सत्यमेव जयते

भारत सरकार
Government of India
विद्युत मंत्रालय
Ministry of Power
उत्तर क्षेत्रीय विद्युत समिति
Northern Regional Power Committee

विषय: प्रचालन समन्वय उप-समिति की 223 वीं बैठक की कार्यसूची।

Subject: Agenda of the 223nd OCC meeting.

प्रचालन समन्वय उप-समिति की **223 वीं** बैठक का आयोजन वीडियो कॉन्फ्रेंसिंग के माध्यम से दिनांक **13.09.2024** को **10:30** बजे से किया जायेगा । उक्त बैठक की कार्यसूची उत्तर क्षेत्रीय विद्युत् समिति की वेबसाइट http://164.100.60.165 पर उपलब्ध है ।

बैठक में सम्मिलित होने के लिए लिंक व पासवर्ड सभी सदस्यों को ई-मेल द्वाराप्रदान किया जाएगा।

कृपया बैठक में उपस्थित होने की सुविधा प्रदान करें।

The **223rd** meeting of the Operation Co-ordination sub-committee will be conducted through Video Conferencing on **13.09.2024** from **10:30 Hrs**. The agenda of this meeting has been uploaded on the NRPC web-site http://164.100.60.165.

The link and password for joining the meeting will be e-mailed to respective e-mail IDs in due course.

Kindly make it convenient to attend the meeting.

Signed by Dharmendra Kumar Meena
Date: 10-09-2024 19:47:16

(डी. के. मीना)
अधीक्षण अभियंता (प्रचालन)

सेवा में : प्रचालन समन्वय उप समिति के सभी सदस्य।
To : All Members of OCC

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खण्ड-क: उ.क्षे.वि.स. Part-A: NRPC

A.1. Confirmation of Minutes

222nd OCC meeting was held on 14.08.2024. Minutes of the meeting were issued vide letter dt. 05.09.2024.

Decision required from Forum:

Forum may approve the minutes of 222nd OCC meeting.

A.2. Status of action taken on decisions of 222nd OCC meeting of NRPC

A.2.1. Status of action taken on decisions of 222nd NRPC meeting is attached as **Annexure- A.0**.

A.3. Review of Grid operations

A.3.1. **Power Supply Position (Provisional) for August 2024**

Anticipated Power Supply Position v/s Actual Power Supply Position (Provisional) of Northern Region during the month of August-2024 is as under:

State / UT	Req. / Avl.	Energy (MU)			Peak (MW)		
		Anticipated	Actual	% Variation	Anticipated	Actual	% Variation
CHANDIGARH	(Avl)	240	214	-10.7%	400	418	4.5%
	(Req)	231	214	-7.1%	457	418	-8.6%
DELHI	(Avl)	5303	3938	-25.7%	7607	6890	-9.4%
	(Req)	3900	3939	1.0%	7100	6890	-3.0%
HARYANA	(Avl)	7829	7209	-7.9%	13811	12703	-8.0%
	(Req)	8123	7209	-11.2%	13124	12703	-3.2%
HIMACHAL PRADESH	(Avl)	1374	1074	-21.9%	1848	1732	-6.3%
	(Req)	1139	1075	-5.6%	1800	1732	-3.8%
J&K and LADAKH	(Avl)	1844	1546	-16.2%	2478	2624	5.9%
	(Req)	1846	1550	-16.1%	3103	2726	-12.1%
PUNJAB	(Avl)	10200	9288	-8.9%	14200	15307	7.8%
	(Req)	11700	9288	-20.6%	15500	15307	-1.2%
RAJASTHAN	(Avl)	10560	7789	-26.2%	17790	13409	-24.6%
	(Req)	9824	7789	-20.7%	17000	13409	-21.1%

UTTAR PRADESH	(Avl)	17670	16228	-8.2%	30500	29126	-4.5%
	(Req)	17360	16300	-6.1%	30500	29126	-4.5%
UTTARAKHAND	(Avl)	1463	1505	2.9%	2300	2452	6.6%
	(Req)	1476	1510	2.3%	2400	2482	3.4%
NORTHERN REGION	(Avl)	56483	48792	-13.6%	84000	77100	-8.2%
	(Req)	55598	48874	-12.1%	90600	77400	-14.6%

As per above, negative / significant variation (≥5%) in Actual Power Supply Position (Provisional) vis-à-vis Anticipated figures is observed for the month of August-2024 in terms of Energy Requirement for Chandigarh, Haryana, HP, UTs of J&K and Ladakh, Punjab, Rajasthan, UP, and in terms of Peak Demand similar variation is noted for Chandigarh, Delhi, Haryana, HP, UTs of J&K and Ladakh, Punjab, Rajasthan, UP, . These states/UTs are requested to submit reason for such variations so that the same can be deliberated in the meeting.

All SLDCs are requested to furnish provisional and revised power supply position in prescribed formats on NRPC website portal by 2nd and 15th day of the month respectively for the compliance of Central Electricity Authority (Furnishing of Statistics, Returns and Information) Regulations, 2007.

A.4. Maintenance Programme of Generating Units and Transmission Lines

A.4.1. Maintenance Programme for Generating Units

The meeting on proposed maintenance programme for Generating Units for the month of October-2024 is scheduled on 12-September-2024 via Video Conferencing

A.4.2. Outage Programme for Transmission Elements

The meeting on proposed outage programme of Transmission elements for the month of October-2024 is scheduled on 12-September-2024 via Video conferencing.

A.5. Planning of Grid Operation

A.5.1. Anticipated Power Supply Position in Northern Region for October 2024

The Anticipated Power Supply Position in Northern Region for October 2024 is as under:

State / UT	Availability / Requirement	Revised Energy (MU)	Revised Peak (MW)	Date of revision
CHANDIGARH	Availability	130	310	No Revision submitted
	Requirement	142	304	

State / UT	Availability / Requirement	Revised Energy (MU)	Revised Peak (MW)	Date of revision
	Surplus / Shortfall	-12	6	
	% Surplus / Shortfall	-8.5%	1.8%	
DELHI	Availability	3020	6010	No Revision submitted
	Requirement	2858	5661	
	Surplus / Shortfall	162	349	
	% Surplus / Shortfall	5.7%	6.2%	
HARYANA	Availability	6320	10860	No Revision submitted
	Requirement	5178	10322	
	Surplus / Shortfall	1142	538	
	% Surplus / Shortfall	22.1%	5.2%	
HIMACHAL PRADESH	Availability	1030	2460	No Revision submitted
	Requirement	1123	1897	
	Surplus / Shortfall	-93	563	
	% Surplus / Shortfall	-8.3%	29.7%	
J&K and LADAKH	Availability	1390	3090	No Revision submitted
	Requirement	1872	3235	
	Surplus / Shortfall	-482	-145	
	% Surplus / Shortfall	-25.7%	-4.5%	
PUNJAB	Availability	6150	10080	No Revision submitted
	Requirement	6499	12748	
	Surplus / Shortfall	-349	-2668	
	% Surplus / Shortfall	-5.4%	-20.9%	
RAJASTHAN	Availability	8330	17860	No Revision submitted
	Requirement	9461	15300	
	Surplus / Shortfall	-1131	2560	
	% Surplus / Shortfall	-12.0%	16.7%	
UTTAR PRADESH	Availability	13020	25500	08-Sep-24
	Requirement	12710	25500	
	Surplus / Shortfall	310	0	
	% Surplus / Shortfall	2.4%	0.0%	
UTTARAKHAND	Availability	1271	2200	06-Sep-24
	Requirement	1287	2260	

State / UT	Availability / Requirement	Revised Energy (MU)	Revised Peak (MW)	Date of revision
	Surplus / Shortfall	-16	-60	
	% Surplus / Shortfall	-1.2%	-2.7%	
NORTHERN REGION	Availability	40661	73600	
	Requirement	41130	72500	
	Surplus / Shortfall	-469	1100	
	% Surplus / Shortfall	-1.1%	1.5%	

SLDCs are requested to update the anticipated power supply position of their respective state / UT for the month of October-2024 and submit the measures proposed to be taken to bridge the gap between demand & availability, as well to dispose-off the surplus, if any, in the prescribed format.

A.6. Follow-up of issues from previous OCC Meetings- Status update.

The updated status of agenda items is enclosed at ***Annexure-A.I***.

All utilities are requested to update the status.

A.7. NR Islanding scheme

Latest status of Islanding Scheme of NR is attached as **Annexure-A.II.**

Members may kindly deliberate.

A.8. Coal Supply Position of Thermal Plants in Northern Region

A.8.1 In 186th OCC meeting, it was agreed that coal stock position of generating stations in northern region may be reviewed in the OCC meetings on the monthly basis.

A.8.2 Accordingly, coal stock position of generating stations in northern region during current month (till 07th September 2024) is as follows:

Station	Capacity (MW)	PLF % (prev. months)	Normative Stock Reqd (Days)	Actual Stock (Days)
ANPARA C TPS	1200	0.81	12	8.0
ANPARA TPS	2630	0.79	12	4.6
BARKHERA TPS	90	0.61	20	33.3
DADRI (NCTPP)	1820	0.65	20	20.6
GH TPS (LEH.MOH.)	920	0.26	20	20.3
GOINDWAL SAHIB TPP	540	0.53	20	17.1
HARDUAGANJ TPS	1265	0.57	20	26.4

Station	Capacity (MW)	PLF % (prev. months)	Normative Stock Reqd (Days)	Actual Stock (Days)
INDIRA GANDHI STPP	1500	0.71	20	34.0
KAWAI TPS	1320	0.79	20	9.7
KHAMBARKHERA TPS	90	0.61	20	31.4
KOTA TPS	1240	0.70	20	9.2
KUNDARKI TPS	90	0.61	20	37.2
LALITPUR TPS	1980	0.76	20	13.1
MAHATMA GANDHI TPS	1320	0.65	20	22.4
MAQSOODPUR TPS	90	0.60	20	32.7
MEJA STPP	1320	0.70	20	18.7
OBRA TPS	1094	0.50	20	10.7
PANIPAT TPS	710	0.77	20	17.6
PARICHHA TPS	1140	0.64	20	13.3
PRAYAGRAJ TPP	1980	0.81	20	16.5
RAJIV GANDHI TPS	1200	0.64	20	13.1
RAJPURA TPP	1400	0.82	20	13.5
RIHAND STPS	3000	0.72	12	14.7
ROPAR TPS	840	0.20	20	23.1
ROSA TPP Ph-I	1200	0.72	20	18.3
SINGRAULI STPS	2000	0.81	12	8.2
SURATGARH TPS	1500	0.60	20	3.7
TALWANDI SABO TPP	1980	0.74	20	5.5
TANDA TPS	1760	0.79	20	17.4
UNCHAHAR TPS	1550	0.74	20	11.1
UTRAULA TPS	90	0.59	20	35.0
YAMUNA NAGAR TPS	600	0.70	20	26.1
CHHABRA-I PH-1 TPP	500	0.85	20	12.3
KALISINDH TPS	1200	0.44	20	14.0
SURATGARH STPS	1320	0.33	20	10.4
CHHABRA-I PH-2 TPP	500	0.85	20	15.4
CHHABRA-II TPP	1320	0.71	20	6.0

A.9. Status of availability of ERS towers in Northern Region (Agenda by NRPC Sectt.)

A.9.1 In the 68th meeting of NRPC issues arising due to non-availability of sufficient ERS were discussed and it was decided that ERS availability monitoring shall be taken as rolling/follow-up agenda in OCC meetings for regular monitoring of ERS under different utilities in Northern region.

A.9.2 Subsequently matter was deliberated in 211th OCC meeting wherein NRLDC representative briefed about the Requirement of ERS, recent experience in Northern Region, CEA Regulation on ERS, Govt. Guidelines and Present situation on ERS.

A.9.3 NRPC Sectt. vide letter dated 26.09.2023 requested all transmission utilities of NR to furnish the length of transmission line (ckt-kms) and number of ERS towers available with them at different voltage levels (e.g. 220 kV, 400 KV 765 KV and + -500 kV HVDC via email at **seo-nrpc@nic.in**.

A.9.4 In this regard, inputs received from utilities are attached as **Annexure-A.III.**

Transmission utilities of NR to update status.

A.10. Updating outage Details by Generating Station/utilities (Agenda by CEA)

A.10.1. To enhance the monitoring of approved Planned Maintenance schedules, Member (GO&D), CEA has directed that actual maintenance availed against approved planned maintenance is to be updated on priority by respective RPCs regularly on monthly basis.

A.10.2. In the 221st OCC meeting of NRPC, forum asked generating stations of NR to update the status of Planned Maintenance schedules versus actual maintenance availed for the previous month before every OCC meeting and it was decided that to enhance the monitoring of approved Planned Maintenance schedules the said agenda item shall be taken as rolling/follow-up agenda in OCC meetings.

A.10.3. In this regard, list of Planned Maintenance schedules versus actual maintenance availed for the year 2024-25 for the month of August 2024 is attached as **Annexure-A.IV.**

A.10.4. In this, regard, Generating Station/utilities of NR are requested to submit each month the details of the maintenance activities that transpired against the originally planned schedule. Further, any deviations from the planned schedule shall be explained by the concerned generating entities.

Generating utilities of NR to update status.

A.11. Flexible Operation of Coal Based Thermal Power Plants (Agenda by CEA)

A.11.1. As per the CEA Gazette Notification dated January 30, 2023, coal-based thermal power generating units shall have flexible operation capability with a minimum power level 55%, along with specified ramp rates, January 2024. Additionally, a phased implementation plan for achieving a 40% minimum technical load (MTL) has been notified, with specific targets and timelines for compliance.

A.11.2. The said matter was also deliberated in 218th OCC meeting of NRPC, wherein MS, NRPC enquired CEA about the list of thermal generating station in northern region that have not met 55% Technical Minimum Load (TML) till date. CEA has shared the list of thermal generating units in NR which are not complying with 55% MTL regulation. (copy attached as **Annexure-A.V**).

A.11.3. In this regard, CEA vide letter dated 01.08.2024 (copy attached as **Annexure-A.VI**) has requested following information:

1. **Regarding 55% MTL (Minimum Technical Load)**

   a. Achievement of 55% TML: Whether the target of achieving 55% Technical Minimum Load (TML) has been met. If not, please provide the reasons and the tentative date for achieving the same.

   b. Adherence to Ramp Rates: Whether the specified ramp rates, i.e., 3% for 100-70% load and 2% for 70%-55% load, have been adhered to. If not, please provide the reasons and the tentative date for achieving the same.

   c. Operator Training: How many operators have been trained in the organization?

   Generators are requested to submit Progress report (**Annexure-A.VII**) as per enclosed format.

2. **Regarding 40% MTL (Minimum Technical Load) and Status of units under Pilot phase**

PILOT PHASE (May, 2023-March, 2024)

Phase	Sector	Organization	Name of Project	Unit No.	Capacity (MW)	Region
Pilot	Central	NTPC	MAUDA TPS	1	500	WR
Pilot	Central	NTPC	SIMHADRI	3	500	SR
Pilot	Central	NTPC	DADRI	6	490	NR
Pilot	Central	DVC	MEJIA TPS	8	500	ER
Pilot	Central	NEYVELI LIGNITE	NEYVELI NEW TPP	2	500	SR
Pilot	State	KPCL	YERMARUS TPS	1	800	SR
Pilot	State	GSECL	WANAKBORI TPP	6	800	WR
Pilot	State	RRVUNL	SURATGARH SCTPP	8	660	NR
Pilot	State	WBPDC	SAGARDIGHI TPS	3	500	ER
Pilot	Private	CEPL	MUTHIARA	2	600	SR
Pilot Phase Total				**10**	**5850**	
Pilot Phase Total (Percentage of Total Capacity)				**1.70%**	**2.76%**	

a. Achievement of 40% TML: Whether the target of achieving 40% Technical Minimum Load (TML) has been met. If not, please provide the reasons and the tentative date for achieving the same.

b. Adherence to Ramp Rates: Whether the specified ramp rates, i.e., 3% for 100-70% load, 2% for 70%-55% load and 1% for 40%-55% load, have been adhered to. If not, please provide the reasons and the tentative date for achieving the same.

Generators are requested to submit duly filled Progress report (**Annexure-A.VIII**) as per enclosed format.

A.11.4. Generating units in NR that have not been able to achieve the technical minimum level of 55% are requested to conform submission of the reasons of same to CEA as per the decision of 222nd OCC meeting. Further, Generating units of NR that have not been able to achieve the technical minimum level of 55% are requested to submit the Technical Minimum Load (TML) achieved by them in the **Annexure-A.IX.**

A.11.5. A per the discussion in 222nd OCC, NTPC and RVUNL are requested to conform submission of their learnings/observations to CEA highlighting the difficulties faced by them to achieve the minimum load operation of 40%.

Members may kindly deliberate.

A.12. Anticipated Energy Requirement & Peak Demand and Unit Wise Planned Maintenance schedule for the year 2025-26 (Agenda by CEA)

A.12.1 Central Electricity Authority vide its mail dated 27.08.2024 has sought information regarding the Anticipated Energy Requirement & Peak Demand and Unit Wise Planned Maintenance schedule for the year 2025-26.

A.12.2 In this regard, please find enclosed herewith the data formats and the inputs desired: -

- Month-wise data of Energy Requirement and Peak Demand **during solar and non-solar hours** are required for the fiscal year 2025-26 as per the format enclosed at **Annexure-A.X**.
- Unit Wise Planned Maintenance schedule for the year 2025-26 as per the format enclosed at **Annexure-A.XI.**

A.12.3 NRPC vide letter dated 29.08.2024 (copy attached as **Annexure-A.XII**) and subsequent reminder dated 05.09.2024 have requested the respective SLDC's of Northern Region to submit the requisite information in the above mentioned prescribed format, however inputs from concerned entities are still awaited.

A.12.4 Respective SLDC's of Northern Region are requested to submit the Energy Requirement and Peak Demand Data during Solar and Non-Solar Hours as per Annexure-A.VI, whereas for Planned Maintenance schedule, SLDCs are requested to co-ordinate with IPPs and State Generating Companies within their state and

submit the data as per Annexure-A.VII. in the prescribed format by email to **seo-nrpc@nic.in** by 20th September 2024.

SLDC's to update status.

A.13. Transmission Infrastructure for upcoming RE Projects (Agenda by CEA)

A.13.1. This has reference to point no. (iii) of action point (copy attached as **Annexure-A.XIII**) of the subject cited meeting held under the chairmanship of Advisor to PM, wherein CEA has been entrusted with the task of identification of State-wise Intra-State sub-stations (132kV and above) where transmission capacity is readily available for evacuating RE.

A.13.2. In this regard, NRPC vide letter dated 16.08.2024 and subsequent reminder dated 05.09.2024 have requested respective SLDCs/STU's of Northern Region to submit the requisite information in prescribed format (copy attached as **Annexure-A.XIV**) for Intra-State sub-stations (132kV and above), however inputs from concerned entities are still awaited.

A.13.3. The said information may kindly be submitted in the prescribed format by email to **seo-nrpc@nic.in** by 10.09.2024.

STU's/SLDC's to update status.

A.14. Revised SPS for 2X315 MVA, 400/220kV ILTs at 400kV GSS Jodhpur (Agenda by RVPN)

A.14.1 RVPN vide letter dated 23.08.2024 (copy attached as **Annexure-A.XV**) has submitted revised SPS for 2X315 MVA, 400/220kV ILTs at 400kV GSS Jodhpur after incorporating suggestions from NRLDC in the 221st and 222nd OCC meeting of NRPC.

Members may kindly deliberate.

A.15. Restriction of DC of Koldam HPS during high inflow and water spillage conditions (Agenda by NTPC)

A.15.1 APC of Koldam should be considered as 1% of Installed Capacity. However, as of now (in high inflow and water spillage conditions), APC is being deducted as 1% of (Installed Capacity + plus overload capability). Same needs to be corrected.

A.15.2 For example, APC should be considered 1% of Installed Capacity i.. 1% of 800MW = 8MW. DC declaration should be 880-8 = 872 MW.

A.15.3 But as of now (in high inflow and water spillage conditions) APC is being considered as1% of Installed Capacity (Installed Capacity + plus overload capability) i.e. 1% of 880MW = 8.8 MW. DC is being restricted to 880-8.8 = 871.2 MW.

A.15.4 As per IEGC Regulation 45-10 (a), during high inflow and water spillage conditions, for Storage type generating station and Run–of-River Generating Stations with or without Pondage, the declared capacity for the day may be up to the installed capacity plus overload capability (up to 10% or such other limit as certified by the

OEM and approved by CEA) minus auxiliary consumption, corrected for the reservoir level. In case, the overload capability of such a station is more than 10% as approved, such a station shall declare the overload capability in advance.

A.15.5 Further, as per Clause 71 C of Tariff Regulations 2024-29, Aux. Energy Consumption of Surface Hydro Generating Station (with capacity above 200 MW) is 1% of Installed Capacity.

Members may kindly deliberate.

A.16. Requirement to confirm spillage conditions during high inflow season (Agenda by NTPC)

A.16.1 Koldam HPS was forced to declare its DC @100% in the month of June 2024, despite the fact that the June to September period being characterized by typically high inflows of Koldam.

A.16.2 June to September 2024 period has already been designated as a high inflow season by NRPC itself, as June to September are historically high inflow months, during which river inflows can increase unpredictably.

A.16.3 To safeguard downstream property and public safety & Reservoir level is maintained on the lower side to manage sudden inrush of water due to cloud burst /heavy rainfall upstream etc. However, Instructions from WBS mandate confirmation of spillage conditions before declaring 110% DC.

A.16.4 Given this pre-established classification, the requirement to confirm spillage conditions during these months should not apply.

A.16.5 In light of this, we kindly request that the DC restrictions for June 2024 be waived and the 110% DC for Koldam be reinstated for the month of June 24.

Members may kindly deliberate.

खण्ड-ख: उ.क्षे.भा.प्रे.के. Part-B: NRLDC

B.1. NR Grid Highlights for August 2024

Detailed presentation on grid highlights of August'2024 will be shared by NRLDC in OCC meeting.

Demand met details of NR

S.No.	Constituents	Max Demand met (in MW)	Date & Time of Max Demand met	Max Consumption (in MUs)	Date of Max Consumption	Average Demand met (in Mus)
1	Chandigarh	418	06.08.24 at	8.1	06.08.24	6.9

			14:00			
2	Delhi	6890	22.08.24 at 15:22	138.7	22.08.24	127.5
3	Haryana	12703	06.08.24 at 15:00	267.4	06.08.24	232.7
4	H.P.	1732	24.08.24 at 09:30	36.9	02.08.24	34.6
5	J&K	2726	24.08.24 at 20:00	54.1	23.08.24	49.9
6	Punjab	15307	08.08.24 at 14:00	356.0	08.08.24	299.7
7	Rajasthan	13409	21.08.24 at 11:00	286.8	21.08.24	251.3
8	U.P	29126	31.08.24 at 22:22	579.1	17.08.24	524.0
9	Uttarakhand	2482	31.08.24 at 22:00	54.4	31.08.24	48.9
10	Northern Region	77380	06.08.24 at 22:00	1694.1	06.08.24	1575.5

***As per SCADA**

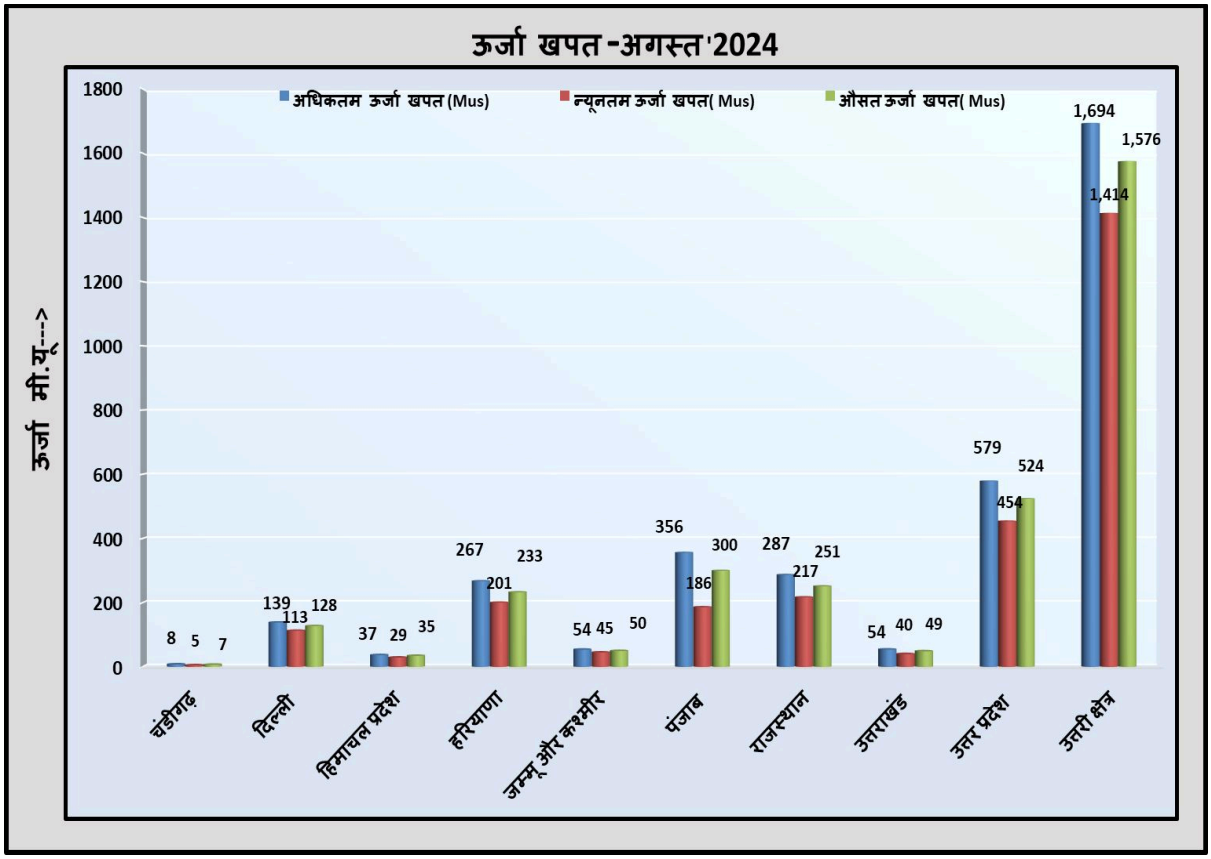
- **In Aug'24, the Maximum energy consumption of Northern Region was 1694 MUs on 06th Aug'24 and it was 4.5 % lower than Aug'23 (1773 MU 18th Aug'23)**
- **In Aug'24, the Average energy consumption per day of Northern Region was 1576 MUs and it was 5.1 % lower than Aug'23 (1661 MUs/day)**
- **In Aug'24, the Maximum Demand met of Northern Region was 77380 MW on 06th Aug'24 @22:00 hours (*as per scada data)* as compared to 81012 MW on 18st Aug'23 @14:30hours.**

Comparison of Average Energy Consumption (MUs/Day) of NR States for the Aug'23 vs Aug'24

क्षेत्र/राज्य	अगस्त- 2023	अगस्त- 2024	% अंतर

चंडीगढ़	6.9	6.9	0.5%
दिल्ली	131.5	127.5	-3.0%
हिमाचल प्रदेश	34.1	34.6	1.6%
हरियाणा	244.9	232.7	-5.0%
जम्मू और कश्मीर	51.1	49.9	-2.5%
पंजाब	313.5	299.7	-4.4%
राजस्थान	328.1	251.3	-23.4%
उत्तराखंड	45.2	48.9	8.3%
उत्तर प्रदेश	505.6	524.0	3.7%
उत्तरी क्षेत्र	1660.8	1575.5	-5.1%

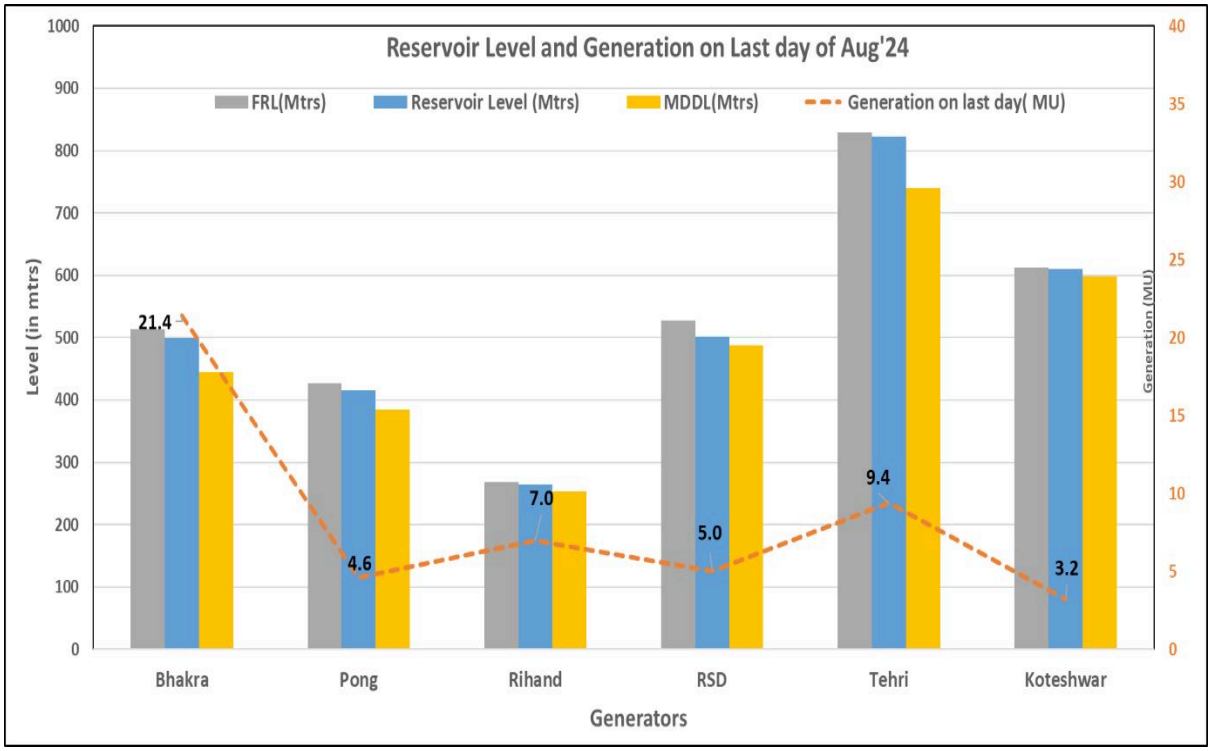
Energy Consumption



Frequency profile

Month	Avg. Freq. (Hz)	Max. Freq. (Hz)	Min. Freq. (Hz)	<49.90 (% time)	49.90 – 50.05 (% time)	>50.05 (% time)
Aug'24	50.00	50.45 (27.08.24 at 13:02:50 hrs)	49.55 (13.08.24 at 19:20:20 hrs)	4.7	75.0	20.3
Aug'23	50.00	50.29 On 02.08.23 at 13:18:10 hrs	49.51 on 31.08.23 at 22:25:00 hrs	7.1	77.3	15.6

Reservoir Level and Generation on Last Day of Month



Detailed presentation on grid highlights of Aug'2024 will be shared by NRLDC in OCC meeting.

Demand forecasting related

With reference to the Clause 31(2) of Central Electricity Regulatory Commission-IEGC Regulations, 2023 and the Operating Procedure of NRLDC prepared in accordance with the same, each SLDC has to furnish the demand estimation for day ahead, week ahead, month ahead (with time block wise granularity) and demand estimation for year ahead (with hour granularity). The sub-clause 31(2) (h) of IEGC-2023 states the following timeline for the submission of demand estimate data to RLDC.

Type of Demand Estimation	Timeline
Daily	10:00 hours of previous day

Weekly	First working day of previous week
Monthly	Fifth day of previous month
Yearly	30th September of previous year

The following is the status regarding forecast data submission.

Region	State	Demand Estimation							
		Daily*		Weekly		Monthly		Yearly	
		Estimation (Y/N)	Data submission (Y/N)	Estimation (Y/N)	Data submission (Y/N)	Estimation (Y/N)	Data submission (Y/N)	Estimation (Y/N)	Data submission (Y/N)
NR	Punjab	Y	Y	N	N	N	N	N	N
	Haryana	Y	Y	N	N	N	N	N	N
	Rajasthan	Y	Y	N	N	N	N	N	N
	Delhi	Y	Y	N	N	N	N	Y*	Y*
	UP	Y	Y	N	N	N	N	Y*	Y*
	Uttarakhand	Y	Y	N	N	N	N	N	N
	HP	N	N	N	N	N	N	Y*	Y*
	J&K	Y	Y	N	N	N	N	N	N
	Chandigarh	Y	Y	N	N	N	N	N	N
	Railways NR	N	N	N	N	N	N	N	N

***Submitted for FY-24-25. Data is awaited for FY 25-26**

In accordance with above, all SLDCs are requested to furnish the demand estimation data as per the formats available at *https://drive.google.com/drive/folders/1KWY4G9gTBLV5wTJkhGEIeRptKP-QbhjL?usp=drive_link* to NRLDC through mail (nrldcmis@grid-india.in) and FTP as per above timeline.

Members may please discuss.

B.2. Grid-Operation related issues

a. Prolonged outage of 400kV Varanasi-Sahupuri line

During 222 OCC Meeting, NRLDC representative raised concern over frequent tripping of 400kV Varanasi-Sahupuri D/C lines due to PLCC maloperation. UP representative stated that there was fault in the GIS compartment of 400kV Varanasi-Sahupuri ckt-2 at Sahupuri station. Frequent incident occurred due to persisting fault in GIS. Later, line was taken under shutdown and corrective actions are being taken. UP was requested to expedite the remedial actions and restore the line-2 as soon as possible so that reliability of NR-ER link through Sahupuri(UP) can be ensured.

It is to be noted that 400kV Varanasi-Sahupuri has not been revived yet. The line is crucial inter-regional link and also is important during September months, as this period is associated with high demand in UP state and high import by the state control area as well as NR.

UPPTCL is requested to provide update and also expedite restoration of line during the meeting.

b. Prolonged outage of FSC of 765kV Koteshwar-Meerut(PG) D/C lines at Meerut(PG)

The FSCs at 765kV Meerut(PG) are out since long time. As reported, reason of outage of FSCs is as follows:

Name of Elements	Outage time/date	Reason of outage
FSC of 765 KV Koteshwar-Meerut (PG) Ckt-2 at Meerut(PG)	12.30/18.04.23	Capacitor bank current imbalance protection operated.
FSC of 765 KV Koteshwar-Meerut (PG) Ckt-1 at Meerut(PG)	08.41/08.06.23	B-Phase to ground fault occurred in the line (Fault Current: 9.0 kA, Fault Location 100.8km from Meerut End). FSC-1 failed.

During 216 OCC meeting, POWERGRID informed that FSC in Ckt-2 is in healthy condition, but could not be taken into service due to capacitor current unbalance issue.

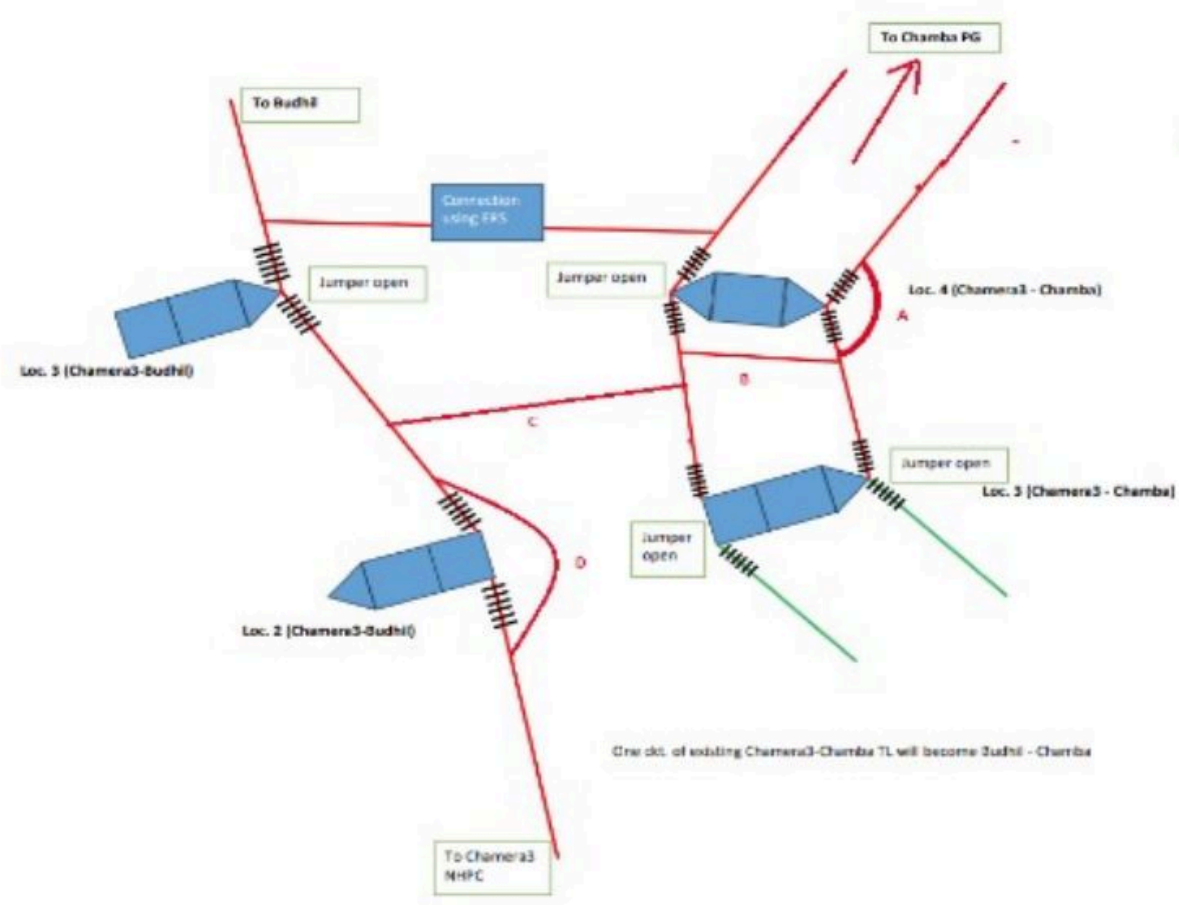
It is pertinent to mention here that Tehri PSP (1000MW) will be commissioned very shortly and FTC process of 400kV Tehri(THDC)-Koteshwar(PG) line-3 has already begun.

After commissioning of Tehri PSP, loading in 765kV Koteshwar-Meerut (PG) D/C lines will increase by significant quantum and approx. 2400MW power would be evacuated through 765kV KoteshwarMeerut (PG) D/C lines. Therefore, FSCs would be required to be kept in service to ensure N-1 compliance for reliable and secure operation. Letter from NRLDC is attached as **Annexure-B.I**.

Accordingly, POWERGRID is requested to expedite revival of FSCs under long outage and provide update during the meeting.

c. Long outage of 220kV Chamera 3-Chamba D/C line

220 KV Chamera_3(NH)-Chamba(PG) (PG) Ckt-1 and ckt-2 were out due to tower collapse on 09-07-2023. Tower collapse was reported at Loc no. 1 from Chamera-3 end and subsequently an interim arrangement was worked out in separate meeting between NRPC, PGCIL(NR2), Chamera3(NHPC), Budhil(Grenko), HPPTCL and NRLDC.



New circuits after installation of the alternative mechanism are in service as:
a) 220 kV Budhil-Chamba transmission line
b) 220 kV Chamera III-Chamba line

As the interim arrangement was done to facilitate safe evacuation of hydropower during the peak hydro season, it is requested that the works on collapsed tower may be expedited and the line may be restored to its normal configuration.

In 215 OCC meeting, NHPC representative stated that tower has been damaged and washed away, accordingly proposal is being worked out to directly string the conductor to gantry. Proposal is being taken up between NHPC and POWERGRID and it is expected that the line would be charged before monsoon season. Work from NHPC side is expected to be completed by Apr 2024.

