



**AGENDA
FOR
193rd OCC MEETING**

**Date: 20.07.2022
Eastern Regional Power Committee
14, Golf Club Road, Tollygunge
Kolkata: 700033**

EASTERN REGIONAL POWER COMMITTEE

AGENDA FOR 193RD OCC MEETING TO BE HELD ON 20.07.2022 (WEDNESDAY) AT 10:00 HRS

PART – A

ITEM NO. A.1: Confirmation of Minutes of 192nd OCC Meeting held on 21st June 2022 through MS Teams online platform.

The minutes of 192nd Operation Coordination sub-Committee meeting held on 21.06.2022 was circulated vide letter dated 13.07.2022.

Members may confirm the minutes of 192st OCC meeting.

PART B: ITEMS FOR DISCUSSION

ITEM NO. B.1: Reliability of transmission system for safe and unrestricted evacuation of power from Tala HEP

400kV Tala Binaguri-1 line has been out since 4th June 2021 due to flashover in outdoor cable termination and 400kV Tala Binaguri-2 has been out since 17th March 2022 Fire outbreak at R-Phase of XLPE cable termination at Tala Hydro plant.

It is noted that only two number of 400 kV twin moose lines (thermal limit equals 874 MV A each) for evacuation of Tala generation are in service. The generation of Chukha hydro plant is also indirectly shared by 400kV Tala-Binaguri-3 (via Malbase). Last year the generation from Tala was approx. 1100 MW in the end of May. The generation of complete Tala hydroelectric plant during May -Sep 2021 is enclosed. The high generation was sustained till September end. It is requested to kindly share the anticipated generation from Tala HEP in the ensuing months of June - September 2022.

Under the circumstances, unless the other two 400kV lines from Tala to Binaguri are restored, availability of only two number of 400 kV lines for evacuation of approx. 1100 MW may lead to violation of N-1 reliability criteria. Any contingency involving N-1-1 may cause complete blackout of Tala hydro plant which would eventually lead to spillage of water and loss of generation.

In the 192nd OCC meeting, Bhutan representative submitted that OEM experts had arrived on 16.06.2022 and the consignment shipped from Germany is expected to reach Kolkata by 28.06.2022.

He further submitted that once the materials are received, both the lines are expected to be synchronized by 15.07.2022.

OCC advised Bhutan to expedite the restoration work of both the 400 KV Tala – Binaguri lines.

Bhutan may update the restoration work of 400 KV Tala – Binaguri Lines.

ITEM NO. B.2: Ensuring Reliability of Barauni Generating Station (2X250 MW).

220 kV Barauni TPS (2 X 250 MW) is connected with grid via 220 kV Barauni-Begusarai D/C, 220 kV Barauni-Mokama-Bihar sharif 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 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.

Following major issues emerged during the discussion of events:

1. Non-availability of bus bar protection at 220 kV as well as 132 kV levels at 220/132 kV Begusarai, 220/132 kV Hazipur and 220/132 kV Bihar Sharif substations of BSPTCL
2. Lack of protection coordination causing unwanted tripping during 132 kV faults at the 220/132 kV Begusarai substation. (Non-direction backup protection time setting is lower compared to IDMT characteristics of 220/132 kV ICTs)
3. Equipment failure (Jumper snapping, CT failure) at 220/132 kV Begusarai substation.
4. Concern by NTPC on Load carrying capacity of 220 kV ACSR Zebra conductor for 220 kV Barauni-Begusarai D/C (Limit provided is 175 MW/Ckt) while conductors are rated for 210-220 MW/ckt.
5. Keeping 220 kV Bihar Sharif-Mokama D/C open for loading control on 220 kV Barauni-Begusarai D/C
6. Restoration of 220 kV Barauni-Hajipur one circuit which is out on tower collapse.

Following are the major outcome of the meeting discussion for short-term and long-term measures:

Short term measures

1. Restoration of 220 kV Barauni-Hajipur circuit which is out on tower collapse by **23-25 July 2022 (As per SLDC Bihar)**
2. SLDC to carry out following study
 - a. Condition-1 all 6 outgoing line from BTPS is available
 - i. Check N-1
 - ii. Suggest network reconfiguration required or not
 - iii. Design SPS if required
 - b. Condition-2 220 kV Barauni-Hajipur S/C is out
 - i. Check N-1
 - ii. Suggest network reconfiguration required or not
 - iii. Design SPS if required
3. SLDC to check the possibility of load segregation at 220 kV Begusarai substation to reduce loading on 220 kV Barauni- Begusarai D/C.
4. For any generation reduction requirement for SPS designed by SLDC, NTPC Barauni to check HP-LP bypass scheme and its feasibility.
5. To avoid a total blackout of Barauni NTPC to check and share the feasibility of house load operation.
6. Protection reviews and audit of Begusarai and O&M rectification

Long term measures

1. SLDC to intimate target date for commissioning of 220 kV Saharsha Begusarai D/C.
2. SLDC to carry out study to decide the operating network configuration considering commissioning of 220 kV Saharsha Begusarai D/C.

Members may discuss.

ITEM NO. B.3: Reserve Shutdown (RSD) of ISGS Thermal Units due to Schedule below technical minimum.

In the recent past it has been observed that during solar hours, the beneficiaries of ER thermal ISGS are surrendering power from respective stations. During such period aggregated schedule of thermal ISGS is often falling below aggregated technical minimum (Pattern for last 4 days is attached) and some generators such as BARH Stage-2, FSTPP I & II, KHSTPP I, KHSTPP II, were even getting schedule much below the technical minimum. The details of which has been given in the **Annexure B.3**. In such condition some ISGS including FSTPP I & II had expressed their desire for taking units under reserve shutdown. However, beneficiaries like West Bengal had expressed reservations against taking units under RSD in view of expected increase in demand and also due to the fact that they had been maintaining above 55% requisition i.r.o. FSTPP(I&II).

As during ongoing monsoon season such situation may occur frequently, matter need discussion to find out ways and means for ensuing resource adequacy, meeting demand & system reliability.

Members may discuss.

ITEM NO. B.4: 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.

Utilities are requested to update the spare of ICTs at the state as well as regional level.

ITEM NO. B.5: 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.

OCC advised all the ISTS licensees, SLDC's and Subsidiaries to submit the updated details of

ERS to ERLDC at the earliest.

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)	
		220 kV	42	Budhipadar - 14 nos. (Lindsey)	
				Mancheswar grid - 14Nos. (Lindsey)	
				Chatrapur - 14 nos. (Lindsey)	
2	PGCIL ERTS 1	765 kV -24 sets	24 Sets	GAYA	15 Suspension & 9 Tension tower
		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 level	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)
6	WBSET CL	400 KV	05+05set (for 400kV-6 available, for 220kV-8, for 132kV-10 6 used for Durgapur -asansol line diversion. 4 available	at Arambagh & Gokarno	Details awaited
7	TPTL		Under discussion for MoU with PGCIL	Details awaited	Details awaited
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
			07 towers set ERS structures suitable for Twin Moose Configuration 400 or 220 kV.	Muzaffarpur (Bihar)ER1	
12	Indigrd (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	36 ERS (All engaged)	Details awaited	Details awaited
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

Utilities may update the status.

ITEM NO. B.6: Outage of Important Transmission System.

B6.1. 132kV Sagbari–Melli.

Sikkim vide mail dated 09.06.2021 updated the following status:

- 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.
- 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.
- 3) In loc 116 &117 land owner demanding for intermediate tower and not allowing for us to clear the jungles.
- 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.
- 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.
- 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 felling with payment of compensation. File for approval is being send to conservator of Forest from DFO on 10/6/2021.

In the 191st OCC Meeting, Sikkim representative submitted that the 132 KV Sagbari-Melli line would be charged within 6 months.

In the 192nd OCC meeting, Sikkim representative submitted that no further update is there.

Sikkim may update.

B6.2. 440/220kV 315 MVA ICT 2 at Meramundali:

400KV/220KV 315 MVA ICT 2 at Meramundali tripped on 21-02-2021 due to fire hazard at Meramundali SS. The ICT is under outage since then. Meramundali S/S is serving the important load of the Odisha. Long outage of an ICT at such crucial S/S may hamper the reliability of the Grid.

In the 190th OCC meeting, OPTCL representative submitted that all the erection works had been completed except those of header pipes due to probable mismatch in them. The work would be completed after the new header pipes are received.

Further, two phases of nitrogen purging have been completed and the third is under progress.

The commissioning work would be completed by 15th May 2022.

In the 191st OCC Meeting, OPTCL representative submitted that 4 nos. of matching short pieces are yet to be received from OEM. The work would be completed after the materials are received.

In the 192nd OCC meeting, OPTCL representative submitted that the erection work of short-pieces had been completed. The work is expected to be completed by first week of July 2022.

OPTCL may update.

ITEM NO. B.7: Agenda by Powergrid.

B.7.1. LAN integration of DCU's installed at various SS of ER for SEM data transmission to ERLDC-Cost proposal.

In continuation with agenda B14 of 190th OCC meeting regarding cost approval for further LAN integration of various DCU's installed across various SS of Eastern Region, followings may be noted: -

1. As per original LOA- 40 Locations integrated.
2. As per amendment of LOA- 69 Locations integrated.

TCS has successfully completed all the 109 LAN integration work under scope vide LOA (Ref: ER-II/KOL/CS/I-2446/P-2420/AMEND-II/4374) dated- 05/07/2021. Now, the following 63 locations where LAN setup is present and AMR LAN integration is possible using that channel. Among these 41 locations can be integrated as regular connection through Normal CAT-6 cabling and TCS has agreed to carry out the work on prevailing rate of existing LOA and further 22 locations require additional financial implication in regard to converter and Optical cables. Further 08 locations are yet to provide any information about connectivity but included in totality. Total location count comes to 71. Location details attached separately.

Total Cost Calculation as below, based on TCS's proposal submitted.

