



भारत सरकार
Government of India
विद्युत मंत्रालय
Ministry of Power
पूर्वी क्षेत्रीय विद्युत समिति

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Azadi Ka
Amrit Mahotsav



Eastern Regional Power Committee

14, गोल्फ क्लब रोड, टालीगंज, कोलकाता-700033

Tel. No.: 033-24239651, 24239658 FAX No.:033-24239652, 24239653 Web: www.erpc.gov.in

NO. ERPC/EE/OPERATION/2022/1009

DATE: 07.11.2022

To

As per list enclosed.

Sub: Minutes of 196th OCC Meeting held on 19.10.2022 (Wednesday) virtually through MS Teams Platform- reg.

Sir,

Please find enclosed minutes of 196th OCC Meeting held on 19.10.2022 virtually through MS Teams Platform for your kind information and necessary action. The same is also available at ERPC website (www.erpc.gov.in).

Observations, if any, may please be forwarded to this office at the earliest.

This issues with the approval of Member Secretary.

Regards,

Yours faithfully,

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07. XI. 22

(A. De)
EE(Operéation)

LIST OF ADDRESSES:

1. CHIEF ENGINEER (TRANS., O&M), BSPTCL, PATNA, (FAX NO.0612-2504557/2504937)
2. CHIEF ENGINEER (System Operation), BSPTCL, PATNA, (FAX NO.0612-2504557/2504937)
3. CHIEF ENGINEER, TRANSMISSION (O&M), JUSNL, RANCHI (FAX NO.-0651-2490486/2490863)
4. CHIEF ENGINEER, TVNL, DORANDA, RANCHI - 834102 (FAX NO.06544-225414)
5. CHIEF LOAD DISPATCHER, SLDC, OPTCL, BHUBANESWAR (FAXNO.0674-2748509)
6. CHIEF GENERAL MANAGER (O&M), OPTCL, BHUBANESWAR
7. SR. GENERAL MANAGER (PP), GRIDCO, JANPATH, BHUBANESWAR(0674-2547180)
8. DIRECTOR (OPERATION), IB TPS, AT/PO BANHARPALI, JHARSUGUDA, (FAX NO. 06645-222225/222230)
9. GENERAL MANAGER, TTPS, TALCHER, (FAX NO.06760-243212)
10. SR. GENERAL MANAGER (ELECTRICAL), OHPC LTD., BHUBANESWAR, (FAX NO.0674-2542102)
11. CHIEF ENGINEER, CLD, WBSETCL, HOWRAH, (FAX NO.033-26886232)
12. CHIEF ENGINEER, CENTRAL PLANNING WING, WBSETCL, SALT LAKE (FAX NO.: 033-23591955)
13. CHIEF ENGINEER (PTR), WBSEDCL, SALT LAKE, KOLKATA (FAX:033-23345862)
14. CHIEF GENERAL MANAGER (OS), WBPDC, KOLKATA-98 (FAX NO. 033-23393286/2335-0516)
15. GM, KOLAGHAT TPS, WBPDC, KOLAGHAT (FAXNO.03228231280)
16. DGM (OPERATION), DPL, DURGAPUR, (FAX NO.0343-2555052)
17. GM (SYS OPERATION), CESC, CHOWRINGHEE SQUARE, KOLKATA (FAX NO.033-22253756/22129871)
18. CHIEF ENGINEER, SLDC, DVC, HOWRAH (FAX NO.033-2688-5094)
19. ADDL.CHIEF ENGINEER, SLDC, POWER DEPT., GOVT. OF SIKKIM, GANGTOK, (FAX NO. 03592-228186/201148/202284)
20. EXECUTIVE DIRECTOR, ERLDC, POSOCO, KOLKATA, (FAX NO.033-2423-5809)
21. GENERAL MANAGER, FSTPP, NTPC, FARAKKA, (FAX NO.03512-224214/226085/226124)
22. GENERAL MANAGER, KhSTPP, NTPC, KAHALGAON (FAXNO.06429-226082)
23. GENERAL MANAGER, TSTPP, NTPC, TALCHER, (FAX NO.06760-249053)
24. GENERAL MANAGER (OS), POWERGRID, ER-II, KOLKATA(Fax no:033-23572827)
25. GENERAL MANAGER, POWERGRID, ER-I, PATNA, (FAXNO.0612-2531192)
26. GENERAL MANAGER (O&M), POWERGRID, ODISHA PROJECTS, SAHID NAGAR, BHUBANESWAR – 751007
27. MANAGING DIRECTOR, DRUK GREEN POWER CORPORATION, P.O. BOX -1351, THIMPU, BHUTAN—(FAX NO 00975-2336411)
28. MANAGING DIRECTOR, BHUTAN POWER CORPORATION, P.O.BOX-580, THIMPU, BHUTAN (FAX NO.00975-2333578)
29. CHIEF ENGINEER (O&M), TALA H.E.PROJECT, BHUTAN (FAX NO.009752/324803)
30. EXECUTIVE DIRECTOR (O&M), NHPC, FARIDABAD (FAXNo.:0129-2272413)
31. GENERAL MANAGER, TEESTA –V POWER STATION, NHPC, SINGTAM, EAST SIKKIM (FAX 03592 -247377)
32. CHIEF ENGINEER, RANGIT POWER STATION, NHPC, P.O. RANGIT NAGAR, SOUTH SIKKIM (FAX NO.03595-259268)
33. SENIOR VICE PRESIDENT, PTC LTD., NBCC TOWERS, 15-BHIKAJI KAMA PLACE, NEW DELHI- 110066 (FAX NO.011-41659504)
34. PLANT HEAD, ADHUNIK POWER & NATUARAL RESOURCES, JHARKHAND(FAX NO.: 0657-6628440)

35. AGM (OPERATION), MAITHON POWER LTD, DHANBAD (FAX:08860004758)
36. VICE PRESIDENT(POWER), VEDANTA LIMITED, BHUBANESWAR- 751023 (FAX NO 0674-2302920)
37. CHIEF ELECTRICAL ENGINEER, EASTERN RAILWAY, KOLKATA-700 001 (FAX NO.: 033-22300446)
38. CHIEF ELECTRICAL ENGINEER, SOUTH EASTERN RAILWAY, KOLKATA-43 (FAX: 033-24391566)
39. DEPUTY DIRECTOR, EASTERN RPSO, SALT LAKE, KOLKATA- (FAXNO:033-23217075)
40. GENERAL MANAGER (O&M), NHPC LTD, FARIDABAD, FAX:0129-2272413
41. ASSOCIATE VICE PRESIDENT, GMR KEL, BHUBANESWAR-751007. (FAX NO:0674-2572794)
42. GM (SO & COMML), NTPC VVNL, NEW DELHI-110033.Fax:011-24367021
43. SHRI D. P. BHAGAVA, CHIEF CONSULTANT (O&M), TEESTA URJA LIMITED, NEW DELHI-110 001(FAX:011-46529744)
44. SHRI BRAJESH KUMAR PANDE, PLANT HEAD, JITPL.(FAX:011-26139256-65)
45. DIRECTOR (NPC), CEA, NRPC BUILDING, KATWARIA SARAI, NEW DELHI-110016
46. DGM (OS), HALDIA ENERGY LIMITED, BARIK BHAWAN, KOKATA-700072, FAX: 033-22360955

CC:

| | | |
|--------------------------|--------------------------|------------------------------|
| Chief Engineer, OPM, CEA | Chief Engineer, NPC, CEA | ASSISTANT SECRETARY, ERPC |
|--------------------------|--------------------------|------------------------------|



MINUTES
OF
196th OCC MEETING

Date: 19.10.2022
Eastern Regional Power Committee
14, Golf Club Road, Tollygunge
Kolkata: 700033

EASTERN REGIONAL POWER COMMITTEE

MINUTES OF 196TH OCC MEETING HELD ON 19.10.2022 (WEDNESDAY) AT 10:30 HRS

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

Member Secretary, ERPC chaired the 196th OCC meeting. Welcoming all the participants to the meeting, he outlined the performance of ER Grid during September-2022 in brief. He highlighted the following points:

- In September-2022, energy consumption of ER was 16,603 MU which was 14.8% more than that of September'2021.
- In September-2022, Peak demand of ER was 26,685 MW which was 6.7 % more than that of September'2021.
- During September-2022, 80.76% of time, grid frequency was in IEGC Band (49.90Hz-50.05Hz).
- All India thermal PLF during September, 2022 was 55.17%. However, in Eastern Region thermal PLF was 74.11%. Bakreswar TPS generating station of WBPDC achieved a PLF of 93.86%.
- As per LGBR 2022-23, total 5150 MW thermal capacity was scheduled for planned maintenance in November-2022.
- During the month of September-2022, following new transmission elements have been commissioned:
 - 1) 220 kV Purulia-Burdwan D/C Line- By DVC.
 - 2) 220 kV Rajarhat (PG) – Newtown-II D/C line- By WBSETCL.
- As far as coal stock position is concerned, many of the power stations of Eastern Region are still reeling under coal shortage. He advised thermal power plants to build up their coal stock as per their normative requirement.

PART – A

ITEM NO. A.1: Confirmation of Minutes of 195th OCC Meeting held on 21st September 2022 through MS Teams online platform.

The minutes of 195th Operation Coordination sub-Committee meeting held on 21.09.2022 was circulated vide letter dated 07.10.2022.

Members may confirm the minutes of 195th OCC meeting.

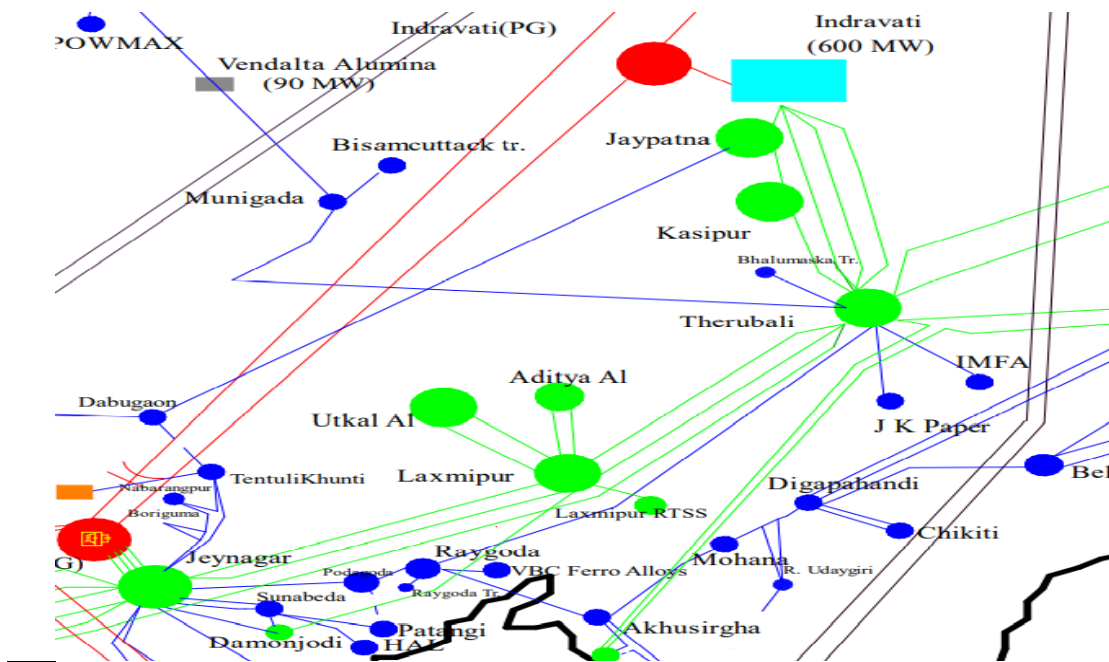
Deliberation in the meeting

Members confirmed the minutes of 195th OCC meeting.

PART B: ITEMS FOR DISCUSSION

ITEM NO. B.1: Long Outage of 400/220 kV,315MVA ICT-1(OPTCL) at Indravati HEP

400/220 kV,315MVA ICT-1(OPTCL) at Indravati HEP was out since February 2022. The reason for the outage was initially reported Buchholz relay operation. Later SLDC Odisha reported that Control & Relay panel of ICT burnt. Indravati HEP has 2x315MVA ,400/220KV ICTs along with 4x150MW hydro generating units connected to the 220KV side. The connectivity of the 400KV network is through only a single line 400KV Indravati HEP-Indravati (PG). Though the 220KV connectivities from Indravati HEP to Therubali are adequate to evacuate full hydro generation of Indravati HEP in absence of 400KV link, however, if the existing running ICT trip will disconnect Indravati HEP from 400KV network. Further, if any line tripped from the existing 4 lines between Indravati HEP to Therubali, that may lead to constraints in the evacuation of hydro generation.



OPTCL may update the Status of the revival of ICT-1 at Indravati (HEP).

Deliberation in the meeting

Representative of OHPC submitted that ICT-1 at Indravati (HEP) would be commissioned by November'2022.

OCC advised OHPC to maintain cold spare ICT in order to avoid any reliability issue.

ITEM NO. B.2: Seeking CTU connectivity for Vedanta Ltd. Jharsuguda Plant through Vedanta-Sundergarh 400 KV D/C line.

1. Vedanta Ltd. has set up state-of-the-art integrated aluminium smelting complex at Jharsuguda, Odisha with a total operating capacity of 1.6 million tonnes per Annum

(MTPA). The company has also setup 2400 MW (4 x 600 MW) sub-critical thermal power plant in FY 2009-10, and 9x135 MW captive power unit in FY 2007-08. Vedanta Limited is one of the largest industrial investors in Odisha having an overall outlay of - & 80,000 Cr. in Aluminium and Power sector projects.

2. It is noteworthy that Vedanta Ltd, Jharsuguda is connected to CTU pooling station at Sundergarh (Jharsuguda) substation through 400 kV VL - Sundergarh 400 kV D/C line. Basis the discussion on 14th October 2016 at Eastern Power Committee Meeting (ERPC) held in Kolkata, it was decided that:
 - i. Control area jurisdiction of Vedanta will be shifted from ERLDC to SLDC, Odisha;
 - ii. Vedanta Ltd. shall be a State embedded entity for all purposes.
 - iii. All four units of TPP i.e. 4x600 MW shall be operated in single bus mode;
 - iv. Jharsuguda line will no more be a dedicated transmission line and considered as a tie-line between ISTS network and OPTCL.
3. It is pertinent to mention that handover of the Sundergarh 400 kV D/C line to OPTCL as envisaged in the ERPC meeting has not taken place. Though the entire expenditure on the construction of the said transmission line has been done by Vedanta and the line continues to be maintained by VL even now to maintain its supply reliability. VL also pays bay maintenance charges to CTU for the bay connected with this line at Jharsuguda. The line is also not reflected by OPTCL in its annual ARR filing to OERC.
4. OPTCL, however, is charging the STU charges and losses for any power being imported from power exchange/ 3party through this 400 kV line, even though the handover is still pending and the Tx. line and bay maintenance cost is also being borne by Vedanta only.
5. Aluminium is a power intensive industry where power is the biggest raw material in aluminium electrolysis process. Power intensive manufacturing operations must transition to Renewable Energy at a much faster rate than anticipated due to worldwide climate change goals. Adoption of RE in Aluminium smelting is unavoidable to remain relevant due to following reasons:
 - i. VL exports more than 60% of the Aluminium produced in the Jharsuguda complex to Europe. It may be noted that Europe would start levying a Carbon Tax on Aluminium producers based on carbon-intensity of their Aluminium production from FY 25 onwards. While the carbon threshold applicable for tax-free imports in this regime would be CO₂e/MT < 8 for Aluminium, Vedanta is presently at 17 CO₂e/ MT.
 - ii. It is imperative for VL to take urgent steps to take mitigative measures and remain competitive in global market by producing low carbon Aluminium (Green Aluminium).
 - iii. Further, India's RPO trajectory & Green Energy Open Access Rules recently notified by MoP, GOI stipulate massive increase in RPO requirement for captive thermal projects and open access consumption to the tune of -24% in FY23 which would further increase to -43% by FY30.
6. To fulfil the low carbon (green) Aluminium requirement and Renewable Purchase Obligation (RPO), VL is critically required to undertake phased reduction of thermal power consumption while expanding RE power adoption in a phased manner over the next 2-3 years.
7. In this endeavor, VL plans to contract renewable energy capacity of -3-4 GW by 2030. VL

has already taken the first step in this direction by entering into a Power Delivery Agreement to procure 180 MW Renewable Energy through the captive route.

8. Large scale RE adoption by VL requires it to contract RE capacity being build outside the State in RE resource-rich regions and import it to its consumption facility at Jharsuguda over the National grid. It may be noted here that solar and wind resource available in the State of Odisha is very low in comparison to other States. With the high equipment prices prevailing today for solar panels and wind turbines, the resultant tariff from the RE project is very high in comparison to other States.
9. For importing power from other States, VL is required to secure Long-Term Access (LTA) over national grid. While the Central Government has allowed waiver of access charges to the ISTS grid, there is no such waiver applicable for conveyance of RE power over the STU network of Odisha.
10. The STU charges applicable on a ₹/MW/month basis works out to a high ₹/kWh cost for RE power (being at lower CUF) due to lower utilization of the State transmission corridor. These high per unit charges for import of RE power makes the transaction unviable over State transmission grid.
11. To remain in business, adoption of RE by Vedanta is non-negotiable. At the same time unsustainable STU charges would end up in cost of Aluminium manufacturing to a level at which selling the product in global market will be almost impossible.
12. Hence VL must be allowed Bulk Consumer Connectivity to ISTS (CTU) network for import of power through the already existing 400 kV D / C VL-Sundergarh D / C line with no charges payable to OPTCL.
13. VL would also like to retain its STU connectivity through Lapanga SS on a common bus arrangement to service the Contract Demand (CD) with the Discom (TPWODL) and also comply with its PPA obligations. This would enable operating a highly critical smelter load with adequate supply redundancy as stipulated in the manual on Transmission planning of CEA.
14. Thus, in view of the above consent for the following is requested by Vedanta Ltd:
 - a. A dual connectivity (CTU & STU) without a split bus arrangement
 - b. Allow import of power through the already existing 400kV D / C VL-Sundergarh D / C line with no charges payable to OPTCL.

Members may discuss.

Deliberation in the meeting

Representative of ERPC briefly explained the agenda highlighting the key points as submitted by M/s Vedanta Ltd.

OCC advised Vedanta Ltd to have a meeting with GRIDCO and OPTCL first. Based on the outcome of the meeting the matter may be taken up in the next Commercial Sub-Committee Meeting and if required the same can also be referred to next TCC and ERPC Meeting.

ITEM NO. B.3: Black Start exercise by Teesta Power Station.

ERLDC vide e-mail dated 10th Oct 2022 has intimated Teesta-V Power Station to carry out Mock Black Start as per decided schedule in OCC in the month of October 2022. In this regard it is to intimate that Teesta-V Power Station had been asked to carry out Mock Black start on 8th Feb 2022. The Mock Black start exercise was failed as Generating units selected for Mock Black start exercise was tripped on Overall Differential Protection (87T) and Generator Instantaneous Over current (50).

The tripping was caused due to out of phase synchronization with grid at Rangpo End. This caused a severe jerk at the generator and very high current (43kA) was feed from the generator. Such severe fault may create permanent damage to Generators / transformers.

To avoid recurrence of any such event a Meeting was held between members from Teesta-V, NHPC corporate, POWERGRID ER2 RHQ and Rangpo station. In the meeting it was decided that power grid will submit detail root cause analysis of synchronization failure and modification to be made at its synchronization scheme. However, till date no such communication has been received from ERLDC in this regard.

Further in 188th OCC meeting issue of failure of black start exercise was discussed in detailed wherein NHPC Teesta-V had expressed dissatisfaction on the decision of ERLDC for allowing power grid to synchronize the Generating unit of Teesta-V at PGCIL Rangpo end and OCC opined that a committee comprising of representatives from ERPC, ERLDC, NHPC and Power Grid may be constituted to undergo a detailed study in this regard. However, no such committee has yet been constituted to suggest remedial measure to avoid recurrence of the incidences of 8th Feb 2022.

In such a circumstances Teesta-V Power Station can do Mock Black Test Exercise limited to only charging of Dead bus at Rangpo End during lean season.

Members may discuss.

Deliberation in the meeting

Powergrid representative submitted that simulation on a spare BCU was carried out in Rangpo S/s. However, for the simulation of delay between the command given and operation of breaker, shutdown of Teesta-V feeder would be required which is planned in the last week of October 2022.

Representative of Teesta-V submitted that shutdown of Teesta-V feeder may be deferred to November'2022 end.

OCC advised Powergrid to coordinate with Teesta-V and defer the said shutdown for the simulation purpose.

On query Powergrid informed that detailed report would be submitted after the completion of simulation by taking the S/d of Teesta-V feeder.

ITEM NO. B.4: Status of upcoming Reactors in Eastern Region.

In the upcoming winter season high voltage scenario is expected to prevail in Eastern region. As discussed in 4th meeting of Eastern Region Power Committee Transmission Planning (ERPCTP) meeting held on 23rd July'2022. Following was updated for upcoming reactors in Eastern Region

| Sl No | Name of Substation | Reactor Size | Expected date of Commissioning | Present Status |
|-------|----------------------|--------------|--------------------------------|---|
| 1 | New Duburi (Odisha) | 1 x 125 MVar | Sep-21 | Commissioned on 23 rd August, 2022 |
| 2 | Meramandali (Odisha) | 1 x 125 MVar | Sep-21 | Commissioned on 07 th Jan,2022 |
| 3 | Mendasal (Odisha) | 1 x 125 MVar | Sep-21 | - |
| 4 | New Chanditala (WB) | 1 x 125 MVar | Dec-21 | - |
| 5 | Kharagpur (WB) | 1 x 125 MVar | Dec-21 | - |
| 6 | Bidhannagar (WB) | 1 x 125 MVar | Dec-21 | - |
| 7 | Gokarno (WB) | 1 x 125 MVar | Dec-21 | - |
| 8 | New PPSP(WB) | 2 x 125 MVar | Aug-22 | - |

Concerned utilities may update regarding the installation of rest of the reactors.

Deliberation in the meeting

Members updated as follows:

| <i>Sl No</i> | <i>Name of Substation</i> | <i>Reactor Size</i> | <i>Timeline of Commissioning</i> |
|--------------|----------------------------|---------------------|---|
| 1 | <i>Mendasal (Odisha)</i> | <i>1 x 125 MVar</i> | <i>October-2022</i> |
| 2 | <i>New Chanditala (WB)</i> | <i>1 x 125 MVar</i> | <i>February-2023</i> |
| 3 | <i>Kharagpur (WB)</i> | <i>1 x 125 MVar</i> | <i>Decembe-2022</i> |
| 4 | <i>Bidhannagar (WB)</i> | <i>1 x 125 MVar</i> | <i>April-2023</i> |
| 5 | <i>Gokarno (WB)</i> | <i>1 x 125 MVar</i> | <i>December-22</i> |
| 6 | <i>New PPSP(WB)</i> | <i>2 x 125 MVar</i> | <i>Clearance from Nabanna is pending. Date would be intimated once LOA is placed.</i> |

ITEM NO. B.5: Upcoming Regulations in 2022.

