



**MINUTES
OF
176th OCC MEETING**

Date:04.03.2021

**Eastern Regional Power Committee
14, Golf Club Road, Tollygunge
Kolkata:700033**

EASTERN REGIONAL POWER COMMITTEE

MINUTES OF 176TH OCC MEETING HELD ON 19.02.2021 (FRIDAY) AT 10:30 HOURS

Member Secretary, ERPC chaired the 176th OCC Meeting. At the outset of meeting, he outlined the performance of ER Grid during January-2021 in brief.

The meeting was conducted through Microsoft Teams online platform. List of participants is enclosed at **Annexure A**.

PART – A

ITEM NO. A.1: Confirmation of minutes of 175th OCC Meeting held on 20th January 2021 through MS Teams.

The minutes of 175th Operation Sub-Committee meeting held on 20.01.2021 circulated vide letter dated 03.02.2021.

Members may confirm the minutes of 175th OCC meeting.

Deliberation in the meeting

Members confirmed the minutes of 175th OCC meeting.

PART B: ITEMS FOR DISCUSSION

ITEM NO. B.1: Outage of Important Transmission System.

1. 400 kV Barh-Motihari D/C and 400 kV Motihari -Gorakhpur D/Clines.

In the 175th OCC meeting, DMTCL submitted that the work for pile foundations were completed at all locations, whereas at 02 nos. (at 26/0 & 26/3) locations the work for pile cap is under progress.

DMTCL informed that the works are in progress at all fronts and both the lines would get restored by 2nd week of March'21.

Regarding non-availability of SCADA data of Motihari, DMTCL submitted that the same has not been rectified yet. They informed that they are pursuing the issue with the vendor i.e. M/S ABB for early restoration. They also informed that the SCADA data would get restored once the 400 kV lines from Motihari get restored to its present configuration.

It was informed that the OPGW work of 400 kV Barh-Motihari lines would be started after permanent restoration of the lines.

DMTCL vide e-mail dated 11thFebruary, 2021 updated the progress of Barh-Motihari and Barh-Gorakhpur D/C lines which is given in **Annexure B.1**.

DMTCL may update.

Deliberation in the meeting

DMTCL informed that all the tower erection has been completed except one special tower in 400 kV Motihari-Gorakhpur Section which is expected to be completed by Februray,2021. They added that stringing of conductors is also under progress and the lines will be restored by 2nd week of March,2021.

They further informed that keeping in view the onset of summer and rise in demand, the shutdown schedule for final restoration work would be reviewed and submitted for approval.

OCC advised DMTCL to submit their shutdown requirement plan to ERLDC and ERPC secretariat and also advised to coordinate with ERLDC & SLDC Bihar for finalizing the shutdown dates.

Regarding non-availability of SCADA data, they informed that SCADA data would get restored once the 400 kV lines from Motihari get restored to its original configuration.

Powergrid informed that as per the advice of ERLDC, they have demobilized the OPGW installation gang for OPGW work in 400 kV Barh-Motihari Ckt-2 and the work would be resumed after permanent restoration of Barh- Motihari & Motihari-Gorakhpur lines.

2. Reconductoring work of 400 kV Rangpo-Binaguri D/Clines.

In the 175th OCC meeting, Powergrid informed that around 80 kms reconductoring work has been completed in total out of 110 kms, and the remaining portions which are left mainly consists of major power line crossings.

They also informed that the work will be completed within two months subject to availability of shutdown.

Powergrid was advised to submit the plan for the shutdowns schedule for balance power line crossings at the earliest so that it could be allowed in the lean hydro season to the extent possible and the reconductoring work of these crossings would be completed as per the schedule to be finalized during OCC Shut Down Meeting in February 2021.

Powergrid may update.

Deliberation in the meeting

Powergrid updated following:

- *96 kms of reconductoring work have been completed for each circuit of 400 kV Rangpo-Binaguri D/C Line and currently work in 2.5 kms stretch for each circuit are under progress.*
- *Out of remaining stretch of 14 Kms, 9 kms belong to West Bengal area and rest in Sikkim area.*
- *They informed that total 3 nos. of power line crossing are left till date out of which work for one crossing would be completed in Feb'21 and remaining two crossings would be completed in March'21'*

They informed that the work is expected to be completed by 25th March, 2021 subject to weather conditions and the line would be charged by 29th March'2021.

OCC advised Powergrid to co-ordinate with ERLDC and the concerned utilities for finalizing the shutdown schedule for power line crossings.

3. 400KV/220KV 315 MVA ICT-3 at Malda S/s.

400KV/220KV 315 MVA ICT-3 at Maldais under continuous shutdown from 04-01-21 for upgradation of 315MVA ICT# 3 at Malda by 500MVA ICT under ERSS – XVII-B.

Powergrid may update.

Deliberation in the meeting

Powergrid informed that work has been delayed due to issue in dew point parameter during pre-commissioning testing and informed that ICT at Malda would be commissioned by 10th March,2021.

SLDC West Bengal raised serious concern on delay of commissioning of ICT-3 at Malda, and stated that further extension of shutdown would severely affect the reliability of power supply and security of the grid in that area in coming days due to gradual increase in demand in view of onset of summer, and scheduled assembly elections.

West Bengal requested Powergrid to explore all the possibilities to bring back the ICT at the earliest.

OCC advised Powergrid to submit a report regarding cause of delay in commissioning the ICT and detailed action plan of work for restoration of ICT by 10th March' 2021 to ERPC secretariat, ERLDC & SLDC West Bengal immediately.

After detailed deliberation, OCC also opined that before extending any long planned shutdowns, transmission licensees should place proper justification/explanation for

cause of the delay to OCC forum beforehand so that the concerned utilities would be aware of issue and the same can be discussed in OCC forum, if required.

4. 132KV-Rangit-Rangpo-1 and 132KV-Rangpo-Gangtok-2.

132KVRangit-Rangpo-1 and 132KV-Rangpo-Gangtok-2 is under continuous shutdown from 12-12-20 for rectification of Multicircuit tower at loc-21 which got bent due to landslide during monsoon.

Power Grid may update.

Deliberation in the meeting

Powergrid informed that the work has been completed and the lines would be restored by 23rd Feb'2021.

OCC advised Powergrid to present a report in OCC regarding the event of occurrence, reason behind the delay of the work, difficulties faced during restoration etc.

5. 400 kV Maithon- Maithon RB D/C

400KV Maithon-Maithon RB D/C is under continuous shutdown from 12-01-21, for re-conductoring work.

Powergrid may update.

Deliberation in the meeting

Powergrid informed that 11.5 km of stringing has been completed out of 31 km for each circuit. They further informed that work related to major power line crossings are pending and shutdown requisition for the same has already been discussed in the 174th OCC maintenance program meeting.

OCC advised Powergrid to submit a detailed plan for restoration of the line to ERPC secretariat/ERLDC at the earliest.

6. 132kV Sagbari –Melli.

In the 174th OCC meeting, Sikkim informed that 132kVMelli-Sagabari S/C is under outage because of faulty breaker issue at Sagabari end. Sikkim informed that 132 kV Sagabari S/s is under DISCOM jurisdiction.

OCC opined that restoration of 132 kV Melli-Sagabari S/C line is very important to ensure reliable supply to Sikkim during contingencies.

OCC advised SLDC Sikkim to take up the issue with DISCOM for rectification of the circuit breaker at Sagabari end of 132 kV Melli-Sagabari S/C line.

In the 175th OCC meeting, SLDC, Sikkim informed that they have taken up the issue with their DISCOM and informed that the circuit breaker issue will be resolved within two weeks.

Sikkim may update.

Deliberation in the meeting

Sikkim informed that the circuit breaker issue has been resolved.

They further informed that as the line was under outage for more than two years, there were vegetation & RoW issues. They added that there is conductor snapping in the line between loc. 20 and loc. 29.

They informed that the line will be charged within one month.

OCC advised Sikkim to expedite the work and restore the line at the earliest.

7. Main bay of Dikchu ICT.

Main Bay 405 connecting Dikchu ICT to Main Bus-2 remains out of service from 19th Feb' 20.

In the 174th OCC meeting, Dikchu informed that the work orders have been placed with the OEM. The materials would be procured by the end of Jan 2021 and the work would be completed by the end of Feb 2021.

Dikchu may update.

Deliberation in the meeting

Dikchu HEP informed that the materials have been received at site and the work would be completed by 1st week of March, 2021.

8. 400 KV main bay of Patna-1 at Kishanganj S/s.

The said bay remains out of service due to problem in Y-ph CB mechanism from 10/04/20.

In the 175th OCC meeting, Powergrid informed that the work has not been started yet due to unavailability of service engineer from China.

OCC advised Powergrid to take up the issue with their corporate office, for early resolution.

Powergrid may update.

Deliberation in the meeting

Powergrid informed that they are planning to carry out the work with in-house expertise and the restoration of bay is expected by April'21.

9. 400KV New Purnea-Gokarna & 400KV New Purnea-FSTPP.

In the 175th OCC meeting, Powergrid informed that the line has already been restored.

Regarding PLCC work of 400 kV New Purnea-Farakka S/C, they informed that LOA has already been placed for new data card to be replaced at 400 kV Farakka end. The PLCC

channel will be restored by Feb'21.

Powergrid may update.

Deliberation in the meeting

Powergrid informed that the permanent restoration of 400 kV New-Purnea-Gokarna & 400 kV New Purnea-FSTPP is going to be completed by March-2021 and the PLCC issue would be resolved during the permanent restoration of the line.

ITEM NO. B.2: Shutdown proposal of generating units for the month of March,2021.

Generator unit shutdown schedule for March' 2021 is given in the table.

In the 175th OCC meeting, NTPC representative stated that they wanted to avail the shutdown of FSTPS U#1 (200 MW) in the month of March,2021.

WBSEDCL representative did not agree with the proposal due to onset of Summer and upcoming elections in the state.

OCC decided to discuss the shutdown proposal of FSTPS U#1 (200 MW) in the next OCC meeting of Feb'21.

Members may update.