Item	Type	Qty	Unit Price	Total Price (INR)
LAN Integration Service at Sub Station**	Services	71	15564	11,05,044.00
Additional Charges for LAN Integration at Kiosk Sites	Services	22	17830	3,92,260.00

Fiber Optical Converters and accessories.	Cable and other	with other	HW Supply	18000	94.50	17,01,000.00
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Total Price: 31,98,304/- INR (without GST).

** Unit price for LAN Integration Service is same as per the existing LOA of AMR Phase-4.

In view of above, it is proposed to provide in-principal approval to POWERGRID such that LOA can be issued for LAN integration to TCS on Single Tender (ST) basis on urgent basis.

In the 191st OCC Meeting, Powergrid representative submitted that few locations in Jharkhand and Sikkim do not have fiber connectivity.

Sikkim representative submitted that fiber connectivity is available at Sagbari.

Jharkhand representative submitted that OPGW installation work is in progress in Chandil and Daltonganj S/s.

GMR representative agreed to provide the port opening details within 5 days.

West Bengal representative submitted that a separate meeting may be convened between the communication departments of WBSETCL, Powergrid, ERLDC and ERPC for further deliberation in this regard.

OCC advised all the states to provide the port opening details to Powergrid at the earliest.

OCC further advised Powergrid to give the status update of LAN integration to ERPC on weekly basis.

OCC gave in-principle approval for the cost proposal of Rs. 31,98,304/- INR (without GST) and referred it to the next Commercial Committee Meeting.

In the 192nd OCC meeting, Powergrid representative submitted that as of 20th June 2022, out of total 180 locations, LAN integration had been completed for 133 locations. Subsequently, LAN integration is being planned for next 23 locations in coming 3 weeks. In the remaining 24 locations work is pending due to non-receipt of port opening details and other issues.

It was informed that the port opening details were received from DMTCL.

In Chuzachen fiber laying work is under progress and LAN integration would be done after completion of work.

Ravangla location of Sikkim has undergrounded cable but due unavailability of end equipment LAN integration is pending.

CESC representative submitted that port opening details would be provided after procurement of media converter for which the order had already been placed.

Bihar representative submitted that in Kudra fiber optic laying work had been completed and terminal equipment work is under progress and the port opening details would be provided within a week.

Jharkhand representative submitted that OPGW is not available in any of the mentioned 9 locations.

NTPC representative submitted that OPGW is not available at Nabinagar location.

OCC advised all the utilities to submit the port opening details, wherever available/applicable, to Powergrid at the earliest. Further, GRIDCO was advised to take up the matter of providing of port opening details with Sterlite.

Powergrid may update.

ITEM NO. B.8: Ensuring N-1 reliability criteria at 400/220 KV Subhashgram (PG) S/s.

400/220 kV Subhashgram (PG) substation is feeding to the major load centers in south Bengal. At present 5 numbers of 400/220 kV ICTs (4x315 MVA+1x500 MVA) having a total transformation capacity of 1760 MVA is installed at Subhashgram. However, total loading through ICTs is crossing 1500 MW on daily basis. It is pertinent to note that N-1 security criteria for ICTs is satisfied till the total drawl remains below 1300 MW. On exceeding the said limit, tripping of a single ICT may overload the four other ICTs which can lead to their cascade tripping, resulting in total black out of Subhashgram (PG) Substation feeding to extensive areas of South-24 parganas and Kolkata (CESC). In addition, 220 KV network connecting Rajarhat, Jeerat, Barasat, Kasba and adjoining stations can possibly trip on overload.

In this regard, a meeting was convened on 10.05.2022 by MS ERPC to discuss on the issue of violation of n-1 reliability criteria for 400/22 kV ICTs at Subhashgram (PG) S/s. In the meeting, it was agreed that an SPS will be implemented at Subhashgram (PG) considering the same load which are identified for 220 kV Subhashgram-EMSS D/C contingency.

In the 191st OCC Meeting, CESC representative submitted that a meeting was convened with Powergrid on 18.05.2022 to finalize the logic of the SPS scheme.

CESC representative submitted that as per the logic, SPS would operate when one of the transformers trips leading to simultaneous overloading of any other transformer. The quantum required for load shedding would be decided by ERLDC control room on real time basis and further intimated to CESC control room.

CESC representative further stated that an IN/OUT Selector Switch will be installed at EMSS for activating/deactivating the SPS Scheme. ERLDC Control Room will advise CESC Control Room for enabling the SPS Scheme when the loading of the ICTs at Subhasgram S/S will not satisfy N-1 Reliability Criterion and the Scheme needs to be disabled by CESC Control Room as per advice from ERLDC Control Room whenever the combined loading of the ICTs comes down within the limit of N-1 Reliability Criterion of the ICTs. This would prevent any unwanted supply interruption in Kolkata city due to maloperation of the scheme following low IR in the secondary circuit and likewise.

ERPC representative was of the view that in case of operation of SPS the load shedding quantum should be triggered automatically instead of manual intervention.

OCC opined that a separate meeting would be convened to finalize the scheme and determine the load shedding quantum.

In this regard, a meeting was convened on 10.06.2022 between ERLDC, POWERGRID ERTS-II and CESC. In the meeting ERLDC proposed that after tripping of any one ICT and overload in the remaining transformer going above 110 % for 5 second then SPS shall operate and requisite load shedding of 200 MW to be done to reduce the loading of other available ICTs immediately within

110% of their rated loading (if required, additional load shed may be done manually to restrict the ICT loading to 100% on instruction from ERLDC).

In the 192nd OCC meeting, CESC representative submitted that the electromechanical backup O/C relays of ICT – 3 & 4 would be replaced by the numerical relays during shutdown of the ICTs.

OCC advised Powergrid to submit the shutdown plan for the said ICTs at the earliest.

Further, OCC advised to implement the SPS scheme finalized as per the meeting held on 10.06.2022.

CESC may update.

ITEM NO. B.9: 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.

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 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.

Some of the correspondences with the photographs of tower condition and record notes of discussion held on dt. 25.06.2020 and dt. 22.10.2021 have been provided at **Annexure B.9**.

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 be affected as stated.

In the 192nd OCC meeting, Vedanta representative submitted that approval for execution of order had been taken from higher authority and the order would be placed in the month of July 2022. Subsequent to that the work would be completed by taking shutdown.

Vedanta may update.

ITEM NO. B.10: Ensuring healthiness of ADMS.

Automatic demand management scheme (ADMS) is already commissioned in West Bengal, DVC and Jharkhand. Logic for ADMS as implemented in these states is as follows.

Sl No	State/Utility	Logic for ADMS operation	Implementation Date	Total Load connected in ADMS logic
1	Jharkhand	System Frequency < 49.9 Hz AND Deviation > 12 % or 25/50/75 MW. Block I, II & III feeders will be selected for load shedding depending on the O/D.	In service from 21st August 2019.	Total 90 MW
2	DVC	F <49.9 Hz AND deviation > 12 % or 150 MW	In service from 17.06.2016.	Total 281 MW
3	West Bengal	F <49.7 AND deviation > 12 % or 150 MW	In service from 25.11.16.	Total 225 MW

ADMS in WB

In the 191st OCC meeting ERLDC intimated that ADMS criteria was satisfied for 38 number of occasions for WB, out of which on 26 no of occasions no relief was observed. Further as desired in the meeting, ERLDC shared the detailed data with WB SLDC vide mail dated 20.05.2022 for analysis from their end. The response from WBSLDC is still awaited. In the month of May, the ADMS criteria satisfied for one occasion which is given below.

Date	Time Period	Frequency	Deviation (MW)
18.05.22	23:08-23:17	49.6	261

However, no information is received regarding operation of ADMS in West Bengal in May-2022 also.

In the 192nd OCC meeting, West Bengal SLDC representative submitted that due to defective multi-functional modules the 33 KV feeders under ADMS scheme did not trip. Also, majority of the 33 KV S/s are having alternating sources. The ADMS primarily being designed in view of the primary source might not have any effect in case the S/s is under secondary source as around 75% of sub-stations were having dual source. Further, planning is being done to bring more number of sub-stations under the purview of ADMS.

He further raised a concern regarding identifying the source of a 33 KV S/s as they are not having any idea about the network or contact with the sub-stations.

In the month of June-22 the ADMS criteria satisfied for the following occasions in West Bengal which is given below.

Date	Time period	Frequency	Deviation
02-06-2022	14:38:00	49.53	293.85
04-06-2022	05:26:00	49.66	322.99
13-06-2022	15:26:00	49.68	336.91
13-06-2022	23:06:00	49.65	323.93

Details of instances where ADMS criteria was satisfied were shared with WBSLDC vide mail dated 13th July 2022. Hence West Bengal is requested to share the details of ADMS operation.

ADMS in Jharkhand

In 191st OCC meeting, Jharkhand representative submitted that ADMS did not operate due to unhealthy communication with some of the sub-stations. OCC advised Jharkhand to take necessary steps in order to ensure healthy communication links. In the month of May-2022 also the criteria for operation of ADMS of Jharkhand were satisfied for around 459 instances from 01.05.2022 to 29.05.2022 but no information received regarding operation of ADMS in Jharkhand.

Jharkhand representative submitted that ADMS could not operate due to non-functioning of RTU. Monitoring of instances is being carried out by M/s Chemtrol for resolving the above issue.

In the month of Jun-2022 also the criteria for operation of ADMS of Jharkhand were satisfied for around 211 instances from 01.06.2022 to 30.06.2022. Details of instances where ADMS criteria was satisfied were shared with Jharkhand SLDC vide mail dated 13th July 2022.

Jharkhand may update the status of ADMS at present.

