Agenda

for

169th OCC Meeting

Date: 27.07.2020

Eastern Regional Power Committee

14, Golf Club Road, Tollygunge

Kolkata: 700033

Eastern Regional Power Committee

Agenda for 169th OCC Meeting to be held on 27th July 2020

PART A

Item No. A.1: Confirmation of minutes of 168thOCC meeting of ERPC held on 17.06.2020

The minutes of 168th OCC meeting were uploaded in ERPC website and circulated vide letter dated 29.06.2020 to all the constituents.

Members may confirm the minutes of 168th OCC meeting.

PART B: ITEMS FOR DISCUSSION

Item No. B.1 Bus split arrangement at 400 KV Sundergarh (Jharsuguda).--ERLDC

In the 16th meeting of Standing Committee on Power System Planning of ER, held at New Delhi on 2nd May 2014, bus splitting arrangement at Sundargarh (Jharsuguda) substation at 765kV & 400kV voltage levels was agreed. The bus split scheme at Sundargarh has been completed in Nov '19. Comments were also sought on the proposal of CTU shared with email.

Subsequently ERLDC has independently carried out the Bus-splitting simulation studies. In the simulation 400 kV Buses at OPGC was considered as coupled (which is how system is operating at present), while in the shared by CTU study same was decoupled. Through simulation it was observed that system remains N-1 secured without any skewed flow when Sundargarh operates in Bus Split mode at 400 kV level, which is in line with CTU study report.

Fault level pre and post bus split observed in simulation is as follows

Substation	Fault level before bus Splitting	Fault level Post bus Splitting
400 kV Sundargarh (Jharsuguda)	66.5 kAmps	46.4 kAmps /46.5 kAmps

Subsequently by letter dated 14th July 2020 CTU suggested to implement bus split arrangement at400 kV Jharsuguda siting reference to CEA 3rd July 2020 letter.

Members may discuss.

Item No. B.2 Implementation of Automatic Demand Management Scheme (ADMS)

The latest status along with proposed logic as follows:

SINo	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	Implemented2 on 5.11.16	F <49.9 AND deviation > 12 % or 150 MW
2	DVC	F <49.7 AND deviation > 12 % or 150 MW	Implemented1 on 7.06.2016	
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	In service from 21st August 2019.	Condition 1: Block I feeders will be selected for load shedding Condition 2: Block I & II feeders will be selected for load shedding Condition 3: Block I, II & III feeders will be selected for load shedding
5	Odisha	1. System Frequency < 49.9 Hz 2. Odisha over-drawl > 150 MW 3. DISCOM over-drawl > (40MW)	10 Months Sent for PSDF approval. It was informed that tender for the work has been floated.	Logic 2 and 3 is AND or OR, in case it is AND then ADMS may not operated when discom are in schedule but GRIDCO is overdrawing due to less generation at state embedded generators
6.	Sikkim			Sikkim informed that they have submitted a proposal to PSDF Committee for installation of OPGW cables which is under approval stage. Sikkim added that ADMS scheme would be implemented after installation of OPGW

In 42nd TCC, TCC opined that uniform logic and settings are to be implemented for all the states. TCC advised to discuss the issue in next OCC Meeting to formulate uniform logic and setting of ADMS.

In 165th OCC, ERLDC gave a presentation on the uniform logic. The proposed logic for ADMS operation is given below:

If frequency is less than 49.9 Hz for 3 minutes
and
Over drawal/Under injection > 150 MW or 12 %

In 166th OCC, OCC agreed to the ERLDC proposed logic.

OCC advised all the states to implement above logic in ADMS. It was also decided that the performance of the ADMS would be analyzed in monthly OCC Meetings, if necessary the logic would be reviewed.

In 168th OCC meeting SLDC DVC informed that revised settings of ADMS had been successfully implemented and detailed report had been mailed to ERPC and ERLDC.

ERLDC requested DVC to share the details of quantum of power that would be disconnected on operation of ADMS.

SLDC Jharkhand informed that revised ADMS settings could not be implemented due to lockdown and they are planning to implement the revised settings by end of June 2020.

SLDC Bihar informed that testing of ADMS got delayed due to lockdown and Chemtrol is planning to

test the ADMS during third week of June 2020.

SLDC Odisha informed that ADMS would be implemented by July 2021.

SLDC Sikkim informed that installation of OPGW is in progress. It would take 18 months for completion ADMS scheme would be implemented after installation of OPGW.

Members may update.

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

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

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

I. All thermal ISGS stations with installed capacity of 200 MW and above and all hydro stations having capacity exceeding 25 MW excluding the Run-of-River Hydro Projects irrespective of size of the generating station and whose tariff is determined or adopted by CERC are directed to install equipment at the unit control rooms for transferring the required data for AGC as per the requirement to be notified by NLDC. NLDC shall notify the said requirements within one month of this order.

II. All such ISGS stations whose tariff is determined or adopted by CERC shall have communication from the nearest wide band node to the RTU in the unit control room.

III. The Central Transmission Utility (CTU) is directed to have communication availability from NLDC/ RLDCs to the nearest wide band node/ switchyard for the generating stations in a redundant and alternate path ensuring route diversity and dual communication.

IV. The NLDC is also directed to commission the required communication infrastructure.

V. The expenditure as a result of compliance of the above directions may be claimed as per relevant regulations or provisions of the PPA.

VI. The NLDC is directed to monitor implementation of the above directions so that all the ISGS stations whose tariff is determined or adopted by CERC are AGC-enabled within six months of this order.

VII. The framework regarding compensation for AGC support and deviation charges as stipulated in the Commission's Order in Petition no. 79/RC/2017 dated 06.12.2017 shall apply to the five pilot projects as also to other ISGS as and when they are AGC enabled. This arrangement shall remain in place till the relevant regulations inter alia on compensation for AGC services are framed by the Commission.

VIII. NLDC/RLDCs are allowed to operate the AGC system for enabling the signals to the power plants at the earliest.

IX. All new thermal ISGS stations with installed capacity of 200 MW and above and hydro stations having capacity exceeding 25 MW excluding the Run-of-River Hydro Projects irrespective of size of the generating station and whose tariff is determined or adopted by CERC shall mandatorily have the capability to provide AGC support.

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

A. Status of implementation of AGC for ISGS stations

Status of implementation as updated in 166th OCC Meeting and 5thTeST Meeting as follows:

Sl No	Station	Status of Communication link from plant substation to PGCIL node	Status of communication system integration from unit to plant substation	Target date for implementation of AGC at plant
1	Farakka STPS - I & II	Both links established	Pending	June 2020
2	Kahalgaon STPS - II	Both links established	Pending	June 2020
3	Barh STPS	Both links established	Installed	Running since August 2019
4	NPGC, Nabinagar	Links from Gaya and Patna has been established.	NPGC, Nabinagar informed that OPGW is available but end equipment need to be procured and installed to establish communication link from their station to NLDC. NTPC further informed that they have placed order for Providing the end equipment.	June 2020
5	Maithon Power Limited	One link established. Other link, Ranchi-Maithon(RB) would complete by March, 2020.	In progress	July 2020
6	Talcher STPS - I	Both links established.		June 2020
7	Kahalgaon STPS - I	Both links established.	NTPC informed that they are approaching CERC for exemption.	
8	Nabinagar Thermal Power Project - BRBCL	Only one link Sasaram- Nabinagar OPGW installation is pending. It would take two years for completion.		June 2020
9	Darlipalli STPS	Communication established.	Integration is in progress	June 2020
10	Teesta – V	One link established		June 2020
11	FarakkaSTPS - III	Link established		June 2020
12	MTPS Stage – II (Kanti)	Link established		June 2020
13	Rangit HPS	One link established		June 2020

Note: OPGW from Barh to Gorakhpur is redundant path for ER to NR which would be completed by March, 2020.

In 168th OCC meeting NTPC ER-II informed that implementation of AGC got delayed due to lockdown and it would take around 6 months to implement AGC.

MPL informed that they have received all the materials and the AGC implementation work is expected to be completed by July 2020.

BRBCL informed that they would implement AGC after installation of OPGW link in 400kV Sasaram-Nabinagar line.

Powergrid informed that OPGW installation would take around one and half year.

Members may update.

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

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

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

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

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

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

Summary of status of implementation:

State	Station/Unit	Action plan
DVC	Mejia unit#7 &8	NIT has been floated. Order placement 30th March2020 Commissioning of AGC 31st July2020
West Bengal	Unit-5 of Bakreswar TPP	SLDC, WB to establish the required hardware for generating AGC signal at SLDC.
Odisha	Unit#3 of OPGC	Joint meeting between SLDC, Odisha and OPGC was held wherein, it was decided to visit Barh, NTPC and NLDC to get acquainted with the AGC Implementation and formulate a plan.

In 168th OCC meeting DVC informed that AGC would be implemented by October 2020. Further DVC added that the work was delayed due to lockdown.

Further OCC advised Odisha to prepare a plan of AGC implementation and share it with ERPC and ERLDC.

Members may update.

Item No. B.4 Outage of important transmission lines

1. 400 kV Kishenganj-Patna D/Clines:

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

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

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

In 163rd OCC, Powergrid informed that both circuits of 400 kV Kishenganj-Patna D/C line would be restored through ERS by December 2019. Powergrid added that permanent restoration of both the circuits of 400 kV Kishenganj-Patna D/C lines would be completed by March2020.

Thereafter, Powergrid vide letter dated 3rd January 2020 informed that the temporary restoration of the line using ERS could not be completed due to pathetic condition of approach road, unprecedented cold weather condition and continued heavy water current in the Ganga river.

Powergrid added that restoration work is under progress in war footing basis and it is expected to be restored temporarily by 3rd/4th week of January 2020 however permanent restoration is expected to be completed by end of March 2020.