Deliberation in the meeting

The updated generating unit shutdown schedule is given below:

Approved Maintenance Schedule of Thermal Generating Units of ER during 2020-21 as on 19.02.2021										
System	Station	Unit	Capacity(MW)	Period (as per LGBR 2020-21)		No. of Days	Reason	Revised Period (As agreed in OCC Meeting)		Remarks
				From	To			From	To	
TVNL	Tenughat TPS	2	210	10.03.21	31.03.21	22	AOH			No plan as of now.
DVC	Mejia TPS	6	250	01.03.21	26.03.21	26	BOH			Deferred
Additional unit shutdown list of Thermal generating stations as approved in 176 th OCC Meeting										
NTPC	TSTPS	2	500	26.10.20	09.12.20	45	COH	01.03.2021		35 days starting from 01.03.21

NTPC informed that TSTPS unit #2 is scheduled for planned shutdown from 1st March,2021 for 35 days for unit overhauling work. They informed that the boiler license has already been extended for two months and now is going to be expired in 1st week of March, 2021.

OCC agreed for shutdown of unit # 2 of TSTPS and advised NTPC to intimate the shutdown schedule to all their beneficiaries before taking the unit out of bar.

ITEM NO. B.3: Repeated tripping of 132 kV Chuzachen – Rangpo – 1 with same fault location

During January 2021, 132 kV Chuzachen-Rangpo-1 tripped repeatedly due to B phase to earth fault at the almost same fault location. ERLDC vide mail dated 15th January 2021 advised Sikkim STU and Sikkim SLDC to find the root cause of repeated tripping and take action to reduce the no of tripping. Tripping incident of 132 kV Chuzachen – Rangpo – 1 in the last 3 months is shown below.

Element Name	Tripping Date	Tripping Time	Reason	Revival Date	Revival Time
132KV-CHUZACHEN-RANGPO-1	27-01-2021	15:01	B_N, 12.28 KM, 1.362 kA (Chuzachen) B_N, 5.2 kA, 2.872 KM (Rangpo)		
132KV-CHUZACHEN-RANGPO-1	25-01-2021	14:21	B-N , 2.9KM , F/C-4.2KA FROM RANGPO	26-01-2021	18:56
132KV-CHUZACHEN-RANGPO-1	25-01-2021	13:42	B-N , 2.9KM , F/C-4.2KA FROM RANGPO B-N,FD 12.36KM,F/C 2.25KA FROM CHEP	25-01-2021	14:16
132KV-CHUZACHEN-RANGPO-1	22-01-2021	15:08	Rangpo: Z1, B-N, 2.925 KM, 4.479 KA	24-01-2021	14:53
132KV-CHUZACHEN-RANGPO-1	22-01-2021	14:04	B-N, Chuzachen: 12.43 KM, ; Rangpo: 2.92 km, Fc= 4.32 kA, Z-1	22-01-2021	14:54
132KV-CHUZACHEN-RANGPO-1	21-01-2021	13:50	B - N FAULT , FAULT 4.9 KA , Z1 2.9 KM (RANGPO)	21-01-2021	15:00
132KV-CHUZACHEN-RANGPO-1	15-01-2021	13:54	Rangpo: B-N, 3km, 1kA; Chuzachen: B-N, 12.7km, 0.8kA.	15-01-2021	14:56
132KV-CHUZACHEN-RANGPO-1	13-01-2021	14:53	Rangpo: B_N, 2.874 KM, 5.3 kA, Chuzachen: B_N, FD-12.25 Km	13-01-2021	15:41
132KV-CHUZACHEN-RANGPO-1	31-12-2020	09:47	B-N,Z1 3.01 KM 5.809 KA FROM RANGPO B-N,15.69 KM 2.452 KA FROM CHUZACHEN	31-12-2020	10:32
132KV-CHUZACHEN-RANGPO-1	27-12-2020	08:30	Rangpo-B-N FD-3.3km FC-6.37kA Chuzachen-B-N, FD-15km FC-2.9kA	27-12-2020	09:16
132KV-CHUZACHEN-RANGPO-1	05-11-2020	13:01	B-N , Z-1, 5.98KA, 2.77KM AT rangpo end	05-11-2020	14:34

In 99th PCC Meeting held on 12.02.2021, the agenda was placed for discussion. PCC referred the issue to OCC for discussion as Sikkim representative were not present in the meeting.

Sikkim may explain.

Deliberation in the meeting

Sikkim informed that the frequent tripping of the 132 kV Chuzachen-Rangpo-1 line is due to RoW issue and the same has been resolved.

OCC advised Sikkim to plan & carry out the annual maintenance work of lines during annual overhauling work of the units of Chuzachen HEP.

ITEM NO. B.4: Frequent Tripping of units of APNRL.

It has been observed that units of APNRL have tripped frequently in recent past. Such frequent tripping impacts load generation balance in real time & compromises reliable supply of power to its beneficiaries.

In the 175th OCC meeting, APNRL informed that they are looking into the issue of frequent tripping of units, for resolving the various issues they are planning to take shutdown of Unit#1 in July'21 and for unit#2 it would be taken care which is under shutdown at present.

OCC noticed that many of the trippings are due to problem in ash evacuation system. APNRL informed that they are also looking into the ash evacuation problem and the present Unit #2 will be taken on bar after rectification of this issue.

OCC advised APNRL to share the action plan/measures to address the frequent tripping of their units at the earliest.

APNRL may update.

Deliberation in the meeting

APNRL representative was not present in the meeting. It was informed that a letter from ERPC Secretariat has already been issued to APNRL in this regard.

ITEM NO. B.5: Review of System Protection Scheme (SPS) of HVDC Talcher-Kolar Bipole-NLDC.

In the 175th OCC meeting, ERLDC explained the logic for revised SPS scheme through a presentation. The logic in brief is given below:

- 400 kV Talcher-Meramundali Line current logic would have three I_{max} settings out of which one will be active depending on the season.
- The I_{max} current settings have been calculated based on thermal ratings of the lines.
- This Talcher-Meramundali Current logic would be ANDed with existing Talcher-Kolar HVDC SPS logic.

Further it was advised that while finalizing the logic the provision for bypassing of 400 kV Talcher-Meramundali line loading logic should be kept to mitigate the planned shutdown of these lines.

NTPC informed that they are ready to implement the revised SPS logic at their end. They added that the ground return mode determination by the SPS logic would be same as it was in the existing logic.

ERLDC informed that for determination of ground return mode condition using the existing logic involves a delay of around 75 sec. They viewed that the time delay can be reduced if a specific signal indicating ground return mode is made available at TSTPS, NTPC end.

Powergrid informed that exclusive signal for ground return mode is not available at their end.

After detailed deliberation OCC agreed to implement the revised SPS logic with ground return mode condition determined as per the existing logic in place.

NTPC informed that the SPS logic will be implemented at their end within one month once the scheme gets finalized.

OCC advised NTPC that after implementation of SPS, the testing of SPS need to be planned and completed.

Regarding issue of non-availability of pole-2 ground recovery signal at NTPC end, OCC advised Powergrid to resolve the issue by Feb'21.

NTPC & Powergrid may update.

Deliberation in the meeting

NTPC informed that logic has been built and the same will be implemented in Unit # 3 DCS during opportunity shutdown of unit# 3.

They added that they would install the transducer and complete other SPS related work in 400 kV TSTPS-Meramundali D/C lines during the line shutdown period planned in 1st week of March 2021.

Regarding issue of pole-2 ground recovery signal at NTPC end, Powergrid informed that this signal is not reliable as it is one-bit signal and same cannot be considered for SPS logic.

NTPC also confirmed that it is not reliable signal and the SPS logic would be implemented as per the existing provisions as discussed earlier.

ITEM NO. B.6: Review of System Protection Scheme (SPS) designed for NEW-SR grid integration: - NLDC.

The existing SPS on NEW-SR corridor (for 765 kV Solapur-Raichur lines) were implemented during the synchronization of SR grid with NEW grid in the year 2014. Over the years, SR grid has been integrated with NEW grid through many inter-regional lines apart from 765 kV Solapur-Raichur. The newly commissioned HVDC Raigarh (WR)-Puglur (SR) Bipole is very

soon expected to be in operation which will further strengthen the network connecting Southern Region.

In the 175th OCC meeting, ERLDC informed that a draft SOP has been prepared and submitted to NLDC for finalization of the same. They explained the various actions to be taken depending on the real time scenario to restore 765 kV Angul-Srikakulam D/c.

They further added that NLDC in co-ordination with RLDCs and SLDCs would take appropriate actions as required depending on the real time scenario.

OCC advised ERLDC to discuss and finalize the draft SOP in consultation with NLDC and submit the same for further discussion.

NLDC & ERLDC may update.

Deliberation in the meeting

ERLDC informed that the draft SOP has been prepared which is enclosed at Annexure B.6.

OCC advised SLDC Odisha and others to go through the SOP and submit their comments/observation, if any, at the earliest.

ITEM NO. B.7: Monthly Data on Category-wise consumption of electricity in states.

The data of category-wise consumption of electricity in the states/UTs, are being frequently referred to by CEA and Ministry of Power. In this regard, as advised by Member(GO &D), GM division of CEA has advised the following:

- The monthly data of category-wise consumption of electricity in the states/UTs may be discussed in the OCC meeting on regular basis with comparative analysis of the same for corresponding monthly data of previous years.
- In case the utilities have reservations on submitting unaudited data then the same may be mentioned in the data itself that these data are unaudited. In that case the data so received would be used only for the purpose of trend analysis and would not be used in any report of CEA.

Members may discuss.

Deliberation in the meeting

OCC advised all SLDCs to take up the issue with their DISCOM(s) and submit the required data on monthly basis to ERPC secretariat.

ITEM NO. B.8: Preparation of FTC procedure by state SLDCs in line of NLDC approved FTC procedure—ERLDC

Consolidated first time procedure for the first time charging of any transmission & generating elements with the grid, is available in the ERLDC website under Document > First time charging tab or "<http://erpc.gov.in/wp-content/uploads/2020/07/168th-OCC-minutes-final->

merged.pdf" link.

This First time Charging (FTC) procedure applies to

1. All the generating station those are regional entities (as defined in IEGC)
2. Power system elements belongs to 400kV level and above irrespective of ownership
3. 220 kV lines emanating from ISGS /ISTS substations
4. Inter-Regional/ Interstate/Transnational transmission lines irrespective of voltage level/ownership
5. HVDC links/poles irrespective of ownership
6. FACTS devices (TCSC/FSC/STATCOM/SVC)
7. Station Transformers (STs) connected at generating stations etc.