During the 218 OCC meeting,

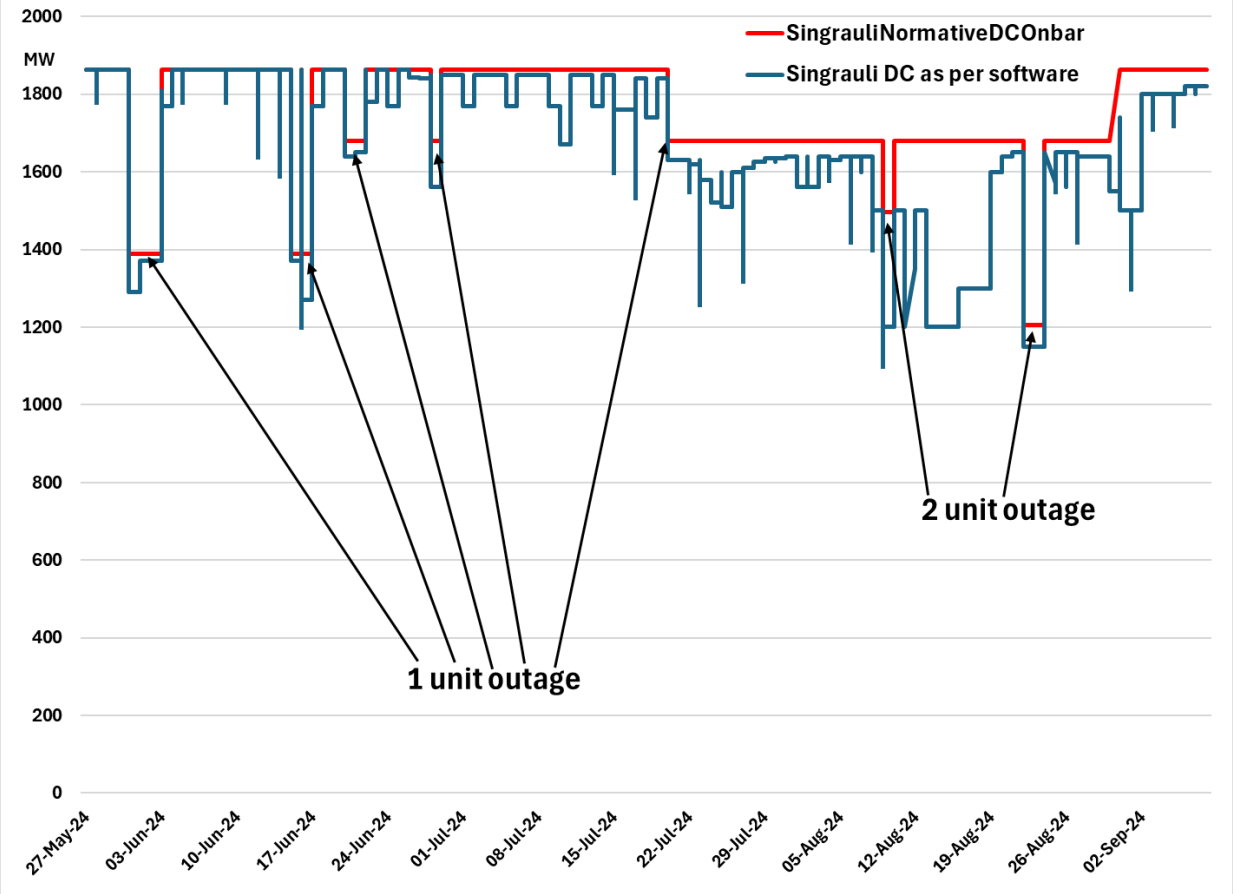
- POWERGRID representative stated that gantry tower design at NHPC end is not available. NHPC requested POWERGRID to develop the approximate tower design with help of some vendor.
- Cost estimate and work plan is under approval for both POWERGRID and NHPC. After approval of the work, the implementation would take 3-4 months and

accordingly it is expected that line would be restored to normal configuration by Nov'2024.

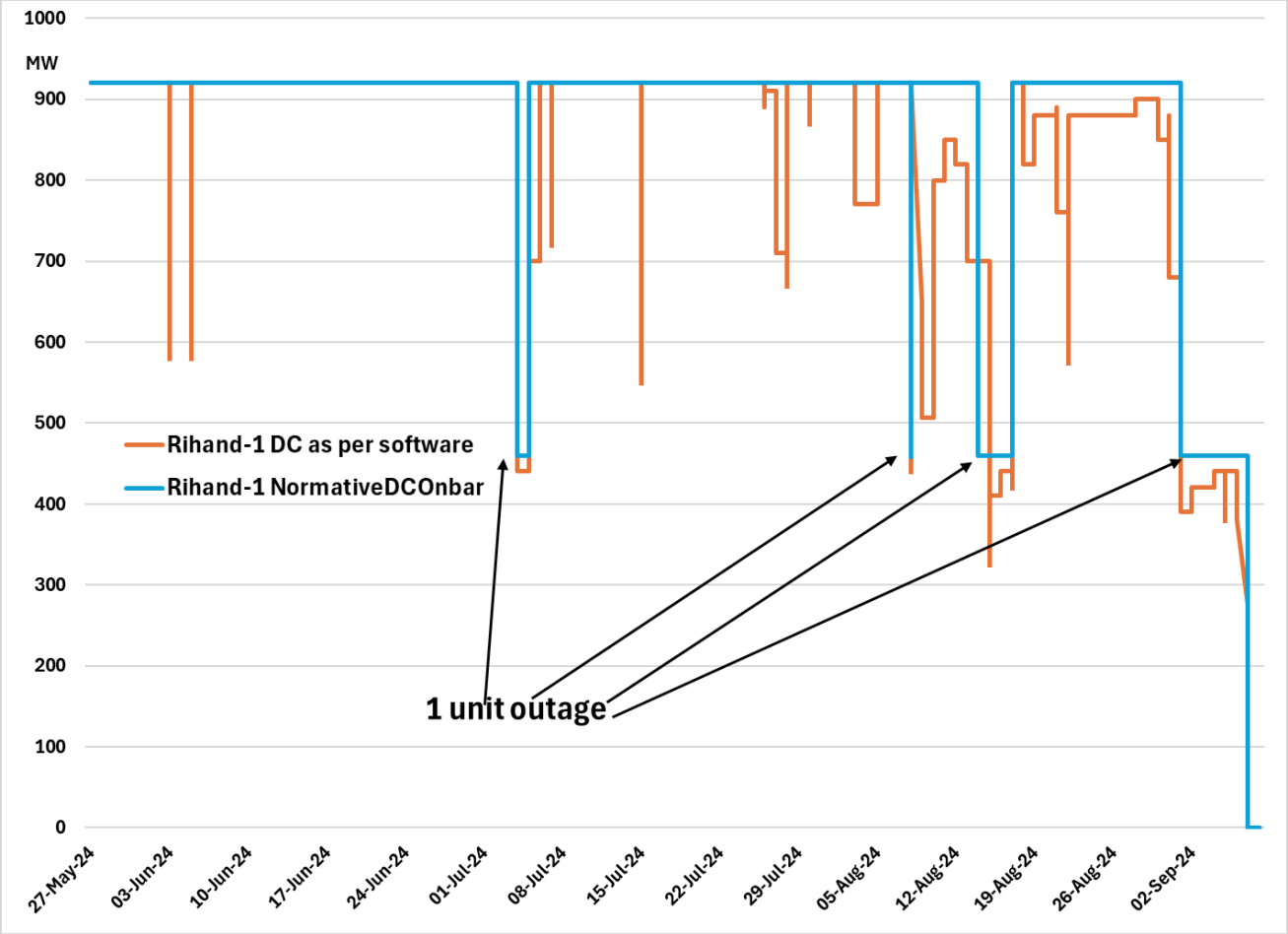
POWERGRID and NHPC are requested to provide update.

d. DC reduction by NTPC thermal generating stations:

The month of Jun-Sep are associated with high demand in Northern region and accordingly it is desirable that maximum generation is available to meet the demand in Northern region. Accordingly, all thermal units were advised to ensure availability of coal and timely provide update to NRLDC/beneficiary states regarding the status of coal stock availability during past OCC meetings as summer preparedness agenda.



Singrauli Plant DC declaration from 27.05.2024-09.09.2024



Rihand-1 Plant DC declaration from 27.05.2024-09.09.2024

From the data available at NRLDC, it was observed that some of the NTPC thermal stations such as Singrauli and Rihand-1 which are pit head thermal plants and having minimal variable charge had reduced their DC during this peak demand season especially during the month of July and August. It is to be noted that September month is associated with very high demand in Northern region and accordingly, it is desirable that maximum internal generation is available so that the stress on inter-regional corridors is minimised.

Members may please discuss.

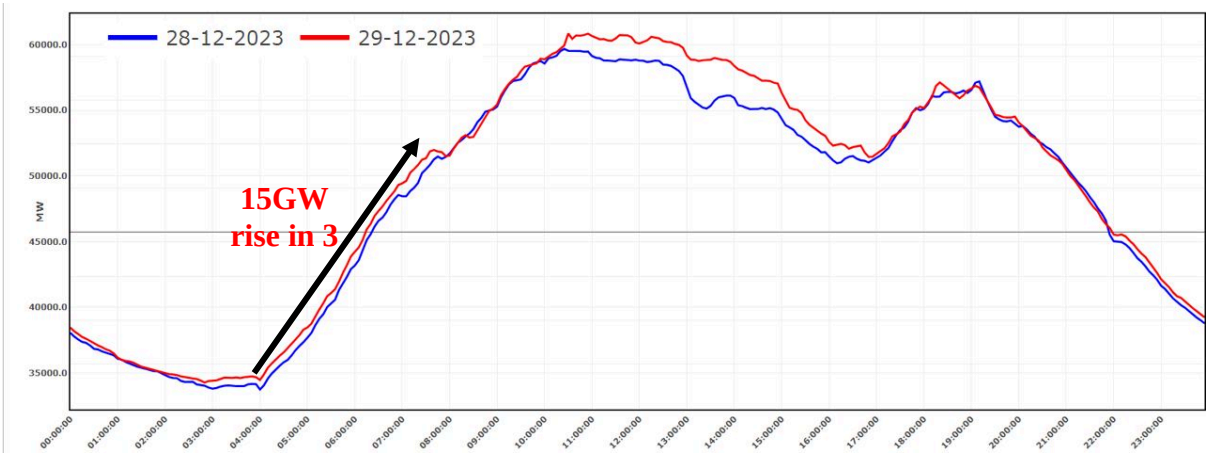
B.3. Winter preparedness 2023-24

Winter in Northern region is likely to start from mid of October till February end, and the challenges faced during these months are well known to all the utilities. During winter, demand of NR states except Rajasthan and hilly states starts reducing. With decreasing temperatures and festivals, winter also brings some severe challenges to NR grid operators. Moreover, there is possibility for severe winter during this season due to the impact of LA-NINA. IMD in their press release dated 05.09.2024, Extended range Forecast for next two weeks (5- 18 Sept, 2024) mentioned that "*The latest MMCFS forecast indicates higher likelihood of La Niña conditions are likely to develop during end of monsoon season*". Accordingly, following measures need to be discussed and implemented for better grid operation during winter months:

(i) Load-generation balance *(Action by SLDCs/ NRLDC)*

- Hydro generation resource which becomes all the more important due to ramping requirement; it starts depleting due to limited inflow of water (most of the hydro stations of NR are snow fed). With increasing solar generation during the day-time, the ramping requirements during evening hours are rising and posing serious challenge to the system operators to maintain frequency within the band.
- Off-peak to peak demand ratio of NR falls to around 0.5 to 0.6 during winter, morning and evening load ramp is quite steep together with limited hydro resources etc. This increases the importance of Portfolio management as per load forecast especially during high ramp up and ramp down periods.
- Generation planning becomes very important especially with the in-surge of renewable integration with the grid, generation resources should be optimally planned, taking care to maintain adequate reserves.

Typical demand pattern for a winter day is shown below:



Measures to be taken by utilities to manage load generation balance during winter months as discussed during previous many meetings are mentioned below:

- With increasing complexity, users may develop in house or use third party Software tools for precision of load forecasting & generation planning for daily basis, which can further go for hourly basis also.
- Forecast of demand ramp has also become important especially with increasing penetration of solar generation, and so SLDCs are advised to forecast load ramping so that commensurate ramping of generation can also be planned.
- Minimize generation to technical minimum as per IEGC guidelines /CERC directions during low demand.
- Co-ordination of ramping of generation during morning & evening peak ramping.
- Optimum utilization of Hydro resources for meeting peak hour demand.

(ii) High voltages in grid (*Action by all utilities*)

Another big challenge with decrease in demand, is the high voltages observed in the grid. With NR load reducing significantly, the lines become lightly loaded and are generating MVAR most of the time leading to high voltages in grid. Moreover, with heating loads across most of the NR states the power factor also is improved minimizing any reactive power requirement from the grid.

To overcome this challenge number of measures have been discussed earlier and are reiterated for OCC members:

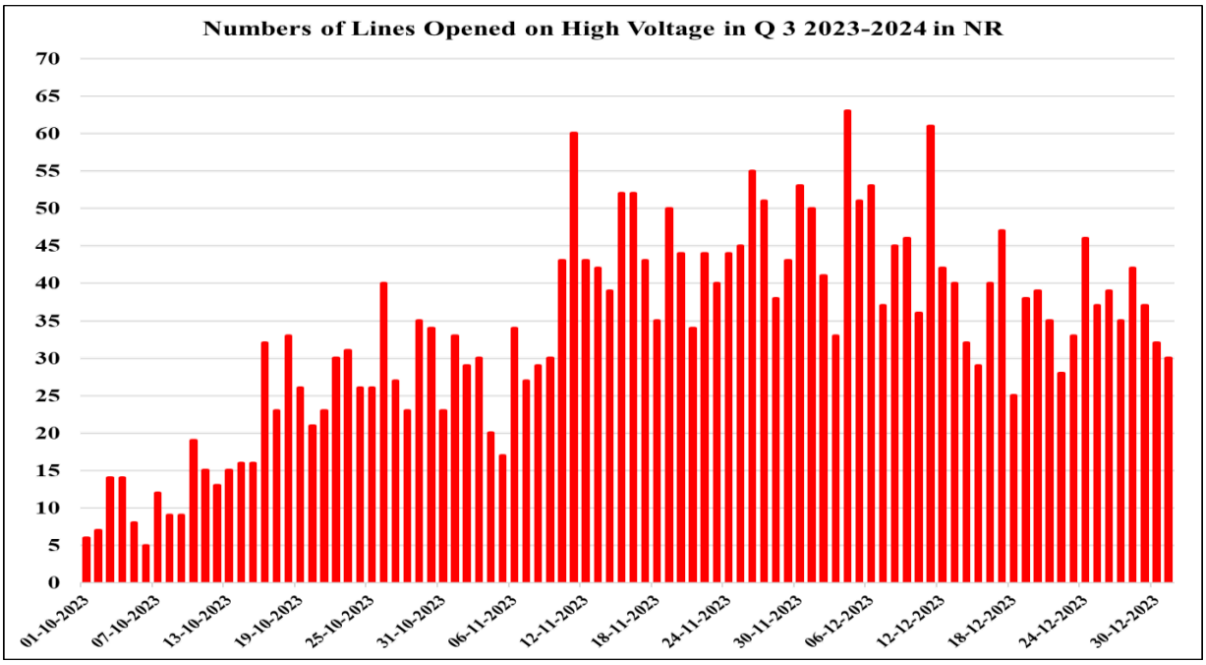
- Ensuring to switch off capacitors & switch on reactors.
- Ensuring healthiness of all commissioned reactors in the system
- Monitoring of reactive power through SCADA displays.
- Reactive power support (absorption) by generating stations as per the capability curve. NRLDC would present the reactive power performance of all thermal generators in next OCC meetings.
- Synchronous condenser operation especially of hydro units during night hours for dynamic voltage support. Some of the generators have already been tested (Tehri, Chamera, Pong, RSD etc.) and shall be available for condenser mode of operation as and when required. States/SLDCs are also advised to explore synchronous condenser operation of Hydro & Gas units in their state control area. It is requested that all other utilities may explore possibility of running units as synchronous condenser.
- ICT Tap Optimization at 400kV & above is carried out by NRLDC. Same exercise need to be carried out by SLDCs at 220kV & below levels. ICT tap optimisation will be done by NRLDC based on SCADA data of Oct month.
- Opening of EHV lines based on expected voltage reduction and also considering security & reliability of system
- To ensure that line reactors available after opening of lines are optimally utilized it is necessary that all the stations where the provision of using line reactors as bus reactors is available at all control centres. The Reactive power document being compiled by NRLDC has the details of all such line reactors. Last updated document is available at NRLDC website under documents section: https://nrldc.in/download/system-restoration-procedure-for-nr_2024/?wpdmdl=13253&lang=en. It is requested that all utilities go through document and share any anomaly/mis-representation. The document is being utilized in real-time operation by control room operators at NRLDC, thus it is necessary that list of all reactors where such provision is available are updated in the document.

(iii) Plan for winter preparedness *(Action by SLDCs)*

Generally Following actions are being taken at NRLDC end for controlling high voltages in the grid. To avoid frequent opening of lines, following instructions are given to avoid over voltages in the system.

- The bus reactors are switched in.
- The manually switchable capacitor banks are taken out.
- The switchable line/tertiary reactor are taken in.
- Optimized the filter banks at HVDC terminal.
- All the generating units on bar are advised to absorb reactive power within the capability curve.
- Reduced power flow on HVDC terminals so that loading on parallel EHV network goes up resulting in drop in voltage.

After exhausting all the above stated resources, in the last resort, lightly loaded lines were opened and priority was given to the lines which have switchable line reactor, so that their line reactors(L/R) can be converted to bus reactors(B/R) to contain the overvoltage. As can be seen from the plot shown below, number of 400kV & above lines have to be opened on daily basis to control high voltages in the grid.



It has been observed that many transmission lines have switchable Line Reactors (with distinct Circuit Breaker for switching operations) but they are not used as Bus Reactors due to concerns raised by line owners owing to non-availability of NGR bypass scheme. Generally, the bypass scheme is required for Neutral Grounding Reactor (NGR) of the line reactor so as to utilize the line reactor as bus reactor. The NGR bypass scheme requires a bypass isolator or circuit breaker, the provision of which makes the conversion possible. In planning stage, instalment of NGR bypass schemes may also be considered in switchable Line Reactors to avoid multiple opening of parallel circuits on high voltage and to maintain system voltage within limits specified under Central Electricity Authority (Grid Standards) Regulations, 2010.

Severe High voltage in Delhi, Punjab & Haryana area

The issue of high voltage in Delhi, Punjab & Haryana state control area is well known. Since the demand of these states reduces drastically in the winter months compared to high demand months from Jun-Sep, the transmission lines and transformers are under-utilised. This leads to a situation wherein the low power flow through these transmission lines leads to high MVAR generation. This high MVAR generation along with less reactive load (highly inductive load during summer months due to agricultural and cooling requirement) leads to very high voltages in the grid. Further due to less demand, these states are generally drawing power from the pit-head plants and their internal generation is also less. This lower internal generation / less machines on bar aggravates the high voltage as no reactive power support is available from near by machines.

Delhi has a transmission network and distribution network involving cable which are generating high reactive power. Further, when these cables are lightly loaded during the night hours of winter months, it leaves the operator no choice but to open the transmission lines. Thus, it is important that already planned and approved reactors are commissioned before the winter season so as to minimise the issues of high voltage in Delhi control area.

Similarly, for Punjab & Haryana apart from the above listed measures, it is critical that lightly loaded transmission lines are opened at lower voltage during night time also keeping in mind grid security so that unnecessary MVAR generation is avoided. Ready list of such lines may be furnished to NRLDC/NRPC for information.

Status of reactors under commissioning in Delhi control area in Northern region as per 222 OCC MoM is shown below:

Substation	Reactor	Status as per 222 OCC MoM
Mundka	1x125 MVAr at 400 kV & 1x25 MVAr at 220 kV	Bay work completed on 25.03.2023. Reactor part tender is dropped and at present same is under revision.
Bamnauli	2x25 MVAr at 220 kV	Bay work completed on 25.03.2023. Reactor part tender is dropped and at present same is under revision.
Electric Lane	1x50 MVAr at 220 kV	Under Re-tendering due to Single Bid
Indraprastha	2x25 MVAr at 220 kV	Bay work completed on 07.11.2023. Reactor part tender is dropped and at present same is under revision.

Special actions are required by Punjab, Haryana & Delhi to avoid the high voltage issues during winter season. It is also requested to expedite the commissioning of these reactors apart from the measures listed above.

(iv) EHV line trip during fog/Smog *(Action by transmission line owners)*

One more challenge during winter months is tripping of EHV lines due to fog. With low temperature across Northern region and sometimes with high humidity in the air, fog starts to appear across Northern region. This problem is generally most severe from 15Dec- 15Feb period. During this time additional care need to be taken by system operator as many multiple element tripping events have been reported in the past especially in Punjab and Eastern UP. Such tripping are more severe if the lines are tripping from generation complex such as Singrauli-Anpara-Rihand complex. Therefore, utilities are requested to ensure:

- **Priority wise cleaning & replacement is carried out. Priority to be given to the lines that have historical record of tripping during foggy weather.**
- Progress on cleaning replacement of porcelain insulator with polymer insulator to be monitored and latest status may be furnished to NRPC/NRLDC.

(v) Load crash due to inclement weather (***Action by all utilities***)

During winter months, the demand of Northern region is much lower compared to summer months for which the transmission system is designed. When operating at reduced demand, the internal generation of most of the states is low based on merit order. Several EHV lines are also opened to ensure voltages within IEGC limits. In such a scenario, in case of rainfall/snowfall, it is seen that demand of Northern region falls sharply. With several lines out due to high voltage and more tripping due to bad weather, ensuring safe and secure grid operation becomes a big challenge for system operators. To overcome this challenge, it is important that:

- All system operators and transmission utilities regularly monitor weather forecast site (Weather portal for power sector)
- ERS is available in case of emergency.
- Ensure additional trained manpower especially during night hours at all major control centres/ substations

(vi) Ensuring protection settings as approved by NRPC (***Action by all transmission & generating stations***)

Apart from above, it needs to be made sure that defense mechanism is healthy i.e. ensuring all SPS healthy, protection system intact, monitoring of df/dt & UFR etc; and telemetry especially of MVAr of Generator, temperature & humidity etc. is available and reliable.

During winter months, it has been observed that there is **frequent tripping of ICTs on overflux and lines on overvoltage** especially in Punjab and Haryana areas. On number of occasions, it is seen that utilities are correcting their protection settings after tripping events. It is important all the protection settings are as approved by NRPC. Utilities are requested to confirm the same from field and ensure that protection settings are only as approved by NRPC.

Utilities are requested to prepare plan for measures to be taken by them for carrying out pre-winter maintenance activities. Same may be shared by utilities via mail with NRPC/NRLDC before next OCC meeting. Members may please discuss.

B.4. Status of compliances of mock drill of islanding schemes as per IEGC 2023

"Mock drill of the islanding schemes shall be carried out annually by the respective RLDCs in coordination with the concerned SLDCs and other users involved in the islanding scheme. In case mock drill with field testing is not possible to be carried out for a particular scheme, simulation testing shall be carried out by the respective RLDC."

Following islanding schemes have been implemented in NR:

1. NAPS (UP)
2. RAPS (Rajasthan)
3. Bawana (Delhi)
4. Pathankot-RSD (Punjab)
5. Unchahar (UP)

During 222 OCC meeting,

All utilities were requested to test the relays one by one involved in the islanding schemes with disabling of actual trimming of load during testing and report may be submitted. Further, officers involved in preparation of the islanding schemes from states side, may also review the islanding scheme in consultation with NRLDC system studies team and carry out simulation studies.

Delhi SLDC confirmed that field testing of SPS is possible and timeline for same shall be provided in consultation with DTL. Punjab also confirmed that field testing is possible and same shall be planned in off-peak season around Nov'2024.

MS NRPC stated that since only signal checking is involved and no actual island formation will take place, accordingly, testing exercise may be carried out at the earliest. He suggested that islanding scheme testing may be carried out in next 2-3 months so as to comply with IEGC.

Some of the SLDCs stated that SOP may also need to be prepared before carrying out mock testing of SPS.

OCC forum discussed that NRLDC in consultation with SLDCs may prepare SOP and carry out mock testing of already commissioned SPS at the earliest.

Accordingly, SOP has been prepared from NRLDC side and is attached as **Annexure-B.II** for comments from SLDCs/STUs and others.

In addition to this, NRLDC representative stated that it was recommended to include the following in Islanding SCADA Display for better monitoring of Island health in real time:

1. Island Generators status with total actual generation in MW (G)
2. Island Load status with actual Load in MW (L)
3. G/L Ratio
4. Islanding Frequency value

The display may be arranged in following fashion.

It was requested to prepare network map of the island for easy visualisation by control room operators. It was also requested to ensure that error-free telemetry of all elements which are part of island is available at SLDC/NRLDC control room. The load and generation may be logged and stored so that periodic analysis of island is possible.

Punjab SLDC stated that Pathankot-RSD display is available at their control center, however, they will implement the same in this format and share with NRLDC.

UP and Rajasthan SLDCs stated that island display has been prepared at their end in the required format, however, there is some issue in transferring the data to NRLDC.

NRLDC representative stated that along with display of island, logging of data also needs to be ensured to study island performance over period of time.

NRLDC stated that display availability of Delhi islanding scheme is poor and most of the data is not available and also requested to develop display in format attached in the meeting.

CGM NRLDC and MS NRPC expressed concern on the same and asked Delhi SLDC to implement the SCADA display at the earliest in the required format.

All SLDCs agreed to implement island display in this format at their end and also to share the data with NRLDC.

Punjab, UP, Rajasthan and Delhi SLDCs are requested to provide update.

B.5. Sharing of ATC/TTC assessment and basecase with NRLDC

All NR states except Chandigarh UT are sharing basecase and ATC/TTC assessment with NRLDC. OCC has advised all states to timely declare TTC/ATC for prospective months and revise the figures as per requirement.

CERC vide their order dated 29.09.2023 has granted approval of "'Detailed Procedure for Allocation of Transmission Corridor for Scheduling of General Network Access and Temporary General Network Access under Central Electricity Regulatory Commission (Connectivity and General Network Access to the inter-State Transmission System) Regulations, 2022".

Detailed roles and responsibilities for State Load Dispatch Centers in various timelines of the approved procedure are provided in the table below.

Purpose	***S No***	***Action of Stakeholder***	***Responsibility***	***Submission to***	***Data/ Information Submission Time line***
1. Revision 0 TTC/ATC Declaration for Month 'M'	*1(a)*	*Submission of node wise Load and generation data along with envisaged scenarios for assessment of transfer capability Assessment of TTC/ATC of the import/export capability of the state and intra-state system and sharing of updated network simulation models*	*SLDC*	*RLDC*	*10th Day of 'M-12' month*
	1(b)	*Declaration of TTC/ATC of the*			*26th*

		intra- state system by SLDC in consultation with RLDC			*Day of 'M-12' month*
2. Interconnection Studies for elements to be integrated in the month 'M'	*2(a)*	*Submission of node-wise load and generation data & sharing of network simulation models for intra-state elements coming in the next six months*	*SLDC*	*RLDC*	*8th Day of 'M- 6' month*
	2(b)	*Sharing of inter-connection study results*			*21st Day of 'M-6' month*
3. Month Ahead TTC/ATC Declaration & Base case for Operational Studies for Month 'M'	*3(a)*	*Submission of node wise Load and generation data along with envisaged scenarios for assessment of transfer capability*	*SLDC*	*RLDC*	*8th Day of 'M- 1' month*
		Assessment of TTC/ATC of the intra- state system and sharing of updated network simulation models			
	3(b)	*Declaration of TTC/ATC of the intra- state system in consultation with RLDC*	*SLDC*	*RLDC*	*22nd Day of 'M-1' month*

To encourage participation from SLDCs regarding basecase preparation and ATC/TTC assessment, two workshops have been conducted from Grid-India/NRLDC side. One workshop was conducted 31.08.2023 before the finalization of the procedure and another on 10.01.2024 recently to involve further participation from SLDCs.

Although all SLDCs are now involved in preparation of basecase & ATC/TTC assessment, it is seen that the timelines as per CERC approved procedure are not being followed and number of times basecases are not received from SLDC side.

5.1 ATC/TTC assessment sharing 11 months in advance

The procedure mentions that:

"SLDCs in consultation with RLDCs shall declare the import and export TTC, ATC, and TRM of the individual control/bid areas within the region in accordance with Regulation 44 (3) of the Grid Code 2023. RLDCs shall assess the import and export TTC, TRM and ATC for the group of control/bid areas within the region (if required). The computed TTC, TRM and ATC figures shall be published on the website of respective SLDCs and RLDCs, along with the details of the basis of calculations, including assumptions, if any, **at least eleven (11) months in advance**. The specific constraints indicated in the system study shall also be published on the website."

Accordingly, SLDCs are requested to send the PSSE cases for four scenarios for Aug'25 i.e. Afternoon Peak, Solar Peak, Evening Peak & Off-Peak hours as given below

S. No.	Scenario	Time of Scenario

1	Off-Peak	06:00 Hrs
2	Afternoon Peak	15:00 Hrs
3	Evening Peak	22:30 Hrs
4	Solar Peak	12:00 Hrs

It is requested that the basecases as well as ATC/TTC assessments may be shared with NRLDC as per CERC approved procedure. Further, the above exercise needs to be carried out regularly monthly.

It was discussed in last several OCC meetings & all states were requested to share basecase as well as ATC/TTC assessments for M-11 scenarios on monthly basis with NRLDC as per CERC approved procedure. Accordingly, it is requested to submit the basecase as well as ATC/TTC assessments.

5.2 Sharing of Data and study results for interconnection studies

As per **Regulation 33 of IEGC 2023,**

(9) Each SLDC shall undertake a study on the impact of new elements to be commissioned in the intra-state system in the next six (6) months on the TTC and ATC for the State and share the results of the studies with RLDC.
(10) Each RLDC shall undertake a study on the impact of new elements to be commissioned in the next six (6) months in (a) the ISTS of the region and (b) the intra-state system on the inter-state system and share the results of the studies with NLDC.
(11) NLDC shall undertake study on the impact of new elements to be commissioned in the next six (6) months in (a) inter-regional system, (b) cross-border link and (c) intra-regional system on the inter-regional system.

In line with above, utilities are requested to share the list of elements/LGB data/interconnection study results etc as per the approved procedure which are expected to be commissioned within next six months. This needs to be practised as monthly exercise on regular basis.

The agenda was discussed in last several OCC meetings & all utilities were requested to share list of elements/LGB data/interconnection study results etc as per the approved procedure on monthly basis.

5.3 TTC/ATC of state control areas for monsoon 2024 (M-1)

As discussed in previous OCC meetings, most of the NR states except Ladakh and Chandigarh U/Ts are sharing basecase and ATC/TTC assessment with NRLDC.

Based on simulation studies and discussions between SLDCs and NRLDC, ATC/TTC limits for NR states for the month of Oct'2024 are attached as **Annexure-B.III.**

OCC has advised all states to timely declare TTC/ATC for prospective months and revise the figures as per requirement.

The agenda was also discussed in last several OCC meetings wherein all states agreed to send the data as well as PSSE basecases on time for all three (M-1, M-6, M-11) scenarios.

In 222 OCC meeting,

- NRLDC representative stated that UP and J&K are regularly sharing basecase as well ATC/TTC assessment with NRLDC. Haryana, Delhi, Uttarakhand, HP and Punjab are sharing data, but on some occasions it is getting missed. It was requested that all SLDCs may timely share the same.
- All SLDCs agreed to share basecase as well as ATC/TTC assessment as per CERC approved procedure.

Still it is being observed that response from SLDCs is not as per desired levels. All SLDCs to provide update.

Members may please discuss.

B.6. Frequent tripping of transmission elements in the month of August'24:

The following transmission elements were frequently tripping during the month of **August'24**:

S. No.	Element Name	No. of forced outages	Utility/SLDC
1	220 KV Anta(NT)-Sakatpura(RS) (RS) Ckt-1	4	NTPC/ Rajasthan
2	220 KV DandhariKalanI(PS)-Ludhiana(PG) (PSTCL) Ckt-2	3	PG/Punjab
3	220 KV NAPP(NP)-Khurja(UP) (UP) Ckt-1	6	NAPP/UP
4	220 KV Saharanpur(PG)-Shamli(UP) (UP) Ckt-1	4	PG/UP
5	400 KV Agra-Unnao (UP) Ckt-1	4	UP
6	400 KV Bhadla-Merta (RS) Ckt-1	5	Rajasthan
7	400 KV Dadri(NT)-Panipat(BB) (PG) Ckt-1	3	NTPC/PG

The complete details are attached at **Annexure-B.IV.**

It may be noted that frequent tripping of such elements affects the reliability and security of the grid. Hence, utilities are requested to analyze the root cause of the tripping and share the remedial measures taken/being taken in this respect.

Members may like to discuss.

B.7. Multiple element tripping events in Northern region in the month of August '24:

A total of 13 grid events occurred in the month of August'24 of which **05** are of GD-1 category, **05** are of GI-2 Category and **03** are of GI-1 Category. The tripping report of all the events have been issued from NRLDC. A list of all these events is attached at **Annexure-B.V.**

Maximum delayed clearance of fault observed in event of multiple elements tripping at 220kV Shahbad(HV) & 220kV Rajokheri(HV) on 26th August, 2024 (As per PMU at

Abdullapur(PG), Y-B phase to phase fault converted into R-Y-B three phase fault with delayed fault clearing time of 2040msec is observed).

Delayed clearance of fault (more than 100ms for 400kV and 160ms for 220kV system) observed in total **05** events out of **13** grid events occurred in the month. In 01 (no.) of grid events, there was no fault in the grid.

Remedial actions taken by constituents to avoid such multiple elements tripping may be shared.

As per IEGC clause 37.2 (c), Disturbance Recorder (DR), station Event Logger (EL), Data Acquisition System (DAS) shall be submitted within 24 hrs of the event and as per IEGC clause 37.2 (e), the user shall submit a detailed report in the case of grid disturbance or grid incidence within one (1) week of the occurrence of event to RLDC and RPC.

Members may take necessary preventive measures to avoid such grid incidents / disturbances in future and report actions taken by respective utilities in OCC & PSC forum. Moreover, utilities may impress upon all concerned for providing the Preliminary Report, DR/EL & Detailed Report of the events to RLDC in line with the regulations.

Members may like to discuss.

B.8. Details of tripping of Inter-Regional lines from Northern Region for August' 24:

A total of 18 inter-regional lines tripping occurred in the month of August'24. The list is attached at **Annexure-B.VI.** The status of receipt of preliminary reports, DR/EL within 24hrs of the event and fault clearing time as per PMU data has also been mentioned in the table. The non-receipt of DR/EL & preliminary report within 24hrs of the event from SLDCs / ISTS licensees / ISGSs is in violation of regulation 37.2(c) of IEGC and regulation 15(3) of CEA Grid Standards. As per regulations, all the utilities shall furnish the DR/EL, flag details & preliminary report to RLDC/RPC within 24hrs of the event. They shall also furnish the detailed investigation report within 7 days of the event if fault clearance time is higher than that mandated by CEA (Grid Standard) Regulations.

Members may please note and advise the concerned for taking corrective action to avoid such tripping as well as timely submission of the information.

Members may like to discuss.

B.9. Status of submission of DR/EL and tripping report of utilities for the month of August'24.

The status of receipt of DR/EL and tripping report of utilities for the month of August'24 is attached at **Annexure-B.VII**. It is to be noted that as per the IEGC provision under clause 37.2 (c), tripping report along with DR/EL has to be furnished within 24 hrs of the occurrence of the event. However, it is evident from the submitted data that reporting status is not satisfactory and needs improvement.

Members may please note and advise the concerned for timely submission of the information. It is requested that DR/EL of all the trippings shall be **uploaded on Web Based Tripping Monitoring System "http://103.7.128.184/Account/Login.aspx"** within 24 hours of the events as per IEGC clause 37.2(c) and clause 15.3 of CEA grid standard. Apart from prints of DR outputs, the corresponding COMTRADE files may please also be submitted in tripping portal / through email.

Members may like to discuss.

B.10. Frequency response performance for the reportable events of month of August 2024:

In the month of August 2024, only 1 no. of reportable event on 23rd August 2024 was notified by NLDC for which FRC/ FRP need to be calculated and the same along with high resolution data need to be submitted to RLDC. Description of the event is as given below:
Table:

S. No.	Event Date	Time (In hrs.)	Event Description	Starting Frequency (in Hz)	Nadir Frequency (in Hz)	End Frequency (in Hz)	*Δf*	NR FRP during the event
1	23-Aug-24	12:34 hrs	As reported, at 12:34 hrs on 23rd August 2024, RE generation loss event of around 1200 MW occurred in RE generation complex of Kayathar, Tuticorin. Hence net generation loss of 1200 MW is considered for FRC/FRP Calculation.	50.006	49.870	49.957	-0.05	1.18

As per IEGC 2023 Clause 30.8, "The primary response of the generating units shall be verified by the Load Despatch Centres (LDCs) during grid events. The concerned generating station shall furnish the requisite data to the LDCs within two days of notification of reportable event by the NLDC."
As per IEGC 2023 Clause 30.10.(n), "Each control area shall assess its frequency response characteristics and share the assessment with the concerned RLDC along with high resolution data of at least 1 (one) second for regional entity generating stations and energy storage systems and 10 (ten) seconds for the state control area."

As per sub-clause (a(v)) of clause (9) of IEGC 2023 Annexure-2, "All the SLDCs shall work out FRC for all the intra-state entities (for events indicated by the Regional Load

Despatch Centres) based on the HDR available at their respective SLDCs and submit the same to respective RLDC within six (6) working days after the event. (Format as per Table-B)."

As per sub-clause (a(vi)) of clause (9) of IEGC 2023 Annexure-2, "All regional entity generating stations shall also assess the FRC for their respective stations and submit the same to respective RLDC within six (6) working days. (Format as per Table-B). The high-resolution data (1 second or better resolution) of active power generation and frequency shall also be shared with RLDC."

Status of details received from constituents as on 05th September, 2024 is:

S. No	Control Area	Event Date
		16-07-2024
1	Punjab	Not Received
2	Haryana	Not Received
3	Rajasthan	Not Received
4	Delhi	Not Received
5	Uttar Pradesh	Received
6	Uttarakhand	Not Received
7	Chandigarh*	NA
8	Himachal Pradesh	Not Received
9	J&K(UT) and Ladakh(UT)	Not Received
10	Dadri -1 (TH)	Received
11	Dadri -2 (TH)	Received
12	Jhajjar (TH)	Received
13	Rihand-1 (TH)	Not Received
14	Rihand-2 (TH)	Not Received
15	Rihand-3 (TH)	Not Received
16	Shree Cement (TH)	Not Received
17	Singrauli (TH)	Received
18	Tanda-2 (TH)	Not Received
19	Unchahar stg-4 (TH)	Received
20	Unchahar (TH)	Received
21	Anta (G)	Not Received
22	Auraiya (G)	Received
23	Dadri (G)	Received
24	AD Hydro (H)	Received
25	Bairasiul (H)	Not Received
26	Bhakra (H)	Not Received
27	Budhil (H)	Received
28	Chamera-1 (H)	Not Received
29	Chamera-2 (H)	Not Received
30	Chamera-3 (H)	Not Received
31	Dehar (H)	Not Received
32	Dhauliganga (H)	Not Received
33	Dulhasti (H)	Not Received
34	Karcham (H)	Received
35	Kishanganga	Not Received
36	Koldam (H)	Received

37	**Koteshwar (H)**	Not Received
38	**Malana-2 (H)**	NA
39	**Nathpa Jhakri (H)**	Not Received
40	**Parbati-2 (H)**	Not Received
41	**Parbati-3 (H)**	Not Received
42	**Pong (H)**	Not Received
43	**Rampur (H)**	Received
44	**Sainj (H)**	Not Received
45	**Salal (H)**	Not Received
46	**Sewa-II (H)**	Not Received
47	**Singoli Bhatwari (H)**	Not Received
48	**Sorang (H)**	Not Received
49	**Tanakpur (H)**	Not Received
50	**Tehri (H)**	Not Received
51	**Uri-1 (H)**	Not Received
52	**Uri-2 (H)**	Not Received

Frequency Response Performance (FRP) of generating stations for each reportable event are calculated based on the submitted high resolution data from generating stations. However, the generating stations for which data is not received till 05th September, 2024, FRC/FRP as per NRLDC HDR data is used for computation of Average Monthly Frequency Response Performance, Beta 'β' for Generating Stations.