In 24th January 2020 meeting held at Patna, Powergrid informed that both circuits of 400 kV Kishenganj-Patna D/C line was restored through ERS on 22nd January 2020.

In 166thand 167th OCC, Powergrid informed that that permanent restoration of both the circuits of 400 kV Kishenganj-Patna D/C lines would be completed by April 2020.

In 168th OCC meeting Powergrid informed that both the circuits of 400 kV Kishenganj-PatnaD/C line would be restored by July 2020 but they required shutdown of both the lines for 20 days.

ERLDC informed that NLDC is not permitting shutdown of both the lines simultaneously and advised to take the shutdown of one circuit at a time.

Further Powergrid informed that shutdown of one circuit at a time is not possible.

OCC advised Powergrid to share the relevant details with ERLDC to take up with NLDC.

Powergrid and ERLDC may update and discuss.

2. 400 kV Barh-Motihari D/C and 400 kV Barh-Gorahkpur D/Clines

Eastern Region Power Committee (ERPC) letter dated 21.11.2019, a six month restoration time starting from the zero date of 15.12.2019 was granted to DMTCL to restore the 400 kV D/C Barh-Motihari-Gorakhpur Lines by re-erecting 6 towers on pile foundations following the washing away of four towers on account of heavy water discharge and change in course of Gandak river last monsoon season.

DMTCL vide its letter dated 21st May 2020 informed that due to the severe impact of COVID 19 Pandemic as well as other Force Majeure events such as unseasonal heavy rains which ultimately affected the pace of DMTCL transmission line restoration work progress and requested for a suitable extension in terms of timelines for completion of restoration work.

To appraise DMTCL challenges, issues, work progress and current position related to restoration work, a consolidated presentation is submitted at Annexure B4.

In 168th OCC meeting, DMTCL informed that due to the severe impact of COVID 19 Pandemic as well as other Force Majeure events such as unseasonal heavy rains, the progress of DMTCL transmission line restoration work got affected. DMTCL shared a detailed presentation on the work progress.

DMTCL further added that if weather conditions would be favorable then the work would have been completed by 15th July 2020.

Thereafter OCC advised DMTCL to complete the restoration work at the earliest and advised DMTCL to share the details of work progress on weekly basis to ERPC.

DMTCL may update.

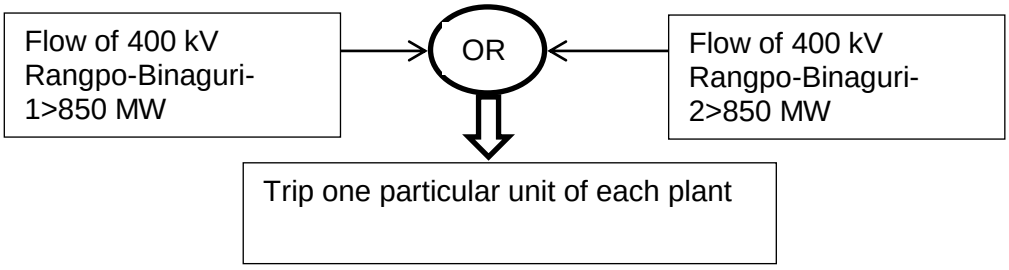
Item No. B.5 SPS for taking care of N-2 Contingency of 400 kV outgoing lines form Sikkim Complex--ERLDC

As per the decision taken in 161 OCC meeting no SPS is required when all the four 400 kV evacuating lines are in service. However, based on the study following proposal are made for the consideration of the forum:

1. When all 4 lines are in service only N-1 contingency of 400 kV Rangpo-Dikchu is critical due to cable portion of Teesta III- Kishanganj section. That part is taken care of by Teesta III local SPS.
2. When all 4 lines in service, following N-2 contingencies are critical
   a. 400 kV Rangpo-Kishanganj& 400 kV Teesta-III-Kishanganj
   b. 400 kV Rangpo-Kishanganj& 400 kV Rangpo-Binaguri one ckt
   c. 400 kVTeesta-III-Kishanganj& 400 kV Rangpo-Binaguri one ckt

From the past experience and due to sharing some common corridor N-2 contingency of 400 kV Rangpo-Kishanganj& 400 kV Teesta-III-Kishanganj is a credible contingency. Following SPS logic may be implemented for ensuring reliability during the above mentioned three critical N-2 contingency:

SPS:



In 168th OCC meeting ERLDC informed that the SPS is required till completion of reconductoring work of 400kV Rangpo-Binaguri D/C lines for safe evacuation of hydro generation in Sikkim during any contingency.

Powergrid informed that they would communicate the proposal to their corporate office for their views.

Powergrid may update.

Item No. B.6 Requirement of AMR data for preparation of Power Supply Position Report(PSP)--ERLDC

PSP report is prepared by night shift executive everyday during night hour containing daily actual operational data of Generators, drawl/injection of utilities, and Interrogational/transactional exchange with connecting regions/nations. This report is shared with MOP and also referred by other organizations for operational data. Presently, any actual data for the report is either collected from the utilities over the phone or filled by RTAMC/ utilities night shift executives in reporting software. But, these data are often received late or sometimes erroneous data are received.

Therefore, for more reliable and correct actual data, the SEM data through AMR may be used for PSP preparation. So, the availability of SEM data through AMR may be used for PSP preparation. The availability of SEM data through AMR for the previous day needs tobe available by 01:00 hrs of the day.

Powergrid may please deliberate.

Item No. B.7 Shutdown of 400kV Nabinagar-Sasaram D/C line and 400kV Sasaram-Daltonganj D/C line -- Powergrid

In 168th OCC meeting BRBCL explained that they are not in a position to avail the unit overhauling from 20.6.2020 due to non availability of BHEL engineers because of the prevailing circumstances of COVID-19.

Powergrid informed that they urgently need the shutdown of 400kV Nabinagar-Sasaram line to rectify the bent tower, which is already in a precarious condition, otherwise the tower might collapse at any time during this monsoon.

Powergrid further added that they have already mobilized the gang to begin the rectification work. Moreover, during the monsoon season it is very difficult to maintain the ERS which has been erected since March 2020 to evacuate Nabinagar generation with an interim arrangement using 400 kV Sasaram-Daltanganj line.

Powergrid intimated that 500 MW power can be evacuated through the interim arrangement during the shutdown of 400kV Sasaram-Nabinagar lines and further committed that they would put all the efforts to complete the tower rectification work by 30.06.2020.

OCC observed that power requisition by the beneficiaries was within 500 MW during first two weeks of June2020 which can be evacuated through the interim arrangement.

OCC felt that in case of tower collapse there would not be any evacuation path for Nabinagar generation. In that eventuality, BRBCL would be entitled to recover full fixed cost from its beneficiaries by declaring full DC under force majeure condition. This may result in huge financial implication on the beneficiaries of BRBCL.

After detailed deliberation, OCC decided to allow the shutdown from 20.06.2020. OCC advised BRBCL to approach its beneficiaries and get the consent so that BRBCL generation would be within 500 MW during the shutdown period. OCC then advised Powergrid to complete the tower rectification work by 30.06.2020.

Thereafter, Powergrid vide mail dated 1st July 2020 informed that due to severe rain, thunderstorm and lightning, the interim arrangement was tripped on 29th June, 1st July 2020 due to no provision of earth wire in the ERS section. It was suspected that galloping of conductors might have caused the said tripping.

Thereafter which guy wire arrangement for holding the conductor has been provided by Powergrid.

Powergrid vide mail dated 7th July 2020 informed that, ERLDC accorded the shutdown of 400 kV Sasaram-Nabinagar Ckt-2 for 10 days w.e.f 23.06.2020 to 02.07.2020 vide their message no.: ERLDC/Ft-02 dtd. 19.06.2020 for the said rectification work. This was apart from the three (03) day shutdown of 400 kV Nabinagar- Sasaram Ckt-1, which was approved from 20.06.2020 to 23.06.2020 for the interconnection of 400 kV Nabinagar- Sasaram Ckt-1 &Daltonganj- Sasaram Ckt-1 through 04 nos. ERS towers for making special alternative arrangement for power evacuation. Subsequently, POWERGRID has completed the said arrangement on 24.06.2020 (13:36).

The shutdown of 400 kV Sasaram-Nabinagar Ckt-2 approved from 23.06.2020 was allowed w.e.f. 27.06.2020 (22:09 hrs) which was returned on 05.07.2020 (16:38 hrs, 8 days).

BRBCL vide letter dated 22nd July 2020 informed that all the running units of BRBCL tripped on 29th June, 1st July and 7th July 2020 because of tripping of interim arrangement provided during the shutdown period. BRBCL requested for declaration of deemed DC of the units. The letter is enclosed at **Annexure-B.7**.

BRBCL, Railway, BSPTCL and Powergrid may discuss.

Item No. B.8 Updated Operating procedure of Eastern Region, 2020. --ERLDC

The Operating Procedure of every region has to be updated and revised annually by the concerned RLDC, in compliance to section 5.1(f) of the IEGC. Accordingly, ERLDC vide email dated 14th July 2020 circulated the draft Operating Procedure of Eastern Region to all regional entities of Eastern Region for their valuable suggestions and observations. The procedure is finalized and uploaded at ERLDC website by 20-07-2020, taking into consideration comments received till 18-07-20.

Members may please note.

Item No. B.9 Finalization of procedure for PSS tuning of power plants -- ERLDC

Power System Stabilizer (PSS) tuning is an ongoing exercise in Eastern regional grid after observation of various low frequency oscillation from time to time in the grid. In line with this, OCC has decided that all generating plants in eastern region will submit their PSS tuning plan to ERLDC/ERPC and the test reports for validation.