However, intrastate 220 kV lines and bellow are not included in this procedure. For safe, secure and reliable operation of the power system, all lines need to be allowed to interconnect with the Power system as per a defined procedure.

Before integration of any new element, RLDC need to carry out detail system integration study which requires different technical parameter for network modeling of the new element.

In view of above, all SLDCs are requested to develop one first time charging procedure or adopt the same procedure practiced at RLDCs for first time integration of any 220 kV and below intra-state new transmission & generating elements including RE generators.

Members may discuss.

Deliberation in the meeting

ERLDC informed that for effective grid operation, updated SCADA diagram and modeling diagrams are very much necessary and advised all SLDCs to ensure SCADA data availability and protection settings confirmation before first time charging of any intrastate element.

SLDCs of Bihar, Jharkhand & DVC informed that they follow the NLDC/ERLDC procedure in case on first time charging of their intrastate elements.

SLDC Odisha & SLDC West Bengal informed that they are having their own procedure & formats for FTC of intra-state lines.

ITEM NO. B.9: Data for preparation of National Electricity Plan (NEP) 2022-27 and 2027-32.

Sub-committee 8 on "Transmission Planning" was constituted by the Committee for preparation of National Electricity Plan (NEP) 2022-27. The first meeting of the sub-Committee was held on 27.10.2020 wherein CEA requested STUs/Discoms to furnish the relevant data pertaining to their state within 30 days as per the format.

All states are requested to submit the relevant details to CEA with a copy to ERPC for preparation of the transmission planning. The relevant details as per the format may be send to the following mail addresses:

- cea-pspa1@gov.in
- mserpc-power@nic.in

WBSETCL, CESC and DVC have submitted the relevant details for preparation of NEP for 2022-27 and 2027- 32.

In the 175th OCC meeting, BSPTCL, OPTCL & JUSNL informed that the relevant information would be submitted within Jan'21.

OCC advised Sikkim also to submit the aforesaid details, if any to CEA by Jan'21.

BSPTCL, OPTCL, JUSNL and Sikkim may update.

Deliberation in the meeting

It was informed that Bihar has submitted the data.

OCC advised OPTCL & JUSNL to submit the relevant information within one week.

ITEM NO. B.10: Short Term and Long-Term Transmission Plan for Intra state Constraints in Orissa-- ERLDC

Based on January 2020-2021 Base case and real-time data, the following constraints have been observed in the State network which does not satisfy N-1 reliability criteria. The details are given below:

Transmission Lines having N-1 Reliability Issue	Present Actual Loading Observed (MW)	Loading observed in Simulation (MW)	Sensitivity of N-1 on Parallel Element	Action Plan by STU and SLDC	Remarks and Details from SLDC/STU
220 kV Rourkela-Tarkera D/C (Loading is low in Real time with High Injection by Vedanta)	24	120	80 %	OPTCL	
220 kV Vedanta-Buddhipadar D/C (High Loading in Injection by Vedanta)	155-160	0	100%	OPTCL	
220 kV Buddhipadar-Lapanga D/C (High loading in injection by Vedanta)	120-140	16	67 %	OPTCL	

In the 174th OCC meeting, ERLDC informed that the N-1 criteria are not being satisfied when the injection from Vedanta is above 130 or 140 MW.

OCC advised Odisha to submit the action plan for removing the constraints in above lines to ERPC and ERLDC.

In the 175th meeting, OCC advised SLDC Odisha to submit their comments to ERLDC/ERPC secretariat within a week.

OPTCL may update.

Deliberation in the meeting

SLDC Odisha informed that they would submit the action plan for removing the constraints in above lines within a week.

ITEM NO. B.11: Issue related to PLCC channel of 400 kV Teesta III-Kishanganj Line-TUL

TUL vide email dated 16.02.21 informed that the issue of faulty channel-1 of PLCC for 400 kV Teesta III-Kishanganj Line could not be resolved even after replacement and tuning of frequency cards with new one. The alarm in the PLCC still persists in Kishnaganj end & Teesta-III end.

TUL may explain. Members may discuss.

Deliberation in the meeting

TUL informed that the PLCC issue in 400 kV Teesta II-Kishanganj line has not been resolved even after replacement and tuning of frequency cards with new one. They further informed that OEM (M/s ABB) has suggested to change the frequency band for resolving the issue.

OCC opined that TPTL being the owner of the transmission line shall act as coordinating agency and coordinate with concerned entities and resolve the issue at the earliest.

PART C: ITEMS FOR UPDATE

ITEM NO. C.1: ER Grid performance during January'2021.

The average and maximum consumption of Eastern Region and Max/Min Demand (MW), Energy Export for the month January- 2021 were as follows:

Average Consumption (Mu)	Maximum Consumption(mu)/ Date	Maximum Demand (MW)	Minimum Demand(MW)	Schedule Export (Mu)	Actual Export (Mu)
		Date/Time	Date/Time		
381	401 MW 29-01-2021	20094 MW 18-01-2021; 18:15	11952 MW 02-01-2021; 14:21	354 7	3353

ERLDC may present Performance of Eastern Regional Grid.

Deliberation in the meeting

The presentation on the performance of Eastern Regional grid is given in Annexure C.1.

Members noted.

ITEM NO. C.2: Primary Frequency Response Testing of Generating Units—ERLDC.

In the 173rd OCC Meeting, NTPC informed that Farakka has already planned to carry out the test on 1st of Feb 2021. Kahalgaon is planning to carry out test after 15th Jan 2021 and BRBCL is planning to carry out the test after Dec 2020.

MPL informed that they have placed the order with Siemens and the dates for testing would be finalized in coordination with ERLDC and Siemens.

OCC further, advised all the other Generators, especially the Hydro-Electric Plants to plan the Primary Frequency Response Testing in the winter season.

A presentation on Primary Frequency Response Testing was given by M/s Siemens on 11.12.2020.

NTPC Kahalgaon informed that they had already placed the PO with M/s Solvina for Primary Frequency Response Testing and it is expected that the testing will be done in the second fortnight of Jan-2021 as confirmed by the agency.

In the 175th OCC meeting, ERLDC updated the primary frequency response testing schedule of the generators received by them.

Respective Generators may update.

Deliberation in the meeting

The updated status of the testing schedule for the generators is enclosed at Annexure C.2.

ERLDC informed that as per preliminary report received for units where PFR have been completed, the primary frequency response observed during testing were satisfactory.

ITEM NO. C.3: Testing of Primary Frequency Response of state generating units by third party agency--ERLDC

In the 171st OCC Meeting, OCC advised all the SLDC's to prepare the action plan for their state generators and submit the details to ERPC and ERLDC at the earliest.

DVC video-mail dated 6th Oct 2020 informed that the Primary Frequency Response Testing may be carried out for the following generating units:

Sl. No.	Name of the Units	Capacity (MW)
1	BTPS-A	500
2	CTPS Unit #7&8	2X250
3	DSTPS Unit#1&2	2X500
4	KTPS Unit # 1&2	2X500
5	MTPS Unit # 3 to 8	2 X 210 MW +2 X 250 MW + 2X 500 MW

6	RTPS Unit # 1 & 2	2 X 600 MW
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However, at present the Primary Frequency Response Testing may not be possible for the following units of DVC:

Sl. No.	Name of the Units	Capacity (MW)	Remarks
1	BTPS-B U#3	210	The Governing system is of the Hydro-mechanical type and the Control system is a Solid-state Hardware/Relay based system.
2	DTPS U#4	210	The Governing system is of the Hydro-mechanical type and the Control system is a Solid-state Hardware/Relay based system
3	MTPS Unit # 1&2	2X210	C & I system of Unit 1 & 2 are originally supplied with a Solid-state Hardware-based system for SG & TG Package which is lacking in scalability and flexibility and the BOP Package is supplied with a primitive DCS system.

In the 173rd OCC Meeting, OPGC informed that for unit # 3 & 4, the order has been placed with M/s Siemens and approval is in process.

OHPC informed that in concurrence to a meeting held with SLDC Odisha, they have planned to carry out the test at one unit of Indravati.

West Bengal informed that they are in discussion with their generators to carry out the primary Frequency response Testing.

DVC informed that both the agencies M/s Siemens & M/s Solvina have agreed to carry out the testing at pre agreed rates, terms & conditions.

In the 175th OCC meeting, SLDC, Bihar informed that BTPS is already coordinating with M/s Slovina regarding the primary frequency test.

DVC informed that the matter is being taken up by their operation team.

SLDC West Bengal informed that the relevant document and vendor names collected from ERLDC has been intimated to the generators.

OCC advised all the SLDCs to coordinate with their generators and submit the unit wise schedule for primary frequency response testing.

Members may update.

Deliberation in the meeting

Barauni TPS informed that PFR testing would be completed by March'2021.

OPGC informed that they would finalize the order with Siemens by end of Feb'2021.

OCC advised SLDC Odisha to coordinate with OHPC and submit the unit wise schedule for primary frequency response testing within a week.

SLDC, DVC informed that indent has been placed for PFR testing of their generating units.

SLDC, Jharkhand informed that they have intimated Tenughat in this regard. OCC advised to coordinate and submit the schedule for PFR testing.

On request from WBPDC, OCC advised ERLDC to share all relevant documents related to selection of the vendor for PFR Testing along with contact details of the vendors to West Bengal SLDC for further sharing by them with their state generators.

ITEM NO. C.4: PSS tuning of Generators in Eastern Region.–ERLDC.

The PSS tuning activity is mandatory in line with IEGC and CEA regulations. The Procedure of PSS tuning for helping utilities in getting this activity carried out has been approved in 171st OCC Meeting and shared with all concerned utilities. List of units where PSS tuning activities is pending is given at **Annexure C4**.

In the 175th OCC meeting, ERLDC informed that PSS tuning at Chuzachen HEP has been completed in Jan'21.

OCC advised all generators to submit their plan for PSS tuning to ERLDC/ERPC secretariat at the earliest.

Members may update.

Deliberation in the meeting

NTPC informed that PSS tuning schedule for BRBCL & Barh has been submitted. OCC advised NTPC to submit a complete schedule for PSS Tuning of all of their units to ERPC secretariat/ERLDC within two weeks.

OHPC informed that they have already taken up with OEM for PSS tuning of their units. OCC advised to submit a status report in this regard.

OCC advised all other generators to submit their plan for PSS tuning to ERLDC/ERPC secretariat at the earliest.

