



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

विषय: प्रचालन समन्वय उप-समिति की 237^{वीं} बैठक की कार्यसूची ।

Subject: Agenda of the 237th OCC meeting.

प्रचालन समन्वय उप-समिति की 237^{वीं} बैठक का आयोजन वीडियो कॉन्फ्रेंसिंग के माध्यम से दिनांक 17.11.2025 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 द्वारा प्रदान किया जाएगा।

कृपया बैठक में उपस्थित होने की सुविधा प्रदान करें।

The 237th meeting of the Operation Co-ordination sub-Committee will be conducted through Video Conferencing on 17.11.2025 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.

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

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

List of addressee (via mail)

OCC Members for FY 2025-26			
S. No	OCC Member	Category	E-mail
1	NLDC	National Load Despatch Centre	nomination awaited (susha@grid-india.in)
2	NRLDC	Northern Regional Load Despatch Centre	somara.lakra@grid-india.in
3	CTUIL	Central Transmission Utility	sandeepk@powergrid.in
4	PGCIL	Central Government owned Transmission Company	rtamc.nr1@powergrid.in rtamcjammu@powergrid.in cpcc.nr3@powergrid.in
5	NTPC	Central Generating Company	RAMESHSINGH@NTPC.CO.IN
6	BBMB		powerc@bbmb.nic.in
7	THDC		bhagatsingh@thdc.co.in
8	SJVN		sjvn.cso@sjvn.nic.in
9	NHPC		surendramishra@nhpc.nic.in
10	NPCIL		df@npcil.co.in
11	Delhi SLDC	State Load Despatch Centre	gmsldc@delhisldc.org
12	Haryana SLDC		cesocomml@hvpn.org.in
13	Rajasthan SLDC		ce.ld@rvpn.co.in
14	Uttar Pradesh SLDC		ceps@upslc.org
15	Uttarakhand SLDC		se_sldc@ptcul.org
16	Punjab SLDC		ce-sldc@pstcl.org
17	Himachal Pradesh SLDC		cehpsldc@gmail.com
18	DTL	State Transmission Utility	bl.gujar@dtl.gov.in
19	HVPNL		cetspk1@hvpn.org.in
20	RRVNL		ce.ppm@rvpn.co.in
21	UPPTCL		smart.saxena@gmail.com
22	PTCUL		ce_oandmk@ptcul.org
23	PSTCL		ce-tl@pstcl.org
24	HPPTCL		gmprojects.tcl@hpmail.in
25	IPGCL	State Generating Company	ncsharma@ipgcl-ppcl.nic.in
26	HPGCL		seom2.rgtpp@hpgcl.org.in
27	RRVUNL		ce.ppmcit@rrvun.com
28	UPRVUNL		cgm.to@uprvunl.org
29	UJVNL		gm_engg_ujvn@yahoo.co.in
30	HPPCL		gm_generation@hppcl.in
31	PSPCL	State Generating Company & State owned Distribution Company	ce-ppr@pspcl.in
32	DHBN	State owned Distribution Company (alphabetical rotational basis/nominated by state govt.)	nomination awaited (md@dhbn.org.in)
33	Ajmer Vidyut Vitran Nigam Ltd.		nomination awaited (md.avvnl@rajasthan.gov.in)
34	Purvanchal Vidyut Vitaran Nigam Ltd.		nomination awaited (mdpurvanchalvnl@gmail.com)