Presently a plethora of regulations have been notified by hon'ble CERC as well as Ministry of Power. The recent developments in various regulatory front are given below:

- Draft detailed procedure on the operational aspects of SRAS has been formulated by NLDC for stakeholder inputs/suggestions. The aforesaid draft detailed procedure is available on the POSOCO website at <https://posoco.in/documents/consultation-papers/>. Members may go through the draft procedure and may forward the comments if any to ancillary@posoco.in.

- CERC released the Explanatory Memorandum of IEGC in the following link https://cercind.gov.in/2022/draft_reg/EM-GRid-code_091022.pdf. last date for submission of comments/suggestions/ objections is hereby extended till 19.10.2022. Now the last date of submission comments and suggestions on Draft IEGC has been extended till 19th October,2022.
- The ministry of power has notified that the 'Green Open Access Rules, 2022' on 6th June,2022. Further POSOCO has been nominated as Central Nodal Agency to operate and set up a single window green energy open access system for renewable energy under the rules. Accordingly, a portal for Green Energy Open Access has been designed and developed by NLDC and is available in the link <https://greenopenaccess.in/landing>. Further the procedure for green energy open access can be accessed in the following link:

<https://greenopenaccess.in/assets/files/Procedure%20for%20scheduling%20of%20power%20in%20Green%20Energy%20Open%20Access.pdf>.
- Hon'ble Commission has notified the GNA regulation with effect from 15.10.2022 except the provisions of Regulations 23 to 24, 26 to 36, 37.9, 38,40, and 43, whose date of commencement shall be notified separately.
- It is informed that a comprehensive review of the Central Electricity Authority (Grid Standards) Regulations, 2010, is being undertaken. In this regard, it is requested that comments/suggestions, if any, may please be sent to the email id cegmcea1@gmail.com with a copy to mserpc-power@nic.in at the earliest.

Members may take note and prepare accordingly.

Deliberation in the meeting

ED, ERLDC made a brief presentation on the upcoming Regulations in 2022.

OCC advised all concerned members to take note of it.

*The presentation is attached at **Annexure B5**.*

ITEM NO. B.6: Furnishing of data for preparation of LGBR 2023-24 of Eastern Region.

As per the IEGC Clause 2.4.2 (d) & (e) issued by CERC on 28.04.2010, Regional Power Committee (RPC) has "to coordinate the planning of maintenance of generating machines of various generating companies of the region including those of interstate generating companies supplying electricity to the Region on annual basis and also to undertake review of maintenance programmed on monthly basis" as well as "to undertake planning of outage of transmission system on annual/monthly basis".

In this regard, Load Generation Balance Report (LGBR) for the year 2023-24 in respect of Eastern Region is to be finalized by October, 2022. The approved programme of planned maintenance in respect of Thermal and Hydro stations in the region, along with the estimated monthly generation programme, the estimated monthly energy requirement (MU) and estimated monthly peak/off-peak demand (MW) for the year 2023-24 of each state / utility shall be the input for preparation of LGBR of Eastern Region for 2023-24.

To prepare the LGBR of Eastern Region, the following data/ information for the year 2023-24 in

respect of the constituents/ generators of Eastern Region is required:

State and Central Sector Generators/PPs/CPPs/SLDCs/Utilities

- i) The Unit-wise and Station-wise monthly energy generation proposed from existing units during 2023-24 (thermal, hydro and RES).
- ii) Annual maintenance programme for each of the generating units (thermal, hydro and RES)
- iii) Generating units under R&M/ long outage indicating date of outage and reasons of outage and expected date of return (thermal and hydro both).
- iv) Partial and forced outage figures (in %) of generating units and auxiliary power consumption for the last 3 years.
- v) Month-wise peak/off-peak demand (MW) – restricted and unrestricted.
- vi) Month-wise energy requirement (in MU) – restricted and unrestricted.
- vii) Month-wise and source-wise power purchase and sale plan (both MU & MW).
- viii) Schedule of commissioning of new generating units during 2023-24 and unit-wise monthly generation programme (in MU) upon COD.
- ix) Allocation of power from new generating units.

ISTS/STU/Transmission licenses in the states and Central Sector

- x) Monthly and annual planned outage of transmission system (Transmission lines 220kV and above / ICTs / Reactors/ other elements (TCSC, SC etc.)).

It is therefore requested to provide the above information (as applicable), at earliest, for compilation of data and preparation of draft LGBR of ER for the year 2023-24.

Deliberation in the meeting

OCC advised all concerned State and Central Sector Generators/PPs/CPPs/SLDCs/Utilities to provide the requisite data, by October'2022, for preparation of draft LGBR of ER for the year 2023-24.

OCC further advised all concerned ISTS/STU/Transmission licenses in the states and Central Sector to provide monthly and annual planned outage of transmission system (Transmission lines 220kV and above / ICTs / Reactors/ other elements (TCSC, SC etc.)) by October'2022.

OCC further opined that after receiving the requisite data, a meeting may be convened with the concerned utilities to finalize the draft LGBR of ER for the year 2023-24.

ITEM NO. B.7: Ensuring healthiness of ADMS.

The performance of automatic demand management scheme (ADMS) of the states for the month of Sep-22 is detailed below:

| State | Criteria for ADMS operation | Number of instances for which ADMS criteria satisfied | Number of instances for which detail received | Update in 196 th OCC meeting |
|-------------|--|---|---|---|
| West Bengal | 1. System Frequency < 49.7 Hz 2. WB over-drawl > 150 MW | 1 | Nil | |

| | | | | |
|-----------|---|-----|-----|--|
| | 3. Delay = 4 min | | | |
| Jharkhand | 1. System Frequency < 49.9 Hz 2. Jharkahnd over-drawl > 150 MW 3. Delay = 3 min | 141 | Nil | |
| DVC | 1. System Frequency < 49.9 Hz 2. DVC over-drawl > 150 MW 3. Delay = 3 min | 40 | Nil | |
| Odisha | 1. System Frequency < 49.9 Hz 2. Odisha over-drawl > 150 MW 3. Delay = 3 min | 19 | Nil | |

The states are requested to update the status of ADMS at present.

Deliberation in the meeting

Members updated the status as follows:

| <i>State</i> | <i>Criteria for ADMS operation</i> | <i>Number of instances for which ADMS criteria satisfied</i> | <i>Number of instances for which detail received</i> | <i>Update in 196th OCC meeting</i> |
|--------------------|--|--|--|--|
| <i>West Bengal</i> | <i>1. System Frequency < 49.7 Hz 2. WB over-drawl > 150 MW 3. Delay = 4 min</i> | <i>1</i> | <i>Nil</i> | <i>Representative of West Bengal informed that on 18th September, the Frequency and Over drawl criteria were satisfied but the delay criterion was not. OCC advised ERLDC to communicate with West Bengal regarding the differences observed in ADMS operation.</i> |
| <i>Jharkhand</i> | <i>1. System Frequency < 49.9 Hz 2. Jharkhand over-drawl > 150 MW 3. Delay = 3 min</i> | <i>141</i> | <i>Nil</i> | <i>Representative of Jharkhand submitted that some of the feeders in ADMS are non-operative due to communication issues.</i> <i>OCC advised Jharkhand to identify the feeders where communication issue persists and send the list to ERPC and ERLDC. OCC further advised Jharkhand to take up the matter with M/s Chemtrols for rectification of the same.</i> |

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| DVC | 1. System Frequency < 49.9 Hz 2. DVC over-drawl > 150 MW 3. Delay = 3 min | 40 | Nil | OCC advised DVC to submit the feeder wise details to ERLDC. |
| Odisha | 1. System Frequency < 49.9 Hz 2. Odisha over-drawl > 150 MW 3. Delay = 3 min | 19 | Nil | OCC advised Odisha to submit the detailed list of feeders connected with ADMS to ERLDC. |

ITEM NO. B.8: Commissioning status of ADMS.

Automatic demand management scheme (ADMS) is already commissioned in West Bengal, DVC and Jharkhand. However, for Bihar and Odisha it is yet to be implemented, the last status as confirmed in the earlier meeting is as follows.

| SI No | State/Utility | Logic for ADMS operation | Implementation status/target |
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| 1 | Bihar | F < 49.7 AND deviation > 12 % or 150 MW | 1 st week of October 2022. |

Bihar may update the status of the implementation of ADMS scheme.

Deliberation in the meeting

Representative of Bihar informed that testing of 6 nos of feeders had already been done. The commissioning would be done in the 1st week of November'2022 after getting consent of Discom.

ITEM NO. B.9: Follow up Agenda

| SL No | Issue/Agenda | Discussion in last OCC Meetings | Update/Status |
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| 1. | <p><u>Ensuring Reliability of Barauni Generating Station (2X250 MW)</u></p> <p>220 kV Barauni TPS (2 X 250 MW) is connected with grid via 220 kV Barauni-Begusarai D/C, 220 kV Barauni-Mokama-Biharshariff D/C and 220 kV Barauni-Hajipur D/C. Out of these 220 kV Barauni-Hajipur one circuit is at present out on tower collapse and expected by 22-25 July 2022 as per Bihar SLDC. The availability of Barauni power plant is equally important from the Pan-India resource adequacy point of view. However, Barauni power plant experienced a total blackout due to loss</p> | <p>In the 195th OCC meeting, Bihar representative submitted that the jumper tightening work of circuit-1 was completed on 8th September 2022. For circuit-2, the jumper tightening work would be completed by 25th September 2022.</p> <p>The estimate of reconductoring work (to HTLS) is under the process of verification by higher authorities and would be submitted to OEM shortly.</p> <p>NTPC representative submitted</p> | <p><i>Bihar: Jumper tightening work of Circuit-2 has been postponed to 1st week of Nov'2022.</i></p> <p><i>Reconductoring work (to HTLS) is already going on for 20nos of lines. HTLS conversion work of 220 KV Barauni-Begusarai D/C line is expected to be clubbed with the work of those 20 lines by Dec'22.</i></p> |

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| | <p>of evacuation path on three occasions in last three months. One meeting was convened by ERLDC on 12 July 2022 to discuss these events. Members from Bihar SLDC, BSPTCL CRITL, BGCL, NTPC Barauni, NTPC Patna RHQ and ERPC participated in the discussion.</p> | <p>that they would consult their Engineering division regarding increase in load carrying capacity after jumper tightening work and revert at the earliest.</p> | <p><i>Otherwise for reconductoring work of the said line fresh tendering would be done.</i></p> <p><i>OCC advised Bihar to identify the towers which are in vulnerable condition so that strengthening work could be carried out in a better manner.</i></p> <p><i>OCC further advised Bihar to keep the 220 KV Biharshariff-Mokama D/C line in closed condition.</i></p> <p><i>NTPC: Load carrying capacity would be tested once jumper tightening work is completed.</i></p> |
| <p>2.</p> | <p><u>Islanding Schemes in Eastern Region</u></p> <p>1.1. <u>Patna Islanding Scheme:</u> In the meeting held on 28th December 2020 and chaired by the Hon'ble Minister of State (IC) it was directed that islanding schemes should be implemented for all major cities of the country considering all the strategic and essential loads. Subsequently, in line with the direction given in the meeting, the subject matter was discussed in PCC meeting of ERPC, and it was finalized that new islanding scheme would be implemented for capital city of Patna & Ranchi.</p> <p>1.2. <u>Chandrapura Islanding Scheme:</u> The scheme detail in brief is as follows: ➤ The CTPS-B islanding scheme is to be designed with two units of CTPS-B (2x250 MW) generating station as</p> | <p>In the 195th OCC meeting, NTPC representative submitted that proposal for detailed study of Islanding scheme is yet to be received from M/s GE.</p> <p>OCC expressed serious concern over the delay in implementing the Islanding Scheme and advised NTPC to expedite the matter with OEM M/s GE and give a copy of mail to ERPC.</p> <p>In the 193rd OCC meeting, DVC representative submitted that the order had been placed to M/s Siemens on 14th July 2022. The expected timeline for completion of work is 9 months</p> | <p><i>NTPC: GE vide letter dated 03.10.2022 informed that they would not be able to carry out the study because of tool limitations.</i></p> <p><i>Possibility for conducting the study through other OEMs is being explored and update regarding the same would be given in the next OCC meeting.</i></p> <p><i>DVC: As per timeline.</i></p> |

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| | <p>participating generator and connected loads at CTPS, Putki, Biada, Nimiaghata & Patherdih. The estimated off-peak and peak load in the proposed islanding system is 280 MW & 420 MW respectively.</p> <p>➤ The islanding frequency for CTPS-B islanding system was decided as 48.4 Hz.</p> | <p>due to semi-conductor issues.</p> | |
| | <p>1.3. <u>IB-TPS Islanding Scheme:</u></p> <p>The scheme was finalized in the special Meeting on Islanding Scheme of IB-TPS held at ERPC, Kolkata on 12th December 2018.</p> <p>In special meeting held on 06.08.2021, OPGC representative informed that work order had been placed on OEM (M/s BHEL) for implementation of the Islanding scheme at IB TPS units.</p> <p>OPGC was also advised to take up the issue with their highest authority as well as with the OEM for expediting the implementation of islanding scheme.</p> | <p>In the 195th OCC meeting, OPTCL representative submitted that the testing of Islanding scheme was planned on the 2nd week of September 2022 which could not be done due to some issues. The testing would be carried out after consultation with OPGC.</p> | <p><i>OCC advised OPTCL to take up the matter with OPGC and submit the timeline to ERPC and ERLDC at the earliest.</i></p> |
| <p>3.</p> | <p><u>Reliable Power Supply to Lalmatia/Godda/Dumka areas of JUSNL</u></p> <p><u>3.1. Restoration of 220kV Farraka-Lalmatia S/C line</u></p> <p>The 220 kV Farakka-Lalmatia S/C was out of service since April 2021 due to tower collapse. The 220/132/33 kV Lalmatia substation is relying on only 132 kV lines. At present the local load at 220 kV Dumka and Godda S/S were being radially fed from 400/220 kV Maithon S/S through 220 kV Maithon-Dumka D/C and 220 kV Dumka-Godda D/C.</p> | <p>In the 195th OCC meeting, Jharkhand representative submitted that the work order was issued on 8th September 2022 with an estimated cost of Rs. 12 Crores. The work is expected to be completed within 3 months.</p> | <p><i>Representative of Jharkhand informed that joint survey has been completed. The expected timeline for completion of the work is December 2022.</i></p> <p><i>MS ERPC advised Jharkhand to submit the activity wise bar chart to ERPC at the earliest.</i></p> <p><i>OCC expressed serious concern about delaying of the project and also advised Jharkhand to keep proper protection system e.g.</i></p> |

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| | | | <p>patrolling team in place in order to avoid theft of the towers/conductors.</p> |
| <p>4.</p> | <p><u>Outage of Important Transmission System</u></p> <p>3.2. <u>132kV Sagbari–Melli.</u></p> <p>Sikkim vide mail dated 09.06.2021 updated the following status:</p> <p>1) In loc 82,83 & 84 we have low ground clearance which need hill cutting but if needed TL can be charged after putting temporarily barbed wire fencing.</p> <p>2) In loc 98-99 a house had been constructed just below the line and warning had been issued to the owner for not to do vertical extension of the house till any such arrangement is made.</p> <p>3) In loc 116 & 117 land owner demanding for intermediate tower and not allowing for us to clear the jungles.</p> <p>4) Loc 128 is in dilapidated condition due to sinking effect posing threat to lives and properties. Local public are asking to shift the tower in safe place before restoration of supply in the TL.</p> <p>5) 80% of jungle clearance has been completed and remaining 20% is in Forest area most of it is under west district and waiting for permission from Forest department.</p> <p>6) The delay in obtaining permission for following trees in forest land is that it cannot be ascertained whether FCA clearance during construction of TL was obtained as the record is not available either in power department or in DFO Office. Regarding this it had been told by ERPC that once obtaining environment clearance at the time of construction there need not to take permission for further clearance of ROW from Forest dept and this matter is been conveyed to the Forest department but they informed us as per Forest Act of Sikkim state permission has to be obtained for fresh</p> | <p>In the 191st OCC Meeting, Sikkim representative submitted that the 132 KV Sagbari-Melli line would be charged within 6 months.</p> <p>In the 46th TCC meeting, Sikkim representative updated the following:</p> <ol style="list-style-type: none"> 1. Tower foundation work is going on in loc 128. 2. Other issues have been resolved. 3. The line is expected to get restored by October-22. | <p>Representative of Sikkim briefly explained the issue and highlighted the reasons behind delaying of the project.</p> <p>He submitted that the expected timeline for restoration is November'2022</p> |

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| | <p>elling with payment of compensation. File for approval is being send to conservator of Forest from DFO on 10/6/2021.</p> | | |
| <p>5.</p> | <p><u>Status of North Karanpura NTPC Generating Station (3 X 660 MW) along with associated transmission elements.</u></p> <p>At the 188th OCC Meeting held on 10-03-2022, it was informed that the North Karanpura unit of NTPC is planned to be synchronized by March 2022 and the Patratu unit is scheduled to be commissioned in March 2024.</p> <p>All India's demand is increasing by leaps and bounds, and so does the Eastern Region's demand. The synchronization of North Karanpura will help a lot of all the beneficiaries, and Jharkhand in particular.</p> <p>Before synchronizing the North Karanpura unit, establishing ISTS connectivity is required. It seems the respective bays at Chandwa and North Karanpura owned by PGCIL and NTPC, respectively, are already ready to charge, but the lines owned by NKTL are not ready yet. As per communication with NKTL dated 09-09-2022, it was informed that the 400 kV North Karanpura (NTPC)-Chandwa (PGCIL) D/C is expected to be first time charged soon. The following status was received: the total scope was 115 towers. This line has had 100% of its foundation and erection activity completed, with 29 kilometres of stringing completed out of a total of 38 kilometres, leaving only nine kilometres to go. Owing to continuous rain and poor weather conditions, progress at the site is being impeded. NKTL is putting their best efforts against all odds and is targeting mechanical completion by September's end.</p> <p>Once ISTS connectivity is established, NTPC may provide an update on the drawal of start-up power for each unit and its duration. Further, after the unit synchronization, the infirm power</p> | <p>In the 195th OCC meeting, NTPC representative submitted that the works related to transmission lines are under progress. Erection and commissioning activities of coal handling plant is also under progress.</p> <p>Upon enquiring about the mode of transportation of coal, it was informed that coal would be transported through pipe conveyor which is yet to be commissioned due to some land related issues.</p> <p>OCC expressed serious concern over the issue of delay in the commissioning of pipe conveyor system for transportation of coal and advised NTPC to expedite the same at the earliest.</p> <p>Odisha representative submitted that NTPC must ensure immediate synchronization of unit- 1 after the readiness of line.</p> <p>NKTL representative submitted that 400 kV North Karanpura (NTPC)-Chandwa (PGCIL) D/C is expected to be charged by 1st October 2022.</p> <p>OCC advised NTPC to submit the detailed timeline regarding synchronization of unit to ERPC at the earliest.</p> <p>On query, NTPC representative also submitted that Bah-St 1 unit-2 would be commissioned by the end of November 2022.</p> | <p><i>Representative of NTPC submitted that Unit 1 of North Karanpura Generating Station would be synchronized by October'2022. He also informed that 400kV North Karanpura(NTPC)-Chandwa(PGCIL) d/C line has been charged.</i></p> <p><i>On query he informed that land requisition from CCL in respect of the pipe conveyor is still pending. And the same has been sensitized to Ministry level also.</i></p> <p><i>Regarding COD of North Karanpura and Barh St 1, U#2, representative of NTPC apprised the forum that both the said units are expected to be commissioned by December'2022.</i></p> |

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| | injection duration and tentative date of COD may be updated. Furthermore, present drawing of start-up power and construction power from the DISCOM, as well as the status of all testing activities may also be updated. | | |
| 6. | <p><u>Ensuring N-1 reliability criteria at 400/220 KV Subhashgram (PG) S/s.</u></p> <p>The reliability issue of Subhasgram (PG) was discussed in the 46th TCC and ERPC meeting. In the meeting it was deliberated that there is an urgent requirement for installation of 6th 400/220kV, 500 MVA ICT at Subhasgram (Powergrid) S/s. On request of West Bengal, CESC agreed to bear the cost associated with the installation of the said ICT and its future maintenance. Further, CESC requested Powergrid to execute the project on deposit work basis. In the 194th OCC meeting, Powergrid representative submitted that decision in this regard would be taken by their corporate office and they would submit the details as and when it is received. ERLDC suggested Powergrid for applying requisition of shutdown regarding implementation of SPS scheme. However, no shutdown request has been received by ERLDC till date.</p> | <p>OCC advised Powergrid to submit the cost estimate to CESC by the 15th October 2022 and finalize the MoU with CESC by the end of October 2022.</p> <p>Regarding implementation of SPS scheme, ER-II availed shutdown on 24.09.2022 and the work regarding SPS has been completed. However, in view of low demand in CESC area presently the SPS scheme is not in service.</p> <p>A strategy based on historical analysis of Subhasgram ICT flow data may be decided for arming and disarming of the SPS.</p> | <p><i>Representative of ERLDC opined that the SPS can be kept under monitoring for a few days and doing so would ensure thorough testing of the same. After that , around 15th Nov'2022 onwards the SPS can be disabled in view of the low demand.</i></p> <p><i>Regarding cost estimate of the ICT, representative of Powergrid informed that cost estimate has been prepared but there is some additional cost implication owing to the requirement of 220kV cables. The revised estimate would be sent to CESC shortly.</i></p> |
| 7. | <p><u>Endangering Grid connectivity, security & stability of 400 KV Sundargarh-Raigarh LILO Ckt – 3 & 4 at tapping points near Sundergarh by M/s Vedanta Ltd, Jharsuguda along with violation of Grid discipline.</u></p> <p>As per the agreement dated 22.12.2010 between M/s Vedanta Ltd. And Powergrid, the connectivity to Vedanta Ltd sub-station was carried out from LILO of 400 KV Sundargarh-Raigarh D/C line # 3 between Tower No – 834 (DD+0) & 835 (DD+0) and 400 KV Sundargarh-Raigarh D/C line # 4 between Tower No – 299 (DD+0) & new Vedanta Tower No-VL3 (DD+0) was done during the year 2011. This activity</p> | <p>In the 195th OCC meeting, Vedanta representative submitted that the ordering is under final stage and would be done by the end of September 2022.</p> <p>Powergrid Odisha representative submitted that the shutdown of both the lines in the month of November 2022 could be proposed only after the order is placed by Vedanta.</p> <p>Vedanta representative ensured that the order would be placed shortly as it is under final</p> | <p><i>Representative of Vedanta informed that the order has been placed.</i></p> <p><i>OCC advised Vedanta to send official communication of the same to Powergrid so that shutdown of both the lines can be processed in the month of November'2022</i></p> |

was taken up as per direction of CERC and instruction of ERLDC/WRLDC in order to charge the Vedanta switchyard at Jharsuguda for sending and receiving of power at Vedanta end with CTU transmission system.