ADMS in DVC

From 01st May,2022 to 29th May,2022 the criteria for operation of ADMS of DVC satisfied for 27 instances. The instance where the ADMS operation criteria fulfilled for DVC is given below:

Date & Time	Actual	Schedule	Overdraw
10-05-2022 18:31	-1547.6	-1723.58	175.9801025
11-05-2022 23:08	-1703.76	-1862.36	158.5952148
12-05-2022	-979.208	-1688.25	709.0393677

18:36			
12-05-2022			
18:55	-966.517	-1686.62	720.1029663
12-05-2022			
19:15	-969.002	-1685.16	716.1547241
13-05-2022			
16:15	-1549.81	-1754.85	205.0428467
18-05-2022			
00:34	-1545.75	-1717.43	171.6845703
18-05-2022			
14:47	-1152.62	-1588.37	435.7495117
18-05-2022			
15:20	-1099.14	-1682.37	583.2293701
18-05-2022			
19:25	-1171.19	-1388.06	216.8713379
18-05-2022			
20:52	-1233.5	-1460.37	226.8729248
18-05-2022			
21:19	-1129.82	-1484.3	354.4798584
18-05-2022			
22:13	-1197.49	-1491.99	294.503418
19-05-2022			
00:04	-1050.62	-1341.16	290.5428467
19-05-2022			
01:12	-1091.18	-1342.65	251.470459
19-05-2022			
02:17	-1057.03	-1294.08	237.0560303
19-05-2022			
22:34	-1194.79	-1479.35	284.5646973
20-05-2022			
00:25	-1318.74	-1523.04	204.2976074
24-05-2022			
14:56	-515.263	-1246.56	731.2921753
24-05-2022			
15:13	-1386.67	-1588.74	202.0670166
24-05-2022			
15:19	-1439.28	-1675.74	236.46521
25-05-2022			
15:45	-1645.17	-1879.83	234.6580811
26-05-2022			
23:06	-1675.16	-1893.13	217.9715576
27-05-2022			
21:18	-1638.27	-1804.25	165.9812012
27-05-2022			
23:06	-1339.91	-1701.38	361.4691162
28-05-2022			
00:11	-1472.82	-1733.48	260.6611328
28-05-2022			
22:29	-1636.55	-1786.7	150.1556396

However, no information was received from DVC regarding the operation of ADMS. In the 191st OCC meeting, OCC advised DVC to share the SCADA data and simulation report with ERPC and ERLDC. However, the report from DVC is still awaited.

In the 192nd OCC meeting, DVC representative submitted that detailed report of ADMS operation

would be shared within a week.

For the month of June-222 the criteria for operation of ADMS of DVC satisfied for 66 instances. The instance where the ADMS operation criteria fulfilled for DVC has been shared with DVC SLDC vide mail dated 13.07.2022.

DVC is requested to update the status of ADMS at present.

ITEM NO. B.11: 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.

Sl No	State/Utility	Logic for ADMS operation	Implementation status/target
1	Bihar	F <49.7 AND deviation > 12 % or 150 MW	1 st week of May 2022.
2	Odisha	1. System Frequency < 49.9 Hz 2. Odisha over-drawl > 150 MW 3. Discom over-drawl > 40 MW	15 th May 2022.

Bihar and Odisha may share the present status of implementation and share the reason for delay in implementation if any.

Bihar representative submitted that ADMS would be operational by 1st week of May 2022.

In the 191st OCC Meeting, Bihar representative submitted that ADMS would be operational by last week of May 2022.

SLDC Odisha representative submitted that out of 88 stations, work has been completed in 69 stations and is expected to be operational by 24th June 2022.

In the 192nd OCC meeting, SLDC Bihar representative submitted that as per the simulation which was carried out on 26.05.2022 in presence of M/s Chemtrol, it was found that the feeders tripped manually from the remote end but not through the communication for automatic tripping.

Further, consent of DISCOM has been taken for testing of ADMS in the last week of June 2022.

SLDC Odisha representative submitted that the ADMS would be commissioned by the end of June 2022.

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

ITEM NO. B.12: 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 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
* 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.				

DVC may update.

ITEM NO. B.13: 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 DVC Network				
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

Members may update.

ITEM NO. B.14: Islanding Schemes in Eastern Region.

B14.1. Implementation of Islanding Schemes in Eastern Region

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.

I. Patna Islanding Scheme:

In the 45th TCC Meeting, following was decided:

- a) A Technical Committee comprising of the members from BSPTCL, SLDC Bihar, and participating generator, Powergrid, ERLDC and ERPC may be constituted for finalizing the Islanding Scheme.
- b) CESC may also be included in the Committee for any technical expertise.
- c) The Committee may consult OEM/Vendor as and when required for any inputs.
- d) The Committee may submit its report by 15th May'2022. TCC advised the concerned constituents to give their nominations latest by 31st March'2022.

In this regard, ERPC vide letter no. ERPC/Operation/IS/2022/97 dated 18.04.2022 (**Annexure B.14.1**) constituted a Technical Committee based on the nominations received for finalizing Patna Islanding Scheme.

In the 190th OCC meeting, Committee submitted that the first meeting was convened on 19th April 2022 and the second meeting is scheduled to be held by 1st week of May 2022. The report would be submitted by 15th May 2022.

In the 192nd OCC Meeting, OCC advised the committee to submit the report to ERPC.

Committee may update.

II. Ranchi Islanding Scheme:

In the 45th TCC Meeting, following was decided:

- a) A Technical Committee comprising of the members from JUSNL, SLDC Jharkhand, and participating generator, Powergrid, ERLDC and ERPC may be constituted for finalizing the Islanding Scheme.
- b) CESC may also be included in the Committee for any technical expertise.
- c) The Committee may consult OEM/Vendor as and when required for any inputs.
- d) The Committee may submit its report by 15th May'2022. TCC advised the concerned constituents to give their nominations latest by 31st March'2022.

In this regard, ERPC vide letter no. ERPC/Operation/IS/2022/97 dated 18.04.2022 (**Annexure B.14.1**) constituted a Technical Committee based on the nominations received for finalizing Ranchi Islanding Scheme.

In the 190th OCC meeting, Committee submitted that the first meeting was convened on 19th April 2022 and the second meeting is scheduled to be held by 1st week of May 2022. The report would be submitted by 15th May 2022.

In the 192nd OCC Meeting, OCC advised the committee to submit the report to ERPC.

Committee may update.

In addition to above new islanding schemes, the following schemes have already been finalized and under different stage of implementation:

III. Chandrapura Islanding Scheme:

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 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.

➤ The islanding frequency for CTPS-B islanding system was decided as 48.4 Hz.

In the 190th OCC meeting, DVC representative submitted that 3 bids were received which were opened on 18th April 2022. He further submitted that the technical evaluation is under progress and the commercial evaluation would be completed by the end of April 2022.

In the 192nd OCC meeting, DVC representative submitted that the order would be placed by the end of June 2022.

DVC may update.

IV. IB-TPS Islanding Scheme:

The scheme was finalized in the special Meeting on Islanding Scheme of IB-TPS held at ERPC, Kolkata on 12th December 2018.

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.

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.

In the 190th OCC meeting, OPTCL representative submitted that the installation, commissioning, and testing of DTPC at both Budhipadar and OPGC end was completed.

OPGC representative submitted that end to end signal testing and wiring from switchyard to relay panel had been completed. The testing would be done during shutdown or outage of the units.

In the 192nd OCC meeting, OPTCL representative submitted that the testing would be done during shutdown activity.

OPTCL may update.

B15.1. Restoration of 220kV Farraka-Lalmatia S/C line

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.

In 181st OCC Meeting, JUSNL representative submitted that they had got a letter from NTPC on 19th July '21 regarding anti-theft charging of the 220kV Farraka-Lalmatia S/C line at 33kV level. Earlier the antitheft charging of the line was done at 11kV level but incidents of thefts have been reported in some portion of the conductor.

Further, Jharkhand representative requested NTPC to submit the details of the 33kV lines passing below 220kV Farakka-Lalmatia T/L. He added that as per information obtained from their JUSNL Discom part, the 33kV lines are mostly connected with 11kV feeders and due to this it would be difficult to charge the Farakka-Lalmatia line at 33kV level in Pakur area.

NTPC representative informed that they had charged the line up to loc no.241 but in between loc no.76-82 only the top conductor was in charged condition and the bottom rest were not; because of this theft might have happened in that portion. He further added that they had already isolated the section from loc no.76-82, whereas up to loc no.76 the line is in charged Condition and from loc no.82-241 the line needs to be charged.

ERPC advised NTPC and Jharkhand to explore the possibility of antitheft charging at 33kV level first and if that is not feasible then charging at 11kV can be assessed.

In the meeting held on 10th August 2021 by the Hon'ble Secretary, Ministry of Power, Government of India, ECL was directed to handover the FLTS assets on "as is where is basis" to

JUSNL, the Operation and Maintenance whereof as was with the NTPC is also to be transferred to the JUSNL without any further delay and latest by 20th August 2021. Further JUSNL was directed to comply with all other directions of the CERC's order dated 21.07.2020, after the transfer of the FLTS from ECL.

In the 182nd OCC meeting, JUSNL representative submitted that the tripartite agreement for taking over of FLTS as well as O&M of FLTS is in process and the same would be done after getting the consent from the competent authority by 4th week of August'2021.

In the 191st OCC Meeting, JUSNL representative submitted that the order would be placed by 31st May'2022.

In the 192nd OCC meeting, JUSNL representative submitted that the price part was opened on 17.06.2022 and the price was found to be higher than the estimated cost. Decision is being taken in this regard and the order would be placed within 20 days.

JUSNL may update.

ITEM NO. B.16: Residual life assessment of Transmission lines – Powergrid.

POWERGRID ER-II is planning to carry our Residual Life Assessment (RLA) in old transmission line (more than 35 years old line) on sample basis to assess the healthiness of the line. RLA is being planned to be carried out in 220kV D/C Birpara-Binaguri TL commissioned in the year 1986. In RLA POWERGRID shall collect samples of line materials (Like Conductor, Earth wire, hardware Fittings, Tower Parts & foundations) for carrying out testing in Test lab to assess their present condition.