ITEM NO. C.5: Operationalizing Bus splitting at Biharshariff—ERLDC.

In the 172nd OCC Meeting, OCC advised Bihar to share the plan for load trimming scheme with ERLDC at the earliest.

OCC decided to put the Bihar Sharif bus splitting scheme in service on 12th Nov 2020. In the 173rd OCC Meeting, ERLDC informed that bus splitting scheme was put in operation on 18th November 2020 and the bus coupler was closed on 19th November 2020.

Bihar informed that uneven power flow through the ICTs was observed and they are in process of implementation of load trimming scheme.

OCC advised Bihar to send their queries, if any to ERPC and ERLDC within a week. OCC also advised Bihar to implement the load trimming scheme to avoid unwanted tripping of the transformers on overload.

Thereafter, BSPTCL submitted the following Load trimming Scheme based on internal discussion:

<p>(A) By using a Bay Control Unit(BCU) to make logical tripping command by using Digital Input and Digital Output. This will be more technical and sophisticated way of implementation.</p> <p>(B) By extending the tripping command to 220 KV Double Circuit Bihar Sharif-Fathua transmission line along with tripping of 500 MVA TRF-04 at Bihar Sharif (PG). Fathua will avail power from Patna(PG) and Gaurichak without any load restriction.</p> <p>In implementation of scheme under option (A) will take significant time (At least 18 Months), as such decision has been taken to implement option (B). Apart from implementation of scheme under option (B) following 132/33 KV GSS shall be shifted on other GSS which are having power source other than Bihar Sharif GSS.</p> <p>(1) Hathidah GSS shall be shifted on Lakhisarai GSS.</p> <p>(2) Wazirganj GSS shall be shifted on Khizirsarai GSS</p>
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Based on the inputs some queries were raised by ERLDC which are provided below for discussion:

1. BCU based SPS logic implementation may need more explanation. In general, multiple element input and status based SPS require PLC based SPS scheme as implemented in most of the schemes.
2. Present option B proposes 500 MVA ICT 4 tripping based SPS rather than 315 MVA ICT 2 (ICT which can overload in certain loading condition) which is the prime objective. The SPS logic of overloading of ICT 2 above 315 MVA would be more apt as it will consider the criteria and will also avoid any unnecessary tripping of 220 kV Bihar Sharif -Fathua D/C with 500 MVA ICT 4 tripping when its outage is not causing any overload on ICT 2 as per demand scenario. BSPTCL is advised to review the scheme.
3. Bihar SLDC may share the impact of the 132kV load shifting and their sensitivity on the ICT loading after split bus condition to ensure their impact.
4. Whether the issue of simultaneous 400/220 kV ICT 1 and 3 tripping on 400 kV line faults observed in the past due to wiring /old relay issue has been resolved by BSPTCL?
5. Any plan by STU for controlling 220 kV Fault level Bihar Sharif also needs to be submitted.

In the 175th OCC meeting, BSPTCL informed that all the electromechanical relays of 400/220 kV ICTs at Bihar Sharif S/s has been replaced with numerical relays.

They further added that, their O&M team is doing analysis regarding the load tripping scheme and the same will be shared with ERLDC shortly.

OCC advised to finalize and implement load tripping scheme so that bus splitting scheme can be operationalized at the earliest. It also advised BSPTCL to submit their comments on the

queries raised by ERLDC within a week.

BSPTCL submitted a MOM dated 04.02.21 in this regard which is annexed as Annexure-C5.

BSPTCL may update.

Deliberation in the meeting

BSPTCL informed that implementation of PLC based SPS logic is under consideration and the same would be implemented within one year. However, they have completed hard-looping based scheme and informed that the load trimming scheme can be operationalized with the present arrangement of hard-looping scheme.

OCC advised ERLDC, Powergrid & BSPTCL to coordinate and operationalize the bus splitting scheme at Biharsharif S/s within one week.

ITEM NO. C.6: Updated Operating Procedure of Eastern Region, 2020.

The Operating Procedure of every region must be updated and revised annually by the concerned RLDC, in compliance to section 5.1(f) of the IEGC. The procedure is finalized and uploaded at ERLDC website by

20- 07-2020, taking into consideration comments received till 18-07-20. To discuss the revised operating procedure of Eastern Region, one special meeting was held on 27-11-2020.

Based on the deliberation in the meeting, operating procedure of Eastern Region has been revised and the final procedure was shared with all regional utilities vide mail dated 04-01-2021. The final procedure is also uploaded on the ERLDC website.

In the 175th OCC meeting, OCC advised all the utilities to go through the revised operating procedure and submit their final observation/comments if any, by January' 21.

Powergrid vide mail dated 1st Feb'21 submitted the observation of Operating Procedure. The same is attached at Annexure- C6.

Members may discuss.

Deliberation in the meeting

After detailed deliberation on the comments submitted by Powergrid, the followings were concluded:

- *Regarding First time charging procedure, OCC reiterated that the procedure as documented by NLDC shall be followed.*
- *Regarding clause 3.7, It was decided that ERLDC would share the relevant details/band details of STATCOM while issuing instruction to utility for changing of setpoint of STATCOM.*
- *It was found that remaining observations of Powergrid have already been addressed in the revised operating procedure circulated vide e-mail dated 04.01.2021.*
- *OCC advised Powergrid to go through the revised operating procedure and submit their comments, if any.*

The procedure is available at ERLDC website; the link is:

https://app.erldc.in/Content/Upload/System%20Study/Operating%20Procedure/2020%20-Operating%20Procedure-R7_After%20Meeting_05-01-2021.pdf

SLDC West Bengal requested for two weeks time to review the operating procedure in view of the changes in SLDC management due to recent transfer/retirement.

OCC agreed and advised all utilities to go through the revised document and submit their final observation/comments within two weeks.

ITEM NO. C.7: Status of UFRs healthiness installed in Eastern Region.

In the 175th OCC meeting, OCC advised all the constituents to send the UFR healthiness data on monthly basis to ERPC.

UFRs healthiness status has been received from WBSETCL, JUSNL& BSPTCL.

Members may update.

Deliberation in the meeting

DVC & CESC submitted the UFR healthiness status.

OCC advised OPTCL to submit the UFR healthiness certificate at the earliest.

ITEM NO. C.8: Status of Islanding Schemes healthiness installed in Eastern Region.

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

Details received from the constituents are as follows:

Sl. No	Name of Islanding Scheme	Confirmation from Generator utility	Confirmation from Transmission Utility end
1	CESC as a whole Islanding	Healthy	Healthy
2	BkTPS Islanding Scheme	Healthy	Healthy
3	Tata Power Islanding Scheme, Haldia	Healthy	Healthy
4	Chandrapura TPS Islanding Scheme, DVC	Not in service	
5	Farakka Islanding Scheme, NTPC	Healthy	
6	Bandel Islanding Scheme, WBPDC	Healthy	Healthy

In the 175th OCC meeting, JUSNL informed that 220 kV Lalmatia-Godda line has been

charged recently. They added that the islanding scheme will be reviewed based on this change in network configuration.

Members may update.

Deliberation in the meeting

CESC submitted the status of the islanding scheme.

ITEM NO. C.9: Review of Islanding Scheme in Eastern Region--ERLDC

a. Islanding Scheme of CPPs.

In line with power plant and system, a mail has also been sent for review of islanding scheme of CPP. However, input is received only from WBSLDC.

In the 175th OCC meeting, OCC advised all SLDCs to coordinate with the CPPs under their control area jurisdiction and intimate the changes occurred in islanding schemes of CPPs, if any, to ERLDC.

SLDC Odisha may update.

Deliberation in the meeting

OCC advised SLDC Odisha to submit details related to changes occurred in islanding schemes of CPPs under their control area within two weeks.

ITEM NO. C.10: Review of Over Current Settings of Lines having HTLS Conductor— ERLDC

In 220 kV and 132 kV network many lines are re-conducted with HTLS conductor. However it is being observed that for some line(s) overcurrent setting modification is not done accordingly. This is leading to underutilization of asset below their thermal limit. Relay setting should not restrict the load ability of transmission line below its thermal loading limit or stability loading limit. The list of some of the lines having HTLS conductor is as follows:

- ii. 132kVJeerat-Dharampur-1
- iii. 132kVJeerat-Dharampur-2
- iv. 132kV-Bidhannagar-Ukhara-1
- v. 132kV-Bidhannagar-Ukhara-2
- vi. 132kVTitagarh-Dharampur-1
- vii. 132kVTitagarh-Dharampur-2
- viii. 132kV-Baharampur-Gokarna-1
- ix. 132kV-Baharampur-Gokarna-2
- x. 132kV Malda-Malda-1
- xi. 132kV Malda-Malda-2
- xii. 220kV Bakreswar-Saidaipur-1
- xiii. 220kV Bakreswar-Saidaipur-2
- xiv. 220kV-Patna-Khagaul-2
- xv. 220kV-Patna-Khagaul-3

It is requested that all transmission licensees who have uprated their lines with HTLS conductor may furnish following data

SI No	Name of line which is re-conducted	Thermal loading limit of line(Amps)	Thermal loading limit of End equipment(Amps)	Over Current Setting of line (Amps)

In the 175th OCC meeting, OCC advised respective utilities to review the overcurrent settings for the lines wherein up gradation of lines are being done with HTLS conductor.

ERLDC informed that this is important for ATC/TTC calculation of the utilities.

OCC advised utilities to go through the list of the lines and update the same in case of any addition to the list.

Members may update.

Deliberation in the meeting

It was informed that details have been received from all the utilities except JUSNL & OPTCL.

OCC advised OPTCL & JUSNL to submit the details within a week.

ITEM NO. C.11: Transfer capability determination by the states.