Considering above and other technical and regulatory requirement of CEA and CERC PSS tuning is being done at different generating station, however at present no formal guideline is available for carrying out the same. Due to which it was observed that result shared by the generating units are not standardized and sometimes some test are missed out.

To take care of the same a draft procedure for PSS tuning is prepared and the same will be circulated later. All are requested to go through it and give comment so that it can be finalized in OCC meeting.

Members may discuss

PART C: ITEMS FOR UPDATE

Item No. C.1: ER Grid performance during June, 2020

The average and maximum consumption of Eastern Region and Max/Min Demand (MW), Energy Export for the month of June – 2020 were as follows:

Month	Average Consumption (mu)	Maximum Consumption(mu)/ Date	Maximum Demand(MW) Date/Time	Minimum Demand(MW) Date/Time	Schedule Export (Mu)	Actual Export (Mu)
June, 2020	422	401.5; 10/06/20	21931 MW on 24-06-2020	13998 MW on 01-06-2020	3213	3087

ERLDC will present Highlight/ Performance of Eastern Regional Grid during OCC meeting.

ERLDC may present the performance of Eastern Regional Grid.

Item No. C.2: Performance primary frequency response of generating stations in Eastern Region for the event in the month of June 2020.

Frequency response characteristics (FRC) has been analyzed pan India for two events of sudden frequency change occurred during the month of June 2020. The details of these events and the overall response of Eastern region have been summarized in the Table given below.

Table 1: Summary of the events and Frequency Response Characteristic (FRC) of Eastern Region for the events

Event	Frequency Change	ER FRC
Event: On 11th June 2020, at 11:59:28:840hrs, 2100 MW generation loss at Bhadla NR.	**50.06 Hz to 49.80 Hz**. Later stabilized at **49.93 Hz**	**9.5%**

Despite of repeated reminders to generating stations, **generation end data (generation output in MW and frequency/speed measured at generator end) are yet to be received from NTPC Kahalgaon and Barh. FRC of state control area is yet to be received from SLDC Jharkhand, Bihar and WB**. Based on data received from generating stations & SLDCs and SCADA data archived at ERLDC, performance of regional generating stations and state control areas has been analyzed and summarized in table 2. Based on data received from generating stations & SLDCs, performance of state generating stations has been analyzed and summarized in table 3.

During the event of May 2020, satisfactory response has been observed in case of unit 1 & 2 at Budge Budge, Balimela unit 3 and Teesta V units. During this event response was non-satisfactory for all units at these units. Unit 1 & 3 at Budge Budge were running at more than Installed capacity prior to the event.

Table 2: performance of regional generating stations and state control areas for the events in the month of June 2020

Category	Name of generating stations and state control area
Satisfactory response	MPL, Dikchu, GMR, Talcher unit 2, BRBCL unit 3, Adhunik unit 1
Response has been observed but tuning required	--
Non-Satisfactory response	Teesta V, Talcher unit 1, 3, 4, 5&6, KhSTPP Stage 1 & 2, FSTPP unit 4, 5 & 6, JITPL, BRBCL unit 1, GRIDCO SLDC, Bihar SLDC, DVC SLDC, Jharkhand SLDC, WB SLDC
Unit not available	Adhunik unit 2, NTPC Darlipalli, KhSTPP unit 5 and 6
No Margin for primary response	Teesta III (All the running units were at 10% overloading of IC)
Oscillatory response observed	NPGC
Data were not available (data not received from SLDC/regional generating station)	NTPC Kahalgaon, NTPC Barh, Bihar SLDC, Jharkhand SLDC, WB SLDC.

Table 3: performance of state generating stations for the events in the month of June 2020(Based on data received from SLDC/generating stations)

Category	Name of generating stations and state control area
Satisfactory response	Balimela unit 5 & 6, Mejia B unit 7 & 8, Koderma unit 1 & 2 and DSTPS unit 1 & 2,
Response has been observed but tuning required	HEL unit 1 & 2,
Non-Satisfactory response	Balimela unit 3, 7 & 8, Rengali, Indravati, U Kolab, IBTPS, Budge Budge unit 1, 2 & 3, RTPS unit 1 & 2, Bokaro A unit 1, Sagardighi unit 3 & 4

In case of **Adhunik unit 1 and Talcher unit 2**, performance of generating units may be tuned to **reduce the time for providing of full response of generating units**. In case of **BRBCL unit 3, Mejia B unit 7 & 8, Koderma unit 1 & 2 and DSTPS unit 1 & 2**, generation reduction has been observed after the initial response. Within 30 seconds, another sustained and satisfactory response has been observed. Performance may be tuned for these generating stations, **for reducing generation decrease after the initial response**. Detail observation from ERLDC side is attached in annexure. Reason for non-satisfactory response has only received from Teesta V and shown in table 4.

Table 4: Reason for generating stations for non-satisfactory response of generating units (as shared by generating stations)

Name	Reason
Teesta V	All machines were running at maximum Load. Due to deposition of trash at intake of Dam, machine did not respond adequately

Points to be discussed:

1. **NTPC Talcher, KhSTPP, FSTPP, JITPL, BRBCL, GRIDCO SLDC, Bihar SLDC, DVC SLDC, Jharkhand SLDC, WB SLDC may share for the reason of non-satisfactory performance at the boundary of their control areas.**
2. **NPGC may share the reason for oscillatory response.**
3. **NTPC Kahalgaon and Barh may share the reason for non-sharing of generator end data**
4. **Bihar, Jharkhand and WB SLDC may share the reason for non-sharing FRC of their control areas.**

Item No. C.3: Status of UFRs healthiness installed in Eastern Region

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

168th OCC meeting BSPTCL informed that they are in process of reviewing the UFR feeders.

OCC advised concerned utilities to submit UFRs healthiness certificate to ERPC.

Concerned Utilities may update.

Item No. C.4: 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.

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

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

In 167th OCC, DVC informed that units 5 & 6 of Mejia TPS were old and not in service. They are planning to implement the islanding scheme with unit 7 and unit 8 of Mejia TPS.

OCC advised DVC to share the plan of their new islanding scheme to ERPC. OCC also advised CESC to send the updated details of their islanding scheme to

In 168th OCC meeting DVC informed that during the preliminary study they identified that the implementation of islanding scheme with Mejia units 7 and 8 was not possible therefore now they had considered Chandrapura unit 7&8 for the implementation of islanding scheme.

Thereafter ERLDC advised DVC to submit at least a preliminary draft plan to ERPC and ERLDC. However such plan is yet to be received from DVC.

DVC may update.

A. Status of Islanding Scheme of IBTPS

Islanding scheme of IBTPS was discussed and finalized in earlier OCC and PCC meeting, OPGC ensured that the islanding scheme will be in place within 6 months post finalization of scheme.

In 167th OCC, OCC advised OPGC to share the status of islanding scheme to ERPC.

OPGC may share the status of islanding scheme.

B. Status of Islanding Scheme of KBUNL

As the islanding Scheme discussion is not progressing, it is desired that one Meeting at ERPC or KBUNL may be called where the scheme finalization may be completed.

In 167th OCC, KBUNL informed that they are ready to implement the islanding scheme but they need confirmation from Bihar on availability of radial load at Gopalganj.

OCC advised BSPTCL to go through the islanding scheme finalized in earlier OCC Meetings and advised to take necessary action to provide the radial load for the islanding scheme.

In the 168th OCC meeting after detailed deliberation, OCC decided to conduct a separate meeting with KBUNL and BSPTCL to discuss the islanding scheme of KBUNL within this week.

In line with decision taken in 168th OCC, a meeting was held through WebEx on 22-June-2020 for discussing and finalizing islanding scheme of KBUNL St-II. Meeting was attended by participants from BSPTCL, Bihar SLDC, KBUNL (NTPC) and ERLDC. Minutes of Meeting is attached in ***Annexure C.4****.*

Members may update.

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

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

Sl No	State/Utility	TTC (MW)		RM(MW)		ATC Import(MW)		Remark
		Import	Export	Import	Export	Import	Export	
1	BSPTCL	6450	--	129	--	6321	--	Sep-20
2	JUSNL	1245	--	34	--	1231	--	Aug-20
3	DVC	1628	2742	66	52	1562	2690	Jun-20
4	OPTCL	2112	1071	83	60	2029	1011	Aug-20
5	WBSETCL	4625	--	400	--	4153	--	Jun-20
6	Sikkim	295	--	2.5	--	292.5	--	Dec-19

Sikkim has stopped sending the TTC values as well as PSSE files.

In 168th OCC meeting ERLDC informed that Sikkim, West Bengal and DVC are not sharing the details of ATC, TTC for few months.

DVC told that due to lockdown the studies were not conducted for upcoming months and agreed to share the details at the earliest.

OCC then advised all the concerned utilities to share the details to ERPC and ERLDC at the earliest.

All concerned Utilities may share the details of ATC, TTC.

Item No. C.6: 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	28 March 2020
2	Maithon	1st week of June 2019	Taken up only after replacing the governing systems of the units	1st Week of February 2020	After June 2020
3	Rengali	2nd week of June 2019	Done on 27th June 2019	Last week of November 2020	Done on 17th January 2020
4	U. Indarvati	3rd week of June 2019	Done on 7th November 2019	2nd week of February 2020	March 2020
5	Subarnarekha	1st week of October 2019	Done 20th August 2019	1st week of January 2020	After Aug 2020
6	Balimela	3rd week of October 2019	Done on 17th July 2019	1st week of March 2020	*Done on 12th Feb 2020*
7	Teesta-V	2nd week of May 2019	Done on 28th Nov 2019	Last week of February 2020	
8	Chuzachen	Last Week of Dec 2019	Done on 5th December 2019	Last week of March 2020	
9	Burla	Last Week of June 2019	Done on 20th July 2019	Last week of February 2020	Done on 11th Feb 2020
10	TLDP-III	1st Week of June 2019	November-19	2nd Week of January 2020	
11	TLDP-IV	Last Week of June 2019	December-19	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	Attempted on 19th Feb 2020 but not Successful

Further Balimela Power House has informed that the district administration have declared large area of Balimela as containment zone in view of the spread of Covid-19 till 19.07.2020 due to which there is severe shortage of manpower at Balimela P.H. and had requested for deferring the mock black start exercise of Balimela Power House which was scheduled on 15.07.20 and decided to defer the mock black start exercise to a next suitable date after 19.07.2020 which will be communicated in advance.