In order to collect samples from the line POWERGRID shall require 2 days shut-down of each ckt as per the following details: -

SL. No.	Name of TL	From Date & Time	To Date & Time	Remarks
1	220kV Birpara-Binaguri Ckt-1	01.07.2022 08:00 Hrs	02.07.2022 16:00 Hrs	ODB
2	220kV Birpara-Binaguri Ckt-2	03.07.2022 08:00 Hrs	04.07.2022 16:00 Hrs	ODB

In the 192nd OCC meeting, Powergrid representative submitted that due to frequent incidents of conductor and earth-wire snapping, shutdown of 220 KV Birpara-Binaguri Ckt-1 & 2 would be required to collect the samples for carrying out the testing.

OCC advised ERLDC to study the feasibility of shutdown of 220 KV Birpara-Binaguri Ckt-1 & 2 as per the schedule mentioned above for collecting the samples for further testing.

Powergrid vide mail dated 13.07.2022 submitted that due to extreme rainfall in North-Bengal during initial days of July Month, most of the towers have got water-logged. In the present situation considering the difficult site condition & keeping in view of the High Hydro Generation during this period they are proposing for re-scheduling of the said shut-down with tentative date by end of October-2022.

This is for kind information.

ITEM NO. B.17: Replacement/Calibration of Special Energy Meters – NTPC Talcher Odisha.

In the 192nd OCC meeting, NTPC Talcher representative requested Powergrid to provide the calibration certificates of 8 nos. of solar meters issued in the year 2020.

OCC advised Powergrid to take up the matter with NTPC Talcher and issue the calibration certificates at the earliest.

NTPC vide letter dated 13.07.2022 submitted that, as per the regulation, Special Energy Meters that are provided in various feeders for commercial purpose needs to be calibrated once in five years. The Calibration of feeders connected to Eastern region at TSTPS premises has been carried out between 19.09.2013 to 04.10.2013. Previously this was also raised many times in OCC meeting of ERPC. After deliberation in 171st OCC meeting, TSTPS received 8 Nos SEM Meters for Solar plant from PGCIL however the calibration certificate is not yet provided.

As per discussion in 192nd OCC meeting, PGCIL has provided the test certificate of the meters,

which may not be accepted as calibration Certificate. Additionally, necessary action may be taken by PGCIL to replace the other (47 Nos) energy meters of TSTPS at the earliest. Requisition of meters from TSTPS is given on 28.05.22 to PGCIL.

Powergrid may update.

ITEM NO. B.18: Updated Operating Procedure of Eastern Region 2022.

As per IEGC 5.1(f) A set of detailed operating procedures for each regional grid shall be developed and maintained by the respective RLDC in consultation with the regional entities for the guidance of the staff of RLDC.

Accordingly, ERLDC has updated the Operating Procedure of the Eastern Region. Draft version of same was circulated with all the utilities of ER vide mail dated 14th July 2022 seeking comments if any by 19th July 2022. The same can also be accessed through the following link

https://app.erlhc.in/Content/Upload/System%20Study/Operating%20Procedure/Draft%20ER%20Operating%20Procedure_Jul-2022-R1.pdf

The major changes are detailed below:

SI No	Changes Made	Reason for Change
1	Short Term Open Access Procedure & Online portal for Short term Open Access Updated	All STOA shifted to NOAR portal wef 1 st -May-2022
2	Link of regional weather summary page updated.	Change in website link
3	Cyber Security Chapter added	New Chapter added as per Cyber security requirement in Control centers
4	List of feeders to be disconnected in case of priority-wise ISTS feeders to be disconnected in case of overdrawal and when the frequency is below 49.4 Hz and no UFR relief has been observed is shown in Annexure 2.6	As per the decision taken in 190 th OCC meeting
5	List of Hot spare unit of Transformer and hot spare unit of Reactor updated	As per information received from utilities
6	Present operating condition of Angul LILLO Bypass Scheme updated	As per operational requirement
7	Closing scheme of Teesta 3-Dikchu circuit during peak hours deleted	Not relevant post-LILO of 400 kV Teesta-III- Kishanganj at Rangpo
8	Standard Operating Procedure for cyclonic event management in the eastern region added	As per CEA report on cyclone resilient Robust electricity transmission and distribution infrastructure in the Coastal areas
9	Annexure updated	As per changes in system where ever applicable

Members may note.

ITEM NO. B.19: Electricity Generation Program for the year 2023-24.

While monitoring the generation performance during the current financial year, CEA has observed that power utilities are facing the problem of loss of generation due to no / low schedule and the losses accounted on other technical and commercial reason.

In this regard, following inputs may kindly be submitted to CEA with a copy to this office as per the enclosed annexures:

- (i) Unit-wise yearly generation (with unit-wise monthly breakup) proposed during the year 2023-24 along with the fuel availability, the anticipated loss of generation on account of various factors such as grid constraint, low schedule/Reserve shutdown due to high cost, coal/lignite quality etc., if any **(Annexure-B.19.1 (Point No. 1 to 5))**.
- (ii) Details of Power Purchase Agreement (PPA) with various Discoms, Traders, States, etc. (Details may be furnished in MW capacity tied up with each party) for long, Medium and short term and expected generation for the next year **(Annexure-B.19.1 (Point No. 6))**.
- (iii) The details of coal linkage from coal agencies and availability of secondary fuel oil/liquid fuel **(Annexure-B.19.1 (point No. 7 (a) and (b)))**.
- (iv) Unit-wise cost of generation and rate of sale of Power **(Annexure-B.19.1 (Point No. 8))**.
- (v) Details of Unit-wise schedule of planned Maintenance as approved by the respective RPCs (Reginal Power Committees), and unit-wise R&M planned to be carried out during 2023-24 (in MS Excel format). The same may also be appropriately considered while furnishing expected generation **(Annexure-B.19.2)**.
- (vi) Details of Unit-wise schedule of planned and actual maintenance during remaining period of the year 2022-23 **(Annexure-B.19.3)**.
- (vii) Month-wise anticipated energy requirement of the State of Eastern Region for the year 2023-24.

The above information may please be furnished at the email

IDs: ceopm-cea@gov.in; targetopmcea@gmail.com

Members may note.

ITEM NO. B.20: Generating Companies to furnish Daily/Monthly Generation and outages data online at National Power Portal (NPP).

As per the relevant provisions of The Electricity Act, 2003, CEA is entrusted with the responsibility to collect, compile & record the data concerning the generation of power and publish various reports like Daily Generation Report, Monthly Generation Report, PLF report, etc. All these reports need to be prepared based on the information furnished by various generating stations/utilities on daily, monthly and yearly basis in a time bound manner.

To enable various Generating companies to submit the aforesaid generation data online, Login IDs and Passwords for the NPP Portal have already issued to the Nodal Officers nominated by

the respective Generating companies. Most of the generating Companies have been submitting the generation data online, however, many of the Generating companies have still not switched over to online mode of submission of generation data leading to delay in preparation/issuance of related reports.

The list of the plants which have not furnished data on the NPP portal even for a single day in the month of June, 2022 is given below:

S.NO.	SECTOR	STATE	UTILITY	STATION TYPE	STATION
1	CENTRAL SECTOR	Jharkhand	DVC	THERMAL	BOKARO TPS 'A' EXP
2		West Bengal	DVC	THERMAL	DURGAPUR TPS
3	IPP SECTOR	Odisha	ICCL	THERMAL	ICCL IMP
4		Odisha	NALCO	THERMAL	NALCO IMP
5		Odisha	VEDANTA	THERMAL	VEDANTA TPP
6	STATE SECTOR	Jharkhand	JUUNL	HYDRO	SUBERNREKHA-I HPS
7		Jharkhand	JUUNL	HYDRO	SUBERNREKHA-II HPS
8		Odisha	APGENCO	HYDRO	MACHKUND HPS
9		Odisha	OHPC	HYDRO	BALIMELA HPS
10		Odisha	OHPC	HYDRO	CHIPLIMA HPS
11		Odisha	OHPC	HYDRO	HIRAKUD HPS
12		Odisha	OHPC	HYDRO	RENGALI HPS
13		Odisha	OHPC	HYDRO	UPPER INDRAVATI HPS
14		Odisha	OHPC	HYDRO	UPPER KOLAB HPS
15		West Bengal	WBSEDCL	HYDRO	PURULIA PSS HPS

Members may note.

ITEM NO. B.21: Flexible Operation of Thermal Power Plants

In accordance with the Section 177 of the Electricity Act, 2003, the Central Electricity Authority (CEA), proposes to notify the draft Central Electricity Authority (Flexible operation of thermal power plants) Regulations, 2022. The proposed draft regulations are available on the CEA Website www.cea.nic.in for inviting public comments and also provided at **Annexure B.21**. The Regulations can also be inspected in the office of Chief Engineer (Legal), Sewa Bhawan (North Wing), Room No. 622, 6th Floor, R. K. Puram, New Delhi-110066 on any working day till 26th August, 2022 between 1100 hrs. to 1600 hrs.

All the Stakeholders including the public are requested to send their comments on the draft regulations to Chief Engineer (Legal), Sewa Bhawan (North Wing), Room No. 622, 6th Floor, R. K. Puram, New Delhi-110066 by post or through e-mail (celegal-cea@gov.in) latest by 26th August, 2022.

Members may discuss/note.

PART C: ITEMS FOR UPDATE

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

The average and maximum consumption of Eastern Region and Max/Min Demand (MW), Energy Export for the month June-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)
538.57	564.8 MU 08-06-2022	26096 MW, 27-06-2022 22:24 Hrs.	18362 MW, 19-06-2022 at 18:09 Hrs.	3828	3621

ERLDC may highlight the performance of the ER grid.

ITEM NO. C.2: 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.2**.

187th OCC advised all the utilities to update the status of project to the ERPC Secretariat.

In the 192nd meeting, OCC advised all the utilities to update the status of PSDF projects if any to ERPC Secretariat at the earliest.

Respective utilities may update.

ITEM NO. C.3: 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.

ITEM NO. C.4: Primary Frequency Response Testing of ISGS Generating Units
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In the 180th OCC meeting, ERLDC representative informed that as per communication received form 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.4**.