Latest status of State ATC/TTC declared by states for the month of April-2021

SI No	State/Utility	TTC (MW)		RM(MW)		ATC Import (MW)		Remark
		Import	Export	Import	Export	Import	Export	
1	BSPTCL	5150	--	103	--	5047	--	Feb-21
2	JUSNL	1544	--	56	--	1488	--	May-21
3	DVC	1355	2995	65	51	1290	2944	Apr-21
4	OPTCL	2251	1432	74	54	2177	1378	Dec-20
5	WBSETCL	5140	--	400	--	4740	--	Mar-21
6	Sikkim	315	--	2.44	--	315.56	--	Feb-21

Declaration of TTC/ATC on SLDC Website

SI No	SLDC	Declared on Website	Website Link	Constraint Available on Website	Type of Website Link
1	BSPTCL	Yes	http://www.bsptcl.in/ViewATCTTCWeb.aspx?GL=12&PL=10	Yes	Static Link-Table
2	JUSNL	Yes	http://www.jusnl.in/pdf/download/ttc_atc_nov_2020.pdf	Yes	Static link – pdf file
3	DVC	Yes	https://application.dvc.gov.in/CLD/	Yes	Static Link-

			atcttmenu.jsp#		Word file
4	OPTCL	Yes	https://www.sldcorissa.org.in/TTC_ATC.aspx	Yes	Static Link-pdf file
5	WBSETCL	Yes	http://www.wbsldc.in/atc-ttc	No (Not updating)	Static Link-Table
6	Sikkim	No	—	No	No link

It is necessary to highlight that the ATC/TTC declaration on website need to be updated in timely manner. It is suggested that along with PDF copies, a tabular format may also kindly be provided so that it can be utilized for preparing ERLDC portal on State ATC/TTC. **In addition, ATC/TTC may be declared three months in advance and periodically reviewed based on any shutdown causing leading to any constraint.**

In the 175th OCC meeting, Odisha SLDC informed that the ATC/TTC details up to March'21 have been sent to ERLDC.

ERLDC requested all the constituents to update the ATC/TTC data in their website in a tabular form and also to put a suitable link on their respective website so that the data can fetched easily.

Members may update.

Deliberation in the meeting

It was updated that website link of ATC/TTC declaration for Sikkim has been restored.

OCC advised all the utilities to calculate and update ATC/TTC for their control area for three months in advance and the same may be periodically reviewed based on any shutdown causing leading to any constraint.

ITEM NO. C.12: Mock Black start exercises in Eastern Region –ERLDC.

Mock black start date for financial year 2020-21 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 Oct 2020		Second Week of Feb 2021	
2	Balimela	Second week of Nov 2020		First Week of March 2021	
3	Rengali	Second week of Nov 2020	Done on 23 rd Nov 2020	First Week of March 2021	
4	Burla	Second week of Nov 2020		First Week of March 2021	
5	U. Indravati	Last week of Oct 2020		Second Week of Feb 2021	
6	Maithon	Third Week of Nov 2020		First Week of March 2021	

7	TLDP-III	Second week of Nov 2020		Second Week of Feb 2021	
8	TLDP-IV	Third Week of Nov 2020		First Week of March 2021	
9	Subarnarekha	Second week of Nov 2020		Second Week of Feb 2021	Done on 12th Feb'21
10	Teesta-V	Third Week of Nov 2020		Third Week of March 2021	
11	Chuzachen	Second week of Nov 2020		First Week of March 2021	
12	Teesta-III	Third Week of Nov 2020		First Week of March 2021	
13	Jorethang	Third Week of Nov 2020		First Week of March 2021	
14	Tasheding	Second week of Nov 2020		First Week of March 2021	
15	Dikchu	Second week of Nov 2020		Second Week of Feb 2021	

Members may update.

Deliberation in the meeting

SLDC Odisha informed that mock black start exercise at U. Indravati is scheduled to be carried out in March' 21.

ITEM NO. C.13: Guidelines for Availability of Spares and Inventories for Power Transmission System (Transmission Lines & Substation/Switchyard) Assets.

PSETD division of CEA vide letter dated 03.02.2021 informed that guidelines for Availability of Spares and Inventories for Power Transmission System (Transmission Lines & Substation/Switchyard) Assets have been formulated after consultation with various stakeholders. The guidelines have been prepared to have uniform practice in maintaining mandatory spares at different levels by power utilities across the country to meet any eventuality like electrical failure/mechanical damage of assets, natural disaster etc. The guidelines are available are available at CEA website at the link:http://cea.nic.in/reports/others/ps/psetd/Spare_Guidelines.pdf.

Members may note.

Deliberation in the meeting

OCC advised all the utilities to comply with the CEA guidelines with regard to availability of spares and inventories for power transmission system.

ITEM NO. C.14: Technical specifications for Bird Flight Diverter (BFD).

It was informed that CEA vide letter dated 04.02.2021 intimated that a technical specification for Bird Flight Diverter has been formulated which is to be placed in identified stretch of transmission & distribution lines to avoid the chances of collision of birds. The specification is available at CEA website at the link :https://cea.nic.in/wp-content/uploads/psetd/2021/01/Technical_Specifications_for_Bird_Flight_Diverter.pdf

Deliberation in the meeting

OCC advised all the utilities to comply with the technical standards for BFD and place the BFDs in the identified stretches as per the guidelines of the Forest Authority.

PART D: OPERATIONAL PLANNING

ITEM NO. D.1: Anticipated power supply position during March 2021.

The abstract of peak demand (MW) vis-à-vis availability and energy requirement vis-à-vis availability (MU) for the month of February 2021 were prepared by ERPC Secretariat on the basis of LGBR for 2019-20 and feedback of constituents, keeping in view that the units are available for generation and expected load growth etc. is enclosed at Annexure.

Members may update.

Deliberation in the meeting

The updated anticipated power supply position for the month of March, 2021 is given in Annexure D1.

ITEM NO. D.2: Major Generating Units/Transmission Element outages/shutdown in ER Grid (as on 13.01.2021).

(a) Outage of major Thermal Generating stations

S.No	Station	Agency	Unit No	Capacity MW	Reason(s)	Outage Date
1	KOLAGHAT	WBPDC	1	210	ESP REPAIR & MAINTENANCE	07-Jun-2018
2	KOLAGHAT	WBPDC	2	210	ESP & ASH HANDLING REPAIR & MAINTENANCE	26-Dec-2019
3	BOKARO'B'	DVC	3	210	BOILER TUBE LEAKAGE	21-Oct-2020
4	BARAUNI TPS	BSPHCL	6	110	ROTOR FAULT	09-Nov-2020
5	WARIA TPS	DVC	4	210	TAKEN OUT OF BAR DUE TO NON RECEIPT OF ENVIRONMENTAL CLEARANCE	31-Dec-2020

6	MPL	MPL	1	525	ANNUAL OVER HAULING	12-Jan-2021
7	MEJIA TPS	DVC	8	500	ANNUAL OVER HAULING	18-Jan-2021
8	KHSTPP	NTPC	3	210	BOILER TUBE LEAKAGE	31-Jan-2021
9	GMR 3	GMR-Infra	3	350	ANNUAL OVERHAULING	02-Feb-2021
10	GMR	GMR-Infra	2	350	GENERATOR SEAL OIL SYSTEM PROBLEM	05-Feb-2021
11	STERLITE	SEL	1	600	TURBINE VIBRATION	07-Feb-2021
12	FSTPP	NTPC	2	200	BOILER TUBE LEAKAGE	08-Feb-2021
13	KHSTPP	NTPC	5	500	BOILER TUBE LEAKAGE	08-Feb-2021
14	DPL	WBPDC	7	300	BOILER TUBE LEAKAGE	10-Feb-2021

All Generating stations are requested to update expected restoration time and reason outage to ERLDC/ERPC on weekly basis in case of any change at their end.

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

(b) Major Generating stations Out on Reserve Shutdown due to low system demand: -

SI No	Station	State	Agency	Unit No	Capacity MW	Reason(s)	Outage Date
1	BARAUNI TPS	BIHAR	BSPHCL	7	110	RSD/ LOW SYSTEM DEMAND	28-May-2020
2	KOLAGHAT	WEST BENGAL	WBPDC	3	210	RSD/LOW SYSTEM DEMAND	13-Jun-2020
3	KOLAGHAT	WEST BENGAL	WBPDC	5	210	RSD/LOW SYSTEM DEMAND	15-Dec-2020
4	KOLAGHAT	WEST BENGAL	WBPDC	6	210	RSD/LOW SYSTEM DEMAND	03-Feb-2021

(c) Hydro Unit Outage Report: -

SI No.	Station	State	Agency	Unit No	Capacity	Reason(s)	Outage Date
1	BURLA HPS/HIRAKUD I	ODISHA	OHPC	6	37.5	R & M WORK	16-Oct-2015
2	BALIMELA HPS	ODISHA	OHPC	1	60	R & M WORK	05-Aug-2016
3	BURLA HPS/HIRAKUD I	ODISHA	OHPC	5	37.5	R & M WORK	25-Oct-2016
4	BALIMELA HPS	ODISHA	OHPC	2	60	R & M WORK	20-Nov-2017

5	BURLA HPS/HIRAKUD I	ODISHA	OHPC	1	49.5	R & M WORK	14-Mar-2018
6	BURLA HPS/HIRAKUD I	ODISHA	OHPC	7	37.5	ANNUAL MAINTENANCE	06-Dec-2019
7	U.KOLAB	ODISHA	OHPC	3	80	TURBINE GUIDE BEARING PROBLEM	07-Jan-2020
8	BALIMELA HPS	ODISHA	OHPC	5	60	STATOR EARTH FAULT	13-Dec-2020
9	RENGALI HPS	ODISHA	OHPC	5	50	ANNUAL MAINTENANCE WORK	16-Dec-2020
10	INDRAVATI	ODISHA	OHPC	3	150	ANNUAL MAINTENANCE WORK	28-Dec-2020
11	BALIMELA HPS	ODISHA	OHPC	4	60	OIL LEVEL DROP IN GENERATOR THRUST BEARING OIL BATH	31-Dec-2020
12	CHUZACHEN	SIKKIM	GATI	1	55	ANNUAL OVERHAULING	01-Feb-2021
13	CHUZACHEN	SIKKIM	GATI	2	55	ANNUAL OVERHAULING	01-Feb-2021

It is seen that about 792MW hydro capacities in Odisha is under forced outage / planned outage in the period of peak monsoon and therefore not available for providing the much needed peaking support during evening peak. SLDC / OHPC may please indicate restoration plan of the units.