35	UPCL		cgmupcl@yahoo.com
36	HPSEB		cesysophpsebl@gmail.com
37	Prayagraj Power Generation Co. Ltd.	IPP having more than 1000 MW installed capacity	sanjay.bhargava@tatapower.com
38	Aravali Power Company Pvt. Ltd		amit.hooda01@apcpl.co.in
39	Apraave Energy Ltd.,		niraj.gupta@apraava.com
40	Talwandi Sabo Power Ltd.		ravinder.thakur@vedanta.co.in
41	Nabha Power Limited		Durvesh.Yadav@larsentoubro.com
42	MEIL Anpara Energy Limited		arun.tholia@meilanparapower.com
43	Rosa Power Supply Company Ltd		Suvendu.Dey@relianceada.com
44	Lalitpur Power Generation Company Ltd		avinashkumar.ltp@lpgcl.com
45	MEJA Urja Nigam Ltd.		rsjuneja@ntpc.co.in
46	Adani Power Rajasthan Limited		manoj.taunk@adani.com
47	JSW Energy Ltd. (KWHEP)		roshan.zipta@jsw.in
48	Transition Cleantech Services Private Limited	IPP having less than 1000 MW installed capacity (alphabetical rotational basis)	nomination awaited (kswamidoss@evrenenergy.com)
49	UT of J&K	From each of the Union Territories in the region, a representative nominated by the administration of the Union Territory concerned out of the entities engaged in generation/ transmission/ distribution of electricity in the Union Territory.	sojpdd@gmail.com
50	UT of Ladakh		cepdldakh@gmail.com
51	UT of Chandigarh		seelo-chd@nic.in
52	Tata Power Delhi Distribution Limited	Private Distribution Company in region (alphabetical rotational basis)	nomination awaited (sandeep.k@tatapower-ddl.com)
53	Gurgaon Palwal Transmission Limited	Private transmission licensee (nominated by central govt.)	(samriddhi.gogoi@indigrid.com)
54	PTC India Limited	Electricity Trader (nominated by central govt.)	nomination awaited (bibhuti.prakash@ptcindia.com)

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खण्ड-क: उ.क्षे.वि.स.**Part-A: NRPC****A.1. Confirmation of Minutes**

The 236th OCC meeting was held on 16.10.2025. Minutes of the meeting were issued vide letter dt. 08.11.2025. No comments received till date.

Decision required from Forum:

The Forum may approve the minutes of the 236th OCC meeting.

A.2. Status of action taken on decisions of the 236th OCC meeting of NRPC

A.2.1. Status of action taken on decisions of 236th OCC meeting is attached as **Annexure- A.I.**

A.3. Review of Grid operations**A.3.1. Power Supply Position (Provisional) for October 2025**

Anticipated Power Supply Position v/s Actual Power Supply Position (Provisional) of Northern Region during the month of October-2025 is as under:

State / UT	Req. / Avl.	Energy (MU)			Peak (MW)		
		Anticipate d	Actua l	% variatio n	Anticipate d	Actual	% variatio n
CHANDIGAR H	(Avl)	130	132	1.2%	350	323	-7.7%
	(Req)	145	132	-9.2%	322	323	0.3%
DELHI	(Avl)	3830	2832	-26.1%	6200	5956	-3.9%
	(Req)	3250	2832	-12.8%	6200	5956	-3.9%
HARYANA	(Avl)	7943	5454	-31.3%	10677	11372	6.5%
	(Req)	6446	5455	-15.4%	11587	11372	-1.9%
HIMACHAL PRADESH	(Avl)	1117	988	-11.6%	1939	2003	3.3%
	(Req)	1149	992	-13.7%	2024	2003	-1.0%
J&K and LADAKH	(Avl)	1230	1586	28.9%	2490	2759	10.8%
	(Req)	1947	1586	-18.6%	3470	2759	-20.5%
PUNJAB	(Avl)	6170	5403	-12.4%	12620	12989	2.9%
	(Req)	6210	5403	-13.0%	13618	12989	-4.6%
RAJASTHAN	(Avl)	8840	8024	-9.2%	19060	14165	-25.7%
	(Req)	10075	8024	-20.4%	16589	14165	-14.6%
UTTAR PRADESH	(Avl)	14415	12542	-13.0%	27200	26269	-3.4%
	(Req)	14260	1255	-12.0%	27200	26269	-3.4%

			4				
UTTARAKHAND	(Avl)	1333	1218	-8.6%	2370	2466	4.1%
	(Req)	1348	1223	-9.3%	2400	2466	2.8%
NORTHERN REGION	(Avl)	45008	38178	-15.2%	80700	74200	-8.1%
	(Req)	44830	38200	-14.8%	75900	74200	-2.2%

As per above, negative/significant variation ($\geq 5\%$) in Actual Power Supply Position (Provisional) vis-à-vis Anticipated figures is observed for the month of October-2025 in terms of Energy Requirement for Chandigarh, Delhi, Haryana, HP, UTs of J&K and Ladakh, Punjab, Rajasthan, UP & Uttarakhand and in terms of Peak Demand similar variation is noted for Delhi, Haryana, HP, UTs of J&K and Ladakh, Punjab, Rajasthan, UP. These states/UTs are requested to submit the reasons for such variations so that this can be deliberated in the meeting.