After direct connectivity of Vedanta 400 KV sub-station with 765/400 KV sub-station of Powergrid at Sundergarh, the tapping points of LILO portion of line # 3 & # 4 was disconnected by M/s Vedanta Pvt. Ltd. In the year 2014 & 2017 respectively, without completion of direct connectivity for Powergrid, in above-mentioned LILO lines.

M/s Vedanta has dismantled all towers of LILO portion except 2 nos. of towers near each tapping point and left these 4 towers without any routine maintenance/watch & ward activity. At present there is no back support at tower no-VL2 and VL5. As there is no watch and ward and routine maintenance work theft of tower members on these towers have become rampant, subsequently weakening the strength of towers which may lead to collapse of existing Vedanta towers as well as Powergrid towers, resulting interruption of power transfer between Eastern and Western Grid.

In this regard, the authority of M/s Vedanta has been informed many times verbally as well as in written communication for replenishment of all missing/hanging members and to provide backstay (back support) for keeping the tower in safe condition and also to take urgent action for direct connectivity of both LILO points.

In spite of these correspondences and discussions with M/s Vedanta Ltd., since dt. 04.03.2019, neither any action has been taken nor any permanent connectivity solution has been implemented. The said LILO lines are in severe danger zone and power flow will

commercial negotiation and they would inform Powergrid by the 1st week of October 2022.

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| | be affected as stated. | | |
| 8. | <p><u>MVAR injection during high voltage seasons.</u></p> <p>The summary of performance for the past two months is summarized at Annexure-9</p> | <p>In the 195th OCC meeting, ERLDC representative submitted that except for MPL and TSTPS, all other generating stations are injecting VAR during high voltage conditions and advised the generators to maintain optimum setpoint to increase the absorption as per the capability curves.</p> <p>OCC advised the respective generators to submit the action plan regarding non-satisfactory performance of reactive power absorption in the upcoming OCC meeting.</p> <p>ERLDC representative also informed the forum that a meeting would be scheduled with all the generating stations as a preparedness against high voltages during the winter season.</p> | <p><i>Representative of DVC informed that DVAR settings for Mejia have been adjusted and significant improvement has been observed. Similar settings have also been implemented in KTPS & DSTPS.</i></p> <p><i>Necessary modifications/changes in settings would also be done in RTPS during overhauling.</i></p> <p><i>OCC advised all the generating stations to maximize their MVAR absorption during high voltage conditions as per their capability curves.</i></p> <p><i>Further a workshop would be organized by ERLDC on 15th October 2022 at ERPC Kolkata on “Governor response and Reactive power performance of generating stations of ER”</i></p> |
| 9. | <p><u>Construction of 2 Lane Bridge across River Kosi along with approach road from Bheja to Bakaur section of NH-527A (Design Chainage Km 0+000 to Km 13+300) under BRT scheme of Bharatmala Pariyojana Phase-I (in the state of Bihar on EPC mode. -Outage of relocation/height raising of 400 KV DC Kishanganj-Darbhanga Tower no. 402 & 403.</u></p> <p>A Bridge across River Kosi along with approach road from Bheja to Bakaur</p> | <p>In the 195th OCC meeting, Adani representative submitted that the proposed NH to be constructed would pass between tower locations 402 and 403. After detailed survey it was decided that 2 nos. of towers (402 and 403) would be dismantled and 3 nos. of towers (402A, 403A & 403B) would be constructed. Out of</p> | <p><i>OCC advised Adani to re-submit the detailed report depicting all the activities (parallel as well as series) so that a critical path may be worked out to complete the project at the minimum time.</i></p> |
| <p>Minutes of 196th OCC Meeting</p> | | <p>Page 18</p> | |

section of NH-527A having a length of 13.3 km is being developed between Bheja- Bakaur The said project is a high-end priority project of Government of India which is being developed for connectivity over Kosi river with 10.2 km longest River Bridge, which is one of the longest river bridges in the Country.

It is intimated that there is a 400kV Kishanganj-Darbhanga (DC line) is falling in the main carriageway of NH-527A at Bheja to Bakaur under Construction Bridge which is required to be relocated. The estimate for the said line has already been received from Adani transmissions vide letter under reference Amounting to Rs. 77, 67, 76,805.00 / - which includes Rs.13,56,24,508.00 towards transmission availability loss. M/s ALTL vide Letter dated 22.02.2022 had submitted that transmission loss charges amounting to Rs. 13,56,24,508. 00 for outage for 25 days is to be deposited by NHA I for shifting the above-mentioned line. Further, in aforementioned letter M/s. Adani transmissions informed that the payment against the loss due to transmission availability loss (Rs. 13,56,24,508.00) shall be refunded by Alipurduar Transmission Limited to NHA I subject to deemed availability certificate issued by Eastern Regional Power corporation to the transmission company.

In this regard, it may be noted that the payment against the loss due to transmission availability loss claimed by M/s, Adani transmissions are huge and the project being implemented under EPC mode with 100% Government funding will burden the Government budget. It may also be noted that the subject project is in its advanced stage of construction and non-shifting of said tower will adversely affect the completion of the project as it is falling in the main

the 3 nos. of towers to be newly constructed, 2 nos. are out of alignment with the original line for which the pile foundation and tower erection activities could be completed without any shutdown requirement. For the remaining one tower, pile foundation work could be carried out without any shutdown but during erection and stringing work shutdown would be required.

He further submitted that a minimum of 25 nos. of days are required to complete all the activities related to construction of new towers and shifting of lines. The work would be carried out after receipt of estimated amount from NHA I. He further stressed upon the fact that the work could be carried out only between the months of October to April, as for the remaining months the area is water logged.

Upon enquiring whether the above proposal is approved by any agency, it was informed that the engineering team of Adani had floated the above proposal.

ERLDC representative advised Adani to explore the possibilities of keeping the line in ERS during the shutdown period. Adani representative submitted that the area being heavily waterlogged, implementation of ERS may not be possible but still they would explore the possibilities of the same.

OCC advised Adani to submit a detailed report within 3-4 days depicting all the activities (parallel as well as series) so

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| | <p>carriage way of the alignment. The completion of the instant project on time will be recognised as a mile stone achievement for Govt of India and will be able to facilitate the Public of backward Region State of Bihar.</p> <p>As per para 5.3 of Ministry of Power Office Memorandum dated 16.08.2021, it is mentioned that in case of projects of national importance (WWI projects), deemed availability may be given for the shut-down period availed by transmission licensees for shifting of their transmission lines, provided that transmission customers are not affected by the shutdown (Annexure B.1)</p> <p>In view of the above and the subject project being of National Importance, it is therefore requested to issue the necessary deemed availability certificate to Alipurduar Transmission Limited for waving off of the Transmission availability loss for the shutdown of 400kV Kishanganj - Darbhanga Line (DC line) for about 25 days.</p> | <p>that a critical path may be worked out to complete the project at the minimum time.</p> | |
| 10. | <p><u>Reliability issues at Ratu and Kake areas of Jharkhand.</u></p> <p>Ratu (Burmu) and Kanke Areas of Jharkhand were previously fed through either 220/132 KV Patratu Old s/s or Hatia old substations of JUSNL. Presently, it is fed through Patratu New 400/220 KV substation having 2 x 315 MVA ICT in a radial manner. The peak load of this stations is around 90 MW and the radial connection through Patratu New source since January 2022 has offloaded Ranchi 2x315 MVA 400/220 KV ICTs.</p> <p>However, 315 MVA 400/220 KV ICT 1 at Patratu New has been under outage since 1st August, 2022 when it had tripped on Bucholz relay operation. Neither, any update has been received as to what internal fault led to such operation, nor any expected date of its revival has been communicated. Therefore, the reliability of aforesaid stations which are forming part of capital</p> | <p>In the 195th OCC meeting, Jharkhand representative submitted that intimation regarding outage of ICT 1 had already been intimated to PGCIL as the ICT is under defect liability period.</p> <p>Powergrid representative submitted that fault identification of ICT-1 has been done. Entire oil of transformer has been drained out and the complete rectification work would be carried at the site and the work is expected to be completed within 20-25 days i.e., by 20th October 2022.</p> <p>Jharkhand representative further submitted that oil sample of ICT-2 was sent for testing but they were not satisfied with the test</p> | <p><i>For ICT 1 repair at site is not possible as per survey report. Revised timeline would be intimated later.</i></p> <p><i>Test report of ICT-2 oil sample would be received by 20th October 2022.</i></p> |

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| | <p>city load of JUSNL has diminished, making it solely dependent on remaining ICT of Patrattu New, 315 MVA 400/220 KV ICT 2. Given fact is a violation of N-1 criteria as mentioned in clause 4.2 and 6.2 of Manual on Transmission planning criteria, CEA. The 2nd ICT has tripped recently on consecutive days on 12th September,2022 and 13th September ,2022 due to operation of Oil surge relay leading to total power failure in 220/132 KV Ratu and 132 KV kanke s/s,though no fault was reported. Thus expeditious investigation of such maloperation is needed to ensure such instances are not repeated.</p> <p>It is informed that one 132 KV ckt of Ratu Kanke d/c has been diverted from Ratu to Hatia old making it 132 KV Kanke Hatia old s/c to supply power to aforesaid areas in events of total power failure during tripping of 315 MVA ICT 2 at Patrattu New. However, this arrangement would basically reduce restoration time ,but won't augment the reliability lapse as the load is still fed radially from Patrattu New.</p> <p>JUSNL is requested to respond to below points</p> <ol style="list-style-type: none"> 1. Actual reason of tripping of 315 MVA ICT 2 At Patrattu New and measures taken to ensure to eliminate such maloperation. 2. Reason of long outage in 315 MVA ICT 1 at Patrattu New and expected date of its revival. | <p>results. Oil sample of ICT-2 has been sent to Patna testing Lab for DG analysis.</p> <p>OCC advised Powergrid and Jharkhand to submit the details of testing report to ERPC and ERLDC.</p> | |
| 11. | <p style="text-align: center;"><u>Agenda by Rangit HEP</u></p> <ol style="list-style-type: none"> 1. <u>Request for maintenance of 20 MVA, 132 KV/66 KV power transformer of Sikkim State Electricity Board installed at Rangit Power Station.</u> <p>It was observed that the oil level of the above transformer is found very low, even the conservator tank was almost empty. It requires to be topped up immediately by Sikkim State Electricity Board.</p> | <p>The issue was also discussed in the 190th OCC meeting dated 21.04.2022 under agenda point B.17, wherein Sikkim representative submitted that approval regarding the refilling of oil was in progress and would be completed within a month. But as on today, the work is not yet completed.</p> | <p><i>OCC advised Rangit to discuss the matter with Sikkim bilaterally and resolve the issue.</i></p> |

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|------------|--|--|---|
| | <p><u>2. Shutdown required for replacement of 132 KV old breaker.</u></p> <p>It is also observed that the 132 KV SF6 gas circuit breaker installed at the primary side of the transformer is not working and as a result, due to a fault in the 20 MVA circuit on 18.09.2022, a complete tripping at Rangit Power Station occurred (all the units and lines tripped). The power station was shut down for almost 3 hours. The power station had raised above issue at earlier OCC meeting dated 21.04.2022 under agenda point B.17.</p> <p>It requires urgent replacement of the faulty circuit breaker with a new one to avoid damage to critical equipment if any fault occurs in the future, for which the shutdown of the above line is required. The shutdown of the said bay for 5 working days continuously is required.</p> | <p>The power station has requested the Sikkim electricity board several times to allow the shutdown of bay by arranging an alternate power source since the day of the problem identified in our following letter. Letter NH/RPS/2021-2022/1504 dated 10/01/2022, NH/RPS/2022-2023/2016 Dated: 04/08/2022,2022/NH/RPS/2022-2023 dated 23.09/2022</p> <p>The same was not permitted by Sikkim SEB till date due to the non-availability of alternate power supply at Ravangla.</p> <p>It is requested to allow the power station to shut down in said bay to carry out the above replacements to make the system healthy.</p> | <p>OCC advised Rangit to discuss the matter with Sikkim bilaterally and resolve the issue.</p> |
| <p>12.</p> | <p><u>Integration of (Interface Energy Meter) IEMs into SCADA/EMS system for telemetry of meter data to SLDCs.</u></p> <p>The existing SEMs are having two communication ports, which can function independently for fetching the SEM data. The optical port is being used for fetching the weekly DSM data through Common Meter Reading Instrument (CMRI), for accounting purpose. The other RS 232 port available remains unused, the online real time data can be fetched from the existing SEM through the unused RS 232 port. This arrangement does not require additional meters or new communication facilities and therefore no additional cost is involved.</p> | <p><i>ERPC representative submitted that the above proposal was discussed in the special meeting of NPC held on 24th June 2022 wherein it was discussed that the spare RS 232 or RS-485 ports may be used for fetching the SEM data and extending it to the SCADA terminal of SLDCs. Cyber security compliance has to be ensured while doing so. Also, the SEM data would only be used for operational planning and deviation management in real time scenario and shall not be used in raising any commercial disputes.</i></p> <p><i>As per the minutes of the NPC meeting, the above scheme has to be implemented on pilot basis in each of the regions. The scheme would be implemented in 2 sub-stations in each region, 1 old and 1 new, in the standby meters to ascertain the feasibility</i></p> | <p><i>Representative of Powergrid informed that implementation of meter data extension for Non-AMR meter from Subhasgram to SLDC WB is underway. It would take around 1 month to implement the same. Some infrastructure would also be required at SLDC end in order to display the raw data as received.</i></p> |

of integration with RTUs.

Powergrid representative submitted that stability of meter has to be checked in case of simultaneous communication of data from optical port and spare port.

ERLDC representative requested that the meters which are not connected with AMR may be selected for implementation on pilot basis.

OCC advised Powergrid to implement the above scheme on pilot basis in a meter not connected with AMR first and simultaneously study the technicalities of carrying out the scheme in AMR connected meters.

PART C: ITEMS FOR UPDATE

ITEM NO. C.1: ER Grid performance during September 2022

The average and maximum consumption of Eastern Region and Max/Min Demand (MW), Energy Export for the month September-2022 were as follows:

| Average Consumption (MU) | Maximum Consumption (MU)/ Date | Maximum Demand (MW) Date/Time | Minimum Demand (MW) Date/Time | Schedule Export (MU) | Actual Export (MU) |
|--------------------------|--------------------------------|---------------------------------------|--|----------------------|--------------------|
| 543.2 | 574.9 MU 02-09-2022 | 26883 MW, 03-09-2022 19:03 Hrs. | 18716 MW, 13-09-2022 at 07:31 Hrs. | 3789 | 3771 |

ERLDC may highlight the performance of the ER grid.

Deliberation in the meeting

The highlight of ER grid performance was presented by MS, ERPC.

ITEM NO. C.2: Primary Frequency Response of generating units in ER.

Frequency response characteristics (FRC) have been analysed pan India in the event of sudden frequency change that occurred in the month of Sep 2022. The details of these events and the overall response of the Eastern region have been summarized in Table below.

| Event | Frequency Change | ER FRC |
|---|--|---------------|
| Event 1: On 11 th September 12:22 hrs , 2022 ,Renewable generation loss of around 3800 MW occurred at Rajasthan renewable generation complex of Northern Region. Load loss=3800 MW Frequency change= 0.301 Hz | Initial Frequency:50.041 Hz Nadir Frequency: 49.61 Hz Final Frequency : 49.740 Hz. | 31.4 % |
| Event 2: On 17 th Sep 2022 at 10:14 hrs Renewable generation loss of around 2333 MW occurred in Fatehgarh & Bhadla generation complex. Load loss=2333 MW Frequency change= 0.04 Hz | Initial Frequency:50.02 Hz Nadir Frequency: 49.764 Hz Final Frequency : 49.98 Hz. | 84.9 % |

The availability of sufficient primary frequency response is one of the fundamental requirements of power system operation not only from reliability point of view but also from regulatory compliance point of view. Based on the assessed FRC re-testing of primary frequency response can be recommended. Therefore, the accurate and high-resolution data from generator end is extremely important in absence of which assessment of FRC is done as per low resolution ERLDC SCADA data. The plant wise data submission statistic for frequency event flagged by ERLDC during July and August is given below:

| Name of the Plant | 09 th July event data submission status | 11 th Aug event data submission status | 11 th Sep event data submission status | 17 th Sep event data submission status |
|-------------------|--|---|---|---|
| Adhunik | Pending | Pending | Submitted | Submitted |
| Barh | Pending | Pending | Pending | Pending |
| BRBCL | Pending | Submitted | Submitted | Submitted |
| Darlipalli | Pending | Pending | Submitted | Pending |
| Farakka | Pending | Pending | Pending | Pending |
| GMR | Pending | Pending | Pending | Pending |
| JITPL | Pending | Pending | Pending | Pending |
| MPL | Submitted | Submitted | Pending | Pending |
| NPGC | Pending | Pending | Pending | Pending |
| Kahalgaoon | Pending | Pending | Pending | Pending |
| Teesta III | Submitted | Submitted | Pending | Pending |
| Teesta V | Submitted | Submitted | Pending | Pending |
| TSTPS | Submitted | Pending | Pending | Pending |

In view of the same all utilities are once again requested to kindly look into the matter and take necessary action to ensure consistent data submission for every frequency event flagged by ERLDC.

Further as per Draft IEGC,

Each control area shall assess its frequency response characteristics and share assessment with the concerned RLDC along with high resolution data of at least 1 (one) second for regional entity generating stations and energy storage systems and 10 (ten) seconds for state control area.

Accordingly, all the generating stations and states are requested to take note of the same.

Deliberation in the meeting

Members noted.

ITEM NO. C.3: Review of implementation of PSDF approved projects of ER.

In 10th NPC meeting held on 09.04.2021, RPCs were advised take up the matter for improvement of the fund disbursement and expeditious implementation of the sanctioned projects under PSDF.

In view of the above, status review of the projects being executed under PSDF funding in Eastern Region would be carried out on regular basis for expediting the projects. All the constituents are requested to furnish/update the status of their respective project in every month.

Concerned utilities may update the present status of the project as given in the **Annexure-C.3**.

Deliberation in the meeting

OCC advised all the utilities to update the status of project to the ERPC Secretariat.

ITEM NO. C.4: 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.

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 states.

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

OCC advised SLDC Odisha and OPGC to interact with Barh NTPC & ERLDC to get the technical specifications & the procedure for implementation of AGC.

In the 183rd OCC meeting, OPGC representative informed that work order has been issued to M/s Siemens for implementation of AGC. The work would be carried out during the unit shutdown which is scheduled from 18.10.2021.

| State | Station/Unit | Deliberation in 184 th OCC Meeting |
|--------|-----------------|--|
| DVC | Mejia unit#7 &8 | DVC representative informed that NIT is to be floated. |
| Odisha | Unit#3 of OPGC | OPGC vide email dated 25 th Oct'21 informed that some additional data is needed from SLDC Odisha and after getting the same AGC would be implemented. |

In the 185th OCC meeting, DVC representative informed that the NIT for implementation of AGC will be floated by 9th December 2021.

OPGC representative was not present during the discussion.

In the 186th OCC meeting, DVC representative informed that the NIT would be floated by 31st December 2021.

In the 187th OCC meeting, OPGC and DVC representative were not present during the discussion.

In the 188th OCC meeting, DVC representative informed that NIT was floated on 29th December 2021 and the bid opening would be done on 19th February 2022.

OPGC representative was not present during the discussion.

In the 190th OCC meeting, DVC representative submitted that NIT would be re-floated due to some issues in the payment terms.

SLDC Odisha representative submitted that the order has been place to M/s Siemens for AGC implementation and the feasibility test would be conducted on 3rd May 2022.

DVC and Odisha may update.

Deliberation in the meeting

OCC advised the respective utilities to update the status of AGC implementation at the earliest.

ITEM NO. C.5: Primary Frequency Response Testing of ISGS Generating Units

In the 180th OCC meeting, ERLDC representative informed that as per communication received from GMR and JITPL PFR testing has been scheduled by Siemens in August'21.

MPL representative submitted that they would carry out the PFR testing in the month of July'21.

In the 181st OCC meeting, ERLDC representative informed that PFR testing of MPL got postponed due to some technical issue. He further informed that PFR testing is going on in APNRL and that of NPGC and BRBCL is scheduled in the last week of July'21 and 1st week of August'21 respectively.

In the 182nd OCC meeting, ERLDC representative submitted that During July – August 2021, PFR testing has been conducted at the following generating units:

1. Adhunik TPS Unit 1 & 2
2. BRBCL TPS Unit 2 & 3
3. Nabinagar STPS Unit 1
4. Kahalgaon STPS Unit 1

In the 183rd OCC meeting, ERLDC representative updated that PFR testing for Unit# 1 & 2 of GMR had been completed.

In the 185th OCC meeting, ERLDC representative informed that PFR testing of Dikchu is being carried out.

In the 187th OCC Meeting, OCC advised all the members to provide the updated status of PFR testing, if any, to ERPC and ERLDC.

In the 188th OCC meeting, ERLDC representative informed that updated status of PFR testing was received from MPL.

The updated status is enclosed at **Annexure-C.5**.

Members may update.

Deliberation in the meeting

OCC advised all the members to provide the updated status of PFR testing, if any, to ERPC and ERLDC.

ITEM NO. C.6: Testing of Primary Frequency Response of State Generating units by third party agency.

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 vide-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 +2 X 250 + 2X 500 |
| 6 | RTPS Unit # 1 & 2 | 2 X 600 |

In the 185th OCC meeting, OHPC representative informed that testing of Primary Frequency Response of all the units of Rengali and Indravati will be done by the end of December 2021.

In the 186th OCC Meeting, OHPC representative informed that the testing of Primary Frequency Response of all the units of Rengali and Indravati would be done by the 2nd week of January 2022.

DVC representative informed that the bid opening had been done on 22nd December 2021.

In the 187th OCC meeting, OHPC and DVC representatives were not present during the discussion.

In the 188th OCC meeting, It was informed that PFR testing of all the 3 units of Budge-Budge are scheduled from 26th Feb 2022 to 3rd March 2022.

OHPC representative submitted that PFR testing of all the units of Rengali (5 units) and Indravati (4 units) would be carried out by M/s Solvina from 20th March 2022 onwards.

DVC representative informed that the work order for PFR testing has been placed.

Generating units may update.

Deliberation in the meeting

OCC advised all the SLDCs to update the status of PFR testing to ERPC and ERLDC.

ITEM NO. C.7: PSS tuning of Generators in Eastern Region

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.

In the 186th OCC Meeting, Teesta –V representative informed that the PSS tuning would be conducted in the last week of January 2022.