In the 168th OCC meeting Odisha informed that they are planning to conduct the black start exercise for Burla and Rengali HEP during June 2020.

Odisha and other members may update.

Item No. C.7: Phase Sequence issue at Lower voltage level observed in Bihar System during charging of 400 kV Barh-Motihari 2. --ERLDC

In 168th OCC meeting BSPTCL informed that the phase sequence of RYB at Barh end was synchronized with the phase sequence of RBY of Motihari end. This problem had been identified and would be resolved by 25th June 2020.

BSPTCL may update.

Item No. C.8: Single Bus Operation at 220 kV Chandil--ERLDC

220/132 kV Chandil is an important substation of Jharkhand, having three 220 kV lines outgoing lines connecting Ramanchandrpur, Ranchi(PG), and Santhaldih (WBPDCL), it also has 3 x 150 MVA and 1 x 100 MVA, 220/132 kV ATRs, with a peak load of around 200-250 MW.

However, even after being such an important substation, Chandil has only a Single Bus scheme at 220 kV level, which is significantly reducing the reliability of the substation. Previously a committee was also formed to explore the possibility of upgrading the substation to a double bus scheme, however, after going for sight visit committee was of the view that upgrading to double bus is not possible without acquiring additional space, thus committee recommended to go with bus sectionalizer.

In the 168th OCC meeting JUSNL explained that estimate of Bus sectionalizer had been made but the same is yet to be approved.

JUSNL may update the timeline for the same.

Item No. C.9: Multiple outage of Isoaltors & Circuit Breakers at Ramchanderpur S/S (JUSNL)--ERLDC

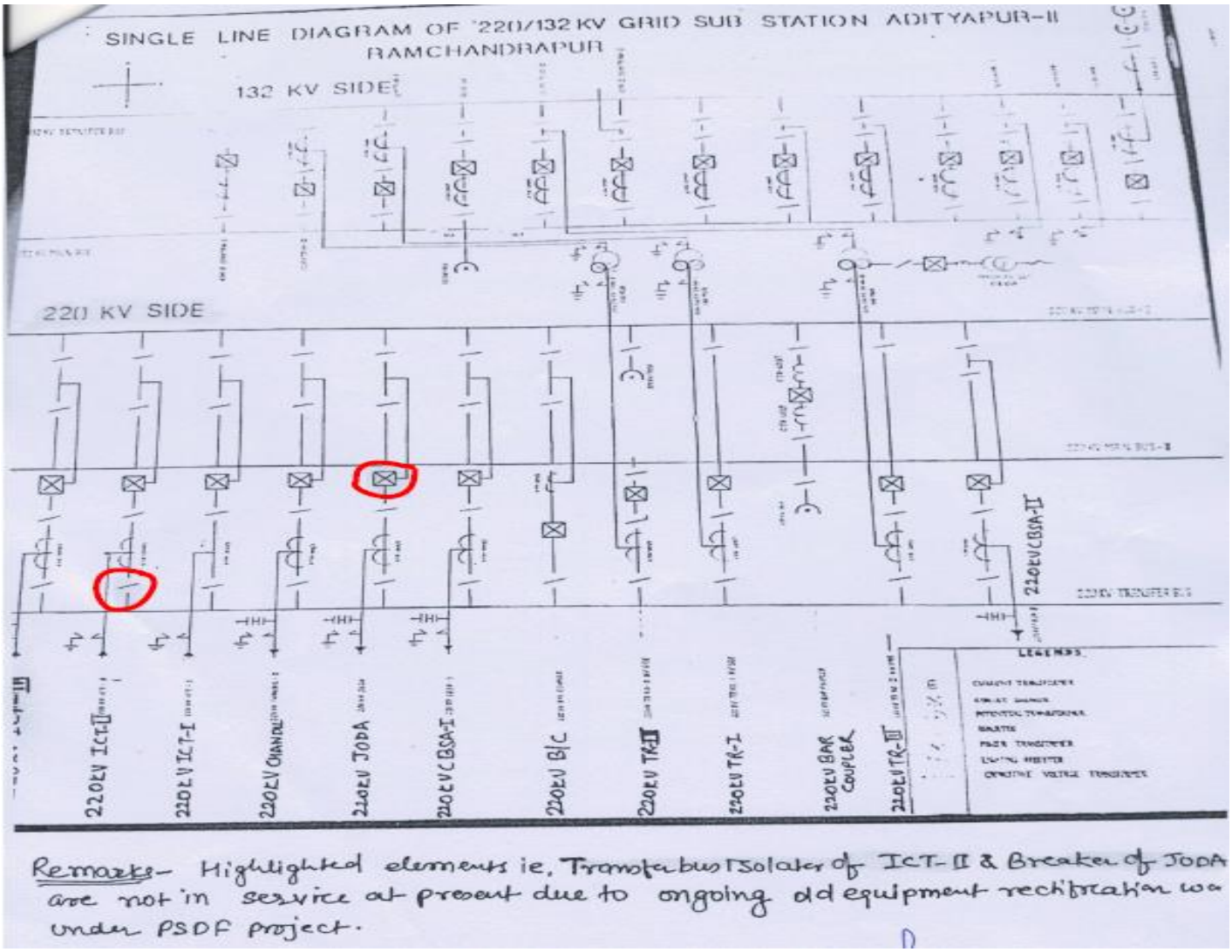
ERLDC had issued shutdown to indenting agency PGCIL of 400KV/220KV 315 MVA ICT-2 at JAMSHEDPUR for 29/Jun/2020 from 09:00-17:00 Hrs vide approval number: APP NO : RQ3258 to facilitate replacement of porcelain insulator string with Polymer insulator string at Jamshedpur S/S switchyard due to high pollution. After returning shutdown closing code was issued ER/06/C/01349 at 29/06/2020 16:30 Hrs. However It could be charged from 400 Kv side only as 220 Kv side(Ramchanderpur) ICT-2 could not be charged due to problem in Bph CB pole of this ICT-2 at Ramchanderpur (Entire 220kV switchyard at Ramchandrapur is owned & maintained by JUSNL).

Being a double main transfer bus scheme at Ramchanderpur ICT still could not be taken into service via transfer bus coupler as Isolator associated with ICT-2 connecting to transfer bus was not resent. While issuing consent for the above shutdown vide mail dated Fri, Jun 26, 1:33 PM JUSNL didn't mention the non-availability transfer bus coupler Isolator associated with ICT-2. Being an important load centre and connecting point to other regions such non-availability of key elements are unwarranted. It has also come into notice that several isolators and breaker remains either out of service or non-existent at Ramchanderpur S/S. Being an ISTS connected station availability of all elements are necessary for secure and reliable system operation.

Following are list of List of Isolators & Circuit Breakers that remains out of service & non existent –

Breaker/Isolator Number	Associated Element Name	Status(In Service/Out of Service/Non-existent)	Reason for not being in service & Duration of outage
Breaker	220 kV Joda Breaker	Out of service	Due to ongoing Old equipment replacement work under PSDF project. Expected to be functional within 10-15 days depending upon availability of S/D.
isolator	220kV Tr. Bus isolator of ICT-2	Out of service	Due to ongoing Old equipment replacement work under PSDF project. Expected to be functional within 10-15 days depending upon availability of S/D.
isolator	220kV Main Bus-2 isolator of Tr no-1	Non- existent	Not Present since inception of this GSS.
isolator	220kV Main Bus-1 isolator of Tr no-2	Non- existent	Not Present since inception of this GSS.
isolator	220kV Main Bus-2 isolator of Tr no-3	Non- existent	Not Present since inception of this GSS.

THE SLD OF 220 KV RAMACHANDERPUR S/S (JUSNL)



JUSNL may update the status of the restoration of above elements.

Item No. C.10: Persisting issue of CVT error at APNRL causing monitoring issue.--ERLDC

The CVT error at APNRL 400 kV Level is resulting in the wrong SCADA update of APNRL voltage. The voltage due to CVT error is reported on the higher side by 8-10 kV causing the monitoring and decision-making ability of Real-Time operator at ERLDC control room. This issue was highlighted earlier also during voltage issue at APNRL in OCC and APNRL informed that it will be rectified. However, the issue is persisting.

APNRL is advised to correct the issue as early as possible.

Item No. C.11: Delay in charging of 400KV FSTPP – Baharampur after tripping: ERLDC

400 KV Baharampur-FSTPP D/c tripped at 17:04 Hrs on 19th July - 2020. After tripping, Ckt I remain charged from FSTPP end and Ckt II remain charged from Baharampur end. Charging code was issued from ERLDC at 17:15Hrs for restoration, however line was charged at 18:03 Hrs (Ckt II) and 18:04 Hrs (Ckt I).

NTPC, FSTPP may please deliberate delay in charging of such important transmission link.

Item No. C.12: Prolonged outage of bays in Koderma (DVC) substation: ERLDC

The main CB of 400 KV Koderma-Bokaro-2 at Koderma was out since 25.12.2019 due to damage in the double interrupter chamber and the line is charged through the tie CB with B/R-2. On 15.07.2020, due to leakage of oil pressure of the main CB of B/R-2, DVC requested emergency S/D of the line due to the unavailability of main CB. Tie CB of B/R-1 and Gaya-1 was also out since 22.10.2019 due to oil leakage from B-ph CT and problem in CB hydraulic mechanism. Such prolonged outages of breakers at such an important substation which has connectivity to ISTS system as well as generating station hamper the reliability and security of the system operation.

