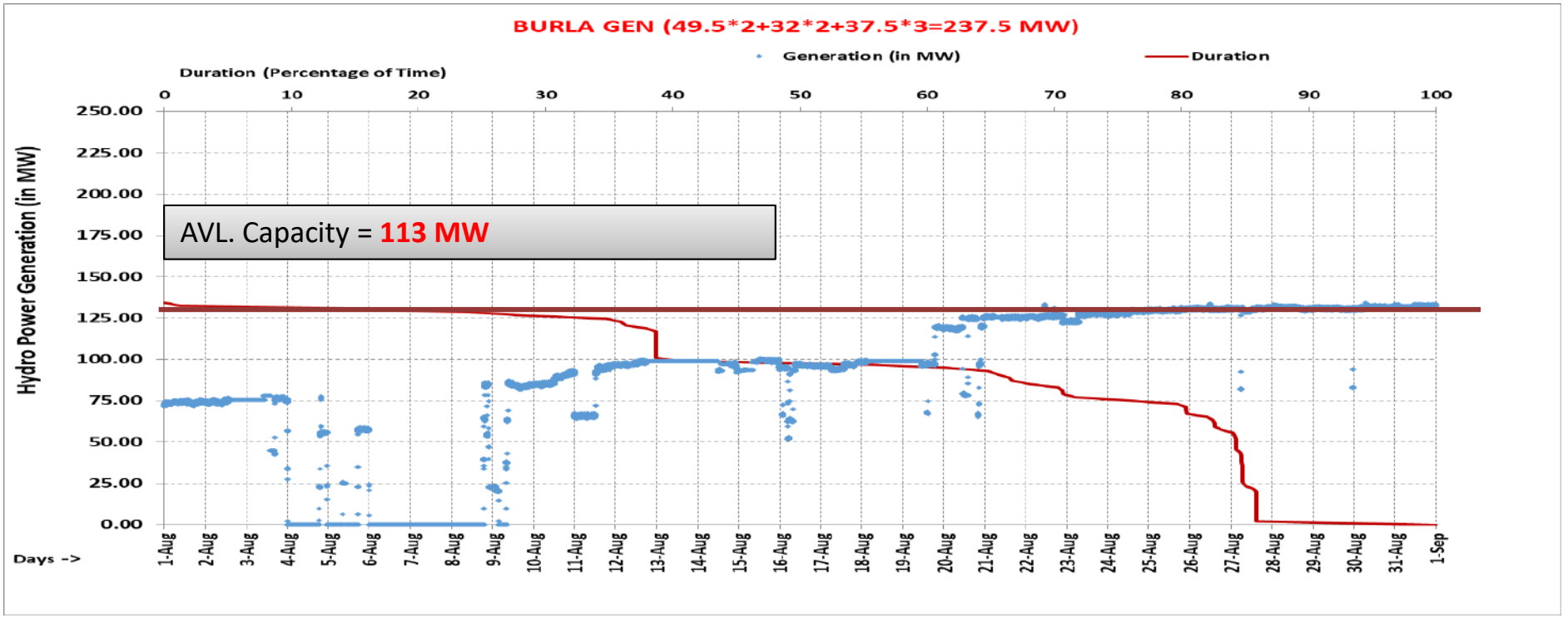
Schedule vs Actual Drawal of Bangladesh for date From 1st August 2019 to 31st August 2019

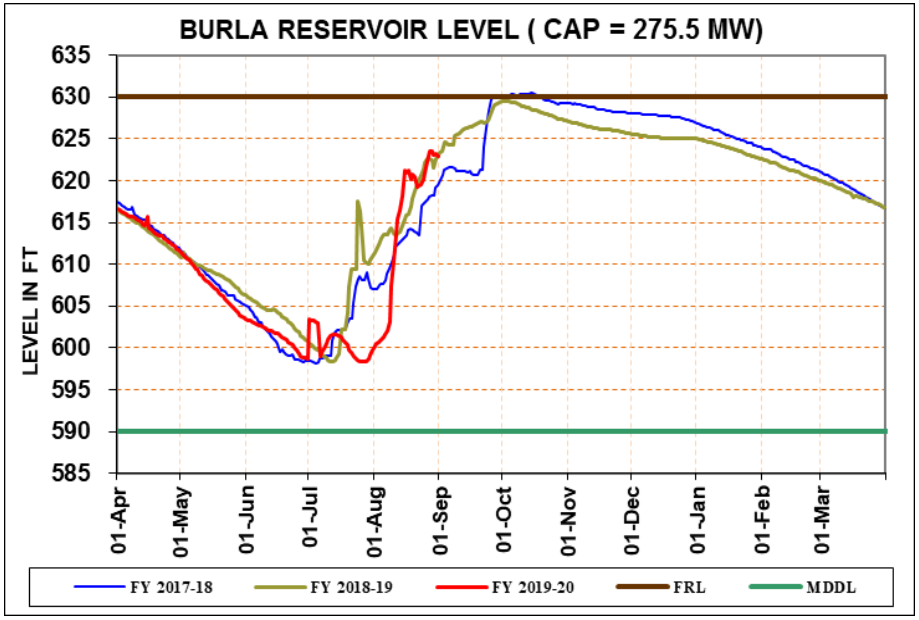


Schedule vs Actual Generation of Tala+ chukha Net for date From 1st August 2019 to 31st August 2019

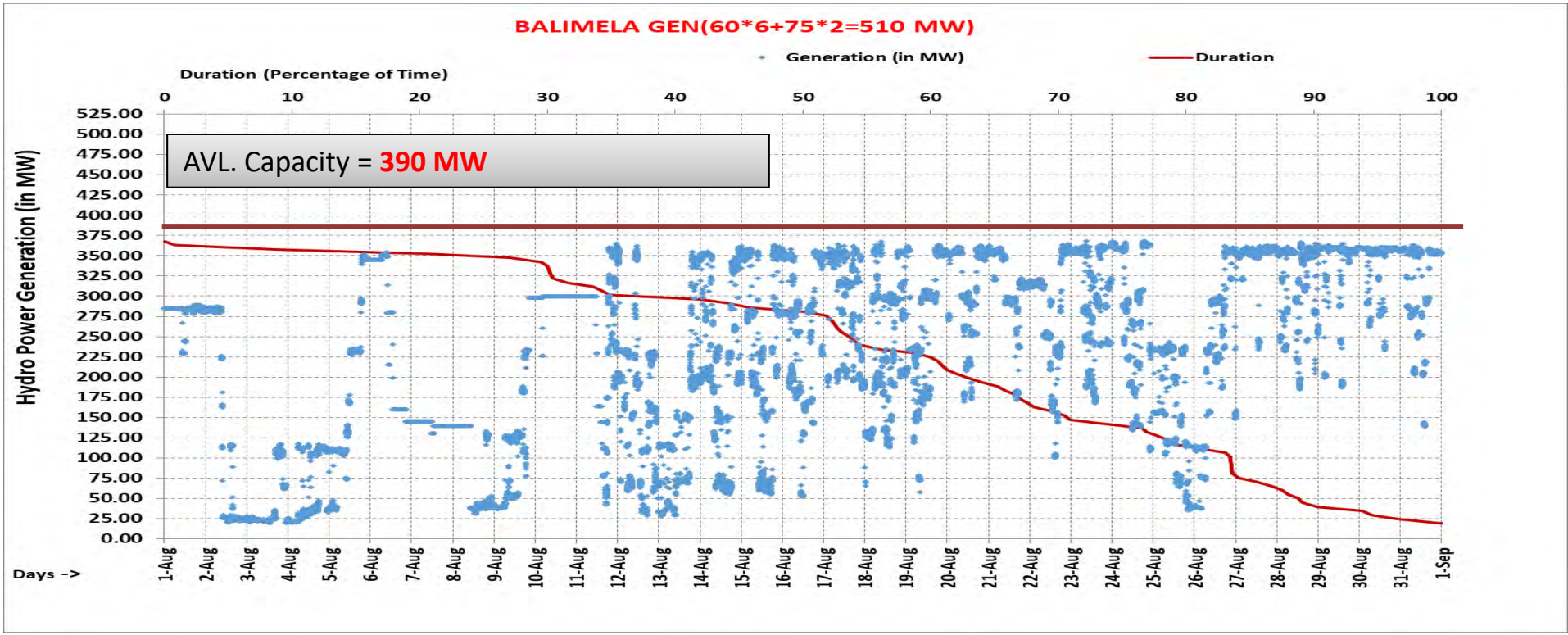


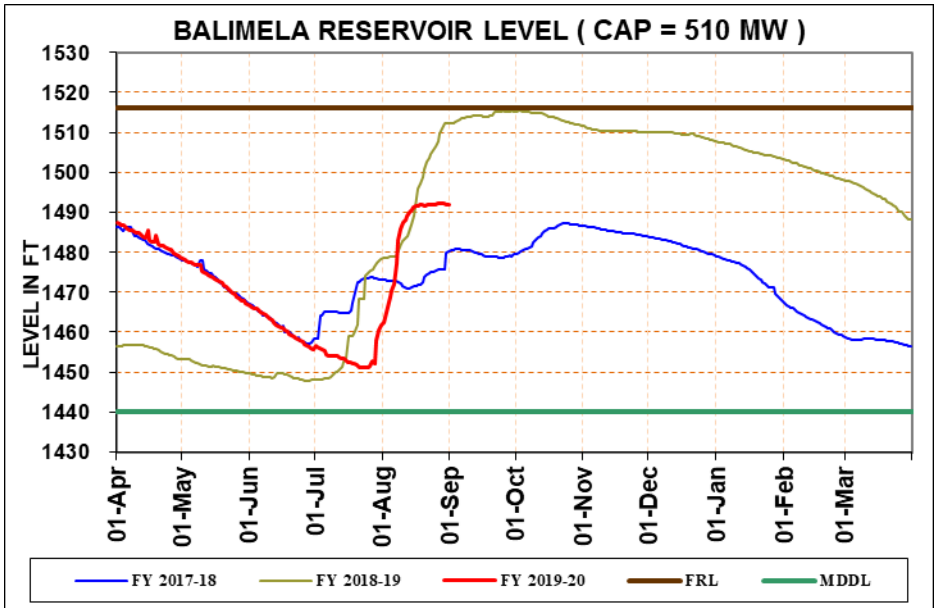
State Hydro Generators Performance



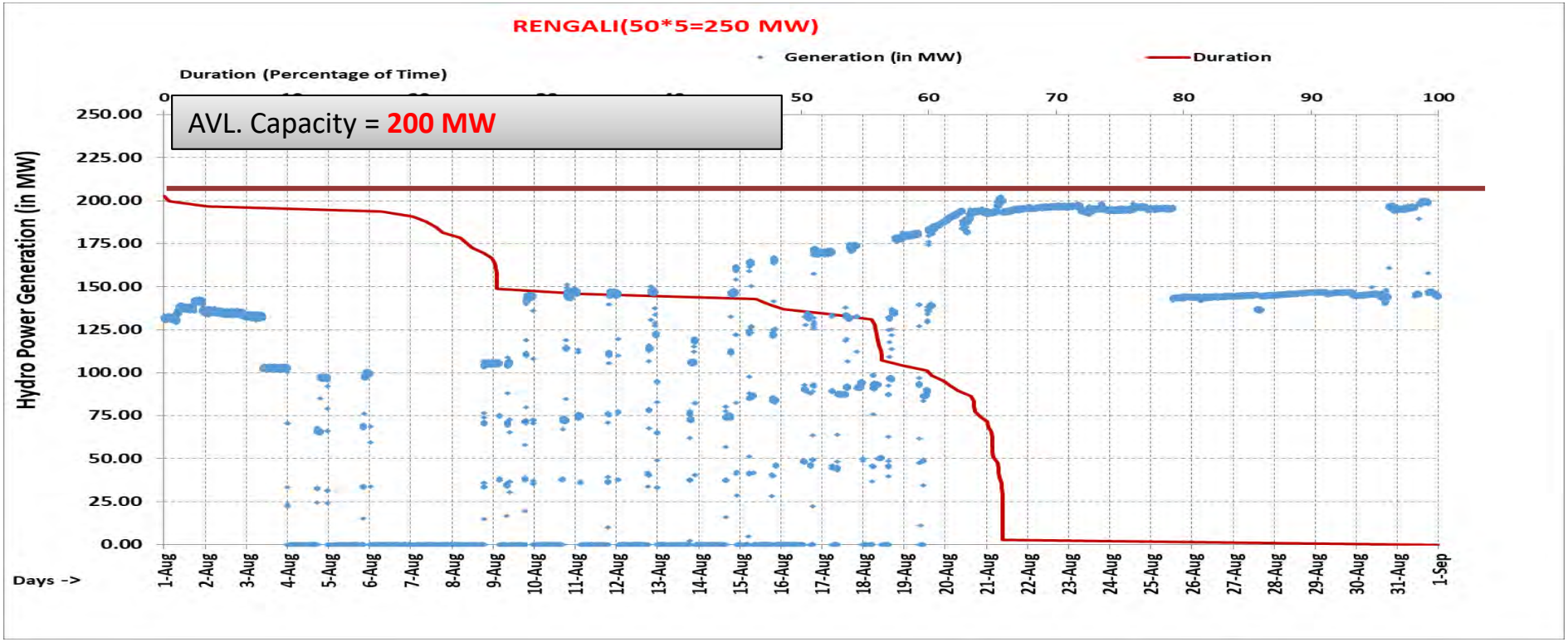


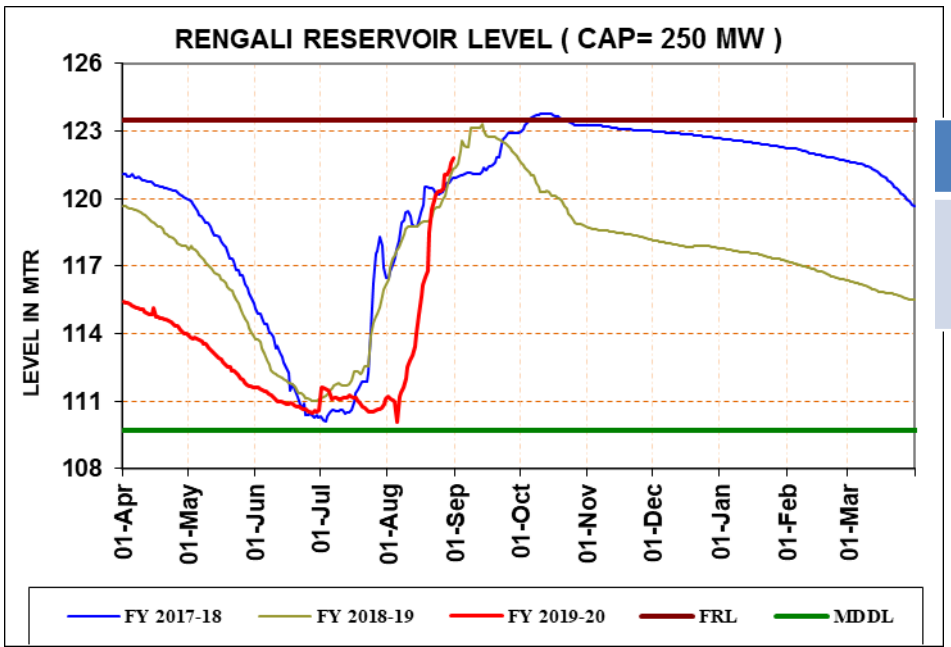
Unit No	Date of Outage	Reason
U - 1	14.03.2018	Turbine & Generator coupling water leakage
U - 5	25.10.2016	R & M Work
U - 6	26.10.2015	R & M Work



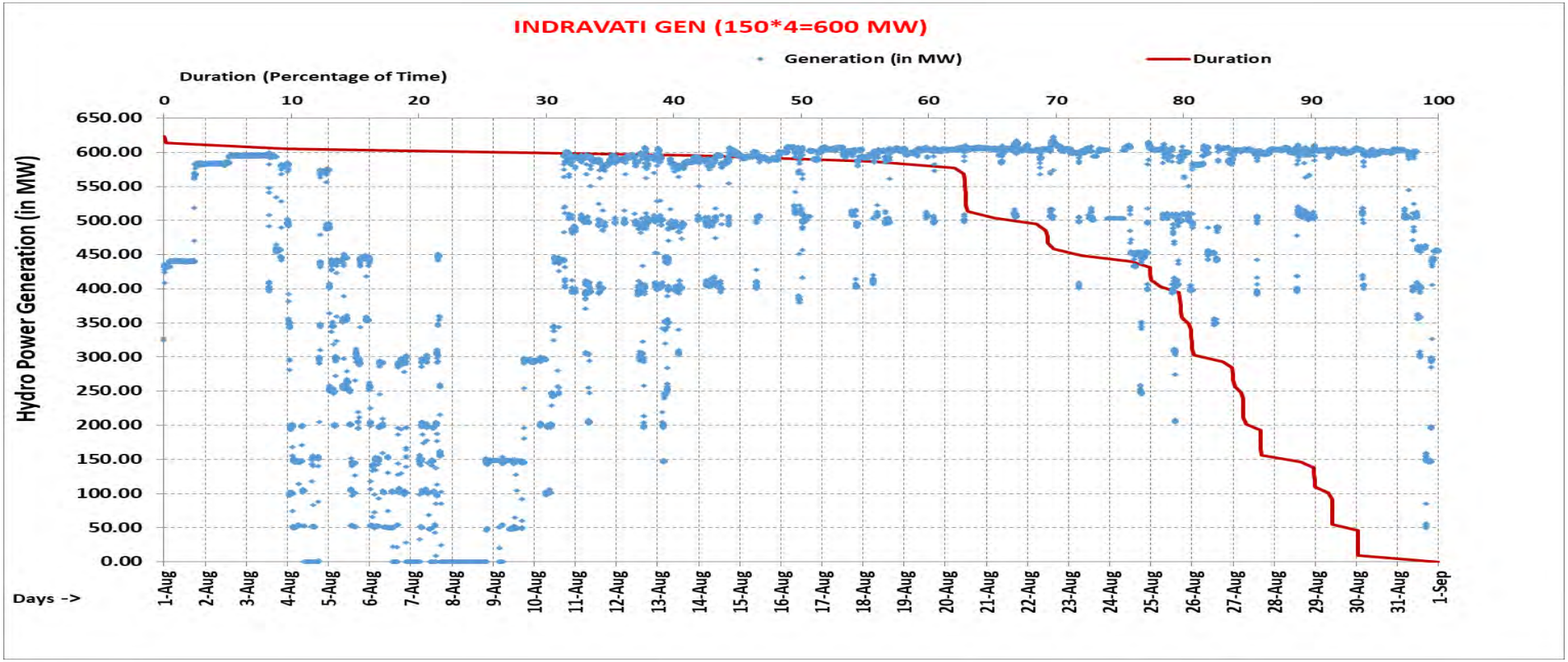


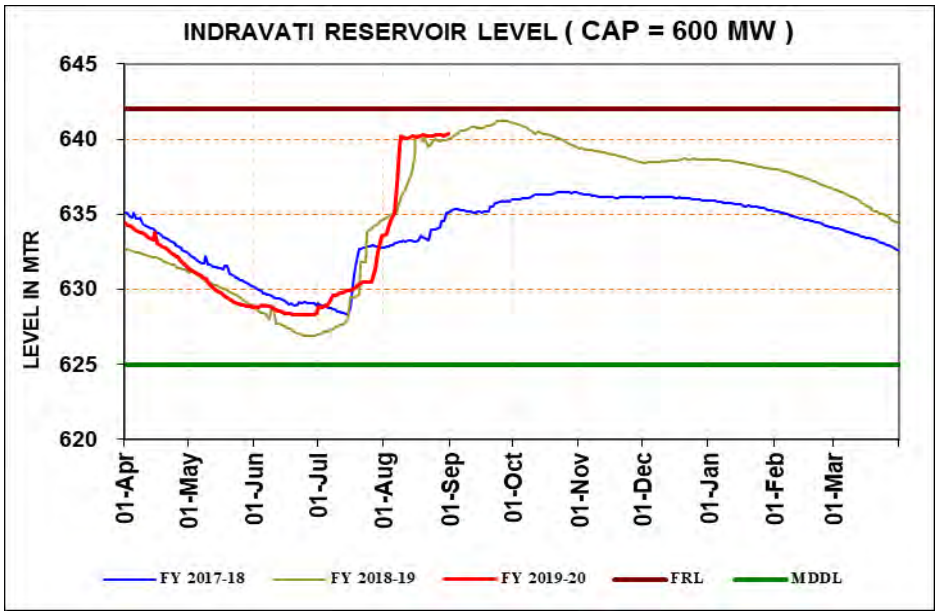
Unit No	Date of Outage	Reason
U – 1(60 MW)	05.08.16	R & M Work
U – 2(60 MW)	20.11.17	R & M Work

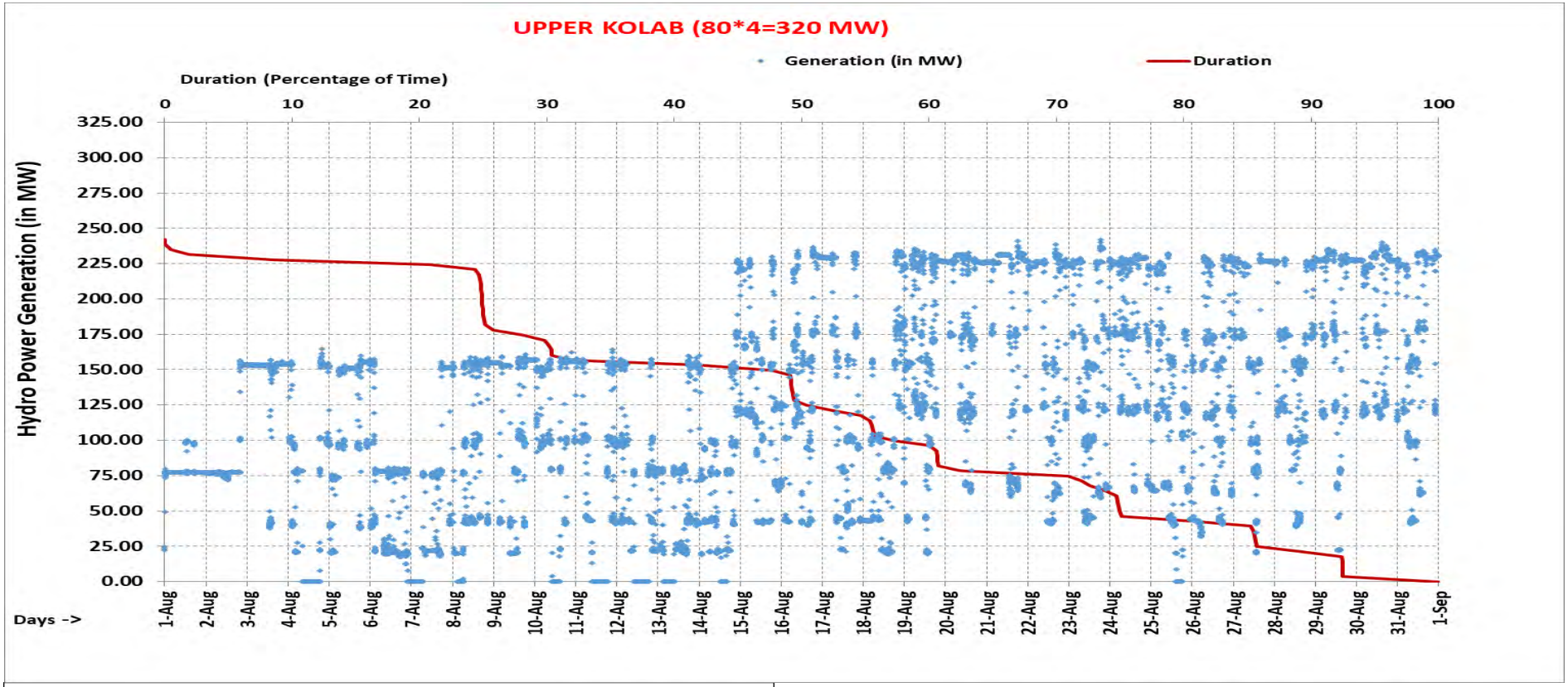


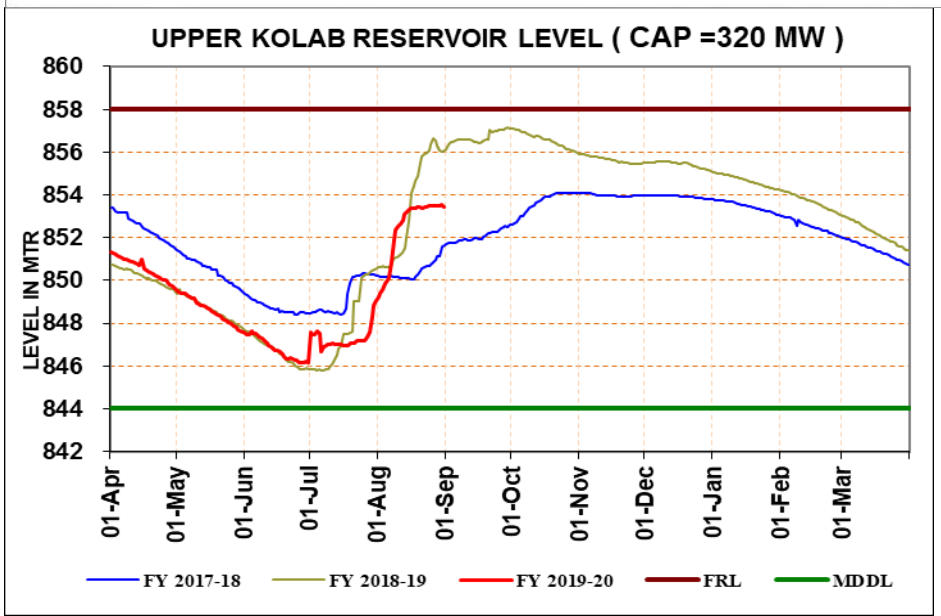


Unit No	Date of Outage	Reason
U – 2(50 MW)	12.12.18	Maint .Work

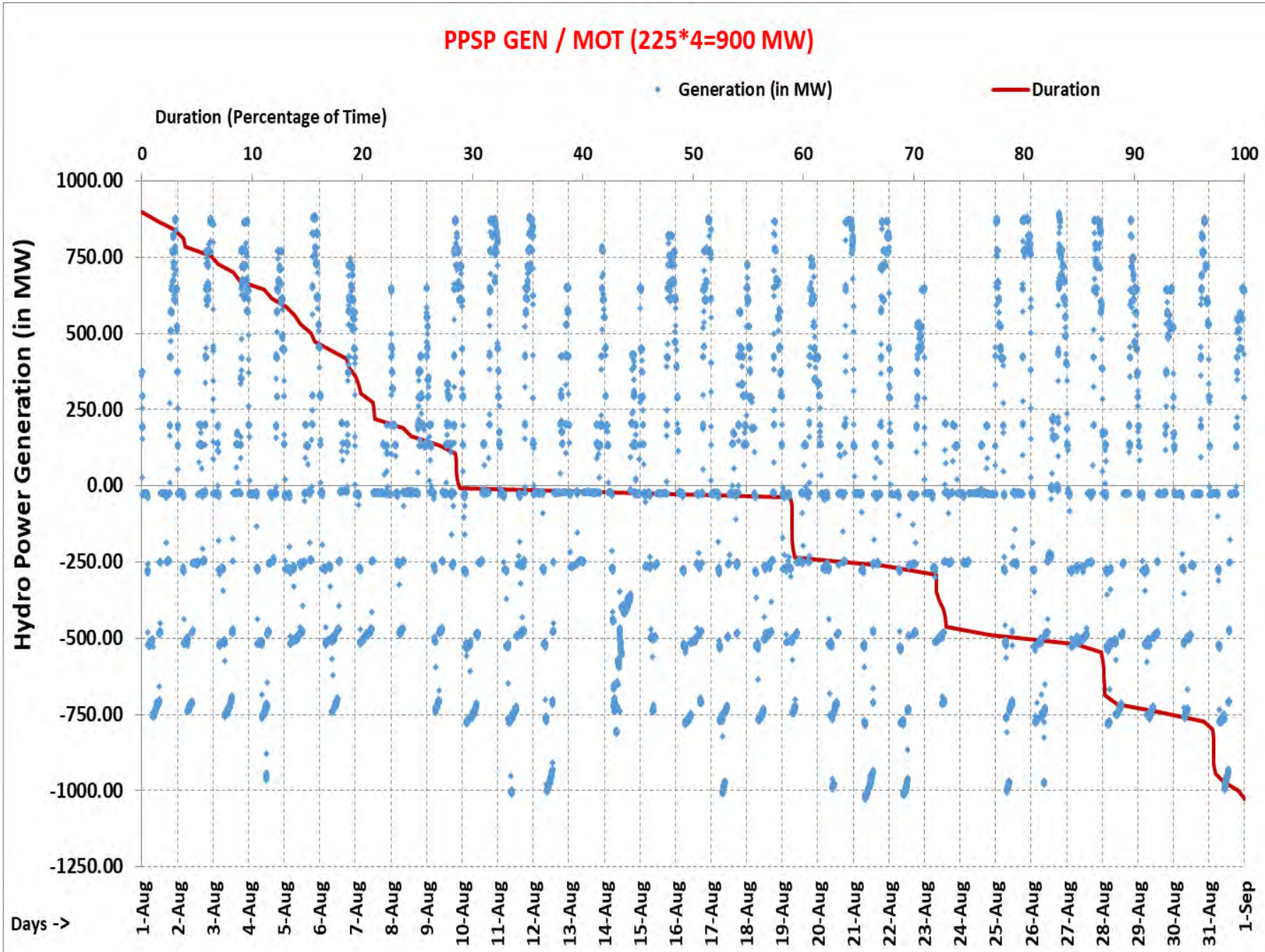

INDRAVATI GEN (150*4=600 MW)
Generation (in MW)
Duration
Duration (Percentage of Time)
0
10
20
30
40
50
60
70
80
90
100
Hydro Power Generation (in MW)
650.00
600.00
550.00
500.00
450.00
400.00
350.00
300.00
250.00
200.00
150.00
100.00
50.00
0.00
Days ->
1-Aug
2-Aug
3-Aug
4-Aug
5-Aug
6-Aug
7-Aug
8-Aug
9-Aug
10-Aug
11-Aug
12-Aug
13-Aug
14-Aug
15-Aug
16-Aug
17-Aug
18-Aug
19-Aug
20-Aug
21-Aug
22-Aug
23-Aug
24-Aug
25-Aug
26-Aug
27-Aug
28-Aug
29-Aug
30-Aug
31-Aug
1-Sep


INDRAVATI RESERVOIR LEVEL (CAP = 600 MW)
LEVEL IN MTR
645
640
635
630
625
620
01-Apr
01-May
01-Jun
01-Jul
01-Aug
01-Sep
01-Oct
01-Nov
01-Dec
01-Jan
01-Feb
01-Mar
FY 2017-18
FY 2018-19
FY 2019-20
FRL
MDDL





Unit No	Date of Outage	Reason
U – 4(80 MW)	01.02.2019	Capital Maint.


PPSP GEN / MOT (225*4=900 MW)
Generation (in MW)
Duration
Duration (Percentage of Time)
0
10
20
30
40
50
60
70
80
90
100
Hydro Power Generation (in MW)
1000.00
750.00
500.00
250.00
0.00
-250.00
-500.00
-750.00
-1000.00
-1250.00
Days ->
1-Aug
2-Aug
3-Aug
4-Aug
5-Aug
6-Aug
7-Aug
8-Aug
9-Aug
10-Aug
11-Aug
12-Aug
13-Aug
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25-Aug
26-Aug
27-Aug
28-Aug
29-Aug
30-Aug
31-Aug
1-Sep

Elements long outages leading to transmission constraint

- 400KV tie bay(405) of (MAITHON RB-I AND DURGAPUR-I) at MAITHON out since 11-01-19 for upgradation of CT/ ISOLATORS /CONNECTORS from 2000 A TO 3150 A.
- 400KV FSTPP-KhSTPP-I out since 06-03-19 for taking up bay upgradation work at NTPC Farakka. Scope of work is under Powergrid ERTS-II. Line restored through tie bay on 31-07-2019.
- 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.
- 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.
- 400 KV Barh –Motihari (DMTCL) – D/C were out since 04/09/2019 on tower collapse at LOC 26/0.

Extremely Severe Cyclone (FANI)
Effects on Power Infrastructure
Damage… Restoration…. & Lesson Learnt

OPTCL- ODISHA

P.K.Pattanaik

20th Sept. 2019

Out line…..

1. Introduction.

2. Extremely Severe Cyclone FANI in ODISHA.
   - Preparatory Action plan for Cyclone
   - Impact on Power Infrastructure.
   - Subsequent Actions of Restoration.
   - Challenges and Opportunities involved
   - Lesson Learnt.

3. Build-Back-Better Infrastructure.

4. SOP for Early Restoration.

5. Adoption of Innovative Technology.
   - Monitoring of Grid Failure.
   - Coordination plan with Stake holder

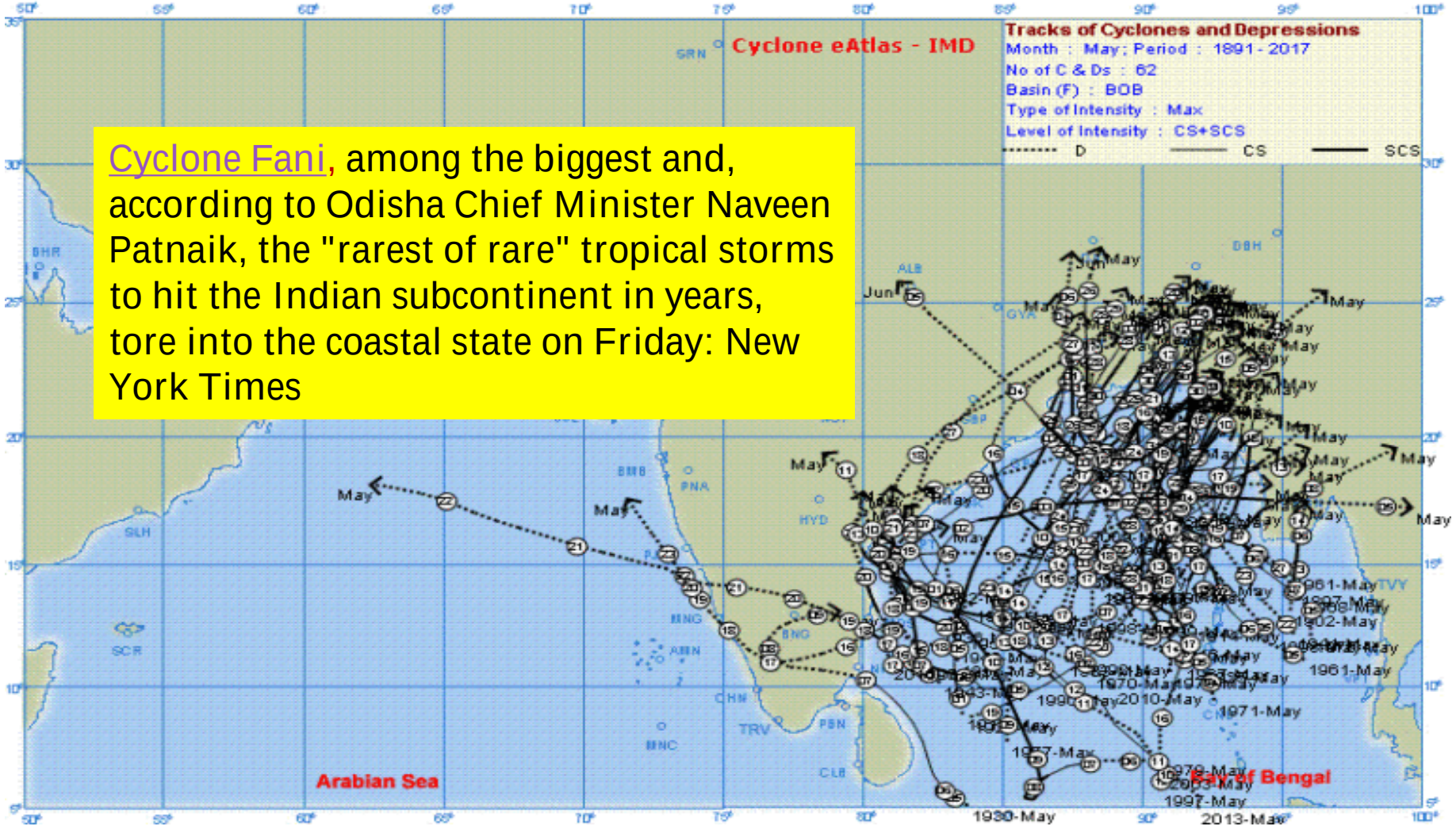
FANI CYCLONE

6. Conclusion.

“DEVASTATED BUT NOT DEFEATED”

Extremely Severe Cyclone FANI in ODISHA

The pathway followed by cyclones in the month of May from 1891 to 2017. Source: India Meteorological Department (Maximum are of D or DD (Depression or Deep Depression. Very few of CS (Cyclone Storm and SCS (Super Cyclone Storm)



Cyclone Fani, among the biggest and, according to Odisha Chief Minister Naveen Patnaik, the "rarest of rare" tropical storms to hit the Indian subcontinent in years, tore into the coastal state on Friday: New York Times

Extremely Severe Cyclone FANI in ODISHA

Odisha, being one of the costal elongated state, facing to Bay of Bengal, has been suffered with severe wind climatic zone .

FANI, a rare summer strongest cyclone in in the Bay of Bengal in the last 20 years hit ODISHA on May 03 with of very less causalities compared to 1999 cyclone. Even the Hurricane Sandy (2012), Harvey and Maria (2017) had the death toll of more than 200 with of wind speed 175 Kmph in the developed countries. Cyclone Fani, equivalent to a Category 4 hurricane (on the Saffir-Simpson Scale)

Year	Cyclone	Max.Speed/kmph	Casualties
2019	**Fani**	**250**	**41**
2018	Titli	56	77
2014	HudHud	185	03
2013	Phailin	215	21
1999	**Super Cyclone**	**250**	**10,000**

Compiled from IMD and News Reports

This is the result of a very effective strategy of disaster preparation and quick responses.

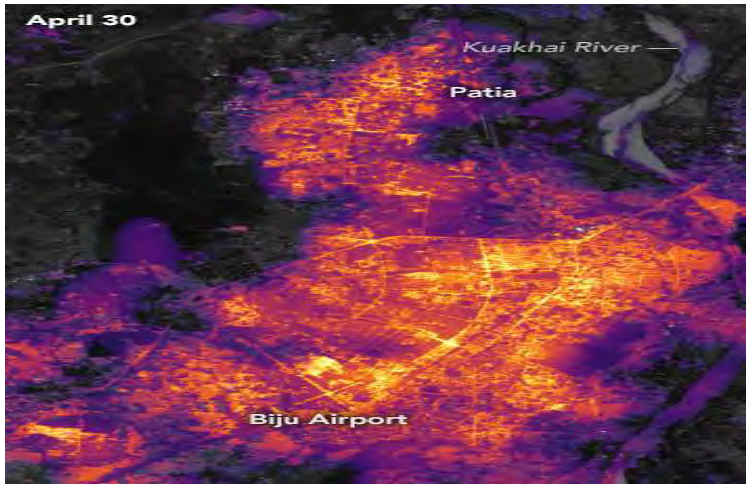
So only countries across the globe including **UNDRR** *have hailed with acknowledgement of appreciation to us. In*

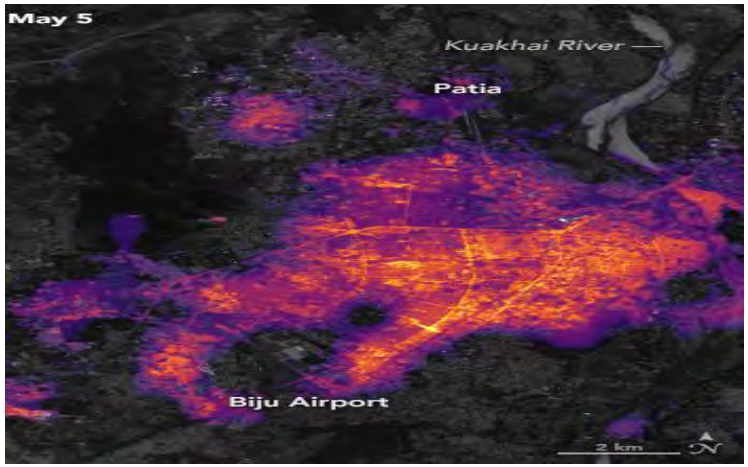
Similarly in the POWER SECTOR also we have achieved the ever best restoration after severe damage of main links to different command area, the testimony is being depicted by NASA with satellite photographs on 30th April, 4th and 5th MAY 2019.