In the 192nd OCC meeting, OCC advised all the members to update the status of PFR testing to ERPC and ERLDC.

Members may update.

ITEM NO. C.5: 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.

WBPDC representative informed that they will place the order in the month 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.

In the 192nd OCC meeting, OCC advised all the state generating units to update the status of PFR testing to ERPC and ERLDC at the earliest.

Generating units may update.

ITEM NO. C.6: 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.6**.

In the 192nd OCC meeting, OCC advised all the generators to update the status of PSS tuning to ERPC and ERLDC.

Generators may update.

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

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

Members may update.

ITEM NO. C.8: 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.

ITEM NO. C.9: Latest Status of States ATC/TTC declared by States for the month of August-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 **August-2022** are as follows:

Sl No	State/Utility	TTC (MW)		RM(MW)		ATC Import (MW)		Remark
		Import	Export	Import	Export	Import	Export	
1	BSPTCL	7050	--		--	6909	--	Aug-22
2	JUSNL	1611	--	53	--	1588	--	Aug-22
3	DVC	1998	3368	62	51	1932	3317	Aug-22
4	OPTCL	3731	1693	136	62	3595	1631	Aug-22
5	WBSETCL	5850	--	450	--	5400	--	Aug-22
6	Sikkim	170	--	2.18	--	167.82	--	May-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						
Aug-22	Submitted	Submitted	Submitted	Submitted	Submitted	Pending
Sep-22	Submitted	Submitted	Submitted	Pending	Submitted	Pending
Oct-22	Pending	Pending	Pending	Pending	Submitted	Pending
Nov-22	Pending	Pending	Pending	Pending	Pending	Pending

Declaration of TTC/ATC on SLDC Website:

Sl 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/atctcmenu.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.

It is observed that from Odisha and Sikkim submission of ATC/TTC and base case are not regular. All the states are once again requested to share ATC/TTC in timely manner.

Further it is noted that ATC declared by Bihar SLDC is much lower than the allocation given to them. While schedule as well as actual interchange Odisha violated its ATC in the month of June-2022.

In the 192nd OCC meeting, ERLDC representative submitted that the ATC/TTC figures declared by Bihar was much below their allocation.

Further it is noted that ATC declared by Bihar SLDC is much lower than the allocation given to them. While schedule as well as actual interchange Odisha violated its ATC in the month of June-2022.

ITEM NO. C.10: Mock Black start exercises in Eastern Region

Mock black start date for financial year is as follows:

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		Jan-2023	
2	Balimela	July-2022		Feb-2023	
3	Rengali	June-2022	27-June-2022	Jan-2023	
4	Burla	July-2022	23-June-2022	Feb-2023	
5	U. Indravati	May-2022	25-May-2022	Jan-2023	
6	Maithon	June-2022		Feb-2023	
7	TLDP-III	Oct-2022		Jan-2023	
8	TLDP-IV	Oct-2022		Feb-2023	
9	Subarnarekha	Aug-2022		Jan-2023	
10	Teesta-V	Sep-2022		Feb-2023	
11	Chuzachen	Oct-2022		Jan-2023	
12	Teesta-III	April-2022	08-April-2022	Feb-2023	
13	Jorethang	Oct-2022		Jan-2023	
14	Tashiding	Oct-2022		Feb-2023	
15	Dikchu	Oct-2022		Jan-2023	
16	Rongnichu	Oct-2022		Feb-2023	

In the 192nd OCC meeting, SLDC Odisha representative submitted that the mock black start exercise of Burla would be carried out on 23.06.2022. Mock black start of Rengali would be carried out on 1st week of July 2022.

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.

Members may update.

PART D: OPERATIONAL PLANNING

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

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

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

Generator unit shutdown schedule for August' 2022 is given in the table:

Proposed Maintenance Schedule of Thermal Generating Units of ER in the month of Aug' 2022								
System	Station	Unit No.	Capacity (MW)	Period (as per LGBR 2022-23)		No. of Days	Reason	Remarks
				From	To			
TVNL	Tenughat TPS	1	210	21.08.2022	10.09.2022	21	Annual Maintenance and R&M	
WBPDCL	Bakreswar TPS	4	210	20.08.2022	29.08.2022	10	PG Test	
	Bandel TPS	2	60	16.08.2022	14.09.2022	30	AOH/BOH	
	Santaldih TPS	6	250	12.08.2022	15.09.2022	35	COH	
DPL	DPPS	7	300	16.08.2022	25.08.2022	10	Boiler Licence Renewal	
NTPC	KhSTPS	6	500	12.08.2022	25.09.2022	45	Boiler+LP+Gen+Combustion Modification	
BRBCL	Nabinagar TPS	2	250	25.08.2022	03.10.2022	40	Biennial Overhaul, Boiler license Renewal	

NTPC Talcher vide letter dated 13.07.2022 requested for shutdown of unit # 2 from 08.08.2022 to 21.09.2022 (45 days) for overhauling works.

Members may update.

ITEM NO. D.3: Major Generating Units/Transmission Element outages/shutdown in ER Grid (as on 12.07.2022)

a) Thermal Generating Stations outage report:

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

1	NABINAGAR(BRBCL)	BIHAR	NTPC	3	250	Annual Overhauling	09-Jul-2022
2	BARH	BIHAR	NTPC	1	660	Boiler Tube Leakage	09-Jul-2022
3	FSTPP	WEST BENGAL	NTPC	6	500	Turbine vibration high	20-Jun-2022
4	GMR	ODISHA	GMR-Infra	2	350	Coal shortage	26-Jun-2022
5	JITPL	ODISHA	JITPL	2	600	Tripped due to turbine Vibration high. Later taken for annual overhauling.	16-May-2022
6	KBUNL	BIHAR	NTPC, BSPHCL	2	195	Initially tripped on Boiler Tube Leakage, later Turbine Valve problem found.	23-Jun-2022
7	BAKRESHWAR	WEST BENGAL	WBPDCL	5	210	Boiler Turbine Generator overhauling job	20-Jun-2022
8	MEJIA TPS	DVC	DVC	6	250	Initially machine was taken out due to conveyor belt issue and later taken out for planned overhauling.	17-Jun-2022
9	BARAUNI TPS	BIHAR	NTPC	6	110	PROBLEM IN CONDENSER VACCUM	17-Jun-2022
10	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
11	DPL	WEST BENGAL	WBPDCL	8	250	Boiler tube leakage	11-Jul-2022
12	KOLAGHAT	WEST BENGAL	WBPDCL	6	210	Low furnace pressure	05-Jul-2022
13	SAGARDIGHI	WEST BENGAL	WBPDCL	2	300	Overhauling activity	12-Jul-2022
14	WARIA TPS	DVC	DVC	4	210	Level of ash pond on alarming level	03-Jul-2022
15	DPL	WEST BENGAL	WBPDCL	7	300	Poor Coal Stock	17-June-2022
16	HEL HIRANMAYEE	WEST BENGAL	WBPDCL	2	150	Coal shortage	07-July-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	MEJIA TPS	DVC	DVC	3	210	Under Reserve Shutdown	10-July-2022

b) Hydro Unit Outage Report:

S. NO	STATION	STATE	AGENCY	UNIT NO	CAPACITY (MW)	REASON(S)	OUTAGE DATE
1	BALIMELA HPS	ODISHA	OHPC	2	60	GOVERNOR PROBLEM	07-July - 2022
2	RENGALI HPS	ODISHA	OHPC	3	50	DAMAGE OF GT	26-Nov-2021
3	BALIMELA HPS	ODISHA	OHPC	3	60	INITIALLY TAKEN OUT DUE TO PROBLEM IN PERMANENT MAGNET GENERATOR. THE UNIT TAKEN OUT UNDER R & M SINCE 08/07/2022 FOR 18 MONTHS.	19-June-2022
4	BALIMELA HPS	ODISHA	OHPC	4	60		04-Apr - 2022
5	BURLA HPS/HIRAKUDA I	ODISHA	OHPC	1	49.5	ANNUAL MAINTENANCE	22-June-2022

It is seen that about 279.5 MW hydro capacities in Odisha is under forced outage and therefore not available for providing the much-needed peaking support during evening peak. SLDC / OHPC may please indicate restoration plan of the units.

SLDC / OHPC may please indicate restoration plan of the units.

d) Long outage report of transmission lines:

SL NO	TRANSMISSION ELEMENT / ICT	AGENCY	OUTAGE DATE	REASONS FOR OUTAGE
1	400 KV IBEUL JHARSUGUDA D/C	IBEUL	29.04.2018	TOWER COLLAPSE AT LOC 44,45
2	220/132 KV 100 MVA ICT 2 AT LALMATIA	FSTPP/JUSNL	22.01.2019	FAILURE OF HV SIDE BREAKER