It was informed in the OCC that PSS tuning of Rongnichu and Chuzachen had been completed.

DVC representative informed that PSS tuning of RTPS unit-1 & 2 would be done in the month of March 2022.

BRBCL representative informed that PSS tuning of BRBCL unit-1 has also been completed.

In the 187th OCC meeting, OCC advised ERLDC to send the updated status of PSS tuning to ERPC.

The updated schedule for PSS tuning of the units is attached at **Annexure-C.7**.

Generators may update.

Deliberation in the meeting

OCC advised all the generators to update the status of PSS tuning to ERPC and ERLDC.

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

Members may update the status of UFR healthiness installed in Eastern Region.

Members may update.

Deliberation in the meeting

Members noted.

ITEM NO. C.9: Status of Islanding Schemes healthiness installed in Eastern Region.

As per the decision taken in the meeting held on 8th July 2021 and chaired by member (GO&D), CEA, data in prescribed formats may be submitted by concerned utilities to RPCs on monthly basis to certify the healthiness of the Islanding Schemes.

a. Format - I for RLDC/SLDCs

| S.NO | Name of Islanding Scheme | Healthiness of Communication channel |
|------|--------------------------|--------------------------------------|
|------|--------------------------|--------------------------------------|

| | | |
|--|--|--|
| | | |
| | | |

b. Format - II for Generating Station

| S.NO | Name of Islanding Scheme | Healthiness of Islanding Relay | Healthiness of Communication channel |
|------|--------------------------|--------------------------------|--------------------------------------|
| | | | |

c. Format - III for Transmission Utility/DISCOMs

| S.NO | Name of Islanding Scheme | Elements considered for tripping to from Island | For communication-based tripping logic Of feeders | For UFR based tripping logic of feeders | |
|------|--------------------------|---|---|--|-----------------------|
| | | | Healthiness of Communication channel | Healthiness of PT Fuse and status of DC supply to UFR relay* | Healthiness of Relay# |
| | | | | | |

* Where dedicated UFR relay have been installed for tripping of the feeders under Islanding scheme

Where UFR functions have been enabled within backup protection relay of the line.

d. Format - IV for collecting Relay details of the Islanding scheme.

The following format may be used to get Relay details of the Islanding scheme:

| S.NO | Description | UFRs-for load relief (A) | df/dt -for load relief (B) | Relay for Island creation(C) |
|------|--|--------------------------|----------------------------|------------------------------|
| 1 | Relay location (S/s name) | | | |
| 2 | Relay make & model | | | |
| 3 | Frequency setting of the relay (at which load shedding is envisaged) | | | |
| 4 | Feeder name (voltage level and source-destination name) signaled by the Islanding Relay for separation /load shedding/separation | | | |

| | | | | |
|---|--|--|--|--|
| | from outside grid | | | |
| 5 | Quantum of load relief due to tripping of feeder (as per state's peak of previous year) | | | |
| 6 | Quantum of load (Min, Avg, Max in MW) on the feeder (as per state's peak of previous year) | | | |

e. Format - V for Contact details of all Nodal Officer

| Utility Name & Location | Name | Designation | Organization | Email ID | Mobile No. |
|-------------------------|------|-------------|--------------|----------|------------|
| | | | | | |

It was deliberated in the 186th OCC meeting that except West Bengal all the entities are sending the report as per the new format.

In the 192nd OCC meeting, it was informed that except for West Bengal all entities are sending the report as per the new format.

Members may update.

Deliberation in the meeting

OCC advised all the concerned utilities to update the status of Islanding Schemes healthiness installed in Eastern Region to ERPC and ERLDC.

ITEM NO. C.10: Latest Status of States ATC/TTC declared by States for the month of November-2022.

To harmonize the ATC/TTC calculation methodology and timeline One to one meeting and hands on training with each SLDC was conducted in the month of Sep-21 and Oct-21. As per the common agreed procedure and timeline ATC/TTC calculation in three months advance and reconciliation of the TTC/ATC figure for the upcoming month between RLDC and SLDC has started from month Dec-21. Reconciled ATC/TTC figures for **November-2022** are as follows:

| SI No | State/Utility | TTC (MW) | | RM(MW) | | ATC Import (MW) | | Remark |
|-------|---------------|----------|--------|--------|--------|-----------------|--------|--------|
| | | Import | Export | Import | Export | Import | Export | |
| 1 | BSPTCL | 5378 | -- | 108 | -- | 5270 | -- | Nov-22 |
| 2 | JUSNL | 1530 | -- | 52 | -- | 1478 | -- | Nov-22 |
| 3 | DVC | 1888 | 3733 | 66 | 52 | 1822 | 3681 | Nov-22 |
| 4 | OPTCL | 4092 | 1582 | 130 | 64 | 3962 | 1518 | Nov-22 |
| 5 | WBSETCL | 5835 | -- | 450 | -- | 5385 | -- | Nov-22 |

| | | | | | | | | |
|---|--------|--------|----|------|----|--------|----|--------|
| 6 | Sikkim | 167.81 | -- | 2.66 | -- | 165.15 | -- | Nov-22 |
|---|--------|--------|----|------|----|--------|----|--------|

As per the agreed philosophy the status of month wise ATC/TTC submission is as follows:

| State | Bihar | Jharkhand | DVC | Odisha | West Bengal | Sikkim |
|--------|-----------|-----------|-----------|-----------|-------------|-----------|
| Month | | | | | | |
| Nov-22 | Submitted | Submitted | Submitted | Submitted | Submitted | Submitted |
| Dec-22 | Submitted | Pending | Submitted | Submitted | Submitted | Pending |
| Jan-23 | Submitted | Pending | Submitted | Submitted | Submitted | Pending |
| Feb-23 | Pending | Pending | Pending | Submitted | Pending | Pending |

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/atcttmenu.jsp# | Yes | Static Link-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 | https://power.sikkim.gov.in/atc-and-ttc | No (Not updating) | Static Link-Excel file |

All the states having net export schedule should declare their export TTC. In view of the same West Bengal is once again requested to share export TTC.

Deliberation in the meeting

OCC advised all the States to update the ATC/TTC values in a timely manner.

ITEM NO. C.11: Mock Black start exercises in Eastern Region

As per IEGC Clause 5.8(b), Mock trial runs of the procedure for different subsystems shall be carried out by the Users/CTU/STU at least once every six months under intimation to the RLDC. Accordingly, the Black Start Schedule of different hydro stations for 2022-23 are given below:

| Sl No | Name of Hydro Station | Schedule of Mock Black Start | Actual Date of Test | Schedule of Mock Black Start | Actual Date of Test |
|-------|-----------------------|--|----------------------------|------------------------------|---------------------|
| | | Test-1 | | Test-2 | |
| 1 | U. Kolab | June-2022 | 21 st July-2022 | Jan-2023 | |
| 2 | Balimela | July-2022 | 09 th Sep-2022 | Feb-2023 | |
| 3 | Rengali | June-2022 | 27- June-2022 | Dec-2022 | |
| 4 | Burla | July-2022 | 23-June-2022 | Jan-2023 | |
| 5 | U. Indravati | May-2022 | 25-May-2022 | Feb-2023 | |
| 6 | Maithon | DVC representative submitted that upgradation work is under progress due to issues in the governing system. Detailed timeline would be submitted to ERPC and ERLDC. Detail timeline yet to be received from DVC SLDC | | Dec-2022 | |
| 7 | TLDP-III | Oct-2022 | | Jan-2023 | |
| 8 | TLDP-IV | Oct-2022 | | Feb-2023 | |
| 9 | Subarnarekha | Sep-2022 | | Dec-2022 | |
| 10 | Teesta-V | Oct-2022 | | Jan-2023 | |
| 11 | Chuzachen | Oct-2022 | | Feb-2023 | |
| 12 | Teesta-III | April-2022 | 08-April-2022 | Dec-2022 | |
| 13 | Jorethang | Oct-2022 | | Jan-2023 | |
| 14 | Tasheding | Oct-2022 | | Feb-2023 | |
| 15 | Dikchu | Oct-2022 | | Dec-2022 | |
| 16 | Rongnichu | Oct-2022 | | Jan-2023 | |

- Note:

*DVC representative submitted that upgradation work is under progress due to issues in the governing system. Detailed timeline would be submitted to ERPC and ERLDC. Detail timeline yet to be received from DVC SLDC.

**Jorethang intimated that Black Start provision is not incorporated in Jorethang HEP System

It is proposed that in case Mock black start is not feasible at Maithon HEP and Jorethang HEP, they may be deleted from this list for tracking.

Further all the generators are requested to express their readiness and provide the tentative date of mock black start exercise for the year 2022-23.

Members may update.

Deliberation in the meeting

OCC advised all the utilities to update the status of Mock Black Start exercise, if any, to ERPC and ERLDC.

ITEM NO. C.12: Requirement of cold spares for ICTs in Eastern Region to meet any exigency.

As per CEA guidelines for availability of spares and inventories for power transmission system (transmission lines & substation/switchyard) assets, adequate cold spare for ICTs has to be maintained at regional as well as state level. Key guidelines for determining spare as per the guidelines are provided below:

- At present PGCIL along with multiple ISTS licensee is operating and maintaining most of the Inter-State Transmission System (ISTS) assets. The transmission lines of above power utilities are spread across more than one states in the country.
- Regional level spare: For regional power utilities (PGCIL & Transmission licensees), the spare at regional level would be required for these assets. These spares should be increased, optimized and limited to double the quantities mentioned for State Level based on transmission line assets in that region in order to avoid unnecessary storage of inventories.
- State level spare: The spares at 'State level' can be maintained at a centralized location which could be conveniently accessed to meet the emergency requirement of various substations/switchyards spread across the State.
- Requirement of state level: ICT and Shunt Reactor: One number single phase/three-phase unit of each rating, as applicable
- Utility for State level spare: If there are five or more substations/switchyards (of same voltage class) of a utility in a State, the 'State Level' spares shall be maintained by the utility.
- Spare at state level by utility having spread in different states: If any utility has five or more substations/switchyards (of same voltage class) spread across different States, spare recommended for 'State Level' shall be maintained for these cluster of substations/switchyards at one or more appropriate locations in any of these States.
- Higher spare for areas having higher probability of damage with natural disaster events: The quantities of spares specified shall be applicable to transmission lines and substations / switchyards in all areas including cyclone / whirlwind / tornado prone areas. However, higher quantity of spares (for some spare items) shall be kept for cyclone / whirlwind / tornado prone areas as indicated in guideline.
- Support between utilities for sharing of spare and associated commercial mechanism: There may be cases, where the extent of damage is so much that specified minimum quantum of spares/inventories may be inadequate in meeting the eventuality. In such cases, support from central power utilities (PGCIL/NTPC/DVC etc.)/transmission licensees/neighboring State utilities may be requested. The financial modalities for providing spares to other utility shall be mutually decided between the utilities.
- Replenishment of Consumed spare: Replenishment of the consumed mandatory spares shall be made at the earliest but in any case, not later than six months from the date of its consumption depending on the criticality of equipment component/material.

With a significant rise in state demands and regional demand along with the number of ICTs, it would be desirable to have an adequate spare to improve reliability and resilience in case of any

exigency. Recently, a substantial delay in restoration of damaged ICTs in eastern region has been observed.

Thus, maintaining adequate regional and state level cold spare is important. Table 1-4 provides various details for deciding the requirement of regional and state level cold spare in Eastern region.

Table 1: State wise ICTs at various voltages in ER

| State Wise ICT | 315 MVA 400/220 kV | 500 MVA 400/220 kV | 315 MVA 400/132 kV | 200 MVA 400/132 kV | 270 MVA 400/132 kV | 250 MVA 400/220 kV | 1500 MVA 765/400 kV | 255 MVA 765/132 kV | Cold Spare Availability |
|----------------|-----------------------|-----------------------|-----------------------|--------------------------|--------------------------|-----------------------------|---------------------------|--------------------------|----------------------------|
| Bihar | 6 | 27 | 3 | 15 | | | 5 | | |
| Jharkhand | 15 | 6 | | | | 1 | 2 | | |
| Sikkim | 5 | | | | 1 | | | | |
| Odisha | 30 | 5 | | | | | 8 | 2 | |
| West Bengal | 38 | 5 | | | | | 4 | | |

Table 2: Utility wise ICTs detail at various voltage level in ER

| Utility | 315 MVA 400/2 20 kV | 500 MVA 400/2 20 kV | 315 MVA 400/1 32 kV | 200 MVA 400/1 32 kV | 270 MVA 400/1 32 kV | 250 MVA 400/2 20 kV | 1500 MVA 765/4 00 kV | 255 MVA 765/1 32 kV | Cold Spare Availabilit y |
|---------------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|-------------------------------|------------------------------|-----------------------------------|
| PGCIL | 47 | 27 | 3 | | | | 15 | | |
| Other ISTS (NKTL, PMJTL, PMTL, DMTCL) | | 8 | | 2 | | | 4 | | |
| IPP (Dikchu) | | | | | 1 | | | | |
| NTPC/NPGC/BRBCL | 4 | | | 9 | | | | 2 | |
| WBSETCL/WBPDCL/CESC | 22 | | | 4 | | | | | |
| OPTCL/SEL | 11 | 2 | | | | | | | |
| DVC | 10 | | | | | | | | |
| BGCL | | 4 | | | | | | | |
| JUSNL/TTPS | | 2 | | | | 1 | | | |

Table 3: Utility wise number of substations with ICTs in ER

| Utility Substation with ICTs | Number of Substation |
|------------------------------|----------------------|
| PGCIL ERTS 1 | 15 |
| PGCIL ERST 2 | 8 |
| PGCIL Odisha | 10 |
| WBSETCL | 5 |
| WBPDCL | 2 |
| OPTCL | 5 |
| BGCL | 2 |
| DVC | 5 |
| JUSNL | 1 |
| ISTS (NKTL/DMTCL/PMTL/PMJTL) | 7 |
| NTPC | 7 |

Table 4: Spread of substations of various utilities in different states

| State | PGCIL ERTS 1 | PGCIL ERTS 2 | PGCIL Odisha | DVC | WBSETCL | OPTCL | Other ISTS | BGCL | JUSNL | NTPC | Others |
|-------------|--------------|--------------|--------------|-----------------|---------|-------|------------|------|-------|------|--------|
| Bihar | 9 | | | | | | 4 | 2 | | 4 | |
| Jharkhand | 6 | | | 3 | | | 1 | | 1 | | |
| Sikkim | | 1 | | | | | | | | | |
| Odisha | | | 10 | | | 5 | | | | 2 | 1 |
| West Bengal | | 6 | | 2 + 1 (MTPS) | 5 | | 2 | | | 1 | 2 |

In the 192nd OCC meeting, ERLDC representative submitted that as per the CEA guidelines, maintenance of adequate spares at State level as well as at Regional level had to be ensured.

ERPC representative submitted that as per the CEA guidelines, the inventory of spares should be digitized and reports of the same should be submitted to CEA on half-yearly basis.

OCC advised all the states to digitize the inventory of spares and submit the report to CEA with a copy to ERPC on half yearly basis.

Further, ERLDC was advised to make a standard format mentioning the date of procurement of ICTs, date of COD of ICTs, declared age of ICTs, remaining life etc and circulate among the concerned utilities.

OCC advised all the concerned utilities to follow the guidelines and submit the report on availability of spares ERPC and ERLDC at the earliest.

Further, Powergrid representative raised a concern regarding diverting the spares from ISTS pool to the states which may pose reliability issues and thereby requested the states to maintain a pool for cold spare ICTs.

MS, ERPC was of the view that the pool of cold spare ICTs may be maintained by a central agency like Powergrid. In case of any requirement of spare ICT on emergency basis by any utility, the same may be provided and the commercial modalities may be decided mutually. Further, to avoid any reliability issues arising out of insufficient spares for the existing ISTS systems, the required optimum number of cold spare ICTs to be maintained by Powergrid may be enhanced which may be put up for approval subsequently.

In the 193rd OCC meeting, Powergrid Odisha representative submitted that 500 MVA and 160 MVA ICT are under procurement which would be placed at Pandiabili and Baripada S/s respectively and cater to the requirement of Odisha. A 315 MVA ICT was recently used in Jeypore S/s. After detailed cost benefit analysis, decision regarding procurement of 315 MVA ICT would be approved.

Powergrid ER-II representative submitted that a 500 MVA ICT is under procurement which would be located at Maithon or Subhashgram. 315 MVA spare ICT (released after augmentation) is available at Durgapur and Malda S/s. one 160 MVA spare ICT is available at Siliguri and one 50MVA ICT was available at Gangtok which was used recently.

Powergrid ER-I representative submitted that regional spare is available at Jamshedpur and Biharshariff S/s. The spare available at Jamshedpur was utilized at Chaibasa. One 315 MVA spare is available at Mujaffarpur S/s. one 160 MVA spare ICT of 220/132 KV is available at Purnea. Further, approval has been taken regarding procurement of one 500 MVA and one 160 MVA spare ICT at Pusauli and Daltonganj respectively.

OPTCL representative submitted that a 315 MVA spare ICT was available at Duburi S/s which was utilized in Meramundali S/s. Procurement of one 500 MVA spare ICT is under progress which would be located at new Duburi S/s. One 500 MVA ICT is available at Meramundali B. Regarding 315 MVA spare ICT, discussions are going on for procuring the same.

SLDC DVC representative submitted that one 315 MVA ICT would be replaced by 500 MVA ICT which would be kept as spare and will be located at Ramkanali S/s.

OCC was of the view that a detailed representation highlighting the ICTs under procurement and

ICTs available at present would be prepared by ERLDC, based on which decision regarding maintaining pool of spares and procurement of spares would be anticipated.

Present Situation of spare ICTS as per update in 193rd OCC Meeting

| Utility | 500 MVA 400/220 kV | 315 MVA 400/220 kV | 160 MVA 220/132 kV |
|---------------------|--|--|----------------------------|
| PGCIL ERTS 1 | 1: Under procurement; will be put at Sasaram | 1: Muzaffarpur (released with ICT upgradation) 1: Bihar Sharif 1 : Under Procurement | 1: Purnea 1: Daltonganj |
| PGCIL ERTS 2 | 1 : Under procurement will be put at either Malda or Shubhasgram | 1 : Malda (released with ICT upgradation) 1: Durgapur (released with ICT upgradation) | 1 : Silliguri |
| PGCIL Odisha | 1: Under procurement and will be put at Pandiabili | 1: Will be procured | 1 : Baripada |
| OPTCL | 1: Under procurement | Under discussion with management | Not available |
| DVC | Not available | 1 will be spare in future as per new approved plan | Not available |
| WBSETCL | No detail | No detail | Not available |

- **For 43 numbers of 400/220 kV 500 MVA ICTs:** 3 regional and 1 state spare are under procurement
- **For 94 numbers of 400/220 kV 315 MVA ICTs:** 3 old and 1 new is available and 2 are under procurement
- **For 220/132 kV 160 MVA ICTs:** 4 regional spares are available.

Members are requested to update the status regularly.

Deliberation in the meeting

OCC advised the concerned members to update the status regularly.

ITEM NO. C.13: Availability of ERS in the Eastern Region and update on the status by various utilities including inter-state and intra-state transmission licensees

In line with CEA guidelines for the availability of spares and inventories for power transmission system (transmission lines & substation/switchyard) assets 2020 and the CEA disaster management plan for power sector 2021, adequate ERS is required to be maintained in ER grid for early restoration of transmission line due to any tower collapse. The Eastern region is prone to cyclones, Norwester/Kalbaisakhi localized storms, hilly terrain with landslides, floods, changes in river course, substation flooding, etc. due to which each year tower collapse occurs causing forced outages of transmission lines. This necessitates adequate ERS maintenance by various utilities in the eastern region for early restoration.

Present status available at ERLDC on ERS as collected during cyclone Yaas in 2021 is provided in the attached table. All transmission utilities are requested to kindly update the ERS availability and any ERS which are already engaged.

Status Update by: PGCIL ERTS 1, PGCIL ERST 2, PGCIL Odisha, WBSETCL and OPTCL (if any ERS is already engaged then same may be put as remarks)

Utility to provide details of available ERS in the attached format:

- State-level: BSPTCL, BGCL, DVC, JUSNL, Sikkim power department (SPD)
- ISTS: Indigrid (OGPTL, PKTCL, ENICL), PGCIL Subsidiaries (CBPTCL, PMTL, PMJTL), Powerlink Transmission limited (PTL), DMTCL, Adani transmission (ATL, NKTL), TPTL

In the 192nd OCC meeting, TPTL representative submitted that they would provide the details by the end of June 2022.

DVC representative submitted that procurement of 7 nos. (Combination of suspension and tension) of ERS is under progress. Further, pile and structures (2 nos.) at Putki and Maithon are available as immediate remedial measures up to 220 KV level.

West Bengal representative submitted that 10 nos. of ERS towers which can be used at all levels are available out of which 6 nos. have been used. Of the remaining, 3 nos. are tension towers and 1 is suspension tower.

OPTCL representative submitted that they would provide the details shortly.

JUSNL representative submitted that 8 nos. of ERS are available which could be used for up to 220 KV levels.

Bihar representative submitted that 36 nos. of ERS (for 220 KV and 132 KV level) are available and all are engaged at present.

The details have been received from OPTCL, PGCIL ERTS-1, ATL, PGCIL Odisha, PGCIL ERTS-2, PTL, ENICL, OGPTL, PKTCL. The details are awaited from WBSETCL, TPTL, BSPTCL, JUSNL and Sikkim Power Department. The utilities are requested to share the details at the earliest.