DVC may update the status of restoration of above-mentioned bays.

Item No. C.13: PSS tuning status in Eastern Region. --ERLDC

Details of units where PSS have not been tuned in last three years are given in **Annexure C.13**. It has been observed that utility such as OPGC, OHPC, WBSEDCL, NTPC, GMR and few others have yet not submitted their plan for PSS tuning to ERLDC/ERPC.

A report on analysis of PSS tuning done so far will be circulated separately.

Members may discuss.

Item No. C.14: Operationalizing Bus splitting at Biharsariff--ERLDC

Bus split arrangement at Biharsariff was already commissioned, however it was not put in service as split bus arrangement was causing uneven loading in 400/220 kV ICTs at Biharsariff. Thus, earlier it was decided that the same will be put in service after commissioning of 4th ICT at Biharsariff. After commissioning of 4th ICT simulation studies are carried out at ERLDC and same is also shared with Bihar SLDC. From the study it is observed that Bus-split at Biharshariff has no significant effect on loading of 400 KV lines but 400/220 KV ICT flows is getting significantly skewed.

- N-1 contingency of 500 MVA ICT-IV leads to 265 MW loading on ICT –II (315 MVA rating) where in base case without bus-split, total ICT loading at Biharshariff was 560 MW and Bihar demand 4650MW.
- If we consider summer peak case having 6000 MW Bihar demand with 660 MW Biharshariff ICTs loading, N-1 contingency of 500 MVA ICT-IV leads to 301 MW loading on ICT –II (315

MVA rating).

In 166th OCC, ERLDC informed that no network constraint had been observed during the simulation study.

OCC advised Bihar to check the demand considered for the simulation study and send their comments to ERLDC within a week, if any.

In 167thOCC, OCC advised Bihar to send the updated demand details to be considered for the simulation study to ERLDC.

BSPTCL via their letter dated 12th March 2020, informed that in simulation Bihar load is considered as 5300 MW they have already met 5891 MW in last summer. Further they pointed considering the stability in power supply in view of upcoming election period in Bihar, bus split arrangement shall not be prudent.

In 168th OCC meeting BSPTCL informed that in simulation study Bihar load has been considered as 5300 MW whereas they have already met a load of 6450 MW. BSPTCL informed that they are doing simulation study on this issue where it was found that 315MVA ICT loading is increasing up to 300 MW during the outage of one 500 MVA ICT.

Therein OCC advised Bihar to send the updated demand details to be considered for simulation study to ERPC and ERLDC. OCC further advised Bihar to make short term plan and long term plan to resolve the issue and submit the details to ERPC and ERLDC.

BSPTCL may share the simulation studies result and short term plan and long term plans.

Item No. C.15: Testing and Calibration of Special Energy Meter: ERLDC

As per decision of 42nd TCC/ERPC meeting and 41st CCM, the testing and calibration of old and highly time drifted SEMs are to be carried out by Powergrid and accordingly the priority list of 314 SEM's is prepared by ERLDC and shared it in 42nd CC meeting.

In 168th OCC meeting, Powergrid informed that the matter regarding testing & calibration and time drifting has been taken up with concerned vendors involved in testing and calibration. Powergrid also informed that the Vendors are ready for doing the testing however they are not ready to set right the time drifting as it is only possible through OEM i.e. L&T. The matter has also been taken up with OEM (M/s L&T), who have confirmed that the heavily time drifted meter shall require to be sent to factory for time correction.

Powergrid informed in 168th OCC meeting that time correction of old meters is not possible. Powergrid further added that testing and calibration of old SEMs would cost around Rs 9000 / unit whereas cost of new SEM would be around Rs 12000/ unit.

In 168th OCC meeting, it was decided that since time correction is not possible it would be better to buy new SEMs instead of going for calibration & testing also advised ERLDC to place the requirement of SEMs in next OCC meeting.

Accordingly, ERLDC proposed to procure 300 energy meters and the details of the same is already shared in 42nd CC meeting,

Powergrid and ERLDC may update.

Item No. C.16: Proposal for procurement of SEM on account of Bhutan--Powergrid

In 166th OCC, DCD (data downloading device) used to download the energy meter data from SEM energy meter of 400kV Siliguri and 220kV Binaguri feeder has gone faulty because of which Malbase substation is not able to send the meter data to the concerned authority since 06.01.2020.

Powergrid informed that no spare DCDs are available.

After detailed discussion, it was decided that some DCDs are to be procured and kept as spares.

OCC advised Powergrid to prepare an estimate and send the details to ERPC Secretariat.

Thereafter, Powergrid informed that at present there are multiple connectivity exists between Bhutan & India (Jigmeling, Malbase, Tala&Chukha) from Eastern Region. At Bhutan side also, SEM installed as per POWERGRID TS & installed on behalf of PTC. During normal maintenance activity it is observed that due to different snag in the SEM or associated data collecting devices, the SEM data could not be received at ERLDC/NLDC.

The matter already discussed in 166th OCC Meeting held on 20 Feb 2020. In 166th OCC, it was recommended for procurement of few DCD's & SEM on account of different S/S of Bhutan, where SEMs are already installed on behalf of PTC.

The technology up-gradation had already taken place in SEM, therefore, it is better to migrate from old SEM where DCD is still required to new type SEM where data can be fetched by Laptop.

Based upon requirement of the SEM the said items will be handed over to Bhutan by POWERGRID on behalf of PTC. However, Installation & maintenance of all SEM & associated devices installed at Bhutan will be sole responsibility of concerned transmission licensee of Bhutan only. At present GENUS make is SEM is already available with Eastern Region and the same make is considered for Bhutan also and approximate cost of procurement of 20 nos SEMs shall be Rs. 3,19,166/- including GST.

Above SEM will be kept in stock at nearby POWERGRID S/S (Alipurduar/Binaguri) &based upon requirement generated at Bhutan it will be handed over on receipt of request through PTC. Necessary installation & maintenance to be taken care by Bhutan only. Cost to be recovered from PTC on one time reimbursement basis.

In 167th OCC, Powergrid informed that based on the requirement of the SEMs, the said items will be handed over to Bhutan by Powergrid on behalf of PTC. However, Installation & maintenance of all SEMs & associated devices installed at Bhutan will be sole responsibility of concerned utility of Bhutan only.

OCC advised Powergrid to coordinate with Bhutan for completion of the work.

OCC decided that the entire cost for completion of above work would be recovered from PTC.

In 168th OCC meeting Powegrid informed that order of 300 SEMs has been placed.

Powergrid further added that they would hand over 20 SEMs to Bhutan as soon as they would receive first installment of the order.

Powergrid may update.

Item No. C.17: Auxiliary Power consumption by Powergrid-- GRIDCO

GRIDCO informed that in 163rd OCC Meeting, OCC advised Powergrid to file a petition before OERC for exemption of Security Deposit, Maximum charges, Meter rent etc.

GRIDCO added that Powergrid not yet approached OERC.

In 166th OCC, Powergrid informed that they are in process of filing the petition before OERC. The petition would be filed by end of February 2020.

In 167thOCC Powergrid informed that petition would be filed in March 2020.

In 168th OCC meeting Powergrid informed that relevant documents are ready for filling the petition before OERC but due to ongoing lockdown they are not able to do it. They would file the petition after 3rd July 2020 as and when OERC starts accepting the petition.

GRIDCO then requested Powergrid to become a customer of Discoms in the meanwhile and liquidate the outstanding charges. GRIDCO representative ensured that the directions of OERC shall be duly complied with and GRIDCO shall return the recovered charges, if necessary based on the directions of OERC.

Powergrid informed that they are ready to pay the energy charges as per their energy consumption.

OCC advised Powergrid and GRIDCO to discuss the issues bilaterally and make an interim arrangement until the OERC decision.

Powergrid and GRIDCO may update.

Item No. C.18: Replacement of defective commercial energy meter (SEM) at NPGCL.

Commercial Special Energy Meter (SEM) of Gaya Line – 1(MAIN ER-1320A) was defective wef 24.06.2020. ERLDC had advised PGCIL to replace the SEM with new one.

Despite of several request from NPGCL as well as ERLDC, PGCIL didn't agree to replace the SEM at NPGCL.

Seeing the importance of energy accounting, NPGCL has collected SEM from PGCIL Gaya s/s &replaced them on its own.

As per clause – 4 of **Connection Agreement** executed between PGCIL and NPGCL on 30.01.2018 and **IEGC regulation_2010, chapter- 6.4 – point no. 21** (Demarcation of responsibilities).

Quote "IEGC Chapt- 6.4 – point no. 21

The CTU shall install special energy meters on all interconnections…….. . The installation, Operation and maintenance of special energy meters shall be in accordance with Central Electricity Authority (installation and operation of meters) Regulation 2006. …….

Unquote"

It is requested to clarify the responsibility center for replacement of defective commercial Special Energy Meter (SEM).

Members may discuss.

Item No. C.19: Nomination of nodal persons for communication related to tripping of grid elements and primary frequency response observed at generating stations. --ERLDC

For smooth communication regarding this transfer of data, all the regional generating stations, transmission utilities and SLDCs were requested in 168th OCC meeting to nominate at least two persons as nodal person(s) for tripping analysis of any grid element and for primary frequency response analysis of generating units. Nomination was not received from new regional generating and all SLDCs. List is shown in following table. These generating units and SLDCs are requested to nominate at the earliest.