(d) Line long outage report:

SL NO	Transmission Element / ICT	Agency	Outage DATE	Reasons for Outage
1	400 KV IBEUL JHARSUGUDA D/C	IBEUL	29/04/18	TOWER COLLAPSE AT LOC 44,45
2	220/132 KV 100 MVA ICT I AT LALMATIA	FSTPP/JUSNL	22/01/19	FAILURE OF HV SIDE BREAKER
3	220 KV PANDIABILI - SAMANGARA D/C	OPTCL	03/05/19	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. PRESENTLY CHARGED FROM PANDIABILLI END (LOC 156) TO LOC 58

4	400 KV MOTIHARI(DMTCL)- GORAKHPUR-I	POWERGRID/DMTCL	13/08/19	LINE SWITCHED 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. 400KV BARH -GORAKHPUR 1 CHARGED AT 18:57 HRS ON 05.02.20 AS INTERIM ARRANGEMENT BYPASSING LILO PORTION OF MOTIHARI.
5	400 KV MOTIHARI(DMTCL)- GORAKHPUR-II	POWERGRID/DMTCL	13/08/19	EARLIER RECONFIGURED BARH - GOROKPUR # II AGAIN LILOED BACK AT MOTIHARI AND THE PORTION BEYOND MOTIHARI SHALL BE TERMED AS 400 KV MOTIHARI(DMTCL)-GORAKHPUR-II
6	400 KV BARH- MOTIHARI(DMTCL) - I	POWERGRID/DMTCL	04/09/19	TOWER COLLAPSE AT LOCATION 26/0 AND 25/5. 400KV BARH -GORAKHPUR 2 CHARGED AT 10:06 HRS ON 31.01.20 AS INTERIM ARRANGEMENT BYPASSING LILO PORTION OF MOTIHARI. 400KV BARH -GORAKHPUR 1 CHARGED AT 18:57 HRS ON 05.02.20 AS INTERIM ARRANGEMENT BYPASSING LILO PORTION OF MOTIHARI.
7	220/132 KV 100 MVA ICT 3 at CHANDIL	JUSNL	30/04/20	ICT BURST AND DAMAGED AFTER FIRE REPORTED
8	132 KV NEW KISHANGANJ - BARSOI S/C	BSPTCL	02/07/20	OUT DUE TO HEAVY SOIL EROSION AT LOC NO 140 AND 141 BY RIVER KANKAI. LINE CHARGED AS 132 KV PURNEA (PG) - BARSOI W.E.F 21.07.20 AT 19:05 HRS TEMPORARILY BY SUITABLE JUMPER ARRNGEMENT AT THE CROSSING POINT OF 132 KV KISANGANJ(NEW) - BARSOI AND 132 KV PURNEA(PG) - KISANGANJ (OLD).
9	132KV-PURNEA	BSPTCL	02/07/20	OUT DUE TO HEAVY SOIL

	(PG)- KISHANGANJ(OLD) S/C			EROSION AT LOC NO 140 AND 141 BY RIVER KANKAI. LINE CHARGED AS 132 KV PURNEA (PG) - BARSOI W.E.F 21.07.20 AT 19:05 HRS TEMPORARILY BY SUITABLE JUMPER ARRANGEMENT AT THE CROSSING POINT OF 132 KV KISANGANJ(NEW) - BARSOI AND 132 KV PURNEA(PG) - KISANGANJ (OLD).
10	220KV BARAUNI- HAJIPUR Ckt-1	BSPTCL	28/09/19	TOWER COLLAPSE AT LOCATION 38 & 39. CKT-2 IS ON ERS SINCE 13.01.2020.
11	400KV-BINAGURI- RANGPO-1	PGCIL	01/11/20	RE-CONDUCTORING WORK FROM TWIN MOOSE TO HTLS.
12	400KV-BINAGURI- RANGPO-2	PGCIL	01/11/20	RE-CONDUCTORING WORK FROM TWIN MOOSE TO HTLS.
13	800KV HVDC ALIPURDUAR- AGRA-POLE-IV	PGCIL	20/11/20	VOLTAGE REGULATION, AT ALIPURDUAR, 422 KV/419 KV
14	800KV HVDC ALIPURDUAR- AGRA-POLE-III	PGCIL	25/12/20	POWER FLOW DIRECTION REVERSAL (NR-NER)
15	400KV/220KV 315 MVA ICT 3 AT MALDA	PGCIL	04/01/21	UPGRADATION OF 315MVA ICT# 3 AT MALDA BY 500MVA ICT UNDER ERSS – XVII-B.
16	400KV-MAITHON- MAITHON RB-1	PGCIL	09/01/21	RE-CONDUCTORING WORK
17	400KV-MAITHON- MAITHON RB-2	PGCIL	12/01/21	RE-CONDUCTORING WORK
18	765 KV ANGUL- JHARSUGUDA-4	PGCIL	03/02/21	VOLTAGE REGULATION; JHARSUGUDA: 799/790KV, ANGUL: 781/774KV
29	220KV-NEW PURNEA- MADHEPURA-1	BSPTCL	24/01/21	VOLTAGE REGULATION
20	400KV- ALIPURDUAR (PG)- JIGMELLING-1	PGCIL	22/01/21	VOLTAGE REGULATION AS REQUESTED BY BHUTAN/CHANGE OVER DONE FROM CKT 2
21	400KV-BINAGURI- TALA-4	PGCIL/ Bhutan	03/02/21	VOLTAGE REGULATION; BINAGURI:412/410 KV. LATER SHUTDOWN AVAILED BY BHUTAN FOR AMP WORKS AT 11:15 HRS ON 08.02.2021
22	765KV- JHARSUGUDA-	PGCIL	04/02/21	VOLTAGE CHANGE: J'GUDA: 798/792 KV, 414/413 KV.

	RAIPUR PS (DURG)- 2			
23	400KV-BINAGURI- TALA-2	PGCIL/ Bhutan	07/02/21	VOLTAGE REGULATION AT BHUTAN END.

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

Transmission licensees/ Utilities are requested to update expected restoration date & work progress regarding restoration regularly to ERLDC/ERPC on monthly basis by 5th of each month so that status of restoration can be reviewed in OCC. Utilities are also requested to update outage of any elements within their substation premises like isolator/breaker to ERLDC/ERPC regularly.

Members may update.

Deliberation in the meeting

Members noted.

ITEM NO. D.3: Commissioning of new units and transmission elements in Eastern Grid in the month of January 2021.

The details of new units/transmission elements commissioned in the month of January-2021 based on the inputs received from beneficiaries:

SL. No.	Element Name	Owner	Charging Date	Charging Time	Remarks
1	400KV/220KV 315 MVA ICT 1 AT INDRAVATI HEP along with associated bays	OHPC	04.01.21	17:01	Replacement of CB
2	400KV-NEW DUBURI-TSL-1	OPTCL	19.01.21	17:50	
3	765 kV Bus Reactor Bank -1 (3 X 110 MVAR along with associated Main Bay-701 and Tie Bay- 702}	PMJTL	23.01.21	15:32	
4	765 kV New Ranchi-Medinipur Transmission Line-1 along with Switchable Line Reactor (3 X 80MVAR +Spare. 01 X 80 MVAR) and associated bays at Medinipur SS (Bay no 703 & 703R).	PMJTL	23.01.21	15:05	
5	765 kV New Ranchi-Medinipur Transmission Line-2 along with Switchable Line Reactor (3 X 80 MVAR +Spare, 01 X 80 MV AR) and associated bays at Medinipur SS (Bay no-706 & 706R)	PMJTL	24.01.21	10:20	
6	220KV Subhasgram-Baruipur D/C	WBSETCL	28.01.21	20:25(CKT-I) 20:26(CKT-II)	
7	Main bays of (Bay No 407 & 410) 400 kV Subhashram- Jeerat D/C at Subhasgram	PGCIL	29.01.21	18:03	

8	400 kV Main Bay (415) of Binaguri - Bongaigaon -2 at Binaguri SS	PGCIL	29.01.21	15:58	
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Members may update.

Deliberation in the meeting

Members noted.

ITEM NO. D.4: UFR operation during the month of January 2021.

Frequency profile for the month is as follows:

Month	Max	Min	% Less IEGC Band	% Within IEGC Band	% More IEGC Band
	(Date/Time)	(Date/Time)			
January, 2021	50.24; 14-01-2021; 18:01hrs.	49.70; 30-01-2021; 05:11hrs	4.86	76.12	19.04

Hence, no report of operation of UFR has been received from any of the constituents.

Members may note.

Deliberation in the meeting

Members noted.

Standard Operating Procedure(SoP) to be referred for restoration of 765 kV Angul – Srikakulam D/c in case high standing phase angle is observed

The existing Special Protection Scheme (SPS) on NEW-SR corridor (namely for 765kV Solapur-Raichur2x S/c lines & HVDC Talcher-Kolar Bipole) were implemented long back as per the system requirements. Over the years, the connectivity of Southern region with NEW grid has strengthened through many high capacity inter-regional lines. In view of strengthening of transmission system as stated above, both the aforesaid SPS schemes were reviewed in consultation with RPCs. NLDC communication dated 21st Oct 2020 for review of HVDC Talcher – Kolar Bipole & NLDC communication dated 09th Dec 2020 for review of SPS of 765kV Solapur-Raichur-2 X S/c lines was shared with all concerned RPCs. The copies of both the communication are enclosed as Annexure I. The proposal for review of SPS were discussed, deliberated and agreed in ERPC/SRPC. After deliberation at ERPC(174th and 175th OCC) /SRPC (38th TCC), it was agreed that Standard Operating Procedure need to be developed to tackle the issue of high Standing Phase Angle (SPA) between Angul and Srikakulam station in case of outage of 765 kV Angul-Srikakulam-D/C. The extracts of the NLDC communication dated 09th Dec 2020 is given below:

“The 765 kV Angul-Srikakulam-D/c is carrying 1583 MW each circuit in the limiting case with 13900 MW of import in SR. The line length is 276 kM and under high loading the angular separation between two buses may reach more than 25 degrees. Under N-1 scenario of tripping of one circuit of 765 kV Angul-Srikakulam-D/c, it is observed that loading on other circuit reaches 2606 MW. In case the double circuit line trips (a highly probable contingency since line crosses through the terrain near to Eastern Coast of India bordering Bay of Bengal which is prone to tropical cyclones with high speeds), the Standing Phase Angle (SPA) between Angul and Srikakulam station would become high. The high SPA would cause the delay in restoration and many a times would make it impossible for the smooth synchronisation of line. Therefore an Standard Operating Procedure need to be developed to tackle the issue and to minimise the possible delays in restoration.”