Present status available at ERLDC on ERS as collected during July 2022 is provided in the attached table.

| SI | Utility | voltage levels | Number of ERS towers available | Location of ERS situated | Type of ERS (Suspension/ Tension/ any other) |
|----|---------|----------------|---|---------------------------------------|--|
| 1 | OPTCL | 400 kv | 14 + 18 procured and in transit (arrive by Sept 2022) | Mancheswar grid - 4 nos. (high Tech) | Can be used for both suspension and Tension |
| | | | | Mancheswar store - 8 nos. (high tech) | |
| | | | | Mancheswar store - 2 nos. (Lindsey) | |

| SI | Utility | voltage levels | Number of ERS towers available | Location of ERS situated | Type of ERS (Suspension/ Tension/ any other) |
|----|----------------------------------|-----------------|--|--|---|
| | | 220 kV | 42 | Budhipadar - 14 nos. (Lindsey) | |
| | | | | Mancheswar grid - 14Nos. (Lindsey) | |
| | | | | Chatrapur - 14 nos. (Lindsey) | |
| 2 | PGCIL | 765 kV -24 sets | 24 Sets | GAYA | 15 Suspension & 9 Tension tower |
| | ERTS 1 | 400 KV -30 sets | 30 Sets | Jamshedpur, Purnea, Lakhisarai | Total 20 nos. Suspension & 10 nos. Tension ERS towers |
| 3 | Adani transmission limited (ATL) | 400 KV | 1 set (12 Column). Nos of ERS towers shall depend on line configuration, type of tower and extension of towers. Approximate 6 suspension towers/ set for 400kV D/C twin conductor. | Central India (Koradi, Maharashtra)- 48 Hours | Modular aluminum guyed towers- Suspension tower |
| 4 | PGCIL (Odisha) | 400 KV ERS - 3 | 3 | Rourkela | Suspension - 2 & Tension-1 |
| | | 765 KV ERS - 24 | 24 | Rengali | Suspension - 15 & Tension-9 |
| 5 | PGCIL ERTS 2 | 400 KV | 1 Set (consisting of 10 towers) - 400 KV Voltage | Durgapur | 7 Set-Suspension 03 Set-Tension |

| SI | Utility | voltage levels | Number of ERS towers available | Location of ERS situated | Type of ERS (Suspension/Tension/any other) |
|----|---------|------------------|--|--|---|
| | | | level | | |
| 6 | WBSETCL | 400, 220, 132 kV | 05+05set (can be used with 400/220/132 kV level) 6 used for Durgapur - asansol line diversion. 4 available | at Arambagh & Gokarno | Can be used for both suspension and Tension |
| 7 | TPTL | | MoU with PGCIL Tie up with Supreme Industry in progress | - | - |
| 8 | CBPTCL | | No ERS | PTC does not own any ERS, however, in case of any such requirement for deployment of ERS, CPTC has an existing agreement with POWERGRID for deployment of ERS. | - |
| 9 | PMTL | - | No ERS | - | - |
| 10 | PMJTL | 765 kV | NO ERS | - | - |
| 11 | PTL | 400 kV | 07 towers set ERS structures suitable for Twin Moose Configuration 400 or 220 kV. | Siliguri (W.B.) | Lindsey Manufacturing Company Ltd USA Model 600 |

| SI | Utility | voltage levels | Number of ERS towers available | Location of ERS situated | Type of ERS (Suspension/ Tension/ any other) |
|----|---------------------------------|----------------------|---|---|--|
| | | | 07 towers set ERS structures suitable for Twin Moose Configuration 400 or 220 kV. | Muzaffarpur (Bihar)ER1 | |
| 12 | Indigrid (ENICL, OGPTL & PKTCL) | 400 KV & 765 KV Line | 765 KV- 6 Sets / 400 KV- 8 Sets | Siliguri, WB. | For 765 KV- 4 Suspension & 2 Tension. For 400 KV- 6 Suspension & 2 Tension. |
| 13 | DMTCL | 400 kV Lines | Arrangement of ERS with M/s Supreme Engineering at Kolkata. | Can be Dispatched in 2-3-weeks periods | - |
| 14 | BSPTCL | 220 kV & 132 kV | 38 ERS which can be used for 220 and 132 kV | 18 Towers in use for 132 kV Kishanganj-Barsoi ckt 4 towers for 220 kv BTPS-Hazipur ckt 4 towers for 220 kV Bodhgaya- Chandauti Purnea : 1 Dehri on sone: 2 Sultanganj: 2 Fatuah: 2 Muzaffarpur : 4 | Can be used for both suspension and Tension |
| 15 | BGCL | - | No ERS | No ERS | - |

| SI | Utility | voltage levels | Number of ERS towers available | Location of ERS situated | Type of ERS (Suspension/Tension/any other) |
|----|-------------------------|-------------------|--|---|--|
| 16 | JUSNL | 220 kV | Total 8 ERS | Hatia: 3 Jamshedpur: 2 Dumka: 3 | Details awaited |
| 17 | DVC | 400 kV and 220 kV | 400 kV: 7 (under procurement) 220 kV: 2 set Pilon structure | 400 kV: Under procurement 220 kV: 1 at putki and 1 at Maithon | - |
| 18 | Sikkim Power Department | | Details awaited | Details awaited | Details awaited |

In the 193rd OCC meeting, TPTL representative submitted that they do not have any ERS towers of their own. In this regard, discussion for signing a MoU with PGCIL is under progress and tie up with M/s Supreme Engineering has also been initiated.

WBSETCL representative submitted that 10 nos. of ERS towers are available which could be used at all the voltage levels. Out of 10 nos., 6 nos. are used for Durgapur-Asansol line and 4 nos. are available. Procurement of additional 6 nos. of ERS towers (which could be used both under suspension and tension) is under planning stage.

Bihar representative submitted the status of ERS towers which is mentioned below.

| Location | Status | Usage | Type | Quantity |
|------------------------|---------------|------------|--------------------|-----------|
| Kishanganj-Barsoi Line | engaged | 220/132 KV | Suspension/Tension | 18 |
| BTPS-Hajipur Line | engaged | 220/132 KV | Suspension/Tension | 4 |
| Bodh Gaya-Chandauti | to be engaged | 220/132 KV | Suspension/Tension | 4 |
| Purnea | Spare | 220/132 KV | Suspension/Tension | 1 |
| Dehri | Spare | 220/132 KV | Suspension/Tension | 2 |
| Fatuha | Spare | 220/132 KV | Suspension/Tension | 3 |
| Mujaffarpur | Spare | 220/132 KV | Suspension/Tension | 4 |
| Sultanganj | Spare | 220/132 KV | Suspension/Tension | 2 |
| Total | | | | 38 |

OCC was of the view that many lines of BGCL and other new sub-stations like Mokama, Hajipur, etc. in Bihar fall under the coverage of river corridor and advised Bihar to keep provisions of ERS towers for those lines.

Members may update.

Deliberation in the meeting

OCC advised the concerned members to update the status regularly.

ITEM NO. C.14: List of lines of Eastern Region violating N-1 security criteria.

The list of such lines for which necessary planning needs to be done to make the system N-1 secure are given below:

| Sl. No | Name of Element | Short Term Measures | Long term Measures | The target date for long term measures |
|---|--|--|--|--|
| Transmission Constraint in Odisha Network | | | | |
| 1 | i. 220 kV Budhipadar-Lapanga D/C, ii. 220 kV Budhipadar Vedanta D/C iii. 220 kV Rourkela-Tarkera D/C | SPS available only for 220 kV Rourkela-Tarkera D/C. However, even with SPS N-1 criteria is not satisfied for all the conditions. Action Required:- Load trimming scheme needs to be planned | 1. Reconductoring of 220 kV Rourkela-Tarkera D/C with HTLS. 2. 220 kV Rourkela-Tarkera second D/C 3. Shifting of Vedanta from 220 kV to 400 kV | OPTCL to provide a target date for Long term measures |
| 2 | i. 220 kV Lapanga-Katapalli D/C , ii. 220 kV Katapali-New Bargarh-Sadepalli (New Bolangir) S/C iii. 220 kV Katapali-Bolangir (PG)- S/C | No SPS Available. Action Required:- SPS/Load trimming scheme needs to be planned | Odisha to share long-term remedial action to make the system N-1 secure. | OPTCL to provide a target date for Long term measures |
| Transmission Constraint in West Bengal Network | | | | |
| 3 | i. 220 kV Waria-Bidhan Nagar D/C ii. 220 kV Waria-Mejia | Opening of 220 kV Waria-Bidhan Nagar D/C as and when required | 400/220kV, 315MVA (3 rd) ICT at Bidhannagar | Target Date 2022-23. WBSETCL may update the present Status |

| Sl. No | Name of Element | Short Term Measures | Long term Measures | The target date for long term measures |
|--|--|--|--|---|
| | D/C | | | |
| Transmission Constraint in DVC Network | | | | |
| 4 | i. 220 kV DSTPS-Waria D/C* | No SPS is Available. Action Required:- SOP/SPS/Load trimming scheme needs to be planned for the time being | i. 220 kV Connectivity at 400 kV Mejia-B ii. LILO of 220 kV Mejia-A and Barjora at Mejia-B | DVC may update the target date |
| 5 | ii. 220 kV Maithon-Dhanbad D/C, iii. 220 kV Maithon-Kalyaneshwari D/C | No SPS is Available. Action Required:- SOP/SPS/Load trimming scheme needs to be planned for the time being | iii. 220 kV Connectivity at 400 kV Mejia-B iv. 220 kV Connectivity at 400 kV RTPS | DVC may update the target date |
| * The N-1 violation of 220 kV DSTPS- Waria D/C or DSTPS ICT 1&2 may result in large-scale disturbance, impacting an area between Durgapur and Maithon. To avoid any such mishap DVC needs to plan and implement an SPS on an urgent basis. Further, the long term measure also needs to be implemented in time bound manner. | | | | |
| Transmission Constraint in Jharkhand Network | | | | |
| 6 | 220 kV Maithon Dumka D/C | No SPS Available. Action Required:- SPS/Load trimming scheme needs to be planned | i. LILO of 1st circuit of 220kV Dumka – Govindpur D/c line at Dhanbad | Target Date 2023. Jharkhand may update the target date |
| Transmission Constraint in West Bengal Network | | | | |
| 6 | i. 220 kV Rajarhat-Newtown AA3 D/C, ii. 220 kV Subhasgram- | SPS is Available for both the Ckts | 1. 220 kV Rajarhat-Newtown AA3 D/C line with HTLS. 2. No Strengthening planned for 220 kV Subhasgram-EMSS D/C | 1. Target Date November 2022 for reconductoring WBSETCL may update the present Status |

| Sl. No | Name of Element | Short Term Measures | Long term Measures | The target date for long term measures |
|--|---|--|--|--|
| | EMSS D/C | | | |
| 7 | i. 220 kV Subhasgram (PG) – Subhasgram (WB) D/C ii. 220 kV Subhasgram (WB)-Lakshmikanpur D/C | SPS Available for 220 kV Subhasgram (PG) – Subhasgram (WB) D/C | i. 220 kV Subshagram – Baruipur D/C ii. 400/132 kV Substation at Lakshmikanpur. | i. Line antitheft charged from Subhasgram end ii. Lakshmikanpur tareget date is December 2024 WBSETCL may update the present Status |
| Transmission Constraint in Bihar Network | | | | |
| 8. | 220 kV Darbhanga-Darbhang(BH) D/C | No SPS Available. Action Required:- SPS/Load trimming scheme needs to be planned | Bihar to share long-term remedial action to make the system N-1 secure. | Bihar to provide a target date for Long term measures |
| 9. | 220 kV Muzzafarpur-Hazipur D/C | No SPS Available. Action Required:- SPS/Load trimming scheme needs to be planned | 1. 220 kV Muzzafarpur-Amnour D/C | Bihar to provide a target date for Long term measures |
| 10. | 220 kV Gaya Bodhgaya D/C | No SPS Available. Action Required:- SPS/Load trimming scheme needs to be planned | 1. 220 kV Gaya Bodhgaya Second D/C | Bihar to provide a target date for Long term measures |

In the 193rd OCC meeting, ERLDC representative submitted that outage of DSTPC ICTs or DSTPS Waria D/C line may create a large scale disturbance.

DVC representative submitted that the contracts for connectivity between MTPS 220 KV to 400 KV and RTPS connectivity have already been awarded and the work is expected to be completed by December 2023. The 400 KV bus connectivity would extend some relief in case of evacuation problem from 220 KV bus due to MTPS generation.

Under long-term measures, programs for augmentation of DSTPS ICT and DSTPS-DTPS HTLS is under progress. Necessary approval from ERPC and CTU has already been taken in this regard.

Moreover, Parulia (PG)-Parulia (DVC) line has already been given to Powergrid for HTLS connectivity. After the HTLS connectivity, possibilities of switching-off of DSTPS ICT may be explored. Further, possibilities of bus-splitting at MTPS may also be worked out.

ERLDC representative requested DVC to maintain some minimum generation in Mejia. DVC representative submitted that Mejia unit-6 would be synchronized by 21st July 2022.

ERLDC representative was of the view that as per the study undergone by them, closing of

Bidhannagar-Waria circuit would not cater to the generation loss issues and advised DVC to explore the possibilities of bus splitting and connectivity to 400 KV of MTPS and RTPS.

Members may discuss.

Deliberation in the meeting

OCC advised all the utilities to update the status, if any, to ERPC and ERLDC.

ITEM NO. C.15: ICT Constraints violating N-1 security criteria.

The list of ICTs which are not N-1 complaint are given below:

| Sl. No | Name of ICT | Short Term Measures | Long term Measures | The target date for long term measures |
|--|---|---|--|---|
| ICT Constraint in West Bengal Network | | | | |
| 1 | i. 400/220 kV 2 X 315 MVA ICTs at Gokarna & ii. 400/220 kV Sagardighi 1 X 315 MVA ICTs | SPS Available for Gokerno ICTs Action Required:- Load trimming scheme needs to be planned for Sagardighi | i. 3 rd ICT at Gokerno | Target Date Dec-22 WBSETCL may update the present Status |
| 2 | i. 400/220 kV ICT-1 & 2 at Bidhannagar | No SPS Available Action Required:- SPS needs to be planned | i. 400/220kV 315MVA (3rd) ICT at Bidhannagar | Target Date 2022-23 WBSETCL may update the present Status |
| ICT Constraint in ISTS Network | | | | |
| 3 | i. 400/220 kV Ranchi 2 X 315 MVA ICTs | SPS Available | i. 3 rd 500 MVA ICT at Ranchi | POWERGRID may update the target date |
| ICT Constraint in DVC Network | | | | |

| Sl. No | Name of ICT | Short Term Measures | Long term Measures | The target date for long term measures |
|----------------------------------|--|---|--------------------------------------|--|
| 4 | i. 400/220 kV Bokaro A 2 X 315 MVA ICTs | No SPS Available Action Required:- SPS needs to be planned | i. Upgradation with 500 MVA ICTs | DVC may update target date |
| 5 | i.400/220 kV ICT-1 & 2 at DSTPS * | No SPS Available Action Required:- SPS needs to be planned | i. Upgradation with 500 MVA ICTs | DVC may update target date |
| ICT Constraint in Odisha Network | | | | |
| 6 | i. 400/220 kV New Duburi 2 X 315 MVA ICTs | No SPS Available Action Required:- SPS needs to be planned | i) 3 rd ICT at New Duburi | Odisha may update the target date |

In the 193rd OCC meeting, ERLDC representative submitted that outage of DSTPC ICTs or DSTPS Waria D/C line may create a large scale disturbance.

DVC representative submitted that under long-term measures, programs for augmentation of DSTPS ICT is under progress. Necessary approval from ERPC and CTU has already been taken in this regard.

Moreover, Parulia (PG)-Parulia (DVC) line has already been given to Powergrid for HTLS connectivity. After the HTLS connectivity, possibilities of switching-off of DSTPS ICT may be explored.

Members may update.

Deliberation in the meeting

OCC advised all the utilities to update the status, if any, to ERPC and ERLDC.

ITEM NO. C.16: Draft Central Electricity Authority (Flexible Operation of Thermal Power Plants) Regulations, 2022 and associated draft procedure by NLDC.

CEA has notified Draft Central Electricity Authority (Flexible operation of thermal power plants) Regulations, 2022. They have asked for comments by 26th August 2022.

Highlights of draft regulation:

- Applicable to all coal and lignite-based thermal power plants and load despatch centres.
- Objective of regulation is to mandate necessary retrofitting of thermal generators to support flexible operation to facilitate dispatch of must run generators like renewables
- This includes measures to reduce technical minimum, now termed as MPL (Minimum Power Level) , increase the ramp rates and optimize the start-up of the power plants

- Units throughout their service life shall be considered for flexible operation.
- Beforehand assessment for Suitability for start/stops, deep load following (Ramps), condition assessment and required upgradation for flexible operation need to be done.
- Load despatch can schedule flexible plants to support the operation of must-run stations.
 - All thermal plants up to minimum power levels of 55 % (Within 1 year)
 - All thermal plants up to minimum power levels of 40% with condition that (Within 3 years based in consultation with OEM)
 - Coal-based thermal plant: Minimum loading/unloading rate shall be 3 %/minute above MPL
 - Supercritical and ultra-super-critical units: Minimum loading/unloading rate shall be 5 %/minute above MPL
- All thermal plants to achieve the requirements should go for technical feasibility studies in consultation with the concerned Original Equipment Manufacturers/ Qualified Consultants
- All Thermal power plants to implement the necessary modifications as per this regulation.
- Any deviation from the limits prescribed under these Regulations shall be brought before the Authority on case-to-case basis by the thermal power plants for exemption, if any.

In view of the same, all thermal power plants in the eastern region should check their feasibility of operation at 55% and 40% status including ramping capability in consultation with OEM. For this ISGS, IPPs, Intra-state SGS and IPPs may also explore associated testing of their respective units at lower levels in consultation with OEM as a pilot project. This activity has been earlier done successfully on various ISGS/IPP power plants. Further, all are requested to submit comments.

In the 194th OCC meeting, NTPC representative submitted that all its units are able to run at 55% load capacity without any oil support.

DVC representative submitted that they are able to achieve the minimum load capacity of 55% in case of 500 MW and 600 MW units provided the coal quality is good. The lower capacity units are ball and tube mill type for which necessary permission from CEA and ERPC would be taken prior to testing of minimum load capacity.

WBPDC representative submitted that the technical minimum for their units is different and varies depending upon their unit capacity. He further submitted that in general a minimum load capacity of 75% is maintained for all their units but due to deteriorated coal quality, at times it becomes difficult to maintain the load capacity especially for Kolaghat units.

WBPDC was advised to send the detailed report on technical minimum of their units to ERPC at the earliest.

OCC advised all the generating units to submit their comments on draft CEA regulations, 2022 of Flexible Operation of Thermal Power Plants to CEA within the stipulated time period. Further, all the generating stations were also advised to submit the reports to ERPC & ERLDC on the present minimum load achieved by them against the designed technical minimum.

Deliberation in the meeting

OCC advised all the generating stations to submit their comments on draft CEA regulations, 2022 to CEA within the stipulated time period.

PART D: OPERATIONAL PLANNING

ITEM NO. D.1: Anticipated power supply position during November 2022

The abstract of peak demand (MW) vis-à-vis availability and energy requirement vis-à-vis availability (MU) for the month of November 2022 provided at Annexure D.1 were prepared by ERPC Secretariat on the basis of LGBR for 2022-23 and feedback of constituents, keeping in view that the units are available for generation and expected load growth etc.

Members may update.

Deliberation in the meeting

The updated anticipated power supply position is provided at Annexure D.1

ITEM NO. D.2: Shutdown proposal of generating units for the month of November 2022

| Proposed Maintenance Schedule of Thermal Generating Units of ER in the month of Nov' 2022 | | | | | | | | |
|---|--------------------|----------|---------------|------------------------------|------------|-------------|-----------------------------------|------------------------------|
| System | Station | Unit No. | Capacity (MW) | Period (as per LGBR 2022-23) | | No. of Days | Reason | Remarks |
| | | | | From | To | | | |
| WBPDC | Bakareshwar TPS | 3 | 210 | 23.11.2022 | 01.01.2023 | 40 | COH | |
| | Bakareshwar TPS | 1 | 210 | 20.11.2022 | 29.11.2022 | 10 | PG Test | |
| | Sagardighi TPS | 4 | 500 | 20.11.2022 | 29.11.2022 | 10 | PG Test | |
| OPGC | IB TPS | 3 | 660 | 01.11.2022 | 25.11.2022 | 25 | Annual Maintenance | |
| DVC | Mejia TPS | 4 | 210 | 01.11.2022 | 06.12.2022 | 35 | BOH- Blr RLA, FGD & De-Nox Burner | |
| | Durgapur Steel TPS | 2 | 500 | 01.11.2022 | 06.12.2022 | 35 | BOH, FGD & De-Nox Burner | |
| CESC | Budge-Budge TPS | 1 | 250 | 04.11.2022 | 29.11.2022 | 26 | Annual maintenance | |
| NTPC | Talcher STPS | 2 | 500 | 01.11.2022 | 15.12.2022 | 45 | COH | Availed S/D in Aug-Sep, 2022 |
| | Farakka STPS | 5 | 500 | 01.11.2022 | 15.12.2022 | 45 | FGD Damper Installation | |
| NPGCL | New Nabinagar STPS | 1 | 660 | 01.11.2022 | 05.12.2022 | 35 | AOH | |

| | | | | | | | | |
|-------|-------|---|-----|------------|------------|----|-----|--|
| JITPL | JITPL | 1 | 600 | 01.11.2022 | 15.12.2022 | 45 | COH | |
| GMR | GMR | 1 | 350 | 01.11.2022 | 15.12.2022 | 45 | COH | |

NTPC vide mail dated submitted that 12.10.2022 Farakka Unit 5 (500 MW) scheduled in LGBR from 01-11-2022 to 15-12-2022 is not being taken for overhauling, however owing to various liabilities, the Unit-2 (200 MW) needs to be taken under shutdown for overhauling from 15-11-2022 for 30 days.

Members may update.

Deliberation in the meeting

The approved maintenance schedule for the month of November 2022 is provided at Annexure D.2.

ITEM NO. D.3: Shutdown of Transmission Elements.

| SL NO | ELEMENT NAME | START DATE | TIME | END DATE | TIME | REASON |
|-------|---------------------------------|------------|----------|------------|----------|--|
| 1 | 400 KV TEESTA-III RANGPO FEEDER | 08.11.2022 | 09:00:00 | 13.11.2022 | 18:00:00 | For internal inspection of the GIS breaker interrupter by OEM and Connector tightening of R phase CT |
| 2 | 400 KV TEESTA-III DIKCHU FEEDER | 14.11.2022 | 09:00:00 | 19.11.2022 | 18:00:00 | For internal inspection of the GIS breaker interrupter by OEM(Hyosung Team) |

Teesta-III may update. Members may discuss.

Deliberation in the meeting

Discussed in 196th OCC S/d Meeting.