All SLDCs are requested to furnish provisional and revised power supply position in prescribed formats on the 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 the proposed maintenance programme for Generating Units for the month of December 2025 is scheduled on 13 November 2025 via Video Conferencing.

A.4.2. Outage Programme for Transmission Elements

The meeting on the proposed outage programme of Transmission elements for the month of December 2025 is scheduled on 13 November 2025 via Video conferencing.

A.5. Planning of Grid Operation

A.5.1. Anticipated Power Supply Position in Northern Region for December 2025

The Anticipated Power Supply Position in the Northern Region for December 2025 is as under:

State / UT	Availability / Requirement	Revised Energy (MU)	Revised Peak (MW)	Date of revision
CHANDIGARH	Availability	120	350	No Revision submitted
	Requirement	127	325	

State / UT	Availability / Requirement	Revised Energy (MU)	Revised Peak (MW)	Date of revision
	Surplus / Shortfall	-7	25	
	% Surplus / Shortfall	-5.5%	7.7%	
DELHI	Availability	3030	6810	No Revision submitted
	Requirement	2306	6026	
	Surplus / Shortfall	724	784	
	% Surplus / Shortfall	31.4%	13.0%	
HARYANA	Availability	5240	10730	No Revision submitted
	Requirement	4652	10110	
	Surplus / Shortfall	588	620	
	% Surplus / Shortfall	12.6%	6.1%	
HIMACHAL PRADESH	Availability	760	1720	No Revision submitted
	Requirement	1222	2363	
	Surplus / Shortfall	-462	-643	
	% Surplus / Shortfall	-37.8%	-27.2%	
J&K LADAKH and	Availability	1040	2400	No Revision submitted
	Requirement	2140	3473	
	Surplus / Shortfall	-1100	-1073	
	% Surplus / Shortfall	-51.4%	-30.9%	
PUNJAB	Availability	4790	11240	No Revision submitted
	Requirement	4753	9538	
	Surplus / Shortfall	37	1702	
	% Surplus / Shortfall	0.8%	17.8%	
RAJASTHAN	Availability	9120	19840	No Revision submitted
	Requirement	11591	20966	
	Surplus / Shortfall	-2471	-1126	
	% Surplus / Shortfall	-21.3%	-5.4%	
UTTAR PRADESH	Availability	10695	21000	06-Nov-2025
	Requirement	10540	21000	
	Surplus / Shortfall	155	0	
	% Surplus / Shortfall	1.5%	0.0%	
UTTARAKHAND	Availability	1318	2500	10-Nov-2025
	Requirement	1349	2550	

State / UT	Availability / Requirement	Revised Energy (MU)	Revised Peak (MW)	Date of revision
	Surplus / Shortfall	-31	-50	
	% Surplus / Shortfall	-2.3%	-2.0%	
NORTHERN REGION	Availability	36113	76200	
	Requirement	38680	72100	
	Surplus / Shortfall	-2567	4100	
	% Surplus / Shortfall	-6.6%	5.7%	

SLDCs are requested to update the anticipated power supply position of their respective state / UT for the month of December 2025 and submit the measures proposed to be taken to bridge the gap between demand & availability, as well as 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.II**.

All utilities are requested to update the status.

A.7. NR Islanding scheme

The latest status of the Islanding Scheme of NR is attached as **Annexure-A.III**.

Members may kindly deliberate.

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

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

A.8.2 Accordingly, the coal stock position of generating stations in the northern region during current month (till 10th November 2025) is as follows:

Station	Capacity (MW)	PLF % (prev. months)	Normative Stock Req'd. (Days)	Actual Stock (Days)
ANPARA C TPS	1200	0.55	14	7.8
ANPARA TPS	2630	0.64	14	10.4
BARKHERA TPS	90	0.00	22	36.1
DADRI (NCTPP)	1820	0.43	22	17.9
GH TPS (LEH.MOH.)	920	0.64	22	21.4
GOINDWAL SAHIB TPP	540	0.46	22	23.4