3	220 KV PANDIABILI - SAMANGARA D/C	OPTCL	03.05.2019	49 NOS OF TOWER COLLAPSED.AS REPORTED BY SLDC OPTCL, TOTAL 60 NOS OF TOWER IN BETWEEN 220KV PANDIABILI – SAMANGARA LINE IN WHICH 48 NOS TOWERS FULLY DAMAGED AND 12 NOS TOWERS PARTIALLY DAMAGED. WORK UNDER PROGRESS. PRESENTLY CHARGED FROM PANDIABILLI END (LOC 156) TO LOC 58
4	220KV BARAUNI-HAJIPUR CKT-1	BSPTCL	28.09.2019	TOWER COLLAPSE AT LOCATION 38 & 39. CKT-2 IS ON ERS SINCE 13.01.2020.
5	220/132 KV 100 MVA ICT 3 AT CHANDIL	JUSNL	30.04.2020	ICT BURST AND DAMAGED AFTER FIRE REPORTED
6	400KV/220KV 315 MVA ICT 2 AT MEERAMUNDALI	OPTCL	21.02.2021	FIRE HAZARD
7	400KV/220KV 315 MVA ICT 4 AT JEERAT	WBSETCL	09.04.2021	VERBALLY CONFIRMED BY WB THAT NEW TRANSFORMER PROCUREMENT UNDER PIPELINE AND SHALL BE REPLACED IN THE NEAR FUTURE.
8	400KV MAIN BUS - 2 AT DIKCHU	DIKCHU	05.05.2021	REPEATED SPURIOUS BUSBAR PROTECTION OPERATION
9	220KV-FSTPP-LALMATIA	JUSNL	21.04.2021	THREE TOWER COLLAPSED NEAR LALMATIA
10	220KV-GAYA-CHANDAUTI (PMTL)-DC	BSPTCL	22.05.2021	FOR DISMANTLING OF TOWER NO 51 UNDER LILO WORK AT BODHGAYA.
11	400KV-BINAGURI-TALA-1	BHUTAN	12.11.2021	FLASHOVER IN XLPE OUTDOOR CABLE TERMINATION AT TALA.
12	400KV-BINAGURI-TALA-2	BHUTAN	17.03.2022	FIRE ON THE GIS TERMINATION OF THE B-PHASE AT TALA END.
13	400KV/220KV 315 MVA ICT 1 AT INDRAVATI (PH)	GRIDCO	24.03.2022	INITIALLY REPORTED BUCHHOLZ RELAY OPERATED. LATER SLDC ODISHA REPORTED THAT CONTROL & RELAY PANEL OF ICT BURNT. REPLACEMENT FOR THE SAME IS UNDER PROCESS.
14	400KV/220KV 315 MVA ICT 3 AT RANGPO	PGCIL	17.05.2022	CONTINUOUS S/D FOR SF6 GAS LEAKAGE RECTIFICATION WORK.

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 update.

ITEM NO. D.4: Commissioning of new units and transmission elements in Eastern Grid in the month of June-2022

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

ERLDC_LIST OF NEW ELEMENTS CHARGED DURING JUNE, 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
1	PMTL	MOTIHARI(DMT CL)	3	400/132	315	7-Jun-22	First Time Charged at 17:59 hours from 400 kV Side . 220 kV side charged on 08-Jun-2022 at 17:52 hours .
TRANSMISSION LINES							
SL No	Agency /Owner	LINE NAME	Length (KM)	Conductor Type	DATE	Remarks	
1	DVC	220KV-RANCHI-MTPS(DVC)-1	228.580	AAAC Zebra	22-Jun-22	Line first charged at 19:01 Hrs (total length 228.58 km), earlier it was Anti theft charged upto 57.975 km from Ranchi end.	
LILO/RE-ARRANGEMENT OF TRANSMISSION LINES							
SL No	Agency /Owner	Line Name/LILO at	Length (KM)	Conductor Type	DATE	Remarks	
NIL							
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	Odisha	400KV MAIN BAY OF MERAMUNDALI-A AT MERAMUNDALI B	MERAMUNDALI B	400	10-Jun-22	Bay first time charged on 16:32 Hrs of 10-06-2022.	
2	Odisha	400KV MAIN BAY OF GMR-1 AT MERAMUNDALI B	MERAMUNDALI B	400	10-Jun-22	Bay first time charged on 16:39 Hrs of 10-06-2022.	
3	Odisha	400KV MAIN BAY OF NEW DUBURI- 2 AT MERAMUNDALI B	MERAMUNDALI B	400	10-Jun-22	Bay first time charged on 17:08 Hrs of 10-06-2022.	
4	Odisha	400KV MAIN BAY OF NEW DUBURI- 1 AT MERAMUNDALI B	MERAMUNDALI B	400	10-Jun-22	Bay first time charged on 17:08 Hrs of 10-06-2022.	

5	Odisha	400KV MAIN BAY OF 400KV FUTURE LINE-7 AT MERAMUNDALI B	MERAMUN DALI B	400	10-Jun-22	Bay first time charged on 17:10 Hrs of 10-06-2022.
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Members may update.

ITEM NO. D.5: UFR operation during the month of June 2022.

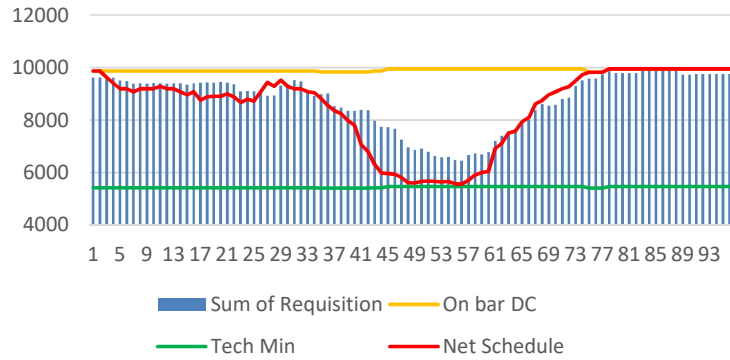
Frequency profile for the month as follows:

Month	Max	Min	Less IEGC Band (%)	Within IEGC Band (%)	More IEGC Band (%)
	(Date/Time)	(Date/Time)			
June, 2022	50.36 Hz on 19.06.2022 at 13:07 Hrs.	49.48 Hz on 13.06.2022 at 16:45 Hrs.	12.45	73.37	14.18

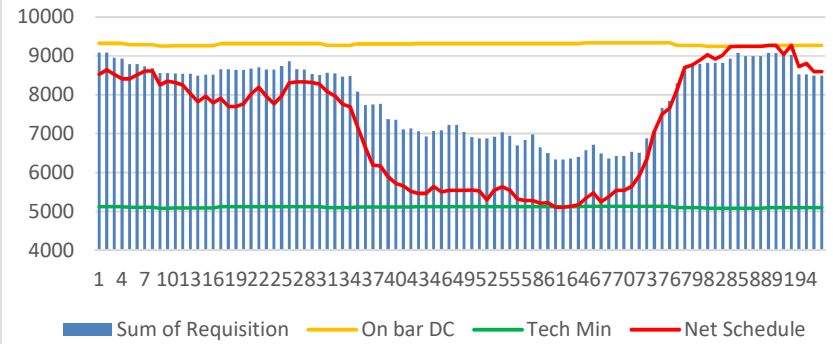
Hence, no report of operation of UFR has been received from any of the constituents. However, in view of low frequency operation and high demand scenario all the constituents are requested to keep the UFR in healthy condition.

Members may note.