Satellite photograph by NASA

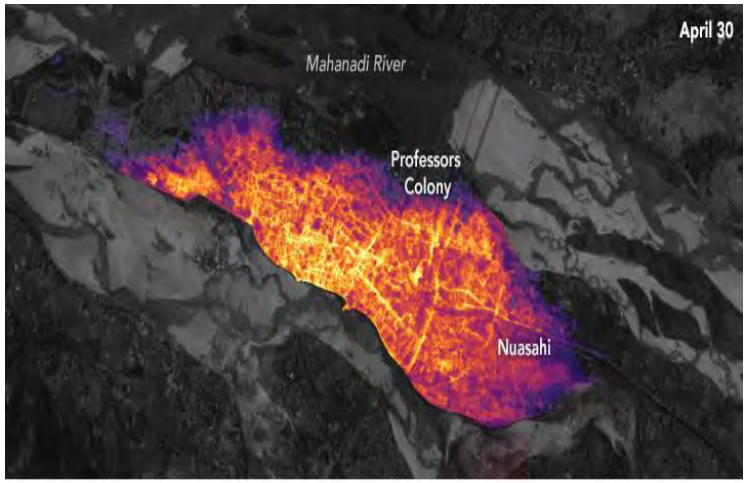
OPTCL
Lifeline of Odisha

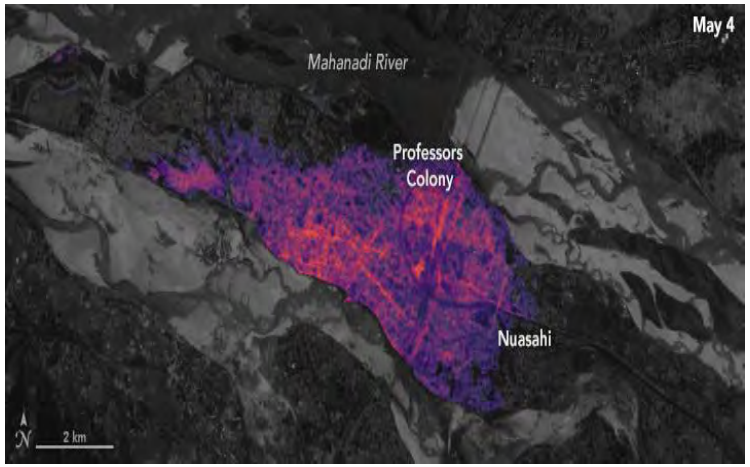
Bhubaneswar City



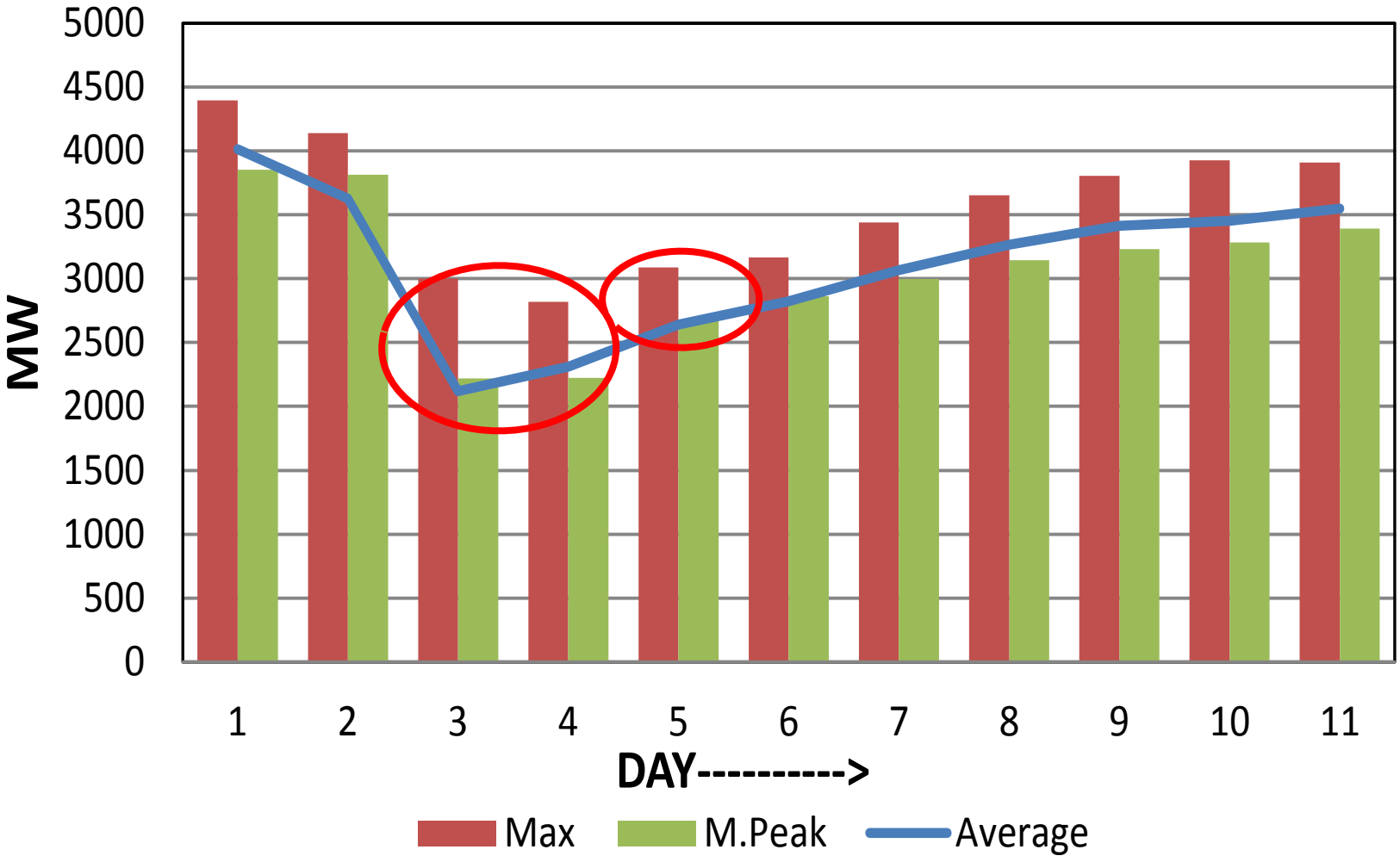


Cuttack City

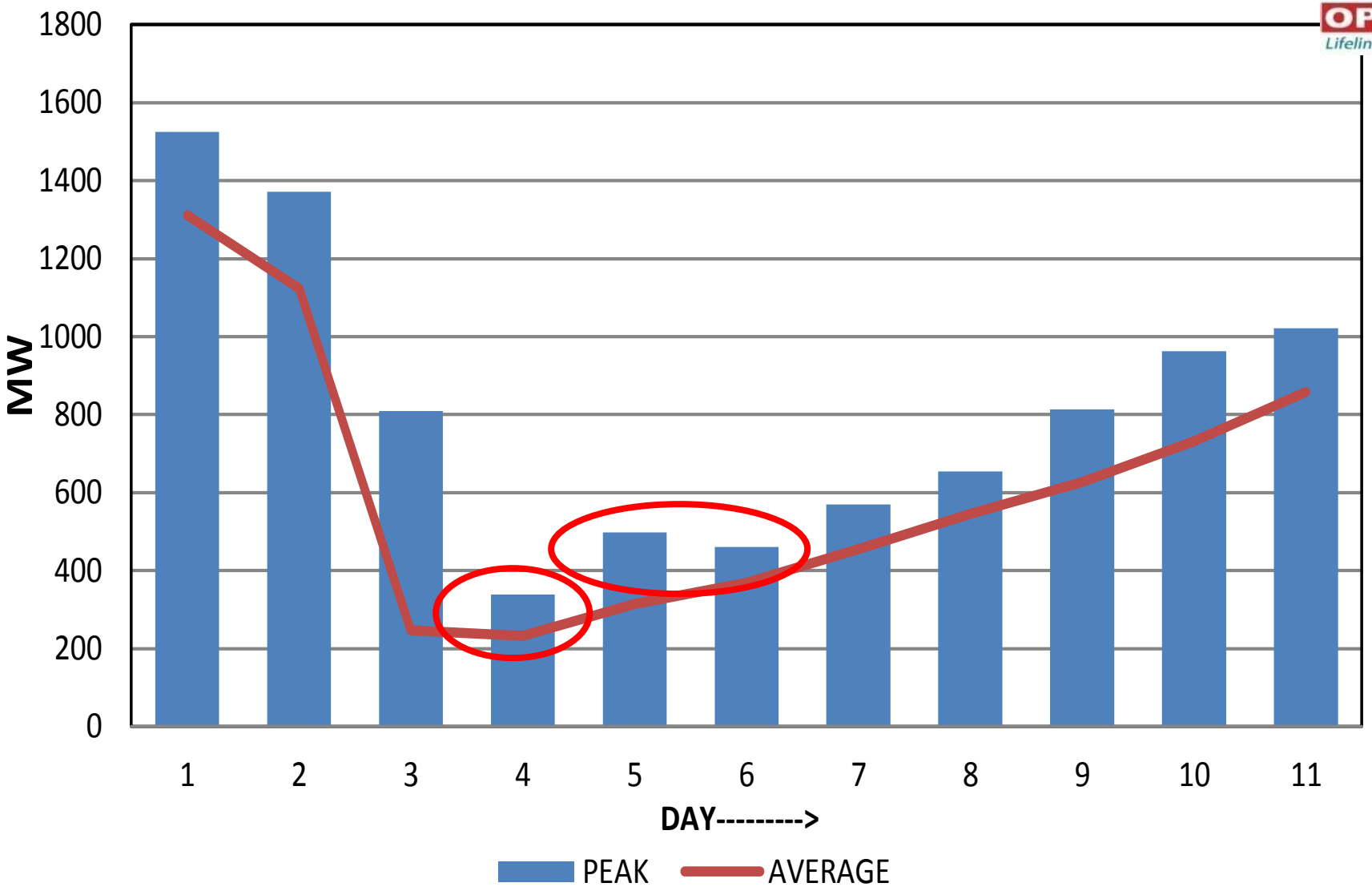


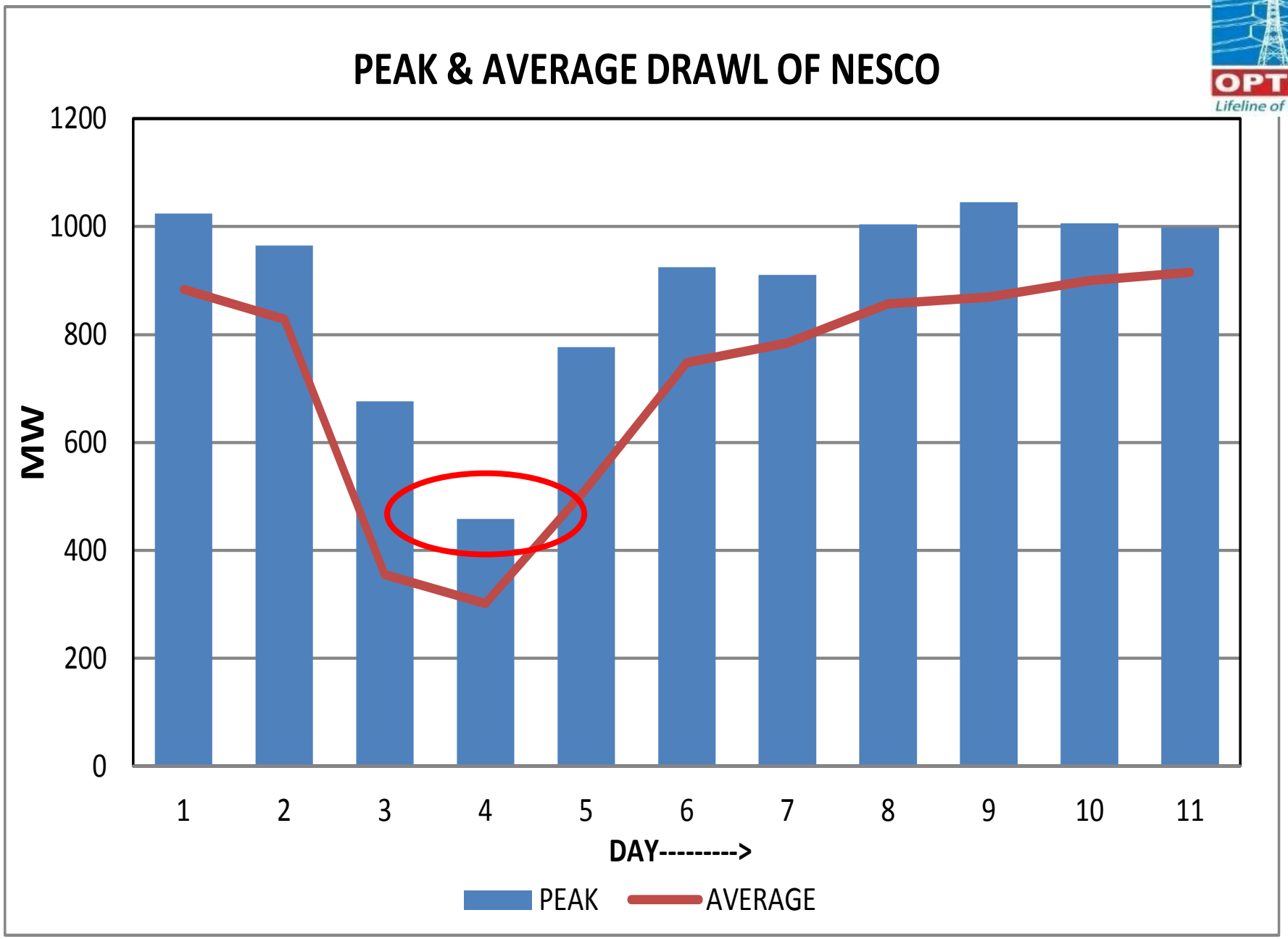


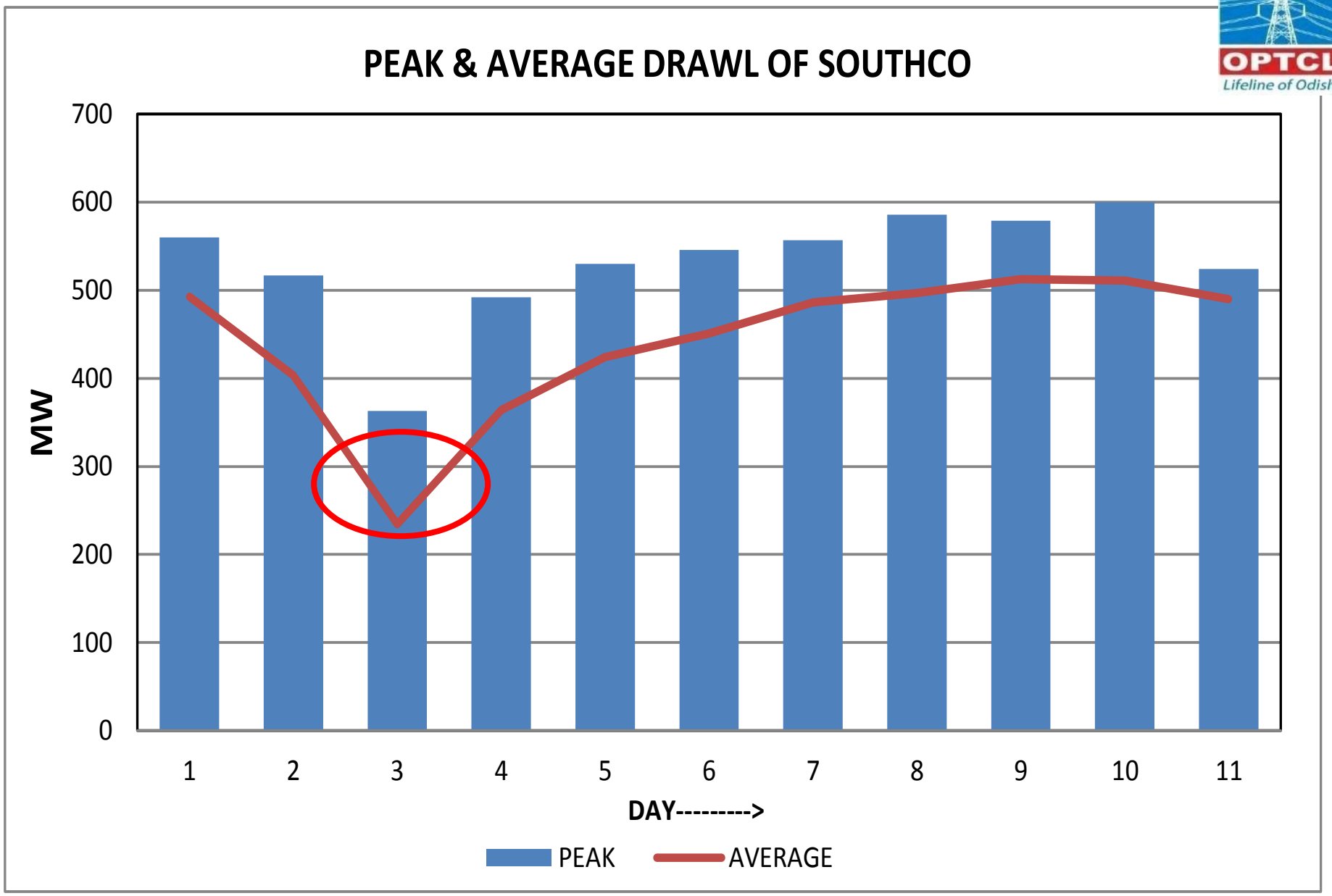
DEMAND PROFILE OF STATE



PEAK & AVERAGE DRAWL OF CESU




PEAK & AVERAGE DRAWL OF NESCO
1200
1000
800
600
400
200
0
MW
1
2
3
4
5
6
7
8
9
10
11
DAY--------->
PEAK
AVERAGE


PEAK & AVERAGE DRAWL OF SOUTHCO
700
600
500
400
300
200
100
0
MW
1
2
3
4
5
6
7
8
9
10
11
DAY--------->
PEAK
AVERAGE

Our Preparatory Action Plan… (Six-A's)

1. **Anticipation of Extreme Event**: 5 days well advance call was from IMD for cyclone FANI.
2. **Action Plan with Timeline**: Series of meeting with all involved units for well planned strategy.
3. **Allocation with Assignment**: Advance deployment of the team with working group with work allocation, time line assignment and checking of equipment at grid Substations.
4. **Advance Material Arrangement**: Advance material arrangement like ERS tower, hardware and others with transportation plan.
5. **Activation of communication channel**: Dedicated point to point Carrier channels were activated and made operational with all anticipated grid sub-stations to be affected.
6. **Alternate network planning**: The detail alternate network planning with inter-department pep-talk conducted for emergency power supply to affected command area

Impacts on Power Infrastructure..

Districts Affected

Critically Affected: Puri, Khurda(Bhubaneswar), Cuttack, Kendrapada and Jagatsinghpur

Widely Affected: Angul, Dhenkanal, Nayagarh, Jajpur, Bhadrak, Balasore, Mayurbhanj, Keonjhar, Ganjam,

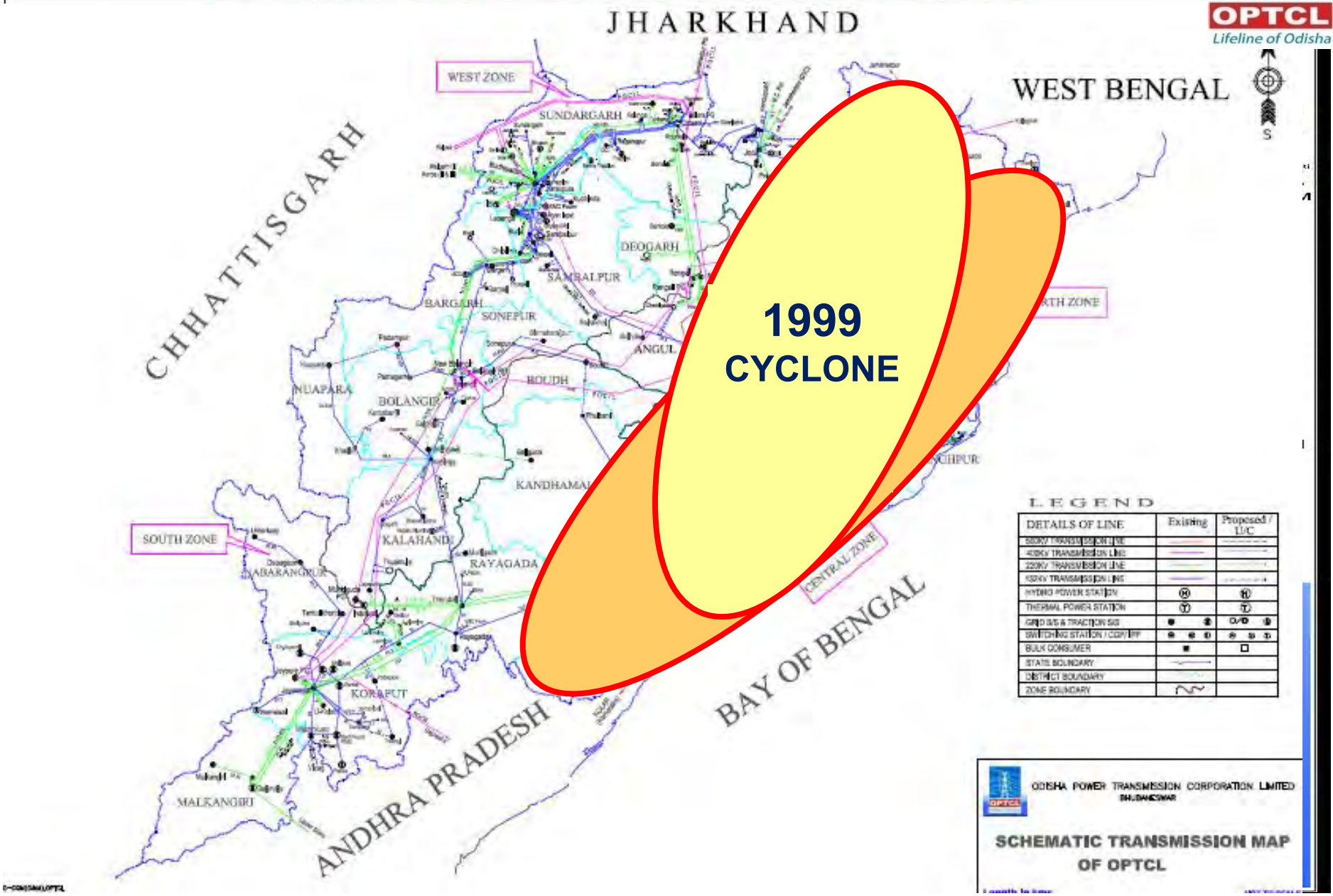
Power line infrastructure in Gajapati, Kandhamal & Rayagada districts are also affected partially

Odisha Map


Jharkhand
West Bengal
Sundargarh
Jharsuguda
Mayurbhanj
Keonjhar
Deogarh
Sambalpur
Balasore
Bargarh
Sonepur
Angul
Bhadrak
Dhenkanal
Jajpur
Chattisgarh
Nawapara
Baudh
Balangir
Kendra
para
Cuttak
Nayagarh
Khurda
Phulbanj
Puri
Navrangpur
Kalahandi
Ganjam
Bay of Bengal
N
Rayagarh
Gajapati
Koraput
Malkangiri
Andhra Pradesh

Where we Operate…

OPTCL
Lifeline of Odisha



Growth of T & D Infrastructure

Parameters		Year 1999 Super Cyclone	Year 2019 FANI Cyclone	% growth	Network Density Growth / 100Sq Km
Voltage with Sub-station Capacity in MVA	400KV	0 (0)	4 (2520)	400% / (Extra 2520 MVA)	-
	220KV	12(1270)	32 (9060)	167% / 613%	-
	132KV	54 (2680.5)	115 (8161)	113% / 204.4%	-
Total		**66 (3950.5)**	**152 (19741)**	**130.3% / 399.7%**	-
Voltage with Ckt Km Length and Network Density per 100 sq Km	400 kV	238 / 0.153	1197/0.768	402.9%	**402.9%**
	220 kV	3834 / 2.46	6106/ 3.921	59.25%	**59.25%**
	132kV	4055/ 2.604	6875/ 4.415	69.54%	**69.54%**
	TOTAL	**8127/ 5.22**	**14178 / 9.105**	**74.45%**	**74.45%**

Area of Odisha State = 1,55,707Sq.Km

Infrastructure Damage

Transmission Sector		Distribution Sector		
Towers (115 Nos.) with 87fully affected and 28 partly towers		1.	33/11 Sub-stations damaged	441
220 KV (Fully/Partly)	54 / 21 nos.	2.	33, 11KV HT Feeders	1859, needs rewiring of 1,13,034 Kms.
132 KV (Fully/Partly)	33/ 7 nos.	3.	DTR affected	66,032 nos, 12,042 needs new installation
Lines (250 Kms.) 19 Lines Major and 13 Lines Minor		4.	Poles	2,19,405 nos. poles up-rooted, requires new erection
400 KV (0+1line)	-	5.	Consumers Affected	45.74 Lakhs
220 KV (8+7 lines)	160 Kms			
132 KV (11+5 lines)	90 Kms			
OPGW Earth wire	80 Kms			
31 nos EHV Grid Sub-stations Affected, Bhubaneswar, Cuttack and PURI command area went to BLACKOUT				

AFFECTED NETWORKS

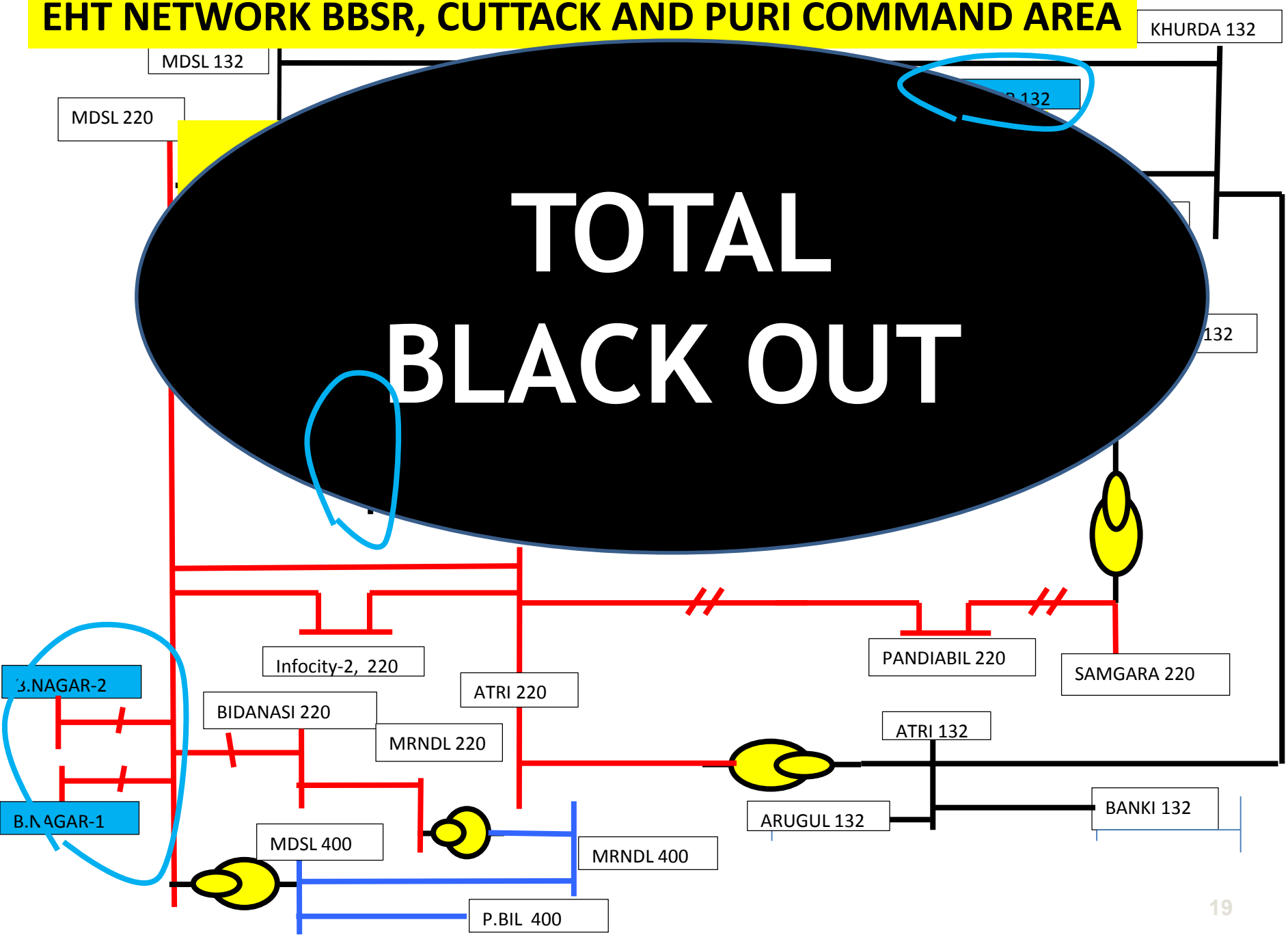
MINOR (13 LINES)

1. 400KV MENDHASAL-MERAMUNDALI
2. 220 MENDHASAL-ATRI-1
3. 220KV MENDHSAL- INFOCITY - ckt1
4. 220KV ATRI- INFOCITY- ckt 2
5. 220KV CHANDAKA-CHANDAKA-B
6. 220KV MERAMUNDALI-BIDANASI
7. 220KV ATRI-PANDIABILI-1
8. 220KV ATRI- PANDIABILI-2
9. 132KV MENDHASAL KHURDA
10. 132KV CUTTACK- JAGATSINGPUR
11. 132KV ATRI-KHURDA
12. 132KV CHANDAKA- BBSR -2
13. 132 KV BPPL- CHANDAKA

MAJOR (19 LINES)

1. 220 MENDHASAL-CHANDAKA-1&2 (DC)
2. 220 MENDHASAL-CHANDAKA-3 &4 (DC)
3. 220KV P.BILLI- SAMAGARA-1 &2 (DC)
4. 220KV ATRI- NARENDRAPUR-1&2 (DC)
5. 132KV MENDHASAL CHANDAKA
6. 132KV KESURA- RSPUR LILO
7. 132KV PHULNAKHARA – CUTTACK LILO
8. 132KV BIDANASI –CHOUDWAR
9. 132KV BIDANASI -CHANDAKA
10. 132KV NIMAPADA PURI
11. 132KV NIMAPADA – CHANDAKA
12. 132KV SAMAGARA-PURI
13. 132KV SAMAGARA – NIMAPADA
14. 132KV KHURDA-SAMUKA
15. 132KV SAMUKA-PURI

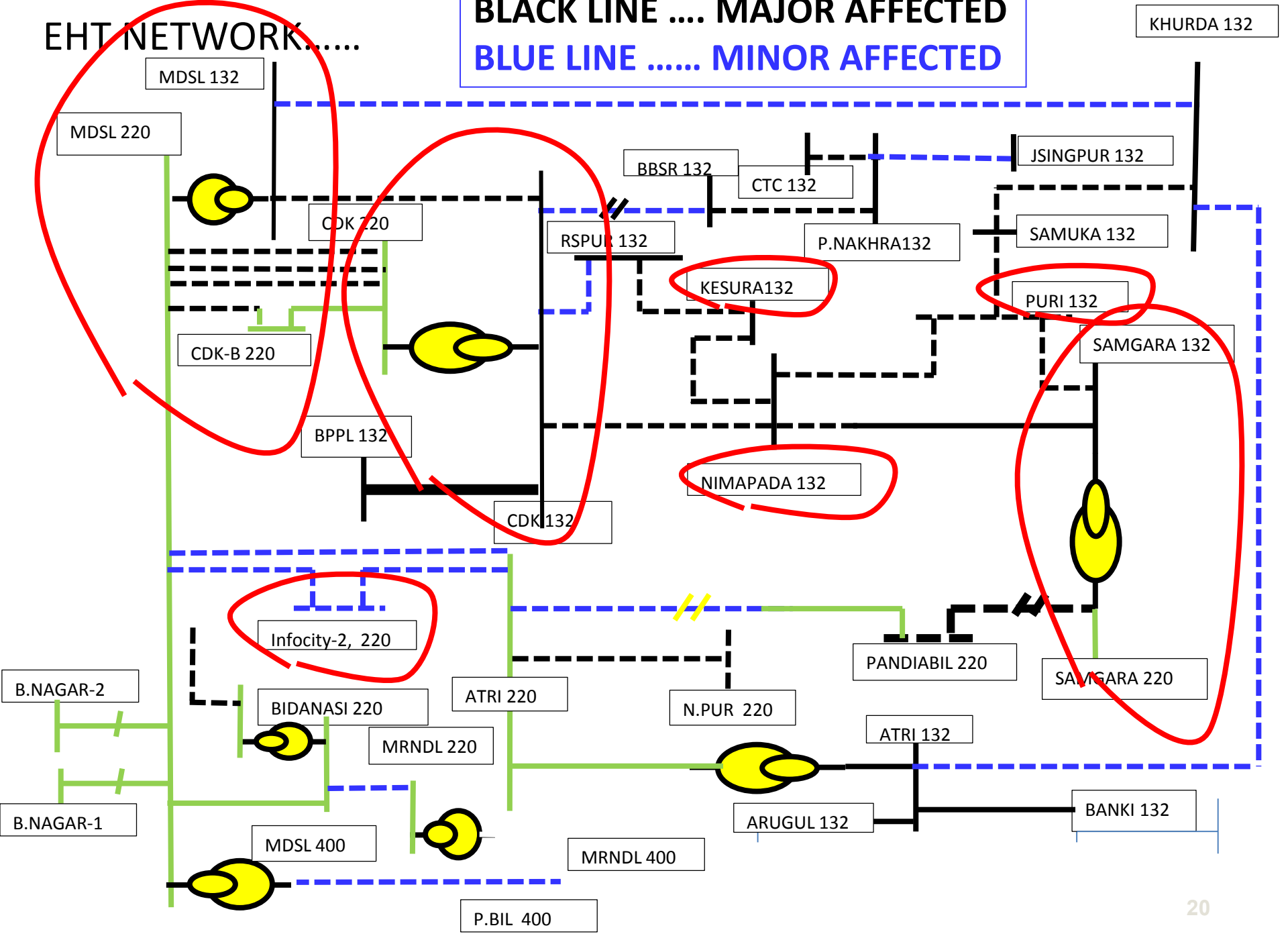
EHT NETWORK BBSR, CUTTACK AND PURI COMMAND AREA



EHT NETWORK.....

BLACK LINE .... MAJOR AFFECTED

BLUE LINE ..... MINOR AFFECTED



MINOR AFFECTED NETWORKS (12 Lines)

Sl. No.	AFFECTED LINES	NATURE OF DAMAGE
1	220 MENDHASAL-ATRI-1	Clearing of fallen tree branches and repair od conductor
2	132KV MENDHASAL KHURDA	Low clearance and jumper damage
3	220KV MENDHSAL- INFOCITY – ckt1	Damage of 3 number of LA at Infocity
4	220KV ATRI- INFOCITY- ckt 2	Damage of 3 number of LA at Infocity
5	220KV CHANDAKA-CHANDAKA-B	Damage of 3 number of LA at Chandaka
6	220KV MERAMUNDALI-BIDANASI	Conductor snapping with insulator failure
7	132KV CUTTACK- JAGATSINGPUR	Conductor snapping with insulator failure
8	132KV ATRI-KHURDA.	Conductor snapping with insulator failure
9	132KV CHANDAKA - BBSR -2	Low clearance and jumper damage
10	220KV ATRI-PANDIABILI-1	Snapped and curled OPGW with 12 Towers
11	220KV ATRI- PANDIABILI-2	Snapped and curled OPGW with 12 Towers.
12	400KV MENDHASAL- MERAMUNDALI	Conductor and OPGW snapping with insulator failure

MAJOR AFFECTED NETWORKS (19 Lines, 115 Towers)

Sl. No.	AFFECTED LINES	NATURE OF DAMAGE
1	220 MENDHASAL-CHANDAKA-1&2	2 Towers Collapsed
2	220 MENDHASAL-CHANDAKA-3 &4	1 Tower Collapsed
3	220KV PANDIABILL- SAMAGARA - 1 & 2	64 Towers Damaged
4	220KV ATRI - NARENDRAPUR – 1 & 2	5 Towers Damaged
5	132KV MENDHASAL CHANDAKA	2 Towers Collapsed
6	132KV KESURA- RSPUR LILO	3 Towers Collapsed
7	132KV PHUL NAKHARA CUTTACK LILO	3 Towers Collapsed

MAJOR AFFECTED NETWORKS (19 Lines, 115 Towers)

Sl. No.	AFFECTED LINES	NATURE OF DAMAGE
8	132KV BIDANASI -CHANDAKA	2 Towers Collapsed
9	132KV BIDANASI –CHOUDWAR	
10	132KV SAMAGARA – NIMAPADA	6 Towers collapsed
11	132KV NIMAPADA PURI	
12	132KV SAMAGARA-PURI	
13	132KV CHANDAKA-NIMAPADA	9 Towers collapsed + 1 Partially
14	132KV KHURDA-SAMUKA	14 Towers collapsed
15	132KV SAMUKA-PURI	4 Towers collapsed

Grid Sub-Stations Affected

Sl. No.	EHV Grid Sub-stations	Sl. No.	EHV Grid Sub-stations
1	400 KV Mendhasal	10	132/33 KV Arugul
2	220/33 KV Infocity	11	132/33 KV Banki
3	220/132/33 KV Chandaka	12	132/33 KV Kesura
4	220/132/33 KV Chandaka B	13	132/33 KV Mancheswar
5	220/132/33 KV Atri	14	132/33 KV Ransinghpur
6	220/132/33 KV Samagara	15	132/33 KV Unit-8
7	220/132/33 KV Bidanasi	16	132/33 KV Khurda
8	220/132/33 KV Cuttack	17	132/33 KV Phulnakhara
9	220/132/33 KV Paradeep	18	132/33 KV Choudwar

Grid Sub-Stations Affected

Sl. No.	EHV Grid Sub-stations	Sl No	EHV Grid Sub-stations
19	132/33 KV Puri	28	132/33 KV Kendrapada
20	132/33 KV Samuka	29	132/33 KV Pattamundei
21	132/33 KV Nimapara	30	132/33 KV Olabhara
22	132/33 KV Konark	31	132/33 KV Chandikhol
23	132/33 KV Nuapatna		
24	132/33 KV Salepur		
25	132/33 KV Jagatsinghpur		
26	132/33 KV Tirtol		
27	132/33 KV Marsaghai		

CRITICALLY DAMAGED TOWERS

OPTCL
Lifeline of Odisha

Harishpur, Chandaka – Nimapada Loc. 161 & 162

Analysis: Severe wind speed, tension on the long span conductor caused twisting of tower.

132KV Nimapada - Puri Line LOC 98

Analysis: Severe wind speed, saline effect erosion, caused twisting of tower.

Chandaka- Nimapada Line

Analysis: Severe wind speed, with corrosion effect, caused toppling of tower.

Oruali, Nimapada - Puri Line, Loc. 47

Analysis: Severe wind speed, gradual STUB exposure due to water logging and long span, caused twisting of tower.

CRITICALLY DAMAGED TOWERS

OPTCL
Lifeline of Odisha

132KV Khurda- Puri

Analysis: Severe wind speed, Ageing Effect and Erosion and Corrosion due to saline effect , caused twisting of tower.

220KV Mendhasal- Chandaka3/4 Loc

Analysis: Topple of 400KV PGCIL Tower upon the conductor caused tension and consequence of dragging to Tension Tower

132KV Chandaka- Nimapada

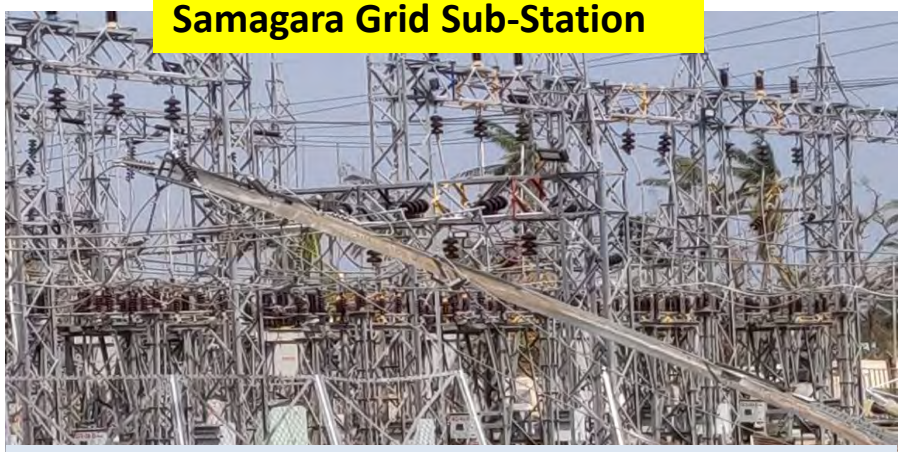
Analysis: Severe wind speed, with corrosion effect, caused toppling of tower.

132KV Bidanasi- Choudwar LOC 16

Analysis: Severe wind speed, OPEN WIND ZONE in the river bed, with of enhancing wind effect, caused twisting of tower.

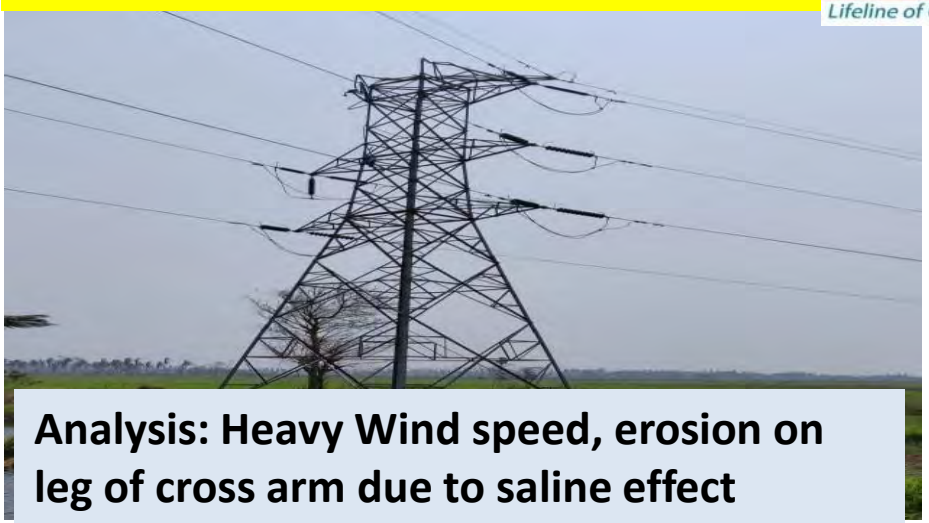
Minor DAMAGED Structures

Samagara Grid Sub-Station



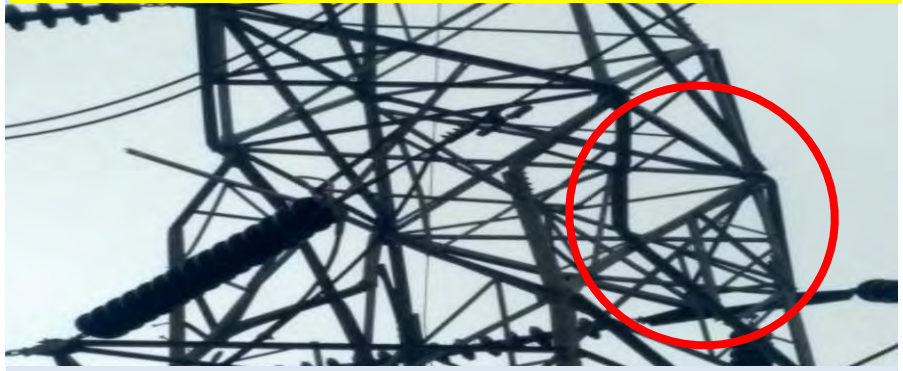
Analysis: Falling of 33KV outgoing Pole resulted with damage of the S/S structures.

220KV Mendhsal- Chandka 1/2 TOP Ben



Analysis: Heavy Wind speed, erosion on leg of cross arm due to saline effect caused bending of TOP

220KV Mendhsal-Chandaka 1/2 Cross arm



Analysis: Topple of 400KV PGCIL Tower upon the conductor caused tension and consequence of Cross arm bending.

132 KV Nimapada-Puri

Analysis: Severe wind speed, tension on the long span conductor caused twisting of tower.

Minor DAMAGED Structures

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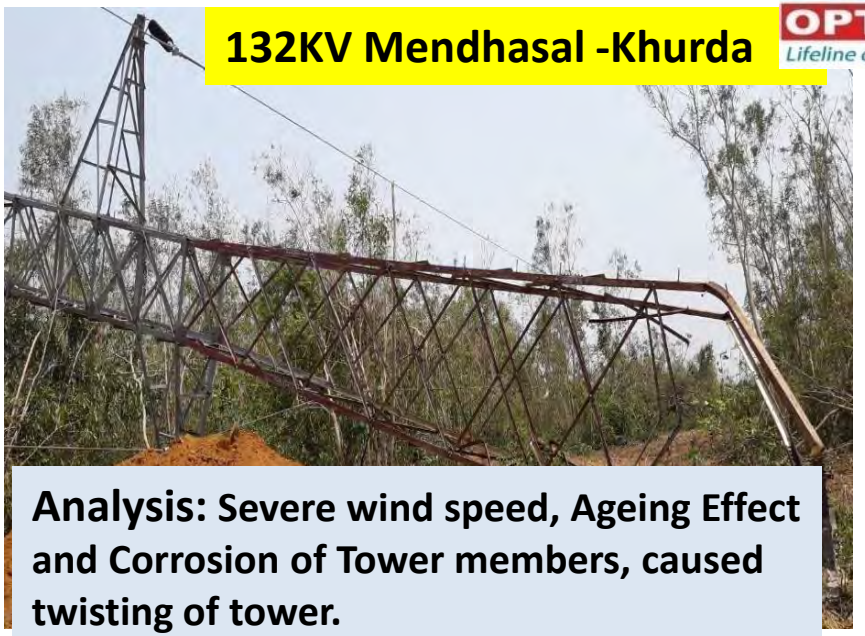
132KV Nimapada- Chandaka

Analysis: Wind speed and long span caused bending of cross arm

132KV Mendhasal -Khurda

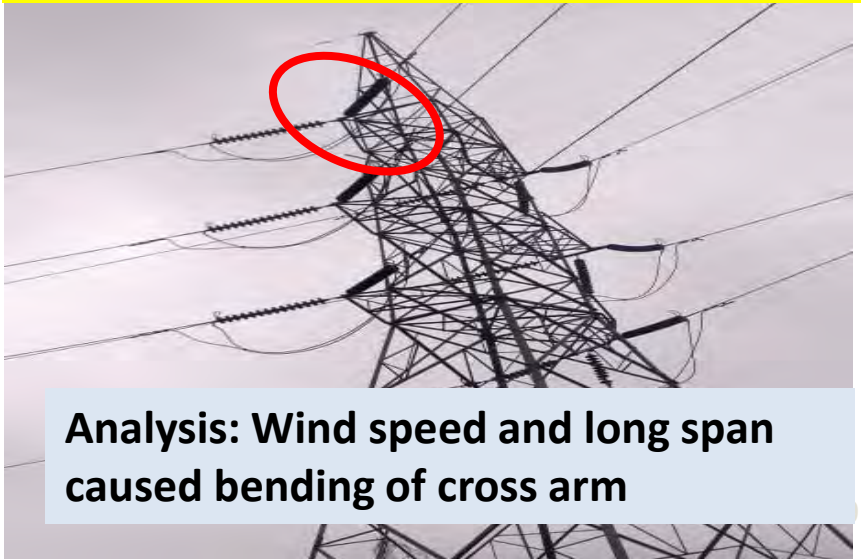


Analysis: Severe wind speed, Ageing Effect and Corrosion of Tower members, caused twisting of tower.