ITEM NO. D.4: Major Generating Units/Transmission Element outages/shutdown in ER Grid (as on 10.10.2022)

a) Thermal Generating Stations outage report:

| SL No | STATION | STATE | AGENCY | UNIT NO | CAPACITY (MW) | REASON(S) | OUTAGE DATE |
|-------|---------|-------|--------|---------|---------------|-----------|-------------|
|-------|---------|-------|--------|---------|---------------|-----------|-------------|

| | | | | | | | |
|---|--------------|-------------|-------|---|-----|--|-------------|
| 1 | BARAUNI TPS | BIHAR | NTPC | 7 | 110 | Excessive chemical deposits on Turbine blades (turbines need to be opened for assessment of the extent of deposits and the repairs required to address the issue of High First Stage pressure in HP Turbine) | 19-Feb-2022 |
| 2 | BARAUNI TPS | BIHAR | NTPC | 6 | 110 | Initially unit tripped on flame failure but later, problem found in condenser. | 14-Jul-2022 |
| 3 | MEJIA TPS | DVC | DVC | 1 | 210 | Boiler tube leakage | 09-Oct-2022 |
| 4 | MEJIA TPS | DVC | DVC | 2 | 210 | Generator protection | 28-Sep-2022 |
| 5 | MEJIA TPS | DVC | DVC | 5 | 250 | Boiler tube leakage | 02-Oct-2022 |
| 6 | DPL | WEST BENGAL | WBPDC | 7 | 300 | Poor coal stock | 09-Oct-2022 |
| 7 | KOLAGHAT TPS | WEST BENGAL | WBPDC | 5 | 210 | Boiler tube leakage | 08-Oct-2022 |
| 8 | BUDGE-BUDGE | WEST BENGAL | CESC | 3 | 250 | Boiler Tube Leakage | 10-Oct-2022 |

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:

| S. NO | STATION | STATE | AGENCY | UNIT NO | CAPACITY (MW) | REASON(S) | OUTAGE DATE |
|-------|---------|-------|--------|---------|---------------|------------------|-------------|
| 1 | BARH | BIHAR | NTPC | 5 | 660 | Reserve Shutdown | 08-Oct-2022 |

c) Hydro Unit Outage Report:

| S. NO | STATION | STATE | AGENCY | UNIT NO | CAPACITY (MW) | REASON(S) | OUTAGE DATE |
|-------|--------------------|--------|--------|---------|---------------|---|-------------|
| 1 | RENGALI HPS | ODISHA | OHPC | 3 | 50 | Damage of GT | 26-Nov-2021 |
| 2 | BALIMELA HPS | ODISHA | OHPC | 3 | 60 | The unit taken out under R & M for 18 months. | 08-Jul-2022 |
| 3 | BALIMELA HPS | ODISHA | OHPC | 4 | 60 | The unit taken out under R & M for 18 months. | 08-Jul-2022 |
| 4 | TEESTA STG III HEP | SIKKIM | TUL | 5 | 200 | Annual over hauling | 22-Sep-2022 |

d) Long outage report of transmission lines (As on 09.10.2022):

| Transmission Element / ICT | Outage From | Reasons for Outage |
|-----------------------------------|-------------|--|
| 400 KV IBEUL JHARSUGUDA D/C | 29.04.2018 | TOWER COLLAPSE AT LOC 44,45 |
| 220 KV PANDIABILI - SAMANGARA D/C | 03.05.2019 | 49 NOS OF TOWER COLLAPSED.AS REPORTED BY SLDC OPTCL, TOTAL 60 NOS OF TOWER IN BETWEEN 220KV PANDIABILI – SAMANGARA LINE IN WHICH 48 NOS TOWERS FULLY DAMAGED AND 12 NOS TOWERS PARTIALLY DAMAGED. WORK UNDER PROGRESS.PRESENTLY CHARGED FROM |

| | | |
|--|------------|--|
| | | PANDIABILLI END (LOC 156) TO LOC 58 |
| 220/132 KV 100 MVA ICT II AT LALMATIA | 22.01.2019 | FAILURE OF HV SIDE BREAKER |
| 220/132 KV 100 MVA ICT 3 AT CHANDIL | 30.04.2020 | ICT BURST AND DAMAGED AFTER FIRE REPORTED |
| 400KV/220KV 315 MVA ICT 4 AT JEERAT | 09.04.2021 | VERBALLY CONFIRMED BY WB THAT NEW TRANSFORMER PROCUREMENT UNDER PIPELINE AND SHALL BE REPLACED IN THE NEAR FUTURE. |
| 220KV-FSTPP-LALMATIA | 21.04.2021 | THREE TOWER COLLAPSED NEAR LALMATIA |
| 400KV MAIN BUS - 2 AT DIKCHU | 05.05.2021 | REPEATED SPURIOUS BUSBAR PROTECTION OPERATION |
| 220KV-GAYA-CHANDAUTI (PMTL)-DC | 22.05.2021 | FOR DISMANTLING OF TOWER NO 51 UNDER LILO WORK AT BODHGAYA. |
| 400KV/220KV 315 MVA ICT 1 AT INDRAVATI (PH) | 24.02.2022 | INITIALLY REPORTED BUCHHOLZ RELAY OPERATED. LATER SLDC ODISHA REPORTED THAT CONTROL & RELAY PANEL OF ICT BURNT. REPLACEMENT FOR THE SAME IS UNDER PROCESS. |
| 220KV-ALIPURDUAR (PG)-ALIPURDUAR(WB)-1 | 14.07.2022 | S/D TAKEN FOR RELAY TESTING PURPOSES, COULD NOT BE RETURNED DUE TO B-PH CB LOCKOUT |
| 400KV/220KV 315 MVA ICT 1 AT PATRATU | 01.08.2022 | BUCHHOLZ RELAY OPERATED |
| 400KV/220KV 315 MVA ICT 1 AT DURGAPUR | 08.08.2022 | FOR REPLACEMENT OF 416-89T ISOLATOR, RELAY & CONTROL PANEL WIRING, REPLACEMENT OF 408 BCT WITH BPI, TESTING |
| 400KV-PATNA-BARH-3&4 | 19.09.2022 | FOR DIVERSION WORKS OF NHAI |
| 400KV-ALIPURDUAR (PG)-PUNASANGCHUN-JIGMELING-2 | 24.09.2022 | Y PHASE TO B PHASE FAULT |
| 220KV-RANCHI-HATIA-2 | 24.09.2022 | TOWER COLLAPSE AT LOCATION NO - 10 |
| 132KV-KATAYA-KUSAHA-2 | 25.09.2022 | DISTANCE PROTECTION OPERATED. SPARKING SEEN BETWEEN TREE AND CONDUCTOR |
| 400KV/220KV 315 MVA ICT 2 AT PATRATU | 27.09.2022 | DGA VIOLATION |
| 220 kV ALIPURDUAR (PG)-SALAKATI-2 | 08.10.2022 | FOR RE-CODUCTORING WORK UNDER NERSS - XII PACKAGE |

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.

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

Members may note.

Deliberation in the meeting

Members noted.

ITEM NO. D.5: Commissioning of new units and transmission elements in Eastern Grid in the month of Sep-2022

The details of new units/transmission elements commissioned in the month of Sep-2022 based on the inputs received from beneficiaries:

ERLDC_LIST OF NEW ELEMENTS CHARGED DURING September, 2022

GENERATING UNITS

| SL. NO. | Location | OWNER/UNIT NAME | Unit No/Source | Capacity added (MW) | Total/Installed Capacity (MW) | DATE | Remarks |
|---------|----------|-----------------|----------------|---------------------|-------------------------------|------|---------|
|---------|----------|-----------------|----------------|---------------------|-------------------------------|------|---------|

NIL

ICTs/ GTs / STs

| SL. NO. | Agency/Owner | SUB-STATION | ICT NO | Voltage Level (kV) | CAPACITY (MVA) | DATE | Remarks |
|---------|--------------|-------------|--------|--------------------|----------------|------|---------|
|---------|--------------|-------------|--------|--------------------|----------------|------|---------|

NIL

TRANSMISSION LINES

| SL. NO. | Agency/Owner | LINE NAME | Length (KM) | Conductor Type | DATE | Remarks |
|---------|--------------|--|-------------|---------------------------------|-----------|---|
| 1 | WBSETCL | 220 kV Rajarhat(PG)-NewTown IIC(WB) UG D/C Transmission Line-1 | 11.250 | XLPE Lead Sheath Cable (1 core) | 26-Sep-22 | Line was anti-theft charged from Rajarhat end on 26-09-2022 at 13:42 Hrs. |
| 2 | WBSETCL | 220 kV Rajarhat(PG)-NewTown IIC(WB) UG D/C Transmission Line-2 | 11.250 | XLPE Lead Sheath Cable (1 core) | 26-Sep-22 | Line was anti-theft charged from Rajarhat end on 26-09-2022 at 13:59 Hrs. |

LILO/RE-ARRANGEMENT OF TRANSMISSION LINES

| SL. NO. | Agency/Owner | Line Name/LILO at | Length (KM) | Conductor Type | DATE | Remarks |
|---------|--------------|-----------------------------------|-------------|----------------|-----------|---|
| 1 | JUSNL | 220KV-DALTONGANJ-LATEHAR(JUSNL)-2 | 41.400 | ACSR Zebra | 30-Sep-22 | Line was charged on 30-09-2022 at 17:29 Hrs(LILO of Daltonganj-Chatra Line-2 at Latehar S/S). Latehar S/S was charged for the First Time. |

BUS/LINE REACTORS

| SL. NO. | Agency/Owner | Element Name | SUB-STATION | Voltage Level (kV) | DATE | Remarks |
|---------|--------------|--------------|-------------|--------------------|------|---------|
|---------|--------------|--------------|-------------|--------------------|------|---------|

NIL

HVDC /AC Filter bank / FACTS DEVICE associated System

| SL. NO. | Agency/Owner | Element Name | SUB-STATION | Voltage Level (kV) | DATE | Remarks |
|---------|--------------|--------------|-------------|--------------------|------|---------|
|---------|--------------|--------------|-------------|--------------------|------|---------|

NIL

BAYS

| SL. NO. | Agency/Owner | Element Name | SUB-STATION | Voltage Level (kV) | DATE | Remarks |
|---------|--------------|---|-------------|--------------------|----------|--|
| 1 | JUSNL | 400KV MAIN BAY OF LATEHAR(JUSNL)-1 AT CHANDWA(PG) | Chandwa(PG) | 400 | 1-Oct-22 | Bay was charged for First Time on 01-10-2022 at 12:57 Hrs. Bay at Chandwa(PG) is owned by JUSNL(Bay No. 401) |
| 2 | JUSNL | 400KV MAIN BAY OF LATEHAR(JUSNL)-2 AT CHANDWA(PG) | Chandwa(PG) | 400 | 1-Oct-22 | Bay was charged for First Time on 01-10-2022 at 13:00 Hrs. Bay at Chandwa(PG) is owned by JUSNL(Bay No. 402) |

Members may note.

Deliberation in the meeting

Members noted.

ITEM NO. D.6: UFR operation during the month of September 2022.

Frequency profile for the month as follows:

| Month | Max | Min | Less IEGC Band (%) | Within IEGC Band (%) | More IEGC Band (%) |
|-----------------|--------------------------------------|--------------------------------------|--------------------|----------------------|--------------------|
| | (Date/Time) | (Date/Time) | | | |
| September, 2022 | 50.31 Hz on 16.09.2022 at 13:02 Hrs. | 49.50 Hz on 02.09.2022 at 19:19 Hrs. | 5.94 | 80.77 | 13.29 |

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

Members may note.

Deliberation in the meeting

Members noted.

Participants in 196th OCC Meeting

Venue: ERPC Conference Hall, Kolkata

Time: 10:30 Hrs.

Date: 19.10.2022 (Wednesday)

| Sl. No. | Name | Designation | Organisation | Contact No. | E-mail Id | Signature |
|---------|-------------------------|--------------------|----------------|----------------------------------|-----------------------------------|-----------|
| 1 | N S Mondal | Member Secretary | ERPC | 9958389967 | mserpc-power@nic.in | |
| 2 | R Sutradhar | Executive Director | ERLDC | 9436302714 | rajibsutradhar@posoco.in | |
| 3 | Sankat Madhusudan Sahoo | DGM(Elect) | OPTCL | 9438908353 | ele.smsahoo@gridco.co.in | |
| 4 | Biplab Chatterjee | Head - Operations | MPL | 9204857100 | biplab.chatterjee@tatapower.co.in | |
| 5 | Rahul Anand | DGM OS | NTPC | 9425823430 | rahulanand@ntpc.co.in | |
| 6 | Avinash Shukla | Sr Manager | BRBCL | | | |
| 7 | Prasanna Kumar Sahoo | DGM (OS) | NTPC, ER-II HQ | 9437962430 | prasanmasahoo@ntpc.co.in | |
| 8 | Shouvik Banerjee | Addl.CE | SLDC, WB | 9434910379 | svkbanerjee@yahoo.com | |
| 9 | Nishant Kumar | AGM(O&M) | DMTCL | 7987210324 | nishant.kumar@setcoran.in | |
| 10 | P. K. Das | CGM | GRIDCO | 9438907408 | prashantk_das@yahoo.co.in | |
| 11 | M. S. Sahoo | DGM | | 9692427876 | ele.msahoo@gridco.co.in | |
| 12 | Diptikant Panda | | GMR, Odisha | 8114918762 | Diptikanta.panda@gmrgroup.in | |
| 13 | Shri B.K.Rai | ACE | Sikkim | 9437786589 9437786589 | rajib@nic.gov.in | |
| 14 | Shri Suraj Pradhan | SE | | | | |
| 15 | Siddharth Singh | | CHEP | | | |
| 16 | Kranti Kumar | DGM | Dikchu | 8374666599 | Kranti.kumar.v@greentkenergy.com | |
| 17 | Md. Aarif | Sr. Manager | | 9933370011 | arif.md@greentkenergy.com | |
| 18 | D.P.Puitandi | CE | SLDC, DVC | 9434745905 | debi.prasad.puitandi@dvc.gov.in | |
| 19 | S.K.Panada | EE | | 6370134794 | santosh.panda@dvc.gov.in | |
| 20 | P.Ghosh | EE | | | | |

Participants in 196th OCC Meeting

Venue: ERPC Conference Hall, Kolkata

Time: 10:30 Hrs.

Date: 19.10.2022 (Wednesday)

| Sl. No. | Name | Designation | Organisation | Contact No. | E-mail Id | Signature |
|---------|--------------------------|-------------------------------------|----------------|--------------------------|---------------------------------|-----------|
| 21 | Debarshi De | SM, System Control | CESC | 9163312742 | debarshi.de@spscim | |
| 22 | Preetam Banerjee | SE | WBSEDCL | 7003871189 9432140765 | preetban72@gmail.com | |
| 23 | Sanjay Kumar Sharma, | SM (E) | Teesta-V Power | | | |
| 24 | Suman Dütta | Manager (E) | | | | |
| 25 | Sunil Kumar Gupta | ESE | SLDC, BSPTCL | 7763817717 | sunil2008iitd@gmail.com | |
| 26 | Gagan Kumar | ESE | | 7763817782 | gagankmishra@gmail.com | |
| 27 | B.B. Mehta | Director & Chief Load Despatcher | SLDC, OPTCL | 9879200736 | dir.sids@optcl.co.in | |
| 28 | Kumar Manish | | ATL & NKTL | | | |
| 29 | Sourjyo Ghosh | | | | | |
| 30 | Rajdeep Bhattacharjee | RE | BSPHCL | 9830380689 | rekolbsphcl@gmail.com | |
| 31 | Amiya Kumar Mohanty | GM | OHPC | 7328840019 | akm-678@yahoo.co.in | |
| 32 | Manoj Podder | DGM (OS) | WBPDCL | 8336904077 | mpodder@wbpdcl.co.in | |
| 33 | D Mukherjee | Mgn (OS) | WBPDCL | 9830052830 | d.mukherjee@wbpdcl.co.in | |
| 34 | H. K. Ghosh | L.O. GRIDCO | GRIDCO | 8917347112 | hemanta60@gmail.com | |
| 35 | D. Deepak Varma | SE | TUL | 8929761021 | deepakdurai@gmail.com | |
| 36 | Ninad Nigam | Manager, Power | Vedanta Ltd. | 9993000757 | ninad.nigam@vedanta.co.in | |
| 37 | Siddhartha Singh | Sr. Manager | CIPCL | 8170005771 | siddhartha.singh@gati.intra.com | |
| 38 | DEBARSHI | | | | | |
| 39 | G. AUGUSTEENBARU (S.M/E) | | NHPC-RPS | 7840056755 | augusteen.guamra@gmail.com | |
| 40 | S. K. Pradhan | AD (Comm) | ERPC | 8249244719 | Sk.Pradhan15@gov.in | |

Participants in 196th OCC Meeting

Venue: ERPC Conference Hall, Kolkata

Time: 10:30 Hrs.

Date: 19.10.2022 (Wednesday)

| Sl. No. | Name | Designation | Organisation | Contact No. | E-mail Id | Signature |
|---------|-------------------|--------------------------|------------------|-------------|-----------------------------|-------------------|
| 41 | S. Sarvesh | AD, C | ERPC | 9599219638 | s.sarvesh@gov.in | S. Sarvesh |
| 42 | S.K. Panda. | FE, SLDC, DVC | DVC | 6370134794 | santosh.panda@dv.gov.in | S.K. Panda |
| 43 | Ajit Kumar Bhagat | Sr. Manager, JUSNL | JUSNL | 8340599939 | cetjusnl@gmail.com | Ajit Kumar Bhagat |
| 44 | Raju Kachhap | Sr. Manager, SLDC Ranchi | JUSNL | 7783087568 | rajmailme82@gmail.com | Raju Kachhap |
| 45 | Bilash Achari | DGM (SO) | ERLDC | 7003472016 | bilash.achari@posoco.in | Bilash Achari |
| 46 | S Mondal | DGM (SO) | ERLDC | 943301155 | saugato@posoco.in | S. Mondal |
| 47 | Shabari Pramanick | Manager (SO) | ERLDC | 9007058764 | shabari.pramanick@posoco.in | Shabari Pramanick |
| 48 | Pinki Debnath | CM (SO) | ERLDC | 9007079914 | pinkidebnath@posoco.in | Pinki Debnath |
| 49 | SAIBAL GHOSH | Manager (SO) | ERLDC | 8584072079 | Saibal@posoco.in | Saibal Ghosh |
| 50 | Avinash Shukla | Sr. Manager | BRIU | 9453017986 | AVINASHSHUKLA@NTPC | Avinash Shukla |
| 51 | Suman Dutta | Manager (E) | NHPC | 9002038325 | SumanDutta@nhpc.nic.in | Suman Dutta |
| 52 | Mithun Gayen | Dy. Manager | POWERGRID | 9007691056 | mithun.gayen@powergrid.in | Mithun Gayen |
| 53 | A.K. Sahu | Ch. Manager | POWERGRID | 9437962180 | ajaya.sahu@powergrid.in | A.K. Sahu |
| 54 | Sudeep Kumar | Ch. Manager | - do - | 9431820338 | Sudeepkumar@powergrid.in | Sudeep Kumar |
| 55 | Sudhakar Pradhan | S.E (EHV) | Power Deptt, GOC | 9593988388 | pradhan.sudhakar@poco.co.in | Sudhakar Pradhan |
| 56 | Kumar Mamish | Dy. Mgr. | ATL/NKTL | 9334689726 | Kumar.mamish@adani.com | Kumar Mamish |
| 57 | Saurav Sahay | Ch. Manager | ERLDC | 9432013173 | Saurav.Sahay@posoco.in | Saurav Sahay |
| 58 | Chandan Kumar | Ch. Manager (OP) | ERLDC, Posoco | 9869251460 | chandan@posoco.in | Chandan Kumar |
| 59 | Sanjay Kr. Sharma | Senior Manager (E) | NHPC, Teesikar | 9800016796 | sanjaynhpc@nhpc.wc.in | Sanjay Kr. Sharma |
| 60 | Nimish Sheth | COO | DMTCL | 7042879619 | nimish.sheth@sewain | Nimish Sheth |
| 61 | Viral Dholakia | CTO | DMTCL | 9924043167 | viral.dholakia@sewain | Viral Dholakia |

Participants in 196th OCC Meeting

Venue: ERPC Conference Hall, Kolkata

Time: 10:30 Hrs.

Date: 19.10.2022 (Wednesday)

| Sl. No. | Name | Designation | Organisation | Contact No. | E-mail Id | Signature |
|---------|--------------|-------------|--------------|-------------|---------------------------------|-------------|
| 62 | PARTHA GHOSH | Ch. Msr | ER-II | 9434748263 | parthanghosh@poweroid.in | P. Ghosh |
| 63 | A. De. | EE | ERPC | 9681932906 | alix.erpc@gov.in | अली ख |
| 64 | S. KESRIWAL | SE | ERPC | | | S. Kesriwal |
| 65 | S.S. Ghosh | EE | ATL | 8918444162 | sauraja.sankar.ghosh5@gmail.com | S. Ghosh |
| 66 | | | | | | |
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Annexure B.5

196th OCC meeting

19.10.22

Upcoming regulations in 2022

CERC (Ancillary Services) Regulations, 2022

CERC (Deviation Settlement Mechanism and Related Matters) Regulations, 2022

Draft CERC (Indian Electricity Grid Code) Regulations, 2022

Central Electricity Regulatory Commission (Connectivity and General Network Access to the inter-State Transmission System) Regulations, 2022

CERC (Sharing of inter-State transmission charges and losses) Regulations, 2020(First Amendment)

Implementation date of Ancillary Regulation-2022

Secondary Reserve
Ancillary Service-

05th December'2022

Tertiary Reserve
Ancillary Service-

01st February'2023

Detailed procedure on the operational aspects of SRAS

- Specifying the roles and methodology to be followed for the operational aspects of procurement, deployment and payment of SRAS.
- Applicable to the Nodal Agency (NLDC), RLDCs, SLDCs, RPCs, CTUIL, Communication Providers, and SRAS Providers

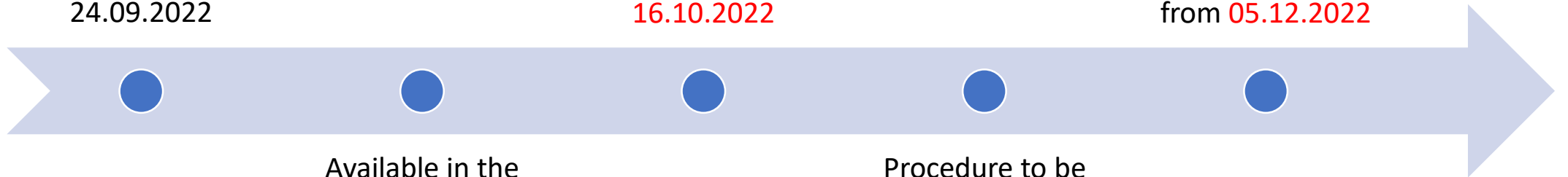
Formulated by
NLDC and
circulated to
stakeholders on
24.09.2022