Station	Capacity (MW)	PLF % (prev. months)	Normative Stock Req'd. (Days)	Actual Stock (Days)
HARDUAGANJ TPS	1265	0.22	22	23.5
INDIRA GANDHI STPP	1500	0.42	22	22.2
KAWAI TPS	1320	0.83	22	22.0
KHAMBARKHERA TPS	90	0.00	22	42.5
KOTA TPS	1240	0.70	22	25.5
KUNDARKI TPS	90	0.00	22	36.2
LALITPUR TPS	1980	0.67	22	16.2
MAHATMA GANDHI TPS	1320	0.33	22	27.0
MAQSOODPUR TPS	90	0.00	22	42.4
MEJA STPP	1320	0.48	22	16.9
OBRA TPS	1094	0.46	22	8.4
PANIPAT TPS	710	0.28	22	51.0
PARICHHA TPS	1140	0.15	22	17.8
PRAYAGRAJ TPP	1980	0.50	22	19.8
RAJIV GANDHI TPS	1200	0.00	22	39.0
RAJPURA TPP	1400	0.35	22	19.3
RIHAND STPS	3000	0.69	14	21.1
ROPAR TPS	840	0.52	22	18.7
ROSA TPP Ph-I	1200	0.54	22	14.8
SINGRAULI STPS	2000	0.71	14	15.8
SURATGARH TPS	1500	0.45	22	17.5
TALWANDI SABO TPP	1980	0.41	22	15.5
TANDA TPS	1760	0.48	22	21.1
UNCHAHAHAR TPS	1550	0.38	22	16.1
UTRAULA TPS	90	0.00	22	40.9
YAMUNA NAGAR TPS	600	0.59	22	30.0
CHHABRA-I PH-1 TPP	500	0.72	22	38.4
KALISINDH TPS	1200	0.63	22	25.1
SURATGARH STPS	1320	0.55	22	19.2
CHHABRA-I PH-2 TPP	500	0.38	22	38.1
CHHABRA-II TPP	1320	0.34	22	37.8
JAWAHARPUR STPP	660	0.00	22	26.1

A.9. Periodic testing of generators and FACTS/HVDC Devices (Agenda by NRPC Sectt.)

- A.9.1. Regulation 40 (1) of CERC (IEGC) Regulations, 2023 stipulates that there shall be periodic tests, as required under clause (3) of this Regulation, carried out on power system elements for ascertaining the correctness of mathematical models used for simulation studies, as well as ensuring desired performance during an event in the system.
- A.9.2. The tests shall be performed once every five (5) years or whenever major retrofitting is done. If any adverse performance is observed during any grid event, then the tests shall be carried out even earlier, if advised by SLDC/RLDC/NLDC/RPC, as the case may be.
- A.9.3. Further, Regulation 40(1)(b) stipulate that “All equipment owners shall submit a testing plan for the next year to the concerned RPC by 31st October to ensure proper coordination during testing as per the schedule. In case of any change in the schedule, the owners shall inform the concerned RPC in advance.”

Extract of IEGC 2023 clause 40,

“40. PERIODIC TESTING

(1) There shall be periodic tests, as required under clause (3) of this Regulation, carried out on power system elements for ascertaining the correctness of mathematical models used for simulation studies as well as ensuring desired performance during an event in the system.

(2) General provisions

(a) The owner of the power system element shall be responsible for carrying out tests as specified in these regulations and for submitting reports to NLDC, RLDCs, CEA and CTU for all elements and to STUs and SLDCs for intra-State elements.

(b) All equipment owners shall submit a testing plan for the next year to the concerned RPC by 31st October to ensure proper coordination during testing as per the schedule. In case of any change in the schedule, the owners shall inform the concerned RPC in advance.

(c) The tests shall be performed once every five (5) years or whenever major retrofitting is done. If any adverse performance is observed during any grid event, then the tests shall be carried out even earlier, if so advised by SLDC, RLDC, NLDC, or RPC, as the case may be.

(d) The owners of the power system elements shall implement the recommendations, if any, suggested in the test reports in consultation with NLDC, RLDC, CEA, RPC and CTU.