132KV Nimapada- Chandaka

Analysis: Wind speed and Saline Effect caused twisting from first section

220KV Mendhsal-Chandaka 1/2 Cross arm



Analysis: Wind speed and long span caused bending of cross arm

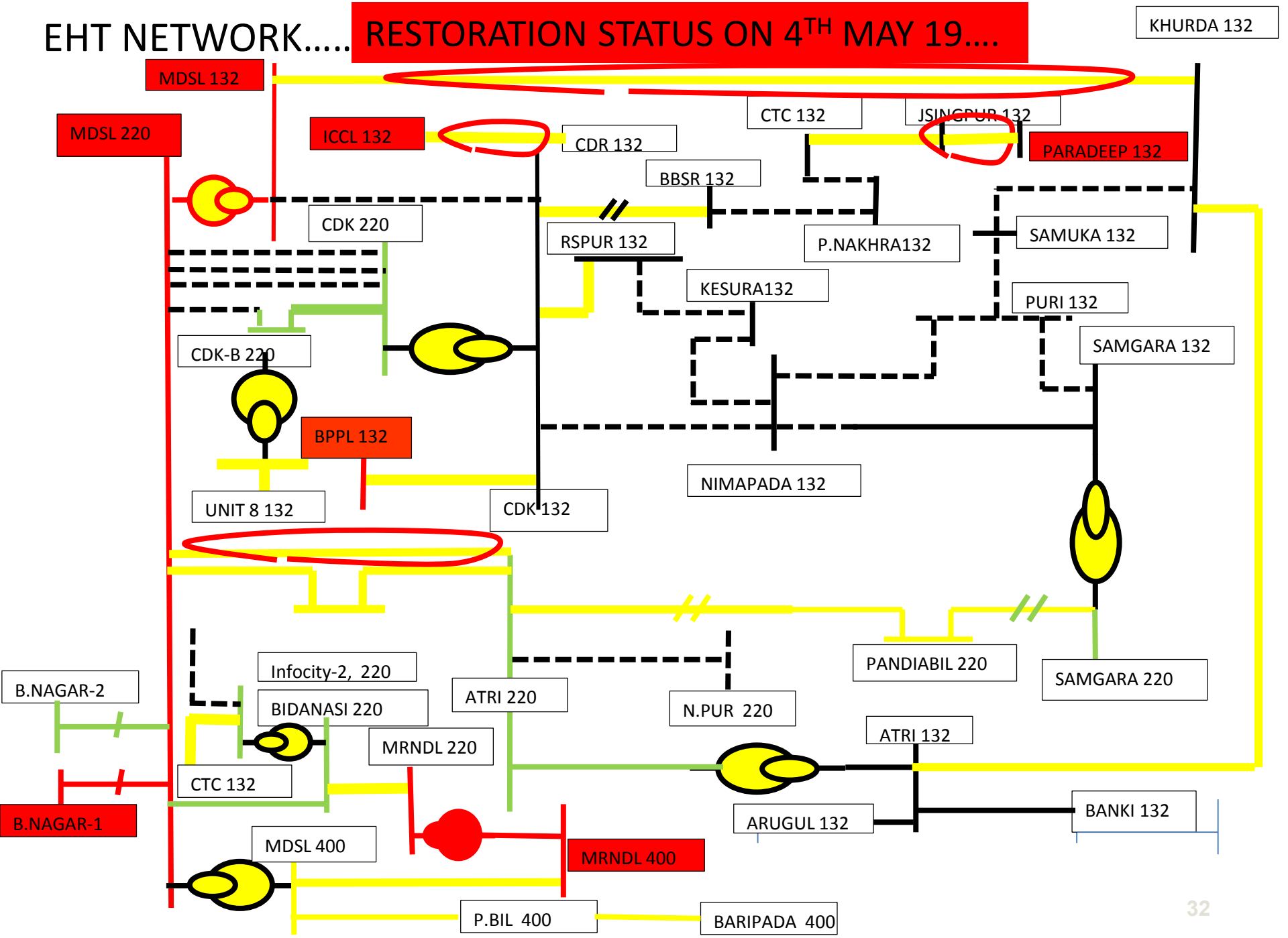
Subsequent Restoration Plan

1. **Assessment, Identification and categorization of Work:** Immediate post-disaster damage assessment through multiple squads and categorisation of damages.
2. **Work Plan to avail emergency Power supply to different command area:** Multi working groups selected under the guidance of Director (Operation) and Director (Project) with Experienced Engineers from different parts of ODISHA and assigned with Team Leader with designated empanelled agencies.
3. **Work Plan for permanent arrangement:** Other Multi working groups to work parallel were also selected under the guidance of both Directors with Experienced Engineers from different parts of ODISHA and assigned with Team Leader with designated empanelled agencies
4. **Work Review on Daily basis:** End of each day's work, both directors were reviewing the works with the team leaders to plan for the next day. CMD was also reviewing the work on daily basis on paying site visit to encourage and motivate the working group as well as solving the issues.
5. **Working Supports :** HRD and Safety wing was also supporting and encouraging the working group, visiting the worksite and taking the review on the works. Mass kitchen and Rest rooms were also arranged for the outside team coming from Odisha and other states. Liaison team was assigned for the work plan for the team coming from different parts of Country.

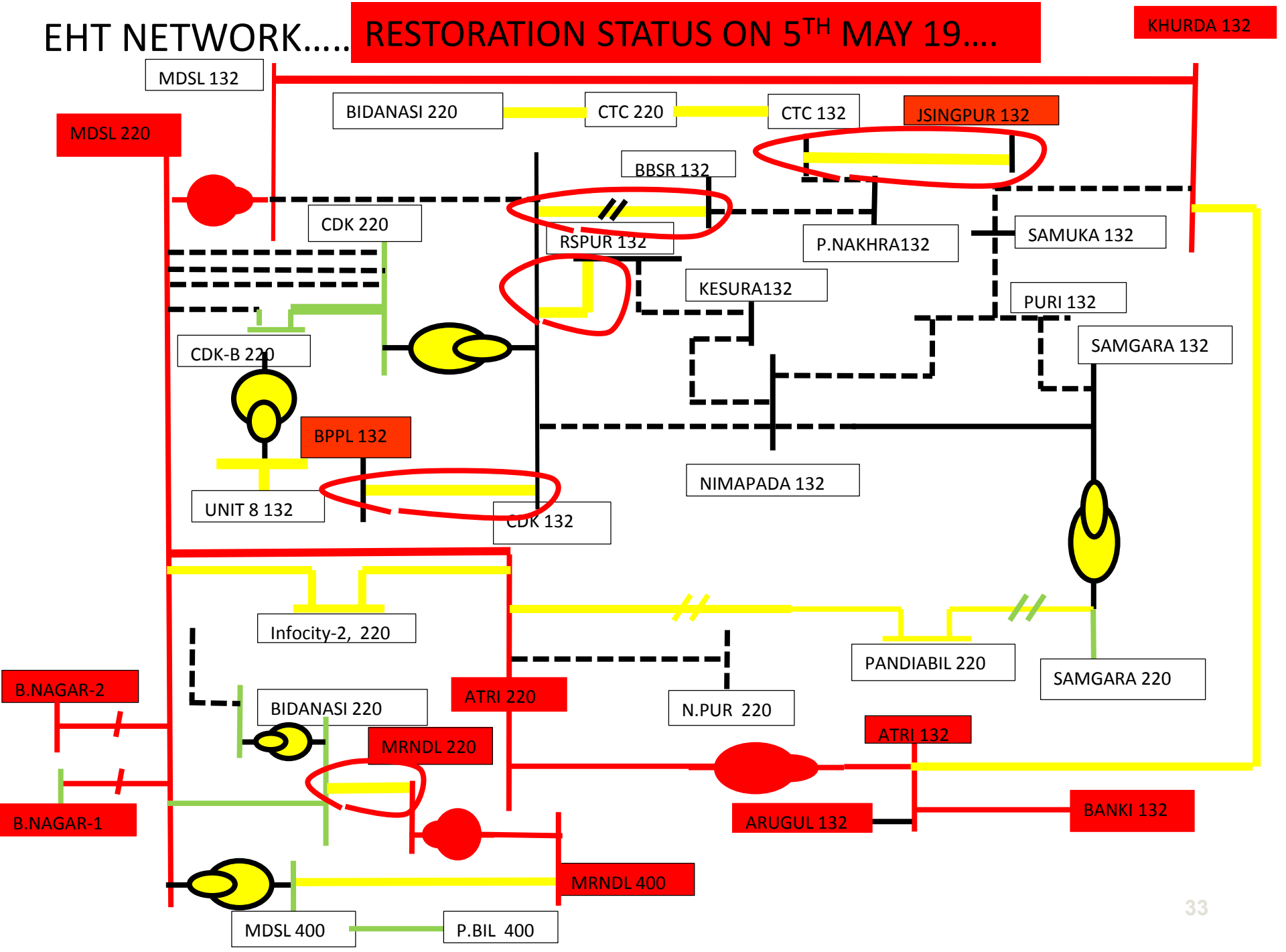
MINOR AFFECTED NETWORKS (12 Lines)

Sl. No.	AFFECTED LINES	RESTORATION
1	220 MENDHASAL-ATRI-1	04.05.2019
2	132KV MENDHASAL KHURDA	04.05.2019
3	220KV MENDHSAL- INFOCITY – ckt1	05.05.2019
4	220KV ATRI- INFOCITY- ckt 2	05.05.2019
5	220KV CHANDAKA-CHANDAKA-B	05.05.2019
6	220KV MERAMUNDALI-BIDANASI	05.05.2019
7	132KV CUTTACK- JAGATSINGPUR	05.05.2019
8	132KV ATRI-KHURDA.	05.05.2019
9	132KV CHANDAKA - BBSR -2	07.05.2019
10	220KV ATRI-PANDIABILI-1	07.05.2109
11	220KV ATRI- PANDIABILI-2	07.05.2019
12	400KV MENDHASAL- MERAMUNDALI	07.05.2019

EHT NETWORK..... RESTORATION STATUS ON 4TH MAY 19....



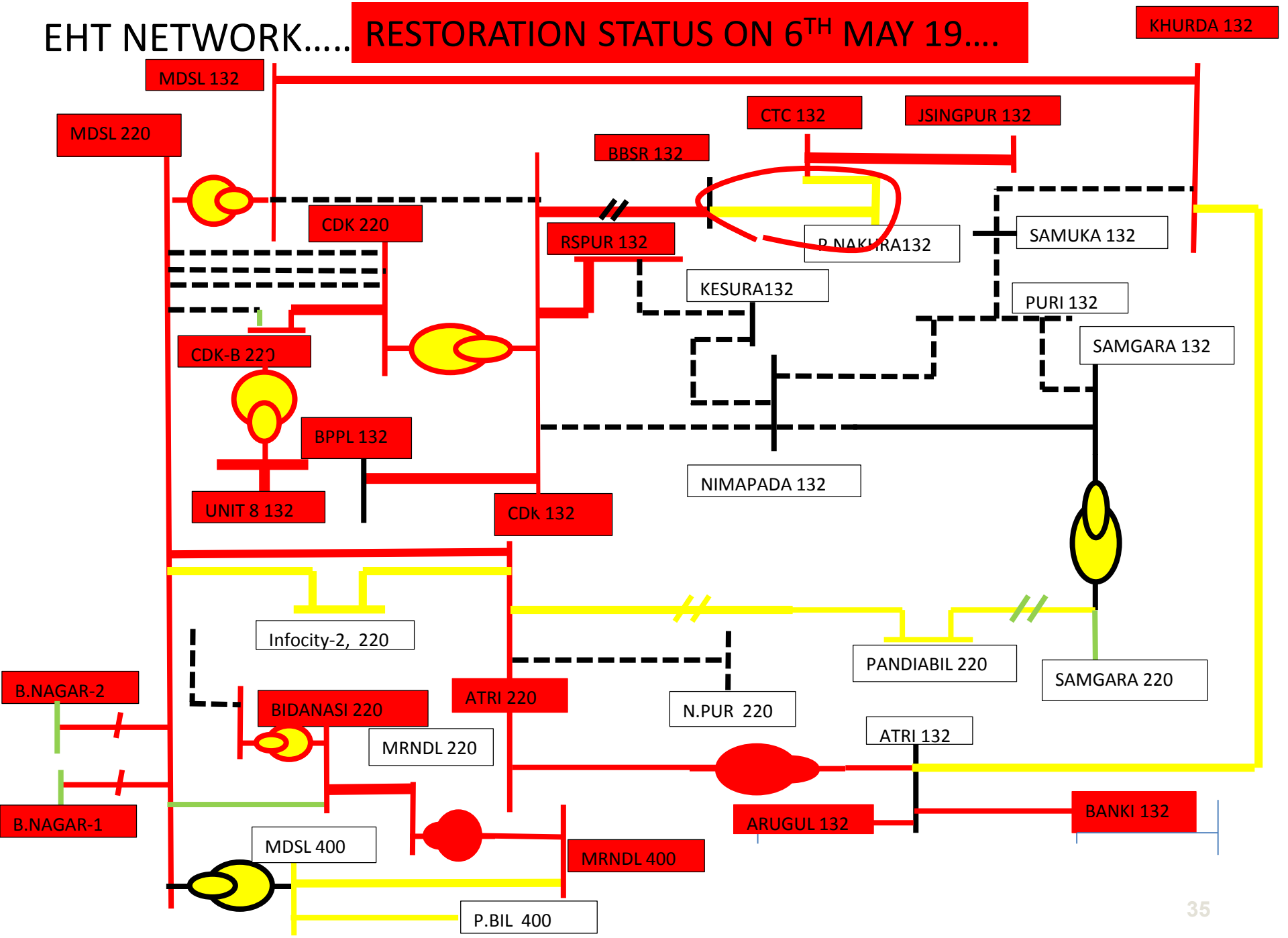
EHT NETWORK..... RESTORATION STATUS ON 5TH MAY 19....



SYSTEM REVIVED ON 05.05.19

- 132kV Jagatsinghpur – Cuttack charged at 10:37 hrs CUTTACK supply
- 220kV Cuttack – Bidanasi line charged at 11:22 hrs
- Chandaka grid availed power supply from CHOUDWAR end through 132 KV Chandaka –BPPL feeder at 15:39 hrs
- 220 KV Chandaka – Chandaka 'B' ckt. Charged at 16:28 hrs from Chandaka end.
- 132 KV Chandaka – BBSR Ckt. 1 charged at 16:37 hrs
- 220kV Meramundali – Bidanasi charged at 19:09 hrs
- 132 KV Chandaka – Ransinghpur line charged at 22:02 hrs
- 132kV Chandaka B – Unit 8 line charged through underground cable at 17:40 hrs

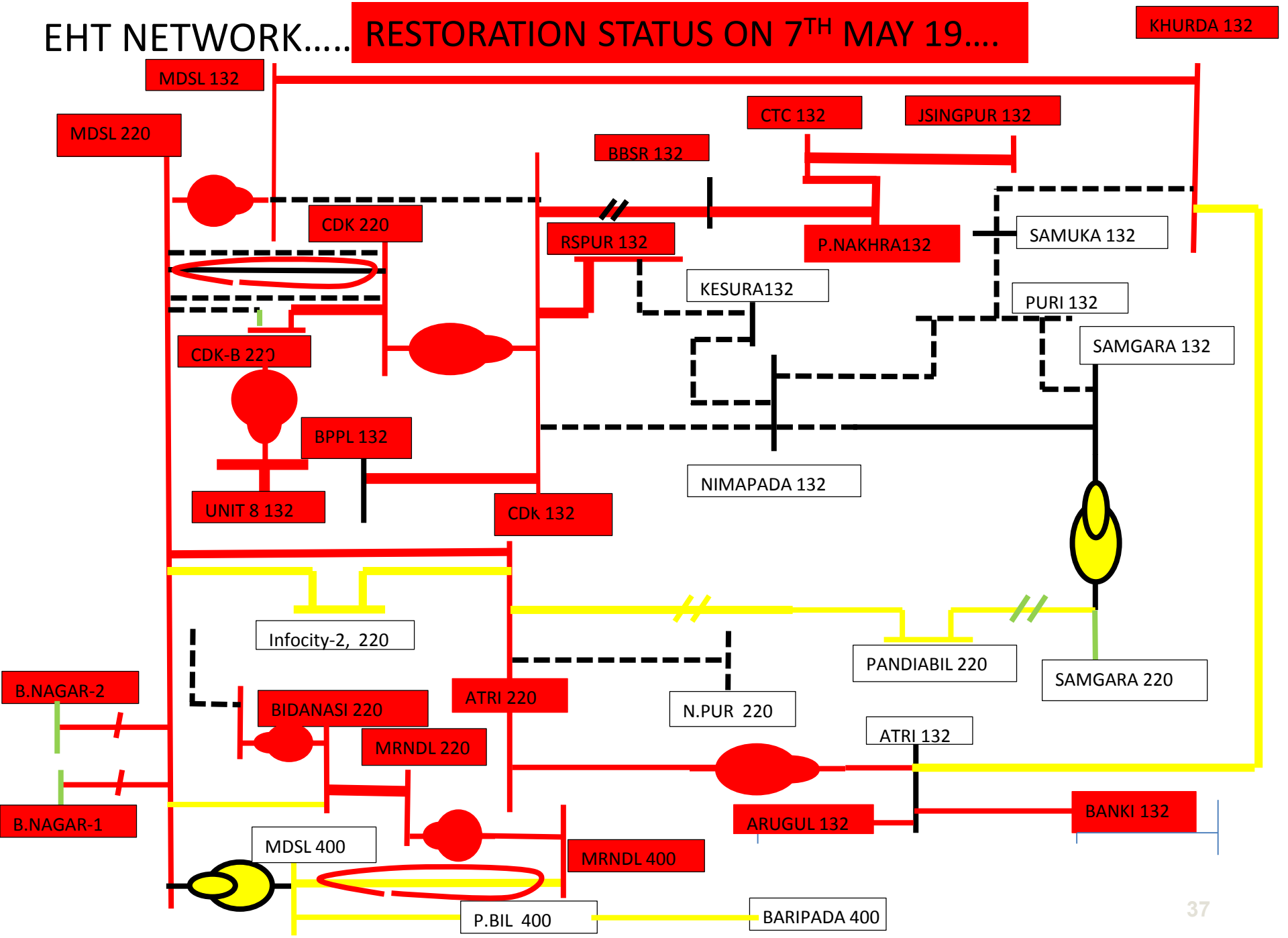
EHT NETWORK..... RESTORATION STATUS ON 6TH MAY 19....



SYSTEM REVIVED ON 06.05.19

- 132kV CUTTACK- BHUBANESWAR

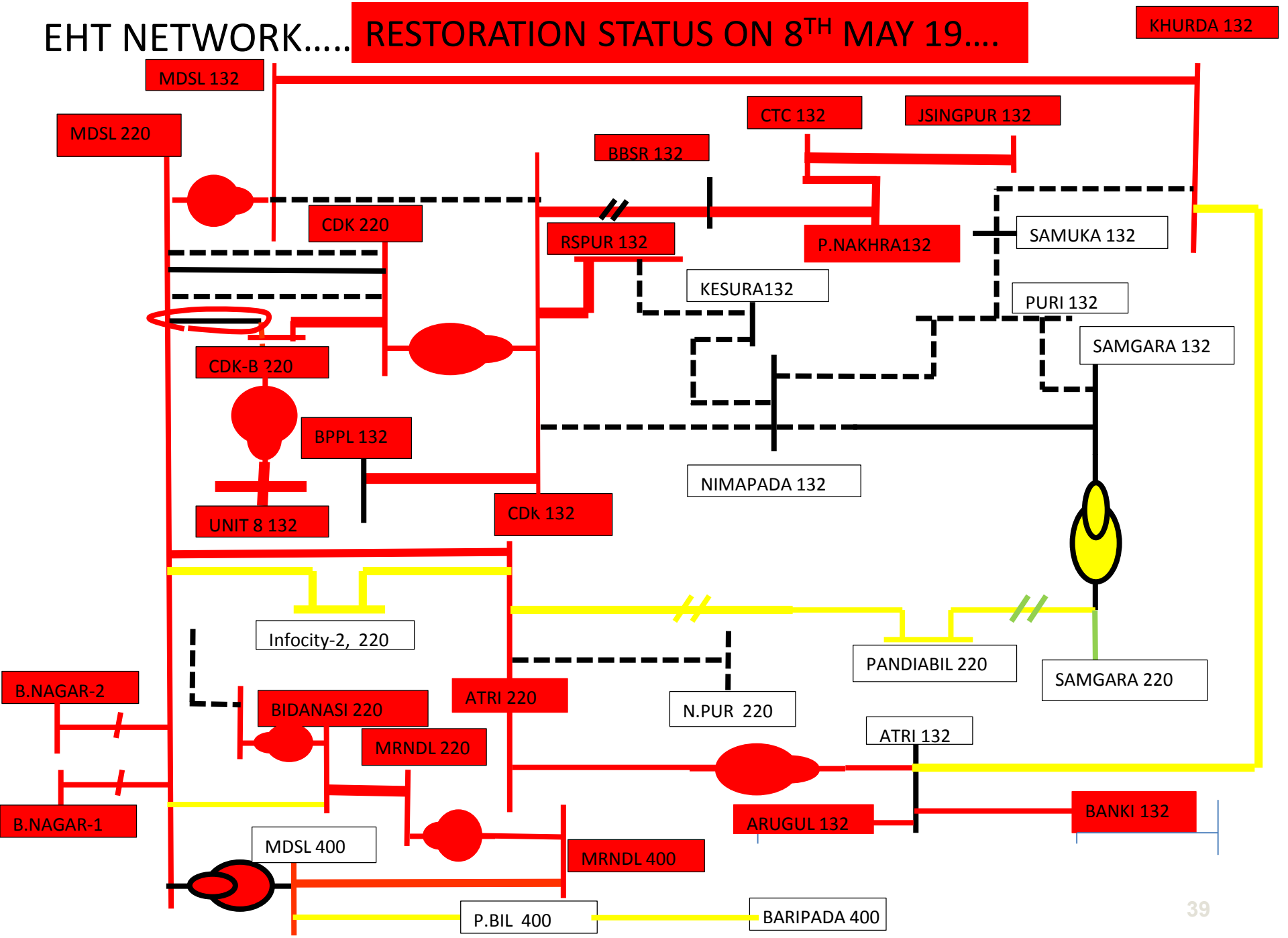
EHT NETWORK..... RESTORATION STATUS ON 7TH MAY 19....



SYSTEM REVIVED ON 07.05.19

- 220kV Mendhasal - Chandaka CKT – II charged at 21.50hrs from Mendhasal end by Inter-Linking .
- 400kV Meramundali – Mendhasal Line charged at 21.21 hrs

EHT NETWORK..... RESTORATION STATUS ON 8TH MAY 19....



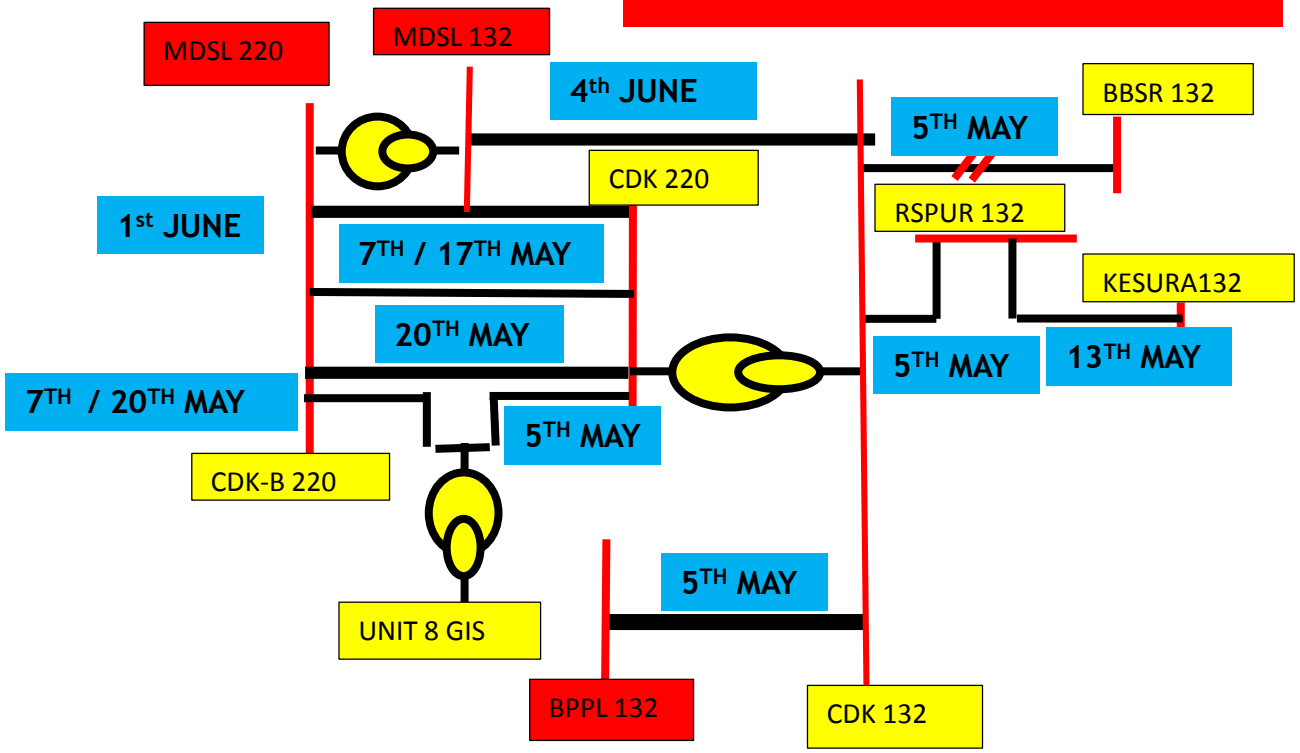
SOME CRITICAL RESTORATION

132KV Bidanasi-Choudwar LOC 16in River Bed

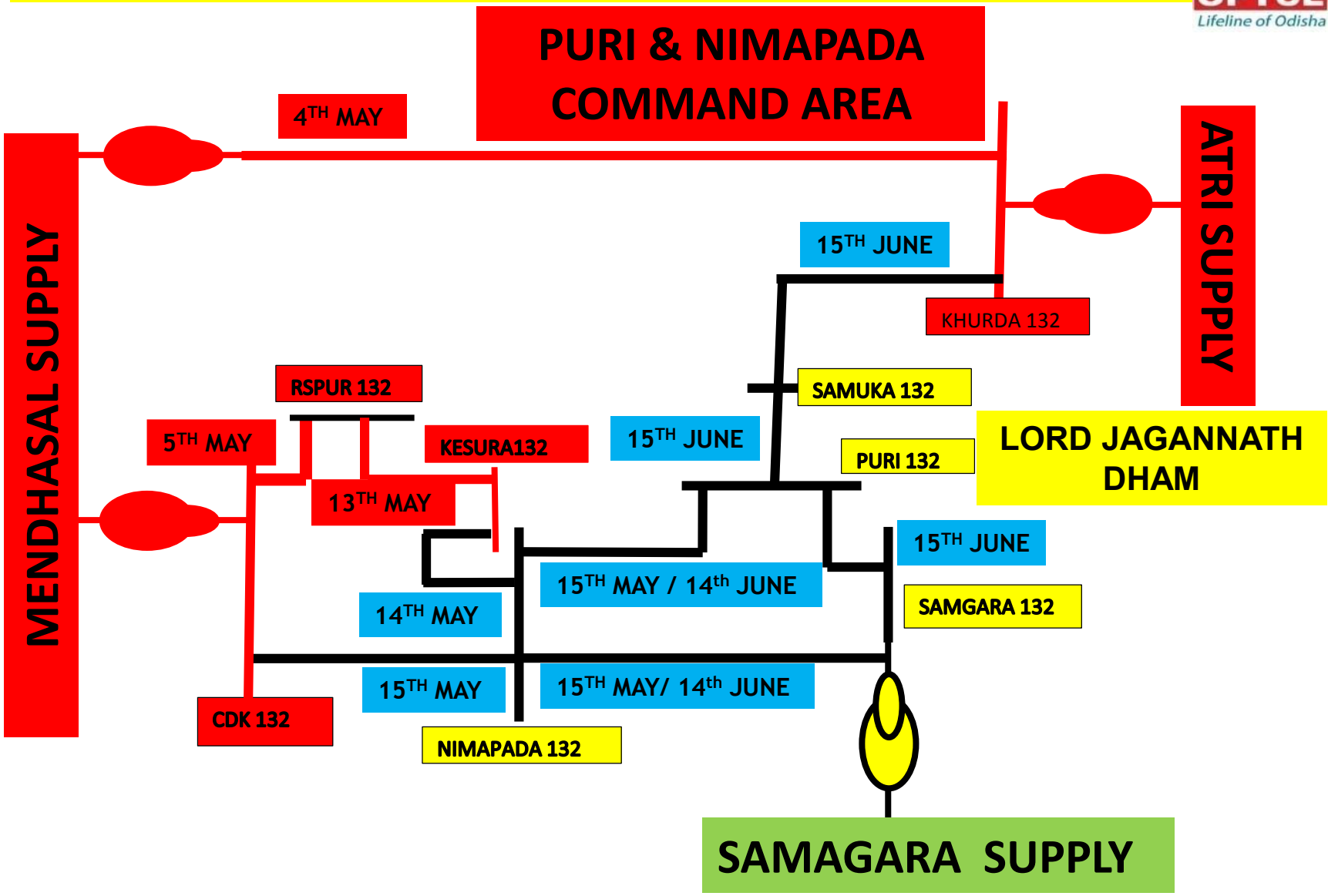
CRITICAL

TEMPORARY SUPPLY ON 5TH MAY & FINAL COMPLETION ON 4th JUNE 2019.

BHUBANESWAR COMMAND AREA



TEMPORARY SUPPLY ON 15TH MAY & FINAL COMPLETION ON 15th JUNE 2019.



MAJOR AFFECTED NETWORKS (19 Lines, 115 Towers)

Sl. No.	AFFECTED LINES	NATURE OF DAMAGE	ACTION PLAN	
			Temporary Arrangement/ Action Plan	Permanent Arrangement
1	220 MENDHASAL-CHANDAKA-1&2	2 Towers Collapsed	Chandaka-2 charged with inter-linking arrangement and taken into service on 07.05.19	**Line-2 charged on 17th May and Line-1 on 1st JUNE**
2	220 MENDHASAL-CHANDAKA-3 &4	1 Tower Collapsed	Chandaka-4 charged with 2 Nos ERS and taken into service on 07.05.19	After repair both charged on 20th May
3	220KV PANDIABILL-SAMAGARA - 1 & 2	64 Towers Damaged	Survey under progress	Restoration Plan worked out
4	220KV ATRI - NARENDRAPUR – 1 & 2	5 Towers Damaged	New Towers installed and charged on 28th May and 29th May	
5	132KV MENDHASAL CHANDAKA	2 Towers Collapsed	New Towers installed and charged on 4th JUNE 19	
6	132KV KESURA- RSPUR LILO	3 Towers Collapsed	New Tower Erected with repair of STUB. Completed on 13th May	
7	132KV PHUL NAKHARA CUTTACK LILO	3 Towers Collapsed	New Tower Erected. Taken into service on 11th May	

MAJOR AFFECTED NETWORKS (19 Lines, 115 Towers)

Sl. No.	AFFECTED LINES	NATURE OF DAMAGE	ACTION PLAN	
			Temporary Arrangement/ Action Plan	Permanent Arrangement
8	132KV BIDANASI -CHANDAKA	2 Towers Collapsed	**Charged on 22nd May 2019**	
9	132KV BIDANASI -CHOUDWAR			
10	132KV SAMAGARA – NIMAPADA	6 Towers collapsed	Erection of ERS completed in 6 Location and charged on 14th May 19	New Tower installed & CHARGED ON 15th June 19.
11	132KV NIMAPADA PURI			
12	132KV SAMAGARA-PURI		ERS Tower on Nimapada- Puri used for PURI supply and charged on 15th May 19.	
13	132KV CHANDAKA-NIMAPADA	9 Towers collapsed + 1 Partially	Erection completed in 10 Location with repair of STUB and charged on 15th May 19	
14	132KV KHURDA-SAMUKA	14 Towers collapsed	NO ACTION	New Tower installed & CHARGED on 15th June
15	132KV SAMUKA-PURI	4 Towers collapsed	ERS tower Erected and CHARGED ON 28th May	New Tower installed charged on 15th June 19.

SEQUENCE OF RESTORATION OF TRANSMISSION ELEMENTS OF BHUBANESWAR -CUTTACK COMMAND AREA

Sl. No	Name of Sub-Stn/Lne	Date	Time	Remarks
1	220 KV Bhanjanagar-Mendhasal ckt-I	03.05.19	17:30	Tripped at 22:24 on 05.05.19, and finally charged at 19.35 hrs on dt 10.05.19
2	132 kV ICCL Choudwar fdr	03.05.19	21:00	
3	132 kV Choudwar-Traction fdr	03.05.19	21:52	
4	Auto TRF No-1 of Mendhashal	04.05.19	16:32	
5	220 kV Mendhasala- Atri fdr	04.05.19	23:42	
6	132kv Atri-Banki fdr	05.05.19	00:14	
7	132 kV Atri -Arugul Fdr	05.05.19	00:15	
8	132 kVParadeep- Jagatsinghpur -Cuttack Fdr	05.05.19	10:46	SCB Medical got power supply from Cuttack at 11:32 Hrs on 05.05.19
9	220 kV Cuttack- Bidanasi Fdr	05.05.19	11:22	
10	132 kV Choudwar-BPPL-Chandaka FDR	05.05.19	15:39	Chandaka Grid S/S avail power supply.
11	Auto TRF No-1 of Chandaka	05.05.19	16:26	
12	220 kV Chandaka- Chandaka-B Fdr	05.05.19	16:28	
13	132 kV Chandaka- Manchsewar Fdr	05.05.19	16:37	Manchseswar Grid S/s charged.
14	SLDC avail Power supply from Mancheswar	05.05.19	17:08	
15	33 kV UNIT-8 S/S Charged from Chandaka-B	05.05.19	17:40	
16	220 kV Bidanasi- Meramandauli FDR	05.05.19	18:59	
17	220 kV bidanasi-cuttack Ckt-2	05.05.19	19:09	
18	220 kV Bidansi- Cuttack Ckt-1	5.0519	19:22	
19	160 MVA Auto-1 of Cuttack	05.05.19	20:08	
20	132 kV Cuttack-Mancheswar Fdr	05.05.19	21:33	
21	132 kV Chandaka-Ranashingpur	05.05.19	22:02	AIIMS got power supply from Ranasinghpur at 22:39 Hrs on 05.05.19
22	220 kV Atri-Pandiavail Ckt-1	06.05.19	08:25	
23	132 kV Khurdha-Kaipadhar Traction	06.05.19	13:50	
24	220 kV Atri-Infocity Fdr	06.05.19	21:21	
25	132 kV Jagatsingpur-Gorakhnath Traction	06.05.19	14:24	
26	132 kV Atri -Arugul Fdr	06.05.19	15:34	
27	132 kV Chandapur- Khurdha	06.05.19	15:35	
28	400 kV Meramanduli-Mendhasala Ckt-1	07.05.19	21:48	
29	220 kV Mendhasala- Chandaka Ckt-2	07.05.19	21:50	
30	400/220 kV, 315 MVA ICT-1 of Mendhasala	07.05.19	22:31	
31	400 kV Mendhasala-Pandiavali CKT-1	07.05.19	22:40	
32	400 kV Mendhasala-Pandiavali CKT-2	07.05.19	23:42	
33	220 kVMendhasala-Chandaka-B Ckt-4	08.05.19	14:46	
34	ICT -2 of Mendhasala	10.05.19	22:05	
35	400 kV Pandiavail-Baripada	10.05.19	23:27	
36	132 kV Phulnakhara-Cuttack fdr	11.05.19	18:47	Phulnakhara Grid S/S charged.

220KV MENDHASAL- CHANDAKA LINE 1/2

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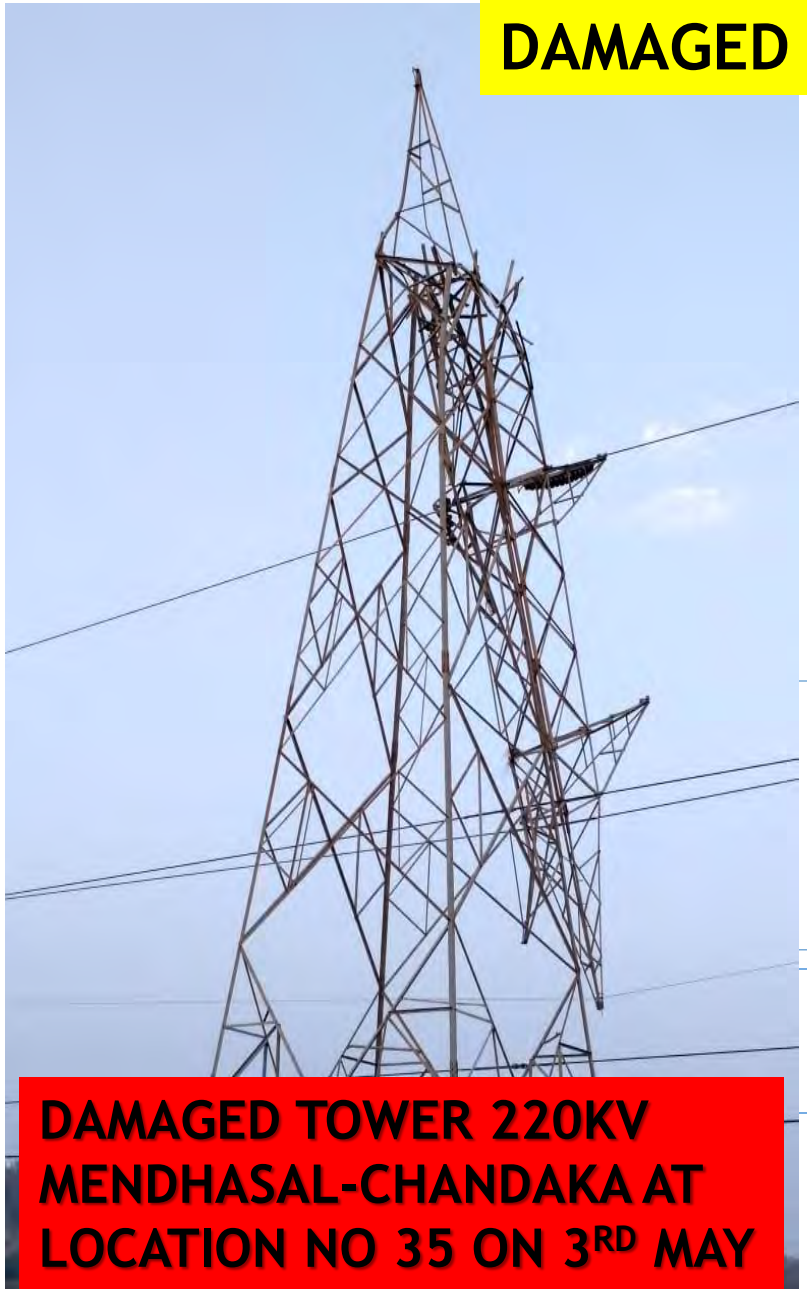
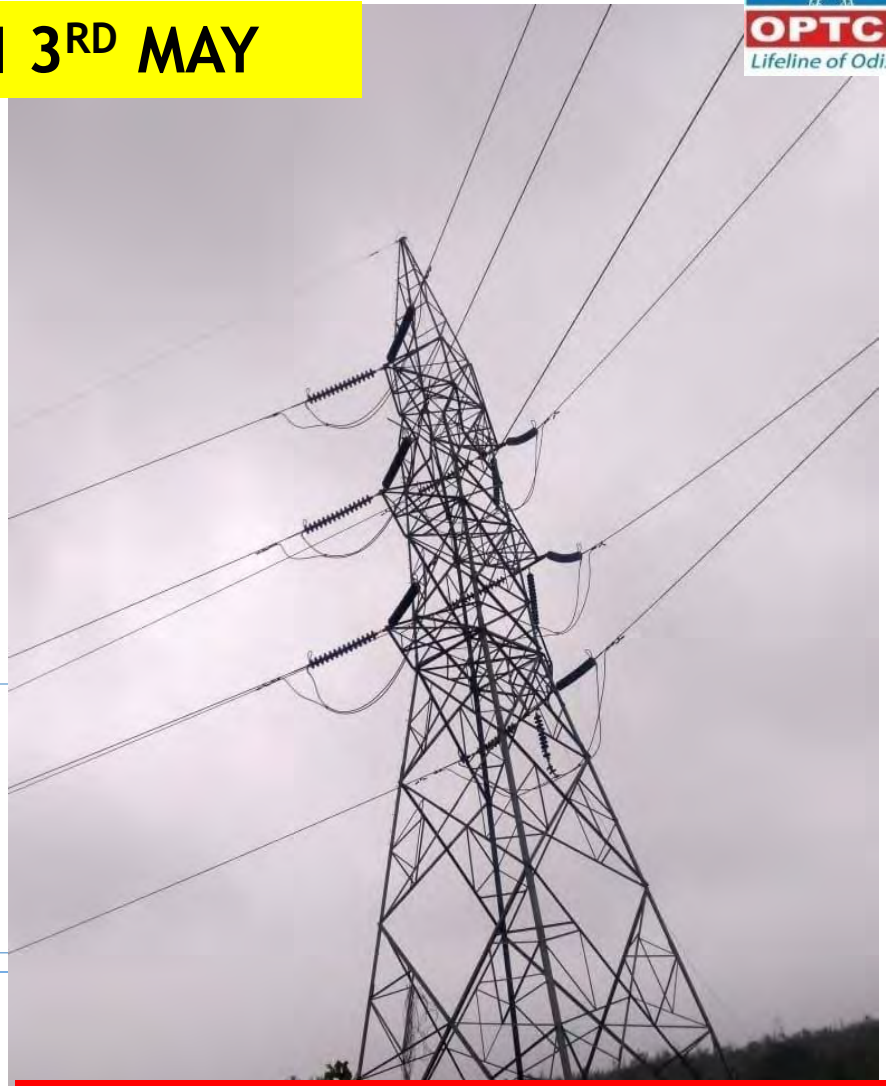
DAMAGED ON 3RD MAY



DAMAGED TOWER 220KV MENDHASAL-CHANDAKA AT LOCATION NO 35 ON 3RD MAY



DAMAGED CROSS ARM 220KV MENDHASAL-CHANDAKA AT LOCATION NO 46 ON 3RD MAY

220KV MENDHASAL- CHANDAKA LINE 1/2

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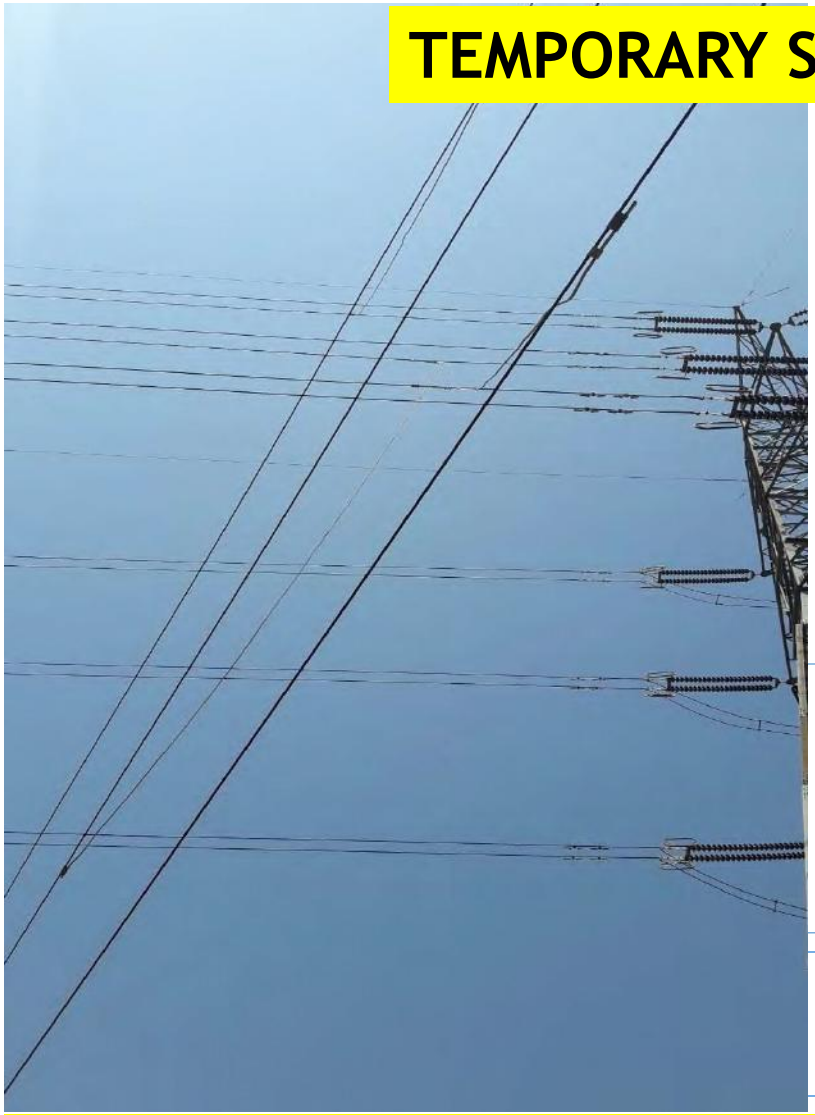
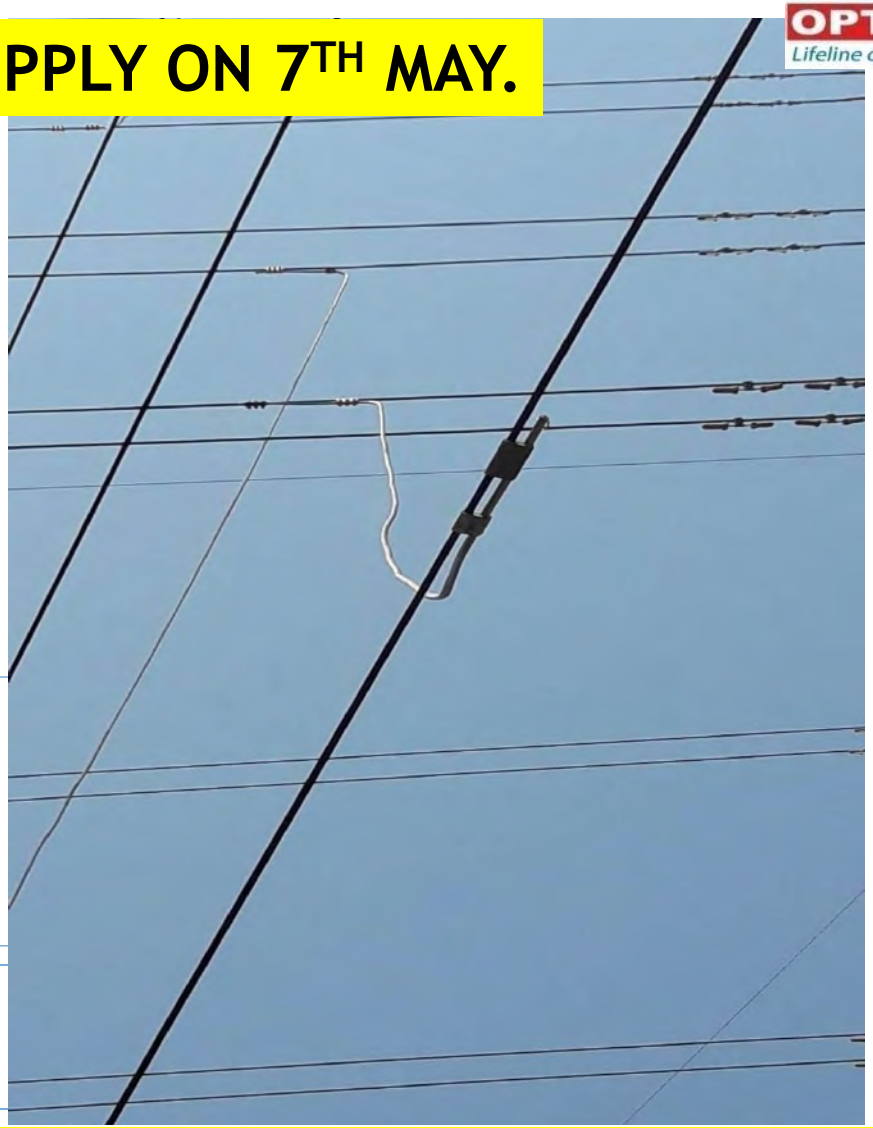
TEMPORARY SUPPLY ON 7TH MAY.