FRP values as considered (as per NRLDC HDR data/ generator high resolution data) for the events of August, 2024 is as follows:

S. No	Control Area	Event Date
		23-08-2024
1	**Punjab**	1.43
2	**Haryana**	1.36
3	**Rajasthan**	0.30
4	**Delhi**	-1.32
5	**Uttar Pradesh**	0.99
6	**Uttarakhand**	1.00
7	**Chandigarh***	NA
8	**Himachal Pradesh**	1.58
9	**J&K(UT) and Ladakh(UT)**	-0.69
10	**Dadri -1 (TH)**	2.62
11	**Dadri -2 (TH)**	4.98
12	**Jhajjar (TH)**	16.88
13	**Rihand-1 (TH)**	1.62
14	**Rihand-2 (TH)**	-4.16
15	**Rihand-3 (TH)**	8.90
16	**Shree Cement (TH)**	1.56
17	**Singrauli (TH)**	0.92
18	**Tanda-2 (TH)**	8.53
19	**Unchahar stg-4 (TH)**	5.65
20	**Unchahar-I TPS**	2.07
21	**Unchahar-II TPS**	-3.91

22	**Unchahar-III TPS**	6.21
23	**Anta (G)**	0.97
24	**Auraiya (G)**	1.07
25	**Dadri (G)**	1.34
26	**AD Hydro (H)**	0.00
27	**Bairasiul (H)**	0.00
28	**Bhakra (H)**	-0.14
29	**Budhil (H)**	8.94
30	**Chamera-1 (H)**	2.54
31	**Chamera-2 (H)**	-0.95
32	**Chamera-3 (H)**	1.43
33	**Dehar (H)**	1.71
34	**Dhauliganga (H)**	0.00
35	**Dulhasti (H)**	0.19
36	**Karcham (H)**	0.35
37	**Kishenganga**	1.25
38	**Koldam (H)**	1.43
39	**Koteshwar (H)**	No Gen
40	**Malana-2 (H)**	NA
41	**Nathpa Jhakri (H)**	0.27
42	**Parbati-2 (H)**	No Gen
43	**Parbati-3 (H)**	0.00
44	**Pong (H)**	0.90
45	**Rampur (H)**	2.68
46	**Sainj (H)**	0.00
47	**Salal (H)**	0.72
48	**Sewa-II (H)**	No Gen
49	**Singoli Bhatwari (H)**	No Gen
50	**Sorang (H)**	0.82
51	**Tanakpur (H)**	-0.10
52	**Tehri (H)**	No Gen
53	**Uri-1 (H)**	0.60
54	**Uri-2 (H)**	0.00

ISGS were requested to confirm whether FGMO as per IEGC 2023 has been implemented at their respective stations or not. Updated sheet on the basis of details receicved is as follows:

Sl. No.	Entity	Capacity(MW)	Governor Mode (FGMO as per IEGC 2023) Yes or No	Droop setting (%)	Remarks (if any)
1	Dadri-1 (TH)	4*200			
2	Dadri -2 (TH)	2*490			
3	Jhajjar (TH)	3*500			
4	Rihand-1 (TH)	2*500	Yes	5.0	Under Implementation
5	Rihand-2 (TH)	2*500	Yes	5.0	Under

					Implementation
6	Rihand-3 (TH)	2*500	Yes	5.0	Under Implementation
7	Shree Cement (TH)	(2 * 150)			
8	Singrauli (TH)	2*500+5*200			
9	Tanda-2 (TH)	2*660			
10	Unchahar stg-4 (TH)	1*500			
11	Unchahar (TH)	2*210			
12	Anta (G)	(1 * 153.2 + 3 * 88.71)			
13	Auraiya (G)	(2 * 109.3 + 4 * 111.19)			
14	Dadri (G)	(2 * 154.51 + 4 * 130.19)			
15	AD Hydro (H)	(2 * 96)	YES	4.0	-
16	Bairasiul (H)	(3 * 60)	Yes	4.0	
17	Bhakra (H)	(5 * 126 + 5 * 157)			
18	Budhil (H)	(2 * 35)			
19	Chamera-1 (H)	(3 * 180)	Yes	5.0	
20	Chamera-2 (H)	(3 * 100)	Yes	5.0	
21	Chamera-3 (H)	(3 * 77)	Yes	4.0	
22	Dehar (H)	(6 * 165)			
23	Dhauliganga (H)	(4 * 70)	Yes	5.0	
24	Dulhasti (H)	(3 * 130)	Yes	5.0	
25	Karcham (H)	(4 * 261.25)	Yes	5.0	
26	Kishenganga	(3 * 110)	Yes	4.0	
27	Koldam (H)	(4 * 200)	Yes	4.0	
28	Koteswar (H)	(4 * 100)	Yes	4.0	
29	Malana-2 (H)	(2 * 50)			
30	Nathpa Jhakri (H)	(6 * 250)	Yes	5.5	
31	Parbati-2 (H)	(4 * 200)			
32	Parbati-3 (H)	(4 * 130)	Yes	4.0	
33	Pong (H)	(6 * 66)			
34	Rampur (H)	(6 * 68.67)			
35	Sainj (H)	(2 * 50)			
36	Salal (H)	(6 * 115)	Yes	3.0	
37	Sewa-II (H)	(3 * 40)	Yes	4.0	
38	Singoli Bhatwari (H)	(3 * 33)			
39	Sorang (H)	(2 * 50)			
40	Tanakpur (H)	(1 * 31.42 + 2 * 31.4)	Yes	4.0	
41	Tehri (H)	(4 * 250)	Yes	4.0	
42	Uri-1 (H)	(4 * 120)	Yes	6.0	

43	Uri-2 (H)	(4 * 60)	Yes	5.0	

Constituents are requested to share the details at the earliest.

Memebers are requested to analyse the frequency response of their respective control area and share the FRC/FRP analysis of generating stations along with unit wise 01 sec data as per timeline for ensuring IEGC compliance.

Members are also requested to reconcile the FRP values as considered for the events of August, 2024.

On 03rd September 2024, NRLDC has conducted an online workshop on Frequency Response Performance of Generators and States of Northern Region. Members from SLDCs, ISGS & State generating stations attended the worlshop. Approx. 185 participants were connected in the meeting. NRLDC presented and explained IEGC clauses related to Governor response FRC/ FRO methodology for computation of FRC/FRO/FRP, methodology for computation of Beta (average monhtly FRP value for incentive related claculation).

NRLDC highlighted non compliance / unsatisfactory data submission status and requested all the memebers for timley computation of FRC/FRP and analysi of governor response of their trespective control area.

Members may like to discuss.

B.11. Mock trial run and testing of black start facilities at generating stations in Northern Region

As per Indian Electricity Grid Code (IEGC) clause 34.3

"*Detailed procedures for restoration post partial and total blackout of each user system within a region shall be prepared by the concerned user in coordination with the concerned SLDC, RLDC or NLDC, as the case may be. The concerned user shall review the procedure every year and update the same. The user shall carry out a mock trial run of the procedure for different sub-systems including black-start of generating units along with grid forming capability of inverter based generating station and VSC based HVDC black-start support at least once a year under intimation to the concerned SLDC and RLDC. Diesel generator sets and other standalone auxiliary supply source to be used for black start shall be tested on a weekly basis and the user shall send the test reports to the concerned SLDC, RLDC and NLDC on a quarterly basis*".

Hydro and gas-based plants are capable of self-black-start. Conducting periodic mock black start exercises are extremely important to ensure the healthiness of black start facilities and also to build awareness as well as confidence among the system operators.

In view of above, regional entity generating stations shall conduct the dead bus charging of their units on rotation basis as per availability of schedule under intimation to the NRLDC. Testing of Diesel generator sets and other standalone auxiliary supply source to be used for black start shall also be done on a weekly basis. SLDC shall also ensure the same in their respective control area. This will ensure the healthiness of blackstart

facility at generating stations. Further, NRLDC shall coordinate with the ISGS and states to conduct the mock black start exercise of subsystems.

Therefore, regional entity generating stations and SLDCs are requested to share the annual schedule plan for conducting dead bus charging / mock black start exercise of generating stations / sub-systems during 2024-25 in the format attached as **Annexure-B.VIII**. Constituents are also requested to share the test report of diesel generators / auxiliary supply on a quarterly basis. In this regard, a communication has already been sent to constituents through NRLDC letter dated 24.04.2024.

Details received from AD Hydro HEP, Tehri HEP, Karcham Wangtoo HEP, Koteshwar HEP, SJVN, Budhil, Chamera-III, Auraiya GPS, Singoli Bhatwari HEP, Koldam HEP, Dadri GPS, Delhi, Punjab and Uttarakhand.

Members are requested to share the tentative schedule of mock black start exercise of generating stations in their respective control area. SLDCs are also requested to share the tentative schedule plan of mock black start exercise of generating stations in their respective control area and share the report of the same.

Members may like to discuss.

B.12. Mock testing of System Protection Schemes (SPS) in Northern Region

As per IEGC clause 16.2

''For the operational SPS, RLDC or NLDC, as the case may be, in consultation with the
concerned RPC(s) shall perform regular load flow and dynamic studies and mock testing for reviewing SPS parameters & functions, at least once in a year. RLDC or NLDC shall share the report of such studies and mock testing including any short comings to respective RPC(s). The data for such studies shall be provided by CTU to the concerned RPC, RLDC and NLDC.''

As per IEGC clause 16.3

''The users and SLDCs shall report about the operation of SPS immediately and detailed
report shall be submitted within three days of operation to the concerned RPC and RLDC in the format specified by the respective RPCs.''

There are 53 numbers of System Protection Scheme (SPS) approved in Northern Region out of which 05 number of SPS are under implementation stage. These SPS are implemented at major generation complexes, important evacuating transmission lines and ICTs which are N-1 non complaint. Details of SPS in Northern Region is available on NRLDC website at link https://nrldc.in/download/nr-sps-2024/?wpdmdl=13255&lang=en .

SPS is designed to detect abnormal system conditions and take predetermined, corrective action to preserve system integrity and provide acceptable system performance. Therefore, correct operation of SPS as per designed logic is important to serve its purpose. To ensure this, mock testing of SPS needs to be conducted at a regular period. Clause 16.2 of IEGC 2023 also mandates the mock testing of SPS for reviewing SPS parameters & functions, at least once a year.

In view of the above, concerned constituents / utility are requested to share the tentative schedule plan for conducting mock testing of SPS in their respective control area during 2024-25 in format attached as **Annexure-B.IX.** In this regard, a communication has already been sent to constituents through NRLDC letter dated 01.05.2024.

Details only received from Uttarakhand & UP.

Members are requested to share the tentative schedule of mock testing of SPS implemented on their control area and share the report of the same.
Members may like to discuss.

B.13. Availability and Standardization of recording instrument (Disturbance recorder and Station Event Logger) and status of work regarding undertaking submitted during First Time Charging of elements:

As per IEGC clause 17

1) *All users shall keep the recording instruments (disturbance recorder and event logger) in proper working condition.*
2) *The disturbance recorders shall have time synchronization and a standard format for recording analogue and digital signals.*

IEGC clause 37.2 (c) also mandates the submission of Disturbance Recorder (DR), station Event Logger (EL), Data Acquisition System (DAS) within 24 hrs of the event.

Data of recording instruments (DR/EL) are very helpful in grid event analysis and also is being used in availability verification of transmission lines. Complete and conclusive analysis of any grid event is not possible without these recording instruments and thus their standardization is very important.

Therefore, availability of disturbance recorder with standardization, time sync and correct nomenclature and station event logger need to be ensured by users at the station of their respective control area.

In view of the above, all the constituents are requested to share the details w.r.t. availability and standardization of disturbance recorder and event logger at the station of their respective control area in format attached as **Annexure-B.X.**

Details only received from Haryana & UP.

This is also to inform you that in some special cases First Time Charging of Elements were allowed for some critical elements on user request based on undertaking submitted by the user. Majority of these undertaking are related to installation of station event logger or non-functionality of station event logger.

In this view, you are requested to submit the status of work regarding undertaking submitted during First Time Charging of elements listed in **Annexure-B.XI**.

Members are requested to share the share the details w.r.t. availability and standardization of disturbance recorder and event logger at the station of their respective control area. Members are also requested to submit the status of work regarding undertaking submitted during First Time Charging of elements.

Members may like to discuss.

B.14. Corrective action for healthiness of 500kV Mundra-Mahindergarh SPS

On 17th May 2024 on outage of both pole (carrying total ~1500MW), SPS of 500kV HVDC Mundra-Mahindergarh inter regional link didn't operate. This issue was discussed during 51st PSC meeting and ADANI was requested to share the details w.r.t. SPS operation during the meeting.
Further, NRLDC in coordination with NLDC conducted an online discussion meeting with concerned stakeholders (SLDCs, ADANI, POWERGRID) on 12th August 2024, for further remedial actions required to make this SPS healthy.

Following actions were decided during the meeting:

i. POWERGRID, ADANI and concerned states were requested to identify the issue in communication links and take expeditious actions to make the all the communication link healthy. POWERGRID & ADANI shall review the healthiness of SPS system at different load centres and communication path between them in coordination with the SLDCs.
ii. States were requested to go through the details of load feeders mentioned in SPS document and share the changes / modifications as per present scenario and share the inputs w.r.t. unavailability in identified load feeders and load shedding. SLDCs shall share the revised updated feeder details (radial) along with expected average/peak load relief through respective feeders.
iii. SLDCs in coordination with their transmission and protection team shall share the status and healthiness of existing SPS system along with details of availability of communication path for incorporation of proposed revised/additional feeders.
iv.

Load end details received from UP, Haryana, Rajasthan & Delhi. Details are attached as **Annexure-B.X**. Details yet to be received from Punjab.

Regarding communication network and hardware system, ADANI has submitted the status of their healthiness. As per details submitted, counter status was found OFF at Alwar, Ratangarh, Gobindgarh, Malerkotla, Bamnauli, Shamli and Dhanonda.

Details have received from UP only. POWERGRID and states are requested to share their inputs at the earliest. Necessary actions also need to be taken on priority. Details are attached as **Annexure-B.XII.**

In view of above, POWERGRID and ADANI are requested to share the status of remedial action taken / planned to be taken. Desired remedial actions need to be expedited.

Status of action taken on decision of 222nd OCC meeting of NRPC

S.N.	Agenda	Decision of 222nd OCC meeting of NRPC	Status of action taken
1	A.12. Installation of Control switch devices in 400KV Kalaamb Wangtoo and Kalaamb Sorang lines at PKATL Substation KALAAMB to control switching surges (Agenda by Powergrid NR-2)	Forum asked POWERGRID to submit report including space related constraint in reactor shifting and effectiveness of CSD relay. Thereafter, decision may be taken in next OCC meeting.	POWERGRID to update status.

Follow up issues from previous OCC meetings

Annexure-A.I

<table>
<tr><td>1</td><td>Down Stream network by State utilities from ISTS Station</td><td>Augmentation of transformation capacity in various existing substations, addition of new substations along with line bays as well as requirement of line bays by STUs for downstream network are under implementation at various locations in Northern Region. Further, 220kV bays have already been commissioned at various substations in NR. For its utilization, downstream 220kV system needs to be commissioned.</td><td>List of downstream networks is enclosed in Annexure-A.I.I.</td></tr>
<tr><td>2</td><td>Progress of installing new capacitors and repair of defective capacitors</td><td>Information regarding installation of new capacitors and repair of defective capacitors is to be submitted to NRPC Secretariat.</td><td>Data upto following months, received from various states / UTs:
◎ CHANDIGARH: Sep-2019
◎ DELHI: Jul-2024
◎ HARYANA: Jun-2024
◎ HP: Feb-2024
◎ J&K and LADAKH: Not Available
◎ PUNJAB: Jul-2024
◎ RAJASTHAN: Jul-2024
◎ UP: Jul-2024
◎ UTTARAKHAND: Aug-2024
All States/UTs are requested to update status on monthly basis.</td></tr>
<tr><td>3</td><td>Healthiness of defence mechanism: Self-certification</td><td>Report of mock exercise for healthiness of UFRs carried out by utilities themselves on quarterly basis is to be submitted to NRPC Secretariat and NRLDC. All utilities were advised to certify specifically, in the report that “All the UFRs are checked and found functional”.</td><td>Data upto following months, received from various states / UTs:
◎ CHANDIGARH: Not Available
◎ DELHI: Jun-2024
◎ HARYANA: Jun-2024
◎ HP: Aug-2024
◎ J&K and LADAKH: Not Available
◎ PUNJAB: Mar-2024
◎ RAJASTHAN: Jun-2024
◎ UP: Jun-2024
◎ UTTARAKHAND: Jun-2024
◎ BBMB: Jun-2024
All States/UTs are requested to update status for healthiness of UFRs on monthly basis for islanding schemes and on quartely basis for the rest .</td></tr>
<tr><td></td><td></td><td>In compliance of NPC decision, NR states/constituents agreed to raise the AUFR settings by 0.2 Hz in 47th TCC/49th NRPC meetings.</td><td>Status:
◎ CHANDIGARH: Not Available
◎ DELHI: Increased
◎ HARYANA: Increased
◎ HP: Increased
◎ J&K and LADAKH: Increased
◎ PUNJAB: Increased
◎ RAJASTHAN: Increased
◎ UP: Increased
◎ UTTARAKHAND: Increased
◎ BBMB: Increased</td></tr>
</table>

<table>
<tr><td></td><td></td><td></td><td></td></tr>
<tr><td>4</td><td>Status of FGD installation vis-à-vis installation plan at identified TPS</td><td>List of FGDs to be installed in NR was finalized in the 36th TCC (special) meeting dt. 14.09.2017. All SLDCs were regularly requested since 144th OCC meeting to take up with the concerned generators where FGD was required to be installed.
Further, progress of FGD installation work on monthly
basis is monitored in OCC
meetings.</td><td>Status of the information submission (month) from states / utilities is as under:
<table><tr><td>◎</td><td>HARYANA</td><td>Jun-2024</td></tr><tr><td>◎</td><td>PUNJAB</td><td>Jun-2024</td></tr><tr><td>◎</td><td>RAJASTHAN</td><td>Jul-2024</td></tr><tr><td>◎</td><td>UP</td><td>Jan-2024</td></tr><tr><td>◎</td><td>NTPC</td><td>Feb-2023</td></tr></table>FGD status details are enclosed as Annexure-A.I.II.
All States/utilities are requested to update status of FGD installation progress on monthly basis.</td></tr>
<tr><td>5</td><td>Submission of breakup of Energy Consumption by the states</td><td>All states/UTs are requested to submit the requisite data as per the billed data information in the format given as under:
<table><tr><td>Category→</td><td>Consumption by Domestic Loads</td><td>Consumption by Commercial Loads</td><td>Consumption by Agricultural Loads</td><td>Consumption by Industrial Loads</td><td>Traction supply load</td><td>Miscellaneous / Others</td></tr><tr><td><Month></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table></td><td>Status of the information submission (month) from states / utilities is as under:
<table><tr><td></td><td>State / UT</td><td>Upto</td></tr><tr><td>◎</td><td>CHANDIGARH</td><td>Not Submitted</td></tr><tr><td>◎</td><td>DELHI</td><td>Jun-24</td></tr><tr><td>◎</td><td>HARYANA</td><td>Jun-24</td></tr><tr><td>◎</td><td>HP</td><td>Jun-24</td></tr><tr><td>◎</td><td>J&K and LADAKH</td><td>JPDCL- Mar’24
KPDCL- Not Submitted</td></tr><tr><td>◎</td><td>PUNJAB</td><td>Jun-24</td></tr><tr><td>◎</td><td>RAJASTHAN</td><td>Jul-24</td></tr><tr><td>◎</td><td>UP</td><td>Jun-24</td></tr><tr><td>◎</td><td>UTTARAKHAND</td><td>Feb-24</td></tr></table>Chandigarh is requested to submit the requisite data w.e.f. April 2018 as per the billed data information in the given format</td></tr>
<tr><td>6</td><td>Information about variable charges of all generating units in the Region</td><td>The variable charges detail for different generating units are available on the MERIT Order Portal.</td><td>All states/UTs are requested to submit daily data on MERIT Order Portal timely.</td></tr>
<tr><td>7</td><td>Status of Automatic Demand Management System in NR states/UT’s</td><td>The status of ADMS implementation in NR, which is mandated in clause 5.4.2 (d) of IEGC by SLDC/SEB/DISCOMs is presented in the following table:</td><td>The status of ADMS implementation in NR is enclosed in Annexure-A.I.II.
<table><tr><td>◎</td><td>DELHI</td><td>Scheme Implemented but operated in manual mode.</td></tr><tr><td>◎</td><td>HARYANA</td><td>Scheme not implemented</td></tr><tr><td>◎</td><td>HP</td><td>Scheme not implemented</td></tr><tr><td>◎</td><td>PUNJAB</td><td>Scheme not implemented</td></tr><tr><td>◎</td><td>RAJASTHAN</td><td>Under implementation.</td></tr><tr><td>◎</td><td>UP</td><td>Scheme implemented by NPCIL only</td></tr><tr><td>◎</td><td>UTTARAKHAND</td><td>Scheme not implemented</td></tr></table></td></tr>
</table>

8	Reactive compensation at 220 kV/ 400 kV level at 8 substations			
	State / Utility	Substation	Reactor	Status
i	DTL	Peeragarhi	1x50 MVAr at 220 kV	1x50 MVAr Reactor at Peeragarhi has been commissioned on dated 18.09.2023
ii	DTL	Harsh Vihar	2x50 MVAr at 220 kV	2x50 MVAR Reactor at Harsh Vihar has been commissioned on dated 31th March 2023.
iii	DTL	Mundka	1x125 MVAr at 400 kV & 1x25 MVAr at 220 kV	Bay work completed on 25.03.2023. Reactor part tender is dropped and at present same is under revision.
iv	DTL	Bamnauli	2x25 MVAr at 220 kV	Bay work completed on 25.03.2023. Reactor part tender is dropped and at present same is under revision.
v	DTL	Indraprastha	2x25 MVAr at 220 kV	Bay work completed on 07.11.2023. Reactor part tender is dropped and at present same is under revision.
vi	DTL	Electric Lane	1x50 MVAr at 220 kV	Under Re-tendering due to Single Bid
vii	PTCUL	Kashipur	1x125 MVAR at 400 kV	SLDC informed that PTCUL has intimated that bid extension has been done till 18.07.2024.
viii	RAJASTHAN	Jodhpur	1x125 MVAr	Agreement signed on dt. 22.06.2020. Grant of Ist Instalment received on dt.19.02.21 & work order placed on dt. 07.04.2022 to M/s Kanohar Electricals Ltd. Schedule time is 18 months. 01 No. of 125 MVAR reactor is under testing which is expected to done by end of May 2024. Tentaive charging plan is to be intimated by Rajasthan SLDC.

Annexure-A-I.I

1. Down Stream network by State utilities from ISTS Station:

Sl. No.	Substation	Downstream network bays	Status of bays	Planned 220 kV system and Implementation status	Revised Target	Remarks
1	400/220kV, 3x315 MVA Samba	Commissioned: 8 Total: 8	Utilized: 6 Unutilized: 2	• Network to be planned for 2 bays.	Mar'25	02 No. of bays shall be utilized for LILO-II of 220kV Jatwal-Bishnah Transmission Line, the work of which is delayed due to persisting RoW issues. expected date of completion is Mar 2025 subject to availability of funds and resolving of RoW issues), Updated in 220th OCC by JKPTCL.
2	400/220kV, 2x315 MVA New Wanpoh	Commissioned: 6 Total: 6	Utilized: 2 Unutilized: 4	• 220 kV New Wanpoh - Alusteng D/c Line	Mar'25	02 No. of bays are to be utilized for connecting 220kV New Wanpoh-Alusteng D/c Line. RoW issues persisting; At present new-wampoh-mirbazar 5km and harwan-alstung 16km have been completed, expected date of completion is Mar 2025 subject to availability of funds and resolving of RoW issues), Updated in 214th OCC by JKPTCL.
				• 220 kV New Wanpoh - Mattan D/c Line	End of 2024	02 No. of bays are to be utilized for connecting 220kV New Wanpoh-Mattan D/c Line. The funding source for the project is being identified and the project is expected to be completed by ending 2024. Updated in 204th OCC by JKPTCL.
3	400/220kV, 2x315 MVA Amargarh	Commissioned: 6 Total: 6	Utilized: 4 Unutilized: 2	• 220kV D/C line from 400/220kV Kunzar - 220/33kV Sheeri	End of 2024	02 No. of bays are proposed to be utilized for connecting 220/132 kV GSS Loolipora. The funding source for the project is being identified and the project is expected to be completed by ending 2024. Updated in 204th OCC by JKPTCL.
4	400/220kV, 2x500 MVA Kurukshetra (GIS)	Commissioned: 8 Total: 8	Utilized: 6 Unutilized: 2	• 220kV Bhadson (Kurukshetra) – Ramana Ramani D/c line	Mar'25	Under construction.Updated in 222nd OCC by HVPNL
5	400/220 kV, 2x315 MVA Dehradun	Commissioned: 6 Total: 6	Utilized: 2 Unutilized: 4	• Network to be planned for 4 bays	-	PTCUL to update the status.
6	Shahjahanpur, 2x315 MVA 400/220 kV	Commissioned: 6 Approved/Under Implementation:1	Utilized: 7	• 220 kV D/C Shahajahanpur (PG) - Gola line	Commissioned	Energization date: 26.10.2023 updated by UPPTCL in 215th OCC
				• LILO of Sitapur – Shahjahanpur 220 kV SC line at Shahjahanpur (PG)	Commissioned	Energization date: 25.02.2022 updated by UPPTCL in 196th OCC
7	Hamirpur 400/220 kV Sub-station	Commissioned: 8 Total: 8	Utilized: 4 Unutilized: 4	• 220 kV Hamirpur-Dehan D/c line	Commissioned	HPPTCL has commissioned the Planned 220kV Dehan-Hamirpur TL utilizing 2 No. 220kV Bays.Commisioned date: 09.06.2022. Updated in 198th OCC by HPPTCL
				• Network to be planned for 4 bays	-	HPPTCL to update the status.
8	Sikar 400/220kV, 1x 315 MVA S/s	Commissioned: 8 Total: 8	Utilized: 6 Unutilized: 2	• LILO of 220 kV Sikar (220 kV GSS)-Dhod S/c line at Sikar (PG)	Commissioned	LILO of 220 kV S/C Sikar-Dhod line at 400 kV GSS PGCIL, Sikar has been charged on dt. 31.03.2022
				• Network to be planned for 2 bays.	-	Against the 3rd ICT at 400 kV GSS Sikar, only 2 bays were constructed and same has been utilized by RVPN by constructing LILO of 220 kV S/C Sikar – Dhod line as updated by RVPNL in 195th OCC
9	Bhiwani 400/220kV S/s	Commissioned: 6 Total: 6	Utilized: 2 Unutilized: 4	• 220 kV D/C line Bhiwani (PG) – Bhiwani (HVPNL) line	Commissioned	Updated in 202nd OCC by HVPNL
				• 220 kV Bhiwani (PG) - Isherwal (HVPNL) D/c line.	Dec'24	Issue related to ROW as intimated in 218th OCC by HVPNL. **Status:** Work was stalled since 29.07.2021 due to ROW issues and farmers agitation and further restarted on 9.10.2023 with the help of district administration. Now, work was again stalled since30.11.2023 due to severe ROW issues. Expected to be completed by 31.12.2024. Foundation 209/212. Erection 193/212. Stinging 37.8/50.3 km
				• 220 kV Bhiwani (PG) - Dadhibana (HVPNL) D/c line.	Oct'25	Line work awarded to M/s R S Infra Projects Pvt. Ltd. Noida, Uttar Pardesh on dated 09.03.2024. Work of route plan and route alignment has been started by the firm as intimated in 218th OCC by HVPNL.
10	Jind 400/220kV S/s	Commissioned: 4 Approved:4 Total: 8	Utilized: 4 Unutilized: 0	• LILO of both circuits of 220 kV Jind HVPNL to PTPS D/C line at 400 kV substation PGCIL Khatkar (Jind) with 0.5 sq inch ACSR conductor	Dec'24	Work in progress. Updated in 220th OCC by HVPNL.
11	400/220kV Tughlakabad GIS	Commissioned: 6 Under Implementation: 4	Utilized: 6 Unutilized: 0	• RK Puram – Tughlakabad (UG Cable) 220kV D/c line – March 2023.	Commissioned	Updated in 216th OCC by DTL
				• Masjid Mor – Tughlakabad 220kV D/c line.	Commissioned	Updated in 216th OCC by DTL

Sl. No.	Substation	Downstream network bays	Status of bays	Planned 220 kV system and Implementation status	Revised Target	Remarks
12	400/220kV Kala Amb GIS (TBCB)	Commissioned: 6 Total: 6	Utilized: 2 Unutilized: 2 Under Implementation:2	• HPPTCL has planned one no. of 220kV D/c line from Kala Amb 400/220kV S/s to 220/132kV Kala Amb S/s	Commissioned	Energization date: 31.05.2024 updated by HPPTCL in 220th OCC
				• HPPTCL has planned one no. of 220kV D/c line from Kala Amb 400/220kV S/s to 220/132kV Giri S/s	-	Tendering process is yet to be started.Updated in 219th OCC by HPPTCL
				• Network to be planned for 2 bays	-	HPPTCL to update the status.
13	400/220kV Kadarpur Sub-station	Commissioned: 8 Total: 8	Utilized: 0 Unutilized: 8	• D/C line Kadarpur - Sec-56 Gurugram.	Not awarded yet	Initial proposal of LILO of 220kV Pali-Sector 56 Line and Pali-Sector 52 line was descoped due to forest issue. Proposal to evacuate power from 220kV D/C Pali-Sector 56 line to Sector 56 and 52 with bunching of lines is under consideration. Updated in 218th OCC by HVPNL
				• S/C line Kadarpur - Sec-52 Gurugram	Not awarded yet	Initial proposal of LILO of 220kV Pali-Sector 56 Line and Pali-Sector 52 line was descoped due to forest issue. Proposl to evacuate power from 220kV D/C Pali-Sector 56 line to Sector 56 and 52 with bunching of lines is under consideration. Updated in 218th OCC by HVPNL
				• S/C line Kadarpur - Pali	Not awarded yet	Initial proposal of LILO of 220kV Pali-Sector 56 Line and Pali-Sector 52 line was descoped due to forest issue. Proposl to evacuate power from 220kV D/C Pali-Sector 56 line to Sector 56 and 52 with bunching of lines is under consideration. Updated in 218th OCC by HVPNL
14	400/220kV Sohna Road Sub-station	Commissioned: 8 Total: 8	Utilized: 4 Unutilized: 4	• LILO of both circuits of 220kV D/c Sohna-Rangla Rajpur at Roj Ka Meo line at 400kV Sohna Road	Dec'24	Updated in 216th OCC by HVPNL
				• LILO of both circuits of 220kV D/c Badshahpur-Sec77 line at 400kV Sohna Road	-	The matter is subjudice in Hon'ble Punjab & Haryana High court, Chandigarh Updated in 205th OCC by HVPNL. **Status:-** Earlier 02 nos 220 kV line bays were to be utilized for the 220 kV GIS S/Stn. Sec-77, Gurugram but due to denotification of land of the 220 kV GIS S/Stn. Sec-77 the said substation is now going to be dismantled and a new substation is proposed at Sec-75A, Gurugram. Now, these 02 no. 220 kV line bays may be utilized at 220 kV GIS S/Stn Sec-75A, Gurugram.
15	400/220kV Prithla Sub-station	Commissioned: 8 Aprroved: 2 Total: 10	Utilized: 4 Unutilized: 4 Under Implementation:2	• 220kV D/C line from Prithla to Harfali with LILO of one circuit at 220kV Meerpur Kurali	Mar'25	Contract awarded on 08.08.23 to M/s Skipper with completion in March 25.Updated in 218th OCC by HVPNL
				• LILO of both ckt of 220kV D/c Ranga Rajpur – Palwal line	Commissioned	Energization date: 31.12.2021. Updated in 198th OCC by HVPNL
				• 220kV D/C for Sector78, Faridabad	30.09.2024	Issue related to ROW and Pending crossing approval from Northern Railways and DFCCIL. as intimated in 218th OCC by HVPNL.
				• Prithla - Sector 89 Faridabad 220kV D/c line	Jul'25	Work awarded to M/s Man Structurals Pvt Ltd. JV M/s Aquarian Enterprises on 09.01.2024. Contractual date: 06.05.2025 and Tentative date of completion :06.05.2025 Route has been approved and further work is in progress.Updated in 218th OCC by HVPNL
16	400/220kV Sonepat Sub-station	Commissioned: 6 Under Implementation:2 Total: 8	Utilized: 2 Unutilized: 4 Under Implementation:2	• LILO of both circuits of 220kV Samalkha - Mohana line at Sonepat	31.10.2024	Updated in 222nd OCC by HVPNL. **Status:** The stringing work between TL No. 19 & 20, TL No. 22 & 23 and TL No. 22 & 24 is pending for want of necessary consent from the forest department. The case has already been uploaded on Parivesh portal and is currently pending at the O/o AIGF, Forest Dept. Panchkula.
				• Sonepat - HSIISC Rai 220kV D/c line	Commissioned	Energization date: 31.05.2024 updated by HVPNL in 220th OCC
				• Sonepat - Kharkhoda Pocket A 220kV D/c line	08.03.2025	Updated in 212th OCC by HVPNL. **Status:** Work order has been issued to M/s R.S Infra on dated 09.08.2023 by O/o CE/PD&C, Panchkula for construction of line. Both bays are under construction and erection of electrical equipment is under progress. Tetative date of completion of both bays at PGCIL end is end of July 2024.
17	400/220kV Neemrana Sub-station	Commissioned: 6 Total: 6	Utilized: 4 Unutilized: 2	• LILO of Bhiwadi - Neemrana 220kV S/c line at Neemrana (PG)	-	Work is under progres. Stub Setting: 14/2017. Permission for Highway is awaited from concerned department as updated in 218th OCC by RVPNL.
18	400/220kV Kotputli Sub-station	Commissioned: 6 Total: 6	Utilized: 4 Unutilized: 2	• Kotputli - Pathreda 220kV D/c line	-	Date of bid opening has been extended up to 30.04.2024 as updated in 218th OCC by RVPNL.
19	400/220kV Jallandhar Sub-station	Commissioned: 10 Total: 10	Utilized: 8 Unutilized: 2	• Network to be planned for 2 bays	Nov'24	LILO of 220 kV BBMB Jalandhar - Butari line at 400 kV PGCIL Jalandhar being planned. Work expected to be completed by May 2024. Updated in 198th OCC by PSTCL. 6 months more are needed due to ROW issues as updated by PSTCL in 220th OCC
20	400/220kV Roorkee Sub-station	Commissioned: 6 Total: 6	Utilized: 4 Unutilized: 2	• Roorkee (PG)-Pirankaliyar 220kV D/c line	Commissioned	Roorkee (PG)-Pirankaliyar 220kV D/c line commissioned in 2020 as intimated by PTCUL in 197th OCC
21	400/220kV Lucknow Sub-station	Commissioned: 8 Total: 8	Utilized: 4 Unutilized: 4	• Network to be planned for 2 bays	Commissioned	• Lucknow -Kanduni, 220 kV D/C line work energized on 05.10.2023. Updated in 212th OCC by UPPTCL. _____ • No planning for 2 no. of bays upated by UPPTCL in 196th OCC. The same has been communicated to Powergrid.

Sl. No.	Substation	Downstream network bays	Status of bays	Planned 220 kV system and Implementation status	Revised Target	Remarks
22	400/220kV Gorakhpur Sub-station	Commissioned: 6 Total: 6	Utilized: 4 Unutilized: 2	• Network to be planned for 2 bays	Commissioned	• Gorakhpur(PG)- Maharajganj, 220 kV D/C line energized on 27.09.2023 updated by UPPTCL in 212th OCC
23	400/220kV Fatehpur Sub-station	Commissioned: 8 Under Implementation:2 Total: 10	Utilized: 6 Unutilized: 2 Under Implementation:2	• Network to be planned for 2 bays	-	• UPPTCL intimated that 02 no. of bays under finalization stage. In 201st OCC, UPPTCL intimated that it is finalized that Khaga s/s will be connected (tentative time 1.5 years). _____ • No planning for 2 no. of bays updated by UPPTCL in 196th OCC. The same has been communicated to Powergrid.
24	400/220kV Abdullapur Sub-station	Commissioned: 10 Under Implementation:2 Total: 12	Utilized: 10 Unutilized: 0 Under Implementation:2	• Abdullapur – Rajokheri 220kV D/c line	Sep'24	Line charged from Rajokheri end on 09.02.2020. The work of construction was awarded to M/s IKE ltd but due to non completion of work firm is blacklisted, Now the pending work of SCADA , Telemetry and Data Integration is being carried out departmentally through OeM M/s ZIV . After completion of these statutory requirement of NRLDC the load will be taken from the Abdullapur. Tentative date of completion of work will be 30.09.2024. Updated in 218th OCC by HVPNL
25	400/220kV Pachkula Sub-station	Commissioned: 8 Under tender:2 Total: 10 Out of these 10 nos. 220kV	Utilized: 2 Unutilized: 4 Under Implementation:2	• Panchkula – Pinjore 220kV D/c line	Commissioned	Updated in 218th OCC by HVPNL
				• Panchkula – Sector-32 220kV D/c line	Commissioned	Energization date: 24.05.2024 updated by HVPNL in 220th OCC
				• Panchkula – Raiwali 220kV D/c line	Commissioned	Updated in 194th OCC by HVPNL
				• Panchkula – Sadhaura 220kV D/c line: Sep'23	Mar'25	Updated in 222nd OCC by HVPNL
26	400/220kV Amritsar S/s	Commissioned:7 Approved in 50th NRPC- 1 no. Total: 8	Utilized: 6 Under Implementation:2	• Amritsar – Patti 220kV S/c line	31.08.2024	Issue in connectivity agreement with CTU. Updated in 222nd OCC by PSTCL.
				• Amritsar – Rashiana 220kV S/c line (2 bays shall be required for above lines. However, 1 unutilized bay shall be used for Patti and requirement of one additional bay approved for Rashiana by NRPC)	31.08.2024	Issue in connectivity agreement with CTU. Updated in 222nd OCC by PSTCL.
27	400/220kV Bagpat S/s	Commissioned: 8 Total: 8	Utilized:6 Unutilized: 2	• Bagpat - Modipuram 220kV D/c line	Commissioned	Updated in 201st OCC by UPPTCL
28	400/220kV Bahardurgarh S/s	Commissioned: 4 Approved: 4 Total: 8	Utilized:2 Unutilized: 2	• LILO of 220 kV Nunamajra- Daultabad S/c line at 400 kV Bahadurgarh PGCIL	Mar'25	Updated in 220th OCC by HVPNL. **Status:** NIT has been floated vide NIT No. EPC-D-96 dated 15.10.23 to be opened on 22.12.23. • Now, the tender has been dropped and likely to be refloated by 31.07.2024.
				• Bahadurgarh - METL 220kV D/c line (Deposit work of M/s METL)	Mar'25	Updated in 220th OCC by HVPNL. **Status:** • Revised BOQ forwarded from Design wing to contract wing. • Tender has floated vide NIT No. EPC-D-100 dated 04.01.2024 with tender opening date of 26.02.2024. • Tender has been opened on 26.03.24 and 03 nos. bids has been received. The work is likely to be awarded by the 31.07.2024.
				• Bahadurgarh - Kharkhoda Pocket B 220kV D/c line	08.03.2025	Updated in 220th OCC by HVPNL. **Status:** Contract awarded on 09.08.23 to M/s R S Infra Noida. Work has been started.
29	400/220kV Jaipur (South) S/s	Commissioned: 4 Total: 4	Utilized:2 Unutilized: 2	• LILO of 220 kV S/C Dausa – Sawai Madhopur line at 400 kV GSS Jaipur South (PG)	06.10.2025	Work order has been issued on 06.10.2023, work under progress as updated by RVPNL in 215th OCC
30	400/220kV Sohawal S/s	Commissioned: 8 Total: 8	Utilized: 8	• Sohawal - Barabanki 220kV D/c line	Commissioned	Energization date: 14.04.2018 updated by UPPTCL in 196th OCC
				• Sohawal - New Tanda 220kV D/c line	Commissioned	Energization date: 28.05.2019 updated by UPPTCL in 196th OCC
				• Network to be planned for 2 bays	Commissioned	• Sohawal - Gonda 220kV S/c line (Energization date: 27.04.2020) updated by UPPTCL in 196th OCC _____ • Sohawal - Bahraich 220kV S/c line (Energization date: 15.02.2021) updated by UPPTCL in 196th OCC
31	400/220kV, Kankroli	Commissioned: 6 Total: 6	Utilized: 4 Unutilized: 2	• 220 kV D/C Kankroli(PG) - Nathdwara line	-	Standard bid document has been finalized on 13.08.2024 and bid is under preparation as updated by RVPN in 222nd OCC.
32	400/220kV, Manesar	Commissioned: 8 Total: 8	Utilized: 4 Unutilized: 4	• Network to be planned for 2 bays	-	Status:- 2nos bays are being utilised for 220 kV D/C Panchgaon (PGCIL)-Panchgaon Ckt-I & 220 kV D/C Panchagon (PGCIL)-Panchgaon Ckt-II, charged on dated 05.09.2022 & 20.10.2022 respectively. The 2nos bays may be utilised by HVPNL in future.
33	400/220kV, Saharanpur	Commissioned: 6 Under Implementation:2 Total: 8	Utilized: 6 Unutilized: 0 Under Implementation:2	• Network to be planned for 2 bays	Commissioned	Saharanpur(PG)-Devband D/c line (Energization date: 20.04.2023) updated by UPPTCL in 207th OCC
34	400/220kV, Wagoora	Commissioned: 10 Total: 10	Utilized: 6 Unutilized: 4	• Network to be planned for 4 bays	-	PDD, J&K to update the status.