Entity	Nodal Person(s) for tripping analysis (At least 2 persons)		Nodal Person(s) for primary frequency response analysis (At least 2 persons)	
	Nodal Person- 1 Name & Contact Details (Phone, email id)	Nodal Person- 2 Name & Contact Details (Phone, email id)	Nodal Person- 1 Name & Contact Details (Phone, email id)	Nodal Person- 2 Name & Contact Details (Phone, email id)
NTPC, Kahalgaon	Nomination not received	Nomination not received	Nomination not received	Nomination not received
NTPC, Talcher	Nomination not received	1 Nomination not received	Nomination not received	Nomination not received
NTPC, Daripalli	Nomination not received	Nomination not received	-------	------
Adhunik	Nomination not received	Nomination not received	Nomination not received	Nomination not received
GMR	Nomination not received	Nomination not received	Nomination not received	Nomination not received
KBUNL	Nomination not received	Nomination not received	Not applicable	
Teesta V	Nomination not received	Nomination not received	Nomination not received	Nomination not received
Teesta III	Nomination not received	Nomination not received	Nomination not received	Nomination not received
Rangit	Nomination not received	Nomination not received	Not applicable	
Chujachen	Nomination not received	Nomination not received	Not applicable	
Jorethang	Nomination not received	Nomination not received	Not applicable	
Tashiding	Nomination not received	Nomination not received	Not applicable	
Dikchu	Nomination not received	Nomination not received	Nomination not received	Nomination not received
Bihar SLDC	Nomination not received	Nomination not received	Nomination not received	Nomination not received
DVC SLDC	Nomination not received	Nomination not received	Nomination not received	Nomination not received
GRIDCO SLDC	Nomination not received	Nomination not received	Nomination not received	Nomination not received
WB SLDC	Nomination not received	Nomination not received	Nomination not received	Nomination not received
Sikkim SLDC	Nomination not received	Nomination not received	Not applicable	

Concerned Utilities may update the nodal persons.

PART D:: OPERATIONAL PLANNING

Item No. D.1: Anticipated power supply position during August 2020

The abstract of peak demand (MW) vis-à-vis availability and energy requirement vis-à-vis availability (MU) for the month of August 2020 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 D1.**

Members may confirm.

Item No. D.2: Shutdown proposal of transmission lines and generating units for the month of August 2020

Generator shutdown for August 2020 is shown below

Proposed Maintenance Schedule of Thermal Generating Units of ER during 2020-21 in the month of August

(as finalised in draft LGBR meeting held on 06.12.2019)

System	Station	Unit	Capacity (MW)	Period		No. of Days	Reason
				From	To		
DVC	**DSTPS**	**2**	**500**	**12.08.20**	**21.09.20**	**41**	COH(Blr,FGD&DeNOX Burner,Turb,Gen)
ODISHA	TTPS	3	60	21.08.20	07.09.20	18	AOH
WBPDCL	Kolaghat TPS	6	210	22.08.20	31.08.20	10	Boiler License renewal
	Sagarighi TPS	2	300	06.08.20	30.08.20	25	AOH/Boiler Overhauling
CESC	SOUTHERN	1	67.5	06.08.20	09.08.20	4	Not Specified
		2	67.5	15.08.20	03.09.20	20	Not Specified

ERLDC may place the list of transmission line shutdown discussed on 24th July 2020.

Members may confirm.

Item No. D.3: Prolonged outage of Power System elements in Eastern Region as on10-06-2020

(i) Thermal Generating units:

S.No	Station	State	Agency	Unit No	Capacity MW	Reason(s)	Outage Date and Time
1	NABINNAGAR(BRBCL)	BIHAR	NTPC	1	250	TRIPPED DUE TO LOSS OF EVACUATION PATH LATER PUT ON RSD W.E.F. 05.07.20 09:02HRS	14-Jul-2020 05:51
2	BARAUNI TPS	BIHAR	BSPHCL	7	110	RSD/LOW SYSTEM DEMAND	28-May-2020 07:00
3	BOKARO 'B'	DVC	DVC	3	210	DESYN ON LOW SYSTEM DEMAND	19-Jun-2020 08:20
4	CHANDRAPURA TPS	DVC	DVC	3	130	TURBINE BLADE DAMAGE	30-Jul-2017 00:00
5	DPL	WEST BENGAL	WBPDCL	7	300	RSD/LOW SYSTEM DEMAND	11-Jul-2020 17:19
6	GMR 3	ODISHA	GMR-Infra	3	350	LOW COAL STOCK	03-Jul-2020 00:01

7	KODERMA	DVC	DVC	1	500	SUSPECTED TUBE LEAKAGE LATER ON LOW SYSTEM DEMAND	08-Jul-2020 01:09
8	KOLAGHAT	WEST BENGAL	WBSETCL	1	210	POLLUTION PROBLEM	10-May-2018 23:05
9	KOLAGHAT	WEST BENGAL	WBSETCL	2	210	ESP FIELD MAINTENANCE	26-Dec-2019 22:48
10	KOLAGHAT	WEST BENGAL	WBPDCL	3	210	RSD/LOW SYSTEM DEMAND	13-Jun-2020 15:15
11	KOLAGHAT	WEST BENGAL	WBSETCL	5	210	RSD/LOW SYSTEM DEMAND	16-Jan-2020 23:37
12	KOLAGHAT	WEST BENGAL	WBSETCL	6	210	RSD/LOW SYSTEM DEMAND	16-Jan-2020 12:08
13	MEJIA TPS	DVC	DVC	1	210	RSD?LOW SYSTEM DEMAND	10-Mar-2020 13:32
14	MEJIA TPS	DVC	DVC	2	210	LOW SYSTEM DEMAND	23-Jun-2020 13:32
15	MUZAFFARPUR TPS	BIHAR	BSPHCL	1	110	RSD/LOW SYSTEM DEMAND	13-Dec-2019 19:45
16	MUZAFFARPUR TPS	BIHAR	BSPHCL	2	110	RSD/LOW SYSTEM DEMAND	19-Oct-2019 13:10
17	RTPS	DVC	DVC	1	270	RSD/LOW SYSTEM DEMAND	07-Jul-2020 15:04
18	ADHUNIK	JHARKHAND	APNRL	1	270	CONDENSER TUBE LEAKAGE	07-Jul-2020 15:04
19	ADHUNIK	JHARKHAND	APNRL	2	270	GT FANS TRIPPED, DETAILS UNDER INVESTIGATION	12-Jul-2020 22:13
20	JITPL	ODISHA	JITPL	1	600	PA FAN PROBLEM	05-Jul-2020 04:52
21	BAKRESHWAR	WEST BENGAL	WBPDCL	2	210	HIGH PRESSURE BY-PASS VALVE OF BOILER IN-OPERATIVE	12-Jul-2020 22:13
22	BARAUNI TPS	BIHAR	BSPHCL	6	110	ELECTRICAL PROTECTION TRIP;PROBLEM IN BEARING GEAR MOTOR	25-Feb-2020 18:10
23	SAGARDIGHI	WEST BENGAL	WBSETCL	2	300	AUXILLARY SUPPLY FAILED	18-Mar-2020 12:20
24	STERLITE	ODISHA	SEL	4	600	PROBLEM IN ASH HANDLING PLANT	12-Jul-2020 18:10

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

(ii) Hydro Generating units:

S.No	Station	State	Agency	Unit No	Capacity (MW)	Reason(s)	Outage Date and Time
1	BALIMELA HPS	ODISHA	OHPC	1	60	R & M WORK	05-Aug-2016 00:00
2	BALIMELA HPS	ODISHA	OHPC	2	60	R & M WORK	20-Nov-2017 00:00
3	BURLA HPS/HIRAKUD I	ODISHA	OPTCL	1	49.5	R & M WORK	14-Mar-2018 17:20
4	BURLA HPS/HIRAKUD I	ODISHA	OPTCL	5	37.5	R & M WORK	25-Oct-2016 09:00
5	BURLA HPS/HIRAKUD I	ODISHA	OPTCL	6	37.5	R & M WORK	16-Oct-2015 09:00
6	BURLA HPS/HIRAKUD I	ODISHA	OPTCL	7	37.5	ANNUAL MAINTENANCE	06-Dec-2019 12:00
7	BALIMELA HPS	ODISHA	OHPC	4	60	SPARKING IN PMG	02-Mar-2020 17:40
8	U. KOLAB	ODISHA	OHPC	3	80	GUIDE BEARING TEMPERATURE HIGH	07-Jan-2020 07:55