TEMPORARY SOLUTION BY INTERLINKING OF VAILABLE LINK SUPPLY WAS EXTENDED ON 7TH MAY 19

220KV MENDHASAL- CHANDAKA LINE 1/2

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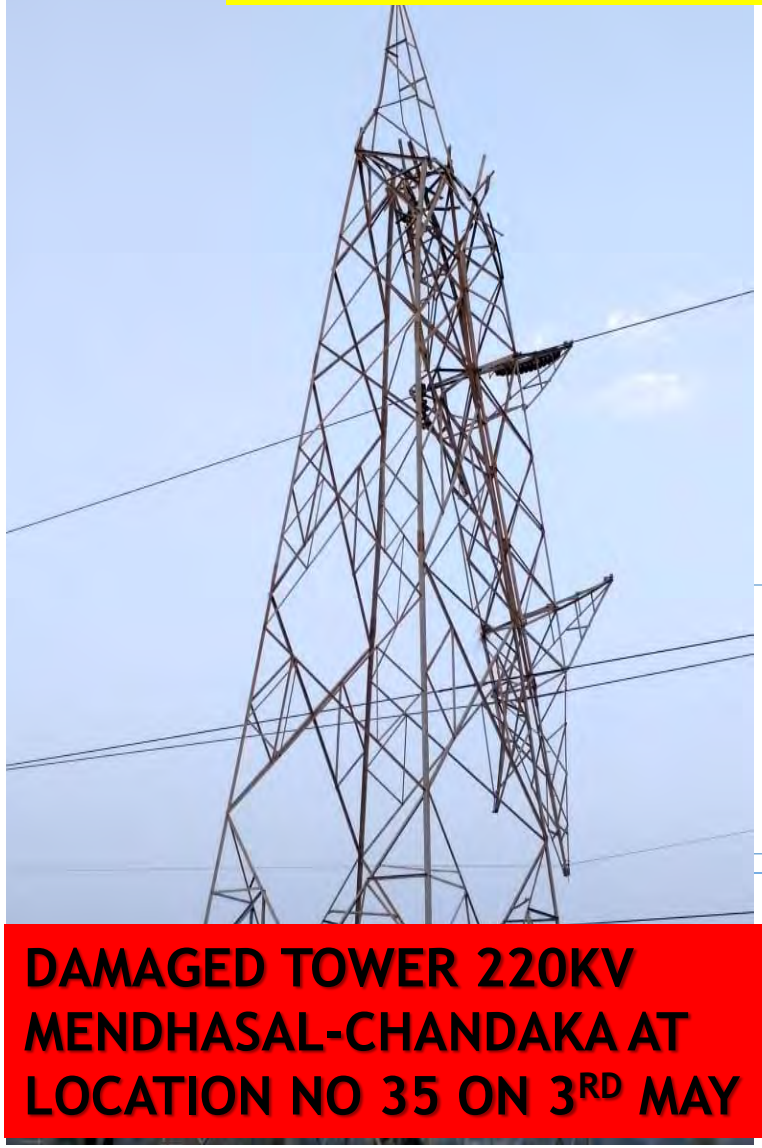
PERMANENT SOLUTION ON 17TH MAY



DAMAGED TOWER 220KV MENDHASAL-CHANDAKA AT LOCATION NO 35 ON 3RD MAY

FULLY ERECTED TOWER AFTER REPAIR ON 17TH MAY

220KV MENDHASAL- CHANDAKA LINE 1/2

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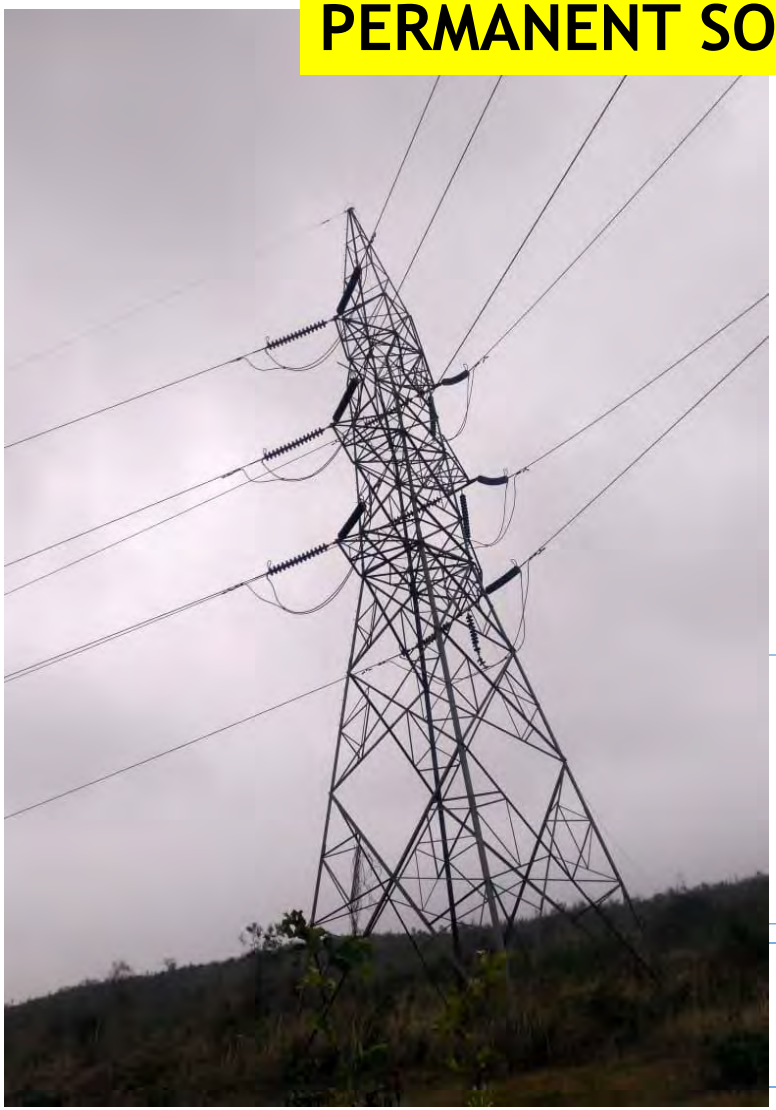
PERMANENT SOLUTION ON 1ST JUNE

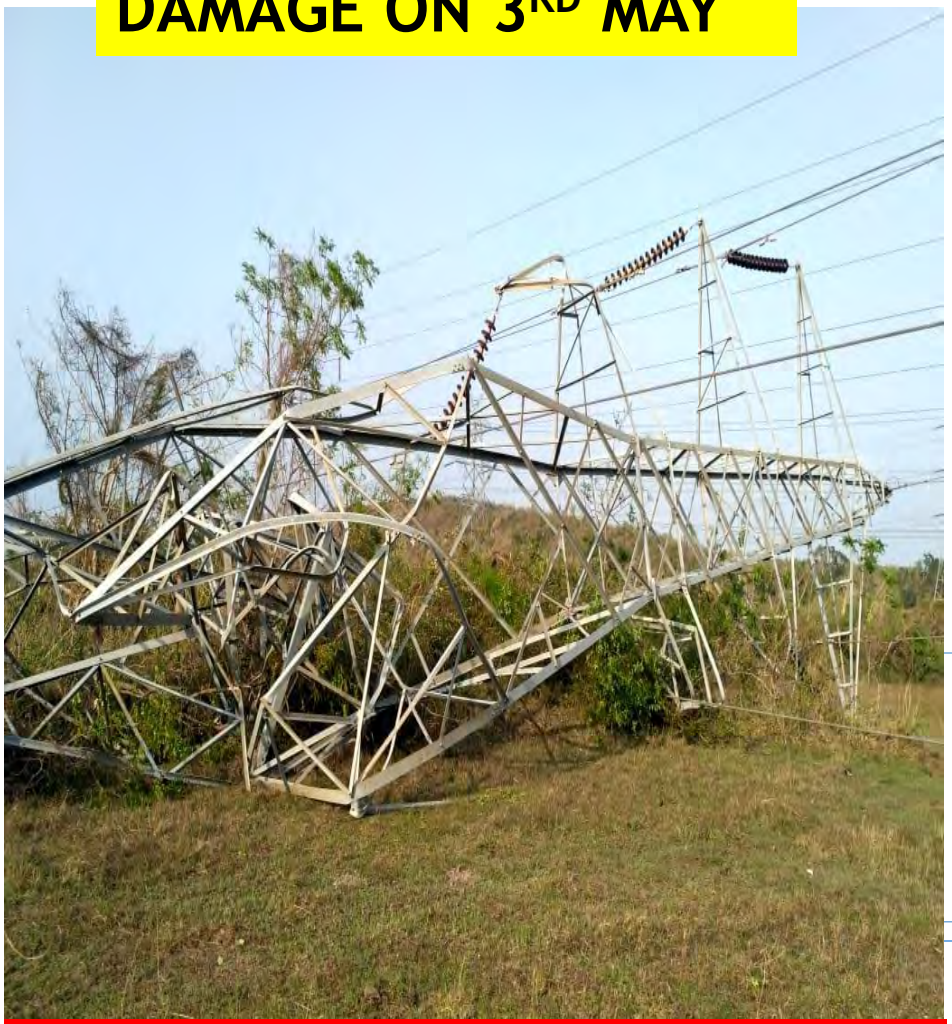


DAMAGED TOWER AT LOCATION NO 46 ON 3RD MAY

NEW TOWER ERECTION ON PLAN AND WORK ON PROGRESS

220KV MENDHASAL- CHANDAKA LINE 3/4

DAMAGE ON 3RD MAY



COLLAPSED TOWER 220KV MENDHASAL-CHANDAKA LINE 3/4 AT LOCATION NO 474 ON 3RD MAY

TEMP. SUPPLY ON 7TH MAY

TEMPORARY ERS TOWER SOLUTION ON 7TH MAY FOR CIRCUIT 4 LOCATION NO 474

220KV MENDHASAL- CHANDAKA LINE 3/4

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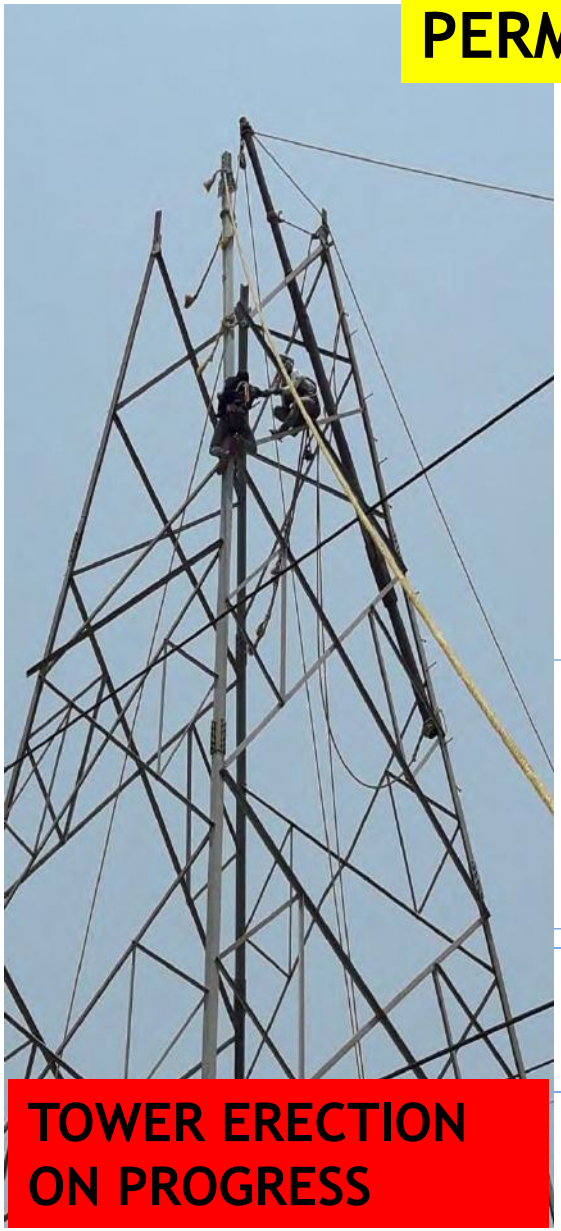
PERMANENT SUPPLY ON 20TH MAY



TOWER ERECTION ON PROGRESS

TOWER ERECTION ON PROGRESS

FULL TOWER ERECTION ON 20TH MAY 19

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ERS TOWER ERECTION

Experience with Distribution System

Distribution Network Damage

Sl No	Items	CESU	NESCO	SOUTHCO	TOTAL
1	33/11 KV S/s – Affected (Nos.)	272	169	-	**441**
3	33 KV Feeder – Affected (Nos.)	163	68	45	**276**
5	11 KV Feeder – Affected (Nos.)	908	493	182	**1583**
7	DTRs – Affected (Nos.)	65,024	798	210	**66,032**
9	Consumers – Affected (Nos.)	25,01,131	14,76,447	6,50,305	**46,27,883**

District wise Damage - CESU

Sl. No.	Name of District	33 KV Feeder	33/11 KV Sub-stations	11 KV Feeder	DTR	Consumer
1	Angul	16	28	96	8153	224680
2	Dhenkanal	15	22	75	4844	198132
3	Cuttack	31	63	197	11926	490532
4	Puri	20	23	98	7538	291171
5	Nayagarh	10	21	55	6446	213310
6	Bhubaneswar City	28	38	156	7844	316257
7	Khurda	18	26	78	6099	250666
8	Kendrapada	13	26	78	6044	256747
9	Jagatsinghpur	9	21	61	5249	217443
10	Jajpur	3	4	14	881	42193
CESU TOTAL		**163**	**272**	**908**	**65024**	**2501131**

Damage of Distribution Structure

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Damage of Distribution Structure

Damage of Distribution Structure

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Immediate Response

- Just after cyclone receded, patrolling teams started clearing small debris and assessing the damages.
- Minor damages were also rectified and consumers given power supply in less affected areas.
- Control Rooms were setup at Energy Department, OPTCL & DISCOM Offices.
- Plan of Action (POA) and Restoration Protocols were chalked out.
- Expenditure modalities finalized for restoration work.
- Requisition placed with SRC for advance fund allotment.

Manpower Mobilization

- Around 800 workmen mobilised from EPC contractors & Rate Contract Agencies and engaged in restoration work of EHT network.
- Around 6000 workmen (in 512 gangs) sourced from Discoms, CPSUs (NTPC & PGCIL), Corporates (Tata, L&T, Godrej, Adani, FEDCO), Contractors, other States (Telengana, West Bengal, Bihar, Kerala) and engaged in revival of Distribution network.
- Apart from above, another 1200 manpower also deployed by licensed HT Contractors for restoration & onward rectification in Bhubaneswar, Cuttack, Khurda, Puri, Nimapada & Jagatsinghpur.
- Almost 200 Engineers/Officers are deputed from other Discoms to CESU area.

Logistic Support

- Arrangements for accommodation & food made at multiple locations.
- 3 large camps organized at PTC, Chandaka, Samagara Grid, Puri and Nimapada Grid for 2000 people.
- Machineries like DG Sets, Pole Erection Machines, Welding Machines, Power Saws, Earth Movers sourced from CPSUs, Discoms, Contractors and local parties.
- Transportation vehicles for men & material arranged on hire basis locally.
- Help Desk made operational at Bhubaneswar Railway Station to coordinate with outside teams/gangs.

Challenges, Opportunities & Lessons Learnt from FANI

Sl	Points	Challenges	Opportunities	Lessons Learnt
1	**Patrolling during Disasters**	Inaccessible water and fallen tree logged area. Communication failure.	Managed by manual approach on creating the front by ODRAF and NDRF team. Sharing of information by pre-defined meeting.	To use of GPS based Android App Patrolling software which can be integrated with Drone camera for quick decision.
2	**Material Management**	Infrastructure damage beyond availability with difficult situation of its transportation.	Materials diversion from the up-coming and running projects. Carriage by head loading, Boats, wooden Platform from access point.	Emergency E-Procurement Policy with pre-defined guidelines.
3	**Work completion before monsoon break.**	1. Monsoon about to break during mid JUNE. 2. Working with Scorching Sun in the mid-summer.	1. Managed by utilizing the multi-gang agencies. 2. Motivation from higher authorities. 3. Allowed to work during night with emergency light support with higher wages.	Strategic and time-bound work plan with dedicated and involved working groups.

Challenges, Opportunities & Lesson Learnt from FANI

Sl	Points	Challenges	Opportunities	Lessons Learnt
4	**Temporary Power supply Extension**	Severe damage of multi-link network.	1. By use of ERS Towers as per the target timeline assigned 2. Alternate Power supply by Inter-linking NETWORK with jumpering of the part healthy system.	1. Advanced strategic plan with logistic approach and experienced empanelled working agencies. 2.Creation of ERS, Disaster Management Unit and Disaster Response Centre being equipped with personnel, vehicles, T&P at different Zones.
5	**Early Supply Extension to Consumers**	Severe Damage of Distribution Network	Phase wise diversion of distribution areas to healthy Grids, optimising the capacities of Sub-station.	**1.** Adaption to RMU, SCADA, GIS, Auto-healing system, SAS, EMS etc.. 2. Underground cables to main important localities

Resiliency of Power Structure during Disasters

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1. **Full proof Strategic Plan :**
   - Six A's Preparatory Tool
   - Well documented POST event Reports on Learning lessons.

2. **Secondary Network Up-gradation: (Distribution)**
   - Mechanism of RMU (Ring Main Unit) with sectionalisors to ULBs.
   - Use of NBLS Tower, UG cable for Trunk Lines
   - H-pole, UG cable, Spun pole for internal ring.
   - HTLS conductor with up gradation of hardware.
   - Polymer Insulators.

3. **Primary System Up gradation: (Transmission)**
   - Network and equipment (Transformers) with N-1 contingency.
   - Use of Robust and resilient Equipment
   - GIS and Hybrid Grids.
   - 400KV CTS (Costal Transmission Scheme) with wind resilient Tower. (Here the link could be Paradeep-Uttara-Mendhasal-Berhempur- Jeypore Link
   - Gradual changeover of TL with same ROW, abolition of OLD tower with up gradation to next voltage level if required.

Resiliency of Power Structure during Disasters

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4. Distributed Independent Sources:

- Micro-Grid with DER (Distributed Energy Resources)
- DG (Distributed Generation) with integration of RE (Renewable Energy).
- Remote Control GIS grids

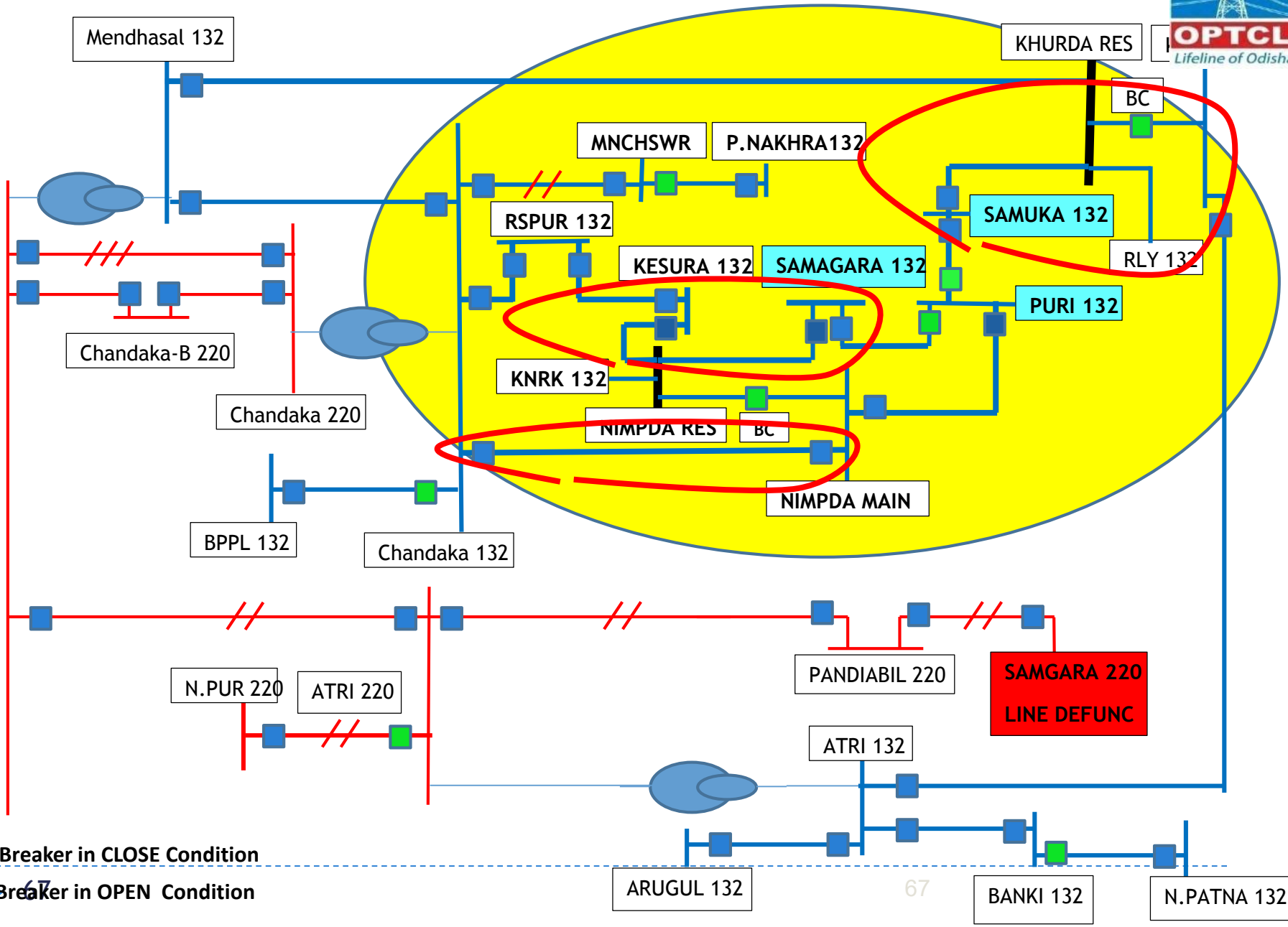
.

5. Adaption to Innovative:

- IoT (Internet of Things) for Auto control for system stability.
- Sensor driven Real time Data analysis and consequent recovery control action.
- Self Healing Network with Auto- Reclose,
- SCADA, SAS and LADR concept for system control.
- GIS and other Hybrid Grids for environment resilient grids .
- Modern innovative SMART GRID and Modern Digital Grid Concept for reliability and stability.

Example of Stable System network to PURI command area even the major 220KV power supply is yet to be in operation after FANI is explained.

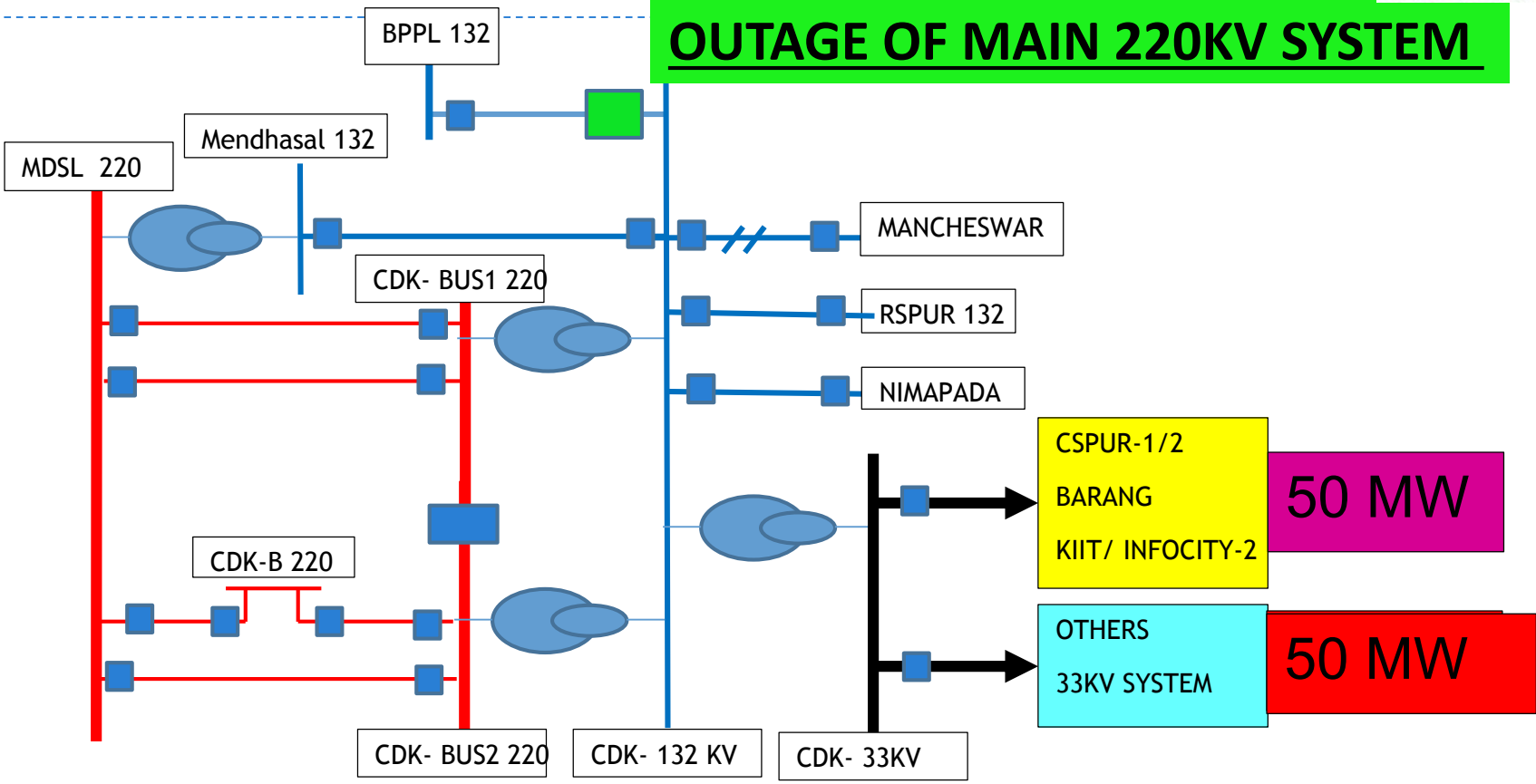
STABLE EHT NETWORK DURING RATH YATRA 2019 FOR STEADY POWER SUPPLY TO PURI COMMAND AREA



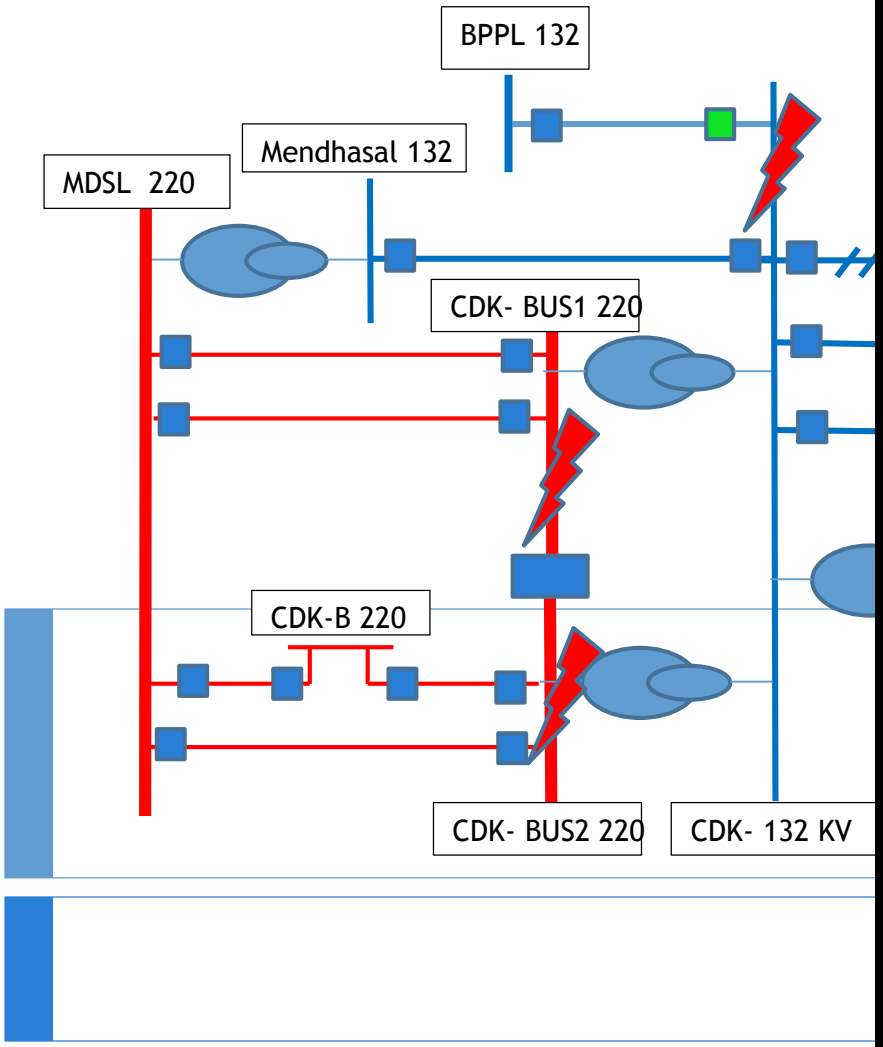
AUTO SHADED CONCEPT CHANDAKA GRID SUB-STATION FO
UN-INTERRUPTED SUPPLY TO IMPRTANT AREA

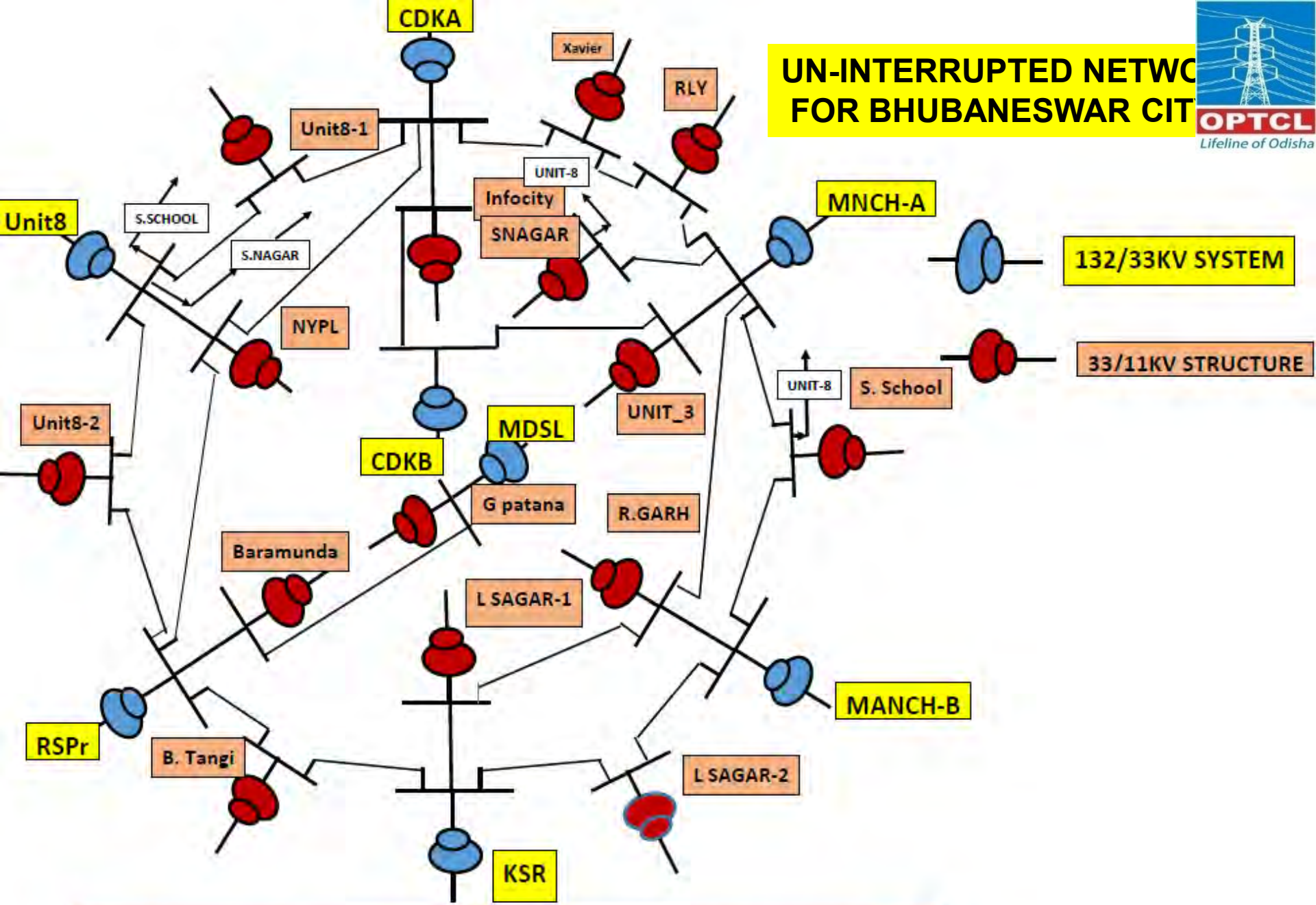
OPTCL
Lifeline of Odisha

OUTAGE OF MAIN 220KV SYSTEM



AUTO SHADED CHANDAKA GRID SUB-STATION




UN-INTERRUPTED NETWO
FOR BHUBANESWAR CIT
OPTCL
Lifeline of Odisha
CDKA
Xavier
RLY
Unit8-1
UNIT-8
Infocity
SNAGAR
MNCH-A
Unit8
S.SCHOOL
S.NAGAR
132/33KV SYSTEM
NYPL
33/11KV STRUCTURE
UNIT-8
S. School
UNIT_3
Unit8-2
MDSL
CDKB
G patana
R.GARH
Baramunda
L SAGAR-1
MANCH-B
RSPr
B. Tangi
L SAGAR-2
KSR
RING MAIN NETWORK FOR BHUBANESWAR COMMAND AREA

Build-Back-Better for un-interrupted Power supply

OPTCL
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1. Revisiting of Tower Design and Profile:

- Reconstruction of the damaged stretch of the TL, ensuring smaller span.
- Adopting strongest Tower that permits higher angles of deviations withstanding of Zone-6.
- For Disaster vulnerable areas, 6 legged / 8-legged stabler towers / monopoles @ smaller span to sustain wind velocity higher that 200KMPH.
- For Flood vulnerable, PILE FOUNDATION and embankment structure to be chosen

2. Revisiting of Line Conductors and Tower Accessories :

- Use of HTLS (High Temperature Low Sag) and other high temperature endurance conductors
- Long-rod insulators, Polymer Insulators.
- Glass fibre Flexible cross arm.
- Corrosion free tower materials, especially for saline affected Zone.

3. Use of Tower Patrolling Software :

- Tower Patrolling software (Android base mobile friendly) using GPS technology can allow us to have pro-active action on the tower

4. Development Data base on Tower Scheduling and Profile:

- The Off-line testing, tower scheduling and other data could be maintained for immediate action

5. Central/State Acts on ROW

- Need of Central/State Act for RoW settlement for T&D projects.
- Stipulation of Benchmark value
- Conversion of Agricultural land to homesteads. .

Build-Back-Better for un-interrupted Power supply

OPTCL
Lifeline of Odisha

6. **Adaption to Innovative and On-Line Monitoring Tools**:

- Use of ON-LINE monitoring devices like PID, Leakage current monitor,
- Fault passage Indicators, Thermal scanning.
- Auto vibrator sensing for looseness on Tower members.

7. Creation of ERS and Disaster Management Unit:

- Creation of ERS, Disaster Management Unit and Disaster Response Centre being equipped with personnel, vehicles, T&P at different Zones.
- The specialised empanelled agencies, satisfying the norms to be created to meet these exigencies.
- Mock Training to be acquaintance to new technology.

8. Encouragement for indigenous home land products:

- ERS Tower is proven of Disaster resilient, but its production being at overseas results with higher cost.
- Encouragement should be for domestic capacity building for easy availability with less price

9. Training and development

- Grooming the youngsters under experienced officers
- Interstate collaboration and deal for extension of helping hand.
- Allowing the youngsters to be the part of the disaster plan.

Distribution Structural Improvement.

1. Up-gradation of Infra-structures.
2. Use of H pole instead rail, joist or RCC or Spun.
3. Use of AB cables.
4. Adaption to RMU either inter-connected or radially fed depending upon the situation.
5. Adaption to Innovative: SCADA, GIS, Auto-healing system, SAS, EMS etc..
6. Underground cables to main important localities.
7. Study of un-interrupted Power supply to Bhubaneswar command area is explained below.

SOP for Early Restoration.

ACTION for Alternate Supply

- Each Identified critical lines in the NETWORK have defined SOP.
- On Outage, the nodal officer immediately avails the alternate supply or for the automated system the standby network gets closed.
- The Nodal Officer then intimates SLDC for Load/ Supply adjustment .

Restoration in case of Damage or Permanent Failure

- Assess the damage
- Acquire the category
- Prioritise the Action Plan
- Short Term Planning with Review
- Long Term Planning with Review
- Closure of the Project With report on Lessons learnt for future reference.

Adoption of Innovative Technology.

- **Monitoring of Grid Failure**: SCADA, SAS and PMU with Digital system already in the role to the maximum grids and integration to REMOTE station by the use of IEDs (Intelligent Electronic Devices) is to be done for easy control, monitoring, supervising and if required necessary real time rectification.

- **Coordination plan with Stake holder**: On-line Data monitoring by the EMS module at present available in SLDC to work upon the pre-scheduling structure with Inter-disciplinary role in line with GRID CODE. We also meet all our stake holders with bi-monthly meeting to discuss the deficiencies and discrepancies.

- **Preparation of a DPR : We are in action of preparing a DPR on " What NOW… What NEXT.. (WNWN) " For resilient Power Infrastructure.**

CONCLUSION ….

Our approach is testimony of our willingness to embrace the changes in the emerging environment with our MANTRA

(PQRS: Power with Quality, Reliability Safety and security.) with a tag line of WE CAN …. WE WILL …..