Sl. No.	Substation	Downstream network bays	Status of bays	Planned 220 kV system and Implementation status	Revised Target	Remarks
35	400/220kV, Ludhiana	Commissioned: 9 Total: 9	Utilized: 8 Unutilized: 1	• Network to be planned for 1 bay	Commissioned	Direct circuit from 220 kV Lalton Kalan to Dhandari Kalan to be diverted to 400 kV PGCIL Ludhiana. Work completed , final agrrement is expected to be signed by May'24. Updated in 218th OCC by PSTCL.
36	400/220kV, Chamba (Chamera Pool)	Commissioned: 3 Under tender:1 Total: 4	Utilized:3 Unutilized: 0 Under tender:1	• Stringing of 2nd ckt of Chamera Pool – Karian 220kV D/c line	Commissioned	Stringing of 2nd Circuit of Chamera Pool-Karian Tansmission line has been completed & terminal bay at 400/220 kV chamera pooling substation (PGCIL) is commissioned on 20.01.2024. Updated in 217th OCC by HPPTCL.
37	400/220kV, Mainpuri	Commissioned: 6 Under Implementation:2 Total: 8	Utilized: 6 Unutilized: 0 Under Implementation:2	• Network to be planned for 2 bays	-	• 02 no. of bays under finalization stage updated by UPPTCL in 196th OCC. Mainpuri S/s planned. Land is not finalized, therefore timeline not available as intimated by UPPTCL in 201st OCC.
38	400/220kV, Patiala	Commissioned: 8 Total: 8	Utilized: 6 Unutilized: 2	• Network to be planned for 2 bays	May'25	2 Nos. bays for 400 kV PGCIL Patiala - 220 kV Bhadson (D/C) line being planned. Tender is yet to be awarded. Timeline one year communicated by PSTCL in 220th OCC meeting

Status of ADMS implementation in NR:

Sl. No.	State / UT	Status	Remarks
1	DELHI	Scheme Implemented but operated in manual mode.	A committee has been constituted under the chairmanship of GM, SLDC Delhi to formulate the logic for implementation of ADMS. Delhi SLDC informed that two meetings have been held by the committee and based on the delibration in those meetings, SoP has been formed by the committee. Delhi SLDC has shared the logic for implementation of ADMS with NRLDC for their observation and upon examination of same NRLDC has submitted its views/comments to Delhi SLDC. In 222nd OCC meeting Delhi SLDC intimated that they would be shortly having a meeting with its Discoms and NRLDC views would be delibrated in the said meeting.
2	HARYANA	Scheme not implemented	Haryana SLDC intimated that the matter has been taken up with Powergrid by XEN/SLDC Design, HVPNL, Panchkula regarding the LSS /ADMS application in ULDC Phase-III for SCADA/EMS upgradation project of SLDCs of Northern region. HVPNL has sought comments & suggestions from Powergrid that LSS/ADMS under SCADA upgradation project will suffice the purpose of ADMS or this LSS/ADMS software is meant for emergency control for SLDC only. Technical specifications are yet to be finalized. MS NRPC asked Haryana SLDC to co-ordiante with its HVPN Design Wing and expedite the matter.
3	HP	Scheme not implemented	HP SLDC imentioned that HPSEB had intimated that initially 142 Nos. of feeders were identified for operation under ADMS functionality but most of these feeders were from same sub-station. Therefore, now they have increased the no. of sub-station and identified the non-critical feeders. Load relief to be given through these feeders is under finalization. The revised feeder list to be shared by HPSEBL with the SLDC within one month.
4	PUNJAB	Scheme not implemented	i. A committee comprising of following officers of PSPCL & PSTCL has been constituted to finalize the logic regarding implementation of Automatic Demand Management System in Punjab Control Area. A meeting in this regard was held on dated 26-02-2024 at PSLDC Complex, Patiala. The committee deliberated various loading scenarios and proposed the following logic for the management of demand: 1. If the frequency sustains below 49.90 Hz for duration of 3 minutes, the Automatic Demand Management System will initiate a 50% reduction in the Over Drawl. 2. In case the frequency falls further below 49.85 Hz, the Over Drawl will be reduced to zero. 3. The software at the SLDC end for ADMS shall be available with ULDC phase –III SCADA system which is under implementation. ii. In 222nd OCC, MS NRPC asked Punjab to co-ordiante with Powergrid for integration of their propsoed logic with the ULDC phase-III SCADA system for timely implementation.
5	RAJASTHAN	Under implementation. Likely completion schedule is 31.03.2024	RVPN informed that the issue of cyber security of link between SATNAM centre and SLDC control room has been resolved. Pilot testing has been done and for different logic combination/cases testing is under progress.
6	UP	Scheme implemented by NPCIL only	i. A meeting regarding ADMS was held on 15.01.2023 with the UPPCL under the chairmanship of MD UPPTCL ii. A committee formed for identification of load at 33 kV level under the chairmanship of Director (Distribution), UPPCL. iii. Another committee under the chairmanship of Director UPSLDC shall identify the technical and operational requirement for ADMS implementation iv. The software at the SLDC end for ADMS shall be available with ULDC phase –III SCADA system which is under implementation and likely to be commissioned by March 2025. v. In order to operate identified 33 kV feeders under ADMS scheme, integration of 132 kV substations with SCADA system is under implementation in the Reliable Communication Scheme and expected date of completion of the scheme is October 2024.
7	UTTARAKHAND	Scheme not implemented	i. UPCL has prepared a system architecture in which all the non-monitored sub-stions have been selected and 11kV feeders have been considered for ADMS operation. For the scheme, discom has also done group-wise selection of feeders and quantum of MW relief to be given for automatic demand response at 11kV level has also been decided. UPCL has awarded the tender for implementation of the aforementioned scheme to M/s Metergy Pvt.Ltd. ii. As per the status report submitted by M/s Metergy Pvt.Ltd, the survey work of 30 nos. incomer sites have been completed and order has been placed by UPCL for hardware equipments. iii. Uttarakhand SLDC informed that feeder list at 11kV level has been finalized and logic of ADMS implementation is under finalization. iv. In 222nd OCC meeting, Uttarakhand intiamted that commissioning of servers and related software has been done and supply of field equipment and infrastructure is under process . Further, New API has to be develop and integrate as new API for WBES for fetching real time schedule has been created by NRLDC. NRLDC has been requested to provide design document(having URL, data structure and credentials etc) of new API.

FGD Status

Updated status of FGD related data submission

NTPC (27.02.2023)
MEJA Stage-I
RIHAND STPS
SINGRAULI STPS
TANDA Stage-I
TANDA Stage-II
UNCHAHAR TPS
UPRVUNL (10.01.2024)
ANPARA TPS
HARDUAGANJ TPS
OBRA TPS
PARICHHA TPS

PSPCL (18.06.2024)
GGSSTP, Ropar
GH TPS (LEH.MOH.)
RRVUNL (09.07.2023)
CHHABRA SCPP
CHHABRA TPP
KALISINDH TPS
KOTA TPS
SURATGARH SCTPS
SURATGARH TPS

Updated status of FGD related data submission

Lalitpur Power Gen. Co. Ltd. (10.01.2024)
Lalitpur TPS
Lanco Anpara Power Ltd. (01.01.2024)
ANPARA-C TPS

HGPCL (14.06.2024)
PANIPAT TPS
RAJIV GANDHI TPS
YAMUNA NAGAR TPS

Adani Power Ltd. (18.02.2022)
KAWAI TPS

Rosa Power Supply Company (01.01.2024)
Rosa TPP Phase-I
Prayagraj Power Generation Company Ltd. (05.01.2024)
Prayagraj TPP
APCPL (01.05.2024)
INDIRA GANDHI STPP

Pending submissions

GVK Power Ltd.
GOINDWAL SAHIB

NTPC
DADRI (NCTPP)
Talwandi Sabo Power Ltd.
TALWANDI SABO TPP
L&T Power Development Ltd.
Nabha TPP (Rajpura TPP)

Target Dates for FGD Commissioning (Utility-wise)

Adani Power Ltd.	KAWAI TPS U#1 (Target: 31-12-2024), KAWAI TPS U#2 (Target: 31-12-2024)
APCPL	INDIRA GANDHI STPP U#2 (Target: 30-09-2023), INDIRA GANDHI STPP U#3 (Target: 30-06-2023)
GVK Power Ltd.	GOINDWAL SAHIB U#1 (Target: 30-04-2020), GOINDWAL SAHIB U#2 (Target: 29-02-2020)
HGPCL	PANIPAT TPS U#6 (Target: 31-12-2026), PANIPAT TPS U#7 (Target: 31-12-2026), PANIPAT TPS U#8 (Target: 31-12-2026), RAJIV GANDHI TPS U#1 (Target: 31-12-2024), RAJIV GANDHI TPS U#2 (Target: 31-12-2024), YAMUNA NAGAR TPS U#1 (Target: 31-12-2024), YAMUNA NAGAR TPS U#2 (Target: 31-12-2024)

NTPC	DADRI (NCTPP) U#1 (Target: 31-12-2020), DADRI (NCTPP) U#2 (Target: 31-10-2020), DADRI (NCTPP) U#3 (Target: 31-08-2020), DADRI (NCTPP) U#4 (Target: 30-06-2020), DADRI (NCTPP) U#5 (Target: 30-06-2022), DADRI (NCTPP) U#6 (Target: 31-03-2023), RIHAND STPS U#1 (Target: 31-10-2025), RIHAND STPS U#2 (Target: 30-06-2026), RIHAND STPS U#3 (Target: 31-12-2024), RIHAND STPS U#4 (Target: 31-03-2025), RIHAND STPS U#5 (Target: 30-06-2025), RIHAND STPS U#6 (Target: 31-10-2025), SINGRAULI STPS U#1 (Target: 31-12-2024), SINGRAULI STPS U#2 (Target: 31-12-2024), SINGRAULI STPS U#3 (Target: 31-12-2024), SINGRAULI STPS U#4 (Target: 31-12-2024), SINGRAULI STPS U#5 (Target: 31-03-2025), SINGRAULI STPS U#6 (Target: 31-06-2024), SINGRAULI STPS U#7 (Target: 31-03-2024), UNCHAHAR TPS U#1 (Target: 31-12-2023), UNCHAHAR TPS U#2 (Target: 31-12-2023), UNCHAHAR TPS U#3 (Target: 30-09-2023), UNCHAHAR TPS U#4 (Target: 30-09-2023), UNCHAHAR TPS U#5 (Target: 30-09-2023), UNCHAHAR TPS U#6 (Target: 31-08-2022), MEJA Stage-I U#1 (Target: 31-10-2023), MEJA Stage-I U#2 (Target: 30-06-2023), TANDA Stage-I U#3 (Target:), TANDA Stage-I U#4 (Target:), TANDA Stage-II U#3 (Target: 31-03-2023), TANDA Stage-II U#4 (Target: 30-09-2023)

L&T Power Development Ltd (Nabha)	Nabha TPP (Rajpura TPP) U#1 (Target: 30-04-2021), Nabha TPP (Rajpura TPP) U#2 (Target: 28-02-2021)
Lalitpur Power Gen. Company Ltd.	LALITPUR TPS U#1 (Target: 31-12-2026), LALITPUR TPS U#2 (Target: 30-09-2026), LALITPUR TPS U#3 (Target: 30-06-2026)
Lanco Anpara Power Ltd.	ANPARA C TPS U#1 (Target: 31-12-2025), ANPARA C TPS U#2 (Target: 31-12-2025)
Prayagraj Power Generation Company Ltd.	PRAYAGRAJ TPP U#1 (Target: 31-12-2026), PRAYAGRAJ TPP U#2 (Target: 31-12-2026), PRAYAGRAJ TPP U#3 (Target: 31-12-2026)
PSPCL	GH TPS (LEH.MOH.) U#1 (Target: 31-12-2026), GH TPS (LEH.MOH.) U#2 (Target: 31-12-2026), GH TPS (LEH.MOH.) U#3 (Target: 31-12-2026), GH TPS (LEH.MOH.) U#4 (Target: 31-12-2026), GGSSTP, Ropar U#3 (Target: 31-12-2026), GGSSTP, Ropar U#4 (Target: 31-12-2026), GGSSTP, Ropar U#5 (Target: 31-12-2026), GGSSTP, Ropar U#6 (Target: 30-12-2026)

Rosa Power Supply Company	ROSA TPP Ph-I U#1 (Target: 31-12-2026), ROSA TPP Ph-I U#2 (Target: 31-12-2026), ROSA TPP Ph-I U#3 (Target: 31-12-2026), ROSA TPP Ph-I U#4 (Target: 31-12-2026)
RRVUNL	KOTA TPS U#5 (Target: 31-08-2024), KOTA TPS U#6 (Target: 31-08-2024), KOTA TPS U#7 (Target: 31-08-2024), SURATGARH TPS U#1 (Target: 31-12-2026), SURATGARH TPS U#2 (Target: 31-12-2026), SURATGARH TPS U#3 (Target: 31-12-2026), SURATGARH TPS U#4 (Target: 31-12-2026), SURATGARH TPS U#5 (Target: 31-12-2026), SURATGARH TPS U#6 (Target: 31-12-2026), SURATGARH SCTPS U#7 (Target: 28-02-2025), SURATGARH SCTPS U#8 (Target: 28-02-2025), CHHABRA TPP U#1 (Target: 31-12-2026), CHHABRA TPP U#2 (Target: 31-12-2026), CHHABRA TPP U#3 (Target: 31-12-2026), CHHABRA TPP U#4 (Target: 31-12-2026), CHHABRA SCPP U#5 (Target: 28-02-2025), CHHABRA SCPP U#6 (Target: 28-02-2025), KALISINDH TPS U#1 (Target: 28-02-2025), KALISINDH TPS U#2 (Target: 28-02-2025)
Talwandi Sabo Power Ltd.	TALWANDI SABO TPP U#1 (Target: 28-02-2021), TALWANDI SABO TPP U#2 (Target: 31-12-2020), TALWANDI SABO TPP U#3 (Target: 31-10-2020)
UPRVUNL	ANPARA TPS U#1 (Target: 31-12-2025), ANPARA TPS U#2 (Target: 31-12-2025), ANPARA TPS U#3 (Target: 31-12-2025), ANPARA TPS U#4 (Target: 31-12-2025), ANPARA TPS U#5 (Target: 31-12-2025), ANPARA TPS U#6 (Target: 31-12-2025), ANPARA TPS U#7 (Target: 31-12-2025), HARDUAGANJ TPS U#8 (Target: 31-12-2026), HARDUAGANJ TPS U#9 (Target: 31-12-2026), OBRA TPS U#9 (Target: 31-12-2026), OBRA TPS U#10 (Target: 31-12-2026), OBRA TPS U#11 (Target: 31-12-2026), OBRA TPS U#12 (Target: 31-12-2026), OBRA TPS U#13 (Target: 31-12-2026), PARICHHA TPS U#3 (Target: 31-12-2026), PARICHHA TPS U#4 (Target: 31-12-2026), PARICHHA TPS U#5 (Target: 31-12-2026), PARICHHA TPS U#6 (Target: 31-12-2026)

MIS Report for Status of Islanding Schemes

Implemented Schemes

Sl. No.	Islanding Scheme	SLDC	Status	Submission of Self Certification of Healitheness	SOP	SCADA Display Page	Remarks
1	NAPS IS	UP	Implemented	Yes (08-10-2021)	Yes	Yes	-
2	RAPS IS	Rajasthan	Implemented	16-Aug-21	Yes	Yes	List of officials in-charge, format for generation, islanding scheme sld and relays in RAPP IS submitted by RVPN on 04.12.2021.
3	Delhi IS	Delhi	Implemented				
4	Pathankot-RSD IS	Punjab	Implemented				

Under Implementation/ Newly Proposed/Under Discussion

Sl. No.	Islanding Scheme	SLDC	Status	Details of progress	DPR for PSDF funding (Required / Not Required)	Timelines Status - Proposed/Actual									
						Study		Design		Approval		Procurement		Commissioning	
						Proposed	Actual	Proposed	Actual	Proposed	Actual	Proposed	Actual	Proposed	Actual
1	Lucknow-Unchahar IS	UP	Under Implementation	Scheme has been approved in 59th NRPC meeting held on 31.10.2022. In the 222nd OCC meeting, UPPTCL representative apprised that Unchahar-Lucknow Islanding scheme has been successfully implemented and same is visible at SCADA of UPSLDC also (except 03 Substation: Namely 132 kV S/s tripula, 132 kV S/s bachhrawan and 132 kV S/s Hussainganj. The data of above 03 substation is not available at UPSLDC due to lack of OPGW. The work of laying OPGW cable is under progress and same shall take around 02 months' time.		-		-	-	-	-	-	-	-	-
2	Agra IS	UP	Under Implementation	Scheme has been approved in 71th NRPC meeting held on 29.01.2024. In 222nd OCC, UPPTCL representative apprised forum that procurement of UFR for Lalitpur Agra Islanding scheme is under process and management approval is expected by month end.		-		-	-	-	-	-	-	-	-
3	Jodhpur-Barmer-Rajwest IS	Rajasthan	Under Implementation	Scheme has been approved in 60th NRPC meeting held on 30.11.2022. In 222nd OCC, RRVPNL representative mentioned logic for Jodhpur-Barmer-Rajwest islanding scheme is under implementation.	-	-		-	-	-	-	-	-	-	-
4	Suratgarh IS	Rajasthan	Under Implementation	Scheme has been approved in 60th NRPC meeting held on 30.11.2022. In 222nd OCC, RRVPNL representative mentioned DPR for implementation of Suratgarh islanding scheme is under finalization.	-	-		-	-	-	-	-	-	-	-
5	Patiala-Nabha Power Rajpura IS	Punjab	Under Implementation	Scheme has been approved in 60th NRPC meeting held on 30.11.2022. In 222nd OCC, Punjab SLDC informed that no reply has been received from PSDF Sectt. regarding DPR for PSDF funding till date. MS, NRPC has asked Punjab SLDC to explore the alternative mechanism for procurement of UFR as funding has been freezed till March'25 from PSDF Sectt.		-		-	-	-	-	-	-	-	-
6	Kullu-Manali-Mandi IS	HP	Under Implementation	Scheme has been approved in 60th NRPC meeting held on 30.11.2022. In 222nd OCC, HPSLDC representative informed that proposed UFR scheme for both Kullu- Manali and Shimla-Solan Islanding scheme has been recommended by the Appraisal Committee of the State PSDF for approval of Hon'ble HPERC.		-		-	-	-	-	-	-	-	-
7	Shimla-Solan IS	HP	Under Implementation	Scheme has been approved in 60th NRPC meeting held on 30.11.2022. HPSLDC intimated forum Shimla-Solan Islanding scheme, issue b/w HPSEBL and M/s GE is unresolved. MS, NRPC asked to have a separate meeting with all stakeholders to resolve the issue.											

Status of availability of ERS towers in NR

Sl. No.	Transmission Utility	Voltage Level (220kV/400kV/765kV/ 500 kV HVDC etc.)	Length of the transmission lines owned by the Utility (Ckt. Kms.)	Number of ERS Sets (towers) available (Nos.)	ERS Set (towers) required as per the Govt. norms.	Location	Remarks
1	PTCUL	400kV	418.394	NIL	1		Tender has been opened and contract activities under process
		220kV	1045.135	NIL	1		
2	Powergrid NR-1	220 KV	1842.88	NIL	1		
		400 KV	11074.26	12 Towers	3	All 400kV ERS at Ballabhgarh	make-Lindsey
		765 KV	4721.85	15 Towers	1	All 765kV ERS at Meerut	Make-SBB
		500 KV HVDC	653.88	NIL	1		
		800 KV HVDC	416.58	NIL	1		
3	Powergrid NR-2	66 KV	37.56	Nil	1		ERS tower available for 400KV rating can be used in place of lower as well as higher voltage Towers. In case used for 765KV Line, No of towers can be erected will reduce due to increase in Tower Hight.
		132 KV	262.7	Nil	1		
		220 KV	2152	Nil	1		
		400 KV	8097.3	02 Set (32 Towers)	2	Kishenpur & Jalandhar	
		765 KV	337.5	Nil	1		
4	Powergrid NR-3	800KV HVDC	2205	NIL	1		400KV ERS will be also be used in other voltage level lines
		500KV HVDC	2566	NIL	1		
		765KV	4396	NIL	1		
		400KV	12254	26 Towers	3	Kanpur	
		220KV	1541	NIL	1		
		132KV	207	NIL	1		
5	PARBATI KOLDAM TRANSMISSION COMPANY LIMITED	400kV	457	NIL	1		Procurement under process.
6	PATRAN TRANSMISSION COMPANY LTD	400kV	0.4	NIL	1	It is kept in Bhopal and on need basis is moved across region	Not available, will tie up based on the requirements in future. However the parent company IndiGrid owns one set of ERS for all five regions.
7	NRSS-XXIX TRANSMISSION LTD	400kV	853	NIL	1		
8	GURGAON PALWAL TRANSMISSION LTD	400kV	272	NIL	1		
9	RAPP Transmission Company Limited.	400kV	402	NIL	1		
10	NRSS XXXVI Transmission Limited	400kV	301.924	NIL	1		Element I - Operational comprising of 3 kms. Element II - Work Under Progress comprising of 221.924 kms. Element II - Work Under Progress comprising of 77 kms.
11	HPPTCL	220 kV	659	NIL	1		
		400 kV	75.7	NIL	1		
12	RVPN	132 kV	18969.958	1	4	01 No. ERS available at 220 kV GSS Heerapura, Jaipur	ERS proposed : 01 Set at 400 kV GSS, Jodhpur. 01 set at 400 kV GSS Bikaner
		220 kV	16227.979		3		
		400 kV	6899.386		2		
		765 kV	425.498		1		

Sl. No.	Transmission Utility	Voltage Level (220kV/400kV/765kV/ 500 kV HVDC etc.)	Length of the transmission lines owned by the Utility (Ckt. Kms.)	Number of ERS Sets (towers) available (Nos.)	ERS Set (towers) required as per the Govt. norms.	Location	Remarks
13	DTL	220kV	915.498	NIL	1	400kV Bamnauli Sub station	ERS tower available for 400KV rating can also be used for lower voltage lines as well
		400kV	249.19	02 Sets (32 towers)	1		
14	JKPTCL						JKPTCL, Jammu: being procured
15	HVPN						JKPTCL, Kashmir:10 tower procured (out of which 3 on loan to JKPTCL, Jammu)
16	PSTCL	400 kV	1666.43	2	2		
		220 kV	7921.991				
17	UPPTCL 1- Meerut	132KV	27508.321	24 Nos(15 Running+9 Angle)		400 kV S/s Gr. Noida	ERS will be also be used in other voltage level lines.
		220KV	14973.453				
		400KV	6922.828				
	UPPTCL 2-Prayagraj	765KV	839.37	24 Towers		220 kv S/s phulpur	ERS will also be used in other voltage lines.
		400KV	1804.257				
		220KV	2578.932				
		132KV	4714.768				
18	POWERLINK						
19	POWERGRID HIMACHAL TRANSMISSION LTD						
20	Powergrid Ajmer Phagi Transmission Limited						
21	Powergrid Fatehgarh Transmission Limited						
22	POWERGRID KALA AMB TRANSMISSION LTD						
23	Powergrid Unchahar Transmission Ltd						
24	Powergrid Khetri Transmission Limited						
25	POWERGRID VARANASI TRANSMISSION SYSTEM LTD						
26	ADANI TRANSMISSION INDIA LIMITED		2090	1 Set (12 towers)	1 set (12 towers)	Sami (Gujarat)	Make-Lindsey ERS set available for 400KV & 500KV rating can be used for lower as well as higher voltage Towers. In case used for 765KV Line, No of towers can reduce due to increase in Tower Height & nos of conductors.
27	BIKANER KHETRI TRANSMISSION LIMITED		482				
28	FATEHGARH BHADLA TRANSMISSION LIMITED	500 kV HVDC 400 kV HVAC	291				
29	NRSS-XXXI(B) TRANSMISSION LTD	400 kV	577.74	Not Available	Not Available		In the advance stage of process of finalising arrangement for providing ERS on need basis with other transmission utility (M/s INDIGRID).
30	ARAVALI POWER COMPANY PVT LTD	765 kv HVAC					

*The transmission Utility with line length less than 500 ckt kms (of 400 KV lines) may be given option either to procure ERS or have agreement with other transmission utilities for providing ERS on mutually agreed terms, when need arises. (As per MoP directions)

											Approved Planned Outage-1			Actual Planned Outage-1		
Capacity (MW) 30-11-2023	Name of Station	UNIT_NM	STN_TYPE_ID	SECTOR	REGION_NM	ST_NM	SH_NM	IPP	FUEL_NM	Capacity (MW) 31-03-2025	Start Date	End Date	Reason	Start Date	End Date	Reason for any deviation
110	KOTA TPS	2	T	STATE SECTOR	Northern	Rajasthan	RRVUNL	FALSE	COAL	110	23-Jul-24	12-Aug-24	AOH			
135	JALIPA KAPURDI TPP	2	T	IPP SECTOR	Northern	Rajasthan	JSWBL	FALSE	LIGNITE	135	28-Jul-24	21-Aug-24	COH			
250	CHHABRA TPP	1	T	STATE SECTOR	Northern	Rajasthan	RRVUNL	FALSE	COAL	250	1-Aug-24	21-Aug-24	AOH			
0	GHATAMPUR TPP	3	T	CENTRAL SECTOR	Northern	Uttar Pradesh	NUPPL	FALSE	COAL	660	1-Apr-24	31-Aug-24	After Unit Commissioning/COD			
600	KALISINDH TPS	1	T	STATE SECTOR	Northern	Rajasthan	RRVUNL	FALSE	COAL	600	1-Aug-24	21-Aug-24	AOH			
45	MAQSOOD PUR TPS	1	T	IPP SECTOR	Northern	Uttar Pradesh	BEPL	FALSE	COAL	45	22-Aug-24	26-Aug-24	Inspection			
45	MAQSOOD PUR TPS	2	T	IPP SECTOR	Northern	Uttar Pradesh	BEPL	FALSE	COAL	45	25-Aug-24	29-Aug-24	Inspection			
45	KHAMBAR KHERA TPS	1	T	IPP SECTOR	Northern	Uttar Pradesh	BEPL	FALSE	COAL	45	16-Aug-24	20-Aug-24	Inspection			
45	KHAMBAR KHERA TPS	2	T	IPP SECTOR	Northern	Uttar Pradesh	BEPL	FALSE	COAL	45	19-Aug-24	23-Aug-24	Inspection			
45	BARKHERA TPS	1	T	IPP SECTOR	Northern	Uttar Pradesh	BEPL	FALSE	COAL	45	9-Aug-24	13-Aug-24	Inspection			
45	BARKHERA TPS	2	T	IPP SECTOR	Northern	Uttar Pradesh	BEPL	FALSE	COAL	45	12-Aug-24	16-Aug-24	Inspection			
45	KUNDARKI TPS	1	T	IPP SECTOR	Northern	Uttar Pradesh	BEPL	FALSE	COAL	45	10-Aug-24	14-Aug-24	Inspection			
45	KUNDARKI TPS	2	T	IPP SECTOR	Northern	Uttar Pradesh	BEPL	FALSE	COAL	45	13-Aug-24	17-Aug-24	Inspection			
45	UTRAULA TPS	1	T	IPP SECTOR	Northern	Uttar Pradesh	BEPL	FALSE	COAL	45	24-Aug-24	28-Aug-24	Inspection			
45	UTRAULA TPS	2	T	IPP SECTOR	Northern	Uttar Pradesh	BEPL	FALSE	COAL	45	27-Aug-24	31-Aug-24	Inspection			

Sr. No.	Region	State	Sector	Organisation	Name of Project	Location District	Fuel Used	Unit No	Total Capacity	DT-of COMMISSIONING
1	NR	Punjab	Private Sector	GPGSL (GVK)	GOINDWAL SAHIB	Tarn Taran	Coal	2	270.00	16-Apr-16
2	NR	Punjab	Private Sector	GPGSL (GVK)	GOINDWAL SAHIB	Tarn Taran	Coal	1	270.00	6-Apr-16
3	NR	Haryana	State Sector	HPGCL	PANIPAT TPS	Panipat	Coal	8	250.00	28-Jan-05
4	NR	Haryana	State Sector	HPGCL	PANIPAT TPS	Panipat	Coal	7	250.00	28-Sep-04
5	NR	Haryana	State Sector	HPGCL	PANIPAT TPS	Panipat	Coal	6	210.00	31-Mar-01
6	NR	Uttar Pradesh	Private Sector	LAPPL	ANPARA C TPS	Sonbhadra	Coal	2	600.00	15-Nov-11
7	NR	Uttar Pradesh	Private Sector	LAPPL	ANPARA C TPS	Sonbhadra	Coal	1	600.00	12-Nov-11
8	NR	Uttar Pradesh	Private Sector	RPSCL	ROSA TPP Ph-I	Shahjahanpur	Coal	4	300.00	28-Mar-12
9	NR	Uttar Pradesh	Private Sector	RPSCL	ROSA TPP Ph-I	Shahjahanpur	Coal	3	300.00	28-Dec-11
10	NR	Uttar Pradesh	Private Sector	RPSCL	ROSA TPP Ph-I	Shahjahanpur	Coal	2	300.00	26-Jun-10
11	NR	Uttar Pradesh	Private Sector	RPSCL	ROSA TPP Ph-I	Shahjahanpur	Coal	1	300.00	10-Feb-10
12	NR	Rajasthan	Private Sector	RWPL (JSW)	JALIPA KAPURDI TPP	Barmer	Lignite	7	135.00	16-Mar-13
13	NR	Rajasthan	Private Sector	RWPL (JSW)	JALIPA KAPURDI TPP	Barmer	Lignite	6	135.00	3-Mar-13
14	NR	Rajasthan	Private Sector	RWPL (JSW)	JALIPA KAPURDI TPP	Barmer	Lignite	8	135.00	28-Feb-13
15	NR	Rajasthan	Private Sector	RWPL (JSW)	JALIPA KAPURDI TPP	Barmer	Lignite	5	135.00	5-Feb-13
16	NR	Rajasthan	Private Sector	RWPL (JSW)	JALIPA KAPURDI TPP	Barmer	Lignite	4	135.00	23-Nov-11
17	NR	Rajasthan	Private Sector	RWPL (JSW)	JALIPA KAPURDI TPP	Barmer	Lignite	3	135.00	2-Nov-11
18	NR	Rajasthan	Private Sector	RWPL (JSW)	JALIPA KAPURDI TPP	Barmer	Lignite	2	135.00	8-Jul-10
19	NR	Rajasthan	Private Sector	RWPL (JSW)	JALIPA KAPURDI TPP	Barmer	Lignite	1	135.00	16-Oct-09
20	NR	Punjab	State Sector	PSPCL	GH TPS (LEH.MOH.)	Bhatinda	Coal	4	250.00	2-Aug-08
21	NR	Punjab	State Sector	PSPCL	GH TPS (LEH.MOH.)	Bhatinda	Coal	3	250.00	5-Feb-08
22	NR	Punjab	State Sector	PSPCL	GH TPS (LEH.MOH.)	Bhatinda	Coal	2	210.00	26-Nov-98
23	NR	Punjab	State Sector	PSPCL	GH TPS (LEH.MOH.)	Bhatinda	Coal	1	210.00	23-May-98
24	NR	Punjab	State Sector	PSPCL	ROPAR TPS	Rupnagar	Coal	6	210.00	30-Mar-93
25	NR	Punjab	State Sector	PSPCL	ROPAR TPS	Rupnagar	Coal	5	210.00	29-Mar-92
26	NR	Punjab	State Sector	PSPCL	ROPAR TPS	Rupnagar	Coal	4	210.00	29-Jan-89
27	NR	Punjab	State Sector	PSPCL	ROPAR TPS	Rupnagar	Coal	3	210.00	31-Mar-88
28	NR	Rajasthan	State Sector	RRVUNL	KALISINDH TPS	Jhalawar	Coal	2	600.00	25-Jul-15
29	NR	Rajasthan	State Sector	RRVUNL	CHHABRA TPP	Baran	Coal	4	250.00	30-Dec-14
30	NR	Rajasthan	State Sector	RRVUNL	KALISINDH TPS	Jhalawar	Coal	1	600.00	7-May-14
31	NR	Rajasthan	State Sector	RRVUNL	CHHABRA TPP	Baran	Coal	3	250.00	19-Dec-13
32	NR	Rajasthan	State Sector	RRVUNL	CHHABRA TPP	Baran	Coal	2	250.00	15-Oct-11
33	NR	Rajasthan	Central Sector	NLC	BARSINGSAR LIGNITE	Bikaner	Lignite	2	125.00	25-Jan-11
34	NR	Rajasthan	Central Sector	NLC	BARSINGSAR LIGNITE	Bikaner	Lignite	1	125.00	28-Jun-10
35	NR	Rajasthan	State Sector	RRVUNL	KOTA TPS	Kota	Coal	7	195.00	1-Jan-10
36	NR	Rajasthan	State Sector	RRVUNL	SURATGARH TPS	Ganganagar	Coal	6	250.00	30-Dec-09
37	NR	Rajasthan	State Sector	RRVUNL	GIRAL TPS	Barmer	Lignite	2	125.00	6-Nov-09
38	NR	Rajasthan	State Sector	RRVUNL	CHHABRA TPP	Baran	Coal	1	250.00	30-Oct-09
39	NR	Rajasthan	State Sector	RRVUNL	GIRAL TPS	Barmer	Lignite	1	125.00	28-Feb-07
40	NR	Rajasthan	State Sector	RRVUNL	KOTA TPS	Kota	Coal	6	195.00	1-Aug-04
41	NR	Rajasthan	State Sector	RRVUNL	SURATGARH TPS	Ganganagar	Coal	5	250.00	19-Aug-03
42	NR	Rajasthan	State Sector	RRVUNL	SURATGARH TPS	Ganganagar	Coal	4	250.00	31-Jul-02
43	NR	Rajasthan	State Sector	RRVUNL	SURATGARH TPS	Ganganagar	Coal	3	250.00	15-Jan-02
44	NR	Rajasthan	State Sector	RRVUNL	SURATGARH TPS	Ganganagar	Coal	2	250.00	1-Oct-00
45	NR	Rajasthan	State Sector	RRVUNL	SURATGARH TPS	Ganganagar	Coal	1	250.00	1-Feb-99
46	NR	Rajasthan	State Sector	RRVUNL	KOTA TPS	Kota	Coal	5	210.00	18-Jul-95
47	NR	Rajasthan	State Sector	RRVUNL	KOTA TPS	Kota	Coal	4	210.00	16-Jan-90
48	NR	Rajasthan	State Sector	RRVUNL	KOTA TPS	Kota	Coal	3	210.00	11-Mar-89
49	NR	Rajasthan	State Sector	RRVUNL	KOTA TPS	Kota	Coal	2	110.00	1-Apr-84
50	NR	Rajasthan	State Sector	RRVUNL	KOTA TPS	Kota	Coal	1	110.00	1-Apr-83

सत्यमेव जयते

भारत सरकार
Government of India
विद्युत मंत्रालय
Ministry of Power
केन्द्रीय विद्युत प्राधिकरण
Central Electricity Authority
तापीय परियोजना नवीनीकरण एवं आधुनिकीकरण प्रभाग
Thermal Project Renovation & Modernization Division

No. 2/3/Flex/2024/ 688 - 692 **Date:** 01.08.2024

Subject: Agenda Note on Flexible Operation of Coal Based Thermal Power Plants for regular discussion in OCC meeting- reg

Reference is invited to letter no. 2/3/Flex/2024/248-255 dated 03.04.2024, wherein the guidelines and action items pertaining to the flexible operation of coal-based thermal power generating units were outlined. As per the CEA Gazette Notification dated January 30, 2023, coal-based thermal power generating units shall have flexible operation capability with a minimum power level of 55%, along with specified ramp rates, by January 2024. Additionally, a phased implementation plan for achieving a 40% minimum technical load (MTL) has been notified, with specific targets and timelines for compliance.

In this regard, it is requested to provide updates on the following agenda items:

Agenda: Regarding 55% MTL (Minimum Technical Load)

a. Achievement of 55% TML: Whether the target of achieving 55% Technical Minimum Load (TML) has been met. If not, please provide the reasons and the tentative date for achieving the same.

b. Adherence to Ramp Rates: Whether the specified ramp rates, i.e., 3% for 100-70% load and 2% for 70%-55% load, have been adhered to. If not, please provide the reasons and the tentative date for achieving the same.

c. Operator Training: How many operators have been trained in the organization?

Agenda: Regarding 40% MTL (Minimum Technical Load) and Status of Units Under Pilot Phase

Phase	Sector	Organisation	Name of Project	Unit No.	Capacity (MW)	Region
Pilot	Central	NTPC	MAUDA TPS	1	500	WR
Pilot	Central	NTPC	SIMHADRI	3	500	SR
Pilot	Central	NTPC	DADRI	6	490	NR
Pilot	Central	DVC	MEJIA TPS	8	500	ER
Pilot	Central	NEYVELI LIGNITE	NEYVELI NEW TPP	2	500	SR
Pilot	State	KPCL	YERMARUS TPS	1	800	SR
Pilot	State	GSECL	WANAKBORI TPP	6	800	WR
Pilot	State	RRVUNL	SURATGARH SCTPP	8	660	NR
Pilot	State	WBPDC	SAGARDIGHI TPS	3	500	ER
Pilot	Private	CEPL	MUTHIARA	2	600	SR
Pilot Phase Total				**10**	**5850**	
Pilot Phase Total (Percentage of Total Capacity)				**1.70%**	**2.76%**	

a. Achievement of 40% TML: Whether the target of achieving 40% Technical Minimum Load (TML) has been met. If not, please provide the reasons and the tentative date for achieving the same.

b. Adherence to Ramp Rates: Whether the specified ramp rates, i.e., 3% for 100-70% load, 2% for 70%-55% load, and 1% for 40%-55% load, have been adhered to. If not, please provide the reasons and the tentative date for achieving the target.

Furthermore, it is requested to provide progress reports and outcomes related to the achievement of both 55% and 40% MTL as early as possible.

Narender Singh
01/08/24.

(Narender Singh)

Chief Engineer, TPRM

To:

1. Member Secretary , NRPC
2. Member Secretary , SRPC
3. Member Secretary , WRPC
4. Member Secretary , ERPC
5. Member Secretary , NERPC

Annexure-A.VII

Progress Report regarding achievement of 55% MTL

S. No	Details	Unit 1	Unit2	Unit3	-------
1	Name of Utility				
2	Plant Name and Address				
3	Capacity, MW				
4	Date of Commissioning				
5	Type of Unit: Supercritical/Subcritical/....				
6	Net Heat rate: Design/Actual				
7	Coal Quality (i) GCV (ii) Volatile matter (iii) Ash Content				
8	Maximum Generation (last 2 years) MW				
9	Minimum Generation (last 2 years) MW				
10	Maximum Ramp Rate Up (last 2 years)				
11	Maximum Ramp Rate Down (last 2 years)				
12	Whether 55% Minimum load Achieved (YES/NO) (i) If YES, specify the duration and time (ii) If NO, specify the reason for the same				
14	Any other details				

Progress Report regarding achievement of 40% MTL

S. No	Details	Unit 1	Unit2	Unit3	-------
1	Name of Utility				
2	Plant Name and Address				
3	Capacity, MW				
4	Date of Commissioning				
5	Type of Unit: Supercritical/Subcritical/....				
6	Net Heat rate: Design/Actual				
7	Coal Quality (i) GCV (ii) Volatile matter (iii) Ash Content				
8	Maximum Generation (last 2 years) MW				
9	Minimum Generation (last 2 years) MW				
10	Maximum Ramp Rate Up (last 2 years)				
11	Maximum Ramp Rate Down (last 2 years)				
12	Whether 40% Minimum load Achieved (YES/NO) (i) If YES, specify the duration and time (ii) If NO, specify the reason for the same (iii) Whether low load test conducted at 40% (YES/NO) (a) If YES, measures identified/implemented for achieving the same. (b) If No, any action taken in this regard				
14	Any other details				

Sr. No.	State	Organisation	Name of Project	Unit No	Total Capacity (MW)	Technical Minimum Load Status (%)
1	Punjab	GPGSL (GVK)	GOINDWAL SAHIB	2	270.00	
2	Punjab	GPGSL (GVK)	GOINDWAL SAHIB	1	270.00	
3	Haryana	HPGCL	PANIPAT TPS	8	250.00	
4	Haryana	HPGCL	PANIPAT TPS	7	250.00	
5	Haryana	HPGCL	PANIPAT TPS	6	210.00	
6	Uttar Pradesh	LAPPL	ANPARA C TPS	2	600.00	
7	Uttar Pradesh	LAPPL	ANPARA C TPS	1	600.00	
8	Uttar Pradesh	RPSCL	ROSA TPP Ph-I	4	300.00	
9	Uttar Pradesh	RPSCL	ROSA TPP Ph-I	3	300.00	
10	Uttar Pradesh	RPSCL	ROSA TPP Ph-I	2	300.00	
11	Uttar Pradesh	RPSCL	ROSA TPP Ph-I	1	300.00	
12	Rajasthan	RWPL (JSW)	JALIPA KAPURDI TPP	7	135.00	
13	Rajasthan	RWPL (JSW)	JALIPA KAPURDI TPP	6	135.00	
14	Rajasthan	RWPL (JSW)	JALIPA KAPURDI TPP	8	135.00	
15	Rajasthan	RWPL (JSW)	JALIPA KAPURDI TPP	5	135.00	
16	Rajasthan	RWPL (JSW)	JALIPA KAPURDI TPP	4	135.00	
17	Rajasthan	RWPL (JSW)	JALIPA KAPURDI TPP	3	135.00	
18	Rajasthan	RWPL (JSW)	JALIPA KAPURDI TPP	2	135.00	
19	Rajasthan	RWPL (JSW)	JALIPA KAPURDI TPP	1	135.00	
20	Punjab	PSPCL	GH TPS (LEH.MOH.)	4	250.00	
21	Punjab	PSPCL	GH TPS (LEH.MOH.)	3	250.00	
22	Punjab	PSPCL	GH TPS (LEH.MOH.)	2	210.00	
23	Punjab	PSPCL	GH TPS (LEH.MOH.)	1	210.00	
24	Punjab	PSPCL	ROPAR TPS	6	210.00	
25	Punjab	PSPCL	ROPAR TPS	5	210.00	
26	Punjab	PSPCL	ROPAR TPS	4	210.00	
27	Punjab	PSPCL	ROPAR TPS	3	210.00	
28	Rajasthan	RRVUNL	KALISINDH TPS	2	600.00	
29	Rajasthan	RRVUNL	CHHABRA TPP	4	250.00	
30	Rajasthan	RRVUNL	KALISINDH TPS	1	600.00	
31	Rajasthan	RRVUNL	CHHABRA TPP	3	250.00	
32	Rajasthan	RRVUNL	CHHABRA TPP	2	250.00	
33	Rajasthan	NLC	BARSINGSAR LIGNITE	2	125.00	
34	Rajasthan	NLC	BARSINGSAR LIGNITE	1	125.00	
35	Rajasthan	RRVUNL	KOTA TPS	7	195.00	
36	Rajasthan	RRVUNL	SURATGARH TPS	6	250.00	
37	Rajasthan	RRVUNL	GIRAL TPS	2	125.00	
38	Rajasthan	RRVUNL	CHHABRA TPP	1	250.00	
39	Rajasthan	RRVUNL	GIRAL TPS	1	125.00	
40	Rajasthan	RRVUNL	KOTA TPS	6	195.00	
41	Rajasthan	RRVUNL	SURATGARH TPS	5	250.00	
42	Rajasthan	RRVUNL	SURATGARH TPS	4	250.00	
43	Rajasthan	RRVUNL	SURATGARH TPS	3	250.00	
44	Rajasthan	RRVUNL	SURATGARH TPS	2	250.00	
45	Rajasthan	RRVUNL	SURATGARH TPS	1	250.00	
46	Rajasthan	RRVUNL	KOTA TPS	5	210.00	
47	Rajasthan	RRVUNL	KOTA TPS	4	210.00	
48	Rajasthan	RRVUNL	KOTA TPS	3	210.00	
49	Rajasthan	RRVUNL	KOTA TPS	2	110.00	
50	Rajasthan	RRVUNL	KOTA TPS	1	110.00	

Format for State/Uts/System-wise and Month-wise Energy Requirement for 2025-26

State/ UTs/ System	Energy Requirement(in MU)											
	April-25	May-25	June-25	July-25	August-25	September-25	October-25	November-25	December-25	January-26	February-26	March-26

Format for State/Uts/System-wise and Month-wise Peak Demand for 2025-26

State/ UTs/ System	Peak Demand (in MW) (Solar hours)											
	April-25	May-25	June-25	July-25	August-25	September-25	October-25	November-25	December-25	January-26	February-26	March-26

State/ UTs/ System	Peak Demand (in MW) (Non-Solar hours)											
	April-25	May-25	June-25	July-25	August-25	September-25	October-25	November-25	December-25	January-26	February-26	March-26

Format for unit wise outage schedule of generating stations

							Outage 1				Outage 2 of same unit				Outage 3 of same unit				Outage 4 of same unit			
STATION NAME	UNIT NO.	STATION TYPE	REGION	STATE	ORGANIZATION/ UTILITY	CAPACITY	From_Date	To_Date	Outage_Reason	Remarks	From_Date	To_Date	Outage_Reason	Remarks	From_Date	To_Date	Outage_Reason_ID	Remarks	From_Date	To_Date	Outage_Reason_ID	Remarks

Note: Please don't leave any cell blank in columns of STATION NAME,UNIT NO.,STATION TYPE,REGION,STATE,UTILITY.