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

(iii) Transmission elements

SL NO	Transmission Element / ICT	Agency	Outage Date and Time	Reasons for Outage
1	400 KV IBEUL JHARSUGUDA D/C	IBEUL	29-04-2018 17:30	TOWER COLLAPSE AT LOC 44,45
2	220/132 KV 100 MVA ICT I AT LALMATIA	FSTPP/JUSNL	22-01-2019 11:13	FAILURE OF HV SIDE BREAKER
3	220 KV PANDIABILLI-SAMANGARA D/C	OPTCL	03-05-2019 11:10	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.
4	400 KV MOTIHARI(DMTCL)-GORAKHPUR-II	POWERGRID /DMTCL	13-08-2019 22:05	EARLIER RECONFIGURED BARH-GORAKHPUR # II AGAIN LILOED BACK AT MOTIHARI AND THE PORTIONBEYOND MOTIHARI SHALL BE TERMED AS 400 KV MOTIHARI(DMTCL)-GORAKHPUR-II
5	400 KV BARH-MOTIHARI(DMTCL) -I	POWERGRID/ DMTCL	13-08-2019 22:04	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.
6	400 KV BARH-MOTIHARI(DMTCL) –I	POWERGRID/ DMTCL	04-09-2019 04:36	TOWER COLLAPSE AT LOCATION 26/0 AND 25/5. 400 KV BARH-GORAKHPUR 2 CHARGED AT 10:06 HRS ON 31.01.20 AS INTERIM ARRANGEMENT BYPASSING LILO PORTION OF MOTIHARI. 400 KV BARH – GORAKHPUR 1 CHARGED AT 18:57 HRS ON 05:02:20 AS INTERIM ARRANGEMENT BYPASSING LILO PORTIION OF MOTIHARI.
7	400 KV MERAMUNDALI-NEW DUBRI-D/C	OPTCL	23-03-2020 18:07	3 NOs OF D/C TOWER COLLAPSED AT LOC NO 17, 18 AND 19 AT APPROX 10 KM FROM MEERAMUNDALI.
8	220 kV Howrah - KTPP II	WBSETCL	01-04-2020 15:53	TOWER COLLAPSE AT LOC NO 66 DUE TO SOIL EROSION.
9	400 KV KOLAGHAT-NEW CHANDITALA	WBSETCL	25-04-2020 08:33	FOR CONNECTIVITY IN BETWEEN 220KV KTPP-HOWRAH CKT AND 400KV KTPP-NEW CHANDITAL CKT.PART OF LINE TO BE USED AT 220 KV TO SUPPLY POWER TO HOWRAH FROM KOLAGHAT.
10	220/132 KV 100 MVA ICT 3 at Chandil	JUSNL	30-04-2020 19:30	ICT BURST AND DAMAGED AFTER FIRE REPORTED
11	220 KV-BEGUSARAI-NEW PURNEA-2	BSPTCL	17-05-2020 11:29	B-N DIST-146.8km FC-Ib-1.18kA FROM NEW PURNEA,TRIPPED AGAIN ON SOTF AT 12:00 HRS. ON PATROLLING IT WAS DISCOVERED THAT AT LOC141-142, CLEARANCE WITH 33 KV FEEDER IS LESS. LINE ANTI THEFT CHARGED FROM BEGUSARAI.
12	765 KV- ANGUL-JHARSUGUDA-3	POWERGRID	27-06-2020 02:39	VOLTAGE REGULATION.

13	132 KV SONENAGAR-RIHAND CKT	UPPCL/JSEB/ BSPTCL	26-06-2020 11:26	CONSENT FROM BSEB AND JSEB OBTAINED FOR CHARGING, CONSENT FROM NR YET TO BE FURNISHED.
14	132 KV NEW KISHENGANJ-BARSOI S/C	BSPTCL	02-07-2020 12:55	TO EXECUTE TAPING WORK BETWEEN OVERCROSSING OF 132KV NEW KISHENGANJ-BARSOI S/C AND 132KV PURNEA (PG)-KISHENGANJ (OLD) S/C JUMPERS (TEMPORARY ARRANGEMENT FOR SUPPLYING POWER TO 132KV 132KV BARSOI SS FROM 132KV KISHENGANJ (OLD) SS, THERE IS HEAVY SOIL EROSION BY RIVER KANKAIHAS BEEN OBSERVED THE LOC NO 140 AND 141 OF 132KV KISHENGANJ NEW –BARSOI T/L DURING FLOOD, WHICH MAY CAUSE COLLAPSING OF THE SAI D TOWER.
15	132KV-PURNEA (PG)-KISHENGANJ(OLD) S/C	BSPTCL	02-07-2020 12:55	
16	765 KV JHARSUGUDA-RAIPUR (DURG)-I	POWERGRID	05-07-2020 15:43	VOLTAGE REGULATION.
17	400 KV PATNA-KISHENGANJ-I	POWERGRID	06-07-2020 08:29	FOR PERMANENT RESTORATION ON NEWLY CONSTRUCTED PILE FOUNDATION.
18	400 KV PATNA-KISHENGANJ-II	POWERGRID	06-07-2020 08:30	
19	400KV- MOTIHARI- BARH-2	POWERGRID/ DMTCL	08-07-2020 02:19	DUE TO SOIL EROSION IN GANDAK RIVER, 5 ANCHORS OF THE ERS HAVE BEEN WASHED.
20	40KV MAIN BAY OF KHSTPP-I AT BARH	POWERGRID	09-07-2020	Y PHASE CT OF MAIN BAY SENSING CURRENT ; TEED OPERATED DURING TRIPPING OF BARH-KHSTPP 1 AT 13:41 HRS ON 09-07-20.

(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 inOCC.

Also Monthly progress report to be submitted to ERLDC/ERPC till restoration of the element. In the 168th OCC meeting, *OCC advised all concerned constituents to update list.*

All concerned constituents may update the list.

Item No. D.4: Commissioning of new transmission elements in Eastern Region

The details of new units/transmission elements commissioned in the month of June – 2020 based on the inputs received from beneficiaries.

SL NO	Element Name	Owner	Charging Date	Charging Time	Remarks
1	400 KV Gaya NPGC-I (Modified)	PGCIL	24-06-2020	04:23	Only LILO portion (up to Dead end towers) – upcoming LILO of Gaya-NPGC at Chanduti s/s
2	400 KV Gaya NPGC ckt-II (Modified)	PGCIL	24-06-2020	17:41	
3	132 KV Samangara – Satasankhackt-I	OPTCL	25-06-2020	16:35	
4	132 KV Samangara – Satasankhackt-I	OPTCL	25-06-2020	16:40	

Item No. D.5: UFR operation during the months of March to June 2020.

Frequency profile for the months as follows:

Month	Max (Date/Time)	Min (Date/Time)	% Less IEGC Band	% Within IEGC Band	% More IEGC Band
March, 2020	50.32; 22/03/20; 17:04:10	49.69; 19/03/20 & 31/03/20; 15:29:30&05:12:10	**5.74**	**71.16**	**23.10**
April, 2020	50.30; 04/04/20;18:02:10	49.61; 01/04/20;22:07:30	**4.99**	**75.20**	**19.81**
May, 2020	50.29; 26/05/20 & 28/05/20; 18:04:10& 19:01:00	49.57; 28/05/20; 17:27:10	**4.23**	**76.69**	**19.08**
June, 2020	50.31; 21/06/20; 09:56:20	49.63; 09/06/20 22:12:50	**4.49**	**76.94**	**18.57**

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

****

Annexure B.7

Date -22-07-2020

To,

The Member Secretary
ERPC, Kolkata

Sub: Deemed availability of BRBCL units during Grid Disturbance on 29th June, 1st July and 7th July'2020

Dear Sir,

BRBCL Nabinagar all running Units tripped as all the outgoing lines (Main and ERS) tripped during repair work of bent Tower leg of 400KV Nabinagar Sasaram line. All the outages have been approved as Grid Disturbance by ERLDC (GD1) and subsequently SG has been made equal to AG as per IEGC grid code.

However, we have not received any DC for the outage of the Unit during the grid disturbance for running as well as RSD units as per the details below:

Date	Date & Time of Tripping	Date & Time of Restoration	RSD UNITS	Unit tripped	Deemed DC required (Period)	Remarks (Reason for DC)
29-06-20	29.06.2020, 21:53	29.06.2020, 22:25	U#3		U#3 from 21:52 hrs 29-6-20 to 06:20 hrs 30-6-20	Revival time for Cold start during RSD. (08 hrs)
				U#1&2	U#1 &2 From 21:52 hrs to 23:45 hrs	Outage DC revision time 8th block
01-07-20	01.07.2020, 05:50 hrs	01.07.2020, 10:05 hrs	U#3		U#3 from 05:51 hrs 01-7-20 to 18:00 hrs 01-7-20	Revival time for Cold start during RSD after evacuation Line and power supply restoration
				U#1&2	Unit_1 &2 06:00 hrs to 07:45 hrs	Outage DC revision time 8th block
07-07-20	07.07.2020, 23:58 hrs	08.07.2020, 03:56 hrs	U#1		U#1 from 23:57 hrs 07-7-20 to 12:00 hrs 08-7-20	Revival time for Cold start during RSD after evacuation Line and power supply restoration
				U#2&3	U#2 &3 from 23:57 hrs to 02:00 hrs 08-07-20	Outage DC revision time 8th block

It is therefore, requested to provide Deemed Availability (DC) of running and RSD units during the said period as mentioned above.

Thanking You,

22-7-2020

A A Prasad
AGM (EEMG)

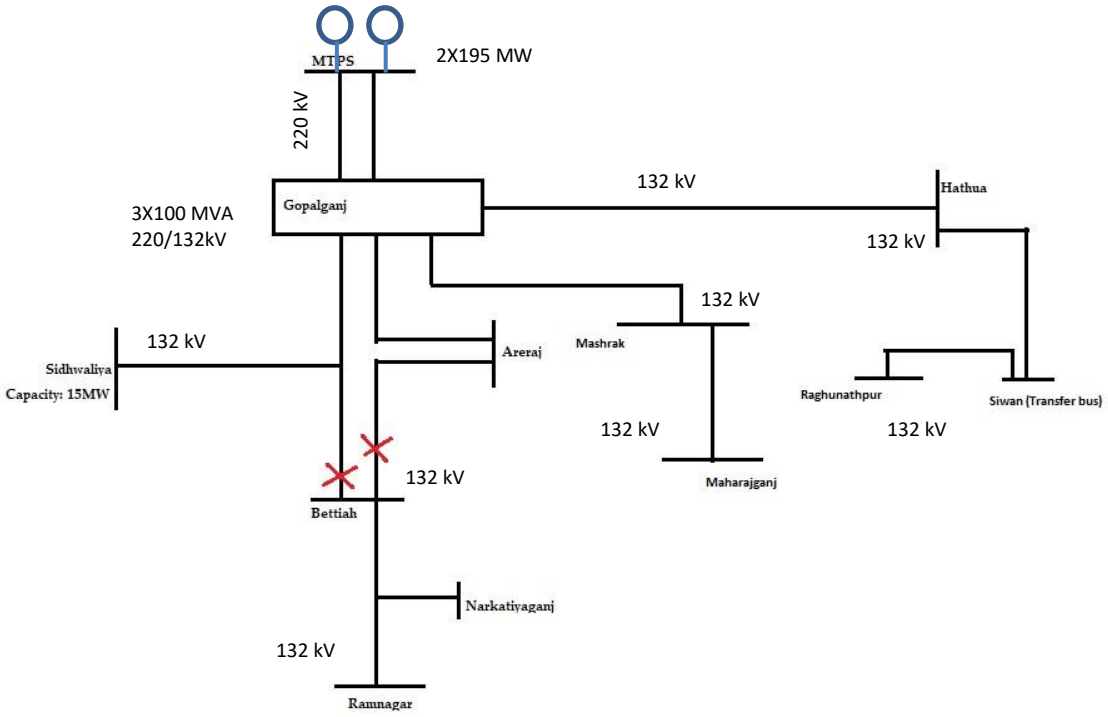
CC:

1. ED (ERLDC)
2. GM (ERLDC)
3. CEO, BRBCL

Minutes of Meeting for KBUNL islanding Scheme

A meeting was held through WebEx on 22-June-2020 for discussing and finalizing islanding scheme of KBUNL St-II. Meeting was attended by participants from BSPTCL, Bihar SLDC, KBUNL (NTPC) and ERLDC.