The SoP in this regard is proposed for tackling this issue which may be implemented as per existing real time conditions in the system.

SoP Proposed: The standing phase angle between 765 kV Angul station (Eastern Region) and 765/400 kV Srikakulam station (Southern Region) has been observed to be very high in case of 765 kV Angul – Srikakulam D/C outage during high import by Southern Region. In order to reduce this angular separation and facilitate synchronization of lines, following actions need to be followed in real-time to restore 765 kV Angul – Srikakulam D/C after outage: -

1. HVDC towards southern region shall be maximized to the extent possible.
 - a. HVDC Gazuwaka has the highest sensitivity (-0.87 degrees per 100 MW) on the angle between Angul and Srikakulam and power order of HVDC may be increased to 800 MW keeping in view the constraints of associated line loadings and voltages in Eastern/Southern region.
 - b. Overload capacity of HVDC Talcher – Kolar and HVDC Raigarh – Pugalur may be utilized.
2. Import of SR shall be reduced to bring the angle within safe limits through increase in generation, reduction in load in southern region or a combination of both. The generation reduction may also be carried out in Eastern region.
 - a. Generation in southern region shall be increased based on the existing system conditions. The generators in the vicinity of Srikakulam station such as Simhadri Stage-I & II, HNPCL, KTPS etc have higher sensitivity on the angle difference.
 - b. Similarly, generation in eastern region may be reduced based on the existing system conditions. The generators in the vicinity of Angul station such as GMR (IPP), JITPL etc. have higher sensitivity on the angle difference.
 - c. Load reduction in Southern region may be carried out based on the existing system conditions.

The sensitivities of change in HVDC power orders, Generation Reduction/Increase in Eastern/Southern region and load reduction in Southern region on angular difference between Angul and Srikakulam stations are given as Table-1.

3. Based on the sensitivities of various actions as mentioned in Sl. No. 1 and 2 above and real time conditions, the suitable actions may be taken in real time to reduce the Standing Phase Angle.

Table-1**765 kV Angul - Srikakulam D/C Outage - Angle Sensitivity**

S. No.	Description	Angular Separation (Deg) (Angul - Srikakulam)	Relief in Angle (Deg)	Relief in Angle (Deg) per 100 MW change in Power Order/Generation/Load
1	Base Case	11.25	-	
2	Base Case + N-1 of 765 kV Angul - Srikakulam S/C	18.99	-	
3	Base Case + N-1-1 of 765 kV Angul - Srikakulam D/C	56.17	-	
	Relief from change in HVDC Power Order			
1	HVDC Talcher - Kolar Bipole (+500 MW)	53.75	-2.42	-0.48
2	HVDC Gazuwaka (+150 MW)	54.87	-1.30	-0.87
3	HVDC Raigarh - Pugalur (+100 MW)	55.66	-0.51	-0.51
4	HVDC Bhadrawati (-200 MW)	57.03	0.86	+0.43
	Relief from change in Generation (ER)			
1	GMR IPP (-100 MW Generation)	55.87	-0.30	-0.30
2	JITPL (-100 MW Generation)	55.88	-0.29	-0.29
3	OPGC (-200 MW Generation)	55.99	-0.18	-0.09
4	Talcher Stage-II (-500 MW Generation)	55.83	-0.34	-0.07
5	Indarvati (-200 MW Generation)	56.03	-0.14	-0.07
6	Balimela (-100 MW Generation)	56.1	-0.07	-0.07
7	Odisha Generation (-500 MW Generation in Odisha)	55.64	-0.53	-0.11
	Relief from change in Generation (SR)			
1	Simhadri Stg-II (+100 MW Generation)	55.36	-0.81	-0.81
2	HNPCL (+100 MW Generation)	55.37	-0.80	-0.80
3	KTPS (+200 MW Generation)	55.57	-0.60	-0.60
4	AP Generation (+500 MW Generation in AP)	52.97	-3.20	-0.64
5	SR Generation (+500 MW Generation in SR)	53.42	-2.75	-0.55
	Relief from change in Load			
1	Srikakulam Load (-100 MW Load in Srikakulam Area)	55.23	-0.94	-0.94
2	Viz-Nagar Load (-100 MW Load in Vizianagaram Area)	55.26	-0.91	-0.91
3	Vishakhapatnam Load (-200 MW Load in Vizag Area)	54.47	-1.70	-0.85
4	AP Load (-500 MW Load in AP)	52.71	-3.46	-0.69
5	SR Load (-1000 MW Load in SR)	50.33	-5.84	-0.58

Assumptions:-

- a) SR Limiting Case (13900 MW) considered for study purpose.
b) HVDC Power Orders in Limiting case:-
Talcher - Kolar: 2000 MW
Raigarh - Pugalur: 1500 MW
Bhadrawati: 1000 MW
Gazuwaka: 650 MW

Date of PFR testing scheduled /completed for generating stations in ER

Sr. No	Station	Generating Unit	Test schedule	Remarks
1	TALCHER STAGE 2	3	Unit 3 - 5: 23-11-2020 to 28-11-2020	Testing for unit 6 yet to be conducted
2		4		
3		5		
4		6		
5	Farakka	2	01-02-2021 to 10-01-2021	Testing completed
6		3		
7		4		
8		5		
9		6		
10	Kahalgaon	1	23-02-2021 to 02-03-2021	Scheduled
11		5		
12		6		
13		7		
14	Barh	4	18-02-2021 to 21-02-2021	Scheduled
15		5		
16	Teesta V	1	07-01-2021 - 08-01-2021	Testing completed
17	Teesta III	1	30-01-2021 - 10-02-2021	Testing completed
18		2		
19		3		
20		4		
21		5		
22		6		
23	Dikchu	1	Unit#1: 6th & 7th April' 21 Unit#2: 8th & 9th April' 21	Scheduled
24		2		
25	MPL	1	11th – 20th March 2021	Scheduled
26		2		

Power Plant	Unit No	Type of Exciter	Exciter Model and Vendor	PSS tuned (Yes/No)	PSS in Service (Yes/No)	Last PSS Tuning Date	Whether Done in Last 3 Years	Report Submitted (Yes/No)	Whether Next to be planned	Planned Next PSS Tuning
West Bengal										
Kolaghat-WBPDCL	1	Static	BHEL	No	Yes	Long Back	No	No	Yes	DAVR Order Place for replacement after that PSS tuning
Kolaghat-WBPDCL	2	Static	BHEL	No	Yes	Long Back	No	No	Yes	DAVR Order Place for replacement after that PSS tuning
Kolaghat-WBPDCL	3	Static	BHEL	No	Yes	Long Back	No	No	Yes	DAVR Order Place for replacement after that PSS tuning
Sagardighi-WBPDCL	2	Static	ABB Unitrol 5000	No	No	Long Back	No	No	Yes	Order to be placed
DPL	7	Static (through Carbon Brush)	Unitrol F 5000 ABB	No	No	N.A	No	Not App	Yes	
DPL	8	Brushless	WBS NO CE/0800-SH8-48-01 BHEL	No	Yes	No	No Detail	No	Yes	
PPSP	1	Thyristor type, full bridge	Digital AVRTOSEX100, Vendor- Toshiba	No	Yes	2009	No	Not App.	Yes	
PPSP	2	Thyristor type, full bridge	Digital AVRTOSEX100, Vendor- Toshiba	No	Yes	2009	No	Not App.	Yes	
PPSP	3	Thyristor type, full bridge	Digital AVRTOSEX100, Vendor- Toshiba	No	Yes	2009	No	Not App.	Yes	

PPSP	4	Thyristor type, full bridge	Digital AVRTOSATEX100, Vendor- Toshiba	No	Yes	2009	No	Not App.	Yes	
TLDP III	4 x 33								Yes	
TLDP IV	4 X 44								Yes	
CESC										
Budge Budge-CESC	1	Static	R-R Industrial Controls Limited	Yes	Yes	2015	No	Yes	Yes	2021-22
Budge Budge-CESC	2	Static	R-R Industrial Controls Limited	Yes	Yes	2015	No	Yes	Yes	2021-22
DVC										
Bokaro A1	500 MW	Brushless	BHEL	No	Yes	2015	No	No	Yes	Jun-20
Bokaro B 210 MW	3						No Detail		Yes	Jun-20
Mejia-DVC	4	STATIC	BHEL	Yes	Yes	2009	No	Not App	Yes	
Raghunathpur-DVC	1	Brushless	Unitrol F 5000	No	No		No Detail	Not App	Yes	Feb-21
Raghunathpur-DVC	2	Brushless	Unitrol F 5000	No	No		No Detail	Not App	Yes	Jun-21
Koderma-DVC	1	Brushless	BHEL	Yes	Yes	2013	No	No	Yes	May-20
Waria	4	STATIC	BHEL	Yes	Yes	2008	No		Yes	Apr-20
ISGS										
Kahalgaon NTPC	1	Semi-Static	ABB 6800	Yes	Yes	Dual	Yes	Yes	Yes	Submitted plot does not show damping clearly so Retuning is suggested
Kahalgaon NTPC	2	Semi-Static	ABB 6800	Yes	Yes	Dual	Yes	Yes	Yes	Submitted plot does not show damping clearly so

										Retuning is suggested
Kahalgaon NTPC	3	Semi-Static	ABB 6800	Yes	Yes	2016	Yes	Yes	Yes	Submitted plot does not show damping clearly so Retuning is suggested
Kahalgaon NTPC	4	Semi-Static	BHEL	Yes	Yes	2015	No	Yes	Yes	Submitted plot does not show damping clearly so Retuning is suggested
Kahalgaon NTPC	6	Brushless	BHEL	Yes	Yes	2009	No	Yes	Yes	Apr-20
Talcher Stage 2	3	Brushless	BHEL	Yes	Yes	2016	Yes	Yes	Yes	
Talcher Stage 2	4	Brushless	BHEL	Yes	Yes	No Details	No Details	No	Yes	
Talcher Stage 2	5	Brushless	BHEL	Yes	Yes	No Details	No Details	No	Yes	
Talcher Stage 2	6	Brushless	BHEL	Yes	Yes	2016	Yes	Yes	Yes	
Barh NTPC	1								Yes	Mar-20
Barh NTPC	2								Yes	Mar-20
Teesta V	1	Static	ALSPA P320 Alstom	Yes	Yes	2008	No	Yes	Yes	Mar-20
Teesta V	2	Static	ALSPA P320 Alstom	Yes	Yes	2008	No	Yes	Yes	Mar-20
Teesta V	3	Static	ALSPA P320 Alstom	Yes	Yes	2008	No	Yes	Yes	Mar-20
BRBCL	1	Brushless	BHEL	No	Yes	Vendor to Do	No		Yes	Submitted plot does not show damping clearly so Retuning is suggested