Annexure-A.XII

सत्यमेव जयते

भारत सरकार
Government of India
विद्युत मंत्रालय
Ministry of Power
उत्तर क्षेत्रीय विद्युत समिति
Northern Regional Power Committee

विषय: Anticipated Energy Requirement & Peak Demand and Unit wise Outage Maintenance schedule for the year 2025-26-reg.

Central Electricity Authority vide its mail dated 27.08.2024 has sought information regarding the Anticipated Energy Requirement & Peak Demand and Unit Wise Planned Maintenance schedule for the year 2025-26. In this regard, please find enclosed herewith the data formats and the inputs desired:-

1. Month-wise data of Energy Requirement and Peak Demand **during solar and non-solar hours** are required for the fiscal year 2025-26 as per the format enclosed at **Annexure-I.**
2. Unit Wise Planned Maintenance schedule for the year 2025-26 as per the format enclosed at **Annexure-II.**

Respective SLDC's of Northern Region are requested to submit the Energy Requirement and Peak Demand Data **during Solar and Non-Solar Hours** as per Annexure-I, whereas for Planned Maintenance schedule, SLDCs are requested to co-ordinate with IPPs and State Generating Companies within their state and submit the data as per Annexure-II.

The above information may kindly be submitted in the prescribed format by email to **seo-nrpc@nic.in** at the earliest.

Signed by Dharmendra Kumar Meena
Date: 29-08-2024 14:54:46

(डी.के. मीना)

अधीक्षण अभियंता (प्रचालन)

सेवा में,

All Chief Engineer, SLDC's of Northern Region States and UT's

Annexure-A.XIII

सत्यमेव जयते

भारत सरकार
Government of India
विद्युत मंत्रालय
Ministry of Power
उत्तर क्षेत्रीय विद्युत समिति
Northern Regional Power Committee

विषय: Implementation of the Action Points of Meeting held in PMO on 20th May, 2024 on the subject 'Transmission Infrastructure for upcoming RE Projects'-reg.

This has reference to point no. (iii) of action point (copy attached) of the subject cited meeting held under the chairmanship of Advisor to PM, wherein CEA has been entrusted with the task of identification of State-wise Intra-State sub-stations (132kV and above) where transmission capacity is readily available for evacuating RE.

2. In this regard, requested to all SLDCs to submit the requisite information in prescribed format (copy attached) in co-ordination with STUs of their respective state for **Intra-State sub-stations (132kV and above)** at the earliest via mail at **seo-nrpc@nic.in**. The format in which above information is desired is attached for reference.

This issues with the approval of Member Secretary, NRPC

Signed by Dharmendra Kumar Meena
Date: 16-08-2024 18:24:38

(डी. के. मीना)
अधीक्षण अभियंता (प्रचालन)

सेवा में,

1. General Manager, Delhi SLDC (**gmsldc@delhisldc.org)**
2. Chief Engineer, Punjab SLDC (**ce-sldc@pstcl.org**)
3. Chief Engineer, Rajasthan SLDC (**ce.ld@rvpn.co.in**)
4. Chief Engineer, Uttar Pradesh SLDC (**cepso@upsldc.org)**
5. Chief Engineer, Haryana SLDC (**cesocomml@hvpn.org.in**)
6. Chief Engineer, Uttarakhand SLDC (**se_sldc@ptcul.org**)
7. Chief Engineer, Himachal Pradesh SLDC (**cehpsldc@gmail.com**)
8. Chief Engineer, UT of J&K and Ladakh SLDC (**sojpdd@gmail.com**)
9. Chief Engineer, Electricity Department UT of Chandigarh (**elop2-chd@nic.in**)

Action Points	Status
(i) Prepare strategies to maximize the use of the current RE evacuation infrastructure. For each strategy, outline the responsibilities of relevant agencies like CERC. Establish a bidding process for transmission allocation at existing pooling stations for entities supplying stored energy during non-solar hours. Develop a mechanism for determining tariffs under existing PPAs for supplying stored energy during solar ramp-up/down hours.	R&R/NRE/RCM Division to add comments MNRE to add its comments
(ii)Establish an institutional mechanism for continuous engagement with the RE developers and Transmission Service Providers (TSPs). A website similar to PMG may be deployed where RE developers and TSPs may resolve their issues.	**CTU's comment** - CTU holds Joint Coordination Committee (JCC) meetings with RE developers and Transmission Service Providers (TSPs) every quarter, where issues are discussed. Minutes of these meetings are also uploaded on CTU website. Development of a separate portal to address the issues of RE developers and TSPs is to be deliberated with all concerned viz. MoP, MNRE, CEA, SECI, other REIAs and CTU. **MNRE to add its comment**

(iii) State-wise InSTS/ISTS substations (132 kV and above) where transmission capacity is readily available for evacuating RE may be identified.These capacities may be updated and published periodically.	**CTU's comment**-Connectivity margins on existing as well as RE polling stations are already available on the portal of CTUIL for ISTS substations and the same is updated every month. **CEA to supplement for InSTS substations**.
(iv) MNRE may consider pre-specifying evacuation dates prior to calling for bids.	**MNRE/SECI's comment**: Availability of evacuation system and its planning are displayed on CTU's website, and the same is being considered by the RE developers while bidding in the tenders, among other factors. This data is highly dynamic. SECI's tenders' scope is limited to specifying a Scheduled Commissioning Date of 24 months from PPA signing. This Date gets automatically extended in case of mismatch between Project commissioning and substation readiness timelines. Pre-specifying evacuation dates at the bidding stage is not feasible, in view of the dynamic nature of connectivity at ISTS substations.
(v) Examine the issue of addressing delayed generation where transmission capacity is lying idle	**CTU's comment**- The Joint Coordination Committee (JCC) meetings convened every quarter by CTU with RE Generators and Transmission Service providers focus on this issue. **MNRE may add its comments**

(vi) MNRE may facilitate sale of RE generation to OA consumers wherever PSAs with Discoms are delayed so that the project can be commissioned and transmission system is put to use.	**MNRE/SECI's comment**: This is allowed in SECI's tenders. The tenders contain the provision that the Developer will be issued NoC by SECI in case the project is commissioned early but PSAs are not signed, to allow third party sale of such power.
(vii)Address the issue of enabling full reverse flow in Raigarh-Pugulur HVDC line.	**PGCIL**-PGCIL has taken up this issue with M/sHitachi Energy, the original equipment manufacturer of this line, to carry out studies for enhancement of reverse flow upto 6000 MW. Terms and conditions are under finalization. **CEA and Grid India to add their comments**
(viii)Prescribe storage trajectory for both existing and new VRE generation. For the existing VRE generation, facilitate sale of the additional storage energy to the willing Discoms through an appropriate mechanism	**NRE Division to add its comments** **MNRE to add its comments**
(viii) Prepare proposal for funding ISTS/InSTS system and storage to accelerate energy transition.	**NRE Division to add its comments**

Format - Transmission Infrastructure for upcoming RE Projects

S.No.	Name of State/UT	Name of Intra-State sub-stations (132kV and above)	Existing Transformer Capacity	Connectivity Granted/ Agreed					Margin avilable for evacuating RE					Remarks
				132kV	220kV	400kV	765kV	Total (MW)	132kV	220kV	400kV	765kV	Total (MW)	

RAJASTHAN RAJYA VIDYUT PRASARAN NIGAM LIMITED.
[Corporate Identity Number (CIN):U40109RJ2000SGC016485]
(Regd. Office: Vidyut Bhawan, Jan Path, Jyoti Nagar, Jaipur - 302 005)
OFFICE OF THE SUPERINTENDING ENGINEER (PROJECT & PLANNING)
✆ +91-141-2740623, Fax:+91-141-2740794;
e-mail: se.pp@rvpn.co.in; website:www.rvpn.co.in

RVPN
An ISO 9001:2000 Certified Company

No. RVPN/SE(P&P)/XEN-3(P&P)/AE-2/ F. /D 297 Jaipur, Dt. 23/8/24

The General Manager (NRLDC)
Grid Controller of India Limited,
18-A, Shaheed Jeet Singh Sansanwal Marg, Katwaria Sarai
New Delhi-110016.

Sub:- Revised SPS for 2x315 MVA, 400/220 kV ILTs at 400 kV GSS Jodhpur.

Ref:- 1. MoM of 221st OCC meeting held on dated 19.07.2024.
2. Discussions held during 222nd OCC Meeting held on dated 14.08.24

On the above captioned subject, it is submitted that SPS for 2x315 MVA, 400/220 kV ILTs at 400 kV GSS Jodhpur (Surpura) was approved in the 197th OCC meeting held on dated 22.07.2022. Due to increased loading in the Bilara, Jodhpur and Bhawad region, operational arrangement of lines and transformers has been changed at 400 kV GSS Jodhpur. This has necessitated the revision of the approved and implemented SPS.

Further, vide this office letter dated 28.06.24, revised SPS for 2x315 MVA, 400/220 kV ILTs at 400 kV GSS Jodhpur (Surpura) was submitted with request to include in the 221st meeting of OCC for discussion and to accord necessary approval of the OCC forum. Thereafter, revised SPS for 2x315 MVA, 400/220 kV ILTs at 400 kV GSS Jodhpur (Surpura) after incorporating suggestions from NRLDC in the 221st OCC Meeting held on dated 19.07.24 was again submitted vide this office letter dated 26.07.2024 **(copy enclosed)** and further technical suitability was conveyed by NRLDC in 222nd OCC Meeting held on dated 14.08.24.

In view of above, you are kindly requested to include the revised SPS in the agenda of next 223rd OCC meeting by OCC Forum.

Encl: As above

(S.C. Meena)
Chief Engineer (PP&D)

Copy to the following for information and necessary action please-

1. The Member Secretary (NRPC), 18-A, Shaheed Jeet Singh Marg, Katwaria Sarai, New Delhi-110016
2. The Chief Engineer (LD/T&C/MPT&S), RVPN, Jaipur/Jodhpur.
3. The Chief Engineer, Power System Planning & Appraisal-I Division, CEA, Sewa Bhawan, RK Puram-I, New Delhi-110066
4. The Superintending Engineer (Operation), NRPC, 18-A, Shaheed Jeet Singh Marg, Katwaria Sarai, New Delhi-110016.
5. The System Operator-2, NRLDC, 18-A, Shaheed Jeet Singh Marg, Katwaria Sarai, New Delhi-110016

Encl: As above

उ.क्षे.वि.स. जोधपुर
सं./No. 867
दिनांक/Date 2/9/2024
NRPC Diary

Document certified by SURESH CHAND MEENA <mlh45871@gmail.com>.
(Chief Engineer (PP&D))
Digitally Signed by SURESH CHAND MEENA
Designation: Chief Engineer
Date :22-08-2024 06:15:19

ग्रिड-इंडिया GRID-INDIA
ग्रिड कंट्रोलर ऑफ इंडिया लिमिटेड
भारत सरकार का उद्यम
GRID CONTROLLER OF INDIA LIMITED
(A Government of India Enterprise)
[formerly Power System Operation Corporation Limited (POSOCO)]
उत्तर क्षेत्रीय भार प्रेषण केन्द्र / Northern Regional Load Despatch Centre
कार्यालय : 18-ए, शहीद जीत सिंह सनसनवाल मार्ग, कटवारिया सराय, नई दिल्ली-110016
Office : 18-A, Shaheed Jeet Singh Sansanwal Marg, Katwaria Sarai, New Delhi-110016
CIN : U40105DL2009GOI188682, Website : www.nrldc.in, E-mail : nrldc@grid-india.in, Tel.: 011 26519406, 26523869, Fax: 011 26852747

संदर्भ सं°: उ0क्षे0भा0प्रे0कें0/प्र0सं0/151/180-186 **दिनांक :** 22 अगस्त, 2024

सेवा मे,

कार्यपालक निदेशक
उत्तरी क्षेत्र-1 मुख्यालय,
पॉवरग्रिड, फरीदाबाद, हरियाणा

विषय: Regarding restoration of FSCs of 765kV Koteshwar-Meerut(PG) D/C lines at Meerut(PG).

Earlier Ref. :

1. NRLDC Letter no. उ0क्षे0भा0प्रे0कें0/प्र0सं0/151/42-48 Dtd. 12-02-2024
2. NRLDC Letter no. उ0क्षे0भा0प्रे0कें0/प्र0सं0/151 Dtd. 07-08-2024

महोदय / महोदया,

The FSCs at 765kV Meerut(PG) are out since long time. As reported, reason of outage of FSCs is as follows:

Name of Elements	Outage time/date	Reason of outage
FSC of 765 KV Koteshwar-Meerut (PG) Ckt-2 at Meerut(PG)	12.30/18.04.23	Capacitor bank current imbalance protection operated.
FSC of 765 KV Koteshwar-Meerut (PG) Ckt-1 at Meerut(PG)	08.41/08.06.23	B-Phase to ground fault occurred in the line (Fault Current: 9.0 kA, Fault Location 100.8km from Meerut End). FSC-1 failed.

During 216 OCC meeting, POWERGRID informed that FSC in Ckt-2 is in healthy condition, but could not be taken into service due to capacitor current unbalance issue.

It is pertinent to mention here that Tehri PSP (1000MW) will be commissioned very shortly and FTC process of 400kV Tehri(THDC)-Koteshwar(PG) line-3 has already begun.

After commissioning of Tehri PSP, loading in 765kV Koteshwar-Meerut (PG) D/C lines will increase by significant quantum and approx. 2400MW power would be evacuated through 765kV Koteshwar-Meerut (PG) D/C lines. Therefore, FSCs would be required to be kept in service to ensure N-1 compliance for reliable and secure operation.

Therefore, you are requested to ensure the healthiness of FSCs of 765 KV Koteshwar-Meerut (PG) D/C lines at Meerut(PG) and advise the concerned to expedite the restoration of FSCs at Meerut(PG) at the earliest.

सादर धन्यवाद

22/08/2024

सोमारा लाकरा
मुख्य महाप्रबंधक (प्रणाली संचालन)
उत्तरी क्षेत्र भार प्रेषण केंद्र, नई दिल्ली

विनम्र सूचनार्थ :

1. सदस्य सचिव, उत्तरी क्षेत्र विद्युत् समिति, नई दिल्ली
2. निदेशक (प्रणाली संचालन), ग्रिड-इंडिया, नई दिल्ली
3. निदेशक (प्रचालन), पॉवरग्रिड, केंद्रीय कार्यालय, गुरुग्राम, हरियाणा
4. कार्यपालक निदेशक, उत्तरी क्षेत्र भार प्रेषण केंद्र, नई दिल्ली
5. कार्यपालक निदेशक(ए0म0), पॉवरग्रिड, केंद्रीय कार्यालय, गुरुग्राम, हरियाणा
6. मुख्य महाप्रबंधक (प्रभारी), राष्ट्रीय भार प्रेषण केंद्र, नई दिल्ली

Standard Operating Procedure (SOP) for Mock Testing of Islanding Schemes in the Northern Region Electrical Grid

Scope

This SOP applies to the testing of islanding schemes implemented across substations, generating units, and feeders within the Northern Region. It covers testing of UFR operation, df/dt protection after islanding, automatic reconnection of feeders post-islanding, and the analysis of grid topology changes that may impact the islanding process.

Prerequisites

1. **Updated Islanding Scheme**: The most recent approved islanding scheme must be available for reference.
2. **Test Equipment**: Calibrated test sets and frequency simulators capable of simulating frequency declines and recovery.
3. **Relay Configuration**: UFR and df/dt relays must have up-to-date settings as per the approved scheme.
4. **Communication**: Ensure communication between all involved parties, between NRLDC, SLDC, substations, generation units etc.

Relay Settings Verification:

1. Verify that all UFRs are set to the predefined islanding frequency (47.9 Hz or any other approved islanding frequency) and that df/dt settings are configured properly.
2. Ensure automatic reconnection mechanisms for tripped lines are set according to the recovery frequency thresholds.

Mock Testing of Under-Frequency Relays (UFR) at Islanding Frequency of 47.9 Hz

1. **Frequency Simulation**:
    - Use a frequency simulator to gradually reduce the system frequency to 47.9 Hz.
    - Monitor the UFR response, ensuring that relays on the designated feeders operate and disconnect them from the main grid at the islanding frequency.
2. **System Separation**:
    - Confirm that the islanding scheme is activated and the designated island separates from the rest of the grid.
    - Ensure that critical generators within the island continue to operate and supply the islanded loads without tripping.

3. **Recording and Verification**:
    - Record the operation times of the UFRs and the behavior of each relay.
    - Verify that each UFR operates within the specified time frame and frequency set point as per the islanding scheme.

Testing of df/dt Relays for Frequency Decay Post-Islanding

1. **Further Frequency Decline Simulation**:
    - After islanding, simulate further frequency declines to test the operation of df/dt relays protecting feeders within the island.
    - Gradually reduce the frequency below 47.9 Hz to simulate grid conditions during continued frequency decay.
2. **Operation of df/dt Relays**:
    - Monitor the response of the df/dt relays and ensure they trip the feeders when the frequency decays below their set thresholds.
    - Confirm that the islanded system remains stable while shedding non-critical loads.
3. **Response Time and Coordination**:
    - Record the operation times and validate coordination between UFRs and df/dt relays to ensure no maloperation or unintended trips.
    - Ensure load shedding occurs in a manner that stabilizes the frequency within the island.

Automatic Reconnection of Tripped Lines After Frequency Recovery

1. **Simulate Frequency Recovery**:
    - Gradually increase the system frequency using the simulator to mimic a post-islanding recovery scenario.
    - Test the automatic reconnection logic of tripped feeders or generator tripping logic of units as the frequency rises above preset thresholds.
2. **Monitor Reconnection**:
    - Confirm that the relays automatically reconnect the feeders or trip generating units once the frequency starts to overshoot as specified in the scheme.
3. **Restoration Confirmation**:
    - Verify that the restoration of feeders is in line with the islanding scheme's logic and that the system operates stably after reconnection.

Examination of Islanded Network under Different Network Topologies/ LGB scenario

1. **Topology Analysis**:
    - Review current network topology and any recent changes, such as the addition of new lines, removal of feeders, or generator modifications, that could impact the islanding scheme's performance.
2. **Generation-Load Ratio Analysis**:
   The ratio of hourly generation and load within the designated island needs to be studied and shared for the past year. This data should be reviewed and shared by SLDC to assess the island's ability to survive during islanding conditions.
3. **Simulate Islanding with Updated Topology**:
    - Simulate islanding with the modified network topology and confirm that the islanded network successfully separates from the main grid.
    - Ensure that the designated island operates independently, with the necessary generation and load remaining intact.
4. **Impact of Topology Changes**:
    - Evaluate whether the changes in network topology affect the ability of the islanding scheme to correctly separate the islanded system during a grid disturbance.
    - If any issues are detected, recommend adjustments to relay settings or the islanding scheme to accommodate the new topology.

Post-Testing Analysis and Report Submission

1. **Data Analysis**:
    - Analyze any discrepancies or abnormal behavior observed during testing. Recommend adjustments to relay settings, protection logic, or the islanding scheme if required.
2. **Report Submission**:
    - Prepare a comprehensive report detailing mock testing results, including any changes made to the islanding scheme.
    - Submit the report to NRPC/NRLDC for review.

National Load Despatch Centre
Import Capability of Punjab for October 2024

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Issue Date: - Issue Time: 1600 Revision No. 0

Date	Time Period in IST (hrs)	Total Transfer Capability (TTC) (MW)	Reliability Margin (MW)	Available Transfer Capability (ATC) (MW)	Approved General Network Access (MW)	Margin Available for Temporary General Network Access(MW)	Changes in TTC w.r.t. Last Revision	Comments
1st October 2024 to 31st October 2024	00-24	10300	500	9800	5497	4303		https://www.punjabsldc.org/ATC_TTC.aspx
Limiting Constraints		N-1 contigency of 400/220KV ICT at Rajpura, Ludhiana, Jalandhar, Muktsar Loading close to N-1 contingency limits of 400/220kV Patran, Malerkotla and Patiala ICTs 220 kV underlying network at Jalandhar, Ludhiana and Amritsar						

National Load Despatch Centre
Import Capability of Uttar Pradesh for October 2024

Issue Date: - Issue Time: 1600 Revision No. 0

Date	Time Period in IST (hrs)	Total Transfer Capability (TTC) (MW)	Reliability Margin (MW)	Available Transfer Capability (ATC) (MW)	Approved General Network Access (MW)	Margin Available for Temporary General Network Access(MW)	Changes in TTC w.r.t. Last Revision	Comments
1st October 2024 to 31st October 2024	00-24	17300	600	16700	10165	6535		https://www.upsldc.org/documents/20182/0/ttc_atc_24-11-16/4c79978e-35f2-4aef-8c0f-7f30d878dbde
Limiting Constraints	N-1 contingency of 400/220kV Obra, Allahabad(PG), Gorakhpur (UP), Agra(PG), Lucknow (PG) ICTs							

National Load Despatch Centre
Import Capability of Haryana for October 2024

Issue Date: - Issue Time: 1600 Revision No. 0

Date	Time Period in IST (hrs)	Total Transfer Capability (TTC) (MW)	Reliability Margin (MW)	Available Transfer Capability (ATC) (MW)	Approved General Network Access (MW)	Margin Available for Temporary General Network Access(MW)	Changes in TTC w.r.t. Last Revision	Comments
1st October 2024 to 31st October 2024	00-24	10300	300	10000	5418	4582		https://hvpn.org.in/#/atcttc
Limiting Constraints	N-1 contingency of 400/220kV ICT at Deepalpur, Hisar, Kabulpur and Panipat(BBMB)							

National Load Despatch Centre
Import Capability of Rajasthan for October 2024

Issue Date: - Issue Time: 1600 Revision No. 0

Date	Time Period in IST (hrs)	Total Transfer Capability (TTC) (MW)	Reliability Margin (MW)	Available Transfer Capability (ATC) (MW)	Approved General Network Access (MW)	Margin Available for Temporary General Network Access(MW)	Changes in TTC w.r.t. Last Revision	Comments
1st October 2024 to 31st October 2024	00-24	7600	600	7000	5755	1245		https://sldc.rajasthan.gov.in/rrvpnl/scheduling/downloads
Limiting Constraints		N-1 contingency of 400/220kV Heerapura, Jodhpur, Bikaner, Ajmer, Merta, Hindaun and Ratangarh ICTs						

National Load Despatch Centre
Import Capability of Delhi for October 2024

Issue Date: - Issue Time: 1600 Revision No. 0

Date	Time Period in IST (hrs)	Total Transfer Capability (TTC) (MW)	Reliability Margin (MW)	Available Transfer Capability (ATC) (MW)	Approved General Network Access (MW)	Margin Available for Temporary General Network Access(MW)	Changes in TTC w.r.t. Last Revision	Comments
1st October 2024 to 31st October 2024	00-24	7300	300	7000	4810	2190		https://www.delhisldc.org/resources/atcttcreport.pdf
Limiting Constraints	N-1 contingency of 400/220kV Mundka, HarshVihar and Bawana (bus-split) ICTs.							

National Load Despatch Centre
Import Capability of Uttarakhand for October 2024

Issue Date: - Issue Time: 1600 Revision No. 0

Date	Time Period in IST (hrs)	Total Transfer Capability (TTC) (MW)	Reliability Margin (MW)	Available Transfer Capability (ATC) (MW)	Approved General Network Access (MW)	Margin Available for Temporary General Network Access(MW)	Changes in TTC w.r.t. Last Revision	Comments
1st October 2024 to 31st October 2024	00-24	1700	100	1600	1402	198		https://uksldc.in/ttc-atc
Limiting Constraints		N-1 contingency of 400/220kV Kashipur ICTs. High loading of 220kV Roorkee-Roorkee and 220kV CBGanj-Pantnagar lines						

National Load Despatch Centre
Import Capability of HP for October 2024

Issue Date: - Issue Time: 1600 Revision No. 0

Date	Time Period in IST (hrs)	Total Transfer Capability (TTC) (MW)	Reliability Margin (MW)	Available Transfer Capability (ATC) (MW)	Approved General Network Access (MW)	Margin Available for Temporary General Network Access(MW)	Changes in TTC w.r.t. Last Revision	Comments
1st October 2024 to 31st October 2024	00-24	850	100	750	1130	-380		https://hpsldc.com/mrm_category/ttc-atc-report/
Limiting Constraints		High loading of 220kV Hamirpur-Hamirpur D/C. Overloading of 2*200MVA Kunihar transformers						

National Load Despatch Centre
Import Capability of J&K for October 2024

Issue Date: - Issue Time: 1600 Revision No. 0

Date	Time Period in IST (hrs)	Total Transfer Capability (TTC) (MW)	Reliability Margin (MW)	Available Transfer Capability (ATC) (MW)	Approved General Network Access (MW)	Margin Available for Temporary General Network Access(MW)	Changes in TTC w.r.t. Last Revision	Comments
1st October 2024 to 31st October 2024	00-24	2500	100	2400	1977	423		
Limiting Constraints		N-1 contigency of 400/220KV ICTs at Amargarh 220 kV underlying network at Amargarh, Wagoora						

National Load Despatch Centre
Import Capability of Chandigarh for October 2024

Issue Date: - Issue Time: 1600 Revision No. 0

Date	Time Period in IST (hrs)	Total Transfer Capability (TTC) (MW)	Reliability Margin (MW)	Available Transfer Capability (ATC) (MW)	Approved General Network Access (MW)	Margin Available for Temporary General Network Access(MW)	Changes in TTC w.r.t. Last Revision	Comments
1st October 2024 to 31st October 2024	00-24	400	20	380	342	38		
Limiting Constraints		N-1 contigency of 220kV Nallagarh-Kishengarh						

Sr No	Element Name	Outage Date	Outage Time	Reason
1	220 KV Anta(NT)-Sakatpura(RS) (RS) Ckt-1	01-Aug-24	05:29	Phase to earth fault B-N. As per PMU and DR (Sakatpura), B-N fault occured, no auto-reclosing is observed. DR not recevied from Anta end.
		09-Aug-24	22:37	Phase to earth fault B-N. As per PMU and DR (Sakatpura), B-N fault occured, no auto-reclosing is observed. DR not recevied from Anta end.
		13-Aug-24	21:39	Phase to earth fault B-N. As per PMU and DR (Sakatpura), B-N fault occured, no auto-reclosing is observed. DR not recevied from Anta end.
		14-Aug-24	08:33	Phase to earth fault B-N. As per PMU and DR (Sakatpura), B-N fault occured, no auto-reclosing is observed. DR not recevied from Anta end.
2	220 KV DandhariKalanI(PS)-Ludhiana(PG) (PSTCL) Ckt-2	01-Aug-24	01:37	Phase to Phase Fault R-B. As per PMU & DR, R-N fault occured, no auto-reclosing is observed.
		06-Aug-24	14:23	Phase to earth fault B-N. As per PMU & DR, B-N fault occured, no auto-reclosing is observed.
		26-Aug-24	21:52	Phase to earth fault R-N. As per PMU & DR, R-N fault occured, no auto-reclosing is observed.
3	220 KV NAPP(NP)-Khurja(UP) (UP) Ckt-1	14-Aug-24	23:09	Phase to earth fault R-N. As per PMU and DR, R-N fault occurred with no A/R operation at Khurja end and successful A/R operation at NAPP end is observed. dat/cfg file of DR not received from NAPP end.
		17-Aug-24	10:16	Phase to earth fault R-N. As per PMU and DR, R-N fault occurred with no A/R operation at Khurja end and successful A/R operation at NAPP end is observed. dat/cfg file of DR not received from NAPP end.
		21-Aug-24	15:14	Phase to earth fault R-N. As per PMU, R-N fault occured, no auto-reclosing is observed. As per DR (Khurja end), R-N fault is observed in zone-3. As reported, line tripped on zone-3 distance protection from Khurja end only due to fault on 220kV Khurja-Debari line.
		24-Aug-24	08:54	Phase to earth fault R-N. As per PMU and DR (NAPP end), B-N fault with no A/R operation is observed. DR of Khurja end not received.
		24-Aug-24	20:54	Phase to earth fault R-N. As per PMU and DR, B-N fault with no A/R operation is observed. As reported, tripping time was 22:42hrs.
		28-Aug-24	05:16	Phase to earth fault B-N. As per PMU, no fault is observed. As per DR of NAPP end, B-N fault is observed. DR not received from Khurja end. Dat/cfg file of DR not received from NAPP end.
4	220 KV Saharanpur(PG)-Shamli(UP) (UP) Ckt-1	01-Aug-24	03:37	Phase to earth fault R-N. As per PMU and DR (Saharanpur end), R-N fault with no A/R operation at Saharanpur end and successful A/R operation at Shamli end. DR of Shamli end not received.
		11-Aug-24	22:09	Phase to earth fault R-N. As per PMU and DR, R-N fault with no A/R operation at Saharanpur end and successful A/R operation at Shamli end.
		13-Aug-24	05:13	Phase to earth fault Y-N. As per PMU and DR, Y-N fault with no A/R operation at Saharanpur end and successful A/R operation at Shamli end.
		17-Aug-24	23:58	Earth fault. As per PMU and DR (Shamli end), B-N fault with no A/R operation at Saharanpur end and successful A/R operation at Shamli end. DR of Saharanpur end not received.
5	400 KV Agra-Unnao (UP) Ckt-1	03-Aug-24	01:53	Phase to earth fault Y-N. As per PMU, Y-N fault occured, no auto-reclosing is observed.
		12-Aug-24	18:03	Phase to earth fault R-N. As per PMU and DR, R-N fault with unsuccessful A/R operation at Unnao end is observed.
		28-Aug-24	04:37	Phase to earth fault R-N. As per PMU and DR, R-N fault is observed with A/R operation started from both ends. Line succussfully closed from agra end and finally line tripped from Unnao end.
		28-Aug-24	08:05	Over Voltage. DR not received from both ends.
6	400 KV Bhadla-Merta (RS) Ckt-1	02-Aug-24	07:31	Phase to Phase Fault R-Y. As per PMU, R-Y fault is observed. DR of Bhadla end is not readable. DR not received from Merta end.
		02-Aug-24	18:06	Phase to Phase Fault R-Y. As per PMU and DR (Merta end), R-Y fault is observed. DR of Bhadla end is not readable. Time sync issue in DR of Merta end.
		04-Aug-24	15:37	Phase to Phase Fault Y-B. As per PMU, R-Y fault is observed. As per DR (Merta), Y-B fault is observed. DR of Bhadla end is not readable. Time sync issue in DR of Merta end.
		13-Aug-24	15:48	Phase to Phase Fault Y-B. As per PMU, R-Y fault is observed. As per DR (Merta), Y-B fault is observed. DR of Bhadla end is not received.
		27-Aug-24	17:44	DT received & 86 relay operated at Merta end. As per PMU, no fault is observed only fluctuation in voltage is observed. DR of Bhadla end is not readable. DR of Merta end is not received.
7	400 KV Dadri(NT)-Panipat(BB) (PG) Ckt-1	02-Aug-24	05:25	Phase to earth fault B-N. As per PMU and DR, Y-N fault with no A/R operation at Dadri end and successful A/R operation at Panipat end. Dat/cfg file of DR of Dadri end not received.
		18-Aug-24	03:24	Earth fault. As per PMU and DR (Panipat end), Y-N fault with no A/R operation at Dadri end and successful A/R operation at Panipat end. DR of Dadri end not received.
		20-Aug-24	10:51	Phase to earth fault R-N. As per PMU, B-N fault and unsuccessful auto-reclosing observed. As per DR of Dadri end, R-N fault is observed. As per DR of Panipat end, B-N fault with unsuccessful A/R operation at Panipat end is observed. Dat/cfg file of DR of Dadri end not received.