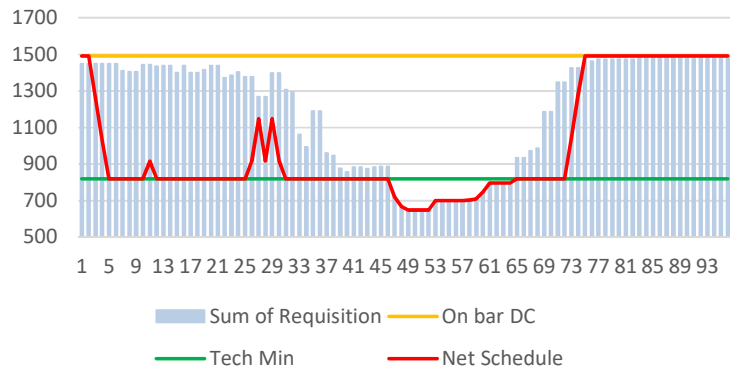
ER ISGS schedule for 12.07.2022



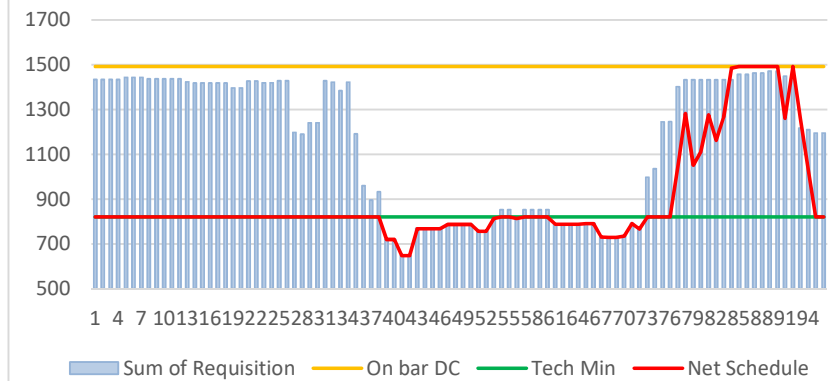
ER ISGS schedule for 10.07.2022



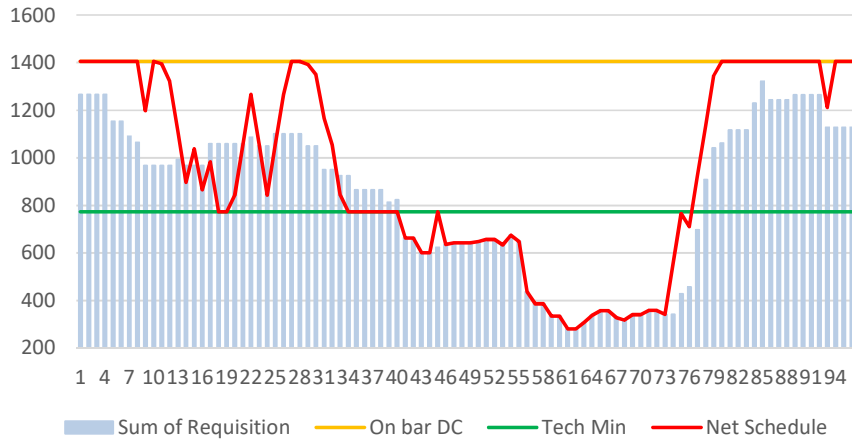
FSTPP I&II schedule for 12.07.2022



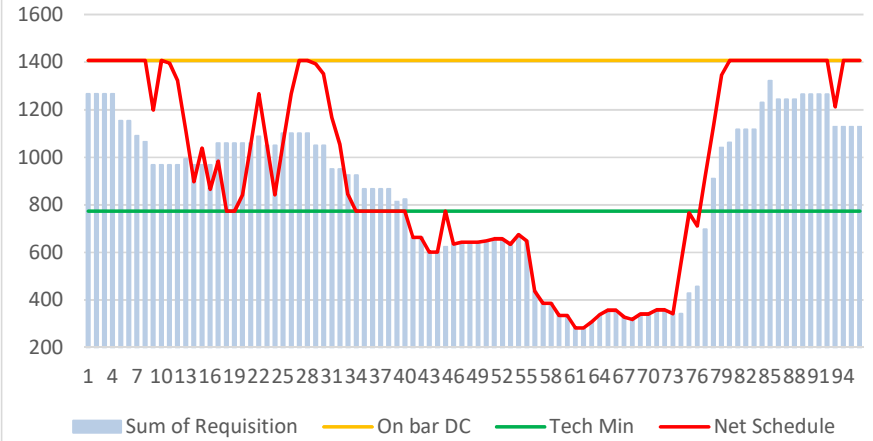
FSTPP I&II schedule for 10.07.2022



KHSTPP II schedule for 10.07.2022



KHSTPP II schedule for 10.07.2022



Reported on: 14.07.2022			
SL no	Generating Station	Fixed Cost(in paise/KWh)	Variable Cost (in paise/KWh)
1	FSTPP	ST -I & II: 82.4	ST -I & II: 416.1
		ST- III: 149.2	ST- III: 408.4
2	KAHALGAON STPP	ST-I: 104.8	ST-I: 379.8
		ST-II: 108.9	ST-II: 360.2
3	BARH	ST- II: 184.0	ST- II: 281.4
4	TSTPP-I	95.9	162.7
5	Nabinagar TPP(BRBCL)	232.6	226.8
6	TEESTA-V HPS	116.3	116.3
7	RANGIT HPS	190	190.0
8	MTPS Stage -II (KBUNL)	273.4	288.9
9	Maithon Power Limited	138.9	261.5
10	Nabinagar STPP (NPGC)	217.4	219.0
11	Darlipali STPP	166.2	128.9
12	BARH-I	242.4	293.0
* Source: Format AS3: RRAS Provider Parameters by ERPC			
Validity of the information: From 16/06/2022 TO 15/07/2022			

N.B: This is for information.

Station name (As per Monthly Generation Report of CEA):-----

Organisation:-----

Unit wise Monthly generation Program for the year 2023-24

1. Contact Details

Sr. no	Name	Designation	email	Phone no.	Fax. no.
1					
2					

2. Units existing on 31.03.2022

Month	Unit No.	Capacity (MW)	Date of commissioning	2022-23 generation details (MU)				2023-24 generation details (MU)			Remarks
				Program for 2022-23	Total Anticipated Gen for Aug 22 to March 23 (MU)	Total Anticipated Gen for 2022-23 (MU)	Reason for low generation (if any)	Anticipated maximum Generation capability (MU)	Anticipated Generation (MU)	Reason for variation from Maximum Capability	

3. Units Commissioned during 2022-23

Month	Unit No.	Capacity (MW)	Date of commissioning	2022-23 generation details (MU)				2023-24 generation details (MU)			Remarks
				Program for 2022-23	Total Anticipated Gen for Aug 22 to March 23 (MU)	Total Anticipated Gen for 2022-23 (MU)	Reason for low generation (if any)	Anticipated maximum Generation capability (MU)	Anticipated Generation (MU)	Reason for variation from Maximum Capability	

4. Units likely to be commissioned during 2023-24

Month	Unit No.	Capacity (MW)	Expected date of commissioning	Expected Generation 2023-24 (MU)	Remarks

5. Loss of Generation due to Grid Constraints/ Low schedules /fuel related issues during 2022-23

Transmission Constraints/ power evacuation problems/ low schedule/high fuel cost

S No.	Details of the Constraint	Loss so far (Apr'22-Jul'22)		during 2022-23	
				Anticipated Period of constraint	Anticipated loss of generation (MU)

6. Unitwise PPA details

Unit No.	Capacity (MW)	With DISCOM				With State Trading Cos.					With PTC / other trading cos.					Untied (MW)			
		State of Discom	Type of PPA(Base load or Peak Load)	Quantum (MW)	Duration of PPA		Quantum (MW)	Type of PPA(Base load or Peak Load)	b/b PPA with Discom (name of Discom)	quantum of b/b PPA in MW	Duration of PPA		Quantum (MW)	Type of PPA(Base load or Peak Load)	b/b PPA with Discom (name of Discom)		quantum of b/b PPA in MW	Duration of PPA	
					From	To					From	To						From	To

7(a) Coal Linkage for coal based plants

Month	Unit No	Domestic linkage (MT)	Source	PLF from this coal linkage during the year (%)

7(b) Gas availability for gas based stations

Unit No.	Various sources	Figures in MMSCMD	PLF from this gas availability during the year (%)

8. Cost of Generation:

Unit No	Cost of Gen. (Paise/kwh)		Rate of Sale of Power during 2021-22 (Paise/kwh)
	Fixed Charge	Variable charge	

Planned maintenance Schedules including R&M activities

A) R&M of Units likely to be completed during 2022-23 & 2023-24

Station name	Unit No.	Capacity (MW)	R&M Schedule	
			From date	To date

B) Annual Overhaul/ Boiler overhaul

Station name	Unit No.	Capacity (MW)	AOH Schedule	
			From date	To date

C) Capital Overhaul

Station name	Unit No.	Capacity (MW)	COH Schedule	
			From date	To date

D) Other maintenance if not included above such as PG tests (new units) and Boiler inspection

Station name	Unit No.	Capacity (MW)	Schedule		Reason
			From date	To date	

Actual and Planned maintenance Schedules including R&M activities

A) **Actual Maintenance Schedule during 2022-23**

Station name	Unit No.	Capacity (MW)	From date	To date	No. of Days	Outage reason

B) **Planned Maintenance Schedule during remaining months of 2022-23**

Station name	Unit No.	Capacity (MW)	From date	To date	No. of Days	Outage reason

[To be published in the Gazette of India, Extraordinary, in Part III, Section 4]

**Government of India
Ministry of Power
Central Electricity Authority**

New Delhi, , 2022

NOTIFICATION

File No. CEA-TH-17-13/4/2022-TETD Division - In exercise of the powers conferred by sub-section (2)(g) of Section 177 of the Electricity Act 2003, the Central Electricity Authority hereby makes the following Regulations namely:

1. Short Title and Commencement-(1) These Regulations may be called the Central Electricity Authority (Flexible operation of thermal power plants) Regulations, 2022.

(2) They shall come into force on the date of their publication in the Official Gazette.

2. Definitions- (1) In these Regulations, unless the context otherwise requires,

- (a) "Act" means the Electricity Act, 2003;
- (b) "Authority" means the Central Electricity Authority established under sub-section (2) of Section 70 of the Act;
- (c) "Base load operation" means operation at maximum continuous rating (MCR) or its high fraction;
- (d) "Boiler Maximum Continuous Rating (BMCR)" means the maximum steam output, the steam generator (boiler) can deliver continuously at rated parameters;
- (e) "Cold start", in relation to steam turbine, means start up after a shut down period exceeding 72 hours (turbine metal temperatures below approximately 40% of their full load values);
- (f) "Control load", in relation to coal or lignite based thermal generating units, means the lowest load at which the rated steam temperature can be maintained under auto control system;
- (g) "Flexible operation" means the ability of thermal plant to adjust the net power fed into the grid as per the dispatch schedules where must run power plants like renewable energy sources are taking part in meeting grid load demand.

- (h) "Hot start", in relation to steam turbine, means start up after a shut down period of less than 10 hours (turbine metal temperatures approximately 80% of their full load values);
- (i) "Maximum Continuous Rating (MCR)",-in relation to coal or lignite based thermal generating units, means maximum continuous output at the generator terminals expressed in kilo volt ampere (kVA) (net of any external excitation power) as guaranteed by the manufacturer at the rated parameters;
- (j) "Minimum Power Levels (MPL)" means the minimum output power at the generator terminals that the power plant can sustain continuously without oil support. It is expressed as percentage of maximum rated capacity.
- (k) "Must run" status for a power plant means generation of power from such power plant should not be curtailed for factors other than on account of grid safety or safety of equipment or personnel.
- (l) "Ramp rate" means the measurement of how quickly a power plant can change its output. It is calculated as the ratio of change in power output to time taken for such change in power output. It is expressed as percentage (of unit rating) per minute.
- (m) "Retrofit" means modernization or upgradation of power plant components or subsystems.
- (n) "Shut down" means total stoppage of power plant and production activities by cutting off in- coming power supply to the power plant.
- (o) "Startup / shutdown time", in relation to power plants means the time required to move from nonoperational state (cold, warm, hot state) to operational state and vice versa. It is expressed in minutes.
- (p) "Sub-Critical Unit", in relation to coal or lignite based thermal generating unit, means a unit designed for main steam pressure less than the critical pressure (225.56 kg/ cm²) of water;
- (q) "Super-Critical Unit", in relation to coal or lignite based thermal generating unit, means a unit designed for main steam pressure more than the critical pressure (225.56 kg/cm²) of water;
- (r) "Thermal Power Plants (TPP)" means the 'generating station' as defined in the Act for generating electricity using fossil fuels such as coal, lignite, gas, liquid fuel or combination of these as its primary source of energy to generate electric power;
- (s) "Ultra Super-Critical Unit", in relation to coal or lignite based thermal generating unit means a supercritical unit with steam temperature of 600/600°C or higher at turbine inlet;