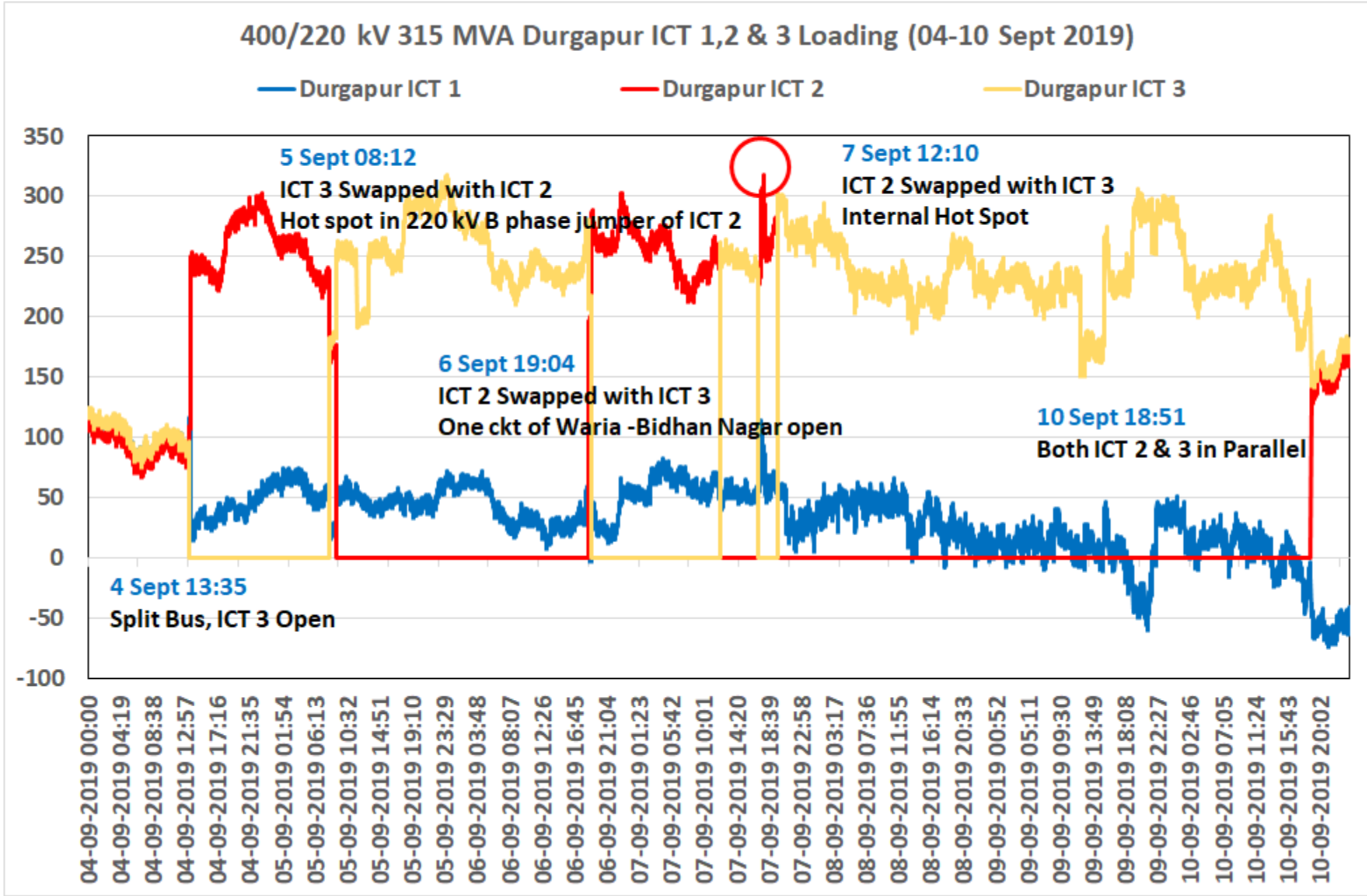
"If we don't strive for change,

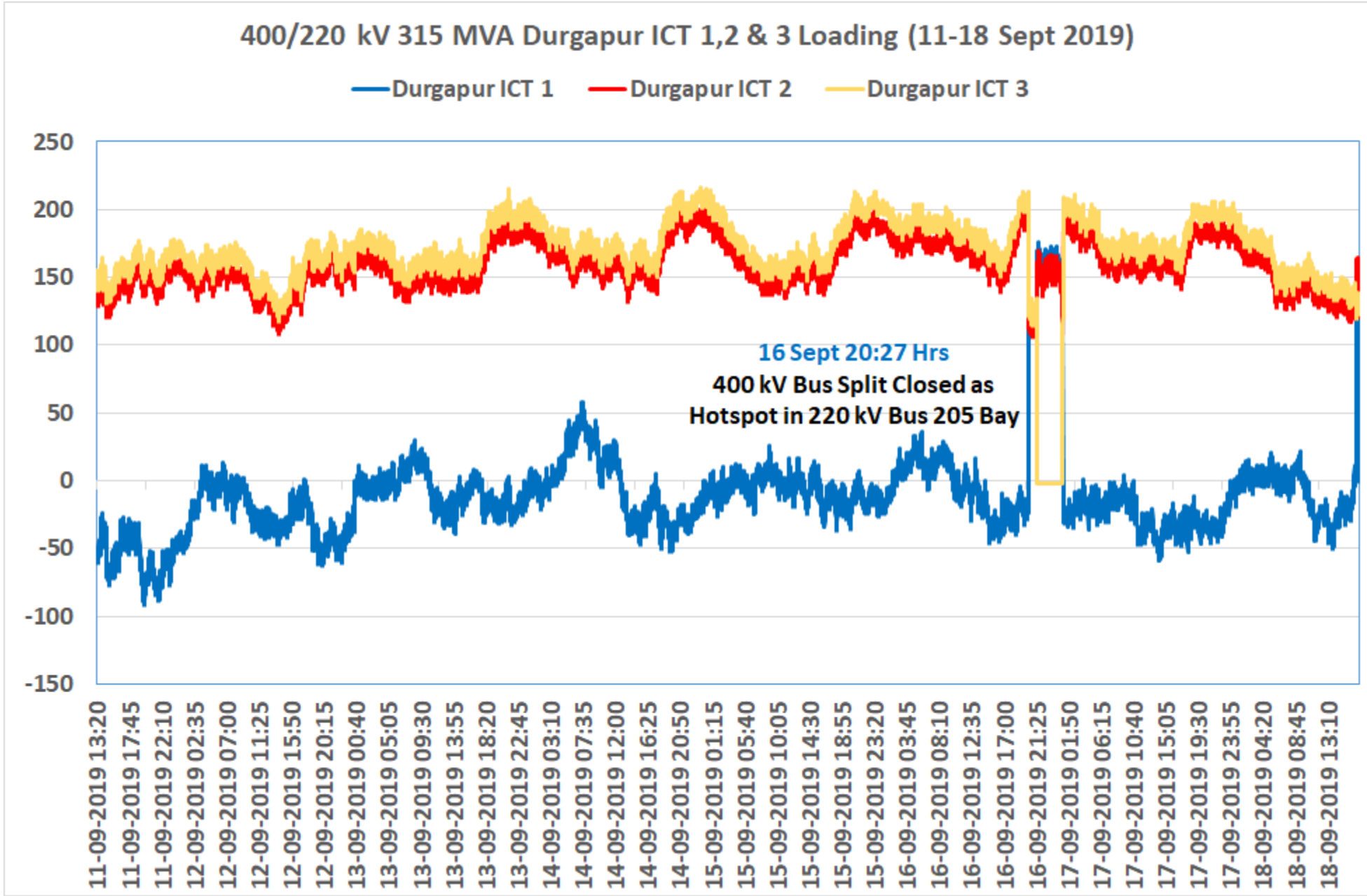
then change will drive us away."

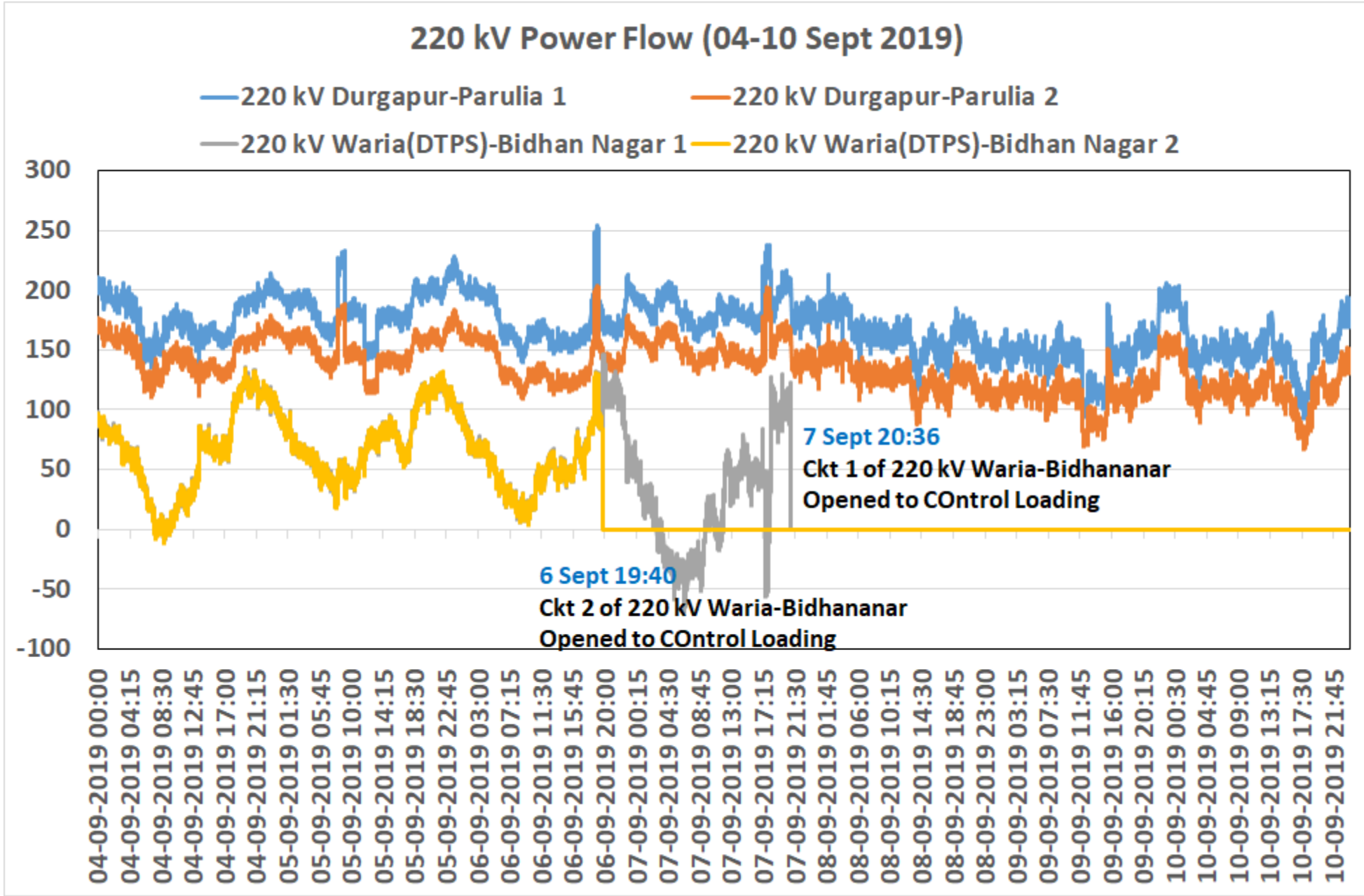
THANK YOU!

Item No. B.1: Operationalization of 400 kV Durgapur Bus Splitting Scheme

- **Bus Split Mode started : 13:35 HRS of 04.09.19 (ICT 3 Made Out)**
- **Issues:**
  - High Loading on ICT 2/ICT 3 (Only one of them in service)
  - Hot Spot on 220 kV Side Jumper of ICT 2
  - Internal Hotspot in ICT 2
  - Both 500 MVA ICT of Maithon Tripped (Delayed Fault in 220 kV Dumka-Govindpur) causing Loading of Durgapur ICT 2 to more than 318 MW (Above rating)
- **Action Taken:**
  - 220 kV Waria-Bidhan Nagar D/C opened to reduce loading
  - ICT 2 and 3 both kept in service from 10 Sept 2019


400/220 kV 315 MVA Durgapur ICT 1,2 & 3 Loading (04-10 Sept 2019)
Durgapur ICT 1
Durgapur ICT 2
Durgapur ICT 3
350
300
250
200
150
100
50
0
-50
-100
5 Sept 08:12
ICT 3 Swapped with ICT 2
Hot spot in 220 kV B phase jumper of ICT 2
7 Sept 12:10
ICT 2 Swapped with ICT 3
Internal Hot Spot
6 Sept 19:04
ICT 2 Swapped with ICT 3
One ckt of Waria -Bidhan Nagar open
10 Sept 18:51
Both ICT 2 & 3 in Parallel
4 Sept 13:35
Split Bus, ICT 3 Open
04-09-2019 00:00
04-09-2019 04:19
04-09-2019 08:38
04-09-2019 12:57
04-09-2019 17:16
04-09-2019 21:35
05-09-2019 01:54
05-09-2019 06:13
05-09-2019 10:32
05-09-2019 14:51
05-09-2019 19:10
05-09-2019 23:29
06-09-2019 03:48
06-09-2019 08:07
06-09-2019 12:26
06-09-2019 16:45
06-09-2019 21:04
07-09-2019 01:23
07-09-2019 05:42
07-09-2019 10:01
07-09-2019 14:20
07-09-2019 18:39
07-09-2019 22:58
08-09-2019 03:17
08-09-2019 07:36
08-09-2019 11:55
08-09-2019 16:14
08-09-2019 20:33
09-09-2019 00:52
09-09-2019 05:11
09-09-2019 09:30
09-09-2019 13:49
09-09-2019 18:08
09-09-2019 22:27
10-09-2019 02:46
10-09-2019 07:05
10-09-2019 11:24
10-09-2019 15:43
10-09-2019 20:02


400/220 kV 315 MVA Durgapur ICT 1,2 & 3 Loading (11-18 Sept 2019)
Durgapur ICT 1
Durgapur ICT 2
Durgapur ICT 3
250
200
150
100
50
0
-50
-100
-150
16 Sept 20:27 Hrs
400 kV Bus Split Closed as
Hotspot in 220 kV Bus 205 Bay
11-09-2019 13:20
11-09-2019 17:45
11-09-2019 22:10
12-09-2019 02:35
12-09-2019 07:00
12-09-2019 11:25
12-09-2019 15:50
12-09-2019 20:15
13-09-2019 00:40
13-09-2019 05:05
13-09-2019 09:30
13-09-2019 13:55
13-09-2019 18:20
13-09-2019 22:45
14-09-2019 03:10
14-09-2019 07:35
14-09-2019 12:00
14-09-2019 16:25
14-09-2019 20:50
15-09-2019 01:15
15-09-2019 05:40
15-09-2019 10:05
15-09-2019 14:30
15-09-2019 18:55
15-09-2019 23:20
16-09-2019 03:45
16-09-2019 08:10
16-09-2019 12:35
16-09-2019 17:00
16-09-2019 21:25
17-09-2019 01:50
17-09-2019 06:15
17-09-2019 10:40
17-09-2019 15:05
17-09-2019 19:30
17-09-2019 23:55
18-09-2019 04:20
18-09-2019 08:45
18-09-2019 13:10


220 kV Power Flow (04-10 Sept 2019)
220 kV Durgapur-Parulia 1
220 kV Durgapur-Parulia 2
220 kV Waria(DTPS)-Bidhan Nagar 1
220 kV Waria(DTPS)-Bidhan Nagar 2
300
250
200
150
100
50
0
-50
-100
7 Sept 20:36
Ckt 1 of 220 kV Waria-Bidhananar
Opened to COntrol Loading
6 Sept 19:40
Ckt 2 of 220 kV Waria-Bidhananar
Opened to COntrol Loading
04-09-2019 00:00
04-09-2019 04:15
04-09-2019 08:30
04-09-2019 12:45
04-09-2019 17:00
04-09-2019 21:15
05-09-2019 01:30
05-09-2019 05:45
05-09-2019 10:00
05-09-2019 14:15
05-09-2019 18:30
05-09-2019 22:45
06-09-2019 03:00
06-09-2019 07:15
06-09-2019 11:30
06-09-2019 15:45
06-09-2019 20:00
07-09-2019 00:15
07-09-2019 04:30
07-09-2019 08:45
07-09-2019 13:00
07-09-2019 17:15
07-09-2019 21:30
08-09-2019 01:45
08-09-2019 06:00
08-09-2019 10:15
08-09-2019 14:30
08-09-2019 18:45
08-09-2019 23:00
09-09-2019 03:15
09-09-2019 07:30
09-09-2019 11:45
09-09-2019 16:00
09-09-2019 20:15
10-09-2019 00:30
10-09-2019 04:45
10-09-2019 09:00
10-09-2019 13:15
10-09-2019 17:30
10-09-2019 21:45

Annexure-B3

CIN: U31200DL2005SGC133875

Fax: +91-11-46529744
Email: info@teestaurja.com

TEESTA URJA LIMITED

(A Government of Sikkim Enterprise)

TUL/PS&R/0001/2019-20/001 Dated 21st August 2019

The Member Secretary
Eastern Regional Power Committee
14, Golf Club Road, Tollygunge, Kolkata -700 033

Sub: 1200 MW Teesta III HE Project, Sikkim – **Evacuation arrangement reg.**

Dear Sir,

We would like to draw your kind attention to the evacuation constraints being witnessed by the hydro generating stations in Sikkim leading to water spillage in the event of shut down of Teesta III - Kishanganj Section and Dikchu - Kishanganj Section of 400 kV D/C Teesta III – Kishanganj Line.

2. At present, during such shutdown, the load in each circuit of 400 kV D/C Rangpo – Binaguri Line is restricted to 850 MW. This capacity of twin moose conductor has been arrived, considering ambient temperature of 45 deg C and maximum conductor temperature to 75 deg C. However, during most of the time, ambient temperature remains below 40 deg C. Further, these lines are designed considering conductor temperature of 85 deg C.

3. In order to minimize loss of hydro generation, during such emergent conditions, it is desired to evacuate maximum possible power through the existing circuits of 400 kV D/C Rangpo – Binaguri Line to avoid spillage of water.

4. Accordingly, as an emergent measure, duly considering the line conditions and existing ambient temperatures, Eastern Regional Load Despatch Centre (ERLDC), in consultation with Powergrid Corporation of India Ltd (PGCIL), may allow evacuation of power up to 1100 MW per circuit from 400 kV D/C Rangpo – Binaguri Line. Similarly, power up to 2200 MW may be considered for evacuation on each circuit i.e. Teesta III - Kishanganj and Dikchu - Kishanganj Sections, in the event of tripping/ constraints on 400 kV D/C Rangpo – Binaguri Line.

5. In view of the foregoing, the proposal is submitted for kind consideration with a request to convene a meeting between ERPC, PGCIL, ERLDC, TPTL and the concerned generators to discuss the procedure for increasing the ampacity of 400 kV D/C Rangpo – Binaguri Line and Teesta III - Kishanganj and Dikchu - Kishanganj Sections of 400 kV D/C Teesta III – Kishanganj Line to the maximum as an emergent measure on case to case basis considering the ambient temperature.

Yours sincerely
For **Teesta Urja Ltd.**

(Yogendra Kumar)
President (O&M)

Copy to:

1. **The Chairman, Central Electricity Authority,** Sewa Bhawan, R K Puram, Sector-I, New Delhi-110066
2. **The Chief Engineer, Power System (Power System Engg & Tech Dev.),** Sewa Bhawan, R K Puram, Sector-I, New Delhi-110066
3. **The Executive Director, ER II, Powergrid Corporation of India Ltd.,** Action Area 1C, New Town, Kolkata - 700156
4. **The Executive Director, Eastern Regional Load Despatch Centre,** 14, Golf Club Road, Tollygunge, Kolkata -700 033

Item No. B.3: Implementation of 400 kV Rangpo-Binaguri SPS Scheme for Contingent Measures

- 400 kV Rangpo-Kishanganj and 400 kV Teesta3-Kishanganj circuit from TVTPL have shown poor availability.
- Due to these 400 kV Rangpo-Bingauri D/C are being used for evacuation of Sikkim Hydro complex.
- Old SPS as well as Interim SPS were disabled at Rangpo when all 4 ckts were available.
- **Old SPS Revived on Rangpo-Binaguri D/C with modification for outage of Quad Moose lines; tested and implemented on 19-08-19.**
- **Will be enabled only in case of outage of Quad Moose lines.**

Contd…

- **Generation after outage of Quad Moose lines to be maintained:**
  - Jorethang, Tashiding, Dikchu have NOC of the order of 67 MW each and Chuzachen of the order of 76 MW.
    - Maintain 50 MW in one unit and the balance in the other unit.
    - Unit with higher generation to be tripped on receipt of SPS signal
  - Teesta-III would maintain 2 units with 261 MW generation on one 400 kV bus to which Dikchu line would also remain connected & 3 units with 652 MW generation on another bus.

Contd…

- **SPS-1 Condition:** Operate only if one ckt of 400 kV Rangpo – Binaguri line trips and power flow through the remaining circuit exceeds 850 MW.
- **Action :**
  - One unit each at Dikchu, Jorethang, Chuzachen, Tashiding having higher generation will be tripped.
  - 2 Units of Teesta-III with reduced generation to remain connected to Dikchu line and rest units to be tripped.
  - Flow through the healthy circuit of Rangpo-Binaguri should remain within **850 MW.**
- **SPS-2 Condition:** Operates if the flow on healthy Rangpo-Binaguri circuit is more than 920 MW even after 700 ms of SPS-1 operation.
- **Action:** Automatic tripping of 400 kV Rangpo-Dikchu line at Rangpo, resulting in isolation of Teesta-3 and Dikchu.

Annexure-B4

Force Majeure Events at DMTCL

Presentation 161st OCC meeting

September 20, 2019
Barh Thermal Power Station

sekura
Safe. Secure. Sustainable

DMTCL introduction

- 2 x 400kV substations
  - 400/220kV GIS substation at Darbanga
  - 400/132kV GIS substation at Motihari
- 2 x 400kV transmission lines
  - 400kV from Dharbanga SS to PGCIL Muzaffarpur substation – 67.5 kms
  - 400kV LILO from Barh – Motihari – Gorakpur (LILO at Motihari substation) - 75.8 kms

Recent Initiatives

- All towers (388) that formed a part of the project were inspected
- Foundations at potentially vulnerable locations were inspected with support from Tractebel and Tata Projects
- Based on advise received, protection works were carried out on the towers located mid-stream of River Gandhak, Areraj bank of River Gandak, Bhudi Gandak and Baghmati Rivers
- Notwithstanding floods in the region and high discharge following heavy rains in Nepal, all protection works carried out have protected the respective towers
- Based on review by experts, towers (26/0 and 27/0) that forms a part of the LILO and located ~ 70 – 115 meters from Gopalganj bank of River Gandhak were considered to be safe this monsoon season
- Two towers with 23 meter piles located mid-stream have already been converted into ~42 meter pile foundation since 2017 (one completed and second at advanced stage of completion)

Short-term pre-monsoon protection activities

- Gandak River Bank Protection for 26/2 & 27/2 locations - Sand bag protection with Bamboo piles was taken up as pre-monsoon preparation to prevent soil from getting washed away

Short-term pre-monsoon protection activities

- Gandak River Bank Protection for location 27/1

27/1 with tilted pile cap in mid stream without protection

Construction of temporary C shape bund in progress to reduce water flow to avoid further damage

Short-term pre-monsoon protection activities

- Bank protection on Bhudi Gandak River (tower location ~60 meters from the bank)

Short-term pre-monsoon protection activities

- Baghmati River Bank protection (8 – 117m away from the river bank)

Short-term pre-monsoon protection activities

- Pre-monsoon (July-19) pictures of Gopalganj end (26/0 and 27/0) **{FM area of impact}**

FM Incident (27/0 Motihari – Gorakhpur line)

- Towers located on the Gopalganj bank are extremely challenging to access during monsoon because of river current and flooding, and are monitored from a distance from the Areraj bank (opposite) and mid-stream pile foundation work location
- It is understood that post the first week of Aug., the river changed course from the central main stream to the Gopalganj side of the bank with very strong currents, and flooded the banks (villager's account in next slide)
- Within a span of 3-4 days, more than 60-70 meters of land was washed away leaving only 1 meter of land near the foot of the foundation
- Based on a safety assessment, the line was taken out of service (details in annexure I) with due intimation of the FM event to ERLDC (clips and photos in following slides)
- On Aug. 15th morning, tower 27/0 was observed to have collapsed, with material damage to one more tower behind it (the damaged tower is currently just 5 meters away from the bank and is also at risk)

Challenge in access during Monsoon

FM Incident (27/0 Motihari – Gorakhpur line)

- Video clips (14-15 Aug, 2019)

Tower 27/0 on 14-Aug-19

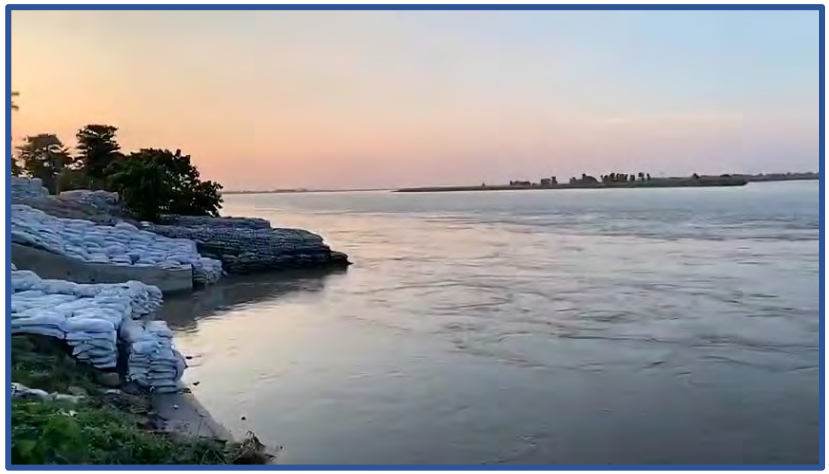
Interaction with villager on 14-Aug-19

Tower 27/0 on 15-Aug-19

FM Incident (26/0 Barh – Motihari line)

- Upon collapse of 27/0 of Motihari – Gorakhpur circuit, imminent threat to 26/0 was envisaged. Massive efforts were initiated for protection of river bank, when location was ~110 meters from bank, from Aug. 15th under challenging conditions
- Notwithstanding the best efforts, all measures initiated over the initial few days were getting washed away by strong currents and flooding of the banks
- Because situation was getting beyond our control, urgent help was sought from BSPTCL and the District Administration on Aug. 19th to support DMTCL in protecting the towers from the river
- With due support from BSPTCL, a massive protection operation was launched jointly by DMTCL, the District Administration, NDRF, Irrigation Department and the Gandhak River Authority involving hundreds of laborers, contractors who work with the government in the area, several boats and other resources w.e.f Aug. 21st
- Measures to control the river current and to divert flow suggested by the CE, Gandhak River Authority (bed bar arrangement) were implemented despite strong currents and challenging local conditions

Pictures of protection measures (bed bar, protection wall, etc.)



Typical Bed bar arrangement that was planned

24 August 2019

25 August 2019

Videos of protection measures (bed bar, protection wall, etc.)

30 August 2019

01 September 2019

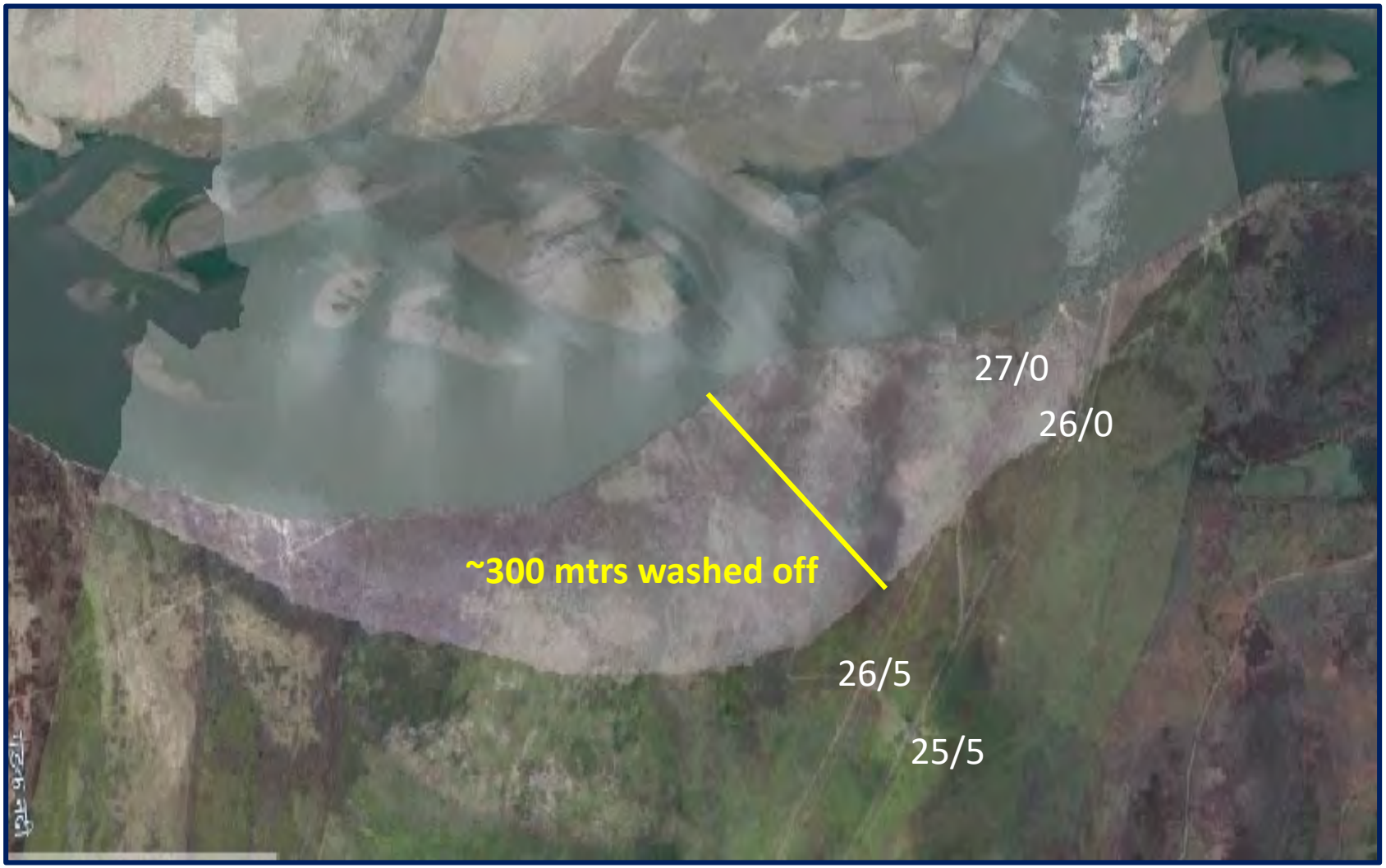
02 September 2019

04 September 2019

FM Incident (26/0 Barh – Motihari line)

- Given the FM event, and considering that foundations were flooded, the line was taken out of service for inspection and safety review a few times (details as per Annexure I) and taken back into service based on request from BSPTCL by keeping a close watch on the towers from a distance
- All efforts kept getting washed away and eventually following heavy rainfall in Nepal and high discharge (~ 80000 cu sec) on Sep 1st tower 26/0 collapsed on Sep. 4th

Monsoon (End Aug-19) Drone images of 26/0 and 27/0



Immediate mitigation

- Considering the need to restore some power supply to the region two agencies, Powerlink (ERS available at Muzaffarpur) and Supreme Engineering Ltd (who has provided ERS in 2017-18) were requested to provide solutions
- Both agencies visited the site and concluded that due to access limitation/constraints and water logging/flooding, installation of ERS is not feasible and neither safe based on prevailing conditions. This will be reviewed again after conditions stabilize
- Design of floating ERS solution was also deliberated and found to be technically not feasible
- As a temporary solution, the technical feasibility of maintaining a single circuit - single conductor solution is being assessed
- The temporary solution should enable 150-200MW power flow (is being attempted and if successful could be implemented in the next few days)

Restoration scheduled envisaged currently

Activity	Start Date	End Date	Days
Design for foundation including all studies	Initiated	30-Sep-19	-
Vendor for foundation work	Initiated	30-Sep-19	-
Mobilization	5-Oct-19	20-Oct-19	15
Foundation Work completion (Motihari- Gorakhpur)	20-Oct-19	18-Feb-20	121
Tower Erection	25-Feb-20	10-Apr-20	45
Foundation Work completion (Motihari- Barh)	25-Oct-19	22-Feb-20	120
Tower Erection	27-Feb-20	12-Apr-20	45
Stringing (Motihari- Gorakhpur)	13-Apr-20	13-May-20	30
Stringing* (Motihari- Barh)	15-May-20	14-Jun-20	30

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. * Stringing for this stretch will start post final stringing and commissioning of Motihari-Gorakhpur Lin*

For consideration

The OCC is requested to kindly note:

- Had the river not changed course and washed away the soil and foundations, the towers in subject would have remain operational
- Notwithstanding significant costs incurred by DMTCL and best efforts by DMTCL's team, District Administration including NDRF, Irrigation and Gandak River Authority, the towers could not be protected, giving a perspective on the situation which was beyond reasonable control
- Options of ERS implementation on ground and floating has been evaluated involving two agencies and not considered feasible
- A temporary evacuation arrangement has been developed in consultation with ex-PGCIL experts and is being implemented (Notwithstanding work on protection measures, two more towers including one used for temporary arrangement are currently at risk)
- DMTCL has already initiated additional assessments including drone based studies and finalizing the foundation design with vetting from IIT, etc.

Contd…

For consideration…

- DMTCL would like to ensure that solutions implemented are sustainable and accordingly while there could be a significant cost and time implications, suitable viable solutions
- DMTCL will also work with the District administration and seek help from the government in carrying out river training and bank protection measures including dredging
- Pending commissioning of one of the 400kV lines, Motihari Substation continues to remain 100% technically available
- Work on restoration can start only after water levels reduce in November assuming favourable and safe working conditions at banks as well as mid-stream as per past experience
- Unless emerging site conditions present unforeseen challenges or new findings, we propose to complete additional foundations and commission both lines as per the scheduled attached

Contd…

For consideration…

- Receipt of urgent relief under Force Majeure will help DMTCL in ensuring that debt service is not impacted, and not constrain incurring of expenses towards operations & maintenance of the asset and incurring costs towards strengthening and restoration

Approval sought

- **We request the OCC to kindly:**

  - **Take note of the Force majeure events, efforts put in by DMTCL in trying to protect the towers from the Force Majeure event, temporary restoration measures taken-up in the absence of feasibility of ERS installation owing to site conditions, the impact of downtime of debt servicing, O&M and restoration costs**

  - ***Grant relief under Force Majeure for the 400kV Barh – Motihari – Gorakpur LILO line***

Annexure I – Outage owing to FM event

1) For Tower no. 27/0 of 400kV Gorakhpur- Motihari Line

- 400kV Gorakhpur – Motihari Ckt 1 was taken out of service on 13th August 2019 at 22:04 hrs.
- 400kV Gorakhpur – Motihari Ckt 2 was taken out of service on 13th August 2019 at 22:05 hrs.

Further, both the above circuits are out of service since the above mentioned timings as tower no. 27/0 collapsed on 15th August 2019

2) For Tower no. 26/0 of 400kV Barh- Motihari Line

List of FM outages for precautionary shutdowns

400 kV D/C Barh-Motihari Ckt. 1					400 kV D/C Barh-Motihari Ckt. 2				
Service-out		Service-in		**Total Outage**	Service-out		Service-in		**Total Outage Hrs.**
Date	Time	Date	Time		Date	Time	Date	Time	
25.08.2019	10:34	25.08.2019	13:27	**02:53**	25.08.2019	10:37	25.08.2019	13:39	**02:52**
25.08.2019	23:26	26.08.2019	15:47	**16:21**	25.08.2019	23:28	26.08.2019	15:49	**16:21**
26.08.2019	23:07	27.08.2019	10:21	**11:14**	26.08.2019	23:08	27.08.2019	10.35	**11:27**
				30:28					**30:40**

Further, while both the above circuits were in service , on 4th September 2019 at 04:36 hrs. tower no. **26/0** collapsed and since then both the circuits are out of service under FM condition

Annexure-B7

Telex : 0264202 POWER IN
Fax : 03592 222927

Phones : 202244
PBX : 222908
222916
222028

GOVERNMENT OF SIKKIM
ENERGY AND POWER DEPARTMENT

No. 30/GOS/E&P/TRD/2018-19/9 Dated 6/9/2019.

PD & back
11/9/19
SE (Hydro) Pl. discuss.
14/9/19
G. Rao (EE)
14/9/19

To,
The Member Secretary
Eastern Region Power Committee (ERPC) Secretariat
14 Golf Club Road, Tollygunge,
Kolkata, 700033, West Bengal

Kind attention of Shri J. Bandyopadhya

SUB : **Cancellation/Termination of Power purchase Agreements with NTPC & its subsidiaries**

Sir,

As a continuation to the issue raised by Energy & Power Department, GOS on the above subject at the 41st TCC/ERPC meeting held at Kochi on 26th & 27th of August 2019, the photocopy of the correspondence made by the State Government to the Ministry of Power, GOI and NTPC are being forwarded to your office so that the matter could also be pursued by the Regional Power Committee to enable Sikkim to terminate/Cancel the Power Purchase Agreements whose details are as under :-

1. For the following power projects MOP, GOI has directed Sikkim to surrender the allocation and will allocate the same to other beneficiaries as and when their requisition is received
   a. Kantee Bijlee Utpadan Nigam STPP b. Nabinagar STPP c. Daripalli-I STPP
   d. BAHR-I STPP e. North Karanpura STPP
   (Total allocation is 73.76 MW)

2. For the following thermal power projects NTPC has agreed to take fresh consent from Sikkim

Telex : 0264202 POWER IN
Fax : 03592 222927

Phones : 202
PBX : 222
222
222

GOVERNMENT OF SIKKIM
ENERGY AND POWER DEPARTMENT

No. ..... Dated .....20..

a. Daripalli-II STPP, b. Gajmara-I STPP, c. Gajmara-II STPP & d. Katwa STPP e. Talcher STPP

As seen in the past, chances of reallocation to other beneficiaries is very slim and till such times, the State has to bear the fixed cost which shall be in excess of Rs 100 Crores annually. Sikkim as of now is power exporting State with no additional thermal power requirement. Also, the State having limited financial resources, the burden of annual out flow of Rs 100 Crores or more cannot be borne by the State.

In circumstances as these, It is requested once again that the matter may be taken by the committee so that all above Power Purchase Agreements are terminated/cancelled immediately without any financial implication to the State.

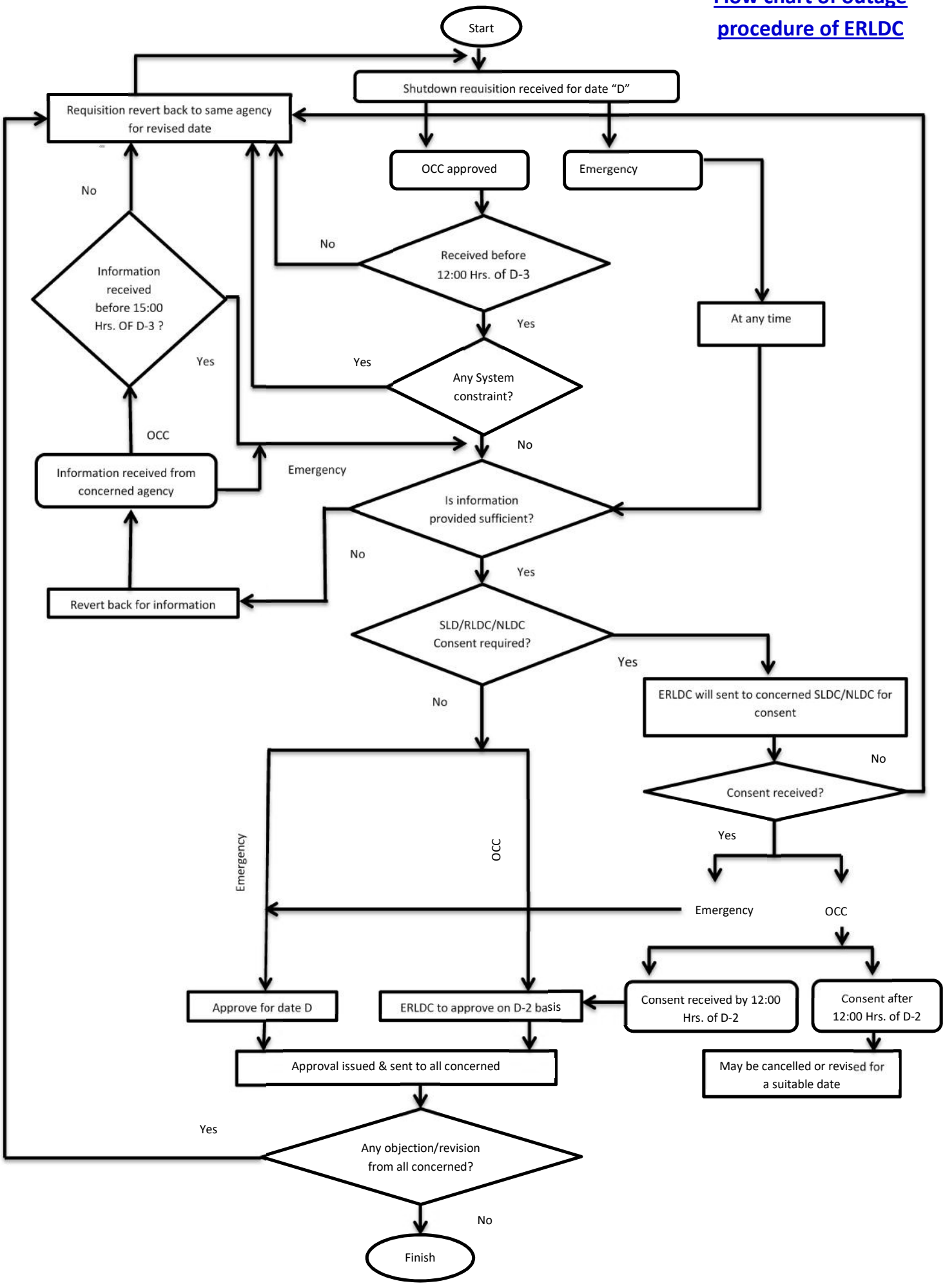
Yours Faithfully

(P.M.Sharma)
Chief Engineer (L/R)
Energy & Power Department

Encl : Photocopy of Correspondence

Annexure-B22

Flow chart of outage procedure of ERLDC



ERLDC Shutdown approval process flow and time line-reg.

With the ever increase in transmission elements, the Grid is getting more secure and reliable. Still, outage of one element may affect severely to adjacent control area depending on system condition that area. Hence, planning and co-ordination between different control areas is absolute necessary. It has been seen that, due to lack of mutual consent/communication between two control area/license, outage of transmission elements are getting delayed or denied due to which monetary loss occurred as well as condition of that particular element worsen. ERLDC wants to draw the attention on the following points which are seen in Eastern constituents/license.

1. There is a shortage of designated outage coordinators in ER constituents /license. Sometimes proper communication is not possible with them.
2. E-mails are not reaching to them in time which is sent from ERLDC (particularly in GRIDCO case). Most of the time mails are seen when ERLDC inform them verbally.
3. It also leads to delayed consent thereby delaying the shutdown.
4. There is no substitute for the absence of outage co-ordination. Sometimes SLDC control room person are coordinating shutdown which is not a good practice. Progress tracking of any outage will be lost once shift change occurred.
5. Planned outages are being sent on holidays also which is very difficult to process.
6. We have seen that, in absence of competent authority (SLDC Hawarh and SLDC Patna for example), OCC approved shutdowns are also get cancelled.

To tackle all the above following suggestions may be considered:

1. Every Transmission license, generators and SLDCs must have dedicated outage co-coordinators and the contact information of all such co-coordinators shall be shared with all.
2. In absence of the designated outage co-coordinator, suitable substitute should be provided and the same shall be intimated to all.
3. All the indenting agencies are requested to communicate with their counterpart outage co-coordinator for smooth and speedy consent if it require.
4. Getting consent timely is very important. All the agencies, whose consent is required for a particular outage, are requested to adhere the time line given by ERLDC fails to which the outage will be cancelled or delayed accordingly.
5. All the agencies are requested to submit holiday list in their control area or any other contingencies well in advance to all.
6. All the agencies must provide their official as well as personal E-mail of their outage coordinators to ERLDC and ensure that checking of the both email are being done simultaneously.

SCADA Item No. 1: Prolonged outage of SCADA data of 400 KV Sagardighi Generating Station at ERLDC

400kV Sagardighi Generating station is not reporting to WB SLDC and hence real time SCADA data is not available at ERLDC as well since **12/08/19.** The matter has been raised on several occasions and letters have been sent to WBSETCL on several times. Non availability of real time SCADA from such an important generating station is adversely affecting real time and post-dispatch grid operation.WBSETCL must take necessary action towards restoration of Sagardighi data telemetry expeditiously.

WBSETCL may update.

SCADA Item no. 2: Update on status of telemetry

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

Major issues are given below:

1. Prolonged outage of Talcher HVDC
2. Unavailability of 34 nos of PMU data in URTDSM project.
3. Regarding frequent intermittentcy of real time SCADA data from Talcher STPS Stage 1 & 2, NTPC agreed to provide additional ports by March 2019.