Grid Event summary for August 2024

S.No.	Category of Grid Incident/ Disturbance	Name of Elements (Tripped/Manually opened)	Affected Area	Owner/ Agency	Outage		Revival		Duration (hh:mm)	Event (As reported)	Energy Unserved due to Generation loss (MU)	Energy Unserved due to Load loss (MU)	Loss of generation / loss of load during the Grid Disturbance		% Loss of generation / loss of load w.r.t Antecedent Generation/Load in the Regional Grid during the Grid Disturbance		Antecedent Generation/Load in the Regional Grid		Fault Clearance time (in ms)
	(GI-1 to GD-V)				Date	Time	Date	Time					Generation Loss(MW)	Load Loss (MW)	% Generation Loss(MW)	% Load Loss (MW)	Antecedent Generation (MW)	Antecedent Load (MW)	
1	GI-1	1)220/33 kV 150 MVA ICT 1 at ABCRenew_RJ01_SL_BHD2_PG 2)220/33 kV 150 MVA ICT 2 at ABCRenew_RJ01_SL_BHD2_PG	Rajasthan	ABC Renewables(IP)	1-Aug-24	09:38	1-Aug-24	14:46	05:08	i)220kV ABC Renewables(IP) has double main bus scheme at 220kV level. ii)During antecedent condition, loading of 220/33 kV 150 MVA ICT-1 & 2 were approx. 72 & 72 MW respectively (as per SCADA). iii)As reported, at 09:38 hrs, sparking occurred in LV cables of ICT-1 at ABC Renewables(IP) S/s which led to failure of LV cables and caused R-N phase to earth fault. On this fault ICT-1 tripped at ABC Renewables(IP) S/s (details of type of protection operated is yet to be received). iv)As per PMU at ABC Renewables(IP), R-N phase to earth fault with fault clearance time of 80msec is observed. v)As reported, due to nearby sparking in cables, for the safety of ICT-2 and remaining LV cables, ICT-2 hand tripped at ABC Renewables(IP) S/s. vi)During this event, dip in NR solar generation of approx. 120 MW is observed (As per SCADA). vii)As per SCADA, no change in demand is observed in Rajasthan control area. viii) As per SCADA, loss in solar generation of approx. 143MW is observed at 220kV ABC Renewables(IP) S/s.	0	0	143	0	0.272	0.000	52615	61649	80
2	GI-1	1)220/132kV 160MVA ICT-1 at Barn (JK) 2)220/132kV 160MVA ICT-2 at Barn (JK) 3)220/132kV 160MVA ICT-3 at Barn (JK) 4)132kV Barn-Canal (JK) Ckt-1 5)132kV Barn-Canal (JK) Ckt-2	Jammu and Kashmir	JK PDD	2-Aug-24	15:03	2-Aug-24	15:35	00:32	i)As reported, at 15:03hrs, 220/132kV 160MVA ICT-1, 132kV Barn-Canal (JK) D/C tripped at Barn(JK) S/s on Y-B phase to phase fault which occurred on 132kV Barn-Canal (JK) D/C (exact reason, location of fault and type of protection operated is yet to be received). ii)As reported, due to tripping of ICT-1, the complete load shifted on 220/132kV 160MVA ICT-2 & 3 which led to tripping of 220/132kV 160MVA ICT-2 & 3 on overloading at Barn(JK) S/s. iii)As per PMU at Kishenpur(PG), Y-B phase to phase fault with fault clearing time of 120ms is observed. iv)As per SCADA, load loss of approx. 345MW occurred in J&K control area.	0	0.184	0	345	0.000	0.498	51533	69320	120
3	GI-2	1)400/220 kV 500 MVA ICT 4 at Patiala(PG) 2)400/220 kV 315 MVA ICT 2 at Patiala(PG) 3)220 KV Patiala(PG)-Nabha(PS) (PSTCL) Ckt-2 4)220 KV Patiala(PG)-Ablowal(PS) (PSTCL) Ckt-2 5)220 KV Bahadurgarh(PS)-Patiala(PG) (PSTCL) Ckt-2 6)220KV Bus 2 at Patiala(PG)	Punjab	PGCIL, PSTCL	7-Aug-24	11:26	7-Aug-24	12:48	01:22	i)400/220kV Patiala(PG) has double main and transfer bus arrangement at 220kV side. ii)During antecedent condition, loading of 400/220 315 MVA ICT-1 & 2 and 400/220 kV 500 MVA ICT-3 & 4 at Patiala(PG) were approx. 170 MW, 170 MW, 265 MW & 260 MW respectively. 220kV lines from Patiala(PG) to Nabha(PS) Ckt-2, Bahadurgarh(PS) Ckt-2 & Ablowal(PS) Ckt-2 and 400/220 kV 500 MVA ICT-4 & 400/220 kV 315 MVA ICT-2 were connected to 220kV Bus-2 at Patiala(PG) S/s. iii)As reported, at 11:26 hrs, during shifting of 400/220 kV 500 MVA ICT-4 from 220kV Bus-2 to 220kV transfer bus, protection switchover of ICT-4 bay was not successful and bus bar protection relay of 220kV Bus-2 maloperated due to wiring related issues. (Exact reason of bus bar protection maloperation is yet to be received). iv)Due to bus bar protection, all the elements connected to 220kV Bus-2 at Patiala(PG) tripped. v)As per PMU at Patiala(PG), fluctuation in voltage and no fault in system is observed. vi)As per SCADA, change in demand of approx. 30 MW in Punjab control area.	0	0.041	0	30	0.000	0.044	57445	68389	NA
4	GD-1	1)220 KV Meerut(PG)-Nara(UP) (PG) Ckt 2)220 KV Nara(UP)-Roorkee(UK) (UP) Ckt 3)220 KV Nara-Jansath (UP) Ckt 4)220 KV Nara-Muzaffarnagar (UP) Ckt 5)220/132kV 160MVA ICT-1 at Nara(UP) 6)220/132kV 200MVA ICT-2 at Nara(UP)	Uttar Pradesh & Uttarakhand	UPPTCL, PGCIL, PTCUL	11-Aug-24	18:25	11-Aug-24	19:00	00:35	i)220kV Nara(UP) has main and transfer bus scheme at 220kV level. ii)During antecedent condition, loading at Nara(UP) S/s was approx. 80 MW. Loading of 220/132kV 160 MVA ICT-1 & 220/132kV 200 MVA ICT-2 at Nara(UP) S/s were approx. 35 MW and 45 MW respectively. iii)As reported, at 18:25 hrs, 220 KV Meerut(PG)-Nara(UP) (PG) Ckt tripped from Meerut(PG) end on B-N phase to earth fault with fault distance of 10.5 km (33.02%) from Meerut(PG) end with fault current of Ib=14.05kA. iv)On this fault, B-phase pole of CB of 220 KV Meerut(PG)-Nara(UP) (PG) Ckt at Nara(UP) end got stuck and could not open properly. On this, LBB of Meerut bay at Nara(UP) S/s operated which led to tripping of 220kV line from Nara(UP) to Roorkee(UK), 200/132kV 160 MVA ICT-1 and 200 MVA ICT-2 at Nara(UP) S/s. v)As reported, during inspection (at Nara(UP) S/s) it was found that tripping command was issued to both 220kV Muzaffarnagar and 220kV Jansath bay also but their breakers were not tripped (cable found broken) hence both these lines were tripped from other end in zone -3. vi)As per PMU at Muzaffarnagar(UP), B-N phase to earth fault with delayed fault clearance time of 1240msec is observed. vii)As per DR of Meerut end of 220 KV Meerut(PG)-Nara(UP) (PG) Ckt, B-N phase to earth fault with fault current of Ib=~12.3kA with unsuccessful A/R operation is observed. Zone-1 distance protection operated from Meerut(PG) end. viii) Due to LBB operation at Nara(UP) S/s and tripping of 220 KV Nara-Jansath (UP) Ckt & 220 KV Nara-Muzaffarnagar (UP) Ckt from remote ends, Nara(UP) S/s lost its connectivity from Grid which led to blackout at 220kV Nara(UP) S/s. ix) As reported, no fault record found at Nara(UP) S/s. During inspection, it was found that DC main fuse of relay panel was blown off. x) As per SCADA, change in demand of approx. 70 MW & 40 MW in UP and Uttarakhand control area respectively. However, SLDC-UP has reported load loss of approx. 80 MW at Nara(UP) S/s.	0	0.07	0	120	0.000	0.221	46027	54199	1240
5	GD-1	1) 220 kV RAPS_A(NP)-Sakatpura(RS) (RS) Ckt-1 2) 220 kV RAPS_A(NP)-Sakatpura(RS) (RS) Ckt-2 3) 220 kV RAPS_B(NP)-Sakatpura(RS) (RS) Ckt 4) 220 kV KTPS-Sakatpura (RS) Ckt-1 5) 220 kV KTPS-Sakatpura (RS) Ckt-2 6) 220 kV KTPS-Sakatpura (RS) Ckt-3 7) 220 kV KTPS-Sakatpura (RS) Ckt-4 8) 220 kV Sakatpura-Ranpur (RS) Ckt 9) 220 kV Sakatpura-Dahara (RS) Ckt 10) 220 kV Sakatpura-Mandalgarh (RS) Ckt 11) 220/132kV 160 MVA ICT-1 at Sakatpura(RS) 12) 220/132kV 100 MVA ICT-2 at Sakatpura(RS) 13) 220/132kV 100 MVA ICT-3 at Sakatpura(RS) 14) 220/132kV 100 MVA ICT-4 at Sakatpura(RS) 15) 220 KV Kota(PG)-KTPS(RVUN) (RS) Ckt-1 16) 110 MW Kota TPS - UNIT 1	Rajasthan	RVPNL, NPCIL, PGCIL, RVUNL	14-Aug-24	16:12	14-Aug-24	16:33	00:21	i)During antecedent condition, 220 kV Anta-Sakatpura (RS) Ckt was not in service. 110 MW Kota TPS - UNIT 1 was generating approx. 60 MW. ii)As reported, at 16:12 hrs, Y-ph CT of 220 KV RAPS_A(NP)-Sakatpura (RS) (RS) Ckt-1 at Sakatpura(RS) end damaged and created bus fault at 220kV buses of Sakatpura(RS). iii)Due to this, busbar protection of both the 220kV buses at Sakatpura(RS) operated and all the elements connected to the buses tripped and complete blackout occurred at Sakatpura(RS). iv)132kV feeder to Ranpur from Sakatpura also tripped. (Exact reason yet to be shared) All other 132kV feeders were hand-tripped after loss of supply. v)During the same time, 220 KV Kota(PG)-KTPS(RVUN) (RS) Ckt-1 also tripped on Y-N phase to earth fault sensing in zone-2 from Kota(PG) end. Also, 110 MW Kota TPS - UNIT 1 tripped (exact nature of protection operated yet to be shared). vi)As per PMU at Kota(PG), Y-N phase to ground fault converted to R-Y-N double phase to ground fault is observed with delayed fault clearing time of 200 ms. vii) As per SCADA, generation loss of approx. 60 MW is observed at KTPS. viii)As reported by SLDC Rajasthan, load loss of approx. 150 MW occurred in Rajasthan control area.	0	0.0525	60	150	0.111	0.222	54124	67666	200
6	GD-1	1) 220KV Dwarka-Pappankalan-I (DTL) Ckt-1 2) 220KV Dwarka-Pappankalan-I (DTL) Ckt-2 3) 220/66kV 100 MVA ICT-1 at Pappankalan-I 4) 220/66kV 100 MVA ICT-2 at Pappankalan-I 5) 220/66kV 160 MVA ICT-3 at Pappankalan-I 6) 220/66kV 160 MVA ICT-5 at Pappankalan-I	Delhi	DTL	18-Aug-24	04:53	18-Aug-24	05:35	00:42	i)220kV Najafgarh(DTL) has double main bus arrangement at 220kV level. ii)During antecedent condition, 220/66kV 160 MVA ICT-3 & 5 at Pappankalan-I and 220KV Bamanauli-Pappankalan (DTL) D/C were connected to Bus-1 and 220/66kV 100 MVA ICT-1 & 2 at Pappankalan-I and 220KV Dwarka-Pappankalan-I (DTL) D/C were connected to Bus-2 at Pappankalan-I. 220KV Bamanauli-Pappankalan (DTL) D/C were not in service and 220kV Bus coupler at Pappankalan-I was in ON position. iii)As reported, at 04:53 hrs, R-ph conductor of 220kV bus coupler at Pappankalan-I broke with heavy sound and was hanging in yard which created bus fault at 220kV Bus-2 of Pappankalan-I. iv)Due to this, busbar protection operated at 220kV Bus-2 of Pappankalan-I and all the elements connected to Bus-2 tripped. v)After tripping of 220KV Dwarka-Pappankalan-I (DTL) D/C, 220/66kV 160 MVA ICT-3 & 5 at Pappankalan-I was also tripped due to loss of supply and complete blackout occurred at 220/66kV Pappankalan-I S/s. vi)As per PMU at Dwarka(PG), R-N phase to earth fault with fault clearing time of 80msec is observed. vii)As per SCADA, change in demand of approx. 230 MW in Delhi control area. However, SLDC-Delhi reported load loss of approx. 144 MW (28MW at Hiranagar, 40MW at G-2, 41MW at Bindapur, 15MW at D C Janakpuri, Chaukhandhi and 20MW at Bodella-1) in Delhi control area.	0	0.101	0	144	0.000	0.233	47934	61849	80
7	GI-2	1)400 KV Kankroli-Zerda (PG) Ckt-1 2)400 KV Kankroli-Zerda (PG) Ckt-2	Rajasthan	PGCIL, GETCO	19-Aug-24	23:48	20-Aug-24	03:05	03:17	i)400/220kV Kankroli(PG) has one and half bus arrangement at 400kV side. ii)During antecedent condition, incoming power at Kankroli(PG) S/s from Zerda(GETCO) S/s through 400 KV Kankroli-Zerda (PG) Ckt-1 & 2 were approx. 50 MW & 30 MW respectively. iii)As reported, at 23:48 hrs, Y-phase CT of bus coupler of 400kV bus-1 & bus-2 at Zerda(GETCO) S/s damaged which led to bus bar protection operation on both 400kV buses at Zerda(GETCO) S/s. iv)Due to bus bar protection operation at Zerda(GETCO), 400 KV Kankroli-Zerda (PG) Ckt-1 & 2 tripped from Zerda(GETCO) end. At the same time, DT received at Kankroli(PG) end, on which 400 KV Kankroli-Zerda (PG) Ckt-1 & 2 tripped from kankroli(PG) end. v)As per DR of kankroli(PG) end of 400 KV Kankroli-Zerda (PG) Ckt-2, Y-N phase to earth fault is observed with fault current of Iy=~1.3kA. DT received at Kankroli(PG) end. vi)As per PMU at Kankroli(PG), Y-N phase to earth fault followed by R-Y phase to phase fault with fault clearing time of 80 msec and 80 msec is observed. Time difference between both fault signatures is approximately 2 seconds. vii)From SCADA SOE and PMU plot it can be confirmed that 400 KV Kankroli-Zerda (PG) Ckt-2 tripped on Y-N phase to earth fault and 400 KV Kankroli-Zerda (PG) Ckt-1 tripped on R-Y phase to phase fault. viii)As per SCADA, no change in demand of Rajasthan control area.	0	0	0	0	0.000	0.000	50301	66210	80
8	GI-2	1)400/220 kV 315 MVA ICT 1 at Muzaffarnagar(UP) 2)400/220 kV 315 MVA ICT 2 at Muzaffarnagar(UP) 3)400/220 kV 315 MVA ICT 3 at Muzaffarnagar(UP) 4)400/220 kV 500 MVA ICT 4 at Muzaffarnagar(UP) 5)220kV Muzaffarnagar-Charla (UP) Ckt 6)220kV Muzaffarnagar-Jansath (UP) Ckt 7)220kV Muzaffarnagar-Shamli (UP) Ckt 8)220kV Muzaffarnagar-Khatauli (UP) Ckt	Uttar Pradesh	UPPTCL	21-Aug-24	09:02	21-Aug-24	10:00	00:58	i)During antecedent condition, 400/220kV 315 MVA ICT-1, 400/220kV 500 MVA ICT-4, 220kV Muzaffarnagar-Shamli (UP) Ckt, 220kV Muzaffarnagar-Khatauli (UP) Ckt, 220kV Muzaffarnagar-Badhni kalan (UP) Ckt & 220/132kV 160MVA ICT-4 were connected to 220kV bus-1 and 400/220 kV 315 MVA ICT-2, 400/220 kV 315 MVA ICT-3, 220kV Muzaffarnagar-Charla (UP) Ckt, 220kV Muzaffarnagar-Jansath (UP) Ckt & 220/132kV 160MVA ICT-5 were connected to 220kV bus-2 at Muzaffarnagar(UP) S/s. Bus coupler of 220kV bus-1 and 220kV bus-2 was in ON condition and 220kV Muzaffarnagar-Nara (UP) Ckt was not in service (under shutdown) during the tripping event. ii)As reported, at 09:02 hrs, R-N phase to earth fault occurred on 220kV Muzaffarnagar-Badhni kalan (UP) Ckt with fault distance of 3.8km from Muzaffarnagar(UP) end and 20.4km from Badhni kalan(UP) end. Fault was sensed in zone-1 from both ends. iii)On this fault 220kV Muzaffarnagar-Badhni kalan (UP) Ckt tripped from Badhni kalan end on zone-1 distance protection on R-N fault. During fault clearing process at Muzaffarnagar(UP) end, R-phase CB interrupting chamber got damaged which resulted into continuation of sparking between R phase male contact and R phase dropper wire of breaker. The circuit breaker operated mechanically (auxiliary contacts operated properly) and thus breaker status reflected as OPEN. iv)As breaker didn't open completely (sparking between R phase male contact and R phase dropper wire of breaker was still there), fault was not cleared yet. Due to continuous fault feeding 400/220kV 315MVA ICT-1 & 2 and 400/220kV 500 MVA ICT-4 tripped on directional earth fault protection and 400/220kV 315 MVA ICT-3 tripped on back up impedance protection. 220 kV Charla line, 220 kV Jansath line and 220 kV shamli line tripped from remote ends on zone-3 distance protection (it is confirmed from respective DRs also). v)Ideally, this fault would have been cleared by LBB protection of Badhni kalan bay, but as CB status changed from ON to OFF due to proper operation of breaker auxiliary contacts, LBB initiation got reset. vi)Further, as reported, bus bar protection of 220kV bus-1 at Muzaffarnagar(UP) also operated after 1 second of fault starting time due to persisting differential current. vii)As per DR of bus bar protection at Muzaffarnagar(UP), busbar protection operated on 220kV bus-1 after 1.05 second of fault starting time. On this, all remaining elements also tripped which were connected to 220kV bus-1 i.e. 220kV Muzaffarnagar-Khatauli (UP) Ckt, 220/132kV 160MVA ICT-4 and bus coupler of 220kV bus-1 and bus-2. viii) As per PMU at Meerut(PG), R-N phase to earth fault with delayed fault clearing time of 1080 msec is observed. ix)As per SCADA, load loss of approx. 290 MW in UP control area. However, SLDC-UP reported load loss of 127 MW in UP control area.	0	0.123	0	127	0.000	0.198	56428	64073	1080
9	GD-1	1)220 KV Ludhiana(PG)-Laltokalan(PS) (PSTCL) Ckt-1 2)220 KV Ludhiana(PG)-Laltokalan(PS) (PSTCL) Ckt-2 3)220 kV Lalton kalan – Ferozpur Road (PS) Ckt 4)220 kV Lalton kalan – Hambran (PS) Ckt 5)220 kV Lalton kalan – Jagraon (PS) Ckt 6)220/66 kV 160 MVA ICT-1 at Laltokalan(PS) 7)220/66 kV 100 MVA ICT-4 at Laltokalan(PS) 8)220/66 kV 100 MVA ICT-5 at Laltokalan(PS)	Punjab	PGCIL, PSTCL	22-Aug-24	20:33	22-Aug-24	21:30	00:57	i)220kV Laltokalan(PS) has double main bus arrangement at 220kV side. ii)During antecedent condition, incoming power at Laltokalan(PS) S/s from Ludhiana(PG) S/s through 220 KV Ludhiana(PG)-Laltokalan(PS) (PSTCL) Ckt-1 & 2 were approx. 210 MW & 230 MW respectively. At 220kV level, all elements were connected to 220kV bus-1 at Laltokalan(PS) S/s. 220kV bus-2 was not in service due to ongoing augmentation work on 220kV bus-2 at Laltokalan(PS) S/s. iii)As reported, at 20:33 hrs, R-N phase to earth fault occurred on 220 KV Ludhiana(PG)-Laltokalan(PS) (PSTCL) Ckt-1 at a distance of 1.5km from Laltokalan(PS) end and 0.76km from Ludhiana(PG) end with fault current of Ir=30.1kA & Iy=12.97kA from Ludhiana(PG) and Laltokalan(PS) end respectively. iv)On this fault, 220 KV Ludhiana(PG)-Laltokalan(PS) (PSTCL) Ckt-1 tripped from Ludhiana(PG) on zone-1 distance protection (as per DR), but R-phase pole of CB couldn't open from Laltokalan(PS) end. v)Due to failure of CB opening, LBB of 220 KV Ludhiana(PG)-Laltokalan(PS) (PSTCL) Ckt-1 bay operated which led to tripping of all elements connected to 220kV bus-1 at Laltokalan(PS) S/s i.e. 220kV lines from Laltokalan(PS) to Ludhiana Ckt-2, Ferozpur Road (PS) Ckt, Hambran (PS) Ckt, Jagraon (PS) Ckt, 220/66 kV 160 MVA ICT-1, 220/66 kV 100 MVA ICT-4 & 5. vi)As per PMU at Ludhiana(PG), R-N phase to earth fault with delayed fault clearing time of 320msec is observed. vii)Due to tripping of all elements at 220kV level on LBB at Laltokalan(PS) S/s, blackout occurred at 220kV Laltokalan(PS) S/s. viii)As per SCADA, change in demand of approx. 290 MW in Punjab control area.	0	0.275	0	290	0.000	0.395	55995	73467	320

S.No.	Category of Grid Incident/ Disturbance	Name of Elements (Tripped/Manually opened)	Affected Area	Owner/ Agency	Outage		Revival		Duration (hh:mm)	Event (As reported)	Energy Unserved due to Generation loss (MU)	Energy Unserved due to Load loss (MU)	Loss of generation / loss of load during the Grid Disturbance		% Loss of generation / loss of load w.r.t Antecedent Generation/Load in the Regional Grid during the Grid Disturbance		Antecedent Generation/Load in the Regional Grid		Fault Clearance time (in ms)
	(GI-1 to GD-V)				Date	Time	Date	Time					Generation Loss(MW)	Load Loss (MW)	% Generation Loss(MW)	% Load Loss (MW)	Antecedent Generation (MW)	Antecedent Load (MW)	
10	GI-2	1)400 KV Muzaffarnagar(UP)-Vishnuprayag(JP) (UP) Ckt 2)110 MW Vishnuparyag HPS - UNIT 1 3)110 MW Vishnuparyag HPS - UNIT 4	Uttar Pradesh	UPPTCL	25-Aug-24	04:25	25-Aug-24	05:51	01:26	i)During antecedent condition, 400 kV Muzaffarnagar(UP)-Vishnuprayag(UP) (UP) Ckt, 110 MW Unit-1 & 4 at Vishnuprayag(UP) were connected to 400kV Bus-1 at Vishnuprayag(UP) and 400 kV Alaknanda(UP)-Vishnuprayag(UP) (UP) Ckt, 110 MW Unit-2 & 3 at Vishnuprayag(UP) were connected to 400kV Bus-2 at Vishnuprayag(UP). 400 kV Vishnuprayag (UP)- Muzaffarnagar(UP) (UP) Ckt, 400kV Alaknanda-Muzaffarnagar ckt and 400kV Vishnuprayag-Alaknanda ckt were carrying ~343 MW, ~462 MW & 86 MW respectively. ii)As reported, at 04:25 hrs, 400 kV Muzaffarnagar(UP)-Vishnuprayag(UP) (UP) Ckt tripped on Y-B phase to phase fault. Fault occurred due to tree falling on the line between tower location no. 102 & 103, tower base at location no. 102 also got damaged due to land slide. Fault distance was ~225km (~79%) from Muzaffarnagar end. iii)Further after ~50msec, 400kV bus coupler at Vishnuprayag HEP tripped on over current stage-2 (DT) protection operation. iv)With the tripping of 400kV Bus coupler at Vishnuprayag HEP, 110 MW Unit-1 & 4 at Vishnuprayag HEP also tripped due to loss evacuation path. v)As per PMU at Muzaffarnagar(UP) and line DR files, Y-B phase to phase which cleared within 80msec is observed. Fault was in Z-1 from Vishnuprayag end. vi)As per SCADA, generation loss of ~220MW occurred at 110 MW Unit-1 & 4 at Vishnuprayag HEP due to tripping of 110 MW Unit-1 & 4. vii)As tower base at location no. 102 of 400 kV Muzaffarnagar(UP)-Vishnuprayag(UP) (UP) Ckt damaged during the event, line was taken under emergency shutdown after the event. Unit-1&4 were revived by 06:00 hrs and taken into service through 400kV Bus-2. Generation evacuated through 400kV Vishnuprayag-Alaknanda ckt & 400kV Alaknanda-Muzaffarnagar ckt path. viii)400 kV Muzaffarnagar(UP)-Vishnuprayag(UP) (UP) Ckt was revived at 17:33 hrs on 27.08.024. 400kV Bus-1 was also taken into service with the revival of 400 kV Muzaffarnagar(UP)-Vishnuprayag(UP) (UP) Ckt.	0	0	220	0	0.488	0.000	45060	63093	80
11	GD-1	1)220 KV Abdullapur(PG)-Rajokheri (HV) (HVPNL) Ckt-1 2)220 KV Abdullapur(PG)-Rajokheri (HV) (HVPNL) Ckt-2 3)220 KV Shahbad-Rajokheri(HV)(HVPNL) Ckt-1 4)220 KV Shahbad-Rajokheri(HV)(HVPNL) Ckt-2 5)220 KV Tepla-Rajokheri(HV)(HVPNL) Ckt-1 6)220 KV Tepla-Rajokheri(HV)(HVPNL) Ckt-2 7)220 KV Shahbad-Durla(HV)(HVPNL) Ckt-1 8)220 KV Shahbad-Durla(HV)(HVPNL) Ckt-2 9)220 KV Shahbad-Joria(HV)(HVPNL) Ckt-1 10)220 KV Shahbad-Joria(HV)(HVPNL) Ckt-2	Haryana	PGCIL, HVPNL	26-Aug-24	22:58	26-Aug-24	23:15	00:17	i)220kV Rajokheri(HV) & 220kV Shahbad(HV) S/s have double main bus arrangement at 220kV side. ii)During antecedent condition, incoming power at Rajokheri(HV) S/s through 220 KV Abdullapur(PG)-Rajokheri (HV) (HVPNL) D/C was approx. 115 MW and outgoing power from Rajokheri(HV) through 220 KV Shahbad-Rajokheri(HV)(HVPNL) D/C was approx. 90 MW. Loading of 220 KV Shahbad-Joria(HV)(HVPNL) D/C and 220 KV Shahbad-Durla(HV)(HVPNL) D/C were approx. 100 MW and 75 MW feeding to Shahbad(HV) and Durla(HV) respectively. iii)As reported, at 22:58 hrs, due to inclement weather conditions, Y-B phase to phase occurred on 220 KV Shahbad-Rajokheri(HV)(HVPNL) Ckt-1 & 220 KV Abdullapur(PG)-Rajokheri (HV) (HVPNL) Ckt-1. iv)As reported, 220 KV Abdullapur(PG)-Rajokheri (HV) (HVPNL) D/C tripped only from Abdullapur(PG) end not from Rajokheri(HV) end. 220 KV Shahbad-Rajokheri(HV)(HVPNL) Ckt-1 tripped on zone-1 distance protection on Y-B-G double phase to ground fault with fault distance of 29km and fault current of Iy=~5.79kA & Ib=~5.35kA from Rajokheri(HV) end. 220 KV Shahbad-Rajokheri(HV)(HVPNL) Ckt-2 & 220 KV Tepla-Rajokheri(HV)(HVPNL) Ckt-2 tripped on direction earth fault from Rajokheri(HV) end. 220 KV Tepla-Rajokheri(HV)(HVPNL) Ckt-1 tripped on zone-3 distance protection on Y-B phase to phase fault from Rajokheri(HV) end (details regarding trippings at Shahbad(HV) S/s is yet to be received). v)As per PMU at Abdullapur(PG), Y-B phase to phase fault converted into R-Y-B three phase fault with delayed fault clearing time of 2040msec is observed. vi)Due to tripping of all 220kV lines at Rajokheri(HV) & Shahbad(HV), both sub-stations lost their connectivity from Grid which led to blackout of 220kV Rajokheri(HV) S/s & 220kV Shahbad(HV) S/s. vii)As per SCADA, change in demand of approx. 350 MW in Haryana control area.	0	0.099	0	350	0.000	0.543	48808	64478	2040
12	GI-1	1)220 KV Amargarh (INDIGRID)-Ziankote(JK) (PDD JK) Ckt-1 2)220 KV Amargarh (INDIGRID)-Ziankote(JK) (PDD JK) Ckt-2	Jammu and Kashmir	PDD JK, INDIGRID	26-Aug-24	13:53	26-Aug-24	17:18	03:25	i)220/132kV Ziankote S/s have two bus at 220kV side i.e., main bus & reserve bus. 220kV Amargarh-Ziankote ckt-1&2 are on the same tower (D/C tower) and line length is ~21.4km. ii)During antecedent condition, 220kV Amargarh(INDIGRID) –Ziankote(JK) D/C was carrying 104 MW each and feeding Ziankote load. iii)As reported, at 13:53 hrs, 220 KV Amargarh(INDIGRID)-Ziankote(JK) (PDD JK) Ckt-2 tripped from both ends on R-Y phase to phase fault with fault distance of 6.6km and fault current of Ir=~2.15kA & Iy=~2.37kA from Ziankote(JK) end. 220 KV Amargarh(INDIGRID)-Ziankote(JK) (PDD JK) Ckt-1 tripped only from Amargarh(INDIGRID) end on the same R-Y phase to phase fault (Exact reason of fault is yet to be received). iv)As per DR of Amargarh(INDIGRID) end of 220 KV Amargarh (INDIGRID)-Ziankote(JK) (PDD JK) Ckt-1, R-Y phase to phase fault is observed in zone-2 with fault current of Ir=~2.5kA & Iy=~2.1kA. v)As per DR of Amargarh(INDIGRID) end of 220 KV Amargarh (INDIGRID)-Ziankote(JK) (PDD JK) Ckt-2, R-Y phase to phase fault is observed in zone-1 with fault current of Ir=~5.2kA & Iy=~4.9kA. vi)As confirmed by Amargarh(NDIGRID), in view of non-availability of carrier communication and A/R scheme at Ziankote end, A/R has been kept disabled at Amargarh end and time delay of Z-2 also kept as instantaneous at Amargarh end. vii)As per PMU at Amargarh(PG), R-Y phase to phase fault which cleared within 120 msec is observed. viii)As per SCADA, change in demand of approx. 180MW is observed in J&K control area.	0	0.615	0	180	0.000	0.247	57013	72984	120
13	GI-2	1)400 KV Bawana(DV)-Maharanibagh(PG) (DTL) Ckt-1 2)400 KV Bawana-Mundka (DV) Ckt-1 3)400 KV Bawana-Mundka (DV) Ckt-2	Delhi	PGCIL, DTL	31-Aug-24	16:40	31-Aug-24	18:06	01:26	i)400kV Bawana(DTL) S/s has one and half breaker bus arrangement at 400kV level. ii)During antecedent condition, incoming power at Bawana(DTL) through 400 KV Bawana-Mundka (DV) Ckt-1 & 2 were approx. 514MW & 503MW respectively and outgoing power from Bawana(DTL) to Maharani Bagh(PG) through 400 KV Bawana(DV)-Maharanibagh(PG) (DTL) Ckt-1 & 2 were approx. 294 MW & 294 MW. iii)As reported, at 16:40 hrs, 400 KV Bawana(DV)-Maharanibagh(PG) (DTL) Ckt-1 tripped on R-Y phase to phase fault with fault distance of 4.71km and with fault current of Ir=~31.38kA & Iy=~29.27kA from Bawana end (Reason of fault is yet to be received). 400 KV Bawana(DV)-Maharanibagh(PG) (DTL) Ckt-1 tripped on zone-1 distance protection from Bawana(DTL) end. iv)As per DR of Bawana(DTL) end of 400 KV Bawana(DV)-Maharanibagh(PG) (DTL) Ckt-1, R-Y phase to phase fault is observed with fault current of Ir=~31.3kA, Iy=~29.3kA and line tripped on zone-1 distance protection. v)As reported, the same fault sensed in zone-1 from Mundka(DTL) end and 400 KV Bawana-Mundka (DV) Ckt-1 & 2 tripped on zone-1 distance protection from Mundka(DTL) end. vi)As per PMU at Maharani Bagh(PG), R-Y phase to phase fault with fault clearing time of 120msec is observed. vii)As per SCADA, change in demand of approx. 105MW is observed in Delhi control area. viii)As reported by SLDC Delhi, the case of over reach of GE D60 relays at Mundka(DTL) S/s is already forwarded to GE company for analysis and necessary corrective recommendations.	0	0.151	0	105	0.000	0.156	53755	67125	120

S. No.	Name of Transmission Element Tripped	Owner/ Utility	Outage		Load Loss/ Gen. Loss	Brief Reason (As reported)	Category as per CEA Grid standards	# Fault Clearance Time (>100 ms for 400 kV and 160 ms for 220 kV)	*FIR Furnished (YES/NO)	DR/EL provided in 24 hrs (YES/NO)	Remarks
			Date	Time							
1	220 KV Auraiya(NT)-Malanpur(MP) (PG) Ckt-1	POWERGRID	06-Aug-24	18:34	Nil	Phase to earth fault R-N	NA	NA	YES (After 24 hrs)	YES	As per PMU and DR (Auraiya end), R-N phase to earth fault is observed. No A/R operation is observed at Auraiya end.
2	220 KV Auraiya(NT)-Malanpur(MP) (PG) Ckt-1	POWERGRID	09-Aug-24	22:19	Nil	Phase to earth fault Y-N	NA	NA	NO	YES	As per PMU and DR (Auraiya end), Y-N phase to earth fault is observed. No A/R operation is observed at Auraiya end.
3	400 KV Gorakhpur(PG)-Motihari(BS) (PG) Ckt-2	POWERGRID	11-Aug-24	07:39	Nil	Phase to earth fault Y-N	NA	NA	YES	YES	As per PMU and DR (Gorakhpur end), Y-N phase to earth fault with unsuccessful A/R operation is observed.
4	220 KV Auraiya(NT)-Malanpur(MP) (PG) Ckt-1	POWERGRID	11-Aug-24	21:50	Nil	Phase to earth fault Y-N	NA	NA	YES (After 24 hrs)	YES	As per PMU and DR (Auraiya end), Y-N phase to earth fault is observed. No A/R operation is observed at Auraiya end. Time sync issue in DR of Auraiya end.
5	800 KV HVDC Kurukshetra(PG) Pole-03	POWERGRID	12-Aug-24	14:11	Nil	Operation of transformer protection	NA	NA	YES (After 24 hrs)	YES (After 24 hrs)	As per PMU, fluctuation in voltage is observed. As reported, Pole-3 blocked from Champa end on CAT A1 protection.
6	800 KV HVDC Agra-Bishwanath Chariali (PG) Ckt-1	POWERGRID	13-Aug-24	00:36	Nil	Earth fault	NA	NA	YES	YES	As per PMU, fluctuation in voltage is observed. As reported, 800KV Agra-BNC Line-1 (Pole-1 & Pole-3) tripped due to Bus differntial fault in pole-1. Fault Distance - 0.9 Km from Agra end, Gantry tower Agra.
7	765 KV Phagi(RS)-Gwalior(PG) (PG) Ckt-1	POWERGRID	15-Aug-24	00:08	Nil	Phase to earth fault Y-N	NA	NA	YES (After 24 hrs)	YES	As per PMU and DR (Phagi end), Y-N phase to earth fault with unsuccessful A/R operation is observed.
8	132 KV Rihand(UP)-Garwa(JS) (UP) Ckt-1	UPPTCL	16-Aug-24	08:30	Nil	Earth fault	NA	NA	NO	NO	As per PMU, no fault is observed. DR/EL not received.
9	220 KV Auraiya(NT)-Malanpur(MP) (PG) Ckt-1	POWERGRID	16-Aug-24	20:56	Nil	Earth fault	NA	NA	YES (After 24 hrs)	NO	As per PMU and DR (Auraiya end), R-N phase to earth fault is observed. No A/R operation is observed at Auraiya end.
10	132 KV Rihand(UP)-Garwa(JS) (UP) Ckt-1	UPPTCL	18-Aug-24	10:00	Nil	Earth fault	NA	NA	YES (After 24 hrs)	YES	As per DR (Rihand end), B-N phase to earth fault is observed.
11	132 KV Rihand(UP)-Garwa(JS) (UP) Ckt-1	UPPTCL	18-Aug-24	22:15	Nil	Phase to Phase Fault Y-B	NA	NA	YES (After 24 hrs)	YES	As per PMU and DR (Rihand end), Y-B phase to phase fault is observed.
12	220 KV Auraiya(NT)-Malanpur(MP) (PG) Ckt-1	POWERGRID	19-Aug-24	14:48	Nil	Phase to earth fault R-N	NA	NA	YES (After 24 hrs)	YES	As per PMU and DR (Auraiya end), R-N phase to earth fault is observed. No A/R operation is observed at Auraiya end.
13	400 KV Kankroli-Zerda (PG) Ckt-1	POWERGRID	19-Aug-24	23:48	Nil	Bus Bar Protection Operated	NA	NA	YES (After 24 hrs)	NO	As per PMU, Y-N phase to earth fault followed by R-Y phase to phase fault is observed. As per DR of kankroli(PG) end of 400 KV Kankroli-Zerda (PG) Ckt-2, Y-N phase to earth fault is observed with fault current of Iy=~1.3kA. DT received at Kankroli(PG) end. As reported, Y-phase CT of bus coupler of 400kV bus-1 & bus-2 at Zerda(GETCO) S/s damaged which led to bus bar protection operation on both 400kV buses at Zerda(GETCO) S/s
14	400 KV Kankroli-Zerda (PG) Ckt-2	POWERGRID	19-Aug-24	23:48	Nil	Bus Bar Protection Operated	NA	NA	YES (After 24 hrs)	YES (After 24 hrs)	
15	765 KV Agra-Gwalior (PG) Ckt-2	POWERGRID	21-Aug-24	10:29	Nil	PLCC maloperation	NA	NA	YES	YES (After 24 hrs)	As per PMU, fluctuation in voltage is observed. As per DR (Agra end), no fault is observed. As reported, line tripped only from Gwalior end due to DT received from Agra end.
16	220 KV Auraiya(NT)-Malanpur(MP) (PG) Ckt-1	POWERGRID	27-Aug-24	01:11	Nil	Phase to earth fault R-N	NA	NA	YES	YES (After 24 hrs)	As per PMU and DR (Auraiya end), R-N phase to earth fault is observed. No A/R operation is observed at Auraiya end. Time sync issue in DR of Auraiya end.
17	220 KV Auraiya(NT)-Mehgaon(MP) (MPSEB) Ckt-1	POWERGRID	28-Aug-24	04:46	Nil	Phase to earth fault Y-N	NA	NA	NO	YES (After 24 hrs)	As per PMU and DR (Auraiya end), Y-N phase to earth fault is observed. No A/R operation is observed at Auraiya end. Time sync issue in DR of Auraiya end.
18	800 KV HVDC Kurukshetra(PG) Pole-2	POWERGRID	31-Aug-24	12:26	Nil	Relay maloperation	NA	NA	YES (After 24 hrs)	YES (After 24 hrs)	As per PMU, fluctuation in voltage is observed. As reported, Pole-2 blocked on external block received from VBE panel at Kurukshetra end.

 # Fault Clearance time has been computed using PMU Data from nearest node available and/or DR provided by respective utilities (*Annexure-* ***II)***

****Yes, if written Preliminary report furnished by constituent(s)***

R-Y-B phase sequencing (Red, Yellow, Blue) is used in the list content.All information is as per Northern Region unless specified.

^^ tripping seems to be in order as per PMU data, reported information. However, further details may be awaited.

Reporting of Violation of Regulation for various issues for above tripping

1	Fault Clearance time(>100ms for 400kV and >160ms for 220kV)	1. CEA Grid Standard-3.e 2. CEA Transmission Planning Criteria
2	DR/EL Not provided in 24hrs	1. IEGC 37.2(c) 2. CEA Grid Standard 15.3
3	FIR Not Furnished	1. IEGC 37.2(b) 2. CEA Grid Standard 12.2 (Applicable for SLDC, ALDC only)
4	Protection System Mal/Non Operation	1. CEA Technical Standard of Electrical Plants and Electric Lines: 43.4.A 2. CEA (Technical Standards for connectivity to the Grid) Regulation, 2007: Schedule Part 1. (6.1, 6.2, 6.3)
5	A/R non operation	1. CEA Technical Standard of Electrical Plants and Electric Lines: 43.4.C 2. CEA Technical Planning Criteria

Status of submission of FIR/DR/EL/Tripping Report on NR Tripping Portal

Time Period: 1st August 2024 - 31st August 2024

S. No.	Utility	Total No. of tripping	First Information Report (Not Received)		Disturbance Recorder (Not Received)	Disturbance Recorder (NA) as informed by utility	Disturbance Recorder (Not Received)	Event Logger (Not Received)	Event Logger (NA) as informed by utility	Event Logger (Not Received)	Tripping Report (Not Received)	Tripping Report (NA) as informed by utility	Tripping Report (Not Received)	Remark
			Value	%	Value		%	Value		%	Value		%	
1	ABC RENEWABLE_RJ01	2	2	100	2	0	100	2	0	100	2	0	100	
2	AD HYDRO	2	1	50	1	0	50	1	0	50	1	0	50	
3	AHEJ4L	1	1	100	1	0	100	1	0	100	1	0	100	
4	ANTA-NT	9	7	78	7	0	78	8	1	100	7	0	78	
5	APMPL	3	3	100	3	0	100	3	0	100	3	0	100	
6	ASEJOL	1	1	100	1	0	100	1	0	100	1	0	100	
7	ASEPL	1	1	100	1	0	100	1	0	100	1	0	100	DR, EL & Tripping report not submitted
8	AURAIYA-NT	8	2	25	0	0	0	2	0	25	1	0	13	
9	BAIRASUIL-NH	2	2	100	2	0	100	2	0	100	2	0	100	
10	BBMB	37	8	22	9	7	30	9	10	33	8	2	23	
11	CHAMERA-II-NH	1	1	100	1	0	100	1	0	100	1	0	100	
12	CHAMERA-I-NH	6	2	33	1	3	33	1	3	33	1	0	17	
13	CPCC1	55	1	2	8	9	17	9	9	20	4	0	7	
14	CPCC2	36	9	25	0	5	0	0	2	0	0	0	0	Details received
15	CPCC3	30	0	0	0	7	0	1	7	4	0	0	0	
16	DADRI-NT	4	0	0	1	0	25	2	0	50	4	0	100	
17	DHAULIGANGA-NH	2	2	100	2	0	100	2	0	100	2	0	100	
18	DULHASTI-NH	3	3	100	3	0	100	3	0	100	3	0	100	
19	FARIDABAD-NT	1	0	0	0	0	0	0	0	0	1	0	100	DR, EL & Tripping report not submitted
20	INDIGRID	1	1	100	1	0	100	1	0	100	1	0	100	
21	KARCHAM	1	1	100	1	0	100	1	0	100	1	0	100	
22	KISHENGANGA-NH	2	2	100	2	0	100	2	0	100	2	0	100	
23	Mega_SuryaUrja	1	1	100	1	0	100	1	0	100	1	0	100	
24	NAPP	9	0	0	0	1	0	0	1	0	0	0	0	Details received
25	PARBATI-III-NH	2	2	100	2	0	100	2	0	100	2	0	100	DR, EL & Tripping report not submitted
26	RAPPA	3	0	0	3	0	100	3	0	100	3	0	100	
27	RAPPB	1	0	0	0	1	0	0	0	0	0	1	0	Details received
28	RAPPC	3	1	33	0	0	0	0	0	0	0	0	0	
29	RENEW SURYARAVI (RSRPL)	1	1	100	1	0	100	1	0	100	1	0	100	
30	RIHAND-NT	1	1	100	1	0	100	1	0	100	1	0	100	DR, EL & Tripping report not submitted
31	SALAL-NH	3	3	100	3	0	100	3	0	100	3	0	100	
32	SEWA-2-NH	1	0	0	0	0	0	0	0	0	0	0	0	Details received
33	SHREE CEMENT	1	1	100	1	0	100	1	0	100	1	0	100	DR, EL & Tripping report not submitted
34	SINGOLI	1	0	0	0	0	0	0	0	0	0	0	0	Details received
35	SINGRAULI-NT	7	7	100	7	0	100	7	0	100	7	0	100	DR, EL & Tripping report not submitted
36	SLDC-DV	17	0	0	0	6	0	0	6	0	0	4	0	Details received

Status of submission of FIR/DR/EL/Tripping Report on NR Tripping Portal

Time Period: 1st August 2024 - 31st August 2024

S. No.	Utility	Total No. of tripping	First Information Report (Not Received)		Disturbance Recorder (Not Received)	Disturbance Recorder (NA) as informed by utility	Disturbance Recorder (Not Received)	Event Logger (Not Received)	Event Logger (NA) as informed by utility	Event Logger (Not Received)	Tripping Report (Not Received)	Tripping Report (NA) as informed by utility	Tripping Report (Not Received)	Remark
			Value	%	Value		%	Value		%	Value		%	
37	SLDC-HP	11	0	**0**	7	0	**64**	7	0	**64**	0	0	**0**	DR, EL & Tripping report not submitted
38	SLDC-HR	32	22	**69**	19	6	**73**	21	5	**78**	21	1	**68**	
39	SLDC-JK	16	0	**0**	16	0	**100**	16	0	**100**	16	0	**100**	
40	SLDC-PS	31	1	**3**	22	2	**76**	22	2	**76**	25	0	**81**	
41	SLDC-RS	59	0	**0**	11	4	**20**	11	4	**20**	26	0	**44**	
42	SLDC-UK	15	1	**7**	1	5	**10**	1	4	**9**	1	0	**7**	
43	SLDC-UP	150	15	**10**	18	30	**15**	19	44	**18**	24	7	**17**	
44	STERLITE	4	0	**0**	0	0	**0**	0	0	**0**	0	3	**0**	Details received
45	TANDA-NT	1	1	**100**	1	0	**100**	1	0	**100**	1	0	**100**	DR, EL & Tripping report not submitted
46	TEHRI	1	0	**0**	0	0	**0**	0	0	**0**	0	0	**0**	Details received
47	UNCHAHAR-NT	4	1	**25**	0	1	**0**	0	2	**0**	0	1	**0**	
Total in NR Region		**583**	**108**	**19**	**161**	**87**	**32**	**170**	**100**	**35**	**180**	**19**	**32**	

As per the IEGC provision under clause 37.2 (c), detailed tripping report along with DR & EL has to be furnished within 24 hrs of the occurrence of the event

Mock trial run/black start schedule plan for 2024-25						Remarks
S.No.	Name of Generatiing Station	Fuel Type	Compliance to 34.3 of IEGC for mock trial runs (Last date on which mock drill carried out)	Tentaive schedule plan for mock trial run		
				Black start exercise of generating unit (dead bus charging)	Mock black start of subsytem (black start of generating unit / island operation / synchronidation)	
NTPC						
1	Dadri GPS	Gas	16-Dec-23	31-Oct-24	NA	
2	Anta GPS	Gas	29-Feb-24			
3	Auraiya GPS	Gas		09-07-2024	09-07-2024	
4	Faridabad GPS	Gas				
5	Koldam HEP	Hydro	14-Mar-24	12-03-2025	12-03-2025	
NHPC						
6	Bairasuil	Hydro	30-Nov-22	2nd week of November	2nd week of November	
7	Salal Stage-I	Hydro	02-Nov-18	3rd week of October	3rd week of October	
8	Salal Stage-II	Hydro		3rd week of October	3rd week of October	
9	Tanakpur HPS	Hydro		4th week of December	4th week of December	
10	Chamera HPS-I	Hydro	02-Dec-22	1st week of December	1st week of December	
11	Chamera HPS-II	Hydro	02-Dec-22	1st week of December	1st week of December	
12	Chamera HPS-III	Hydro	04-Dec-17	1st week of December	1st week of December	
13	URI-I	Hydro	20-Dec-16	1st week of December	1st week of December	
14	URI-II	Hydro	20-Dec-16	1st week of December	1st week of December	
15	Dhauliganga	Hydro	28-Dec-21	4th week of December	4th week of December	
16	Dulhasti	Hydro		4th week of November	4th week of November	
17	Sewa-II	Hydro	29-May-22	3rd week of November	3rd week of November	
18	Parbati-3	Hydro	22-Dec-20	4th week of December	4th week of December	
19	Kishanganga	Hydro		4th week of October	4th week of October	
SJVNL						
20	Nathpa-Jhakri	Hydro	09-Dec-22	20.11.2024	20.11.2024	
21	Rampur	Hydro	09-Dec-22	20.11.2024	20.11.2024	
THDC						
22	Tehri	Hydro	07-11-23	06-11-24	06-11-24	
23	Koteshwar	Hydro	14-Mar-24	Dec-24	Dec-24	
BBMB						
24	Bhakra (L)	Hydro	31-Dec-22			
25	Bhakra (**R**)	Hydro	26-Dec-22			
26	Ganguwal	Hydro				
27	Kotla	Hydro				
28	Dehar	Hydro				
29	Pong	Hydro	08-Jun-14			
*: Rampur can be black started only after starting of Nathpa Jhakri units due to Tandem operation						
IPPGCL(Indraprashta power generating Corporation Ltd.)/ Delhi Gencos						
30	I.P. Gas Turbine (IPGCL G.T.)	Gas	20-Feb-19	10-04-2024	10-04-2024	Conducted
31	Pragati Gas Turbine (PPCL)	Gas				
32	Bawana GT	Gas				
33	Rithala(TPPDL)	Gas				Not in operation
Haryana						
34	Western Yamuna Canal (WYC-I & II)	Hydro				
Himachal Pradesh						
35	Bhabha	Hydro				
36	Bassi	Hydro				
37	Ghanvi	Hydro				
38	Giri	Hydro				
39	Larji	Hydro				
40	Phojal	Hydro				
41	Sainj HEP	Hydro				
42	Swara Kuddu HEP	Hydro				
43	Bajoli Holi HEP	Hydro				
Malana Power Company Ltd.						