- (t) "Unit", in relation to a coal or lignite based thermal generating station, means steam generator with interconnected steam turbine-generator and auxiliaries, operated as one single set or system to generate electric power;
- (u) "Warm start", in relation to steam turbine, means start up after a shut down period between 10 hours and 72 hours (turbine metal temperatures between approximately 40% and 80% of their full load values).
- (2) words and expressions used but not defined in these Regulations shall have the meaning assigned to them in the Act.
3. **Applicability** - These Regulations shall apply to all coal and lignite based thermal power plants and load despatch centers.
4. **General Requirements** - (1) The Thermal Power Plants shall be suitably designed for full range of ambient and other environmental conditions prevailing at site.
- (2) The various parts or components or assemblies of equipment and systems shall be of proven materials with established physical and chemical properties appropriate to the service as intended.
- (3) All equipment and systems installed shall comply with the provisions of statutes, Regulations and safety codes, as applicable.
- (4) (1) The Thermal Power Plants shall be designed to comply with requirements stipulated in
- (a) Central Electricity Authority (Technical Standards for Connectivity to the Grid) Regulations, 2007 as amended time to time;
 - (b) Indian Electricity Grid Code issued by Central Electricity Regulatory Commission (CERC);
 - (c) Applicable State Grid Code issued by appropriate Regulatory Commission;
 - (d) Central Electricity Authority (Technical Standards for Construction of Electrical Plants and Electric Lines) Regulations, 2010 as amended time to time;
 - (e) Central Electricity Authority. (Measures relating to Safety and Electricity Supply), Regulations, 2010 as amended time to time;
 - (f) Central Electricity Authority (Safety Requirements for Construction, Operation and Maintenance of Electrical Plants and Electric Lines) Regulations, 2011 and;
 - (g) Central Electricity Authority (Grid Standards) Regulations, 2010.
- (2) The conditions stipulated in these Regulations shall prevail upon in case of contradictions.
5. The flexible operation of a power plant shall refer to the characteristics indicated in Fig. 1.

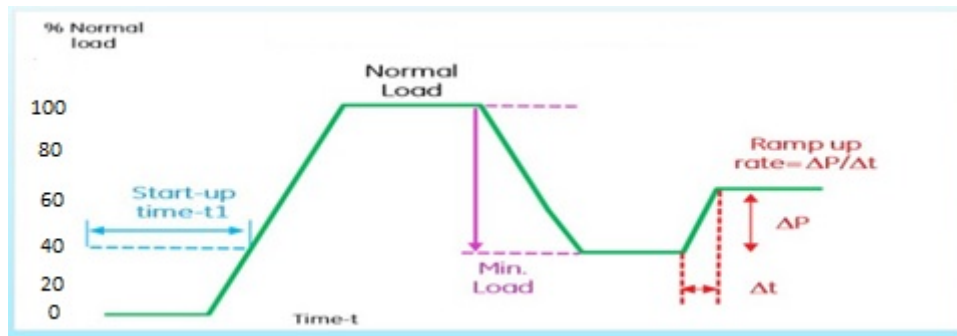


Fig 1: Characteristics of Flexibility

6. Suitability of units for flexible operation:

- i. The units throughout their service life shall be considered for flexible operation.
- ii. The suitability of units for start/stops and deep load following (Ramps) shall be assessed beforehand.
- iii. The condition assessment of existing plant systems and its upgradation, if required, to accommodate operating requirements arising out of flexible operation shall be addressed beforehand.

7. Flexible Operation of the Thermal Power Plants (TPP):

- i. All TPPs shall be capable of providing the required output as per the schedule for generation finalized by appropriate Load Despatch Centers. Based on the availability of must run stations, plants or units shall follow the variable load requirements.
- ii. The appropriate Load Despatch Centers shall schedule all coal based thermal power plants, upto the MPL of 55%, to support the operation of must run stations.
- iii. The appropriate Load Despatch Centers may schedule all coal based thermal power plants, upto the MPL of 40%, to support the operation of must run stations, subject to the provisions mentioned at Sub-clause (v) of this Clause.
- iv. The minimum rate of loading or unloading for coal based thermal power plants shall be 3% per minute above the MPL.

Provided that for supercritical and ultra-super-critical units, minimum rate of loading or unloading shall be 5% per minute above the MPL.

- v. The thermal power plants shall implement the necessary modifications, if any, to achieve the requirements as specified in Sub-Clause (ii), (iii) and (iv) of this Clause to generate flexible power according to schedules finalized by appropriate LDCs.

Provided that the implementation of Sub-Clause (iii) and (iv) of this Clause would be completed by all thermal power units within three years from the date of notification of these Regulations, subject to the technical feasibility studies to be done in consultation with concerned OEMs or qualified consultants with regard to the requirements mentioned at Clause 6 and Clause 8 of these regulations.

Provided further that the implementation of Sub-Clause (ii) shall be implemented by all thermal power units within one year of the notification of these Regulations.

8. Process for implementing Flexible Operation of the Thermal Power Plants:

Measures to lower minimum limits of power output, increase the ramp rates and optimize the start-up of the power plants should be implemented based on technical feasibility studies involving assessment of the following factors in consultation with the concerned Original Equipment Manufacturers/ Qualified Consultants:

- a. Rated Capacity
- b. Minimum load Design rating with no oil support
- c. Design Ramp rate.
- d. Influence of low load operation on components and systems.
- e. Technical boundary conditions for flexible operation
- f. Combustion system optimization, co-ordination of mill and burner systems.

TPPs may decide adoption of suitable modifications in consultation with concerned OEMs/ qualified consultants.

9. 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.

Annexure-C.2

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 aviled 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	42135	42506	24	43236	56.04		69.195	90% grant availed on award cost.	
2			Installation of Capacitor bank in 20 Nos of Grid Sub Station. (74)	18.882	42618	43550	24	44281	16.99		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	90% grant availed on award cost. Project closure is expected by Q-2 of 2021-22.	
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	0.29			0.29	10% grant availed
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	Target date for completion of project is Sept.'21 subject to availability of S/D & Covid scenario. Request for release for final 10% grant has been placed.
21	WBPDCL	Renovation and Modernization of switchyard and related protection system of different power stations (BTPS, BKTPS and KTPS) of WBPDCL (155)	45.16	27-Jul-18	27-Mar-19	12	27-Mar-20	34.52			41.68	Target date for completion of project is Oct'21, subject to availability of S/D & Covid scenario. 90% grant availed on award cost.	
			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 aviled so far	Under process of release	Total awards amount of placed of till date	Latest status
22	DVC	DVC	Renovation and Upgradatg 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	90% grant availed on award cost.
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.4

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

Annexure C.6

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 August 2022

		Demand (MW)	Energy Requirement (MU)
1	BIHAR		
	NET MAX DEMAND	6615	3888
	NET POWER AVAILABILITY- Own Sources	554	213
	Central Sector+Bi-Lateral	6647	3997
	SURPLUS(+)/DEFICIT(-)	586	322
2	JHARKHAND		
	NET MAXIMUM DEMAND	1670	1020
	NET POWER AVAILABILITY- Own Source	328	134
	Central Sector+Bi-Lateral+IPP	1203	882
	SURPLUS(+)/DEFICIT(-)	-139	-4
3	DVC		
	NET MAXIMUM DEMAND	3065	1970
	NET POWER AVAILABILITY- Own Source	5164	3219
	Central Sector+MPL	455	347
	Bi- lateral export by DVC	2169	1614
	SURPLUS(+)/DEFICIT(-) AFTER EXPORT	385	-18
4	ODISHA		
	NET MAXIMUM DEMAND (OWN)	5800	3500
	NET MAXIMUM DEMAND (In Case of CPP Drawal)	4550	2902
	NET POWER AVAILABILITY- Own Source	4108	2581
	Central Sector	1986	1403
	SURPLUS(+)/DEFICIT(-) (OWN)	294	484
	SURPLUS(+)/DEFICIT(-) (In Case, 600 MW CPP Drawal)	1544	1082
5	WEST BENGAL		
5.1	WBSEDCL		
	NET MAXIMUM DEMAND	7560	4620
	NET MAXIMUM DEMAND (Incl. Sikkim)	7570	4627
	NET POWER AVAILABILITY- Own Source (Incl. DPL)	4913	2597
	Central Sector+Bi-lateral+IPP&CPP+TLDP	2635	1896
	EXPORT (To SIKKIM)	10	7
	SURPLUS(+)/DEFICIT(-) AFTER EXPORT	-22	-134
5.2	CESC		
	NET MAXIMUM DEMAND	1980	1030
	NET POWER AVAILABILITY- Own Source	830	476
	IMPORT FROM HEL	540	374
	TOTAL AVAILABILITY OF CESC	1370	850
	DEFICIT(-) for Import	-610	-180
	WEST BENGAL (WBSEDCL+CESC+IPCL)		
	(excluding DVC's supply to WBSEDCL's command area)		
	NET MAXIMUM DEMAND	9540	5650
	NET POWER AVAILABILITY- Own Source	5743	3073
	CS SHARE+BILATERAL+IPP/CPP+TLDP+HEL	3175	2270
	SURPLUS(+)/DEFICIT(-) BEFORE WBSEDCL'S EXPORT	-622	-307
	SURPLUS(+)/DEFICIT(-) AFTER WBSEDCL'S EXPORT	-632	-314
6	SIKKIM		
	NET MAXIMUM DEMAND	104	47
	NET POWER AVAILABILITY- Own Source	8	3
	Central Sector	204	140
	SURPLUS(+)/DEFICIT(-)	108	96
	EASTERN REGION		
	NET MAXIMUM DEMAND	26269	15476
	NET MAXIMUM DEMAND (In Case of CPP Drawal of Odisha)	25043	16074
	BILATERAL EXPORT BY DVC (Incl. Bangladesh)	2169	1614
	EXPORT BY WBSEDCL TO SIKKIM	10	7
	EXPORT TO B'DESH & NEPAL OTHER THAN DVC	642	478
	NET TOTAL POWER AVAILABILITY OF ER	27406	16648
	(INCLUDING CS ALLOCATION +BILATERAL+IPP/CPP+HEL)		
	SURPLUS(+)/DEFICIT(-)	1127	1165
	SURPLUS(+)/DEFICIT(-) (In Case, 600 MW CPP Drawal of Odisha)	2353	567