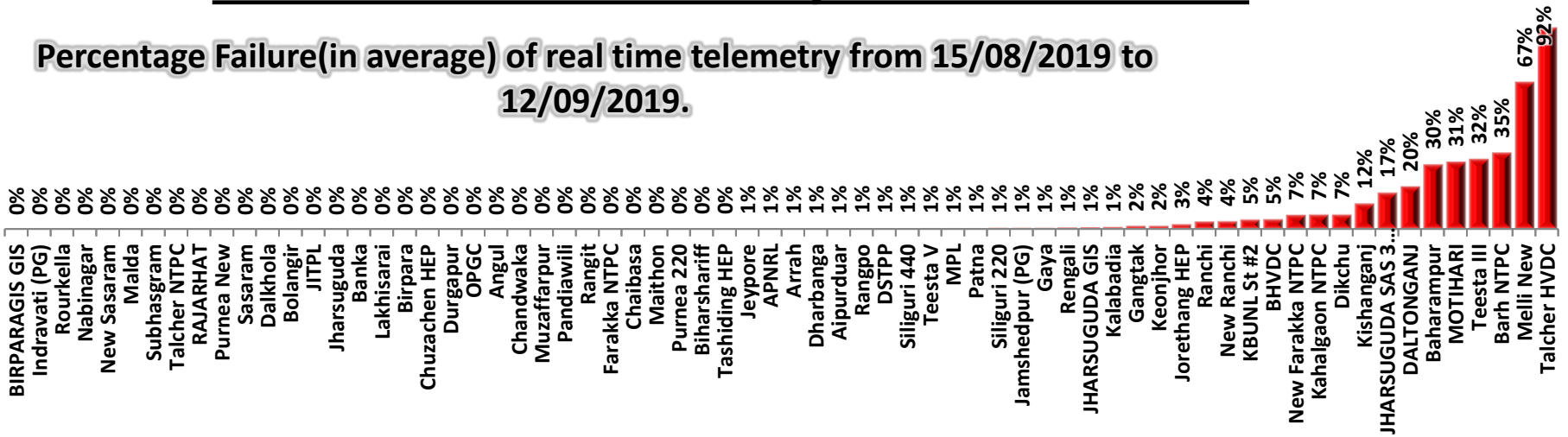
Brief presentation on SCADA and URTDSM data availability is attached in annexure – I

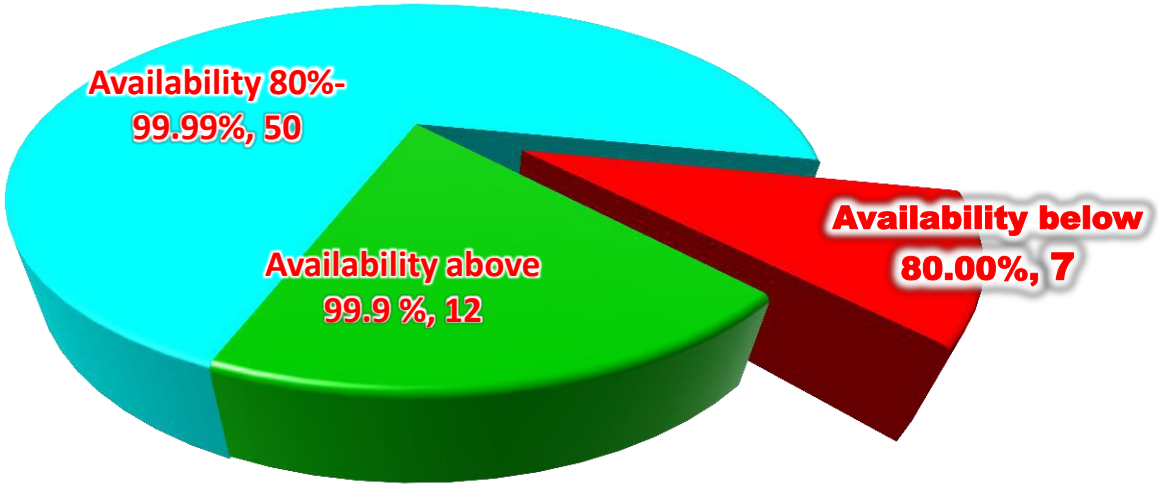
Members may update

Annexure-1

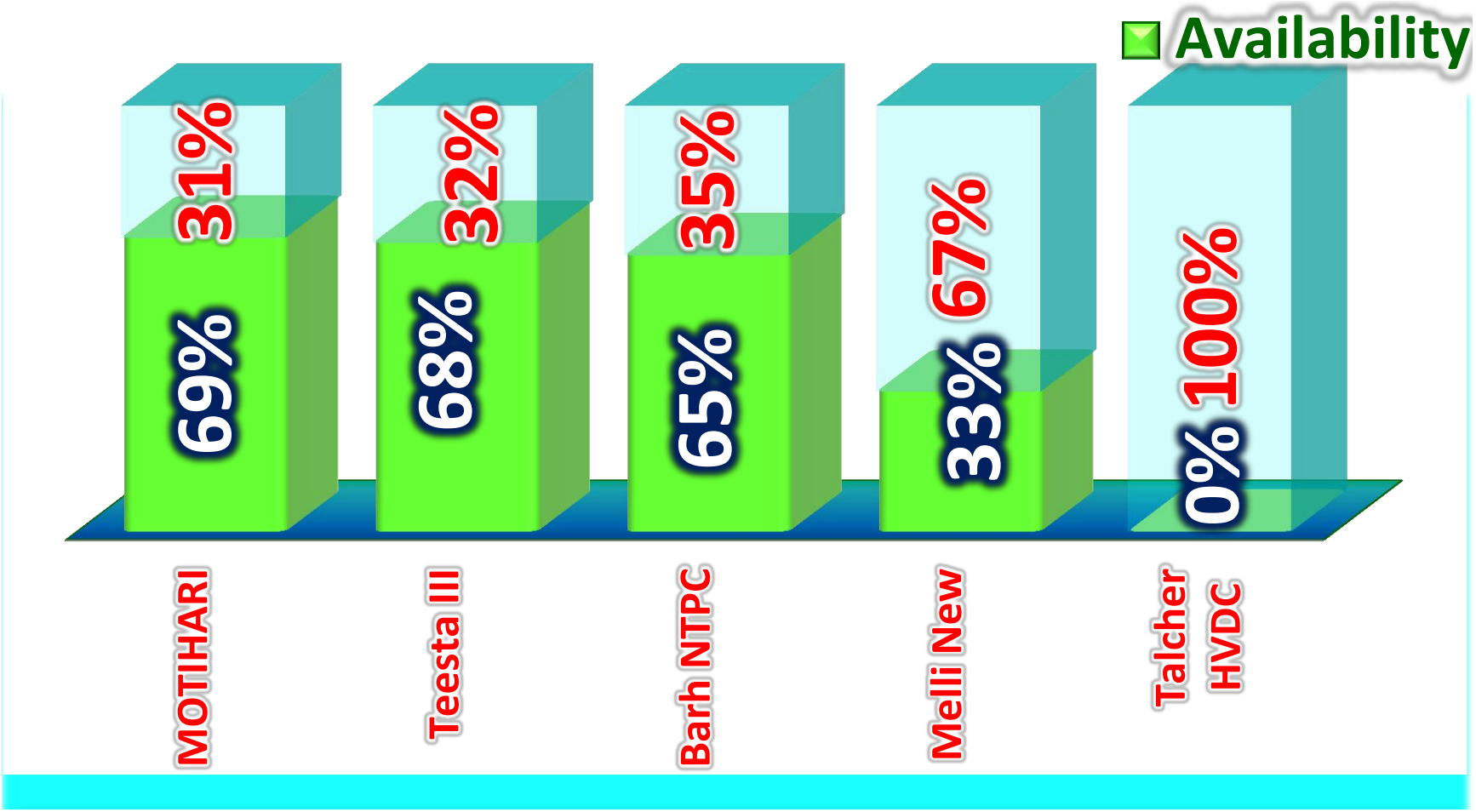
SCADA data availability:-Central Sector

Percentage Failure(in average) of real time telemetry from 15/08/2019 to 12/09/2019.





Major Concerns



Prolonged Outage of Data Telemetry

- Real time SCADA data of 400kV **Sagardighi** Generating station is not reporting to ERLDC since **12/08/19.**

- Real time SCADA data of 400kV **Talcher HVDC** is not reporting to ERLDC since **19/08/19**.

URTDSM Telemetry Summery

– Central Sector:

Prolonged outage of 12 Nos of PMUs.

- Chandwa(2 Nos)
- Maithon (3 Nos)
- Malda (2 Nos)
- Talcher STPS (5 Nos)

Integration of 15 PMUs are pending :

- Kahalgaon STPS (5 Nos),
- Sterlite (3 Nos),
- Patratu TPS (3 Nos),
- Tenughat TPS (2 Nos),
- JITPL (2 Nos).

URTDSM Telemetry Summery

-**State Sector**:

 # Prolonged outage of 07 Nos of PMUs

- Bakreswar (WB) – 4 Nos PMU
- Mejia B (DV) – 2 Nos PMU
- Koderma TPS(DV) – 1 Nos PMU

Non availability of SCADA data above 220 kV Level

WBSETCL

- Following 220 kV station data not available:

  - TLDP 4 220kV : Communication link failure.
  - Dharampur 220kV : Communication link issue.
  - Egra 220 : Communication link issue.
  - Bantala 220kV : Communication link issue.
  - Alipurduar 220kV: Communication link yet to be established (February 2018).
  - Rishra 220kV

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

- **BIHAR**
  - Barauni TPS 220kV
  - Motipur 220 KV
- **Odisha**
  - Narsingpur 220kV.
  - Nalco 220kV : Most of CB and Isolator data are not available
  - Jindal Steel and Power Limited (JSPL) 400kV: Most of CB and Isolator data are not available
- **JHARKHAND**
  - Hatia New 220.
  - Jamtara 132kV
  - Garwa 132kV
  - Deoghar 132kV
  - Kendposi 132 kV

Annexure-D.1

Anticipated Power Supply Position for the month of
Oct-19

SL.NO		PARTICULARS	PEAK DEMAND MW	ENERGY MU
1		**BIHAR**		
	i)	NET MAX DEMAND	5500	2850
	ii)	NET POWER AVAILABILITY- Own Source (including bilateral)	700	348
		- Central Sector	4600	2485
	iii)	SURPLUS(+)/DEFICIT(-)	-200	-16
2		**JHARKHAND**		
	i)	NET MAX DEMAND	1360	810
	ii)	NET POWER AVAILABILITY- Own Source (including bilateral)	386	179
		- Central Sector	969	552
	iii)	SURPLUS(+)/DEFICIT(-)	-5	-79
3		**DVC**		
	i)	NET MAX DEMAND (OWN)	2900	1875
	ii)	NET POWER AVAILABILITY- Own Source	5544	3071
		- Central Sector	529	301
		Long term Bi-lateral (Export)	1241	923
	iii)	SURPLUS(+)/DEFICIT(-)	1932	574
4		**ODISHA**		
	i)	NET MAX DEMAND	4400	3285
	ii)	NET POWER AVAILABILITY- Own Source	3736	1834
		- Central Sector	1683	908
	iii)	SURPLUS(+)/DEFICIT(-)	1018	-544
5		**WEST BENGAL**		
5.1		**WBSEDCL**		
	i)	NET MAX DEMAND (OWN)	7080	3481
	ii)	CESC's DRAWAL	83	62
	iii)	TOTAL WBSEDCL's DEMAND	7163	3543
	iv)	NET POWER AVAILABILITY- Own Source	4679	2031
		- Import from DPL	420	0
		- Central Sector	2619	1594
	v)	SURPLUS(+)/DEFICIT(-)	555	82
	vi)	EXPORT (TO B'DESH & SIKKIM)	110	-49
5.2		**DPL**		
	i)	NET MAX DEMAND	0	200
	ii)	NET POWER AVAILABILITY	420	225
	iii)	SURPLUS(+)/DEFICIT(-)	420	25
5.3		**CESC**		
	i)	NET MAX DEMAND	2100	985
	ii)	NET POWER AVAILABILITY - OWN SOURCE	680	499
		FROM HEL	440	368
		Import Requirement	980	118
	iii)	TOTAL AVAILABILITY	2100	985
	iv)	SURPLUS(+)/DEFICIT(-)	0	0
6		**WEST BENGAL (WBSEDCL+DPL+CESC)** **(excluding DVC's supply to WBSEDCL's command area)**		
	i)	NET MAX DEMAND	9180	4666
	ii)	NET POWER AVAILABILITY- Own Source	5779	2755
		- Central Sector+Others	4039	1962
	iii)	SURPLUS(+)/DEFICIT(-)	638	51
7		**SIKKIM**		
	i)	NET MAX DEMAND	105	48
	ii)	NET POWER AVAILABILITY- Own Source	8	3
		- Central Sector+Others	179	102
	iii)	SURPLUS(+)/DEFICIT(-)	82	57
8		**EASTERN REGION** **At 1.03 AS DIVERSITY FACTOR**		
	i)	**NET MAX DEMAND**	22762	13534
		Long term Bi-lateral by DVC	1241	923
		EXPORT BY WBSEDCL	110	-49
	ii)	**NET TOTAL POWER AVAILABILITY OF ER (INCLUDING C/S ALLOCATION)**	28151	14501
	iii)	**PEAK SURPLUS(+)/DEFICIT(-) OF ER (ii)-(i)**	4038	92

Annexure-D2

ERLDC, KOLKATA

TRANSMISSION ELEMENTS OUTAGE APPROVED IN 161th OCC MEETING OF ERPC

		FROM		TO					
Sl	**NAME OF THE ELEMENTS**	**DATE**	**TIME**	**DATE**	**TIME**	**REMARKS**	**S.D availed BY**	**Reason**	**SUBJECT TO CONSENT FROM AGENCY**
1	A/R of 400 kV Barh- Motihari-2	01/10/19	7:00	31/10/19	19:00	ODB	POWERGRID ER-1	OPGW Installation under LIVELINE Condition.	since line is already under shutdown ER-I is requested to start the activity at the earliest
2	A/R of 400 kV Motihari- Gorakhpur -2	01/10/19	7:00	31/10/19	19:00	ODB	POWERGRID ER-1	OPGW Installation under LIVELINE Condition.	since line is already under shutdown ER-I is requested to start the activity at the earliest
3	400 KV PATNA - BALIA-4	03/10/19	9:30	03/10/19	18:00	ODB	POWERGRID NR-3	FOR THE AMP OF THE LINE REACTOR AT BALLIA SUBSTATION	
4	315MVA ICT-I	05/10/19	8:00	28/10/19	18:00	ODB	ER-II/Odisha/BARIPADA S/S	OC, EF, Overflux & REF Relay retrofitting	GRIDCO
5	160 MVA ICT-I	07/10/19	8:00	28/10/19	18:00	ODB	ER-II/Odisha/BARIPADA S/S	OC, EF, Overflux & REF Relay retrofitting	GRIDCO
6	400 KV Binaguri-Tala- CKT -III	09/10/19	10:00	09/10/19	17:00	ODB	ER-II/POWERGRID	Defect Compliance of cross patrolling by CC-AM	NLDC
7	220KV BUS-1 at Rangpo	09/10/19	8:00	11/10/19	17:00	OCB	ER-II/POWERGRID	For rectification of SF6 gas leakage repair work(both Shutdown needed on same dates) &liquidation of Line defeats	
8	220KV Rangpo NEW MELLI line	09/10/19	8:00	15/10/19	17:00	OCB	ER-II/POWERGRID	For rectification of SF6 gas leakage repair work(both Shutdown needed on same dates) &liquidation of Line defeats	
9	400 KV Main Bus -I at Subhasgram SS	09/10/19	9:00	09/10/19	17:00	ODB	ER-II/POWERGRID/SUBHASGRAM	AMP of 400 KV Main Bus -I at Subhasgram SS	WB
10	220KV BUS-II AT NEW PURNEA	09/10/19	9:30	09/10/19	18:00	ODB	POWERGRID ER-1	220KV BUS-II, AMP & BUS ISOLATOR WORK OF PRN CKT-I	BSEB
11	422 MAIN BAY BALLIA 4 AT PATNA	09/10/19	10:00	09/10/19	17:30	ODB	POWERGRID ER-1	AMP WORK	
12	417 TIE BAY BALLIA 2 & BARH 2 AT PATNA	09/10/19	9:30	12/10/19	17:30	OCB	POWERGRID ER-1	CB OVERHAULING & BCU UPDRATION WORKS UNDER SS03 PACKAGE	
13	220 KV OPTCL # 2 Main Bay (Bay No-207)	09/10/19	8:00	09/10/19	17:00	ODB	ER-II/Odisha/Rengali	MOM Box Retrofitting	
14	400kV Jeypore-Gazuwaka-II Line	09/10/19	08:00:00	10/10/19	18:00:00	ODB	ER-II/Odisha /Jeypore	Replacement of porcelain insulator with polymer insulator	NLDC
15	400KV GIS Main Bay-436 & Tie Bay-437 of ICT-3 at Sundergarh	09/10/19	9:00	09/10/19	18:00	ODB	ER-II/Odisha/Sundergarh	For 765kV ICT3 construction works.	
16	765KV Sundargarh-Angul Ckt #4 with LR at Sundergarh	09/10/19	9:00	09/10/19	17:00	ODB	ER-II/Odisha/Sundergarh	To take B ph Reactor in to service and keep out of serive SPARE Reactor+BPI Erection at T point + TL maint. Work	NLDC
17	400 KV PATNA - BALIA-1	10/10/19	9:30	10/10/19	18:00	ODB	POWERGRID NR-3	FOR DGA SAMPLING OF BHEL MAKE HV BUSHINGS OF LINE REACTOR AT BALLIA S/S	
18	400 KV Binaguri-Tala- CKT -IV	10/10/19	8:00	10/10/19	17:00	ODB	ER-II/POWERGRID	Defect Compliance of cross patrolling by CC-AM	NLDC
19	400kV Sagardighi-Durgapur-2	10/10/19	9:00	10/10/19	18:00	ODB	ER-II/POWERGRID	Line Maint Activity	WB
20	400 KV Binaguri-Tala- CKT -IV	10/10/19	8:00	10/10/19	17:00	ODB	ER-II/POWERGRID	Defect Compliance of cross patrolling by CC-AM	NLDC
21	220 KV Birpara-Siliguri Ckt-I	10/10/19	8:00	10/10/19	17:30	ODB	ER-II/POWERGRID	Retrofitting of Numerical Distance Relay, Rectification of displaced VD and Loose A/H, and Jumper tightning, damage conductor repair	
22	400 KV BUS-I of NTPC Farakka	10/10/19	9:00	10/10/19	18:00	ODB	ER-II/POWERGRID	For connecting BUS isolator of bay no-22 to BUS-I and Bus stability test of Bay-22 (Main Bay of Kahalgaon ckt-1). After augmentation of BUS Isolator from 2000A to 3150 A rating under ERSS-XV projects.	FSTPP

23	400 kV Bus-IV at Maithon SS	10/10/19	10:00	10/10/19	17:30	ODB	ER-II/POWERGRID	Dismantling of Bus isolator Jumpers of bay no-409 for Upgradation of bay equipment under ERSS-XVII project work.	
24	400 KV Main Bus -II at Subhasgram SS	10/10/19	9:00	10/10/19	17:00	ODB	ER-II/POWERGRID/SUBHASGRAM	AMP of 400 KV Main Bus -II at Subhasgram SS	WB
25	765/400 KV 1500MVA ICT-II AT GAYA S/S	10/10/19	9:00	10/10/19	18:00	ODB	POWERGRID ER-1	FOR INSTALLATION & COMMISSIONING OF BACKUP IMPEDANCE RELAY FOR SYSTEM UPGRADATION	NLDC
26	220KV BUS COUPLER BAY (204-52) AT NEW PURNEA	10/10/19	9:30	10/10/19	18:00	OCB	POWERGRID ER-1	ISOLATORS (205-89B) AT BUS-2 SIDE WILL BE REPLACED	BSEB
27	220 KV NEW PURNEA BEGUSARAI #1	10/10/19	8:00	10/10/19	18:00	ODB	POWERGRID ER-1	Line Crossing for New Conductor in Purnea-Purnea-1 line	BSEB
28	220 KV NEW PURNEA BEGUSARAI # 2	10/10/19	8:00	10/10/19	18:00	ODB	POWERGRID ER-1	Line Crossing for New Conductor in Purnea-Purnea-1 line	BSEB
29	400 KV PUSAULI -BIHARSHARIF LINE-2	10/10/19	9:00	15/10/19	19:00	ODB	POWERGRID ER-1	REPLACEMENT OF INSULATORS AT ROAD/RAIL/RIVER/POWER LINE CROSSINGS AND RELAY RETROFITTING	
30	800 KV HVDC BNC AGRA POLE II	10/10/19	10:00	10/10/19	15:00	ODB	POWERGRID ER-1	FOR ATTENDING THE BROKEN JUMPER PAD AT TOWER LOC.2432	NLDC
31	423 BAY TIE BAY OF BARH 4 AND BALLIA 4 AT PATNA	10/10/19	13:00	10/10/19	17:30	ODB	POWERGRID ER-1	AMP WORK	
32	413 MAIN BAY BALLIA 1 AT PATNA	10/10/19	9:30	12/10/19	17:30	OCB	POWERGRID ER-1	CB OVERHAULING & BCU UPDRATION WORKS UNDER SS03 PACKAGE	
33	125 MVAR BUS REACTOR-1 AT PATNA	10/10/19	9:30	10/10/19	17:30	OCB	POWERGRID ER-1	AMP WORK	
34	400KV BARH PATNA CKT 1	10/10/19	9:00:00 AM	11/10/19	########	ODB	POWERGRID ER-1	INSULATOR REPLACEMENT	
35	765 KV MAIN BAY OF 1500MVA ICT-1 (BAY 703) AT NEW RANCHI	10/10/19	9:00	10/10/19	17:00	ODB	POWERGRID ER-1	AMP WORK	NLDC
36	132 KV MAIN BUS AT LAKHISARAI	10/10/19	9:30	11/10/19	17:30	ODB	POWERGRID ER-I	CONSTRUCTION WORKS OF ICT-3 .ENTIRE POWER IN 132 KV LKR & JAMUI LINES WILL BE ZERO.	BSEB
37	220 KV OPTCL # 1 Main Bay (Bay No-208)	10/10/19	8:00	10/10/19	17:00	ODB	ER-II/Odisha/Rengali	MOM Box Retrofitting	
38	400 kV 410 main Bay of Baripada-Pandiabili line	10/10/19	9:00	11/10/19	17:30	ODB	ER-II/Odisha/BARIPADA S/S	Gasket replacement	
39	765KV Sundargarh-Angul Ckt #3 with LR at Sundergarh	10/10/19	9:00	10/10/19	17:00	ODB	ER-II/Odisha/Sundergarh	BPI Erection at T point + TL Maint work	NLDC
40	765kV darlipalli Ckt 1	10/10/19	9:00	10/10/19	18:00	ODB	ER-II/Odisha/Sundergarh	Quad to twin modification of jumper works and BPI erection works	NLDC
41	400KV Sundergarh-Rourkela Ckt #1	10/10/19	8:00	10/10/19	18:00	ODB	ER-II/ODISHA/SUNDERGARH	TL Maintenance works	
42	400 kv Mendhasal -Pandiabili ckt-2 at Mendhasal sub-station.	10/10/19	9:00:00	10/10/19	18:00:00	ODB	ER-II/Odisha/ Pandiabili GIS	Servecing of line isolator at Mendhasal.	GRIDCO
43	ICT-II Main Bay(404)	10/10/19	9:00	10/10/19	18:00	ODB	ER-II/ODISHA/Keonjhar	AMP work	
44	400 KV MALDA-FARAKKA CKT-II(A/R SWITCH)	10/10/19	9:00	10/10/19	18:00	ODB	ER-II/POWERGRID	OPGW STRINGING WORK	
45	400 KV Binaguri Bongaigaon Ckt I	11/10/19	6:00	12/10/19	18:00	ODB	ER-II/POWERGRID/ALIPURDUAR	Conductor reparing work, against theft by Miscreants.	NLDC
46	50 MVA ICT-I 132/66 KV at Gangtok	11/10/19	9:00	11/10/19	18:00	ODB	ER-II/POWERGRID	For AnnualAMp Works	Sikkim
47	400KV Maithon-Right Bank #I	11/10/19	8:00	25/10/19	18:00	OCB	ER-II/POWERGRID	Re conductoring work	MPL
48	400KV Maithon-Kahalgaon I&II	11/10/19	8:00	12/10/19	18:/00	OCB	ER-II/POWERGRID	PL Crossing during Re-conductoring work of Maithon - Right Bank Line	
49	220 KV Main Bus-I at Subhasgram SS	11/10/19	9:00	11/10/19	17:00	ODB	ER-II/POWERGRID/SUBHASGRAM	AMP of 220 KV Main Bus-I at Subhasgram SS	WB
50	132 KV Siliguri-NJP (Bay-102) at Siliguri	11/10/19	10:00	11/10/19	17:00	ODB	ER-II/POWERGRID/SILIGURI	Bay AMP work	WB
51	765/400 KV 1500MVA ICT-III AT GAYA S/S	11/10/19	9:00	11/10/19	18:00	ODB	POWERGRID ER-1	FOR INSTALLATION & COMMISSIONING OF BACKUP IMPEDANCE RELAY FOR SYSTEM UPGRADATION	NLDC

52	220KV BUS-I AT NEW PURNEA	11/10/19	9:30	11/10/19	18:00	ODB	POWERGRID ER-1	220KV BUS-I, AMP & BUS ISOLATOR WORK OF PRN CKT-I.	BSEB
53	400KV NORTH BUS-2 AT PUSAULI	11/10/19	9:00	11/10/19	18:00	ODB	POWERGRID ER-1	AMP WORK	NLDC
54	400 KV MAIN BUS-2 AT RANCHI	11/10/19	9:30	11/10/19	**17:00**	ODB	POWERGRID ER-1	FIXING OF STOOL IN YPH BUS-II CVT	JSEB
55	408 BAY(ICT-1 TIE BAY) AT DALTONGANJ	11/10/19	9:30	11/10/19	17:30	ODB	POWERGRID ER-1	BAY AMP	
56	800 KV HVDC BNC AGRA POLE I	11/10/19	10:00	11/10/19	15:00	ODB	POWERGRID ER-1	FOR ATTENDING THE BROKEN JUMPER PAD AT TOWER LOC.2432	NLDC
57	424 MAIN BAY BARH 4 AT PATNA	11/10/19	16:00	11/10/19	17:30	ODB	POWERGRID ER-1	CB DEW POINT MEASUREMENT	
58	400 KV Rengali - Talcher # 2 Line	11/10/19	8:00	20/10/19	17:00	ODB	ER-II/Odisha/Rengali	For PID Measurement (Line Auto-reclose switch is to be kept in Non-auto mode)	
59	ICT-I (3x 105 MVA) at Jeypore	11/10/19	10:00:00	11/10/19	12:00:00	ODB	ER-II/Odisha /Jeypore	For changing ICT-I combination form Unit-I,III, IV to Unit-I , II & IV for charging Unit-II	GRIDCO
60	765kV darlipalli Ckt 2	11/10/19	9:00	11/10/19	13:00	ODB	ER-II/Odisha/Sundergarh	Quad to twin modification of jumper works	NLDC
61	400KV Sundergarh-Rourkela Ckt #2	11/10/19	8:00	11/10/19	18:00	ODB	ER-II/ODISHA/SUNDERGARH	TL Maintenance works	
62	400 kv Bus-I at Mendhasal sub-station.	11/10/19	9:00:00	11/10/19	18:00:00	ODB	ER-II/Odisha/ Pandiabili GIS	Servecing of bus isolator at Mendhasal.	GRIDCO
63	ICT-I Main Bay(406)	11/10/19	9:00	11/10/19	18:00	ODB	ER-II/ODISHA/Keonjhar	AMP work	
64	160 MVA ICT-II	11/10/19	8:00	28/10/19	18:00	ODB	ER-II/Odisha/BARIPADA S/S	OC, EF, Overflux & REF Relay retrofitting	GRIDCO
65	220 KV Birpara-Siliguri Ckt-II	12/10/19	8:00	12/10/19	17:30	ODB	ER-II/POWERGRID	Retrofitting of Numerical Distance Relay, Rectification of displaced VD and Loose A/H, and Jumper tightning, damage conductor repair	
66	500 MVA ICT #1 at Maithan	12/10/19	8:00	12/10/19	18:00	ODB	ER-II/POWERGRID	1. AMP work 2. On load testing of CSD & Replacement of MOG under ERSS-IX project work.	DVC
67	132KV Main Bus at Malda	12/10/19	8:00	12/10/19	17:00	ODB	ER-II/POWERGRID	ERSS-XX Constructional work(Re-connection of Bus isolator Jumper)	WB
68	220 KV Main Bus-II at Subhasgram SS	12/10/19	9:00	12/10/19	17:00	ODB	ER-II/POWERGRID/SUBHASGRAM	AMP of 220 KV Main Bus-II at Subhasgram SS	WB
69	400KV JSR -BARIPADA LINE	12/10/19	9:30	12/10/19	17:30	ODB	POWERGRID ER-1	INSULATOR REPLACEMENT TO BE CARRIED OUT AT LOC NO 188 DAMGED BY MISCREANTS	
70	400 KV 125 MVAR BR-I AT GAYA SS	12/10/19	9:00	12/10/19	18:00	ODB	POWERGRID ER-1	FOR UPRATING OF CT WORK FOR 400 KV UNDER NABINAGR -2 PACKAGE	
71	400KV NEW PURNEA- MALDA-1	12/10/19	9:30	12/10/19	18:00	ODB	POWERGRID ER-1	FOR REPLACEMENT OF Y-PHASE CVT DUE TO SECONDARY VOLTAGE DRIFT.	
72	400KV RANCHI-RAGUNATHPUR LINE-2	12/10/19	10:00	12/10/19	17:00	ODB	POWERGRID ER-1	FOR AUTO RECLOSE RELAY TEST OF TIE BAY	DVC
73	201 BAY(ATR-1 HV SIDE BAY) AT DALTONGANJ	12/10/19	9:30	12/10/19	17:30	ODB	POWERGRID ER-1	BAY AMP	
74	205 BAY BUS COUPLER AT PATNA	12/10/19	9:30	12/10/19	17:30	OCB	POWERGRID ER-1	AMP WORK	
75	418 MAIN BAY BARH 1 AT PATNA	12/10/19	9:30	15/10/19	17:30	OCB	POWERGRID ER-1	CB OVERHAULING & BCU UPDRATION WORKS UNDER SS03 PACKAGE	
76	400KV RAGUNATHPUR -MAITHON-S/C	12/10/19	9:00	12/10/19	17:00	ODB	POWERGRID ER-1	CHANGING OF FLASHED PILOT STRING. AT LOC NO 86 DURING LIGHTENING	DVC
77	80 MVAR Bus Reactor at Duburi SS	12/10/19	9:00	12/10/19	17:30	ODB	ER-II/Odisha/BARIPADA S/S	AMP works	
78	315MVA ICT # II	12/10/19	09:00:00	12/10/19	18:00:00	ODB	ER-II/Odisha /Jeypore	AMP of ICT # II, 208 Bay CT and testing of Back up Impedance relay	GRIDCO
79	400kV GIS tie bay no. 434 & 435 of ICT4 & OPGC 1 at Sundargarh	12/10/19	9:00	12/10/19	17:00	ODB	ER-II/Odisha/Sundergarh	For 765kV ICT-$ construction works.	
80	400KV Sundergarh-Rourkela Ckt #4	12/10/19	8:00	12/10/19	18:00	ODB	ER-II/ODISHA/SUNDERGARH	TL Maintenance works	
81	400KV Balangir-Angul Line	12/10/19	08:00 Hrs	14/10/19	18:00 Hrs	ODB	ER-II/Odisha/Balangir	Replacement of defective insulator by Polymer long Rod Insulator	NLDC
82	400 kv Bus-II at Mendhsal sub-station.	12/10/19	9:00:00	12/10/19	18:00:00	ODB	ER-II/Odisha/ Pandiabili GIS	Servecing of bus isolator at Mendhasal.	GRIDCO
83	80MVAR Main Bay(408)	12/10/19	9:00	12/10/19	18:00	ODB	ER-II/ODISHA/Keonjhar	AMP work	

84	220 kV Bus-1 at Baripada	13/10/19	9:00	13/10/19	17:30	ODB	ER-II/Odisha/BARIPADA S/S	Isolator Alignment works	GRIDCO
85	220KV Birpara-Chukha Ckt-I	14/10/19	8:00	14/10/19	17:30	ODB	ER-II/POWERGRID	Retrofitting of Numerical Distance Relay	NLDC
86	400kV Berhampore Sagardighi-1	14/10/19	9:00	14/10/19	18:00	ODB	ER-II/POWERGRID	Line Construction: For Stringing works in MULTI CKT(MCT73-76) & Dead End Tower	WB
87	220KV Siliguri- Kishanganj#1	14/10/19	8:00	14/10/19	17:00	ODB	ER-II/POWERGRID	Replacement of arcing horn	
88	220KV Birpara-Chukha Ckt-I	14/10/19	8:00	14/10/19	17:30	ODB	ER-II/POWERGRID	Retrofitting of Numerical Distance Relay	NLDC
89	435 Bay at NTPC Farakka (Main Bay of Kahalgaon-3)	14/10/19	10:00	14/10/19	11:00	ODB	ER-II/POWERGRID	Oil Sampling of Bay CT.	
90	433 Bay at NTPC Farakka (Main Bay of Berjampore-1)	14/10/19	11:00	14/10/19	12:00	ODB	ER-II/POWERGRID	Oil Sampling of Bay CT.	
91	434 Bay at NTPC Farakka (Tie Bay of Berjampore-1 & Kahalgaon-3)	14/10/19	16:00	14/10/19	17:00	ODB	ER-II/POWERGRID	Oil Sampling of Bay CT.	
92	50 MVA ICT-II 132/66KV at Gangtok	14/10/19	9:00	14/10/19	18:00	ODB	ER-II/POWERGRID	For AnnualAMp Works	Sikkim
93	400KV Maithon-Durgapur I&II	14/10/19	8:00	15/10/19	18:00	OCB	ER-II/POWERGRID	PL Crossing during Re-conductoring work of Maithon - Right Bank Line	
94	414 Tie Bay of 500 MVA ICT#5 and 400 KV Subhasgram Haldia Line-2 at Subhasgram	14/10/19	9:00	16/10/19	17:00	OCB	ER-II/POWERGRID/SUBHASGRAM	Pole Inspection of 414 Breaker	
95	765 KV GAYA-BALIA-S/C	14/10/19	8:00	14/10/19	18:00	ODB	POWERGRID ER-1	FOR RECTIFICATION OF SHUT DOWN NATURE DEFECTS (SPACER CAP, SPACER SET, RIGID SPACER, FIXING OF CROSS ARM MEMBERS ETC	NLDC
96	220 KV ARA KHAGAUL CKT 1	14/10/19	10:00	14/10/19	17:00	ODB	POWERGRID ER-1	REPLACEMENT OF OLD MAIN1 RELAY WITH NUMERICAL RELAY UNDER SYSTEM UPGRADATION	BSEB
97	400/220KV 500MVA ICT-I AT KISHANGANJ	14/10/19	8:30	14/10/19	18:00	ODB	POWERGRID ER-1	ANNUAL MAINTENANCE OF TRANSORMER & TESTING	BSEB
98	400 KV 125 MVAR BR-II AT GAYA SS	14/10/19	9:00	14/10/19	18:00	ODB	POWERGRID ER-1	FOR UPRATING OF CT WORK FOR 400 KV UNDER NABINAGR -2 PACKAGE	
99	400 KV 500MVA ICT-IV AT BIHARSHARIF	14/10/19	9:00	14/10/19	17:00	ODB	POWERGRID ER-1	1. LBB relay testing of TIE bay of KOD ckt 2 and ICT-4. 2. CSD commissioning in main & tie CB.	BSEB
100	400 KV BSF - KOD CKT II LINE	14/10/19	9:00	14/10/19	17:00	ODB	POWERGRID ER-1	1. LBB relay testing of TIE bay of KOD ckt 2 and ICT-4. 2. CSD commissioning in main & tie CB.	DVC
101	400/132 KV 200 MVA ICT-II AT BANKA	14/10/19	9:00	14/10/19	18:00	ODB	POWERGRID ER-1	ERECTION OF 132KV GANTRY TOWER FOR ICT-III	BSEB
102	220KV ICT-2 BAY AT PUSAULI	14/10/19	9:00	14/10/19	18:00	ODB	POWERGRID ER-1	AMP WORK	
103	315 MVA ICT-1 AT RANCHI	14/10/19	9:30	18/10/19	17:00	ODB	POWERGRID ER-1	REPLACEMENT OF 01 NO 220 KV (Y-PH) & 2 NOS 33 KV (R & Y PH) BUSHINGS	JSEB
104	204(GARHWA LINE-1 BAY) AT DALTONGANJ	14/10/19	9:30	14/10/19	17:30	ODB	POWERGRID ER-1	BAY AMP	
105	220 KV MAIN BAY OF SIPARA 1 (208) AT PATNA	14/10/19	9:30	14/10/19	17:30	OCB	POWERGRID ER-1	AMP WORK	
106	400KV BARH PATNA CKT 2	14/10/19	10:00	15/10/19	19:00	ODB	POWERGRID ER-1	INSULATOR REPLACEMENT	
107	765KV BUS-1 AT NEW RANCHI	14/10/19	9:00	15/10/19	17:00	OCB	POWERGRID ER-1	RELATED TO CONSTRUCTION OF 765KV NRNC-MIDNAPUR LINE BAY	NLDC
108	400 KV TI EBAY OF KAHALGAON-I AND FUTURE AT LAKHISARAI	14/10/19	9:30	15/10/19	17:30	ODB	POWERGRID ER-I	CONSTRUCTION WORKS OF ICT-3	
109	400 KV KODERMA-BOKARO TL - 2	14/10/19	8:00	14/10/19	17:00	ODB	POWERGRID ER-1	RECTIFICATION WORK OF JUMPER TIGHTENING.	DVC
110	400 kV Farakka-Sagardighi-I	14/10/19	9:00	15/10/19	17:00	ODB	FSTPP	CB & Relay Test	WB
111	220 KV ICT # 1 Main Bay (Bay No-201)	14/10/19	8:00	14/10/19	17:00	ODB	ER-II/Odisha/Rengali	MOM Box Retrofitting	
112	132 kV Baripada-Bhograi Line 103 Bay	14/10/19	9:00	14/10/19	17:30	ODB	ER-II/Odisha/BARIPADA S/S	AMP works	GRIDCO
113	220 kV Bus -II at Jeypore & 220 kV Bus Coupler CB(20252)	14/10/19	08:00:00	16/10/19	18:00:00	OCB	ER-II/Odisha /Jeypore	For 30 Years old Isolator Retrofitting Works of Bus-II side Isolators of Jeynagar I, Jeynagar-2 & ICT-I & Bus Coupler Bay	GRIDCO
114	765kV Raipur-I at Sundargarh	14/10/19	9:00	14/10/19	18:00	ODB	ER-II/Odisha/Sundergarh	BPI erection works at T-point	NLDC
115	Rengali Main Bay (403)	14/10/19	9:00	14/10/19	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.	

116	401 KV Mendhasal-Pandiabili Ckt-1 at Mendhasal sub-station.	14/10/19	9:00:00	14/10/19	18:00:00	ODB	ER-II/Odisha/ Pandiabili GIS	Servecing of line isolator at Mendhasal.	GRIDCO
117	400 KV TIE BAY OF SNG#3 & RANCHI#2 (BAY No-420)	14/10/19	9:00:00	14/10/19	18:00:00	ODB	ER-II/ODISHA/ROURKELA	AMP WORKS	
118	220KV TBC 201 Bay	14/10/19	9:00	14/10/19	18:00	ODB	ER-II/ODISHA/Keonjhar	AMP work	
119	400KV D/C Tala - Binnaguri (New Siliguri) T/L 1 (Circuit 3 & Circuit 4)	15/10/19	8:00	16/10/19	18:00	ODB	ATL	**Stringing activity of 400KV D/C Quad Alipurduar - Siliguri Transmission Line**	SUBJECT TO BHUTAN CONSENT
120	Binaguri - Bongaigaon D/C (Twin) Line (POWERGRID)	15/10/19	6:00	18/10/19	18:00	ODB	ER-II/POWERGRID/ALIPURDUAR	Stringing at crossing between Loc. No. 11/0 - 12/0 of Jigmeling line and loc. No. 273-274 of Binaguri - Bongaigaon Line	TRANSMISSION LICENSEE HAS TO TAKE APPROVAL OF NERPC
121	220KV Birpara-Chukha Ckt-II	15/10/19	8:00	15/10/19	17:30	ODB	ER-II/POWERGRID	Retrofitting of Numerical Distance Relay	NLDC
122	220kv Bus coupler at Alipurduar	15/10/19	8:00	15/10/19	17:00	ODB	ER-II/POWERGRID	AMP WORK	
123	400kV Berhampore Sagardighi-2	15/10/19	9:00	15/10/19	18:00	ODB	ER-II/POWERGRID	Line Construction: For Stringing works in MULTI CKT(MCT73-76) & Dead End Tower	WB
124	220KV Siliguri- Kishanganj#2	15/10/19	8:00	15/10/19	17:00	ODB	ER-II/POWERGRID	Replacement of arcing horn	
125	220KV Birpara-Chukha Ckt-II	15/10/19	8:00	15/10/19	17:30	ODB	ER-II/POWERGRID	Retrofitting of Numerical Distance Relay	NLDC
126	220KV DLK-SLG # I	15/10/19	0/375	15/10/19	17:00	ODB	ER-II/POWERGRID	For AMP	
127	422 Bay at NTPC Farakka (Main Bay of Kahalgaon-1)	15/10/19	10:00	15/10/19	11:00	ODB	ER-II/POWERGRID	Oil Sampling of Bay CT.	
128	424 Bay at NTPC Farakka (Main Bay of Berjampore-2)	15/10/19	11:00	15/10/19	12:00	ODB	ER-II/POWERGRID	Oil Sampling of Bay CT.	
129	423 Bay at NTPC Farakka (Tie Bay of Berjampore-2 & Kahalgaon-1)	15/10/19	16:00	15/10/19	17:00	ODB	ER-II/POWERGRID	Oil Sampling of Bay CT.	
130	125MVAR BUS REACTOR 1 at Rajarhat	15/10/19	9:00	15/10/19	17:00	ODB	ER-II/POWERGRID	PSD RELAY COMMISSIONING UNDER CONSTRUCTION HEAD AND TESTING WITH LIVE CONDITION. EQUIPMENT WILL ON-OFF DURING CHARGED CONDITION.	
131	220 KV ARA KHAGAUL CKT 2	15/10/19	10:00	15/10/19	17:00	ODB	POWERGRID ER-1	REPLACEMENT OF OLD MAIN1 RELAY WITH NUMERICAL RELAY UNDER SYSTEM UPGRADATION	BSEB
132	400KV JAMSHEDPUR -DURGAPUR LINE	15/10/19	9:30	15/10/19	13:00	ODB	POWERGRID ER-1	LINE CT TANDELTA TEST & LINE ISOLATOR ALINGMENT WORKS.	
133	400 KV BUS-I AT GAYA S/S	15/10/19	9:00	15/10/19	18:00	ODB	POWERGRID ER-1	FOR UPRATING OF CT WORK FOR 400 KV UNDER NABINAGR -2 PACKAGE	BSEB
134	400KV SASARAM-DALTONGANJ-2 LINE	15/10/19	9:00	18/10/19	18:00	ODB	POWERGRID ER-1	TO ATTEND PUNCH POINTS IN LINE	
135	765KV SASARAM-FATEHPUR-S/C	15/10/19	7:00	17/10/19	18:00	ODB	POWERGRID NR-3	RECTIFICATION OF DAMAGED CROSS-ARM AT TOWER LOC.NO. 326 BY NR-3	NLDC
136	400KV MAIN BAY OF 400KV BSF CKT-I (401) AT BANKA	15/10/19	10:00	15/10/19	16:00	ODB	POWERGRID ER-1	ANNUAL MAINTENANCE	
137	400KV SPARE BAY (421 BAY) AT PUSAULI	15/10/19	9:00	15/10/19	18:00	ODB	POWERGRID ER-1	AMP WORK	
138	400 KV PUSAULI-VARANASI LINE	15/10/19	9:00	20/10/19	19:00	ODB	POWERGRID ER-1	REPLACEMENT OF INSULATORS AT ROAD/RAIL/RIVER/POWER LINE CROSSINGS AND RELAY RETROFITTING	NLDC
139	206(GARHWA LINE-2 BAY) AT DALTONGANJ	15/10/19	9:30	15/10/19	17:30	ODB	POWERGRID ER-1	BAY AMP	
140	400/220 KV 315 MVA ICT-2 AT MUZAFFARPUR	15/10/19	9:30	17/10/19	17:30	OCB	POWERGRID ER-1	OLTC OVERHAULING	BSEB
141	220 KV MAIN BAY OF SIPARA 2 (210) AT PATNA	15/10/19	9:30	15/10/19	17:30	OCB	POWERGRID ER-1	AMP WORK	
142	414 BAY TIE OF BALLIA 1 & BARH 2 AT PATNA	15/10/19	9:30	18/10/19	17:30	OCB	POWERGRID ER-1	CB OVERHAULING & BCU UPDRATION WORKS UNDER SS03 PACKAGE	
143	400KV CHANDWA-GAYA-I	15/10/19	9:00	15/10/19	12:00	ODB	POWERGRID ER-I	FOR BAY CONSTRUCTION WORK OF 400 KV CHANDAWA - NORTH KARNAPURA LINE AT CHANDAWA	NLDC
144	400KV CHANDWA-GAYA-II	15/10/19	14:00	15/10/19	17:00	ODB	POWERGRID ER-I	FOR BAY CONSTRUCTION WORK OF 400 KV CHANDAWA - NORTH KARNAPURA LINE AT CHANDAWA	NLDC
145	A/R of 400 kV Kishanganj- Patna Ckt-2	15/10/19	7:00	31/10/19	19:00	ODB	POWERGRID ER-1	OPGW Installation under LIVELINE Condition.	
146	220kV Dhanbad-Maithon PG Ckt#2	15/10/19	09:00Hrs	15/10/19	14:00Hrs	ODB	DVC	for replacement of broken/damaged suspension insulator strings at Loc. no. 105 of the line under the jurisdiction of Kalyaneswari Sub-Station.	
147	50 MVAR Line Reactor-1	15/10/19	9:00	22/10/19	17:00	OCB	MPL	Oil Filtration & Testing job.	
148	MPL-Ranchi Line-1	15/10/19	9:00	18/10/19	17:00	ODB	MPL	Testing activity.	