Mock trial run/black start schedule plan for 2024-25						Remarks
S.No	Name of Generatiing	Fuel	Compliance to 34.3 of IEGC for mock trial runs (Last date on	Tentaive schedule plan for mock trial run		
44	Malana-I	Hydro	12-Mar-24			
Everest Power Company Ltd.						
45	Malana-II	Hydro	03-Jan-19			
AD Hydro Power Ltd.						
46	AD Hydro	Hydro	27-Jan-23	**24-02-2025**	**24-02-2025**	
JSW						
47	Karcham Wangtoo	Hydro	29-Dec-21			It is submitted that we shall perform black start Mock trial test after completion of M4 and M5 of GIS overhauling. In the meantime, Karcham Wangtoo HEP can carry out black start exercise of generating unit only at this point (dead bus charging).
48	Baspa	Hydro				
Greenco						
49	Budhil	Hydro				inability to carry out Mock Black start exercise keeping in view the Unit safety being installed capacity low and issue of Governing system. The Governing system of Budhil HEP is of M/S Dong Fong China make and we are not ge□ng any support from OEM a□er COVID-19.. The planning for changing the governing system is in Process.
50	Sorang HEP	Hydro				
Jammu & Kashmir						
51	Baghlihar-I	Hydro				
52	Baghlihar-II	Hydro				
53	Lower Jhelum	Hydro	20-Dec-16			
54	Upper Sindh	Hydro	20-Dec-16			
Punjab						
55	Jogendernagar/ Shanan	Hydro				
56	UBDC	Hydro				
57	Mukerian	Hydro				
58	Anandpur Sahib (APS)	Hydro				
59	Ranjit Sagar (Thein Dam)	Hydro		04-05-2024	04-05-2024	
Rajasthan						
60	Ramgarh GT Extn.	Gas				
61	Dholpur CCPP	Gas				
62	Rana Pratap Sagar (RPS)	Hydro	16-Jan-11			
63	Jawahar Sagar	Hydro				
64	Mahi Bajaj Sagar I	Hydro	21-Jul-15			
65	Mahi Bajaj Sagar II	Hydro	24-Mar-16			
Uttar Pradesh						
66	Rihand (H) or Pipri	Hydro	16-Feb-24			
67	Obra(H)	Hydro	16-Feb-24			
68	Khara	Hydro				
69	Matatila	Hydro				
GVK						
70	Alaknanda HEP	Hydro				
Jaiprakash power Venture Ltd.						
71	Vishnu Prayag IPP	Hydro				
Uttrakhand						
72	Ramganga	Hydro				
73	Chibro	Hydro				
74	Dhalipur	Hydro				
75	Khodri	Hydro				
76	Khatima	Hydro				
77	Chilla	Hydro				
78	Maneri Bhali-I	Hydro				
79	Maneri Bhali-II	Hydro				
80	Vyasi HEP	Hydro				
81	Dhakrani HEP	Hydro				
82	Kulhal HEP	Hydro				
83	Gamma GPS	Gas				
84	Sravanti GPS	Gas	NA	NA	NA	
L&T						

Mock trial run/black start schedule plan for 2024-25						Remarks
S.No	Name of Generatiing	Fuel	Compliance to 34.3 of IEGC for mock trial runs (Last date on	Tentaive schedule plan for mock trial run		
85	Singoli Bhatwari	Hydro	Not done yet	03rd Dec 2024	03rd Dec 2024	Consent did not given for mock drill by SLDC Dehradun due to constraint of partial power evacuation

Sr. No.	Scheme Name	State Control Area	Date of review of SPS	Last date on which Mock testing carried out	Tentaitve schedule of SPS Mock testing during 2024-25	Remarks
1	SPS for WR-NR corridor - 765kV Agra-Gwalior D/C	POWERGRID		12-03-2024		
2	SPS for contingency due to tripping of HVDC Mundra-Mahendergarh	ADANI				
3	SPS for high capacity 400 kV Muzaffarpur-Gorakhpur D/C Inter-regional tie-line related contingency	POWERGRID				
4	SPS for 1500 MW HVDC Rihand-Dadri Bipole related contingency	POWERGRID				
5	System Protection Scheme (SPS) for HVDC Balia-Bhiwadi Bipole	POWERGRID				
6	SPS for contingency due to tripping of multiple lines at Dadri(NTPC)	NTPC				
7	SPS for reliable evacuation of power from NJPS, Rampur, Sawra Kuddu, Baspa Sorang and Karcham Wangtoo HEP	SJVN/HPPTCL/JSW				
8	SPS for Reliable Evacuation of Ropar Generation	Punjab				
9	SPS for Reliable Evacuation of Rosa Generation	Uttar Pradesh		07-05-2022	counducted on 20-04-2024	
10	SPS for contingency due to tripping of evacuating lines from Narora Atomic Power Station	NAPS				
11	SPS for evacuation of Kawai TPS, Kalisindh TPS generation complex	Rajasthan				
12	SPS for evacuation of Anpara Generation Complex	Uttar Pradesh		06-07-2020		
13	SPS for evacuation of Lalitpur TPS Generation	Uttar Pradesh		14-07-2018	counducted on 21.05.2024	
14	SPS for Reliable Evacuation of Bara TPS Generation	Uttar Pradesh				
15	SPS for Lahal Generation	Himachal Pradesh		08-07-2020		
16	SPS for Transformers at Ballabhgarh (PG) substation	POWERGRID				
17	SPS for Transformers at Maharanibagh (PG) substation	POWERGRID				
18	SPS for Transformers at Mandola (PG) substation	POWERGRID				
19	SPS for Transformers at Bamnauli (DTL) Substation	Delhi				
20	SPS for Transformers at Moradabad (UPPTCL) Substation	Uttar Pradesh			counducted on 20-04-2024	
21	SPS for Transformers at Muradnagar (UPPTCL) Substation	Uttar Pradesh		07-02-2023	counducted on 20-04-2024	
22	SPS for Transformers at Muzaffarnagar(UPPTCL) Substation	Uttar Pradesh			counducted on 20-04-2024	
23	SPS for Transformers at Greater Noida(UPPTCL) Substation	Uttar Pradesh			SPS Unhealthy	
24	SPS for Transformers at Agra (UPPTCL) Substation	Uttar Pradesh		12-07-2023		
25	SPS for Transformers at 400kV Sarojininagar (UPPTCL) Substation	Uttar Pradesh		17-05-2023		
26	SPS for Transformers at 220kV Sarojininagar (UPPTCL) Substation	Uttar Pradesh		18-05-2022		
27	SPS for Transformers at 400kV Unnao (UPPTCL) Substation	Uttar Pradesh		19-05-2023	SPS Unhealthy	
28	SPS for Transformers at 220kV Unnao (UPPTCL) Substation	Uttar Pradesh				
29	SPS for Transformers at 400kV Sultanpur (UPPTCL) Substation	Uttar Pradesh			SPS Unhealthy	
30	SPS for Transformers at 400kV Bareilly (UPPTCL) Substation	Uttar Pradesh				
31	SPS for Transformers at 400kV Azamgarh (UPPTCL) Substation	Uttar Pradesh		14-05-2023	counducted on 06-05-2024	
32	SPS for Transformers at 400kV Mau (UPPTCL) Substation	Uttar Pradesh		17-01-2019	counducted on 27-04-2024	
33	SPS for Transformers at 400kV Gorakhpur (UPPTCL) Substation	Uttar Pradesh		14-05-2023	counducted on 27-04-2024	
34	SPS for Transformers at 400kV Sarnath (UPPTCL) Substation	Uttar Pradesh		19-05-2023	counducted on 23-05-2024	
35	SPS for Transformer at 400kV Rajpura (PSTCL) Substation	Punjab				
36	SPS for Transformers at 400kV Mundka (DTL) Substation	Delhi		19-06-2023		
37	SPS for Transformers at 400kV Deepalpur (JKTPL) Substation	Haryana				
38	SPS for Transformers at 400kV Ajmer (RVPN) Substation	Rajasthan				
39	SPS for Transformers at 400kV Merta (RVPN) Substation	Rajasthan				
40	SPS for Transformers at 400kV Chittorgarh (RVPN) Substation	Rajasthan				
41	SPS for Transformers at 400kV Jodhpur (RVPN) Substation	Rajasthan				
42	SPS for Transformers at 400kV Bhadla (RVPN) Substation	Rajasthan				
43	SPS for Transformers at 400kV Ratangarh (RVPN) Substation	Rajasthan				
44	SPS for Transformers at 400kV Nehtaur(UPPTCL) Substation	Uttar Pradesh		05-07-2022		
45	SPS for Transformers at Obra TPS	Uttar Pradesh			counducted on 20-05-2024	
46	SPS for Transformers at 400KV Kashipur (PTCUL) substation	Uttarakhand		03-09-2023	Septemeber 2024	
47	SPS for Transformers at 400KV Fatehgarh Solar Park (AREPRL)	ADANI				
48	SPS to relive transmission congestion in RE complex (Bhadla2)	POWERGRID				
49	SPS for Transformers at 400kV Bikaner (RVPN) Substation	Rajasthan				
50	SPS for Transformers at 400kV Bawana (DTL) Substation	Delhi		06-09-2023		
51	SPS for Transformers at 400kV Bhilwara (RVPN) Substation	Rajasthan				
52	SPS for Transformers at 400kV Hinduan (RVPN) Substation	Rajasthan				
53	SPS for Transformers at 400kV Suratgarh (RVPN) Substation	Rajasthan				

Sr No	Case ID	Station	FTC Element Name	Undertaking date	Undertaking Period	Undertaking	Compliance
1	1118756	220kV Deoband (UP)	220kV Deoband-Saharanpur- D/C	01.04.2023	3 months	Station Event Logger to be installed.	
2	1118797	400kV Sultanpur(UP)	315 MVA ICT-4 at Sultanpur	19.05.2023	1 month	Non-functional Station Event Logger	
3	1118818	400kV Bhadla(RS)	Recommissioning of old 500MVA 400/220kV , T&R make ICT (dismantled from 400kV GSS Ramgarh) at 400kV GSS Bhadla in place of failed 500MVA, 400/220kV ICT-III at 400kV GSS Bhadla	22.05.2023	2 months	Station Event Log hanging and GPS synchronisation problem	
4	1118792 & 1118793	400kV Panki(UP) & 400kV Fatehpur(PG)	By-pass of 400 kV Kanpur Panki 1 & 2 and 400 kV Kanpur Fatehpur Line 1 & 2 through 402 & 405 Tie bay CB at 400 kV Kanpur Substation	09.05.2023	During shutdown of lines (No time period mentioned)	Change in name of line in Station Event Logger and DR	
5	1118828	400kV Mundka	315MVA 400/220/33kV ICT 3 at 400kV Mundka	27.06.2023	1-2 months	Software issue in Station Event logger	
6	1118913	220kV Budgam	220kV Wagoora-Budgam section of 220kV Wagoora-Zainakote Circuit-I(Reconductoring of Zebra to HTLS)	10.10.2023	3 days	Relay settings of GSS Wagoora & Budgam updated as per new required parameters and the DR/EL of GSS Budgam	
7	1118894	RSDCL PPS-4 of Nokh Solar Park	220kV all emements	16.10.2023	By 31.10.2024	Station Event Logger to be installed.	
8	1118924	Muzaffarnagar(UP)	400/220/33kV ICT-3 at Muzaffarnagar(UP) [Replacement of 315MVA ICT after tank failure dated 23-08-23 08:01 Hrs]	20.10.2023	3-4 months	Non-functional Station Event Logger	
9	1118904	NTPC Auraiya	220kV Bay No 213 of Safai(UP) line at NTPC Auraiya GPS (after LILO of 220kV Auraiya-Sikandra ckt-2)	02.11.2023	1 year	Non-functional Station Event Logger	
10	1119094	400kV Unnao(UP)	500 MVA ICT-II AT 400 KV UNNAO	08.04.2024	1 month	Insufficient no of ports available in GPS Clock	
11	1119125	400kV Gorakhpur(UP)	500 MVA ICT-II AT 400 KV MOTIRAM ADDA,GORAKHPUR	19.06.2024	6 weeks	Station Event Logger to be installed.	
12	1119165	Samaypur BBMB()	208 bay for 220KV FGPP-Samaypur Ckt-1	29-07-2024	15 days	time sync between DR and EL within next 15 days	
13	1119169	NTPC Faridabad	210 bay for 220KV FGPP-Samaypur Ckt-1	30-07-2024	3 month	the station event logger	
14	1119217	POWERGRID	All elements	06.09.2024	By Mar 2025	Correction of station name in Station event logger	

Annexure-B.XII

RE: Mock testing of SPS of 500kV HVDC Mundra-Mahindergarh link

Thu 8/29/2024 7:29 PM

To:NRLDC SO 2 <nrldcso2@grid-india.in>; CPCC1 <rtamc.nr1@powergrid.in>;

Cc:seo-nrpc <seo-nrpc@nic.in>; Somara Lakra (सोमारा लाकरा) <somara.lakra@grid-india.in>; Mahavir Prasad Singh (महावीर प्रसाद सिंह) <mahavir@grid-india.in>; Arunkumar P <Arunkumar.P@adani.com>; Sugata Bhattacharya (सुगाता भट्टाचार्या) <sugata@grid-india.in>; Deepak Kumar <deepak.kr@grid-india.in>; AMIT SHARMA <amsharma@grid-india.in>; Bikas Kumar Jha (बिकास कुमार झा) <bikaskjha@grid-india.in>; Manas Ranjan Chand (मानस रंजन चंद) <manas@grid-india.in>; Aman Gautam (अमन गौतम) <amangautam@grid-india.in>; Gnanaguru . <Gnanaguru.1@adani.com>; Sumeet Sharma <Sumeet.Sharma@adani.com>; Naman Vyas <Namany.Vyas@adani.com>; Milan Popat <Milan.Popat@adani.com>; Nihar Raj <nihar.raj@adani.com>; Abhishek Kukreja <Abhishek.Kukreja@adani.com>;

5 attachments (9 MB)

Counter (2).jpg; Counter.jpg; TPS (2).jpg; TPS.jpg; 220KV Alwar ss.jpg;

Dear Sir,

Please find the attached Photos. on 28-08-2024, a representative from M/s. Commtel Networks visited the Mahendragarh site and confirmed the healthiness of the SDH and TPS, along with their associated cards.

All SPS System equipment are functioning properly. The 15 TPS installed in the remote substation.

The details and status of TPS and Counter at Mahendragarh End.

S.No	TPS	TPS Status	Counter	Counter Status
1	PG Hissar	ON	17	OKAY
2	Bhiwani	ON	17	OKAY
3	Dadari	ON	17	OKAY
4	Alwar	ON	-	OFF
5	Bhilwara	ON	12	OKAY
6	Merta	ON	14	OKAY
7	Ratangarh	ON	-	OFF
8	Gobinugarg	ON	-	OFF
9	Malerkotla	ON	-	OFF
10	Laton Kalan	ON	6	OKAY
11	Mandula	ON	12	OKAY
12	Bamnauli	ON	-	OFF
13	Shamli	ON	-	OFF
14	Bahadurgarh	ON	10	OKAY

15	Dhanonda	ON	-	OFF

There alarms on the system are due to the following reasons.

1. Equipment Failure/ card failure/ power failure at Remote Sites.
2. Cable connectivity break between the remote System and cable coming from Field.
3. E1 connectivity outage at remote Sites.

Our team, with support from Commtel Networks, visited the nearest TPS installed at the 220/132 kV Alwar Substation to check its healthiness. However, during the inspection, the panel was found to be de-energized, necessitating an end-to-end test. (Photo Attached) Similarly, each substation needs to be ensured the healthiness of the TPS by respective Substation owner.

We request you to please confirm the healthiness of the Sr no 1 and 2 .

Thanks and Regards,

Kalicharan Sahu
(O&M) HVDC & EHV Substations,
Adani Energy Solutions Limited
| ±500kV HVDC Mahendragarh Terminal Sub Station I
Village-Kheri- Aghiyar, Taluka- Kanina, Mahendragarh 123 029, Haryana, India
Mob +91 9764006167| Off +91 1285 277326

From: NRLDC SO 2 <nrldcso2@grid-india.in>
Sent: Tuesday, August 27, 2024 10:07 AM
To: SLDC Punjab <se-sldcprojects@pstcl.org>; PC PSTCL SLDC PUNJAB <pcpstcl@gmail.com>; Haryana <sldcharyanacr@gmail.com>; Delhi <sldcmintoroad@gmail.com>; UP <sera@upsldc.org>; Rajasthan <SE.LDRVPNL@RVPN.CO.IN>; ce.ld@rvpn.co.in; CPCC1 <rtamc.nr1@powergrid.in>; neerajk@powergrid.in; setncmrt@upptcl.org; bharatlalgujar@gmail.com; akashdeep3433786@gmail.com; xenemtcbhpp2@bbmb.nic.in; PC Control Room <pccont@bbmb.nic.in>; se.prot.engg@rvpn.co.in; Arunkumar P <Arunkumar.P@adani.com>; Kali Charan Sahu <Kalicharan.Sahu@adani.com>; rajbir-walia79@yahoo.com; ase-sldcop@pstcl.org; sesldcop@hvpn.org.in; cepso@upsldc.org; se-sldcop <se-sldcop@pstcl.org>; SICHVDC Controlroom <SICHVDC.Controlroom@adani.com>
Cc: seo-nrpc <seo-nrpc@nic.in>; somara.lakra <somara.lakra@grid-india.in>; Mahavir Prasad Singh (महावीर प्रसाद सिंह) <mahavir@grid-india.in>; Sugata Bhattacharya (सुगाता भट्टाचार्या) <sugata@grid-india.in>; deepak.kr <deepak.kr@grid-india.in>; AMIT SHARMA <amsharma@grid-india.in>; bikaskjha <bikaskjha@grid-india.in>; Manas Ranjan Chand (मानस रंजन चंद) <manas@grid-india.in>; Aman Gautam (अमन गौतम) <amangautam@grid-india.in>
Subject: Re: Mock testing of SPS of 500kV HVDC Mundra-Mahindergarh link

Sir,

In reference of the trailing mail, it is to be mentioned that inputs have received from Rajasthan only. Members agreed to shared the details by 22nd August 2024, however no further details received from Haryana, Punjab, Delhi, UP & ADANI.

Kindly share the details as discussed during the meeting held on 20th August 2024, so that further remedial actions can be initiated on the basis of those details.

सादर धन्यवाद/ Thanks & Regards
प्रणाली संचालन-II/ System Operation-II
उ°क्षे°भा°प्रे°के°/ NRLDC
ग्रिड कंट्रोलर ऑफ इंडिया लिमिटेड/ Grid Controller of India Limited
Formerly known as
पोसोको / POSOCO

From: NRLDC SO 2
Sent: Tuesday, August 20, 2024 12:49:55 PM
To: SLDC Punjab; PC PSTCL SLDC PUNJAB; Haryana; Delhi; UP; Rajasthan; ce.ld@rvpn.co.in; CPCC1; neerajk@powergrid.in; setncmrt@upptcl.org; bharatlalgujar@gmail.com; akashdeep3433786@gmail.com; xenemtcbhpp2@bbmb.nic.in; PC Control Room; se.prot.engg@rvpn.co.in; Arunkumar.P@adani.com; Kalicharan.Sahu@adani.com; rajbir-walia79@yahoo.com; ase-sldcop@pstcl.org; sesldcop@hvpn.org.in
Cc: seo-nrpc; Somara Lakra (सोमारा लाकरा); Mahavir Prasad Singh (महावीर प्रसाद सिंह); Sugata Bhattacharya (सुगाता भट्टाचार्या); Deepak Kumar; AMIT SHARMA; Bikas Kumar Jha (बिकास कुमार झा); Manas Ranjan Chand (मानस रंजन चंद); Aman Gautam (अमन गौतम)
Subject: Re: Mock testing of SPS of 500kV HVDC Mundra-Mahindergarh link

Sir,

Please find attached presentation w.r.t. review of SPS of HVDC Mundra-Mahindergarh link.

As discussed during online meeting held today from 10:30hrs onward with SLDCs, ADANI and POWERGRID, following action plan has been decided:

1. SLDCs shall share the revised updated feeder details (radial) along with expected average/peak load

relief through respective feeders.

2. SLDCs in coordination with their transmission and protection team shall share the status and healthiness of existing SPS system along with details of availability of communication path for incorporation of proposed revised/additional feeders.
3. Mahindergarh(ADANI) shall coordinate with the POWERGRID and share the action plan to make the SPS system healthy and operational at Mahindergarh(ADAIN), Bhiwani(PG) & Bhiwani(BBMB).
4. POWERGRID & ADANI shall review the healthiness of SPS system at different load centers and communication path between them in coordination with the SLDCs.

Kindly take necessary actions w.r.t. your control area and share the inputs by afternoon of 22nd August 2024.

सादर धन्यवाद/ Thanks & Regards
प्रणाली संचालन-II/ System Operation-II
उ॰क्षे॰भा॰प्रे॰के॰/ NRLDC
ग्रिड कंट्रोलर ऑफ इंडिया लिमिटेड/ Grid Controller of India Limited
Formerly known as
पोसोको / POSOCO

From: NRLDC SO 2
Sent: Friday, August 16, 2024 5:36:26 PM
To: SLDC Punjab; PC PSTCL SLDC PUNJAB; Haryana; Delhi; UP; Rajasthan; ce.ld@rvpn.co.in; CPCC1; neerajk@powergrid.in; setncmrt@upptcl.org; bharatlalgujar@gmail.com; akashdeep3433786@gmail.com; xenemtcbhpp2@bbmb.nic.in; PC Control Room; se.prot.engg@rvpn.co.in; Arunkumar.P@adani.com; Kalicharan.Sahu@adani.com; rajbir-walia79@yahoo.com; ase-sldcop@pstcl.org
Cc: seo-nrpc; Somara Lakra (सोमारा लाकरा); Mahavir Prasad Singh (महावीर प्रसाद सिंह); Sugata Bhattacharya (सुगाता भट्टाचार्या); Deepak Kumar; AMIT SHARMA; Bikas Kumar Jha (बिकास कुमार झा); Manas Ranjan Chand (मानस रंजन चंद); Aman Gautam (अमन गौतम)
Subject: Re: Mock testing of SPS of 500kV HVDC Mundra-Mahindergarh link

Sir,

Kindly refer trailing mail.

ADANI has shared the identified issues in communication link of SPS and load related details have been received from UP only. Other members are also requested to share the details w.r.t. their control area. POWERGRID and ADANI are requested to review the status of healthiness of communication links to load centers.

In this regard an online meeting has been scheduled on 20th August 2024 (Tuesday). Kindly ensure that concerned members shall connect in the meeting.

Online meeting to review the healthiness of SPS of 500kV HVDC Mundra-Mahindergarh link
Hosted by NRLDCSO Grid_India

https://nrldc.webex.com/nrldc/j.php?MTID=m8a6b11dfbb5341cc4b8de3e5403b9ff6
Tuesday, August 20, 2024 10:30 AM | 5 hours | (UTC+05:30) Chennai, Kolkata, Mumbai, New Delhi
Meeting number: 2514 426 7076
Password: rgEcnsPB934

सादर धन्यवाद/ Thanks & Regards
प्रणाली संचालन-II/ System Operation-II
उ°क्षे°भा°प्रे°के°/ NRLDC
ग्रिड कंट्रोलर ऑफ इंडिया लिमिटेड/ Grid Controller of India Limited
Formerly known as
पोसोको / POSOCO

From: NRLDC SO 2
Sent: Tuesday, August 13, 2024 4:32 PM
To: SLDC Punjab; PC PSTCL SLDC PUNJAB; Haryana; Delhi; UP; Rajasthan; ce.ld@rvpn.co.in; CPCC1; neerajk@powergrid.in; setncmrt@upptcl.org; bharatlalgujar@gmail.com; akashdeep3433786@gmail.com; xenemtcbhpp2@bbmb.nic.in; PC Control Room; se.prot.engg@rvpn.co.in; Arunkumar.P@adani.com; Kalicharan.Sahu@adani.com; rajbir-walia79@yahoo.com; ase-sldcop@pstcl.org
Cc: seo-nrpc; Somara Lakra (सोमारा लाकरा); Mahavir Prasad Singh (महावीर प्रसाद सिंह); Sugata Bhattacharya (सुगाता भट्टाचार्या); Deepak Kumar; AMIT SHARMA; Bikas Kumar Jha (बिकास कुमार झा)

Subject: Re: Mock testing of SPS of 500kV HVDC Mundra-Mahindergarh link

Sir,

Non operation of SPS of 500kV HVDC Mundra-Mahindergarh inter regional link on 17th May 2024 on outage of both pole (carrying total ~1500MW) was discussed during 51st PSC meeting. ADANI was requested to share the details w.r.t. SPS operation during the meeting.

As per details received from ADANI, there are two links for SPS signal communication to load centers. One is directly to 220kV Dhanonda(HR) and communication to rest of load centers is through Bhiwani & Hissar S/s of POWERGRID. Other stations are also involved in further communication to all the load centers. SPS communication network (received from ADANI) is attached herewith the mail.

During 17th May incident, SPS operated at Dhanonda S/s however, operation didn't occur at load centers on second path. During investigation by ADANI team, it was identified that communication link between Bhiwani and Hissar is not healthy and there are chances that communication link between other stations may also be not healthy.

During online meeting conducted on 05th August 2023, states also highlighted the challenges regarding changes / unavailability in identified load feeders and load shedding in Punjab, Haryana, Delhi, UP and Rajasthan.

In view of above following actions are desired:

1. POWERGRID and concerned states are requested to identify the issue in communication links and take expeditious actions to make the all the communication link healthy.
2. States are requested to go through the details of load feeders mentioned in SPS document and share the changes / modifications as per present scenario and also share the inputs w.r.t. unavailability in identified load feeders and load shedding.

Details have received from UP only. POWERGRID and states are requested to share their inputs at the earliest. Necessary actions also need to be taken on priority.

सादर धन्यवाद/ Thanks & Regards
प्रणाली संचालन-II/ System Operation-II
उ°क्षे°भा°प्रे°के°/ NRLDC
ग्रिड कंट्रोलर ऑफ इंडिया लिमिटेड/ Grid Controller of India Limited
Formerly known as
पोसोको / POSOCO

From: NRLDC SO 2
Sent: Thursday, August 8, 2024 12:22:45 PM
To: SLDC Punjab; PC PSTCL SLDC PUNJAB; Haryana; Delhi; UP; Arshad Jamal; Rajasthan; ce.ld@rvpn.co.in
Cc: seo-nrpc; N Roy (एन रॉय); S Usha (एस उषा); Somara Lakra (सोमारा लाकरा); Mahavir Prasad Singh (महावीर प्रसाद सिंह); Manas Ranjan Chand (मानस रंजन चंद); Rahul Shukla (राहुल शुक्ला); Aman Gautam (अमन गौतम); Minnakuri Venkateswara Rao (मिन्नाकुरी वेंकटेश्वर राव); Sugata Bhattacharya (सुगाता भट्टाचार्या); Deepak Kumar; AMIT SHARMA
Subject: Mock testing of SPS of 500kV HVDC Mundra-Mahindergarh link

Ma'am/Sir,

As you are well aware that an online meeting was scheduled on 05.08.2024 among NLDC, WRLDC, NRLDC, SLDC Gujarat, SLDC Delhi, SLDC UP, SLDC Haryana, SLDC Punjab and ATL team to discuss the mock testing of SPS of 500kV HVDC Mundra-Mahindergarh link and some challenges were highlighted during the meeting regarding changes/unavailability in identified load feeders and load shedding in Punjab, Haryana, Delhi, UP and Rajasthan.

As per IEGC clause 16.1, *“SPS for identified system shall have redundancies in measurement of input signals and communication paths involved up to the last mile to ensure security and dependability.”*

As per IEGC clause 16.2, *"For the operational SPS, RLDC or NLDC, as the case may be, in consultation with the concerned RPC(s) shall perform regular load flow and dynamic studies and mock testing for reviewing SPS parameters & functions, at least once in a year. RLDC or NLDC shall share the report of such studies and mock testing including any short comings to respective RPC(s). The data for such studies shall be provided by CTU to the concerned RPC, RLDC and NLDC.’’*

In view of the above, states may confirm the status of the identified load feeders (whether operational or not) and whether any changes done in the existing load details. SPS scheme of 500kV HVDC Mundra-Mahindergarh is attached herewith.

सादर धन्यवाद/ Thanks & Regards
सुगता भट्टाचार्य/ Sugata Bhattacharya
प्रणाली संचालन-II/ System Operation-II
उ॰क्षे॰भा॰प्रे॰के॰/ NRLDC
ग्रिड कंट्रोलर ऑफ इंडिया लिमिटेड/ Grid Controller of India Limited
Formerly known as
पोसोको / POSOCO

Fwd: Mock testing of SPS of 500kV HVDC Mundra-Mahindergarh link

Tue 8/27/2024 4:58 PM

Inbox

To:NRLDC SO 2 <nrldcso2@grid-india.in>;

---------- Forwarded message ---------
From: SE T&C Meerut < setncmrt@upptcl.org>
Date: Tue, Aug 27, 2024 at 4:34 PM
Subject: Re: Mock testing of SPS of 500kV HVDC Mundra-Mahindergarh link
To: SE (R&A) <sera@upsldc.org>

As per telephonic conversation with EEEMTD,Meerut,It is to inform that Six pairs(12Nos)fiber are available between 220KV Substation, Shamli&400KV Substation, Shamli. Further modalities regarding availability &sharing of these fiber can be discussed with EMTD&Transmission wing.

On Tue, 27 Aug, 2024, 16:24 SE (R&A), <sera@upsldc.org> wrote:

> Sir ,
>
> As per trailing mail and in reference to the meeting held on 20.08.2024, kindly share the status of availability/status/healthiness of communication path between 220kV Shamli and 400kV Shamli, availability of communication path for incorporation of proposed revised/additional feeders along with the healthiness of existing communication path of SPS incorporated feeders at 220kV Shamli.
>
> ---------- Forwarded message ---------
> From: NRLDC SO 2 < nrldcso2@grid-india.in>
> Date: Tue, Aug 27, 2024 at 10:07 AM
> Subject: Re: Mock testing of SPS of 500kV HVDC Mundra-Mahindergarh link
> To: SLDC Punjab <se-sldcprojects@pstcl.org>, PC PSTCL SLDC PUNJAB <pcpstcl@gmail.com>, Haryana <sldcharyanacr@gmail.com>, Delhi <sldcmintoroad@gmail.com>, UP <sera@upsldc.org>, Rajasthan <SE.LDRVPNL@rvpn.co.in>, ce.ld@rvpn.co.in <ce.ld@rvpn.co.in>, CPCC1 <rtamc.nr1@powergrid.in>, neerajk@powergrid.in <neerajk@powergrid.in>, setncmrt@upptcl.org <setncmrt@upptcl.org>, bharatlalgujar@gmail.com <bharatlalgujar@gmail.com>, akashdeep3433786@gmail.com <akashdeep3433786@gmail.com>, xenemtcbhpp2@bbmb.nic.in <xenemtcbhpp2@bbmb.nic.in>, PC Control Room <pccont@bbmb.nic.in>, se.prot.engg@rvpn.co.in <se.prot.engg@rvpn.co.in>, Arunkumar.P@adani.com <Arunkumar.P@adani.com>, Kalicharan.Sahu@adani.com <Kalicharan.Sahu@adani.com>, rajbir-walia79@yahoo.com <rajbir-walia79@yahoo.com>, ase-sldcop@pstcl.org <ase-sldcop@pstcl.org>, sesldcop@hvpn.org.in <sesldcop@hvpn.org.in>, cepso@upsldc.org <cepso@upsldc.org>, se-sldcop <se-sldcop@pstcl.org>, sicHVDC.Controlroom@adani.com <sicHVDC.Controlroom@adani.com>
> Cc: seo-nrpc <seo-nrpc@nic.in>, Somara Lakra (सोमारा लाकरा) <somara.lakra@grid-india.in>, Mahavir Prasad Singh (महावीर प्रसाद सिंह) <mahavir@grid-india.in>, Sugata Bhattacharya (सुगाता भट्टाचार्या) <sugata@grid-india.in>, Deepak Kumar <deepak.kr@grid-india.in>, AMIT SHARMA <amsharma@grid-india.in>, Bikas Kumar Jha (बिकास कुमार झा) <bikaskjha@grid-india.in>, Manas Ranjan Chand (मानस रंजन चंद) <manas@grid-india.in>, Aman Gautam (अमन गौतम) <amangautam@grid-india.in>
>
> Sir,

In reference of the trailing mail, it is to be mentioned that inputs have received from Rajasthan only. Members agreed to shared the details by 22nd August 2024, however no further details received from Haryana, Punjab, Delhi, UP & ADANI.
Kindly share the details as discussed during the meeting held on 20th August 2024, so that further remedial actions can be initiated on the basis of those details.

सादर धन्यवाद/ Thanks & Regards
प्रणाली संचालन-II/ System Operation-II
उ॰क्षे॰भा॰प्रे॰के॰/ NRLDC
ग्रिड कंट्रोलर ऑफ इंडिया लिमिटेड/ Grid Controller of India Limited
Formerly known as
पोसोको / POSOCO

From: NRLDC SO 2
Sent: Tuesday, August 20, 2024 12:49:55 PM
To: SLDC Punjab; PC PSTCL SLDC PUNJAB; Haryana; Delhi; UP; Rajasthan; ce.ld@rvpn.co.in; CPCC1; neerajk@powergrid.in; setncmrt@upptcl.org; bharatlalgujar@gmail.com; akashdeep3433786@gmail.com; xenemtcbhpp2@bbmb.nic.in; PC Control Room; se.prot.engg@rvpn.co.in; Arunkumar.P@adani.com; Kalicharan.Sahu@adani.com; rajbir-walia79@yahoo.com; ase-sldcop@pstcl.org; sesldcop@hvpn.org.in
Cc: seo-nrpc; Somara Lakra (सोमारा लाकरा); Mahavir Prasad Singh (महावीर प्रसाद सिंह); Sugata Bhattacharya (सुगाता भट्टाचार्या); Deepak Kumar; AMIT SHARMA; Bikas Kumar Jha (बिकास कुमार झा); Manas Ranjan Chand (मानस रंजन चंद); Aman Gautam (अमन गौतम)
Subject: Re: Mock testing of SPS of 500kV HVDC Mundra-Mahindergarh link

Sir,

Please find attached presentation w.r.t. review of SPS of HVDC Mundra-Mahindergarh link.

As discussed during online meeting held today from 10:30hrs onward with SLDCs, ADANI and POWERGRID, following action plan has been decided:

1. SLDCs shall share the revised updated feeder details (radial) along with expected average/peak load relief through respective feeders.
2. SLDCs in coordination with their transmission and protection team shall share the status and healthiness of existing SPS system along with details of availability of communication path for incorporation of proposed revised/additional feeders.

उत्तर प्रदेश राज्य भार प्रेषण केन्द्र लि०
यू०पी०एस०एल०डी०सी०परिसर, विभूति
खण्ड II,गोमती नगर, लखनऊ–226010
ई मेल : sera@upsldc.org

U.P. State Load Despatch Centre Ltd.
UPSLDC Complex, Vibhuti Khand II
Gomti Nagar, Lucknow- 226010
E-mail: sera@upsldc.org

No: - 2661 /SE(R&A)/EE-II/SPS Dated:- 07/08/ 2024

General Manager, NRLDC18-A,
SJSS Marg, Katwaria Sarai,
New Delhi – 110016

Subject- Regarding SPS of HVDC Mundra-Mahendargarh line

Kindly refer to SE (ETC) Muzaffarnagar letter no/062/E.T.C./MZN/400 kV S/S Shamli dated 05.05.2024. (copy enclosed) regarding feeder wise load of Shamli area. As per the letter, at present complete load relief (i.e. 300MW) may not be provided by 220 kV Shamli, so that alternatively feeder and load details of 400 kV Shamli has also been provided. Also it is informed that at present SPS system at 220 kV Shamli is not healthy which is being maintained by PGCIL.

It is therefore requested to kindly instruct the concerned to incorporate 132 kV feeders of 220 kV Shamli & 400 kV Shamli in SPS of HVDC Mundra-Mahendargarh line so that appropriated load relief may be provided from UP Control area and take necessary action regarding healthiness of SPS system

Sangeet
(Sangeeta)
Superintending Engineer (R&A)

No: - /SE(R&A)/EE-II/SPS Dated: - 2024

Copy forwarded to following via e-mail for kind information and necessary action:-

1. Director, UPSLDC, Vibhuti Khand – II, Gomti Nagar, Lucknow.
2. Director (Operation), UPPTCL, 11th Floor, Shakti Bhawan Extn., Lucknow.
3. Chief Engineer (PSO), Vibhuti Khand – II, Gomti Nagar, Lucknow.
4. Chief Engineer (Trans. West),PareshanBhawan, 130D, Hydel Colony, Victoria Park, Meerut 250001.
5. SE (Operations), 18 – A SJSS Marg, Katwaria Sarai, New Delhi, 110016.

/
(Sangeeta)
Superintending Engineer (R&A)

कार्यालय
अधीक्षण अभियन्ता
विद्युत पारेषण मण्डल
उ०प्र०पावर ट्रांसमिशन कारपोरेशन लि०
132 के०वी० भोपारोड उपकेन्द्र
मुजफ्फरनगर-251001

OFFICE OF THE
SUPERINTENDING ENGINEER
Electricity Transmission Circle
U.P. Power Transmission Corporation Ltd.
132 KV Bhopa Road Sub-station
Muzaffarnagar-251001

दूरभाष : 0131-2608038 Ph. 0131-2608038
E-mail : seetcmzn@upptcl.org, seetcmzn@gmail.com

संख्या / No. 1062 /E.T.C./MZN/400 KV S/S Shamli दिनांक / DATED 05/08/24

Subject: - Regarding SPS of HVDC Mundra-Mahendargarh.

Superintending Engineer (R & A)
U.P State Load Despatch Centre Ltd.
UPSLDC Complex, Vibhuti Khand-II
Gomti Nagar, Lucknow.
Email. sera@upsldc.org

Please refer to your office letter no. 2187 dt. 01.07.2024, forwarded to this office by SE (T&C), Meerut vide endorsement no. 2237/CE(TW)/MT/SPS dt. 23.07.2024 vide which it has been requested to provide details of 132 KV feeders for planned relief to HVDC Mundra-Mahendargarh SPS.