Last date for
comment
16.10.2022

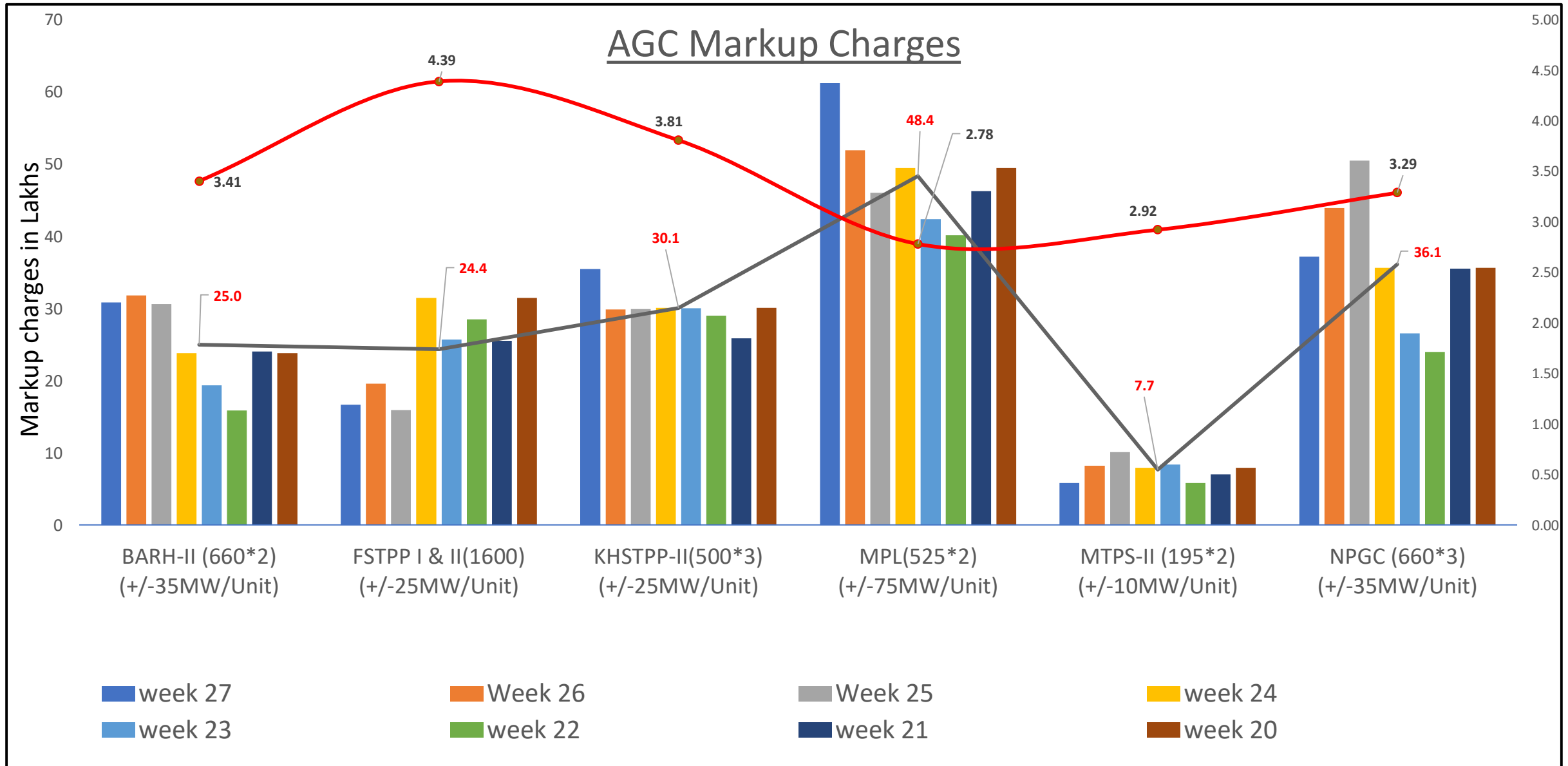
SRAS going to be
implemented
from 05.12.2022

Available in the
link
[https://posoco.in/
documents/consu
ltation-papers/](https://posoco.in/documents/consultation-papers/)

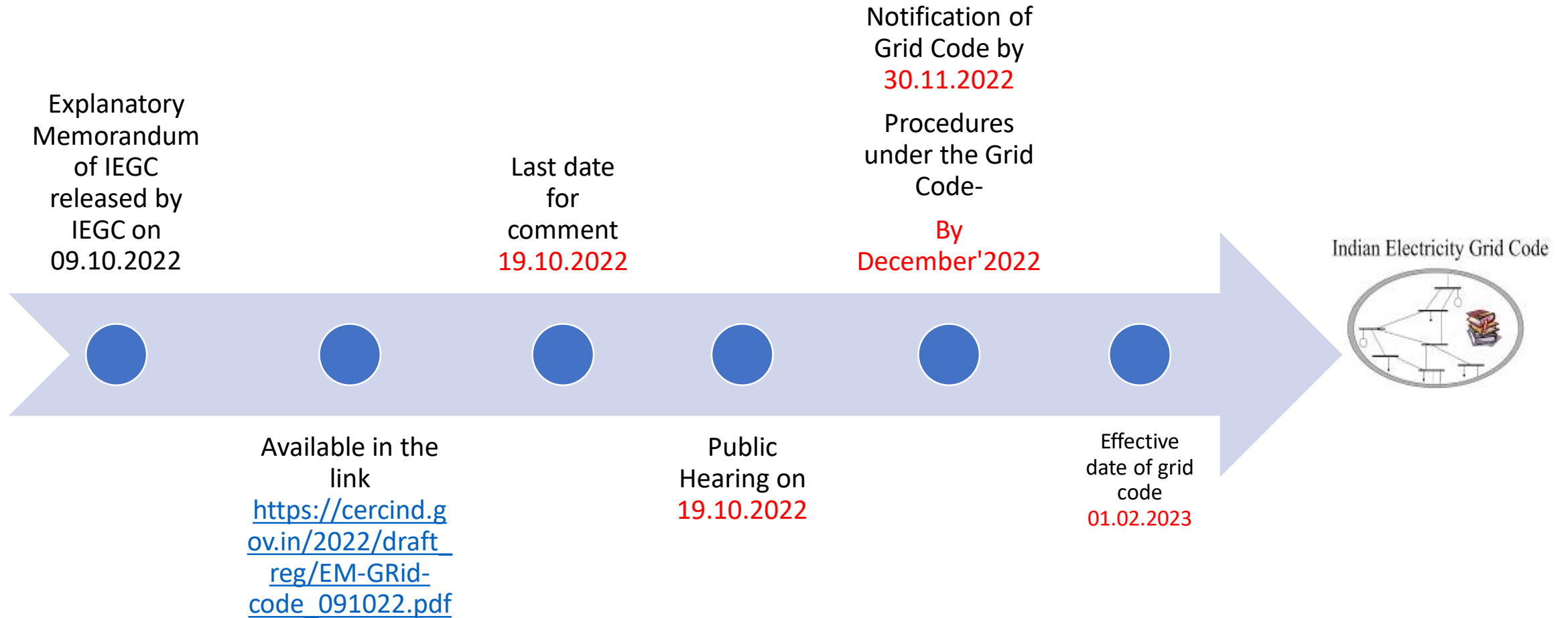
Procedure to be
finalized by
30.10.2022



Earning of incentive through AGC



Indian Electricity Grid Code (IEGC)



Indian Electricity Grid Code (IEGC)- PROCEDURE DRAFTING REQUIREMENTS

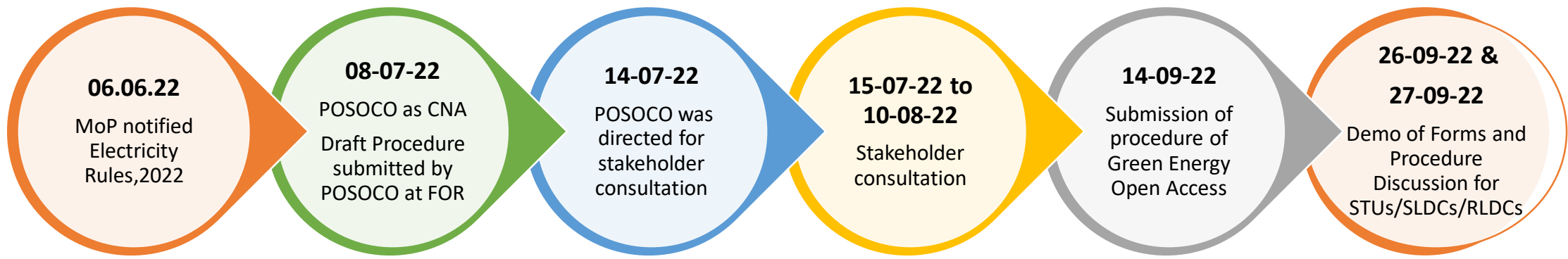
| Entity | Drafting Responsibilities | Regulation No. | Remarks |
|--------|--|--|--|
| NLDC | Detailed procedure covering modalities for first time energization and integration of new or modified power system elements | Connection Code Regulation No. 8(2) | Existing, to be reviewed in line with IEGC |
| | Operating procedure | Operating Code: Regulation No. 28(3) | Existing, to be reviewed in line with IEGC |
| | Quantum of secondary/tertiary reserves | Operating Code: Regulation No. 30 (11) (n), 30(12)(a) | Commission approval required |
| | Assessment of secondary / tertiary reserves | Operating Code Regulation No. 30 (11)(p) , 30(12)(d) | Commission approval required |
| | Procedure for operational planning analysis, real-time monitoring, real-time assessments and format for data submission and updating | Operating Code: Regulation No. 31 (1)(c) | Existing, to be reviewed in line with IEGC |
| | Template for Restoration Procedure | Operating Code: Regulation No. 34 (1) | Existing, to be reviewed in line with IEGC |
| RLDC | Operating procedure | Operating Code: Regulation No. 28(4) | Existing, to be reviewed in line with IEGC |
| | Procedure for operational planning analysis, real-time monitoring, real-time assessments and format for data submission and updating | Operating Code: Regulation No. 31 (1)(c) | Existing, to be reviewed in line with IEGC |
| | Restoration Procedure | Operating Code: Regulation No. 34 (1) | Existing, to be reviewed in line with IEGC |

Indian Electricity Grid Code (IEGC)- PROCEDURE DRAFTING REQUIREMENTS

| Entity | Drafting Responsibilities | Regulation No. | Remarks |
|--------------------------------------|---|--|---------|
| SLDC | Detailed procedure covering modalities for first time energization and integration of new or modified power system elements | Connection Code Regulation No. 8(4) | - |
| | Operating procedure | Operating Code: Regulation No. 28(5) | - |
| | Restoration Procedure | Operating Code: Regulation No. 34 (1) | - |
| Governing board of certifying agency | Periodic capacity building, certification and recertification for system operators at NLDC, RLDC, SLDC and sub-LDC | Operating Code: Regulation No. 41 | - |

Central Electricity Regulatory Commission (Connectivity and General Network Access to the inter-State Transmission System) Regulations, 2022

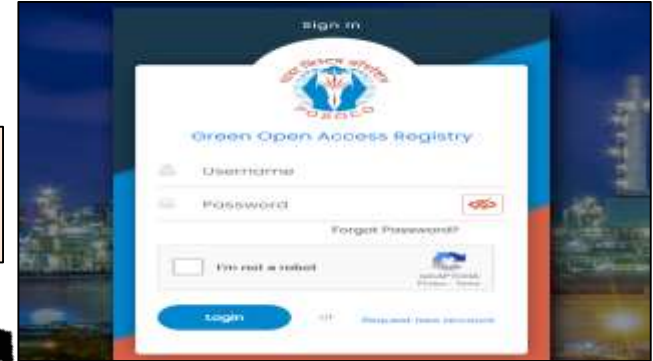
| Clause/ Part to be implemented | Effective date of Implementation |
|---|---|
| Offer of Transition by the CTU to the entities applied/granted Connectivity/LTA/MTOA as per the Connectivity Regulations 2009 | 15 th October, 2022 |
| Entities to give their consent on Transition | 15 th November, 2022 |
| CTU to inform details of Bank Guarantee (BGs) | 30 th November, 2022 |
| Acceptance of new application as per GNA regulations | 1 st December 2022 |
| Entities to submit the BGs for transition | 31 st January, 2023 |
| Actual Effectiveness of the GNA in practice for Transition Cases | 1 st February, 2023 |
| Detailed Procedures on T-GNA as required under GNA Regulations, 2022 posted on POSOCO website | Last date of comment 28 th October, 2022 |
| Implementation of TGNA | 1 st February, 2023 |



Key Aspects of Green Energy Open Access:

- Transaction limit reduced to 100 kW
- SLDC Nodal agency for Green STOA in state
- STU Nodal agency for Long term Green Open Access in state
- Respective state softwares to be integrated with GOAR portal
- Easy access to Renewable Energy Power
- Discoms obligated to procure and supply green power
- Overall open access grant process streamlined

greenopenaccess.in
Portal Link



GOAR portal login page



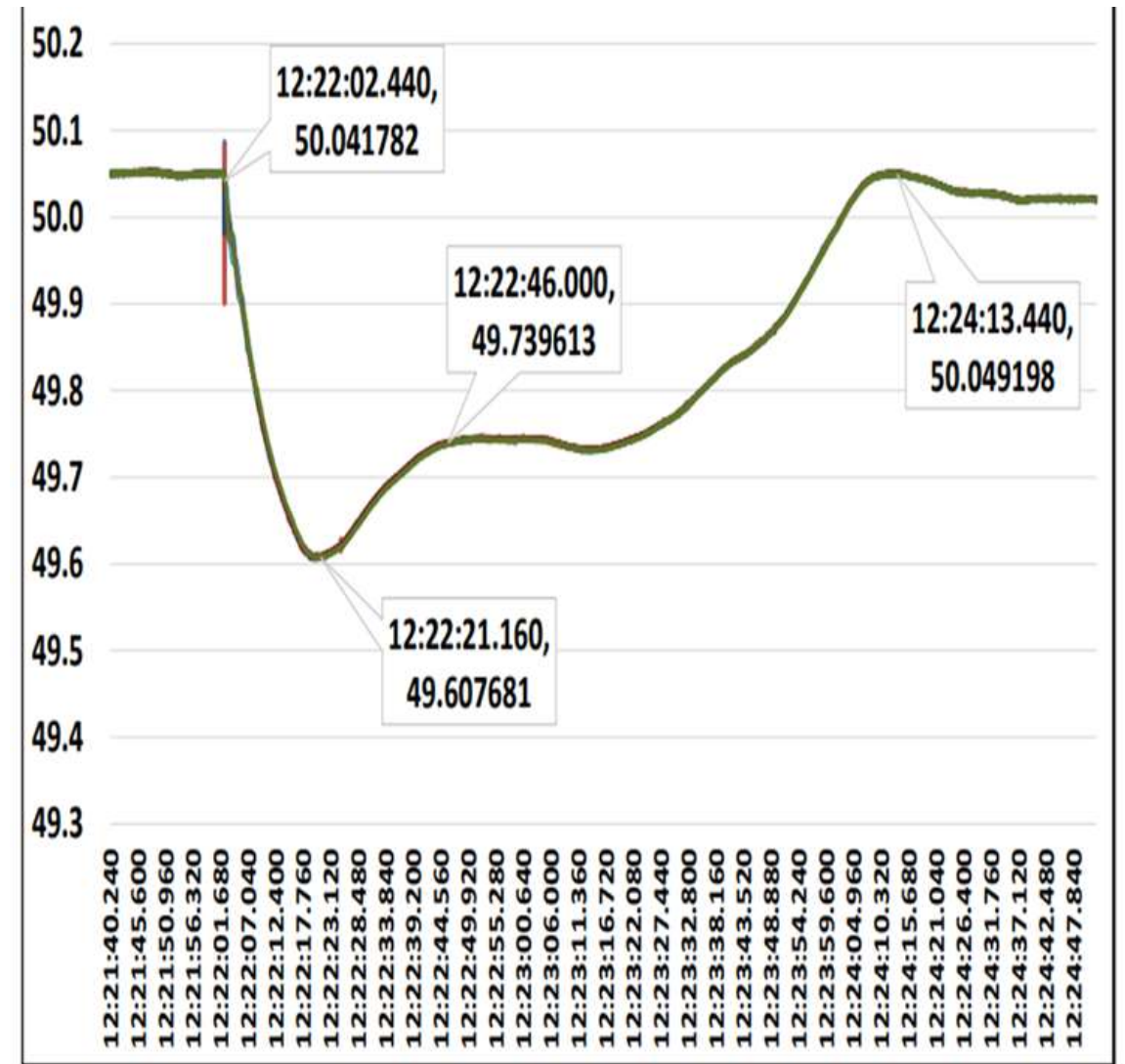
Timeline of other regulations

| Clause/ Part to be implemented | Effective date of Implementation |
|---|---|
| CERC (Deviation Settlement Mechanism and Related Matters) Regulations, 2022 (hereafter, DSM Regulations) | 05th December'2022 |

| CERC (Sharing of inter-State transmission charges and losses) Regulations,2020(First Amendment)) | |
|--|--------------------------------------|
| Finalization of "CERC (Sharing of inter-State transmission charges and losses) Regulations,2020(First Amendment)" | 30th November 2022 |
| Revised procedure under Sharing Regulation to be issued by NLDC | 31st December,2022 |

3800 MW Generation loss event on 11.09.2022

- **Date and time of event :**
11.09.2022 at 12:22 hrs.
- **Event :**
 1. 220 kV Bhadla – CSP Jodhpur tripped due to phase to phase fault.
 2. Renewable generation loss of around 3800 MW at Fatehgarh & Bhadla complex in NR due to low voltage
- **Generation loss=3800 MW**
- **Frequency change= 0.301 Hz**



FRC of Eastern Region

| S No | Particulars | Dimension | Bihar | Jharkhand | DVC | OPTCL | WB | SIKKIM | ER-IR total |
|------|---|-----------|--------|-----------|--------|--------|--------|--------|-------------|
| 1 | Actual Net Interchange before the Event (12:21:50) | MW | 4407 | 772 | -1064 | 2452 | 1552 | 49 | -3623 |
| 2 | Actual Net Interchange after the Event (12:23:20) | MW | 4341 | 767 | -1186 | 2455 | 1483 | 48 | -4615 |
| 3 | Change in Net Interchange (2 - 1) | MW | -66.1 | -5.2 | -121.5 | 2.9 | -69.0 | -1.0 | -991.4 |
| 4 | Generation Loss (+) / Load Throw off (-) during the Event | MW | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 5 | Control Area Response (3 - 4) | MW | -66.1 | -5.2 | -121.5 | 2.9 | -69.0 | -1.0 | -991.4 |
| 6 | Frequency before the Event | HZ | 50.041 | 50.041 | 50.041 | 50.041 | 50.041 | 50.041 | 50.041 |
| 7 | Frequency after the Event | HZ | 49.740 | 49.740 | 49.740 | 49.740 | 49.740 | 49.740 | 49.740 |
| 8a | Change in Frequency (7 - 6) | HZ | -0.30 | -0.30 | -0.30 | -0.30 | -0.30 | -0.30 | -0.30 |
| 8 | Effective change in Frequency considering RGMO * | HZ | -0.30 | -0.30 | -0.30 | -0.30 | -0.30 | -0.30 | -0.30 |
| 9 | Frequency Response Characteristic (5 / 8) | MW/HZ | 220 | 17 | 404 | -10 | 229 | 3 | 3294 |
| 10 | Net System Demand met before the Event | MW | 4727 | 1096 | 2972 | 5514 | 6181 | 51 | 20540 |
| 11 | Internal Generation before the Event (10 - 1) | MW | 320 | 324 | 4036 | 3062 | 4629 | 2 | 24163 |
| 12 | Ideal load response assuming 4% per Hz (0.04*Row 10) | MW/Hz | 189.1 | 43.8 | 118.9 | 220.5 | 247.3 | 2.0 | 821.6 |
| 13 | Ideal generator response assuming 5% droop.....40% per Hz (40% of Row 11) | MW/Hz | 128.0 | 129.5 | 1614.2 | 1224.7 | 1851.6 | 0.7 | 9665.3 |
| 14 | Composite ideal response (12 + 13) | MW/Hz | 317.1 | 173.3 | 1733.1 | 1445.2 | 2098.8 | 2.8 | 10486.9 |
| 15 | Percentage of ideal response {(9/14)x100} | % | 69.2% | 10.0% | 23.3% | -0.7% | 10.9% | 115.4% | 31.4% |

| S. N | Performance* | Grading |
|------|------------------------|---------------|
| i. | $FRP \geq 1$ | Excellent |
| ii. | $0.85 \leq FRP < 1$ | Good |
| iii. | $0.75 \leq FRP < 0.85$ | Average |
| iv. | $0.5 \leq FRP < 0.75$ | Below Average |
| v. | $FRP < 0.5$ | Poor |

The image features a dark blue background on the left side, which includes a large, semi-transparent circle. The right side of the image is white. The text "Thank You" is centered in the white area.