149	315 MVA ICT-I at Lapanga grid S/s	15/10/19	8:00	15/10/19	18:00	ODB	GRIDCO	Flushing of fire water pipe line, fixing of spray nozzle and detectors.	
150	125 MVAR BR # 2 Main Bay (Bay No. 419)	15/10/19	8:00	15/10/19	17:00	ODB	ER-II/Odisha/Rengali	Bay AMP	
151	125 MVAR BR # 2 TIE Bay (Bay No. 420)	15/10/19	8:00	15/10/19	17:00	ODB	ER-II/Odisha/Rengali	Bay AMP	
152	201 bay 220KV Baripada-Balasore Line -1	15/10/19	9:00	15/10/19	17:30	ODB	ER-II/Odisha/BARIPADA S/S	AMP works	GRIDCO
153	765kV Raipur-II at Sundargarh	15/10/19	9:00	15/10/19	18:00	ODB	ER-II/Odisha/Sundergarh	BPI erection works at T-point	NLDC
154	400KV Sundergarh-Raigarh Ckt #3	15/10/19	8:00	21/10/19	18:00	ODB	ER-II/Odisha/Sundergarh	For PID Testing of Porcelain Insulator. Only Auto reclose to be made off	NLDC
155	Sundergarh-Raigarh Ckt #2	15/10/19	8:00	15/10/19	18:00	ODB	ER-II/Odisha/Sundergarh	For Insulator replacement	NLDC
156	400KV Balangir-Jeypore Line	15/10/19	08:00 Hrs	16/10/19	18:00 Hrs	ODB	ER-II/Odisha/Balangir	Replacement of defective insulator by Polymer long Rod Insulator and AMP of Bolangir line reactor at Jeypore	NLDC
157	400 kv Mendhasal -Pandiabili-1 main bay at Mendhasal sub-station.	15/10/19	9:00:00	15/10/19	18:00:00	ODB	ER-II/Odisha/ Pandiabili GIS	AMP (timimg, CRM and DCRM) of main bay.	
158	220KV 202 Bay (Future line bay)	15/10/19	9:00	15/10/19	18:00	ODB	ER-II/ODISHA/Keonjhar	AMP work	
159	400kV Angul-Meramundali Line Reactor at meramundali	15/10/19	9:00	15/10/19	18:00	ODB	ER-II/Odisha/Angul SS	AMP Work	
160	132KV RANGIT-KURSEONG	15/10/19	9:00	17/10/19	18:00	ODB	ER-II/POWERGRID	REAIRING OF TOWER 24 DUE TO NATURAL HILL SINKING	WB
161	132KV RANGIT-RANGPO	15/10/19	9:00	15/10/19	18:00	ODB	ER-II/POWERGRID	REAIRING OF TOWER 24 DUE TO NATURAL HILL SINKING	Sikkim
162	400kV Berhampore-Farakka-2	16/10/19	9:00	16/10/19	18:00	ODB	ER-II/POWERGRID	Line Maint Activity	
163	132 KV Siliguri Melli Sc line	16/10/19	10:00	16/10/19	17:00	ODB	ER-II/POWERGRID	Defect liquidation & Jumper rectification	Sikkim
164	220KV DLK-SLG # II	16/10/19	0/375	16/10/19	17:00	ODB	ER-II/POWERGRID	For AMP	
165	409 Bay at NTPC Farakka (Main Bay of Bus reactor-2)	16/10/19	10:00	16/10/19	12:00	ODB	ER-II/POWERGRID	Oil Sampling of Bay CT.	
166	408 Bay at NTPC Farakka (Tie Bay of Bus Reactor-1 & GT-3)	16/10/19	16:00	16/10/19	17:00	ODB	ER-II/POWERGRID	Oil Sampling of Bay CT.	
167	132KV Gangtok-Rangpo-II Line	16/10/19	9:00	16/10/19	14:00	ODB	ER-II/POWERGRID	For AnnualAMp Works	Sikkim
168	400KV RBTPS-Ranchi I&II	16/10/19	8:00	17/10/19	18:00	OCB	ER-II/POWERGRID	PL Crossing during Re-conductoring work of Maithon - Right Bank Line	MPL
169	Tie bay of GT#1/Maithon#1 (Bay No. 404) at MPL	16/10/19	8:00	30/09/19	18:00	OCB	ER-II/POWERGRID	Upgradation of Bay equipmenets under ERSS-XVII Project work	
170	125MVAR BUS REACTOR 2 at Rajarhat	16/10/19	9:00	16/10/19	17:00	ODB	ER-II/POWERGRID	PSD RELAY COMMISSIONING UNDER CONSTRUCTION HEAD AND TESTING WITH LIVE CONDITION. EQUIPMENT WILL ON-OFF DURING CHARGED CONDITION.	
171	132KV Rangpo-Gangtok line-2	16/10/19	9:00	16/10/19	18:00	ODB	ER-II/POWERGRID	Conductor repairing in b/w loc 104 & 105	Sikkim
172	220 KV ARA SASARAM	16/10/19	10:00	16/10/19	17:00	ODB	POWERGRID ER-1	REPLACEMENT OF OLD MAIN1 RELAY WITH NUMERICAL RELAY UNDER SYSTEM UPGRADATION	BSEB
173	400 KV BUS-II AT GAYA S/S	16/10/19	9:00	16/10/19	18:00	ODB	POWERGRID ER-1	FOR UPRATING OF CT WORK FOR 400 KV UNDER NABINAGR -2 PACKAGE	BSEB
174	400KV MAIN BAY OF 400KV SILIGURI CKT-2 (BAY NO.404) AT NEW PURNEA	16/10/19	9:30	16/10/19	18:00	ODB	POWERGRID ER-1	FOR REPLACEMENT OF GASKET OF POLE COLOUMN OF R-PH TO ATTENTD THE SF6 LEAKAGE.	
175	220 KV NEW PURNEA BEGUSARAI #1	16/10/19	8:00	16/10/19	18:00	ODB	POWERGRID ER-1	Line Crossing for New Conductor in Purnea-Purnea-2 line	BSEB
176	220 KV NEW PURNEA BEGUSARAI # 2	16/10/19	8:00	16/10/19	18:00	ODB	POWERGRID ER-1	Line Crossing for New Conductor in Purnea-Purnea-2 line	BSEB
177	400KV MAIN BAY OF 400KV BSF CKT-II (404) AT BANKA	16/10/19	10:00	16/10/19	16:00	ODB	POWERGRID ER-1	ANNUAL MAINTENANCE	
178	400KV TIE BAY OF DALTONGANJ-1 TO 500MVA ICT-1 (CWD60Q50 BAY) AT PUSAULI	16/10/19	9:00	16/10/19	18:00	ODB	POWERGRID ER-1	AMP WORK	
179	400KV RANCHI-MTN-I TL	16/10/19	9:00	16/10/19	17:00	ODB	POWERGRID ER-1	FOR STRENTHNING OF TOWER PICK AT LOCATION NO. 509, 510 & 511	
180	400KV RANCHI-RAGHUNATHPUR-I TL	16/10/19	9:00	16/10/19	17:00	ODB	POWERGRID ER-1	FOR STRENTHNING OF TOWER PICK AT LOCATION NO. 509, 510 & 511	DVC

181	400 KV MAIN BUS-1 AT RANCHI	16/10/19	9:00	16/10/19	17:00	ODB	POWERGRID ER-1	STABILITY TEST FOR BUS BAR PROTECTION OF 426 BAY (TIE BAY OF RNC-RNC-1 AS COMMISSIONING TEST)	JSEB
182	400 KV RANCHI-RANCHI-1 TL	16/10/19	9:00	16/10/19	17:00	ODB	POWERGRID ER-1	STABILITY TEST FOR BUS BAR PROTECTION OF 426 BAY (TIE BAY OF RNC-RNC-1 AS COMMISSIONING TEST)	
183	400 KV PATNA BARH 1	16/10/19	9:30	19/10/19	17:30	OCB	POWERGRID ER-1	COMMISSIONING OF 80 MVAR SWITCHABLE LINE REACTOR IN PATNA BARH LINE 1 AT PATNA SS UNDER SS03 PACKAGE	
184	400KV BARH PATNA CKT 3	16/10/19	#########	16/10/19	########	ODB	POWERGRID ER-1	SHUT DOWN NATURE WORK	
185	400KV CHANDWA-NEW RANCHI-I	16/10/19	9:00	16/10/19	12:00	ODB	POWERGRID ER-I	FOR BAY CONSTRUCTION WORK OF 400 KV CHANDAWA - NORTH KARNAPURA LINE AT CHANDAWA	NLDC
186	400KV CHANDWA-NEW RANCHI-II	16/10/19	14:00	16/10/19	17:00	ODB	POWERGRID ER-I	FOR BAY CONSTRUCTION WORK OF 400 KV CHANDAWA - NORTH KARNAPURA LINE AT CHANDAWA	NLDC
187	400 KV MAIN BUS-2 AT LAKHISARAI	16/10/19	9:30	17/10/19	17:30	ODB	POWERGRID ER-I	CONSTRUCTION WORKS OF ICT-3	BSEB
188	315 MVA ICT- I & II at Lapanga grid S/s	16/10/19	8:00	16/10/19	18:00	ODB	GRIDCO	OLTC operation of master follower to be done for 2 nos of ICT.	
189	10152- 132KV Jaleswar Line Main bay	16/10/19	9:00	16/10/19	17:30	ODB	ER-II/Odisha/BARIPADA S/S	AMP works	GRIDCO
190	400KV Baripada-Kharagpur line	16/10/19	9:00	28/10/19	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	WB
191	765KV Bus-I at Sundargarh	16/10/19	9:00	23/10/19	18:00	OCB	ER-II/Odisha/Sundergarh	Erection of SF6 to Air bushing of 765KV GIS bus sectionalizer, jumpering , HV & impulse testing for commissioning of 765KV GIS under construction head.	NLDC
192	400KV Sundergarh-Raigarh Ckt #1	16/10/19	8:00	16/10/19	18:00	ODB	ER-II/ODISHA/SUNDERGARH	TL Maintenance works	NLDC
193	400 kv Mendhasal -Pandiabili-2 main bay at Mendhasal sub-station.	16/10/19	9:00:00	16/10/19	18:00:00	ODB	ER-II/Odisha/ Pandiabili GIS	AMP (timimg, CRM and DCRM) of main bay.	
194	220KV 204 Bay (Future line bay)	16/10/19	9:00	16/10/19	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 Sep'19.	
195	132kv Siliguri-kurseong SC line	17/10/19	8:00	17/10/19	17:00	ODB	ER-II/POWERGRID	Defect liquidation & Jumper rectification	WB
196	400kV Maithan Kahalgaon-1 Line	17/10/19	9:00	19/10/19	18:00	ODB	ER-II/POWERGRID	facilitating of equipment erection work for Upgradation of bay equipment under ERSS-XVII project work.	
197	80MVAR Farakka LINE REACTOR 1 & FARAKKA LINE	17/10/19	9:00	17/10/19	17:00	ODB	ER-II/POWERGRID	PSD RELAY COMMISSIONING UNDER CONSTRUCTION HEAD AND TESTING WITH LIVE CONDITION. EQUIPMENT WILL ON-OFF DURING CHARGED CONDITION. 03NOS. CORNA RING OF HV BUSHING INSTALLATION. - PRESENTLY FARAKKA LINE IS ANTI THEFT CHARGE.	
198	400KV Rangpo Teesta-v Ckt-2	17/10/19	8:00	21/10/19	17:00	OCB	ER-II/POWERGRID	For rectification of SF6 gas leakage repair work,	TEESTA-V
199	400KV Rangpo Teesta-v Ckt-2	17/10/19	8:00	17/10/19	14:00	ODB	ER-II/POWERGRID	For Installation of Insulation Tape in Loc LILO 7 to 8	TEESTA-V
200	400 KV Subhasgram Rajarhat Line	17/10/19	9:00	17/10/19	17:00	ODB	ER-II/POWERGRID/SUBHASGRAM	A/R Retrofitting & Testing	WB
201	220 KV ARA NADOKHAR	17/10/19	10:00	17/10/19	17:00	ODB	POWERGRID ER-1	REPLACEMENT OF OLD MAIN1 RELAY WITH NUMERICAL RELAY UNDER SYSTEM UPGRADATION	BSEB
202	400 KV JAMSHEDPUR- MAITHON LINE	17/10/19	9:30	17/10/19	13:00	ODB	POWERGRID ER-1	LINE CT TANDELTA TEST & LINE ISOLATOR ALINGMENT WORKS.	
203	400 KV GAYA-NABINAGAR -1 LINE	17/10/19	9:00	17/10/19	18:00	ODB	POWERGRID ER-1	FOR UPRATING OF CT WORK FOR 400 KV UNDER NABINAGR -2 PACKAGE	
204	765KV GAYA-VARANASI-II	17/10/19	9:00	21/10/19	18:00	ODB	POWERGRID ER-1	FOR STRENGTHENING OF 765 KV LINE TOWER	NLDC

205	400 KV BSF-BALIA CKT-I	17/10/19	9:00	17/10/19	18:00	**ODB**	POWERGRID ER-1	RELPACEMENT OF POLYMER INSULATOR IN LOC.NO 228& 227(BESIDE SONE RIVER)	NLDC
206	400KV MAIN BAY OF 400KV KHG CKT-I (407) AT BANKA	17/10/19	10:00	17/10/19	0:00	ODB	POWERGRID ER-1	ANNUAL MAINTENANCE	
207	220KV ICT-1 BAY AT PUSAULI	17/10/19	9:00	17/10/19	18:00	ODB	POWERGRID ER-1	AMP WORK	
208	400KV RANCHI-MTN-I TL	17/10/19	9:00	17/10/19	17:00	ODB	POWERGRID ER-1	REPAIR WORK OF DAMAGED E/W	
209	400KV RANCHI-RAGHUNATHPUR-I TL	17/10/19	9:00	17/10/19	17:00	ODB	POWERGRID ER-1	REPAIR WORK OF DAMAGED E/W	DVC
210	400KV RANCHI-NEW RANCH-1 TL	17/10/19	9:00	17/10/19	17:00	ODB	POWERGRID ER-1	REPAIR WORK OF DAMAGED E/W	
211	400KV RANCHI-NEW RANCH-2 TL	17/10/19	9:00	17/10/19	17:00	ODB	POWERGRID ER-1	REPAIR WORK OF DAMAGED E/W	
212	400KV RANCHI-NEW RANCH-3 TL	17/10/19	9:00	17/10/19	17:00	ODB	POWERGRID ER-1	REPAIR WORK OF DAMAGED E/W	
213	400KV RANCHI-NEW RANCH-4 TL	17/10/19	9:00	17/10/19	17:00	ODB	POWERGRID ER-1	REPAIR WORK OF DAMAGED E/W	
214	400 KV MAIN BUS-1 AT RANCHI	17/10/19	9:00	17/10/19	17:00	ODB	POWERGRID ER-1	STABILITY TEST FOR BUS BAR PROTECTION OF 429 BAY (TIE BAY OF RNC-RNC-2 AS COMMISSIONING TEST)	JSEB
215	400KV BUS 1 AT CHAIBASA	17/10/19	9:30	17/10/19	17:30	ODB	POWERGRID ER-1	AMP WORK OF 400KV BUS BAR 1	
216	208(LATEHAR LINE-1 BAY) AT DALTONGANJ	17/10/19	9:30	17/10/19	17:30	ODB	POWERGRID ER-1	BAY AMP	
217	400KV BARH PATNA CKT 4	17/10/19	#########	17/10/19	########	ODB	POWERGRID ER-1	SHUT DOWN NATURE WORK	
218	400KV B/R-I AT CHANDWA	17/10/19	9:00	17/10/19	12:00	ODB	POWERGRID ER-I	FOR BAY CONSTRUCTION WORK OF 400 KV CHANDAWA - NORTH KARNAPURA LINE AT CHANDAWA	
219	400KV B/R-II AT CHANDWA	17/10/19	14:00	17/10/19	17:00	ODB	POWERGRID ER-I	FOR BAY CONSTRUCTION WORK OF 400 KV CHANDAWA - NORTH KARNAPURA LINE AT CHANDAWA	
220	400 KV 80 MVAR reactor-I at Lapanga grid S/s	17/10/19	8:00	17/10/19	16:00	ODB	GRIDCO	Flushing of fire water pipe line, fixing of spray nozzle and detectors.	
221	220 KV ICT # 2 Main Bay (Bay No-202)	17/10/19	8:00	20/10/19	17:00	OCB	ER-II/Odisha/Rengali	CB Pole Overhauling & MOM Box Retrofitting	
222	40452- 400KV Kharagpur Line Main Bay	17/10/19	9:00	17/10/19	17:30	ODB	ER-II/Odisha/BARIPADA S/S	AMP works	
223	220 kV Bus -I at Jeypore & 220 kV Bus Coupler CB(202 52)	17/10/19	08:00:00	19/10/19	18:00:00	OCB	ER-II/Odisha /Jeypore	For 30 Years old Isolator Retrofitting Works of Bus-I side Isolators of Jeynagar I, Jeynagar-2 & ICT-I & Bus Coupler Bay	GRIDCO
224	400KV Sundergarh-Raigarh Ckt # 3	17/10/19	8:00	17/10/19	18:00	ODB	ER-II/ODISHA/SUNDERGARH	TL Maintenance works	NLDC
225	400 KV tie bay of Mendhasal-Pandiabili -1 & Mendhasal Pandiabili -2 at Mendhasal sub-station.	17/10/19	9:00:00	17/10/19	18:00:00	ODB	ER-II/Odisha/ Pandiabili GIS	AMP (timimg, CRM and DCRM) of tie bay.	
226	220 KV Bus Coupler Bay (Bay No-202)	17/10/19	9:00:00	17/10/19	18:00:00	ODB	ER-II/ODISHA/ROURKELA	AMP WORKS	
227	220KV ICT-II 205 Bay	17/10/19	9:00	17/10/19	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 Sep'19.	
228	765kV Angul-Sundergarh-3 Line Reactor	17/10/19	9:00	17/10/19	18:00	ODB	ER-II/Odisha/Angul SS	AMP work	
229	400kV Bus Section 2A at Alipurdua	18/10/19	8:00	18/10/19	17:00	ODB	ER-II/POWERGRID	AMP WORK	
230	400 KV Farakka-Sagardighi-2	18/10/19	9:00	18/10/19	18:00	ODB	ER-II/POWERGRID	Liquidation of shut down nature defects in various locations in Transmission line.	WB
231	132 KV Gangtok-Rangpo-I Line	18/10/19	9:00	18/10/19	14:00	ODB	ER-II/POWERGRID	For AnnualAMp Works	Sikkim
232	220 KV Maithon-Dhanbad I&II	18/10/19	8:00	19/10/19	18:/00	OCB	ER-II/POWERGRID	PL Crossing during Re-conductoring work of Maithon - Right Bank Line	DVC
233	400KV BUS-II at Malda	18/10/19	8:00	18/10/19	17:00	ODB	ER-II/POWERGRID	ERSS-XX Constructional work(Disconnection of TBC Bus isolator Jumper)	WB
234	500MVA ICT 1 at Rajarhat	18/10/19	9:00	18/10/19	17:00	ODB	ER-II/POWERGRID	PSD RELAY COMMISSIONING UNDER CONSTRUCTION HEAD AND TESTING WITH LIVE CONDITION. EQUIPMENT WILL ON-OFF DURING CHARGED CONDITION. -03NOS. CORNA RING OF HV BUSHING INSTALLATION.	WB
235	132KV Rangpo-Rangit line	18/10/19	8:00	18/10/19	14:00	ODB	ER-II/POWERGRID	For Installation of Insulation Tape in Loc LILO 6 - 7	Sikkim
236	132 KV ARA DUMRAON	18/10/19	10:00	18/10/19	17:00	ODB	POWERGRID ER-1	REPLACEMENT OF OLD DISTANCE RELAY WITH NUMERICAL RELAY UNDER SYSTEM UPGRADATION	BSEB

237	400 KV RANCHI -ROURKELA CKT 1	18/10/19	9:30	18/10/19	17:30	ODB	POWERGRID ER-1	INSULATOR REPLACEMENT AT LOC NO 352 FLASHED DUE TO LIGHTNING	
238	400 KV GAYA-NABINAGAR -2 LINE	18/10/19	9:00	18/10/19	18:00	ODB	POWERGRID ER-1	FOR UPRATING OF CT WORK FOR 400 KV UNDER NABINAGR -2 PACKAGE	
239	MAIN BAY OF 400KV MUZ-2(409) AT NEW PURNEA	18/10/19	9:30	19/10/19	18:00	OCB	POWERGRID ER-1	MIDLIFE OVERHAULING OF ALSTOM MAKE CB.	
240	401 KV BSF-BALIA CKT-II	18/10/19	9:00	18/10/19	18:00	**ODB**	POWERGRID ER-1	RELPACEMENT OF POLYMER INSULATOR IN LOC.NO 228& 227(BESIDE SONE RIVER)	NLDC
241	400KV MAIN BAY OF 400KV KHG CKT-II (410) AT BANKA	18/10/19	10:00	18/10/19	16:00	ODB	POWERGRID ER-1	ANNUAL MAINTENANCE	
242	400KV MAIN BAY OF 500MVA ICT-1 (CWD60Q52) AT PUSAULI	18/10/19	9:00	18/10/19	18:00	ODB	POWERGRID ER-1	AMP WORK	
243	AMP OF LR2(63MVAR) AT CHAIBASA	18/10/19	9:30	18/10/19	17:30	ODB	POWERGRID ER-1	AMP OF LR2	
244	210(LATEHAR LINE-2 BAY) AT DALTONGANJ	18/10/19	9:30	18/10/19	17:30	ODB	POWERGRID ER-1	BAY AMP	
245	500 MVA ICT 3 AT PATNA	18/10/19	9:30	18/10/19	17:30	ODB	POWERGRID ER-1	RECTIFICATION OF FO SENSOR	BSEB
246	400KV PATNA BALIA CKT 1	18/10/19	1:00:00 PM	18/10/19	########	ODB	POWERGRID ER-1	SHUT DOWN NATURE WORK	
247	400 KV NEW RANCHI-RANCHI CKT-3	18/10/19	9:00	18/10/19	18:00	ODB	POWERGRID ER-1	FOR INSULATION SLEEVE INSTALLATION WORK AT LOC 054-055 OF 400 KV NEW RANCHI-NEW RANCHI CKT - 3&4 LINE	
248	400 KV NEW RANCHI-RANCHI - CKT-4	18/10/19	9:00	18/10/19	18:00	ODB	POWERGRID ER-1	FOR INSULATION SLEEVE INSTALLATION WORK AT LOC 054-055 OF 400 KV NEW RANCHI-NEW RANCHI CKT - 3&4 LINE	
249	401 KV RANCHI- MAITHANCKT-1	18/10/19	9:00	18/10/19	18:00	ODB	POWERGRID ER-1	FOR INSULATION SLEEVE INSTALLATION WORK AT LOC 054-055 OF 400 KV NEW RANCHI-NEW RANCHI CKT - 3&4 LINE	
250	765 KV RANCHI -RAGHUNATHPUR CKT-1	18/10/19	9:00	18/10/19	18:00	ODB	POWERGRID ER-1	FOR INSULATION SLEEVE INSTALLATION WORK AT LOC 054-055 OF 400 KV NEW RANCHI-NEW RANCHI CKT - 3&4 LINE	NLDC
251	400KV KAHALGAON-MAITHON-I	18/10/19	9:00	18/10/19	17:00	ODB	POWERGRID ER-1	FOR REPLACEMENT OF DE-CAPPED INSULATOR AT LOC NO 299 DURING LIGHTENING	
252	315 MVA ICT-II at Lapanga grid S/s	18/10/19	8:00	18/10/19	18:00	ODB	GRIDCO	Main Tank oil leakage repairing by IWs BHEL.	
253	40952- 400KV Jamshedpur line Main Bay	18/10/19	9:00	18/10/19	17:30	ODB	ER-II/Odisha/BARIPADA S/S	AMP works	
254	765 KV DC Sundargarh - Angul Ckt #3	18/10/19	8:00	18/10/19	18:00	ODB	ER-II/ODISHA/SUNDERGARH	TL Maintenance works	NLDC
255	UIHEP-Bus Reactor Tie Bay (411)	18/10/19	9:00	18/10/19	18:00	ODB	ER-II/Odisha /Indravati	AMP works of UIHEP- BR Tie Bay (411).Power flow will be Interrupted in 400KV Indravati-UIHEP Line Due to temporary shutdown of UIHEP Main bay(412) at Indravati.	
256	Bus bar-1 at Indravati	18/10/19	9:00	18/10/19	18:00	ODB	ER-II/Odisha /Indravati	AMP works of Bus-1	GRIDCO
257	400 kv Mendhasal -Pandiabili-1 main bay at Mendhasal sub-station.	18/10/19	9:00:00	18/10/19	18:00:00	ODB	ER-II/Odisha/ Pandiabili GIS	AMP of CT.(Cap and tan delta)	
258	220KV OPTCL-II 206 Bay	18/10/19	9:00	18/10/19	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 Sep'19.	
259	Alipurduar - New Siliguri D/C (QUAD) Line (STERLITE)	19/10/19	6:00	22/10/19	18:00	ODB	ER-II/POWERGRID/ALIPURDUAR	Stringing at crossing between Loc. No. 13/0 - 14/0 of Jigmeling line and loc. No. 292-293 of Sterlite Line	NLDC
260	400KV Baharampur(India)-Bheramara (Bangladesh) CKT-I	19/10/19	9:00	20/09/19	18:00	ODB	ER-II/POWERGRID	Line Construction:Stringing of up coming Bnagladesh -II line crossing at LOC. NO. AP 88 & AP 89 with Bangaldesh Line 1 (LOC NO 194 & LOC NO 195)	NLDC
261	400kV Baharampur(India)-Bheramara (Bangladesh) CKT-II	19/10/19	9:00	20/09/19	18:00	ODB	ER-II/POWERGRID	Line Construction:Stringing of up coming Bnagladesh -II line crossing at LOC. NO. AP 88 & AP 89 with Bangaldesh Line 1 (LOC NO 194 & LOC NO 195)	NLDC

262	80MVAR Gokarna LINE REACTOR 2 & GOKARNA LINE	19/10/19	9:00	19/10/19	17:00	ODB	ER-II/POWERGRID	PSD RELAY COMMISSIONING UNDER CONSTRUCTION HEAD AND TESTING WITH LIVE CONDITION. EQUIPMENT WILL ON-OFF DURING CHARGED CONDITION. - PRESENTLY FARAKKA LINE IS ANTI THEFT CHARGE.	WB
263	400/220kV 315 MVAICT -3 at Rangpo	19/10/19	8:00	25/10/19	17:00	OCB	ER-II/POWERGRID	For rectification of SF6 gas leakage repair work,	
264	132 KV ARA ARA (BSPTCL)	19/10/19	10:00	19/10/19	17:00	ODB	POWERGRID ER-1	REPLACEMENT OF OLD DISTANCE RELAY WITH NUMERICAL RELAY UNDER SYSTEM UPGRADATION	BSEB
265	400KV TIE BAY OF DURGAPUR & MEJIA AT JAMSHEDPUR	19/10/19	9:30	19/10/19	17:30	ODB	POWERGRID ER-1	AMP WORK	
266	400 KV RANCHI-SIPAT-1 LINE AND 80 MVAR LINE REACTOR AT RANCHI	19/10/19	9:30	19/10/19	17:00	ODB	POWERGRID ER-1	AMP & REPLACEMENT OF DEFECTIVE CAPTHOR IN FSC	NLDC
267	101 BAY (ATR-2 IV SIDE BAY) AT DALTONGANJ	19/10/19	9:30	19/10/19	17:30	ODB	POWERGRID ER-1	BAY AMP	
268	400KV PATNA BALIA CKT 2	19/10/19	2:00:00 PM	19/10/19	########	ODB	POWERGRID ER-1	SHUT DOWN NATURE WORK	
269	TIE BAY OF 765KV DHARAMJAYGARH LINE-1 AND 765KV, 1500 MVA ICT-2 (BAY 705) AT NEW RANCHI	19/10/19	9:00	19/10/19	17:00	ODB	POWERGRID ER-1	AMP WORK	NLDC
270	400 KV KODERMA-BOKARO TL - 1	19/10/19	10:00	19/10/19	12:00	ODB	POWERGRID ER-1	PRUNING TREES WHICH LIE IN CENTRE OF CORRIDOR UNDER FOREST AREAS	DVC
271	400 KV Talcher # 2 Main Bay (Bay No-403)	19/10/19	8:00	19/10/19	17:00	ODB	ER-II/Odisha/Rengali	MOM Box Retrofitting	
272	21052- 160MVA ICT II Main Bay	19/10/19	9:00	19/10/19	17:30	ODB	ER-II/Odisha/BARIPADA S/S	AMP works	
273	766 KV DC Sundargarh - Angul Ckt #4	19/10/19	8:00	19/10/19	18:00	ODB	ER-II/ODISHA/SUNDERGARH	TL Maintenance works	NLDC
274	125MVAR BUS REACTOR-2	19/10/19	09:00 Hrs	19/10/19	18:00 Hrs	ODB	ER-II/Odisha/Balangir	AMP for 125 MVAR BUS Reactor-2	
275	400 kv Mendhasal -Pandiabili-2 main bay at Mendhasal sub-station.	19/10/19	9:00:00	19/10/19	18:00:00	ODB	ER-II/Odisha/ Pandiabili GIS	AMP of CT.(Cap and tan delta)	
276	220 KV Transfer Bus Coupler Bay (Bay No-205)	19/10/19	9:00:00	19/10/19	18:00:00	ODB	ER-II/ODISHA/ROURKELA	AMP WORKS	
277	400kV ICT 3 Main Bay 413	19/10/19	9:00	19/10/19	18:00	ODB	ER-II/Odisha/Angul SS	AMP work	
278	400 KV RANCHI-SIPAT-2 LINE AND 80 MVAR LINE REACTOR AT RANCHI	20/10/19	9:30	20/10/19	17:00	ODB	POWERGRID ER-1	AMP & REPLACEMENT OF DEFECTIVE CAPTHOR IN FSC	NLDC
279	10252- 160MVA ICT I Bay	20/10/19	9:00	20/10/19	17:30	ODB	ER-II/Odisha/BARIPADA S/S	AMP works	
280	400kV GIS Main Bay 435 of ICT-4 at Sundargarh	20/10/19	9:00	20/10/19	17:00	ODB	ER-II/Odisha/Sundergarh	AMP works	
281	765 KV DC Sundargarh - Angul Ckt #1	20/10/19	8:00	18/10/19	18:00	ODB	ER-II/ODISHA/SUNDERGARH	TL Maintenance works	NLDC
282	66 KV Gangtok-Lagyap(LLHP) Line	21/10/19	9:00	21/10/19	14:00	ODB	ER-II/POWERGRID	For AnnualAMp Works	Sikkim
283	220KV Maithon-Dumka I&II	21/10/19	8:00	22/10/19	18:/00	ODB	ER-II/POWERGRID	PL Crossing during Re-conductoring work of Maithon - Right Bank Line	JSEB
284	500MVA ICT 2 at Rajarhat	21/10/19	9:00	21/10/19	17:00	ODB	ER-II/POWERGRID	PSD RELAY COMMISSIONING UNDER CONSTRUCTION HEAD AND TESTING WITH LIVE CONDITION. EQUIPMENT WILL ON-OFF DURING CHARGED CONDITION.	WB
285	400 KV Rajarhat Jeerat Line	21/10/19	9:00	21/10/19	17:00	ODB	ER-II/POWERGRID/SUBHASGRAM	A/R relay retrofitting & testing and Main-1 Distance Relay Replacement.	WB
286	400KV TIE BAY OF MAITHON & CHAIBASA 1 AT JAMSHEDPUR	21/10/19	9:30	21/10/19	17:30	ODB	POWERGRID ER-1	AMP WORK	
287	TIE BAY OF 400KV MUZ-2 & KISHANGANJ-1(408) AT NEW PURNEA	21/10/19	9:30	22/10/19	18:00	OCB	POWERGRID ER-1	MIDLIFE OVERHAULING OF ALSTOM MAKE CB.	
288	400KV BSF 80 MVAR BUS REACTOR II AT BIHARSHARIF	21/10/19	9:00	21/10/19	17:00	ODB	POWERGRID ER-1	AMP WORK	
289	400KV TIE BAY OF BSF CKT-I & ICT-I (402) AT BANKA	21/10/19	10:00	21/10/19	16:00	ODB	POWERGRID ER-1	ANNUAL MAINTENANCE	

290	400KV MAIN BAY OF 315MVA ICT-2 (CWD70Q52) AT PUSAULI	21/10/19	9:00	21/10/19	18:00	ODB	POWERGRID ER-1	AMP WORK	
291	102 BAY (ATR-1 IV SIDE BAY) AT DALTONGANJ	21/10/19	9:30	21/10/19	17:30	ODB	POWERGRID ER-1	BAY AMP	
292	400KV PATNA BALIA CKT 3	21/10/19	10:00	21/10/19	12:00	ODB	POWERGRID ER-1	SHUT DOWN NATURE WORK	
293	765 KV NEW RANCHI - DHARAMJAYGARH CKT-I	21/10/19	9:00	21/10/19	18:00	ODB	POWERGRID ER-1	FOR 1 NOS INSULATOR CHANGING WORK , TIGHTING OF KEEPER, CC RING ETC.	NLDC
294	400 KV KODERMA -BIHARSHARIF TL - 1	21/10/19	8:00	22/10/19	17:00	ODB	POWERGRID ER-1	RECTIFICATION WORK OF SPACER DAMPER .	DVC
295	400 kV Farakka-Sagardighi-II	21/10/19	9:00	22/10/19	17:00	ODB	FSTPP	CB & Relay Test	WB
296	10452- 160MVA ICT II Bay	21/10/19	9:00	21/10/19	17:30	ODB	ER-II/Odisha/BARIPADA S/S	AMP works	
297	63MVAr Bus Reactor	21/10/19	09:00:00	21/10/19	18:00:00	ODB	ER-II/Odisha /Jeypore	Installation & Commissioning of CSD (during SD period switch OFF & switch ON code is required for 03 times each for fine tuning of CSD) and AMP of BR	
298	400kV GIS Main Bay 430 of RAIGARH-3 at Sundargarh	21/10/19	9:00	21/10/19	17:00	ODB	ER-II/Odisha/Sundergarh	AMP works	
299	766 KV DC Sundargarh - Angul Ckt #2	21/10/19	8:00	19/10/19	18:00	ODB	ER-II/ODISHA/SUNDERGARH	TL Maintenance works	NLDC
300	125MVAR BUS REACTOR-2 Main Bay(406 Bay)	21/10/19	09:00 Hrs	21/10/19	18:00 Hrs	ODB	ER-II/Odisha/Balangir	AMP for 406 52CB & 406 CT	
301	400 KV tie bay of Mendhasal-Pandiabili -1 & Mendhasal Pandiabili -2 at Mendhasal sub-station.	21/10/19	9:00:00	21/10/19	18:00:00	ODB	ER-II/Odisha/ Pandiabili GIS	AMP of CT.(Cap and tan delta)	
302	220KV Bus Coupler 207 Bay	21/10/19	9:00	21/10/19	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 Sep'19.	
303	400kV Angul-Bolangir Line	21/10/19	9:00	21/10/19	18:00	ODB	ER-II/Odisha/Angul SS	Commissioning of LILO Isolator	NLDC
304	220 KV Birpara- Alipurduar Ckt-I	22/10/19	8:00	22/10/19	17:00	ODB	ER-II/POWERGRID	AMP WORK	
305	400kV Sagardighi-Jeerat Line	22/10/19	9:00	22/10/19	18:00	ODB	ER-II/POWERGRID	Line Maint Activity	WB
306	400 kV Bus-IV at Maithon SS	22/10/19	10:00	22/10/19	17:30	ODB	ER-II/POWERGRID	Re-connection of Bus isolator Jumpers of bay no-409 for Upgradation of bay equipment under ERSS-XVII project work.	
307	400/220 KV ICT-5 at Malda	22/10/19	8:00	22/10/19	17:00	ODB	ER-II/POWERGRID	Recctification of 89M2 isolator(Y PH).	WB
308	220kV New Melli-JLHEP Line I	22/10/19	10:00	22/10/19	17:00	ODB	ER-II/POWERGRID	Dew Point measurement and CRM Testing	
309	220KV Rajarhat NEWTOWN 3 CKT 1	22/10/19	9:00	22/10/19	17:00	ODB	ER-II/POWERGRID	PD CHECKING.	WB
310	208 Bay (220 KV Side of 315 MVA ICT#1) at Subhasgram SS	22/10/19	9:00	22/10/19	17:00	ODB	ER-II/POWERGRID/SUBHASGRAM	Bay AMP Work	WB
311	220 KV Arambagh-Medinipur D/C	22/10/19	8:00	23/10/19	17:00	ODB	ER-II/POWERGRID/TBCB	For stringing work of 765 KV D/C Medinipur-Jeerat Transmission line in the section AP 22/0 to AP 23/0	WB
312	132 KV MAIN BUS AT ARA	22/10/19	9:00	22/10/19	13:00	ODB	POWERGRID ER-1	132 KV MAIN BUS R PHASE CVT REPLACEMENT DUE TO SECONDARY VOLTAGE VIOLATION . ALL 132KV LINES I.E 132 KV DUMRAON, 132 KV ARA, 132 KV JAGDISHPUR OUT OF SERVICE	BSEB
313	400KV TIE BAY OF CHAIBASA -2 & ANDAL 1 AT JAMSHEDPUR	22/10/19	9:30	22/10/19	17:30	ODB	POWERGRID ER-1	AMP WORK	
314	400KV TIE BAY OF BSF CKT-II & ICT-II (405) AT BANKA	22/10/19	10:00	22/10/19	16:00	ODB	POWERGRID ER-1	ANNUAL MAINTENANCE	
315	400KV TIE BAY OF BIHARSHARIF-2 AND BUS REACTOR-1 (CWD80Q50) AT PUSAULI	22/10/19	9:00	22/10/19	18:00	ODB	POWERGRID ER-1	AMP WORK	
316	400KV RANCHI-NEW RANCH-2, MAIN BAY AT RANCHI	22/10/19	9:00	22/10/19	17:00	ODB	POWERGRID ER-1	BAY AMP, CB DCRM REPEAT TEST AS PER OS INSTRUCTION	
317	220 KV RANCHI - CHANDIL-1	22/10/19	9:30	22/10/19	17:00	ODB	POWERGRID ER-1	REPLACEMENT OF FLASHOVER/BROKEN INSULATORS DUE TO LIGHTNING	JSEB
318	400KV CBSA-KGP1 LINE	22/10/19	9:30	22/10/19	17:30	ODB	POWERGRID ER-1	AUTORECLOSE TEST OF 400KV KGP1 LINE	WB
319	104(CHATARPUR LINE-1 BAY) AT DALTONGANJ	22/10/19	9:30	22/10/19	17:30	ODB	POWERGRID ER-1	BAY AMP	
320	213 MAIN BAY 220KV FATUHA LINE AT PATNA	22/10/19	9:30	24/10/19	17:30	OCB	POWERGRID ER-1	CB OVERHAULING & BCU UPDRATION WORKS UNDER SS03 PACKAGE	
321	400KV PATNA BALIA CKT 4	22/10/19	10:00	22/10/19	16:00	ODB	POWERGRID ER-1	SHUT DOWN NATURE WORK	
322	765KV BUS-2 AT NEW RANCHI	22/10/19	9:00	23/10/19	17:00	OCB	POWERGRID ER-1	RELATED TO CONSTRUCTION OF 765KV NRNC-MIDNAPUR LINE BAY	NLDC

323	400KV RANCHI-MAITHON-S/C	22/10/19	9:00	22/10/19	17:00	ODB	POWERGRID ER-1	FOR REPLACEMENT OF DE-CAPPED INSULATOR AT LOC NO 239 DURING LIGHTENING	
324	10952- 132KV Baripada Line Main bay	22/10/19	9:00	22/10/19	17:30	ODB	ER-II/Odisha/BARIPADA S/S	AMP works	GRIDCO
325	400kV Jeypore-Gazuwaka-I Line	22/10/19	08:00:00	25/10/19	16:00:00	ODB	ER-II/Odisha /Jeypore	For doing PID test(Auto Reclose Swiitch to be put into Non Auto mode at Jeypore & Gazuwaka end)	NLDC
326	Replacement of DGA Violated CTs with new GE make CTs.	22/10/19	6:00	22/10/19	18:00	OCB	ER-II/Odisha/HVDC Talcher	Outage of Bus Filter Bay (10CO6A-T1) of ACF-1 on continuous basis for replacement of DGA violated CTs with new GE make CTs. The same Filter Bank ACF-1 shall be kept in service through 10C06C Bay . There shall be no interruption or any limitition of Powerflow & all the Filter Banks shall remain in Sevice during above conditions.	NLDC
327	400KV Sundergarh-Raigarh Ckt #4	22/10/19	8:00	28/10/19	18:00	ODB	ER-II/Odisha/Sundergarh	For PID Testing of Porcelain Insulator. Only Auto reclose to be made off	NLDC
328	125MVAR BUS REACTOR-2 Tie Bay(40506 Bay)	22/10/19	09:00 Hrs	22/10/19	18:00 Hrs	ODB	ER-II/Odisha/Balangir	AMP for 40506 52CB & 40506 CT	
329	400 KV 125 MVAR BUS REACTOR-1	22/10/19	9:00:00	22/10/19	18:00:00	ODB	ER-II/ODISHA/ROURKELA	AMP WORKS	
330	125MVAR Bus Reactor Main Bay (402)	22/10/19	9:00	22/10/19	18:00	ODB	ER-II/ODISHA/Keonjhar	AMP work	
331	400kV Angul-Meramunduli-1 Line	22/10/19	9:00	22/10/19	18:00	ODB	ER-II/Odisha/Angul SS	Commissioning of LILO Isolator	GRIDCO
332	HVDC Biswanathchariali - Alipurduar Line 1&2 (POWERGRID)	23/10/19	6:00	25/10/19	18:00	ODB	ER-II/POWERGRID/ALIPURDUAR	Stringing at crossing between Powergrid Loc. No. 22/0 - 23/0 of Jigmeling line and loc. No. 8-9 of 800 KV APD-BNC LILO in.	NLDC
333	66 KV Gangtok-Bulbulay Line	23/10/19	9:00	23/10/19	14:00	ODB	ER-II/POWERGRID	For AnnualAMp Works	Sikkim
334	132KV S/C Maithan Hydel - Jamtara	23/10/19	8:00	24/10/19	18:00	OCB	ER-II/POWERGRID	PL Crossing during Re-conductoring work of Maithon - Right Bank Line	DVC
335	220kV New Melli-JLHEP Line II	23/10/19	10:00	23/10/19	17:00	ODB	ER-II/POWERGRID	Dew Point measurement and CRM Testing	
336	220KV Rajarhat NEWTOWN 3 CKT 1	23/10/19	9:00	23/10/19	17:00	ODB	ER-II/POWERGRID	PD CHECKING	WB
337	220 KV Bus Coupler Bay (204 Bay) at POWERGRID, Subhasgram	23/10/19	9:00	24/10/19	17:00	OCB	ER-II/POWERGRID/SUBHASGRAM	For CGL make CB Pole Overhauling	WB
338	765KV GAYA-VARANASI-II	23/10/19	9:00	25/10/19	18:00	ODB	POWERGRID ER-1	FOR STRENGTHENING OF 765 KV LINE TOWER	NLDC
339	MAIN BAY OF 400KV 125MVAR B/R-1 (415) AT NEW PURNEA	23/10/19	9:30	24/10/19	18:00	OCB	POWERGRID ER-1	MIDLIFE OVERHAULING OF ALSTOM MAKE CB.	
340	400KV BSF 125 MVAR BUS REACTOR IV AT BIHARSHARIF	23/10/19	9:00	23/10/19	17:00	ODB	POWERGRID ER-1	AMP WORK	
341	132KV MAIN BUS AT BANKA	23/10/19	9:00	24/10/19	16:00	ODB	POWERGRID ER-1	ERECTION OF BUS EXTENSION TOWER AND EXTENSION OF BUS	BSEB
342	400KV MAIN BAY OF VARANASI NORTH (CWL30Q52 BAY) AT PUSAULI	23/10/19	9:00	23/10/19	18:00	ODB	POWERGRID ER-1	AMP WORK	
343	220 KV MAIN BUS-2 AT RANCHI	23/10/19	9:30	23/10/19	17:00	ODB	POWERGRID ER-1	AMP WORK	JSEB
344	400KV CBSA-RKL1 LINE	23/10/19	9:30	23/10/19	17:30	ODB	POWERGRID ER-1	LINE BAY AMP	
345	214 MAIN BAY ICT 1 AT PATNA	23/10/19	9:30	25/10/19	17:30	OCB	POWERGRID ER-1	CB OVERHAULING & BCU UPDRATION WORKS UNDER SS03 PACKAGE	
346	400KV KAHALGAON-BARH CKT 1	23/10/19	5:00:00 PM	24/10/19	########	ODB	POWERGRID ER-1	INSULATOR REPLACEMENT	
347	400 KV KODERMA -BIHARSHARIF TL - 2	23/10/19	8:00	24/10/19	17:00	ODB	POWERGRID ER-1	RECTIFICATION WORK OF SPACER DAMPER .	DVC
348	202 bay 220KV Baripada-Balasore Line -2	23/10/19	9:00	23/10/19	17:30	ODB	ER-II/Odisha/BARIPADA S/S	AMP works	GRIDCO
349	Bus bar-2 at Indravati	23/10/19	9:00	23/10/19	18:00	ODB	ER-II/Odisha /Indravati	AMP works of Bus-2	GRIDCO
350	125MVAR Bus Reactor Tie Bay (40102)	23/10/19	9:00	23/10/19	18:00	ODB	ER-II/ODISHA/Keonjhar	AMP work	
351	132 KV ARA JAGDISHPUR	24/10/19	10:00	24/10/19	17:00	ODB	POWERGRID ER-1	REPLACEMENT OF OLD DISTANCE RELAY WITH NUMERICAL RELAY UNDER SYSTEM UPGRADATION	After commissioning of ara-jagdishpur line -II
352	400KV Malda-New Purnea-I	24/10/19	8:00	24/10/19	17:00	ODB	ER-II/POWERGRID	A/R Retrofitting	
353	New Melli-Tashiding line	24/10/19	10:00	24/10/19	17:00	ODB	ER-II/POWERGRID	Dew Point measurement and CRM Testing	
354	400KV TIE BAY OF ICT 3 AND FUTURE AT JAMSHEDPUR	24/10/19	9:30	24/10/19	17:30	ODB	POWERGRID ER-1	AMP WORK	
355	400KV TIE BAY OF NABINAGAR & SPARE BAY (BAY 420) AT PUSAULI	24/10/19	9:00	24/10/19	18:00	ODB	POWERGRID ER-1	AMP WORK	
356	220KV SIDE ICT# I BAY (205 BAY) AT RANCHI	24/10/19	9:30	24/10/19	17:00	ODB	POWERGRID ER-1	AMP WORK	
357	106(DTG-JUSNL LINE-1 BAY) AT DALTONGANJ	24/10/19	9:30	24/10/19	17:30	ODB	POWERGRID ER-1	BAY AMP	