(3) Testing requirements

The following tests shall be carried out on the respective power system elements:

TABLE 9 : TESTS REQUIRED FOR POWER SYSTEM ELEMENTS

Power System Elements	Tests	Applicability
Synchronous Generator	(1) Real and Reactive Power Capability assessment. (2) Assessment of Reactive Power Control Capability as per CEA Technical Standards for Connectivity (3) Model Validation and verification test for the complete Generator and Excitation System model including PSS. (4) Model Validation and verification of Turbine/Governor and Load Control or Active Power/ Frequency Control Functions. (5) Testing of Governor performance and Automatic Generation Control.	Individual Unit of rating 100MW and above for Coal/lignite, 50MW and above gas turbine and 25 MW and above for Hydro.
Non synchronous Generator (Solar/Wind)	(1) Real and Reactive Power Capability for Generator (2) Power Plant Controller Function Test (3) Frequency Response Test (4) Active Power Set Point change test. (5) Reactive Power (Voltage / Power Factor / Q) Set Point change test	Applicable as per CEA Technical Standards for Connectivity.
HVDC/FACTS Devices	(1) Reactive Power Controller (RPC) Capability for HVDC/FACTS (2) Filter bank adequacy assessment based on present grid condition, in consultation with NLDC. (3) Validation of response by FACTS devices as per settings.	To all ISTS HVDC as well as Intra-State HVDC/FACTS, as applicable

- A.9.4. In the 73rd NRPC meeting, the NRPC forum asked all Generators and HVDC/FACT owners to furnish the Testing schedule for 2024-25 and 2025-26 to NRPC/NRLDC at the earliest. However, the same is still pending.
- A.9.5. In the 236th OCC meeting, MS NRPC asked Generators and HVDC/FACT owners to furnish a Testing schedule for 2025-26 in the format attached at **Annexure-A.IV.a** to seo-nrpc@nic.in.
- A.9.6. In view of the above, Generators and HVDC/FACT owners are requested to furnish Testing schedule for 2025-26 in the format attached as **Annexure-A.IV.a** to seo-nrpc@nic.in.
- A.9.7. List of generating stations from which information is received is attached as **Annexure-A.IV.b**

Utilities to update status.

- A.10. Implementation of the AUFLS scheme in accordance with the report of the Task Force on Automatic under Frequency Load Shedding (AUFLS) (Agenda by NRPC Secretariat)**
- A.10.1. In line with the report of the Task Force on Automatic under Frequency Load Shedding (AUFLS) and df/dt scheme, NPC Secretariat to communicate the region-wise relief quantum (based on the Regional Peak Demand Met during the previous year) by 31st of May to RPCs for implementation in the next Financial Year (FY).

A.10.2. NPC Secretariat has communicated to RPCs that they have computed the quantum of load shedding in different stages of AUFLS based on the Peak Demand Met of the Region in the financial year (2024-25). The region-wise Peak Demand Met is considered by NPC Sectt. is as follows:

Region	NR	SR	WR	ER	NER
Peak Demand Met (MW)	80,548	68,094	72,556	29,299	3,678

A.10.3. The quantum of load shedding in different stages of AUFLS region-wise is as follows:

Sr. No.	Stage	Frequency (Hz)	Demand Disconnection (%)	Quantum of Load shed in MW					
AUFLS Set Points and Percentage Quantum of Relief				NR	SR	WR	ER	NER	All India Load shed
1	Stage 1	49.4 Hz	5.00%	3801.7	3213.9	3424.5	1382.8	173.5	11996.55
2	Stage 2	49.2 Hz	6.00%	4562.04	3856.7	4109.4	1659.4	208.3	14395.86
3	Stage 3	49.0 Hz	7.00%	5322.4	4499.5	4794.3	1935.9	243.03	16795.17
4	Stage 4	48.8 Hz	7.00%	5322.4	4499.5	4794.3	1935.9	243.03	16795.17
Total (in MW)				19008.5	16069.5	17122.4	6914.3	867.9	59982.7

A.10.4. After the receipt of the allocated load shedding quantum of the Region from NPC, AUFLS relief quantum should be distributed among the State/UT in the region by the RPCs in consultation with the stakeholders.