Thank You

| Name of the Plant | Performance in Aug - 22 | Performance in Sep-22 | Comments | Improvement |
|--------------------------|--------------------------------|------------------------------|---|--------------------|
| Mejia | Non-Satisfactory | Non-Satisfactory | Reactive power injection at higher voltages | No improvement |
| Barh | Non-Satisfactory | Non-Satisfactory | Reactive power injection at higher voltages | No improvement |
| BRBCL | Non-Satisfactory | Non-Satisfactory | Reactive power injection at higher voltages | No improvement |
| Sagardighi | Non-Satisfactory | Non-Satisfactory | Reactive power injection at higher voltages | No improvement |
| JITPL | Non-Satisfactory | Non-Satisfactory | Reactive power injection at higher voltages | No improvement |
| MPL | Satisfactory | Satisfactory | - | |
| NPGC | Non-Satisfactory | Non-Satisfactory | Reactive power injection at higher voltages | No improvement |
| Kahalgaon | Non-Satisfactory | Non-Satisfactory | Reactive power absorption at all voltages | No improvement |
| TSTPS | Satisfactory | Satisfactory | - | |

Annexure-C.3

| POWER SYSTEM DEVELOPMENT FUND | | | | | | | | | | | | | |
|--|-------------|---|--|----------------|---------------------|-----------------------------------|---------------------|--|----------------------|--------------------------|--|--|---|
| Status of the Projects in Eastern Region | | | | | | | | | | | | | |
| Sl No | State | Entity | Name of the scheme | Grant Approved | Grant sanctioned on | 1st Installment grant released on | Completion Schedule | Completion schedule w.r.t date of 1st instalment | Grant availed so far | Under process of release | Total awards amount of placed of till date | Latest status | |
| 1 | Bihar | BSPTCL | Renovation and Upgradation of protection system of substations. (18) | 64.22 | | | 24 | | 56.04 | | 69.195 | 90% grant availed on award cost. | |
| 2 | | | Installation of Capacitor bank in 20 Nos of Grid Sub Station. (74) | 19.40 | | | 24 | | 18.62 | | 21.55 | | |
| | | | Total | 83.10 | | | | | 73.03 | | 90.745 | | |
| 5 | Jharkhand | JUSNL | Renovation & Upgradation of protection system of Jharkhnad. (161) | 138.13 | 15-Nov-17 | 28-Mar-19 | 16 | 28-Jul-20 | 114.68 | 1.01 | 145.674 | Project Completed. | |
| 6 | | | Reliable Communication & data acquisition system upto 132kV Substations ER. (177) | 22.36 | 24-May-19 | | 24 | | | | | | Price bid has been opened. Tender on awarding stage. |
| | | | Total | 160.49 | | | | | 114.68 | | 145.674 | | |
| 7 | Odisha | OPTCL | Renovation and Upgradation of protection system of substations. (08) | 162.50 | 11-May-15 | 22-Mar-16 | 24 | 22-Mar-18 | 46.04 | | 63.31 | Project Completed on Dec-20. Request for release of final 10 % fund has been placed. | |
| 8 | | | Implementation of OPGW based reliable communication at 132 kv and above substations. (128) | 25.61 | 15-Nov-17 | 29-Mar-19 | 36 | 29-Mar-22 | 23.04 | | | 51.22 | 90% grant availed on award cost. Work In Progress |
| 9 | | | Installation of 125 MVAR Bus Reactor along with construction of associated by each at 400kV Grid S/S of Mendhasal, Meramundali & New Duburi for VAR control & stabilisation of system voltage. (179) | 27.23 | 27-Jul-18 | 1-Apr-19 | 18 | 1-Oct-20 | 8.17 | | | 24.5 | 90% grant availed . Rest work in progress |
| 10 | | | Implementation of Automatic Demand Management System (ADMS) in SLDC, Odisha. (196) | 2.93 | 24-May-19 | 19-Feb-20 | 10 | 19-Dec-20 | 0.713 | | | 0.713 | 30% grant availed. Work in Progress. |
| 11 | | | Protection Upgradation and installation os Substation Automatic System (SAS) for seven nos of 220/132/33kV Substations (Balasore, Bidanasi, Budhipadar, Katapali, Narendrapur, New-Bolangir & Paradeep). (209) | 29.56 | 24-May-19 | 13-Feb-20 | 18 | 13-Aug-21 | 8.87 | | | 32.85 | 30% grant availed. Work in Progress. |
| 12 | | OHPCL | Renovation and Upgradation of protection and control system of OHPC. (109) | 22.35 | 22-May-17 | 25-May-18 | 24 | 25-May-20 | 14.94 | | | 21.25 | 90% grant availed on award cost. |
| | | | Total | 270.18 | | | | | 101.35 | | 193.42 | | |
| 14 | West Bengal | WBSETCL | Installation of switchable reactor & shunt capacitor for voltage improvement. (88) | 43.37 | 22-May-17 | 22-Jun-18 | 19 | 22-Jan-20 | 33.07 | | 40.83 | 90% grant availed on award cost. Will get completed by Oct'21 | |
| 15 | | | Renovation & Modernisation of Transmission System. (87) | 70.13 | 22-May-17 | 25-Jun-18 | 25 | 25-Jul-20 | 63.12 | | | 96.44 | 90% grant availed on award cost. Will get completed by Mar'22 |
| 16 | | | Installation of Bus Reactors at different 400kV Substation within the state of West Bengal for reactive power management of the Grid. (210) | 71.74 | 24-May-19 | 23-Oct-19 | 19 | 23-May-21 | 39.3 | | | 45.62 | 30% grant availed on award cost. 04 Nos. of Reactors will be commissioned by December 2021. LoA of the 5th Reactor is yet to be placed. |
| 17 | | | Project for establishment of reliable communication and data acquisition at different substation at WBSWTCL. (222) | 31.19 | 24-May-19 | 23-Oct-19 | 25 | 23-Nov-21 | 3.12 | | | | The tender has been been cancelled for OPGW. Re-tendering has to be done. |
| 18 | | | Implementation of Integated system for Scheduling, Accounting, Metering and Settlement of Transactions (SAMAST) system in West Bengal. (197) | 10.08 | 43910 | | 12 | | | | | | 10% grant not yet requested |
| 19 | | WBPDCL | Renovation and Modernization of 220/ 132 kV STPS switch yard and implementation of Substaion Automation System. (72) | 23.48 | 5-Sep-16 | 18-May-17 | 18 | 18-Nov-18 | 21.13 | | | 32.09 | Project Completed |
| 21 | WBPDCL | Renovation and Modernization of switchyard and related protection system of different power stations (BTSP, BKTPS and KTSP) of WBPDCL (155) | 45.16 | 27-Jul-18 | 27-Mar-19 | 12 | 27-Mar-20 | 34.52 | | | 41.68 | Project Completed. | |
| | | | Total | 295.15 | | | | | 194.26 | | 256.661 | | |

| POWER SYSTEM DEVELOPMENT FUND | | | | | | | | | | | | |
|--|--------|--------------|--|-----------------|---------------------|-----------------------------------|---------------------|--|----------------------|--------------------------|--|----------------------------------|
| Status of the Projects in Eastern Region | | | | | | | | | | | | |
| Sl No | State | Entity | Name of the scheme | Grant Approved | Grant sanctioned on | 1st Installment grant released on | Completion Schedule | Completion schedule w.r.t date of 1st instalment | Grant availed so far | Under process of release | Total awards amount of placed of till date | Latest status |
| 22 | DVC | DVC | Renovation and Upgradation of the protection and control system of Ramgarh Sub Station. (81) | 25.96 | 2-Jan-17 | 31-May-17 | 24 | 31-May-19 | 22.95 | 2.57 | 28.603 | Project Completed. |
| 23 | | | Renovation and Modernization of control and protection system and replacement of equipment at Parulia, Durgapur, Kalyanewari, Giridhi Jamsedpur, Barjora, Burnpur, Dhanbad and Bundwan substation. (106) | 140.50 | 16-May-17 | 14-Dec-17 | 24 | 14-Dec-19 | 102.43 | 0.98 | 127.684 | |
| Total | | | | 166.46 | | | | 125.38 | | 156.287 | | |
| 24 | Sikkim | ENPD, Sikkim | Drawing of optical ground wire (OPGW) cables on existing 132kV & 66kV transmission lines and integration of leftover substations with State Load Despatch Centre, Sikkim. (173) | 10.00 | 24-May-19 | | 18 | | 3.00 | | 20 | 30% grant availed on award cost |
| Total | | | | 10.00 | | | | | 3.00 | | 20.00 | |
| 26 | ERPC | ERPC | Creation and Maintenance of web based protection database management. (67) | 20.00 | 17-Mar-16 | 28-Jun-16 | 18 | 28-Dec-17 | 14.83 | | 16.48 | Project Completed |
| 27 | | | Study Programme on power trading at NORD POOL Academy for Power System Engineers of Eastern Region. (122) | 5.46 | 27-Jul-18 | 27-Mar-19 | 13 | 27-Apr-20 | 4.61 | | 5.37 | |
| 28 | | | Traning Program for Power system Engineers of various constituents of Eastern Region. (117) | 0.61 | 27-Jul-18 | 11-Apr-19 | 24 | 11-Apr-21 | 0.54 | | 0.60888 | 90% grant availed on award cost. |
| Total | | | | 26.07 | | | | | 19.98 | | 22.45888 | |
| GrandTotal | | | | 1,011.46 | | | | | 631.68 | | 885.25 | |

Annexure-C.5

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 | August'21 | Testing completed for Unit 1 |
| 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 | - | Postponed due to some technical issue |
| 26 | | 2 | | |
| 27 | GMR | 1 | August'21 | Testing Completed |
| 28 | | 2 | | |
| 29 | | 3 | | |
| 30 | JITPL | 1 | August'21 | Scheduled |
| 31 | | 2 | | |
| 32 | | 3 | | |
| 33 | NPGCL | 1 | August'21 | Testing Completed |

| | | | | |
|----|-------|-------|-----------------------------------|-------------------|
| 34 | BRBCL | | 1 st Week of August'21 | Testing Completed |
| 35 | APNRL | 1&2 | July'21-August-21 | Testing Completed |
| 36 | BBGS | 1,2&3 | 26th Feb 22 - 3rd Mar 22 | Scheduled |

| Power Plant | Unit No | PSS tuned (Yes/No) | PSS in Service (Yes/No) | Last PSS Tuning Date | Whether Done in Last 3 Years | Whether Next to be planned | Planned Next PSS Tuning |
|--------------------|---------|--------------------|-------------------------|---------------------------|------------------------------|----------------------------|---|
| West Bengal | | | | | | | |
| Kolaghat-WBPDCL | 3 | No | Yes | Long Back | No | Yes | To be done within Jan./Feb. 2022 after DAVR replacement. |
| Bakreshwar-WBPDCL | 2 | Yes | Yes | 2019 | Yes | Yes | PSS tuning to be done during Unit O/H in the month of November-December, 2021 |
| Bakreshwar-WBPDCL | 4 | Yes | Yes | 2019 | Yes | Yes | BHEL offer received. PSS tuning to be done within Nov. , 2021 |
| Bakreshwar-WBPDCL | 5 | Yes | Yes | 2019 | Yes | Yes | BHEL offer received. PSS tuning to be done within Nov. , 2021 |
| PPSP | 1 | No | Yes | 2009 | No | Yes | Dec-21 |
| PPSP | 2 | No | Yes | 2009 | No | Yes | Dec-21 |
| PPSP | 3 | No | Yes | 2009 | No | Yes | Dec-21 |
| PPSP | 4 | No | Yes | 2009 | No | Yes | Dec-21 |
| TLDP III | 4 x 33 | | | No Detail | No Detail | Yes | To be updated by WBSEDCL |
| TLDP IV | 4 X 44 | | | No Detail | No Detail | Yes | To be updated by WBSEDCL |
| DVC | | | | | | | |
| Raghunathpur-DVC | 1 | No | No | | No Detail | Yes | Will be done after AOH |
| Raghunathpur-DVC | 2 | No | No | | No Detail | Yes | Jun-21 |
| Waria | 4 | Yes | Yes | 2008 | No | Yes | Unit Is out of Service |
| ISGS | | | | | | | |
| Kahalgaon NTPC | 1 | Yes | Yes | 2017 | Yes | Yes | Apr-21 |
| Kahalgaon NTPC | 3 | Yes | Yes | 2016 | Yes | Yes | Jul-21 |
| Kahalgaon NTPC | 4 | Yes | Yes | 2015 | No | Yes | Mar-21 |
| Kahalgaon NTPC | 6 | Yes | Yes | 2009 | No | Yes | Mar-21 |
| Talcher Stage 2 | 3 | Yes | Yes | 2016 | Yes | Yes | Nov-21 |
| Talcher Stage 2 | 4 | Yes | Yes | No Details | No Details | Yes | Nov-21 |
| Talcher Stage 2 | 5 | Yes | Yes | No Details | No Details | Yes | Nov-21 |
| Talcher Stage 2 | 6 | Yes | Yes | 2016 | Yes | Yes | Nov-21 |
| Barh NTPC | 1 | | | | | | |
| Barh NTPC | 4 | | | 2015 | | Yes | In Next AOH |
| Barh NTPC | 5 | | | During Unit commissioning | | Yes | June 2021 (AOH) |
| Teesta V | 1 | Yes | Yes | 2008 | No | Yes | Nov-21 |
| Teesta V | 2 | Yes | Yes | 2008 | No | Yes | Nov-21 |
| Teesta V | 3 | Yes | Yes | 2008 | No | Yes | Nov-21 |
| BRBCL | 2 | Yes | Yes | 2019 | Yes | Yes | Jun-21 |

| | | | | | | | |
|------------------|-----------|-----|-----|---------------|-----|-----|-------------------------|
| BRBCL | 3 | No | Yes | Vendor to Do | No | Yes | Jun-21 |
| BRBCL | 4 | No | Yes | Vendor to Do | No | Yes | To be updated |
| KBUNL | 1 | Yes | Yes | 2014 | No | Yes | 2021-22 |
| KBUNL | 2 | Yes | Yes | 2014 | No | Yes | 2021-22 |
| Rangit | 3 x 20 | | | Not Available | No | Yes | To be updated by NHPC |
| IPP | | | | | | | |
| ADHUNIK | 1 | Yes | YES | 2013 | No | Yes | Mar-21 |
| ADHUNIK | 2 | Yes | YES | 2013 | No | Yes | Mar-21 |
| JITPL | 1 | Yes | Yes | 2016 | Yes | Yes | Jul-21 |
| JITPL | 2 | Yes | Yes | 2016 | Yes | Yes | Jul-21 |
| GMR | 1 | Yes | Yes | 2013 | No | Yes | Dec-21 |
| GMR | 2 | Yes | Yes | 2013 | No | Yes | Dec-21 |
| GMR | 3 | Yes | Yes | 2013 | No | Yes | Dec-21 |
| Orissa | | | | | | | |
| IB TPS | 1 | Yes | Yes | 2011 | No | Yes | Mar'2021 |
| IB TPS | 2 | Yes | Yes | 2012 | No | Yes | Mar'2021 |
| Upper Indravati | 1 | Yes | No | 2015 | No | Yes | To be updated by OHPC |
| Upper Indravati | 2 | Yes | No | 2015 | No | Yes | To be updated by OHPC |
| Upper Indravati | 3 | Yes | No | 2000 | No | Yes | To be updated by OHPC |
| Upper Indravati | 4 | Yes | No | 2001 | No | Yes | To be updated by OHPC |
| Balimela | 1 (60 MW) | | | No detail | | Yes | To be updated by OHPC |
| Balimela | 2 (60 MW) | | | No detail | | Yes | To be updated by OHPC |
| Balimela | 3 (60 MW) | No | No | Not tuned | No | Yes | To be updated by OHPC |
| Balimela | 4 (60 MW) | No | No | Not tuned | No | Yes | To be updated by OHPC |
| Balimela | 5 (60 MW) | No | No | Not tuned | No | Yes | To be updated by OHPC |
| Balimela | 6 (60 MW) | No | No | Not tuned | No | Yes | To be updated by OHPC |
| Balimela | 7 (75 MW) | No | No | Not tuned | No | Yes | To be updated by OHPC |
| Balimela | 8 (75 MW) | No | No | Not tuned | No | Yes | To be updated by OHPC |
| Upper Kolab | 1 | Yes | Yes | 2007 | No | Yes | To be updated by OHPC |
| Upper Kolab | 2 | Yes | Yes | 2007 | No | Yes | To be updated by OHPC |
| Upper Kolab | 3 | Yes | Yes | 2007 | No | Yes | To be updated by OHPC |
| Upper Kolab | 4 | Yes | Yes | 2007 | No | Yes | To be updated by OHPC |
| Sterlite | 4 X 600 | | | No detail | | Yes | To be updated by SLDC |
| Jharkhand | | | | | | | |
| Tenughat | 1 | Yes | Yes | 2017 | Yes | Yes | Dec-21 |
| Tenughat | 2 | Yes | Yes | 2017 | Yes | Yes | Dec-21 |
| Subarnrekha | 2 X 65 | | | | | Yes | To be updated |
| Bihar | | | | | | | |
| BTPS | 6 (110) | | | | | Yes | To be updated by BSPGCL |

| | | | | | | | |
|---------------|---------|----|-----|------|----|-----|-------------------------|
| BTPS | 7 (110) | | | | | Yes | To be updated by BSPGCL |
| BTPS | 8 | | | | | Yes | To be updated by BSPGCL |
| BTPS | 9 | | | | | Yes | To be updated by BSPGCL |
| Bhutan | | | | | | | |
| Tala | 1 | No | Yes | | | Yes | To be updated by BPC |
| Tala | 2 | No | Yes | | | Yes | To be updated by BPC |
| Tala | 3 | No | Yes | | | Yes | To be updated by BPC |
| Tala | 4 | No | Yes | | | Yes | To be updated by BPC |
| Tala | 5 | No | Yes | | | Yes | To be updated by BPC |
| Tala | 6 | No | Yes | | | Yes | To be updated by BPC |
| Chukha | 1 | No | Yes | 2005 | No | Yes | To be updated by BPC |
| Chukha | 2 | No | Yes | 2005 | No | Yes | To be updated by BPC |
| Chukha | 3 | No | Yes | 2005 | No | Yes | To be updated by BPC |
| Chukha | 4 | No | Yes | 2005 | No | Yes | To be updated by BPC |
| Mangdechu | 1 | No | Yes | | | Yes | Sep-21 |
| Mangdechu | 2 | No | Yes | | | Yes | Sep-21 |

Anticipated Peak Demand (in MW) of ER & its constituents for November 2022

| 1 | BIHAR | Demand (MW) | Energy Requirement (MU) |
|------------|--|-------------|-------------------------|
| | NET MAX DEMAND | 5250 | 2345 |
| | NET POWER AVAILABILITY- Own Sources | 500 | 187 |
| | Central Sector+Bi-Lateral | 5600 | 2724 |
| | SURPLUS(+)/DEFICIT(-) | 850 | 567 |
| 2 | JHARKHAND | | |
| | NET MAXIMUM DEMAND | 1670 | 900 |
| | NET POWER AVAILABILITY- Own Source | 418 | 163 |
| | Central Sector+Bi-Lateral+IPP | 1081 | 555 |
| | SURPLUS(+)/DEFICIT(-) | -171 | -182 |
| 3 | DVC | | |
| | NET MAXIMUM DEMAND | 3050 | 1935 |
| | NET POWER AVAILABILITY- Own Source | 5000 | 2580 |
| | Central Sector+MPL | 300 | 206 |
| | Bi- lateral export by DVC | 2200 | 1440 |
| | SURPLUS(+)/DEFICIT(-) AFTER EXPORT | 50 | -589 |
| 4 | ODISHA | | |
| | NET MAXIMUM DEMAND (OWN) | 4400 | 2628 |
| | NET MAXIMUM DEMAND (In Case of CPP Drawal) | 5550 | 3100 |
| | NET POWER AVAILABILITY- Own Source | 3033 | 1731 |
| | Central Sector | 1771 | 1085 |
| | SURPLUS(+)/DEFICIT(-) (OWN) | 404 | 188 |
| | SURPLUS(+)/DEFICIT(-) (In Case, 600 MW CPP Drawal) | -746 | -284 |
| 5 | WEST BENGAL | | |
| 5.1 | WBSEDCL | | |
| | NET MAXIMUM DEMAND | 5660 | 2830 |
| | NET MAXIMUM DEMAND (Incl. Sikkim) | 5665 | 2837 |
| | NET POWER AVAILABILITY- Own Source (Incl. DPL) | 4360 | 2207 |
| | Central Sector+Bi-lateral+IPP&CPP+TLDP | 2108 | 1093 |
| | EXPORT (To SIKKIM) | 5 | 7 |
| | SURPLUS(+)/DEFICIT(-) AFTER EXPORT | 803 | 463 |
| 5.2 | CESC | | |
| | NET MAXIMUM DEMAND | 1750 | 760 |
| | NET POWER AVAILABILITY- Own Source | 460 | 305 |
| | IMPORT FROM HEL | 540 | 366 |
| | TOTAL AVAILABILITY OF CESC | 1000 | 671 |
| | DEFICIT(-) for Import | -750 | -89 |
| | WEST BENGAL (WBSEDCL+CESC+IPCL) | | |
| | (excluding DVC's supply to WBSEDCL's command area) | | |
| | NET MAXIMUM DEMAND | 7410 | 3590 |
| | NET POWER AVAILABILITY- Own Source | 4820 | 2512 |
| | CS SHARE+BILATERAL+IPP/CPP+TLDP+HEL | 2648 | 1459 |
| | SURPLUS(+)/DEFICIT(-) BEFORE WBSEDCL'S EXPORT | 58 | 381 |
| | SURPLUS(+)/DEFICIT(-) AFTER WBSEDCL'S EXPORT | 53 | 374 |
| 6 | SIKKIM | | |
| | NET MAXIMUM DEMAND | 133 | 64 |
| | NET POWER AVAILABILITY- Own Source | 4 | 1 |
| | Central Sector | 191 | 86 |
| | SURPLUS(+)/DEFICIT(-) | 62 | 22 |
| | EASTERN REGION | | |
| | NET MAXIMUM DEMAND | 21483 | 11934 |
| | NET MAXIMUM DEMAND (In Case of CPP Drawal of Odisha) | 22611 | 11462 |
| | BILATERAL EXPORT BY DVC (Incl. Bangladesh) | 2000 | 1440 |
| | EXPORT BY WBSEDCL TO SIKKIM | 5 | 7 |
| | EXPORT TO B'DESH & NEPAL OTHER THAN DVC | 642 | 462 |
| | NET TOTAL POWER AVAILABILITY OF ER | 23166 | 11849 |
| | (INCLUDING CS ALLOCATION +BILATERAL+IPP/CPP+HEL) | | |
| | SURPLUS(+)/DEFICIT(-) | 1678 | 380 |
| | SURPLUS(+)/DEFICIT(-) (In Case, 600 MW CPP Drawal of Odisha) | 550 | -92 |

ANNEXURE D2

| Approved Maintenance Schedule of Thermal Generating Units of ER during 2022-23 in the month of November'2022 | | | | | | | | | | | | |
|--|--------------------|----------|--------------|------------------------------|------------|-------------|-----------------|------------|-------------|-----------------------------------|----------------------------|------------------------------|
| System | Station | Unit No. | Capacity(MW) | Period (as per LGBR 2021-22) | | No. of Days | Approved Period | | No. of Days | Reason | Whether as per LGBR or not | Remarks |
| | | | | From | To | | From | To | | | | |
| WBPDCL | Bakareshwar TPS | 3 | 210 | 23.11.2022 | 01.01.2023 | 40 | 23.11.2022 | 17.12.2022 | 25 | COH | YES | |
| | Bakareshwar TPS | 1 | 210 | 20.11.2022 | 29.11.2022 | 10 | | | | PG Test | NO | NOT Availing |
| | Sagardighi TPS | 4 | 500 | 20.11.2022 | 29.11.2022 | 10 | | | | PG Test | NO | NOT Availing |
| OPGC | IB TPS | 3 | 660 | 01.11.2022 | 25.11.2022 | 25 | 01.11.2022 | 25.11.2022 | 25 | Annual Maintenance | YES | |
| DVC | RTPS | 1 | 600 | 01.12.2022 | 14.01.2023 | 45 | 25.10.2022 | 13.12.2022 | 50 | Annual Maintenance | NO | |
| | Mejia TPS | 4 | 210 | 01.11.2022 | 06.12.2022 | 35 | | | | BOH- Bir RLA, FGD & De-Nox Burner | NO | NOT Availing |
| | Durgapur Steel TPS | 2 | 500 | 01.11.2022 | 06.12.2022 | 35 | | | | BOH, FGD & De-Nox Burner | NO | NOT Availing |
| CESC | Budge-Budge TPS | 1 | 250 | 04.11.2022 | 29.11.2022 | 26 | 04.11.2022 | 29.11.2022 | 26 | Annual maintenance | YES | |
| NTPC | Talcher STPS | 2 | 500 | 01.11.2022 | 15.12.2022 | 45 | | | | COH | NO | Availed S/D in Aug-Sep, 2022 |
| | Farakka STPS | 2 | 200 | 25.12.2022 | 28.01.2023 | 35 | 15.11.2022 | 14.12.2022 | 30 | Annual Maintenance | NO | |
| NPGCL | New Nabinagar STPS | 1 | 660 | 01.11.2022 | 05.12.2022 | 35 | 01.11.2022 | 19.01.2023 | 40 | Boiler Modification | YES | |
| JITPL | JITPL | 1 | 600 | 01.11.2022 | 15.12.2022 | 45 | 01.11.2022 | 15.12.2022 | 45 | COH | YES | |
| GMR | GMR | 1 | 350 | 01.11.2022 | 15.12.2022 | 45 | 19.11.2022 | 13.12.2022 | 25 | COH | YES | |