Following was discussed during the meeting

1. In the meeting it was reconfirmed that islanding of KBUNL St-II unit(s) will be carried out with 220 kV Gopalganj substation along with load supplied radially from it.
2. Network diagram of radial connection is as follows
3. 

4. SLDC Bihar Submitted following load connected in Radial system

Sl No	Name of Substation	Peak Load (MW)	Off Peak Load (MW
1	Gopalganj (Local)	90	35
2	Areraj	20	12
3	Hathua	32	25
4	Raghunatpur	24	12
5	Mashrak & Mahrajganj	55	40
	Total	221	124

5. Further BSPTCL confirmed that no UFR is connected at any of the above substations
6. KBUNL informed that with above load it is possible to successfully island two units of Stage-II. The minimum load required for stable operation of 2 units is 200 MW. Further they informed that during last 4-5 months tripping of 220 kV KBUNL-Gopalganj D/C has reduced significantly and now these lines are very much stable.

7. ERLDC stated that in case in case it is difficult to island both the units, islanding may also be planned with only one unit of KBUNL along with UFR relay at suitable substations to match load with generation.
8. KBUNL emphasized for islanding of both the units and informed that they will simulate the impact of load generation mismatch on the unit and will reconfirm the number of units that can be islanded stably. If post islanding with 2 units, the frequency of the island shoots up, one of the units will be tripped by sensing MW & df/dt
9. After discussion it was agreed that BSPTCL and KBUNL will submit following data
    a. BSPTCL
        i. Upcoming connectivity of the substations considered under islanding to ensure proper formation of island under contingent conditions.
        ii. Present peak and Off peak MVAr loads of all substations considered in the island
        iii. Confirmation that lines within the island will not trip on encroachment of power swing in Zone-3
        iv. Reconfirm about existence and settings of UFR in the substations within the proposed island
        v. Identification of suitable LV (33 kV) feeders (10 -15 MW load each) where UFR can be installed to maintain load generation balance within island after it has formed and fine tuning of island frequency.
    b. KBUNL (NTPC)
        i. Model for excitation system of KBUNL units
        ii. Model for Governor system of KBUNL
        iii. Maximum Ramp up and Ramp down rate
        iv. Frequency band within which machine can operate stably
        v. Expected change in output with HP-LP bypass and time for same

10. Once the above information are collected ERLDC is required to simulate islanding condition using offline simulation software
11. Meeting ended with vote of thanks

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	that PSS tuning
Kolaghat-WBPDCL	2	Static	BHEL	No	Yes	Long Back	No	No	Yes	that PSS tuning
Kolaghat-WBPDCL	3	Static	BHEL	No	Yes	Long Back	No	No	Yes	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 AVRTOSATEX100, Vendor- Toshiba	No	Yes	2009	No	Not App.	Yes	
PPSP	2	Thyristor type, full bridge	Digital AVRTOSATEX100, Vendor- Toshiba	No	Yes	2009	No	Not App.	Yes	
PPSP	3	Thyristor type, full bridge	Digital AVRTOSATEX100, 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	
Budge Budge-CESC	2	Static	R-R Industrial Controls Limited	Yes	Yes	2015	No	Yes	Yes	
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	3	Semi-Static	ABB 6800	Yes	Yes	2016	Yes	Yes	Yes	
Kahalgaon NTPC	4	Semi-Static	BHEL	Yes	Yes	2015	No	Yes	Yes	
Kahalgaon NTPC	6	Brushless	BHEL	Yes	Yes	2009	No	Yes	Yes	Apr-20
Farakka NTPC	4	Brushless	Siemens	Yes	Yes	2008	No	No	Yes	
Farakka NTPC	5	Brushless	Siemens	Yes	Yes	2008	No	No	Yes	
Farakka NTPC	6	Brushless	BHEL	Yes	Yes	2015	No	No	Yes	
Talcher Stage 1	1	Static	Andritz	Yes	Yes	2015	No	Yes	Yes	
Talcher Stage 1	2	Static	Andritz	Yes	Yes	2014	No	Yes	Yes	
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	
Nabinagar NPGC	2						No Details		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	
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	Mar-20
Chuzachen HEP	2	Static	P320 AVR, ALSTOM	Yes	Yes	2013	No	Yes (issue with Time scale)	Yes	Mar-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	
IB TPS	2	Static	Model: Unitrol 5, BHEL	Yes	Yes	2012	No	No	Yes	
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 tuned	No	No	Yes	
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	4 X 600								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									
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		

ANNEXURE D1

ANTICIPATED POWER SUPPLY POSITION FOR THE MONTH OF AUG-20

SL.NO		PARTICULARS	PEAK DEMAND IN MW	ENERGY IN MU
1		BIHAR		
	i)	NET MAX DEMAND	6390	3790
	ii)	NET POWER AVAILABILITY- Own	543	220
	iii)	Central Sector+Bi-Lateral	4399	2754
	iv)	SURPLUS(+)/DEFICIT(-)	-1448	-816
2		JHARKHAND		
	i)	NET MAXIMUM DEMAND	1420	850
	ii)	NET POWER AVAILABILITY- Own Source	386	243
	iii)	Central Sector+Bi-Lateral+IPP	1008	697
	iv)	SURPLUS(+)/DEFICIT(-)	-26	91
3		DVC		
	i)	NET MAXIMUM DEMAND	2980	1950
	ii)	NET POWER AVAILABILITY- Own Source	5244	3399
	iii)	Central Sector+MPL	529	372
	iv)	Bi- lateral export by DVC	1673	1245
	v)	SURPLUS(+)/DEFICIT(-) AFTER EXPORT	1120	576
4		ODISHA		
	i)	NET MAXIMUM DEMAND	5130	3255
	ii)	NET POWER AVAILABILITY- Own Source	4110	2504
	iii)	Central Sector	2081	1422
	iv)	SURPLUS(+)/DEFICIT(-)	1061	670
5		WEST BENGAL		
5.1		WBSEDCL		
	i)	NET MAXIMUM DEMAND	7235	4330
	ii)	IPCL DEMAND	83	62
	iii)	TOTAL WBSEDCL's Energy Requirement (incl.B'Desh+Sikkim+IPCL)	7528	4546
	iv)	NET POWER AVAILABILITY- Own Source	4352	2262
	v)	Contribution from DPL	465	334
	vi)	Central Sector+Bi-lateral+IPP&CPP+TLDP	2886	2151
	vii)	EXPORT (TO B'DESH & SIKKIM)	210	156
	viii)	SURPLUS(+)/DEFICIT(-) AFTER EXPORT	175	199
5.2		CESC		
	i)	NET MAXIMUM DEMAND	2000	1075
	ii)	NET POWER AVAILABILITY- Own Source	750	533
	iii)	FROM OTHER SOURCE (INCL. IPP/CPP-29-30 MU/M)	710	161
	iv)	IMPORT FROM HEL	540	381
	v)	TOTAL AVAILABILITY OF CESC	2000	1075
	vi)	SURPLUS(+)/DEFICIT(-)	0	0
6		WEST BENGAL (WBSEDCL+DPL+CESC) (excluding DVC's supply to WBSEDCL's command area)		
	i)	NET MAXIMUM DEMAND	9318	5467
	ii)	NET POWER AVAILABILITY- Own Source	5576	3128
	iii)	CS SHARE+BILATERAL+IPP/CPP+TLDP+HEL	4136	2693
	iv)	SURPLUS(+)/DEFICIT(-) BEFORE WBSEDCL'S EXP.	385	355
	v)	SURPLUS(+)/DEFICIT(-) AFTER WBSEDCL'S EXP.	175	199
7		SIKKIM		
	i)	NET MAXIMUM DEMAND	100	45
	ii)	NET POWER AVAILABILITY- Own Source	8	3
		- Central Sector	186	131
	iii)	SURPLUS(+)/DEFICIT(-)	94	89
8		EASTERN REGION		
	i)	NET MAXIMUM DEMAND	24841	15357
	ii)	BILATERAL EXPORT BY DVC	1673	1245
	iii)	EXPORT BY WBSEDCL	210	156
	iv)	NET TOTAL POWER AVAILABILITY OF ER (INCLUDING CS ALLOCATION +BILATERAL+IPP/CPP+HEL)	28196	17566
	v)	ENERGY SURPLUS(+)/DEFICIT(-) OF ER AFTER EXPORT (v = iv - i -ii - iii)	1473	808