In this reference, it is to apprise that following is the details of 132 KV feeders being fed from 220 KV Sub-Station Shamli.

S.No.	Name of feeder	Connected Load (MVA)	Maximum Load (MW)	Average Load (MW)
1	132 KV Lalukheri	63+63	72	47
2	132 KV Jhinjhana	63+40+40	80	52
3	132 KV Kairana-I/II	63+63	41	27
4	132 KV Jasala	63+40	58	38
	Total		251	164

1. Following Case wise Trippings of 132 KV Feeders at 220 KV Sub-Station, Shamli for tripping of HVDC Mundra-Mahendergarh Line may be used.

(A) In Maximum Load Condition:-

S. No.	State.L.S quantum	Name of feeding substation	Feeder/line/ equipment	MW	Case-1 50 MW	Case-2 100 MW	Case-3 200MW	Case-4 300 MW
1	Uttar Pradesh Case-1 =50 MW Case-2 =100 MW Case-3 =200 MW Case-4 =300 MW	220 KV Subsatatio n, Shamli	132 KV Jasala	58	1	1	1	1
2			132 KV Kairana-I	20.5		1		1
3			132 KV Kairana-II	20.5	-	1		1
4			132 KV Lalukheri	72	-	-	1	1
5			132 KV Jinjhana	80	-		1	1
			Total Relief	251	58	99	210	251

(B) In Average Load Condition :-

S. No.	State.L.S quantum	Name of feeding substation	Feeder/line/ equipment	MW	Case-1 50 MW	Case-2 100 MW	Case-3 200MW	Case-4 300 MW
1	Uttar Pradesh Case-1 =50 MW Case-2 =100 MW Case-3 =200 MW Case-4 =300 MW	220 KV Subsatatio n, Shamli	132 KV Jasala	38	1		1	1
2			132 KV Kairana-I	13.5	1		1	1
3			132 KV Kairana-II	13.5	-		1	1
4			132 KV Lalukheri	47	-	1	1	1
5			132 KV Jinjhana	52	-	1	1	1
			Total Relief	164	51.5	99	164	164

Alternatively HVDC Mundra-Mahendargarh SPS may be shifted to 400 KV Sub-Station Shamli, details of 132 KV feeders from 400 KV Sub-Station Shamli with its Maximum and Average load is as follows :

S.No.	Name of feeder	Connected Load (MVA)	Maximum Load (MW)	Average Load (MW)
1	132 KV Budhana	63+40	82	53
2	132 KV Kharad	63+40	78	51
3	132 KV Jalalpur	40+40	41	27
4	132 KV Thanabhawan	63+63+40	74	48
5	132 KV Kaniyan	40+40	35	23
	Total		310	202

2. Following Case wise Trippings of 132 KV Feeders at 400 KV Sub-Station, Shamli for tripping of HVDC Mundra-Mahendergarh Line is hereby recommended

(A). In Maximum Load Condition :-

S. No.	State.L.S quantum	Name of feeding substation	Feeder/line/ equipment	MW	Case-1 50 MW	Case-2 100 MW	Case-3 200MW	Case-4 300 MW
1	Uttar Pradesh Case-1 =50 MW Case-2 =100 MW Case-3 =200 MW Case-4 =300 MW	400 KV Subsatation, Shamli	132 KV Budhana	82	-	-	1	1
2			132 KV Kharad	78	-	-	1	1
3			132 KV Jalalpur	41	1	-	1	1
4			132 KV Thanabhawan	74	-	1	-	1
5			132 KV Kaniyan	35	1	1	-	1
			Total Relief	310	76	109	201	310

(B). In Average Load Condition :-

S. No.	State.L.S quantum	Name of feeding substation	Feeder/line/ equipment	MW	Case-1 50 MW	Case-2 100 MW	Case-3 200MW	Case-4 300 MW
1	Uttar Pradesh Case-1 =50 MW Case-2 =100 MW Case-3 =200 MW Case-4 =300 MW	400 KV Subsatation, Shamli	132 KV Budhana	53	-	1	1	1
2			132 KV Kharad	51	1	1	1	1
3			132 KV Jalalpur	27	-	-	1	1
4			132 KV Thanabhawan	48	-	-	1	1
5			132 KV Kaniyan	23	-	-	1	1
			Total Relief	202	51	104	202	202

Submitted for information and necessary action

(Nikhil Kumar)
Superintending Engineer

संख्या / No. /E.T.C./MZN/ दिनांक / DATED

Copy forwarded to the following for information and necessary action :

1. Chief Engineer (TW) UPPTCL Meerut.
2. Superintending Engineer, Electricity (T&C) Circle, UPPTCL Meerut.
3. Executive Engineer Electricity Transmission Division, Shamli

(Nikhil Kumar)
Superintending Engineer

कार्यालय
अधीक्षण अभियन्ता
विद्युत परीक्षण एवं परिचालन मण्डल
उ0प्र0 पावर ट्रांसमिशन कारपोरेशन लि0
प्रथम तल पारेषण भवन, 130–डी, विक्टोरिया पार्क
मेरठ– 250 003
मोबाइल: 9412749817

U.P. POWER TRANSMISSION CORPORATION LIMITED
UPPTCL

OFFICE OF THE
SUPERINTENDING ENGINEER
Electricity Test & Commissioning Circle
U.P. POWER TRANSMISSION CORPORATION LTD.
1st Floor Pareshan Bhawan, 130-D, Victoria Park,
Meerut 250 003
Mobile: 9412749817

No. 82 **/ ETCC-MT /** **Dated-** 30/05/24

Sub :- SPS related to HVDC Mundra-Mahendargarh.

(By e-mail)

Superintending Engineer (R&A)
UPSLDC Vibhuti Khand ,
Gomti Nagar,
Lucknow.

In reference to the above cited subject, UPSLDC via email on 22.05.2024 informed that on 17.05.2024 at 16:20 hrs, Case-3 of SPS related to HVDC Mundra - Mahendergarh operated. As per action in case-3 operation of this line SPS, 200MW load relief at 220kV Shamli (UP) is desired. However, no load relief at 220kV Shamli was observed at given date and time. It is to bring in your notice that due to commissioning of 400kV Shamli S/s entire power flow scenario has been changed. Current situation is summarized as below.

At 220kV Shamli S/s feeders shown in the list	Planned load relief (MW)	Current situation
Thana Bhawan -1	25	The only line cateting Thana Bhawan has been made LILO at 132kV Jalalpur. Now Jalalpur is fed from 220kV Shamli S/s while load of Thana Bhawan is fed from 400kV Shamli S/s.
Thana Bhawan -2	25	
Jasala-1	25	Only one line exists.
Jasala-2	25	
Kharad-1	50	Only one line exists which is normally kept open at Kharad and load of Kharad is normally fed from 400kV Shamli S/s.
Kharad-2	50	
Baraut-1	150 (case-4)	No such line exist at 220kV Shamli S/s.
Baraut-2	150 (case-4)	

In view of the above facts, entire load relief strategy needs to be reviewed and redesigned for SPS. On 17.05.2024 at 16:20 hrs, no tripping observed at 220kV S/S Shamli as SPS system is unhealthy, which is being maintained by M/s PGCIL.

Hence it is requested to you to kindly coordinate with M/s PGCIL for modification of the scheme and rectification of the fault in SPS.

(Pramod Kumar Mishra)
Superintending Engineer

No. 82 **/ETCC-MT/** **Dated/–** 30/05/24

Copy forwarded to the following for information & necessary action:-

1. Chief Engineer (TW), UPPTCL Victoria Park, Meerut.
2. Executive Engineer, Electricity Test & Commissioning Div., Muzaffarnagar.

(Pramod Kumar Mishra)
Superintending Engineer

SK/SENew/NewEngLetter01

Revised updated feeder details (radial) along with expected average Load Relief

S.No.	Name of Sub- Station	Feeder name as per existing detail	Revised name of Existing Feeder /Line/Equipment	Average Load relief (MW)	Remark
1	220 kV GSS Alwar	132 kV GSS Mundawar	132 kV GSS Pinan	25	
		132 kv GSS Bansoor	132 kV GSS Telco	45	
		132 kV GSS Ramgarh	132 kV GSS Ramgarh	65	
		132 kV GSS Malakhera	132 kV GSS Malakhera	50	
		132 kV Alwar (LOCAL)	132 kV GSS Alwar (LOCAL)	120	
2	220 kV GSS Ratangarh	132 kV Sardar Sher			Generally Feed from 220 kV Halasar
3	220 kV GSSV Bhilwara	132 kV GSS Gangapur	132 kv GSS Karoi	15	
		132 kV GSS Danta	132 kV GSS Danta	30	
		132 kV GSS Devgarh	132 kV GSS Bankali	18	
		132 kV GSS Kareda			
4	400 kV GSS Merta	132 kV GSS Kuchera	132 kV GSS Dhawa	25	
		132 kV GSS Lamba	132 kV GSS Lamba jatan	55	
		132 kV GSS Gotan			

Email **Control Room CONTROL ROOM SLDC**

Re: Review of SPS installed for 500kV HVDC Mundra - Mahindergarh.

From : Executive Engineer TS Rewari <xentsrwr@hvpn.org.in> Thu, Aug 29, 2024 01:20 PM

Subject : Re: Review of SPS installed for 500kV HVDC Mundra - Mahindergarh.

To : Control Room CONTROL ROOM SLDC <controlroomsldc@hvpn.org.in>

Cc : SE TS GGN <setsggn@hvpn.org.in>, Executive Engineer Executive Engineer <xen400kvdhanoda@hvpn.org.in>, Substation Engineer <sse220kvlulaahir@hvpn.org.in>

In continuation of trailing email and discussion held today telephonically, it is gathered that desired load relief shall not get as load of 220 kV Lula Ahir shall be fed through 220 kV Dadri-Lula Ahir line being synchronized. Therefore, it is proposed that in the existing scheme SPS, the tripping of 220 kV D/C Lula Ahir line at 400 kV Dhanonda end may be removed and tripping of all incomers (2 no. 132 kV Incomers of 100 MVA 220/132 kV TFs and one no. 33 kV incomer of 100 MVA 220/33 kV TF) at 220 kV Lula Ahir substation may be added.

The maximum load (for FY 2023-24) on three no. 100 MVA TFs installed at 220 kV Lula Ahir is 53.46 MVA, 86.26 MVA and 87.02 MVA

The average load on three no. 100 MVA TFs installed at 220 kV Lula Ahir is 50 MVA, 70 MVA and 70 MVA

From: "Executive Engineer TS Rewari" <xentsrwr@hvpn.org.in>
To: "Control Room CONTROL ROOM SLDC" <controlroomsldc@hvpn.org.in>
Cc: "SE TS GGN" <setsggn@hvpn.org.in>, "Executive Engineer Executive Engineer" <xen400kvdhanoda@hvpn.org.in>, "Substation Engineer" <sse220kvnarnaul@hvpn.org.in>
Sent: Wednesday, August 28, 2024 12:46:13 PM
Subject: Re: Review of SPS installed for 500kV HVDC Mundra - Mahindergarh.

In reference of trailing email it is submitted that 220 kV Lula Ahir is connected with 400 kV Dhanonda through 220kV D/C line and with 220 kV Dadri through 220kV S/C line and with 220 kV Rewari with 220kV S/C line.
In general circuits of 400 kV Dhanonda and 220 kV Dadri runs in synchronization. The maximum load (for FY 2023-24) on three no. 100 MVA TFs installed at 220 kV Lula Ahir is 53.46 MVA, 86.26 MVA and 87.02 MVA. It is further added that in general 220 kV Dadri takes load from 220 kV Lula Ahir substation and thus act as sink.

In case of operation of SPS at 400 kV Dhanonda, the desired load relief as mentioned in trailing email (90+95 MW) can be achieved through existing scheme (by outage of three no. 100 MVA TFs and 220 kV Dadri (acting as sink)).

Regards
XEN/TS Division
HVPNL Rewari.

From: "Control Room CONTROL ROOM SLDC" <controlroomsldc@hvpn.org.in>
To: "Executive Engineer TS Rewari" <xentsrwr@hvpn.org.in>, "Executive Engineer TS Rohtak" <xentsrtk@hvpn.org.in>, "Executive Engineer Ts Bhiwani" <xentsbhw@hvpn.org.in>, "Executive Engineer Executive Engineer" <xen400kvdhanoda@hvpn.org.in>, xendhanonda@gmail.com
Cc: "Chief Engineer SO Commercial" <cesocomml@hvpn.org.in>, "Chief Engineer TS Panchkula" <cetspkl@hvpn.org.in>, "Chief Engineer TS Hisar" <cetshsr@hvpn.org.in>, "Superintending Engineer SLDC OP" <sesldcop@hvpn.org.in>, "SE TS Rohtak" <setsrtk@hvpn.org.in>, "SE TS GGN" <setsggn@hvpn.org.in>, "Superintending Engineer TS Hisar" <setshsr@hvpn.org.in>, "Superintending Engineer MP CC Dhulkote" <sempccdkt@hvpn.org.in>, "Superintending Engineer MP CC Delhi" <sempccdelhi@hvpn.org.in>, "Executive Engineer MP Rohtak" <xenmpccrtk@hvpn.org.in>, "XEN MP Hisar" <xenmpcchsr@hvpn.org.in>, "XEN MP CC" <xenmpccggn@hvpn.org.in>
Sent: Wednesday, August 21, 2024 11:57:59 AM
Subject: Review of SPS installed for 500kV HVDC Mundra - Mahindergarh.

Sir,

Please see the attachments.

--
Regards,
SCE (पाली प्रभारी अभियंता)/SLDC Control room,
HVPNL Panipat
Contact No- 9053090722,9053090721,0180-2664095

Fwd: Review of SPS installed for 500kV HVDC Mundra - Mahindergarh.

Control Room CONTROL ROOM SLDC <controlroomsldc@hvpn.org.in>

Fri 8/30/2024 12:44 PM

To:NRLDC SO 2 <nrldcso2@grid-india.in>; NRLDC SO-II <nrldcso2@gmail.com>; Deepak Kumar <deepak.kr@grid-india.in>;

Cc:Superintending Engineer SLDC OP <sesldcop@hvpn.org.in>;

2 attachments (209 KB)

Email SPS Rewari.pdf; Regarding SPS Bhiwani.pdf;

Sir,

In reference to the SPS installed for 500kV HVDC Munda - Mahindergarh link the information received from TS wing (copy attached) is as under:

1. At 400kV Dhanonda through Lula Ahir substation:- It is proposed that in the existing scheme SPS, the tripping of 220 kV D/C Lula Ahir line at 400 kV Dhanonda end may be removed and tripping of all incomers (2 no. 132 kV Incomers of 100 MVA 220/132 kV TFs and one no. 33 kV incomer of 100 MVA 220/33 kV TF) at 220 kV Lula Ahir substation may be added. The maximum load (for FY 2023-24) on three no. 100 MVA TFs installed at 220 kV Lula Ahir is 53.46 MVA, 86.26 MVA and 87.02 MVA. The average load on three no. 100 MVA TFs installed at 220 kV Lula Ahir is 50 MVA, 70 MVA and 70 MVA.

2. At 400/220kV Bhiwani BBMB: It is proposed that in the existing scheme SPS, the tripping of 220 kV Bapora (Bhiwani HVPNL) D/C line at Bhiwani BBMB end may be removed and tripping of all incomers (2 no. 132 kV Incomers of 100 MVA 220/132 kV T-1 & T-2 TFs) at 220 kV Bapora (Bhiwani HVPNL) substation may be added. The maximum load on two no. 100 MVA TFs installed at 220kV Bhiwani HVPNL is 80 MW and 85 MW respectively. The average load on two no. 100 MVA TFs installed at 220kV Bhiwani HVPNL is 70 MW and 70 MW respectively.

3. At 132kV Charkhi Dadri: It is proposed that in the existing scheme SPS, the tripping of 132kV Kalanaur line at Dadri BBMB end may be removed and tripping of 132kV Haluwas & 132kV Dadri old at Dadri BBMB may be added. The maximum load on 132kV Haluwas & 132kV Dadri old line is 45 MW and 50 MW respectively. The average load on 132kV Haluwas & 132kV Dadri old line is 40 MW and 40 MW respectively.

Rest information kept unchanged. It is also added here that the fiber connectivity is also available on all the above substations.
It is also pertinent to mention here that 700 MW load relief is expected from Haryana. Rest of the states have been allotted with a relative less amount of relief as compared to Haryana for 500kV HVDC Mundra - Mahendargarh link. The Haryana share from APL Mundra has also been reduced now. In view of the above, the expected load relief from the NR states is required to be reviewed accordingly. The same was also pointed out by this office during the online meeting held on dated 20.08.2024.

This is for information & further necessary action please.

From: "Executive Engineer TS Rewari" <xentsrwr@hvpn.org.in>
To: "Control Room CONTROL ROOM SLDC" <controlroomsldc@hvpn.org.in>
Cc: "SE TS GGN" <setsggn@hvpn.org.in>, "Executive Engineer Executive Engineer" <xen400kvdhanoda@hvpn.org.in>, "Substation Engineer" <sse220kvlulaahir@hvpn.org.in>
Sent: Thursday, August 29, 2024 1:20:08 PM
Subject: Re: Review of SPS installed for 500kV HVDC Mundra - Mahindergarh.

In continuation of trailing email and discussion held today telephonically, it is gathered that desired load relief shall not get as load of 220 kV Lula Ahir shall be fed through 220 kV Dadri-Lula Ahir line being synchronized. Therefore, it is proposed that in the existing scheme SPS, the tripping of 220 kV D/C Lula Ahir line at 400 kV Dhanonda end may be removed and tripping of all incomers (2 no. 132 kV Incomers of 100 MVA 220/132 kV TFs and one no. 33 kV incomer of 100 MVA 220/33 kV TF) at 220 kV Lula Ahir substation may be added.

The maximum load (for FY 2023-24) on three no. 100 MVA TFs installed at 220 kV Lula Ahir is 53.46 MVA, 86.26 MVA and 87.02 MVA
The average load on three no. 100 MVA TFs installed at 220 kV Lula Ahir is 50 MVA, 70 MVA and 70 MVA

From: "Executive Engineer TS Rewari" <xentsrwr@hvpn.org.in>
To: "Control Room CONTROL ROOM SLDC" <controlroomsldc@hvpn.org.in>
Cc: "SE TS GGN" <setsggn@hvpn.org.in>, "Executive Engineer Executive Engineer" <xen400kvdhanoda@hvpn.org.in>, "Substation Engineer" <sse220kvnarnaul@hvpn.org.in>
Sent: Wednesday, August 28, 2024 12:46:13 PM
Subject: Re: Review of SPS installed for 500kV HVDC Mundra - Mahindergarh.

In reference of trailing email it is submitted that 220 kV Lula Ahir is connected with 400 kV Dhanonda through 220kV D/C line and with 220 kV Dadri through 220kV S/C line and with 220 kV Rewari with 220kV S/C line.
In general circuits of 400 kV Dhanonda and 220 kV Dadri runs in synchronization. The maximum load (for FY 2023-24) on three no. 100 MVA TFs installed at 220 kV Lula Ahir is 53.46 MVA, 86.26 MVA and 87.02 MVA. It is further added that in general 220 kV Dadri takes load from 220 kV Lula Ahir substation and thus act as sink.

In case of operation of SPS at 400 kV Dhanonda, the desired load relief as mentioned in trailing email (90+95 MW) can be achieved through existing scheme (by outage of three no. 100 MVA TFs and 220 kV Dadri (acting as sink)).

Regards
XEN/TS Division
HVPNL Rewari.

From: "Control Room CONTROL ROOM SLDC" <controlroomsldc@hvpn.org.in>
To: "Executive Engineer TS Rewari" <xentsrwr@hvpn.org.in>, "Executive Engineer TS Rohtak" <xentsrtk@hvpn.org.in>, "Executive Engineer Ts Bhiwani" <xentsbhw@hvpn.org.in>, "Executive Engineer Executive Engineer" <xen400kvdhanoda@hvpn.org.in>, xendhanonda@gmail.com
Cc: "Chief Engineer SO Commercial" <cesocomml@hvpn.org.in>, "Chief Engineer TS Panchkula" <cetspkl@hvpn.org.in>, "Chief Engineer TS Hisar" <cetshsr@hvpn.org.in>, "Superintending Engineer SLDC OP" <sesldcop@hvpn.org.in>, "SE TS Rohtak" <setsrtk@hvpn.org.in>, "SE TS GGN" <setsggn@hvpn.org.in>, "Superintending Engineer TS Hisar" <setshsr@hvpn.org.in>, "Superintending Engineer MP CC Dhulkote" <sempccdkt@hvpn.org.in>, "Superintending Engineer MP CC Delhi" <sempccdelhi@hvpn.org.in>, "Executive Engineer MP Rohtak" <xenmpccrtk@hvpn.org.in>, "XEN MP Hisar" <xenmpcchsr@hvpn.org.in>, "XEN MP CC" <xenmpccggn@hvpn.org.in>
Sent: Wednesday, August 21, 2024 11:57:59 AM
Subject: Review of SPS installed for 500kV HVDC Mundra - Mahindergarh.

Sir,

Please see the attachments.

--
Regards,
SCE (पाली प्रभारी अभियंता)/SLDC Control room,
HVPNL Panipat
Contact No- 9053090722,9053090721,0180-2664095

--
Regards,
SCE (पाली प्रभारी अभियंता)/SLDC Control room,
HVPNL Panipat
Contact No- 9053090722,9053090721,0180-2664095

Every 8333.3 sheets of paper costs us a tree.
Please don't print this e-mail unless you really need to. Save Paper Save Trees

HARYANA VIDYUT PRASARAN NIGAM LIMITED

Regd. Office: Shakti Bhawan, Plot No. C-4, Sector-6, Panchkula, 134109.
Corporate Identity Number: U40101HR1997SGC033683
Website: www.hvpn.org.in, E-mail - xentsbhw@hvpn.org.in
Phone No: 01664-242797(O)

To

The Executive Engineer,
LDPC, HVPNL,
Panipat.

Memo No.Ch-116/OMBE-7 Dated: 29.08.2024

Subject: SPS scheme at HVPNL substations for getting load relief due to tripping of 500Kv HVDC Mundra – Mahendargarh

Please refer to this O/Memo No. 108/OMBE-7 dated 27.08.2024 and O/Email dated 09.08.2024 on the subject cited matter.

In this continuation to above, the details of SPS under TS division, HVPNL, Bhiwani is as under:

S No.	Name of feeding S/Stn	Feeder/Line/Equipment	SPS Installed	Max. Load	Load Relief (Avg Load)	Remarks
1	220KV S/Stn Bhiwani	132KV IA Bhiwani Line	UFR	50MW	40 MW	SPS (UFR)Installed and healthy
2	220KV S/Stn Bhiwani	132KV Bhiwani Ckt 2	UFR	50MW	40 MW	SPS (UFR)Installed and healthy
3	220KV S/Stn Bhiwani	132KV Tosham	UFR	-	-	SPS (UFR) Installed and healthy but line is running on No load as 2nd source to 132KV Tosham
4	220KV S/Stn Bhiwani	132KV Incomer of Transformer 100MVA Transformer T2	-	85MW	70 MW	SPS may be provided for load relief as mentioned on subject above.
5	220KV S/Stn Bhiwani	132KV Incomer of 100MVA Transformer T1	-	80MW	70 MW	SPS may be provided for load relief as mentioned on subject above.
6	132kV substation Dadri-2	132kV Dadri-kalanaur ckt	Yes		Nil	SPS Installed and healthy but line is running on No load as 2nd source to 132KV Kalanaur
7	132kV substation Dadri-2	132kV Dadri-Makrani ckt	Yes		Nil	SPS Installed and healthy but line is running on No load as 2nd source to 132KV Makrani
8	132kV substation Dadri-2	132kV Dadri-Haluwas ckt	-	45MW	40MW	SPS may be provided for load relief as mentioned on subject above.
9	132kV substation Dadri-2	132kV Dadri-Dadri old	-	50MW	40MW	SPS may be provided for load relief as mentioned on subject above.

This is for kind information and necessary action please.

Executive Engineer,
Transmission System Division,
HVPNL, Bhiwani

CC to:

1. SE/TS Circle, HVPNL, Hisar for kind information, please.

Re: Mock testing of SPS of 500kV HVDC Mundra-Mahindergarh link

SLDC, DELHI <sldcmintoroad@gmail.com>

Wed 8/28/2024 3:48 PM

To:NRLDC SO 2 <nrldcso2@grid-india.in>;

Cc:sinha.surendra <sinha.surendra@yahoo.com>; dgmsodelhisldc@gmail.com <dgmsodelhisldc@gmail.com>; Manager (T) SO <managersogd@gmail.com>;

In reference to trailing mail, the maximum load on 220kV feeders covered under SPS of 500kV HVDC Mundra-Mahindergarh link are as under:

S. No.	Name of the Element	MW
1	220 KV BAMNAULI-PAPANKALAN-I CKT.-I	120
2	220 KV BAMNAULI-PAPANKALAN-I CKT.-II	120
3	220 KV MANDAULA- GOPALPUR CKT.-I	212
4	220 KV MANDAULA- GOPALPUR CKT.-II	214

Regards,
SLDC Delhi

On Tue, Aug 27, 2024 at 10:07 AM NRLDC SO 2 <nrldcso2@grid-india.in> wrote:

> Sir,
>
> In reference of the trailing mail, it is to be mentioned that inputs have received from Rajasthan only. Members agreed to shared the details by 22nd August 2024, however no further details received from Haryana, Punjab, Delhi, UP & ADANI.
>
> Kindly share the details as discussed during the meeting held on 20th August 2024, so that further remedial actions can be initiated on the basis of those details.
>
> सादर धन्यवाद/ Thanks & Regards
> प्रणाली संचालन-II/ System Operation-II
> उ॰क्षे॰भा॰प्रे॰के॰/ NRLDC
> ग्रिड कंट्रोलर ऑफ इंडिया लिमिटेड/ Grid Controller of India Limited
> Formerly known as
> पोसोको / POSOCO

SPS of 500kV HVDC Mundra-Mahindergarh

SPS cases:

Case-1: Blocking of (one pole or Bipole) AND Reduction in power injection at Mahindergarh by more than 600 MW and up to 900 MW

Action: *Shed 300 MW (Haryana: 150 MW, Punjab: 50 MW, Rajasthan: 50 MW, UP: 50 MW) identified load in Northern Region within 500 ms (including all signal propagation / breaker opening time delay).*

Case-2: Blocking of (one pole or Bipole) AND Reduction in power injection at Mahindergarh by more than 900 MW and up to 1250 MW.

Action: *Shed 600 MW (Haryana: 300 MW, Punjab: 100 MW, Rajasthan: 100 MW, UP: 100 MW) identified load in Northern Region within 500 ms (including all signal propagation / breaker opening time delay).*

Case-3: Blocking of (one pole or Bipole) AND Reduction in power injection at Mahindergarh by more than 1250 MW and up to 2000 MW

Action: *Shed 1400 MW (Haryana: 600 MW, Punjab: 200MW, Rajasthan: 200 MW, UP: 200 MW, Delhi: 200 MW) identified load in Northern Region within 500 ms (including all signal propagation / breaker opening time delay).*

Case-4: Blocking of (one pole or Bipole) AND Reduction in power injection at Mahindergarh by more than 2000 MW

Action: *Shed 1900 MW (Haryana: 700 MW, Punjab:300MW, Rajasthan: 300 MW, UP: 300 MW, Delhi: 300 MW) identified load in Northern Region within 500 ms (including all signal propagation / breaker opening time delay).*

Load Groups: In approved SPS

S. No.	State/ L.S. quantum	Name of feeding substation	Feeder/ line/ equipment	MW	Case-1 300MW	Case-2 600MW	Case-3 1400MW	Case-4 2000MW
1	Rajasthan Case-1: 50MW Case-2: 100MW Case-3: 200MW Case-4: 300MW	220/132kV Alwar	132kV Mandawar	25	1	1	1	1
2			132kV Bansoor	45		1	1	1
3			132kV Ramgarh	14		1	1	1
4			132kV Malakheda	10			1	1
5			132kV Alwar(local load)	50				1
6		220/132kV Ratangarh	132kV Sardar Shahar	26	1	1	1	1
7		220/132kV Bhilwara	132kV Gangapur	20			1	1
8			132kV Danta	15			1	1
9			132kV Devgarh	10			1	1
10			132kV Kareda	10			1	1
11		220/132kV Merta	132kV Kuchera	35			1	1
12			132kV Lamaba	25				1
13			132kV Gotan	25				1
14	Haryana Case-1: 150MW Case-2: 300MW Case-3: 600MW Case-4: 700MW	400/220kV Bhiwani_BBMB	220kV Bapora D/C	65+65			1	1
15		400/220kV Hissar_PG	220kV Isharwal D/C	40+35			1	1
16		400/220kV Dhanonda through 220kV Lula Ahir	220kV Rewari D/C (3x100MVA)	95+90	1	1	1	1
17		400/220kV Bahadurgarh	220kV Nuna Majra D/C (3x100MVA)	80+80		1	1	1
18		132kV Charkhi Dadri	132kV Kalanaur	50			1	1

Existing feeders at 220/132kV Alwar (as per SCADA)
132kV Telco circle
132kV KG Bas
132kV Local MACL
132kV Ramgarh
132kV ALMIA
132kV Pinan
132kV Malakhera

Load Groups: In approved SPS

19	Punjab Case-1: 50MW Case-2: 100MW Case-3: 200MW Case-4: 300MW	220/66kV Gobindgarh	66kV Talwara-1	35			1	1
20			66kV Talwara-2	35				1
21		220/66kV Laltokalan	66kV Gill Road-1	50		1	1	1
22			66kV Gill Road-2	50	1	1	1	1
23			66kV Dugri	65			1	1
24		220/66kV Malerkotla	66kV Malerkotla	35				1
25			66kV Lasoi Amargarh	45				1
26			66kV Malaud$	20				
27			66kV Siarh$	20				
28	Uttar Pradesh Case-1: 50MW Case-2: 100MW Case-3: 200MW Case-4: 300MW	Shamli	Thana Bhagwan-1	25	1	1	1	
29			Thana Bhagwan-2	25	1	1	1	
30			Jasala-1	25		1	1	
31			Jasala-2	25		1	1	
32			Kharad-1	50			1	
33			Kharad-2	50			1	
34			Baraut-1	150				1
35			Baraut-2	150				1
36	Delhi Case-1: 50MW Case-2: 100MW Case-3: 200MW Case-4: 300MW	400/220kV Bamnauli	Papankalan1 ckt-1	100			1	1
37			Papankalan1 ckt-2	100			1	1
38		400/220kV Mandola	Gopalpur-1	150			1	1
39			Gopalpur-2	150			1	1

$: New feeder added in Punjab for peak demand period

132kV Feeders at 220kV Shamli	**132kV Feeders at 400kV Shamli (alternate option)**
132kV Lalukheri 132kV Jhinjhana 132kV Kairana-1 & II 132kV Jasala	132kV Budhana 132kV Kharad 132kV Jalalpur 132kV Thanabhawan 132kV Kaniyan
Max. load: 251MW & Avg. Load: 164MW	Max. load: 310MW & Avg. Load: 202MW

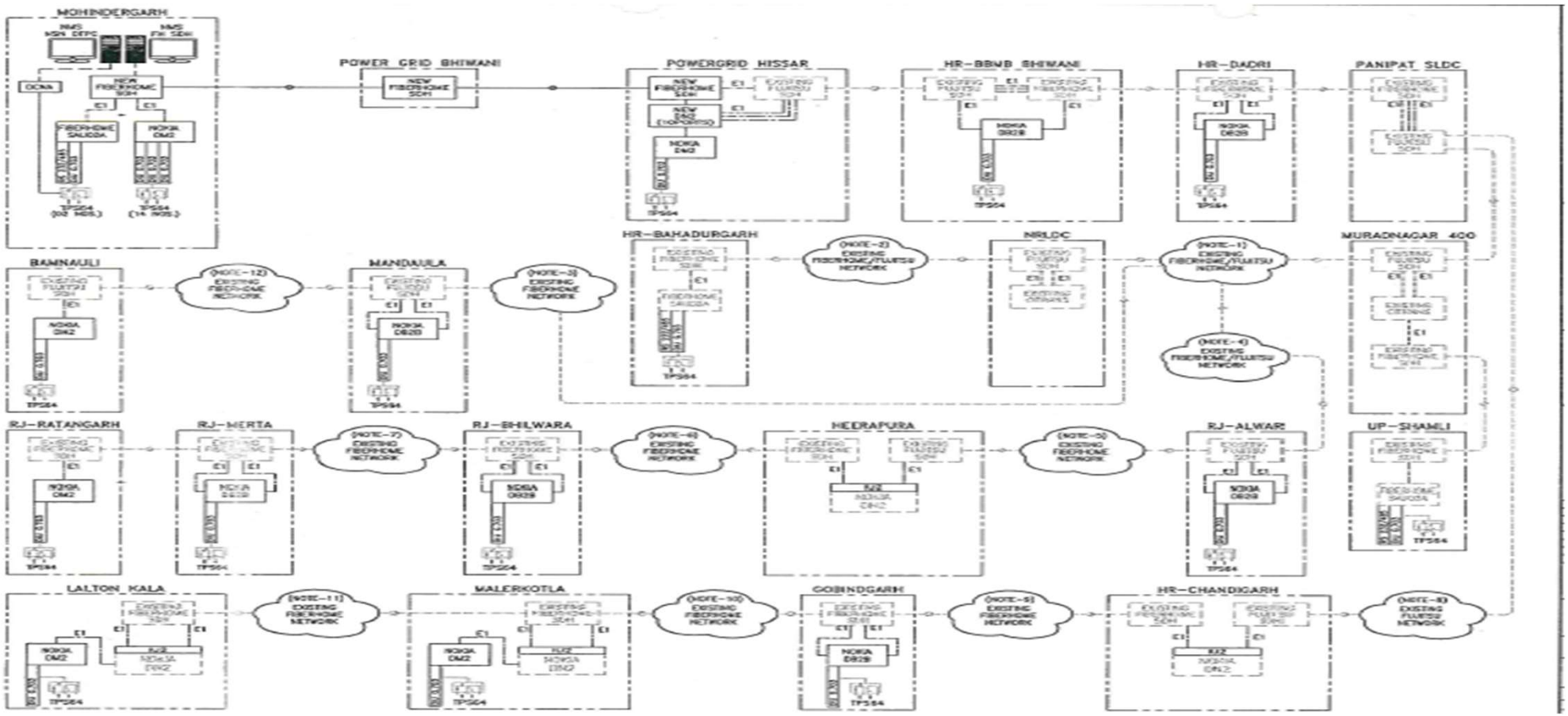
220kV Papankalan has tow (02) source:

1. 220kV Bamnauli-Papankalan D/C
2. 220kV Dwarka-Papankalan D/C

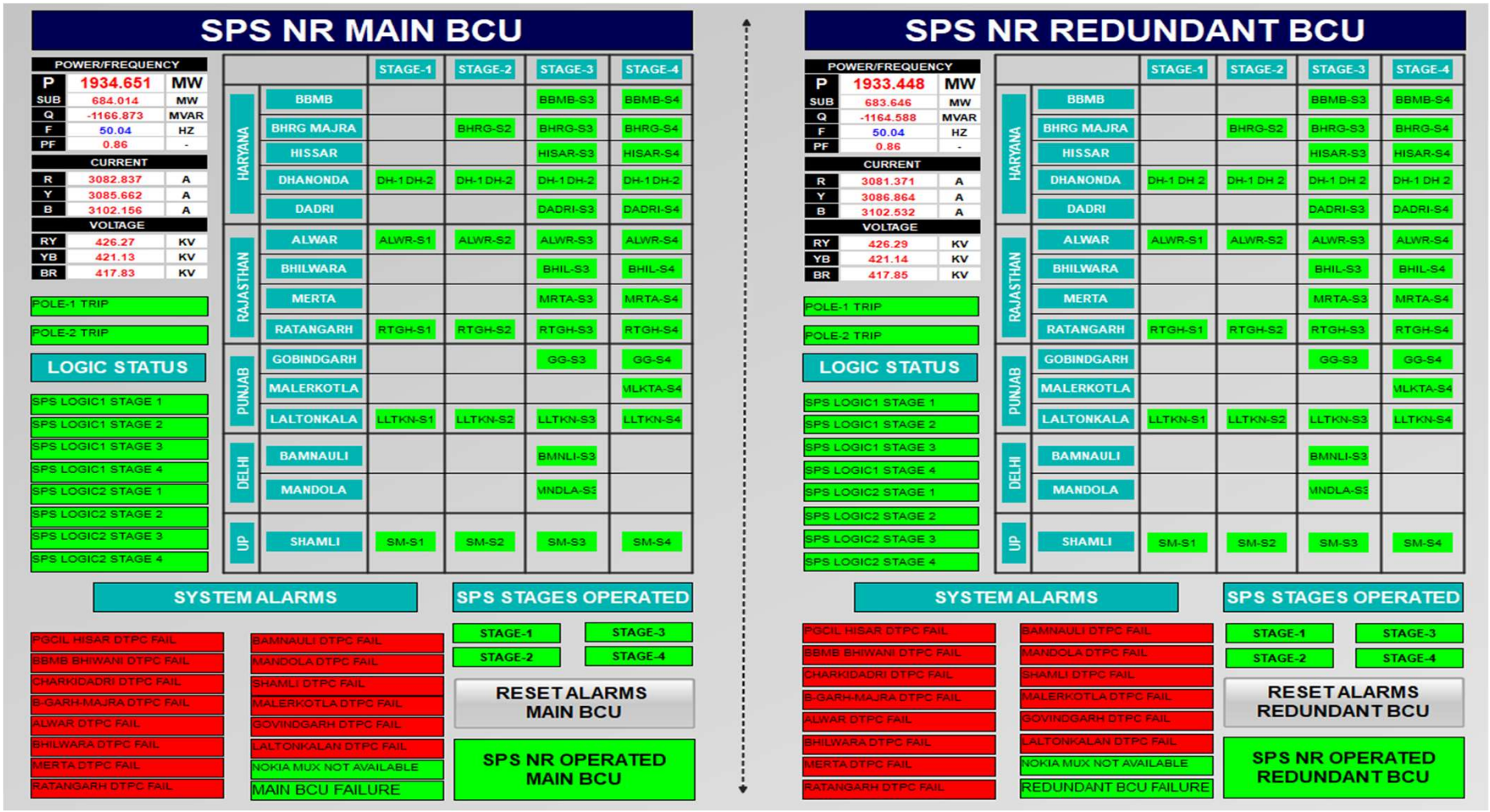
❖ All four feeders may be incorporated in SPS to ensure load relief in any scenario.

Communication path:

There are two links for SPS signal communication to load centers. One is **directly to 220kV Dhanonda(HR)** and communication to rest of load centers is through Bhiwani & Hissar S/s of POWERGRID.

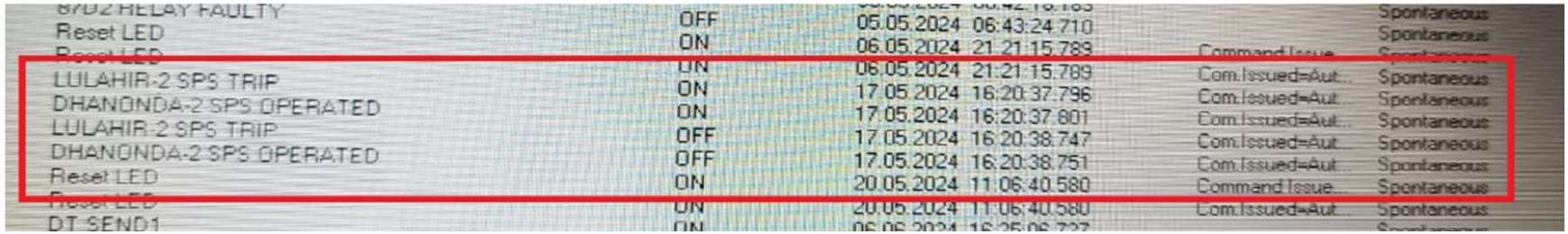


SPS SCADA display at Mahindergarh (5-08-2024)



Bipole tripping on 17th May 2024 (power order:1500MW)

SPS link to Dhanonda operated. SPS operation at other stations was not occurred.



87D2 RELAY FAULTY				Spontaneous
Reset LED	OFF	05.05.2024 06:43:24.710		Spontaneous
Reset LED	ON	06.05.2024 21:21:15.789	Command Issue...	Spontaneous
LULAHIR-2 SPS TRIP	ON	06.05.2024 21:21:15.789	Com.Issued=Aut...	Spontaneous
DHANONDA-2 SPS OPERATED	ON	17.05.2024 16:20:37.796	Com.Issued=Aut...	Spontaneous
LULAHIR-2 SPS TRIP	ON	17.05.2024 16:20:37.801	Com.Issued=Aut...	Spontaneous
DHANONDA-2 SPS OPERATED	OFF	17.05.2024 16:20:38.747	Com.Issued=Aut...	Spontaneous
Reset LED	OFF	17.05.2024 16:20:38.751	Com.Issued=Aut...	Spontaneous
Reset LED	ON	20.05.2024 11:06:40.580	Command Issue...	Spontaneous
DT SEND1	ON	20.05.2024 11:06:40.580	Com.Issued=Aut...	Spontaneous