358	400 KV PATNA BARH LINE 1	24/10/19	9:30	25/10/19	17:30	OCB	POWERGRID ER-1	UNDER SS03 PACKAGE FOR COMMISSIONING OF 80 MVAR BUS REACTOR AS SWITCHABLE LINE REACTOR	
359	400 KV Talcher # 1 Main Bay (Bay No-404)	24/10/19	8:00	24/10/19	17:00	ODB	ER-II/Odisha/Rengali	MOM Box Retrofitting	
360	20952- 160MVA ICT I Main Bay	24/10/19	9:00	24/10/19	17:30	ODB	ER-II/Odisha/BARIPADA S/S	AMP works	GRIDCO
361	765KV Bus-II at Sundargarh	24/10/19	9:00	30/10/19	18:00	OCB	ER-II/Odisha/Sundergarh	Erection of SF6 to Air bushing of 765KV GIS bus sectionalizer, jumpering , HV & impulse testing for commissioning of 765KV GIS under construction head.	NLDC
362	400kV Angul-Talcher Line	24/10/19	9:00	24/10/19	18:00	ODB	ER-II/Odisha/Angul SS	Commissioning of LILO Isolator & Line maintenance work	
363	400KV Malda-New Purnea-II	25/10/19	8:00	25/10/19	17:00	ODB	ER-II/POWERGRID	A/R Retrofitting, 2 no Dead Tank CT replacement.	
364	400KV MAIN BAY OF ANDAL-I AT JAMSHEDPUR	25/10/19	9:30	25/10/19	17:30	ODB	POWERGRID ER-1	AMP WORK	
365	REACTOR BAY OF 400KV MUZ-2(409R) AT NEW PURNEA	25/10/19	9:30	26/10/19	18:00	OCB	POWERGRID ER-1	MIDLIFE OVERHAULING OF ALSTOM MAKE CB.	
366	400KV BUS-I AT BANKA	25/10/19	9:00	26/10/19	16:00	ODB	POWERGRID ER-1	ERECTION OF BUS EXTENSION TOWER	BSEB
367	400KV TIE BAY OF NABINAGAR-2 & DALTONGANJ-2 (BAY 423) AT PUSAULI	25/10/19	9:00	25/10/19	18:00	ODB	POWERGRID ER-1	AMP WORK	
368	400 KV RANCHI- MAITHON-RB-1	25/10/19	9:00	25/10/19	17:00	ODB	POWERGRID ER-1	INSULATOR STRING REPLAC AT LOCATION 516 FLASHED DUE TO LIGHTNING	
369	107(DTG-JUSNL LINE-2 BAY) AT DALTONGANJ	25/10/19	9:30	25/10/19	17:30	ODB	POWERGRID ER-1	BAY AMP	
370	409 MAIN BAY ICT 2 AT PATNA	25/10/19	9:30	27/10/19	17:30	OCB	POWERGRID ER-1	CB OVERHAULING & BCU UPDRATION WORKS UNDER SS03 PACKAGE	
371	400KV KAHALGAON-BARH CKT 2	25/10/19	6:00:00 PM	26/10/19	########	ODB	POWERGRID ER-1	INSULATOR REPLACEMENT	
372	765 KV NEW RANCHI - DHARAMJAYGARH CKT-II	25/10/19	9:00	25/10/19	18:00	ODB	POWERGRID ER-1	FOR 26 NOS INSULATOR CHANGING WORK ,TIGHTING OF KEEPER, CC RING ETC.	NLDC
373	10852- 132KV Bangriposi Line Main Bay	25/10/19	9:00	25/10/19	17:30	ODB	ER-II/Odisha/BARIPADA S/S	AMP works	GRIDCO
374	400kV Jeypore-Gazuwaka-II Line	25/10/19	08:00:00	27/10/19	16:00:00	ODB	ER-II/Odisha /Jeypore	For doing PID test(Auto Reclose Swiitch to be put into Non Auto mode at Jeypore & Gazuwaka end)	NLDC
375	765kV Sundargarh-Dharamjaygarh Ckt#3 at Sundargarh	25/10/19	9:00	25/10/19	14:00	ODB	ER-II/Odisha/Sundergarh	BPI erection works at T-point for system improvement	NLDC
376	125 MVAR BR	25/10/19	9:00	25/10/19	18:00	ODB	ER-II/Odisha /Indravati	Local WTI Replacement and CT Ratio Shifitng from Turret CT(200/1) to Bay CT(1000/1).During the Shut Down The Power flow in The UIHEP Line Will be Zero Due to the Temporary Shut Down of UIHEP Main bay (412).	GRIDCO
377	315MVA, ICT-1	25/10/19	09:00 Hrs	25/10/19	18:00 Hrs	ODB	ER-II/Odisha/Balangir	AMP for 315MVA, ICT-1	GRIDCO
378	400KV Keonjhar-Rengali Line	25/10/19	7:00	25/10/19	18:00	ODB	ER-II/ODISHA/Keonjhar	Replacement of Porcelain insulator by Polymer insulators in NH crossing. Shutdown shall be taken if not availed in Sep'19.	
379	400kV Angul-Meramunduli-2 Line	25/10/19	9:00	25/10/19	18:00	ODB	ER-II/Odisha/Angul SS	Commissioning of LILO Isolator & Line maintenance work	GRIDCO
380	66 KV Gangtok-Tadong Line	26/10/19	9:00	26/10/19	14:00	ODB	ER-II/POWERGRID	For AnnualAMp Works	Sikkim
381	400KV Maithon-Right Bank #II	26/10/19	8:00	09/11/19	18:00	OCB	ER-II/POWERGRID	Re conductoring work	MPL
382	400KV Mejia - Jamshedpur Line	26/10/19	8:00	26/10/19	18:00	ODB	ER-II/POWERGRID	Insulator replacement at Loc. No. 127,169 and 178	
383	132 KV Rangit-Kuresang Ckt	26/10/19	9:00	26/10/19	16:00	ODB	ER-II/POWERGRID	Damage conductor Top & Middle Phase correction at location 51-52	WB
384	400KV MAIN BAY OF ANDAL-II AT JAMSHEDPUR	26/10/19	9:30	26/10/19	17:30	ODB	POWERGRID ER-1	AMP WORK	
385	400 KV RANCHI- MAITHON-RB-2	26/10/19	9:00	26/10/19	17:00	ODB	POWERGRID ER-1	INSULATOR STRING REPLACED AT LOCATION 495 FLASHED DUE TO LIGHTNING	
386	416 BAY BALIA LINE-2 BAY AT PATNA	26/10/19	9:30	29/10/19	17:30	OCB	POWERGRID ER-1	CB OVERHAULING & BCU UPDRATION WORKS UNDER SS03 PACKAGE	
387	404-main bay of 80MVAR Bus Reactor at Duburi SS	26/10/19	9:00	26/10/19	13:30	ODB	ER-II/Odisha/BARIPADA S/S	AMP works	
388	40304-Tie bay of Duburi-BPD line & Bus Reactor at Duburi SS	26/10/19	13:30	26/10/19	17:30	ODB	ER-II/Odisha/BARIPADA S/S	AMP works	
389	765kV Sundargarh-Dharamjaygarh Ckt#4 at Sundargarh	26/10/19	9:00	26/10/19	14:00	ODB	ER-II/Odisha/Sundergarh	BPI erection works at T-point for system improvement	NLDC

390	400KV Keonjhar-Baripada Line	26/10/19	7:00	26/10/19	18:00	ODB	ER-II/ODISHA/Keonjhar	Replacement of Porcelain insulator by Polymer insulators in NH crossing . Shutdown shall be taken if not availed in Sep'19.	
391	400KV BUS REACTOR 2 (125MVAR) & Meramundali 2 Tie Bay 411	26/10/19	9:00	26/10/19	18:00	ODB	ER-II/Odisha/Angul SS	AMP Work	
392	400KV Bus-I	27/10/19	9:00	27/10/19	17:30	ODB	ER-II/Odisha/BARIPADA S/S	AMP works	GRIDCO
393	765kV GIS BUS-I along with AIS section of Darmajaygar-I & II Main Bays	27/10/19	9:00	28/10/19	17:00	OCB	ER-II/Odisha/Sundergarh	for 765KV GIS and 765KV ICT-3&4 commissioning work under construction head	NLDC
394	401 Bay (400 KV Subhasgram Sagardighi Line Main Bay) at POWERGRID, Subhasgram	28/10/19	9:00	30/10/19	17:00	OCB	ER-II/POWERGRID/SUBHASGRAM	For CGL make CB Pole Overhauling	
395	TIE BAY OF 400KV MLD-2 & 125MVAR B/R-1(414) AT NEW PURNEA	28/10/19	9:30	29/10/19	18:00	OCB	POWERGRID ER-1	MIDLIFE OVERHAULING OF ALSTOM MAKE CB.	
396	400KV BUS-II AT BANKA	28/10/19	9:00	29/10/19	16:00	ODB	POWERGRID ER-1	ERECTION OF BUS EXTENSION TOWER	BSEB
397	412 MAIN BAY OF ICT 1 AT PATNA	28/10/19	9:30	30/10/19	17:30	OCB	POWERGRID ER-1	CB OVERHAULING & BCU UPDRATION WORKS UNDER SS03 PACKAGE	
398	400 KV Talcher # 1 Main Bay (Bay No-404)	28/10/19	8:00	28/10/19	17:00	ODB	ER-II/Odisha/Rengali	MOM Box Retrofitting	
399	220KV Bus-II	28/10/19	9:00	28/10/19	17:30	ODB	ER-II/Odisha/BARIPADA S/S	AMP works	GRIDCO
400	3X166.7 MVA Coupling Transformer	28/10/19	09:00:00	28/10/19	12:00:00	ODB	ER-II/Odisha /Jeypore	For changing Coupling Transformer combination form Unit-II,III, IV to Unit-I , II & III for charging Unit-I	
401	765kV Sundargarh-Dharamjaygarh Ckt#1 at Sundargarh	28/10/19	9:00	28/10/19	14:00	ODB	ER-II/Odisha/Sundergarh	BPI erection works at T-point for system improvement	NLDC
402	315MVA ICT-II	28/10/19	9:00	28/10/19	18:00	ODB	ER-II/ODISHA/Keonjhar	Retro fitting of Back up Impedance relay. Shutdown shall be taken if not availed in Sep'19.	GRIDCO
403	400KV MAIN BAY OF TISCO AT JAMSHEDPUR	29/10/19	9:30	29/10/19	17:30	ODB	POWERGRID ER-1	AMP WORK	
404	400 KV Talcher # 1 Tie Bay (Bay No-406)	29/10/19	8:00	04/11/19	17:00	OCB	ER-II/Odisha/Rengali	CB Pole Overhauling & MOM Box Retrofitting	
405	Tie bay (414) of 400KV Bolangir-Gazwaka Line # II	29/10/19	09:00:00	29/10/19	18:00:00	ODB	ER-II/Odisha /Jeypore	AMP ofTie bay (414) of 400KV Bolangir-Gazwaka Line # II	
406	765kV GIS BUS-II along with AIS section of Darlipalli -I & II Main Bays	29/10/19	9:00	30/10/19	17:00	OCB	ER-II/Odisha/Sundergarh	for 765KV GIS and 765KV ICT-3&4 commissioning work under construction head	NLDC
407	765kV Sundargarh-Dharamjaygarh Ckt#2 at Sundargarh	29/10/19	9:00	29/10/19	14:00	ODB	ER-II/Odisha/Sundergarh	BPI erection works at T-point for system improvement	NLDC
408	50MVAR Line Reactor	29/10/19	9:00	29/10/19	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.	GRIDCO
409	315MVA ICT-I	29/10/19	9:00	29/10/19	18:00	ODB	ER-II/ODISHA/Keonjhar	Retro fitting of Back up Impedance relay. Shutdown shall be taken if not availed in Sep'19.	GRIDCO
410	400 KV Binaguri Bongaigaon Ckt II	30/10/19	6:00	31/10/19	18:00	ODB	ER-II/POWERGRID/ALIPURDUAR	Conductor reparing work, against theft by Miscreants.	NLDC
411	400kV 125MVAR Reactor at Berhampore	30/10/19	9:00	30/10/19	18:00	ODB	ER-II/POWERGRID	Balance Construction Activity	
412	MAIN BAY OF 400KV KISHANGANJ-1(410) AT NEW PURNEA	30/10/19	9:30	31/10/19	18:00	ODB	POWERGRID ER-1	FOR REPLACEMENT OF GASKET OF R-PHASE PIR TO ATTENTD THE SF6 LEAKAGE.	
413	220KV SIDE ICT# 2 BAY (209BAY) AT RANCHI	30/10/19	9:30	30/10/19	17:00	ODB	POWERGRID ER-1	AMP WORK	
414	MAIN BAY OF 765KV, 1500MVA ICT-2 (BAY 706) AT NEW RANCHI	30/10/19	9:00	30/10/19	17:00	ODB	POWERGRID ER-1	AMP WORK	NLDC
415	220 KV BUS # 1 at Rengali	30/10/19	8:00	30/10/19	17:00	ODB	ER-II/Odisha/Rengali	AMP	
416	125MVAr BR	30/10/19	09:00:00	30/10/19	18:00:00	ODB	ER-II/Odisha /Jeypore	AMP of 125MVAR BR	
417	Replacement of DGA Violated CTs with new GE make CTs.	30/10/19	6:00	30/10/19	18:00	OCB	ER-II/Odisha/HVDC Talcher	Outage of Tie Bay(10CO3B-T12)of Pole-2 on continuous basis for replacement of DGA violated CTs with new GE make CTs. Pole-2 shall be kept in service through Main Bay (10C03-C)There shall be no interruption or limitation of Powerflow & all the Filter Banks shall remain in Sevice during above conditions.	NLDC
418	765kV ANGUL-II at Sundargarh	30/10/19	9:00	30/10/19	11:00	ODB	ER-II/Odisha/Sundergarh	BPI erection works at T-point	NLDC

419	400KV Meramundali 2 Main Bay 412	30/10/19	9:00	29/10/19	18:00	ODB	ER-II/Odisha/Angul SS	AMP Work	
420	400kV Sagardighi-Subhasgram Line	31/10/19	9:00	31/10/19	18:00	ODB	ER-II/POWERGRID	Line Maint Activity	WB
421	66 KV Gangtok-Sherathang Line	31/10/19	9:00	31/10/19	14:00	ODB	ER-II/POWERGRID	For AnnualAMp Works	Sikkim
422	403 Bay (315 MVA ICT#1 Main Bay) at POWERGRID, Subhasgram	31/10/19	9:00	31/10/19	17:00	ODB	ER-II/POWERGRID/SUBHASGRAM	Bay AMP Work	
423	220KV PUSAULI- DEHRI BAY (204 BAY) AT PUSAULI	31/10/19	9:00	31/10/19	18:00	ODB	POWERGRID ER-1	AMP WORK	BSEB
424	400KV RNC-RKL-2 MAIN BAY AT RANCHI	31/10/19	9:30	31/10/19	17:00	ODB	POWERGRID ER-1	AMP WORK	
425	400 KV NEW RANCHI-RANCHI CKT-2	31/10/19	9:00	31/10/19	18:00	ODB	POWERGRID ER-1	INSULATOR CHANGING WORK AT LOC 11 AND OTHER MISC WORK	
426	220 KV BUS # 1 at Rengali	31/10/19	8:00	31/10/19	17:00	ODB	ER-II/Odisha/Rengali	AMP	
427	400kV ICT 3 & Future Line Tie Bay 414	31/10/19	9:00	31/10/19	18:00	ODB	ER-II/Odisha/Angul SS	AMP Work	

ERLDC, KOLKATA									
TRANSMISSION ELEMENTS OUTAGE DEFFERED IN 161th OCC MEETING OF ERPC									
		FROM		TO					
SI	NAME OF THE ELEMENTS	DATE	TIME	DATE	TIME	REMARKS	S.D availed BY	Reason	COMMENTS
1	Futute bay of 500MVA ICT-3 (421) at Maithan	01/10/19	09:00	25/10/19	18:00	OCB	ER-II/POWERGRID	Retrofitting of 400kV BHEL CB under ERSS-XX project work by M/s TBEA	Deffered due to Durga Puja(01/10/19 to 08/10/19)
2	Main bay of 400kv Maithon-MPL Ckt#1,(Bay no 403) at MPL	01/10/19	08:00	15/10/19	18:00	OCB	ER-II/POWERGRID	Upgradation of Bay equipmenets under ERSS-XVII Project work	Deffered due to Durga Puja(01/10/19 to 08/10/19)
3	Main bay of 400kv Maithon-MPL Ckt#2,(Bay no 406) at MPL	01/10/19	08:00	15/10/19	18:00	OCB	ER-II/POWERGRID	Upgradation of Bay equipmenets under ERSS-XVII Project work	Deffered due to Durga Puja(01/10/19 to 08/10/19)
4	220 kV Bus-I at Malda	01/10/19	08:00	01/10/19	17:00	ODB	ER-II/POWERGRID	ERSS-XX Constructional work(Re-connection of Bus isolator Jumper)	Deffered due to Durga Puja(01/10/19 to 08/10/19)
5	220KV WBSETCL- Subhasgram Line#1	01/10/19	09:00	01/10/19	17:00	ODB	ER-II/POWERGRID/SUBHASGRAM	For rectification of Abnormal sound Coming from Line Isolator	Deffered due to Durga Puja(01/10/19 to 08/10/19)
6	400 KV MAIN BAY OF 400KV SILIGURI CKT-2 (BAY NO.401) AT NEW PURNEA	01/10/19	09:30	03/10/19	18:00	ODB	POWERGRID ER-1	FOR REPLACEMENT OF GASKET OF POLE COLOUMN OF Y-PH TO ATTENTD THE SF6 LEAKAGE.	Deffered due to Durga Puja(01/10/19 to 08/10/19)
7	220 KV CHANDIL-#2 MAIN BAY AT RANCHI	01/10/19	09:30	01/10/19	17:30	ODB	POWERGRID ER-1	AMP WORK	DEffered due to Durga Puja(01/10/19 to 08/10/19)
8	400KV BUS -I AT PATNA	01/10/19	09:30	01/10/19	17:30	ODB	POWERGRID ER-1	AMP, JUMPER TIGHTING	DEffered due to Durga Puja(01/10/19 to 08/10/19)
9	A/R of 400 kV Biharsharif- Banka Ckt-2	01/10/19	07:00	31/10/19	19:00	ODB	POWERGRID ER-1	OPGW Installation under LIVELINE Condition.	Deffered due to Durga Puja(01/10/19 to 08/10/19)
10	A/R of 400 kV Biharsharif- Koderma Ckt-2	01/10/19	07:00	31/10/19	19:00	ODB	POWERGRID ER-1	OPGW Installation under LIVELINE Condition.	Deffered due to Durga Puja(01/10/19 to 08/10/19)
11	A/R of 400 kV Ranchi- Maithon RB Ckt-2	01/10/19	07:00	31/10/19	19:00	ODB	POWERGRID ER-1	OPGW Installation under LIVELINE Condition.	DEffered due to Durga Puja(01/10/19 to 08/10/19)
12	400 KV Rengali - Talcher # 1 Line	01/10/19	08:00	10/10/19	17:00	ODB	ER-II/Odisha/Rengali	For PID Measurement (Line Auto-reclose switch is to be kept in Non-auto mode)	DEffered due to Durga Puja(01/10/19 to 08/10/19)
13	315 MVA ICT II at Baripada	01/10/19	09:00	01/10/19	17:30	ODB	ER-II/Odisha/BARIPADA S/S	AMP works	Deffered due to Durga Puja(01/10/19 to 08/10/19)
14	400 kV Jeypore-Indravati S/C Line	01/10/19	08:00:00	01/10/19	18:00:00	ODB	ER-II/Odisha /Jeypore	For PID defect insulator replacement work	DEffered due to Durga Puja(01/10/19 to 08/10/19)
15	765KV Bus-I at Sundargarh	01/10/19	09:00	07/10/19	18:00	OCB	ER-II/Odisha/Sundergarh	HV & Impulse testing of 765KV GIS (Construction Head)	Deffered due to Durga Puja(01/10/19 to 08/10/19)
16	400KV Sundergarh-Raigarh Ckt #1	01/10/19	08:00	07/10/19	18:00	ODB	ER-II/Odisha/Sundergarh	For PID Testing of Porcelain Insulator. Only Auto reclose to be made off	Deffered due to Durga Puja(01/10/19 to 08/10/19)
17	50MVAR JEYPORE LINE REACTOR	01/10/19	09:00 Hrs	01/10/19	18:00 Hrs	ODB	ER-II/Odisha/Balangir	AMP for 50MVAR Jeypore L/R and 403R 52 CB	Deffered due to Durga Puja(01/10/19 to 08/10/19)
18	400kV Bus Reactor-2	01/10/19	09:00	01/10/19	18:00	ODB	ER-II/Odisha/Angul SS	AMP Work	Deffered due to Durga Puja(01/10/19 to 08/10/19)
19	400kV Maithan Kahalgaon-1 Line	02/10/19	09:00	03/10/19	18:00	ODB	ER-II/POWERGRID	Dismantling of Jumpers and equpments of bay no-409 for Upgradation of bay equipment under ERSS-XVII project work.	Deffered due to Durga Puja(01/10/19 to 08/10/19)
20	400kV Maithan Kahalgaon-1 Main Bay (409)	02/10/19	09:00	25/10/19	18:00	OCB	ER-II/POWERGRID	Upgradation of bay equipment and Re conductoring work under ERSS-XVII project work	Deffered due to Durga Puja(01/10/19 to 08/10/19)
21	220 kV Bus-II at Malda	02/10/19	08:00	02/10/19	17:00	ODB	ER-II/POWERGRID	ERSS-XX Constructional work(Reconnection of Bus isolator Jumper)	Deffered due to Durga Puja(01/10/19 to 08/10/19)
22	40352- Main Bay of 315MVA ICT I	02/10/19	09:00	02/10/19	17:30	ODB	ER-II/Odisha/BARIPADA S/S	AMP works	Deffered due to Durga Puja(01/10/19 to 08/10/19)
23	315 MVA ICT#1 at POWERGRID, Subhasgram	03/10/19	09:00	03/10/19	17:00	ODB	ER-II/POWERGRID/SUBHASGRAM	For AMP Work	Deffered due to Durga Puja(01/10/19 to 08/10/19)
24	400 /220 KV 500MVA ICT-I AT GAYA SS	03/10/19	9:00	03/10/19	18:00	ODB	POWERGRID ER-1	FOR INSTALLATION & COMMISSIONING OF BACKUP IMPEDANCE RELAY FOR SYSTEM UPGRADATION	Deffered due to Durga Puja(01/10/19 to 08/10/19)

25	220KV NPRN- PRN CKT-I	03/10/19	09:30	14/10/19	18:00	OCB	POWERGRID ER-1	FOR RE-CONDUCTORING WORK OF LINE (EXISTING COND. TO BE REPLACED WITH HTLS).	Deffered due to Durga Puja(01/10/19 to 08/10/19)
26	220 KV MAIN BUS-1 AT RANCHI	03/10/19	09:30	03/10/19	17:00	ODB	POWERGRID ER-1	AMP AND R-PH CVT REPLACEMENT	DEffered due to Durga Puja(01/10/19 to 08/10/19)
27	400KV BUS 2 AT PATNA	03/10/19	09:30	08/10/19	17:30	ODB	POWERGRID ER-1	JUMPER CONNECTION OF BARH LINE-1 LINE REACTOR BAY. CHANGING OF BUS ISOLATOR OF BAY 409 AND 412	DEffered due to Durga Puja(01/10/19 to 08/10/19)
28	500 MVA ICT-1 AT PATNA	03/10/19	09:30	04/10/19	17:30	OCB	POWERGRID ER-1	AMP AND CSD COMISSIONING	Deffered due to Durga Puja(01/10/19 to 08/10/19)
29	TIE BAY OF 400KV SIDE, 1500MVA ICT-2 AND 400KV RNC-2 LINE(BAY 408) AT NEW RANCHI	03/10/19	09:00	03/10/19	17:00	ODB	POWERGRID ER-1	AMP WORK	DEffered due to Durga Puja(01/10/19 to 08/10/19)
30	220 KV BUS #2 AT PURNEA	03/10/19	09:00	03/10/19	17:00	ODB	POWERGRID ER-3	ATTEND HOT SPOT/REPLACE OF BUS ISOLATOR PURNEA #2.	Deffered due to Durga Puja(01/10/19 to 08/10/19)
31	400 KV 406 Main Bay of 315 MVA ICT-II	03/10/19	09:00	03/10/19	17:30	ODB	ER-II/Odisha/BARIPADA S/S	AMP works	Deffered due to Durga Puja(01/10/19 to 08/10/19)
32	400KV Baripada-Kharagpur line	03/10/19	09:00	15/10/19	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	DEffered due to Durga Puja(01/10/19 to 08/10/19)
33	Main bay-710 of 765kV Sundargarh- Angul Line-3 at Sundergarh	03/10/19	09:00	03/10/19	18:00	ODB	ER-II/Odisha/Sundergarh	for replacement of CB closing damper	Deffered due to Durga Puja(01/10/19 to 08/10/19)
34	50MVAR ANGUL LINE REACTOR	03/10/19	09:00 Hrs	03/10/19	18:00 Hrs	ODB	ER-II/Odisha/Balangir	AMP for 401R 52 CB	Deffered due to Durga Puja(01/10/19 to 08/10/19)
35	400kv Bus Reactor-3	03/10/19	09:00	03/10/19	18:00	ODB	ER-II/Odisha/Angul SS	AMP Work	Deffered due to Durga Puja(01/10/19 to 08/10/19)
36	400KV Bus#1 at binaguri	04/10/19	10:00	04/10/19	12:00	ODB	ER-II/POWERGRID	Jumper connection between Bus-I to 410 & 413 bays after completion of bay upgradation works on 410 & 413 main bays under ERSS-XX	Deffered due to Durga Puja(01/10/19 to 08/10/19)
37	400KV BINAGURI-RANGPO-1 line	04/10/19	12:00	04/10/19	15:00	ODB	ER-II/POWERGRID	Removal of jumper on 411bay Isolator and connecting the same on main and tie bay (410 & 411 respectively) inter connector (Rigid Bus pipe) after completion of bay upgradation works on 410 main bay under ERSS-XX	Deffered due to Durga Puja(01/10/19 to 08/10/19)
38	400KV BINAGURI-RANGPO-2 line	04/10/19	15:00	04/10/19	18:00	ODB	ER-II/POWERGRID	Removal of jumper on 414bay Isolator and connecting the same on main and tie bay (413 & 414 respectively) inter connector (Rigid Bus pipe) after completion of bay upgradation works on 413 main bay under ERSS-XX	Deffered due to Durga Puja(01/10/19 to 08/10/19)
39	132 KV Birpara-Birpara-I	04/10/19	08:00	04/10/19	17:30	ODB	ER-II/POWERGRID	AMP works	Deffered due to Durga Puja(01/10/19 to 08/10/19)
40	400KV TISCO -BARIPADA	04/10/19	09:30	04/10/19	17:30	ODB	POWERGRID ER-1	FLASHED INSULATOR REPLACEMENT TO BE CARRIED OUT AT LOC NO 208 DUE TO LIGHTNING	DEffered due to Durga Puja(01/10/19 to 08/10/19)
41	400 /220 KV 315MVA ICT-II AT GAYA SS	04/10/19	9:00	04/10/19	18:00	ODB	POWERGRID ER-1	FOR UPRATING OF CT WORK FOR 400 KV UNDER NABINAGR -2 PACKAGE	Deffered due to Durga Puja(01/10/19 to 08/10/19)
42	220KV BUS COUPLER AT PUSAULI	04/10/19	09:00	04/10/19	18:00	ODB	POWERGRID ER-1	AMP WORK	Deffered due to Durga Puja(01/10/19 to 08/10/19)
43	406 BAY AT CHAIBASA	04/10/19	09:30	04/10/19	17:30	ODB	POWERGRID ER-1	AMP WORK OF 406 BAY	Deffered due to Durga Puja(01/10/19 to 08/10/19)
44	419 BAY BALLIA -3 MAIN BAY AT PATNA	04/10/19	10:00	04/10/19	17:30	ODB	POWERGRID ER-1	AMP WORK	Deffered due to Durga Puja(01/10/19 to 08/10/19)
45	400KV MAIN BAY OF 400KV BR-1 (BAY 410) AT NEW RANCHI	04/10/19	09:00	04/10/19	17:00	ODB	POWERGRID ER-1	AMP WORK	DEffered due to Durga Puja(01/10/19 to 08/10/19)
46	132kV Kolaghat(DVC)-Kolaghat(WBSETCL) Tie	04/10/19	10:00Hrs	04/10/19	17:00Hrs	ODB	DVC	To attend hotspots at different points of connectors	DEffered due to Durga Puja(01/10/19 to 08/10/19)
47	220 KV Transfer Bus Coupler Bay (Bay No-203)	04/10/19	08:00	04/10/19	17:00	ODB	ER-II/Odisha/Rengali	MOM Box Retrofitting	DEffered due to Durga Puja(01/10/19 to 08/10/19)
48	400 kV 407 main Bay of Baripada-Duburi line	04/10/19	09:00	05/10/19	17:30	ODB	ER-II/Odisha/BARIPADA S/S	AMP & Gasket replacement	Deffered due to Durga Puja(01/10/19 to 08/10/19)
49	400kV Jeypore-Gazuwaka-I Line	04/10/19	08:00:00	05/10/19	18:00:00	ODB	ER-II/Odisha /Jeypore	Replacement of porcelain insulator with polymer insulator	DEffered due to Durga Puja(01/10/19 to 08/10/19)

50	220 kv bus coupler 206 bay with 220 kv main bus-II at Pandiabili.	04/10/19	10:00:00	04/10/19	18:00:00	ODB	ER-II/Odisha/ Pandiabili GIS	For AMP (timing and CRM) of 206 bay.	Deffered due to Durga Puja(01/10/19 to 08/10/19)
51	765kV Angul Sunderagrh-1 Line reactor Bay	04/10/19	10:00	04/10/19	17:00	ODB	ER-II/Odisha/Angul SS	Circuit breaker Damper replacement Work	Deffered due to Durga Puja(01/10/19 to 08/10/19)
52	132 KV Birpara-Birpara-II	05/10/19	08:00	05/10/19	17:30	ODB	ER-II/POWERGRID	AMP works	Deffered due to Durga Puja(01/10/19 to 08/10/19)
53	765/400 KV 1500MVA ICT-I AT GAYA S/S	05/10/19	9:00	05/10/19	18:00	ODB	POWERGRID ER-1	FOR INSTALLATION & COMMISSIONING OF BACKUP IMPEDANCE RELAY FOR SYSTEM UPGRADATION	Deffered due to Durga Puja(01/10/19 to 08/10/19)
54	400 KV PUSAULI ALLAHABD LINE	05/10/19	09:00	10/10/19	18:00	ODB	POWERGRID ER-1	REPLACEMENT OF INSULATORS AT ROAD/RAIL/RIVER/POWER LINE CROSSINGS AND RELAY RETROFITTING	Deffered due to Durga Puja(01/10/19 to 08/10/19)
55	400/220KV 500MVA ICT-I AT PUSAULI	05/10/19	09:00	08/10/19	18:00	OCB	POWERGRID ER-1	SHIFTING OF TRANSFORMER FOR TRANSFORMER RETROFITTING WORK	DEffered due to Durga Puja(01/10/19 to 08/10/19)
56	420 TIE BAY OF BARH 3 AND BALLIA 3 AT PATNA	05/10/19	13:00	05/10/19	17:30	ODB	POWERGRID ER-1	AMP WORK	Deffered due to Durga Puja(01/10/19 to 08/10/19)
57	416 BAY BALLIA -IV MAIN BAY AT PATNA	05/10/19	09:30	07/10/19	17:30	OCB	POWERGRID ER-1	CB OVERHAULING & BCU UPDRATION WORKS UNDER SS03 PACKAGE	Deffered due to Durga Puja(01/10/19 to 08/10/19)
58	220 KV Bus Coupler Bay (Bay No-204)	05/10/19	08:00	05/10/19	17:00	ODB	ER-II/Odisha/Rengali	MOM Box Retrofitting	DEffered due to Durga Puja(01/10/19 to 08/10/19)
59	Jeypore- Rengali Tie Bay (402)	05/10/19	09:00	05/10/19	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.	DEffered due to Durga Puja(01/10/19 to 08/10/19)
60	400 kv future ICT 410 bay with Pandiabili-Mendhasal -1 tie 411 bay. NB:Pandiabili-Mendhasal ckt-1 shall be remain charged through main bay 412.	05/10/19	10:00:00	05/10/19	18:00:00	ODB	ER-II/Odisha/ Pandiabili GIS	AMP (timimg and CRM) of 406 bay.	Deffered due to Durga Puja(01/10/19 to 08/10/19)
61	765kV Angul Sunderagrh-2 Line reactor Bay	05/10/19	10:00	05/10/19	17:00	ODB	ER-II/Odisha/Angul SS	Circuit breaker Damper replacement Work	Deffered due to Durga Puja(01/10/19 to 08/10/19)
62	220KV Bus-I at Maithan	06/10/19	09:00	06/10/19	18:00	ODB	ER-II/POWERGRID	Isolation of Jumpers of 220kV Bus-1 in Dumka-1&II side for stringing work in 220kV side under ERSS-XX project work	Deffered due to Durga Puja(01/10/19 to 08/10/19)
63	400kV MTN Durgapur-2 line	06/10/19	11:00	07/10/19	15:00	ODB	ER-II/POWERGRID	For crane movement required for dismantling and Re-erectionof interrupter of R&B ph of Main Bay CB for internal inspection.	Deffered due to Durga Puja(01/10/19 to 08/10/19)
64	400KV FARAKKA GOKARNA CKT-I	06/10/19	8:00	07/10/19	17:00	OCB	POWERGRID ER-1	TERMINATION OF 400KV D/C RAJARHAT- PURNEA LINE FROM NEW PURNEA END	Deffered due to Durga Puja(01/10/19 to 08/10/19)
65	400KV FARAKKA GOKARNA CKT-II	06/10/19	8:00	07/10/19	17:00	OCB	POWERGRID ER-1	TERMINATION OF 400KV D/C RAJARHAT- PURNEA LINE FROM NEW PURNEA END	DEffered due to Durga Puja(01/10/19 to 08/10/19)
66	400 kV 411 Tie Bay of Baripada-Pandiabili & Baripada-TISCO line	06/10/19	09:00	07/10/19	17:30	ODB	ER-II/Odisha/BARIPADA S/S	Gasket replacement	Deffered due to Durga Puja(01/10/19 to 08/10/19)
67	220KV Bus-II at Maithan	07/10/19	09:00	08/10/19	18:00	ODB	ER-II/POWERGRID	Stringing of strung bus in 220kV side for ICT-3 incomer bays under ERSS-XX project work	Deffered due to Durga Puja(01/10/19 to 08/10/19)
68	220kV Maithan Dumka-1&2 line	07/10/19	09:00	08/10/19	18:00	ODB	ER-II/POWERGRID	Stringing of strung bus in 220kV side for ICT-3 incomer bays under ERSS-XX project work. Both the line will be under shut down for stringing work.	Deffered due to Durga Puja(01/10/19 to 08/10/19)
69	421 MAIN BAY BARH-3 AT PATNA	07/10/19	16:00	07/10/19	17:30	ODB	POWERGRID ER-1	AMP WORK	Deffered due to Durga Puja(01/10/19 to 08/10/19)
70	132 KV BUS COUPLER at Birpara	08/10/19	08:00	08/10/19	17:30	ODB	ER-II/POWERGRID	AMP works	Deffered due to Durga Puja(01/10/19 to 08/10/19)
71	415 MAIN BAY BALLIA 1 AT PATNA	08/10/19	09:30	11/10/19	17:30	OCB	POWERGRID ER-1	CB OVERHAULING & BCU UPDRATION WORKS UNDER SS03 PACKAGE	Deffered due to Durga Puja(01/10/19 to 08/10/19)
72	400 kV 408 Tie Bay of Baripada-Duburi & Baripada-Jamshedpur line	08/10/19	09:00	09/10/19	17:30	ODB	ER-II/Odisha/BARIPADA S/S	Gasket replacement	Deffered due to Durga Puja(01/10/19 to 08/10/19)
73	765KV Bus-II at Sundargarh	08/10/19	09:00	15/10/19	18:00	OCB	ER-II/Odisha/Sundergarh	HV & Impulse testing of 765KV GIS (Construction Head)	Deffered due to Durga Puja(01/10/19 to 08/10/19)
74	400KV Sundergarh-Raigarh Ckt #2	08/10/19	08:00	14/10/19	18:00	ODB	ER-II/Odisha/Sundergarh	For PID Testing of Porcelain Insulator. Only Auto reclose to be made off	Deffered due to Durga Puja(01/10/19 to 08/10/19)

75	400KV TBC at Malda	10/10/19	08:00	12/11/19	17:00	OCB	ER-II/POWERGRID	ERSS-XVII-B Constructional work	AFTER NOVEMBER
76	400/220 KV 315 MVA ICT-3 at Malda Substation(associated Bays 403 and 205)	11/10/19	08:00	03/12/19	17:00	OCB	ER-II/POWERGRID	ERSS-XVII-B Constructional work	AFTER NOVEMBER
77	400KV BINAGURI-RANGPO-1 main bay 410 at Binaguri	14/10/19	10:00	04/11/19	18:00	OCB	ER-II/POWERGRID	TBEA Bay upgradation work under ERSS-XX	After high hydro
78	400KV BINAGURI-RANGPO-2 main bay 413 at Binaguri	14/10/19	10:00	04/11/19	18:00	OCB	ER-II/POWERGRID	TBEA Bay upgradation work under ERSS-XX	After high hydro
79	400KV BUS-I at Malda	16/10/19	08:00	16/10/19	17:00	ODB	ER-II/POWERGRID	ERSS-XX Constructional work(Disconnection of TBC Bus isolator Jumper)	WB
80	400KV Bus#1 at binaguri	09/10/19	09:00	10/10/19	17:00	ODB	ER-II/POWERGRID	Connection between SF6 to Air (GIS) Bushing	After high hydro
81	400KV Bus#2 at Binaguri	11/10/19	09:00	12/10/19	17:00	ODB	ER-II/POWERGRID	Connection between SF6 to Air (GIS) Bushing	After high hydro
82	400KV Bus#1 at binaguri	14/10/19	10:00	14/10/19	12:00	ODB	ER-II/POWERGRID	Removal of Jumper between Bus-I to 410 & 413 bays for isolating the bays from Bus-1 and to commence bay upgradation works under ERSS-XX	After high hydro
83	400KV BINAGURI-RANGPO-1 line	14/10/19	12:00	14/10/19	16:00	ODB	ER-II/POWERGRID	Removal of Jack bus dropper on main and tie Bay (410 & 411 respectively) inter connector (Rigid Bus pipe) to isolate 410 bay and connecting the same on 411bay Isolator under ERSS-XX	After high hydro
84	400KV BINAGURI-RANGPO-2 line	14/10/19	16:00	14/10/19	20:00	ODB	ER-II/POWERGRID	Removal of Jack bus dropper on main and tie Bay (413 & 414 respectively) inter connector (Rigid Bus pipe) to isolate 413 bay and connecting the same on 414bay Isolator under ERSS-XX	After high hydro
85	Binaguri-Kishengunj-I & B/R-I Tie Bay-417 at Binaguri	14/10/19	10:00	14/10/19	17:00	ODB	ER-II/POWERGRID	AMP works	After high hydro
86	400KV NEW PURNEA-SILIGURI -1	14/10/19	09:30	14/10/19	18:00	ODB	POWERGRID ER-1	FOR REPLACEMENT OLD DISTANCE RELAY(EPAC) WITH NEW MICOMP44 RELAY UNDER SYSTEM UPGRADATION	After high hydro
87	400KV BINAGURI-RANGPO-1 line	15/10/19	10:00	31/11/19	18:00	OCB	ER-II/POWERGRID	Reconductoring work by M/s APAR	After high hydro
88	400KV BINAGURI-RANGPO-2 line	15/10/19	10:00	31/11/19	18:00	OCB	ER-II/POWERGRID	Reconductoring work by M/s APAR	After high hydro
89	Binaguri -Purnea-I and Alipurduar-I Tie Bay-423 at Binaguri	15/10/19	10:00	15/10/19	17:00	ODB	ER-II/POWERGRID	AMP works	After high hydro
90	220KV NPRN- PRN CKT-II	15/10/19	09:30	26/10/19	18:00	OCB	POWERGRID ER-1	FOR RE-CONDUCTORING WORK OF LINE (EXISTING COND. TO BE REPLACED WITH HTLS).	After high hydro
91	400KV NEW PURNEA-SILIGURI -2	15/10/19	14:00	15/10/19	18:00	ODB	POWERGRID ER-1	FOR REPLACEMENT OLD DISTANCE RELAY(EPAC) WITH NEW MICOMP44 RELAY UNDER SYSTEM UPGRADATION	After high hydro
92	500MVA ICT 1 AT PATNA	21/10/19	09:30	25/10/19	17:30	OCB	POWERGRID ER-1	CONSTRUCTION OF FIREWALL AND EQUIPMENT UPRATING & JUMPER CONNECTION	AFTER CHATT PUJA
93	220 KV Bus #1 with Siliguri #1 ckt, ICT#1, Birpara#1 ckt & Bus Section-I at Binaguri	28/10/19	09:00	29/10/19	17:00	ODB	ER-II/POWERGRID	Commissioning of Bus #1 Bus bar protection for ICT#3 ERSS-XVII	After high hydro
94	220 KV Bus #2 with Siliguri #2, ICT#2, Birpara#2 & Bus Section-II at Binaguri	30/10/19	09:00	31/10/19	17:00	ODB	ER-II/POWERGRID	Commissioning of Bus #2 Bus bar protection for ICT#3 ERSS-XVII	After high hydro
95	400/220KV 315MVA ICT-II AT PUSAULI	09/10/19	08:00	14/11/19	18:00	OCB	POWERGRID ER-1	FOR TRANSFORMER RETROFITTING WORK	After Chhat Puja

Quarterly Preparedness Monitoring -AGENDA

(Status as on :)

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