BRBCL	2	Brushless	BHEL	Yes	Yes	2019	Yes	Yes	Yes	
BRBCL	2	Brushless	BHEL			Vendor to Do	No		Yes	
BRBCL	3	Brushless	BHEL	No	Yes	Vendor to Do	No		Yes	
KBUNL	1					2019	No		Yes	
KBUNL	2						No		Yes	
KBUNL	3						No		Yes	
KBUNL	4						No		Yes	
Rangit	3 x 20						No		Yes	
IPP										
Jorethang	1	Static	ALSPA CONTOGEN V3 P320 AVR, VENDOR - ALSTOM	Yes	Yes	2015	No	Yes	Yes	Mar-20
Jorethang	2	Static	ALSPA CONTOGEN V3 P320 AVR, VENDOR - ALSTOM	Yes	Yes	2015	No	Yes	Yes	Mar-20
Chuzachen HEP	1	Static	P320 AVR, ALSTOM	Yes	Yes	2013	No	Yes (issue with Time scale)	Yes	Dec-20
Chuzachen HEP	2	Static	P320 AVR, ALSTOM	Yes	Yes	2013	No	Yes (issue with Time scale)	Yes	Dec-20
ADHUNIK	1	Brushless	ST5B	Yes	YES	2013	No	No	Yes	Jul-20
ADHUNIK	2	Brushless	ST5B	Yes	YES	2013	No	No	Yes	Jul-20
JITPL	1	Brushless	BHEL	Yes	Yes	2016	Yes	Yes	Yes	

JITPL	2	Brushless	BHEL	Yes	Yes	2016	Yes	Yes	Yes	
GMR	1	Static	ABB-Unitrol	Yes	Yes	2013	No	Yes	Yes	Dec-20
GMR	2	Static	ABB-Unitrol	Yes	Yes	2013	No	Yes	Yes	Dec-20
GMR	3	Static	ABB-Unitrol	Yes	Yes	2013	No	Yes	Yes	Dec-20
Orissa										
IB TPS	1	Static	Model: Unitrol 5, BHEL	Yes	Yes	2011	No	No	Yes	Mar'2021
IB TPS	2	Static	Model: Unitrol 5, BHEL	Yes	Yes	2012	No	No	Yes	Mar'2021
Upper Indravati	1	Static (ST) Digital	Fuji Electric Co. Japan	Yes	No	2015	No	No	Yes	
Upper Indravati	2	Static (ST) Digital	Fuji Electric Co. Japan	Yes	No	2015	No	No	Yes	
Upper Indravati	3	Static (ST) Digital	Fuji Electric Co. Japan	Yes	No	2000	No	No	Yes	
Upper Indravati	4	Static (ST) Digital	Fuji Electric Co. Japan	Yes	No	2001	No	No	Yes	
Balimela	1 (60 MW)	Under R & M							Yes	
Balimela	2 (60 MW)	Under R & M							Yes	
Balimela	3 (60 MW)	Not Provided	Not Provided	No	No	Not tuned	No	No	Yes	
Balimela	4 (60 MW)	Not Provided	Not Provided	No	No	Not tuned	No	No	Yes	
Balimela	5 (60 MW)	Not Provided	Not Provided	No	No	Not tuned	No	No	Yes	
Balimela	6 (60 MW)	Not Provided	Not Provided	No	No	Not tuned	No	No	Yes	
Balimela	7 (75 MW)	Static	Not Provided	No	No	Not tuned	No	No	Yes	
Balimela	8 (75 MW)	Static	Not Provided	No	No	Not	No	No	Yes	

	MW)					tuned				
Upper Kolab	1	Static	Unitrol BHEL	Yes	Yes	2007	No	No	Yes	
Upper Kolab	2	Static	Unitrol BHEL	Yes	Yes	2007	No	No	Yes	
Upper Kolab	3	Static	Unitrol BHEL	Yes	Yes	2007	No	No	Yes	
Upper Kolab	4	Digital Static	Unitrol BHEL(Max-DNA Software)	Yes	Yes	2007	No	No	Yes	
Rengali	1	Digital Static	Unitrol BHEL	Yes	Yes	Not tuned	No	No	Yes	
Rengali	2	Digital Static	Unitrol BHEL	Yes	Yes	Not tuned	No	No	Yes	
Rengali	3	Digital Static	Unitrol BHEL	Yes	Yes	Not tuned	No	No	Yes	
Rengali	4	Digital Static	Unitrol BHEL (Max-DNA Software)	Yes	Yes	Not tuned	No	No	Yes	
Rengali	5	Static	Unitrol BHEL	No	Yes	Not tuned	No	No	Yes	
Sterlite	1									
Sterlite	2									
Sterlite	3									
Sterlite	4								Yes	
Jharkhand										
Tenughat	1	Static	Unitrol D	Yes	Yes	2017	Yes	No		
Tenughat	2	Static	Unitrol D	Yes	Yes	2017	Yes	No		
Subarnrekha	2 X 65									
Bihar										

BTPS	6 (110)									
BTPS	7 (110)									
BTPS	8									
BTPS	9									
Bhutan										
Tala	1	Static	ABB Unitrol (M/D)	No	Yes			No		
Tala	2	Static	ABB Unitrol (M/D)	No	Yes			No		
Tala	3	Static	ABB Unitrol (M/D)	No	Yes			No		
Tala	4	Static	ABB Unitrol (M/D)	No	Yes			No		
Tala	5	Static	ABB Unitrol (M/D)	No	Yes			No		
Tala	6	Static	ABB Unitrol (M/D)	No	Yes			No		
Chukha	1	Static	BHEL	No	Yes	2005	No	No	Yes	
Chukha	2	Static	BHEL	No	Yes	2005	No	No	Yes	
Chukha	3	Static	BHEL	No	Yes	2005	No	No	Yes	
Chukha	4	Static	BHEL	No	Yes	2005	No	No	Yes	
Mangdechu	1	Static	BHEL	No	Yes			No		
Mangdechu	2	Static	BHEL	No	Yes			No		
Mangdechu	3	Static	BHEL	No	Yes			No		
Mangdechu	4	Static	BHEL	No	Yes			No		

ANTICIPATED POWER SUPPLY POSITION FOR THE MONTH OF MARCH-21			
SL.NO	PARTICULARS	PEAK DEMAND IN MW	ENERGY IN MU
1	BIHAR		
	i) NET MAX DEMAND	5300	2810
	ii) NET POWER AVAILABILITY- Own	475	238
	iii) Central Sector+Bi-Lateral	4900	2245
	iv) SURPLUS(+)/DEFICIT(-)	75	-347
2	JHARKHAND		
	i) NET MAXIMUM DEMAND	1480	860
	ii) NET POWER AVAILABILITY- Own Source	385	127
	iii) Central Sector+Bi-Lateral+IPP	938	507
	iv) SURPLUS(+)/DEFICIT(-)	-157	-226
3	DVC		
	i) NET MAXIMUM DEMAND	3100	2080
	ii) NET POWER AVAILABILITY- Own Source	5500	3160
	iii) Central Sector+MPL	260	253
	iv) Bi- lateral export by DVC	2300	1690
	v) SURPLUS(+)/DEFICIT(-) AFTER EXPORT	360	-357
4	ODISHA		
	i) NET MAXIMUM DEMAND	4300	2604
	ii) NET POWER AVAILABILITY- Own Source	3668	1863
	iii) Central Sector	1986	947
	iv) SURPLUS(+)/DEFICIT(-)	1354	206
5	WEST BENGAL		
5.1	WBSEDCL		
	i) NET MAXIMUM DEMAND	7400	3875
	ii) IPCL DEMAND	0	62
	iii) TOTAL WBSEDCL's Energy Requirement (incl.B'Desh+Sikkim+IPCL)	7405	3941
	iv) NET POWER AVAILABILITY- Own Source	4681	1930
	v) Contribution from DPL	465	207
	vi) Central Sector+Bi-lateral+IPP&CPP+TLDP	2671	1335
	vii) EXPORT (TO B'DESH & SIKKIM)	5	4
	viii) SURPLUS(+)/DEFICIT(-) AFTER EXPORT	412	-469
5.2	CESC		
	i) NET MAXIMUM DEMAND	1730	855
	ii) NET POWER AVAILABILITY- Own Source	760	501
	iii) FROM OTHER SOURCE (INCL. IPP/CPP-29-30 MU/M)	430	54
	iv) IMPORT FROM HEL	540	300
	v) TOTAL AVAILABILITY OF CESC	1820	855
	vi) SURPLUS(+)/DEFICIT(-)	0	0
6	WEST BENGAL (WBSEDCL+DPL+CESC) (excluding DVC's supply to WBSEDCL's command area)		
	i) NET MAXIMUM DEMAND	9729	4792
	ii) NET POWER AVAILABILITY- Own Source	5896	2638
	iii) CS SHARE+BILATERAL+IPP/CPP+TLDP+HEL	3741	1689
	iv) SURPLUS(+)/DEFICIT(-) BEFORE WBSEDCL'S EXP.	-92	-465
	v) SURPLUS(+)/DEFICIT(-) AFTER WBSEDCL'S EXP.	-97	-469
7	SIKKIM		
	i) NET MAXIMUM DEMAND	113	58
	ii) NET POWER AVAILABILITY- Own Source	2	2
	- Central Sector	184	76
	iii) SURPLUS(+)/DEFICIT(-)	73	20
8	EASTERN REGION		
	i) NET MAXIMUM DEMAND	22964	11062
	ii) BILATERAL EXPORT BY DVC	2300	1524
	iii) EXPORT BY WBSEDCL	5	3
	iv) NET TOTAL POWER AVAILABILITY OF ER (INCLUDING CS ALLOCATION +BILATERAL+IPP/CPP+HEL)	27305	13745
	v) ENERGY SURPLUS(+)/DEFICIT(-) OF ER AFTER EXPORT (v = iv - i -ii - iii)	2036	-1152