A.10.5. NRPC Sectt. has computed each State/UT Stage-wise AUFLS quantum for NR based upon the task force report and quantum of load shedding in different stages of AUFLS region-wise finalized by NPC. The details of which are mentioned in the table below:-

State/UT	Stage-1 49.4 Hz (5%)	Stage-2 49.2 Hz (6%)	Stage-3 49.0 Hz (7%)	Stage-4 48.8 Hz (7%)	Total	Currently implemented relief as per 231st OCC
	Stage-1 Relief	Stage-2 Relief	Stage-3 Relief	Stage-4 Relief		
Chandigarh	17	21	24	24	86	Nil
Delhi	334	400	467	467	1668	1595
Haryana	586	704	821	821	2931	3177
Himachal Pradesh	101	122	142	142	507	1076
UT J&K & Ladhak	140	168	196	196	700	777
Punjab	645	773	902	902	3223	3012

Rajasthan	853	1024	1194	1194	4266	4066
Uttar Pradesh	1297	1557	1816	1816	6486	8537
Uttarakhand	127	152	177	177	633	865
Total	4100	4920	5740	5740	20499	23105

A.10.6. States/UT shall identify the load relief for each stage, considering the Quantum of relief and their demand contribution, considering the intra-day, seasonality etc. 10% additional relief would be finalised considering the demand growth of the year, planned and forced outages, UFR and breaker issues etc. SLDC would communicate feeder-wise, Stage-wise details etc. to RPC/RLDC.

A.10.7. In the 234th OCC meeting, it was apprised that states like Chandigarh, Delhi, Punjab (In Stage 1&2), Rajasthan (In Stage 1& 2) need to plan load relief in comparison to actual load relief required (attached as **Annexure-A.V**). Further, as per the recommendation of the task force, the planned relief should be 10% more than the actual estimated relief.

A.10.8. In the 236th OCC meeting, the forum asked states to plan load relief as per the recommendations of the Task Force.

Members may kindly deliberate.

A.11. Monthly Review of LGBR for the next 11 months (Availability & Requirement) (Agenda by NRPC Secretariat)

A.11.1. In 236th OCC meeting matter regarding monthly Review of LGBR for the next 11 months (Availability & Requirement) was discussed and it was agreed that NR States/UTs shall submit the data for the monthly Review of LGBR for the next 11 months including the break-up of sources through which demand is proposed to be met, such as ISGS, internal generation, bilateral arrangements, DAM/RTM transactions, or other contracts, shall also be provided.

A.11.2. Accordingly, NR States/UTs are requested to submit the data for the monthly Review of LGBR for the next 11 months (Dec'25 to Oct'26) as per the format attached at **Annexure-A.VI.a** and **Annexure-A.VI.b**.

Members may kindly deliberate.

A.12. Interim charging (rated voltage) of 765 kV D/C Bhadla III Ramgarh line and Ramgarh SS (PS) (Agenda by Powergrid NR-1)

A.12.1. Powergrid NR-1 has submitted that the transmission system for evacuation of power from Ramgarh PS & Bhadla-III PS is under implementation as part of the transmission system for evacuation of power from REZ in Rajasthan (20GW) under Part B1 & Part C1 package Phase-III.

A.12.2. As part of the Ph-III, Part C1 scheme, 765 kV D/C Bhadla III-Ramgarh line and Ramgarh PS substation construction is completed and Anti-theft charges as given per the arrangement given below:

- o Antitheft charging of 80 km of 765 kV D/C Bhadla III-Ramgarh line with tapping from RRVPNL's 132 kV Bajju-PSP 1 line (58 km) at 132 kV was carried out on 26.09.2025. The entire 186 km route length couldn't be charged due to the limitation of 50 kA bus charging, breaking the current capacity of the circuit Breaker provided at both ends of the 132 kV line.

A.12.3. As part of the Ph-III, Part B1 scheme, 765kV Bhadla-III PS – Sikar-II D/c line and Bhadla-III PS are being implemented with a commissioning schedule of Dec'25 (Ant. SCOD)

A.12.4. Ramgarh PS is to be charged from Bhadla III PS with the interconnecting 765 kV D/C Bhadla III-Ramgarh line between these two PS, and Bhadla III is to be charged from Sikar II PS with the interconnecting 765 kV D/C Bhadla III-Sikar II line between these two PS.

A.11.3. As per the latest Status provided by RE applicants, RE generation is expected to be commissioned from Feb'26 onwards at Bhadla-III PS and Dec'25 onwards at Ramgarh PS.

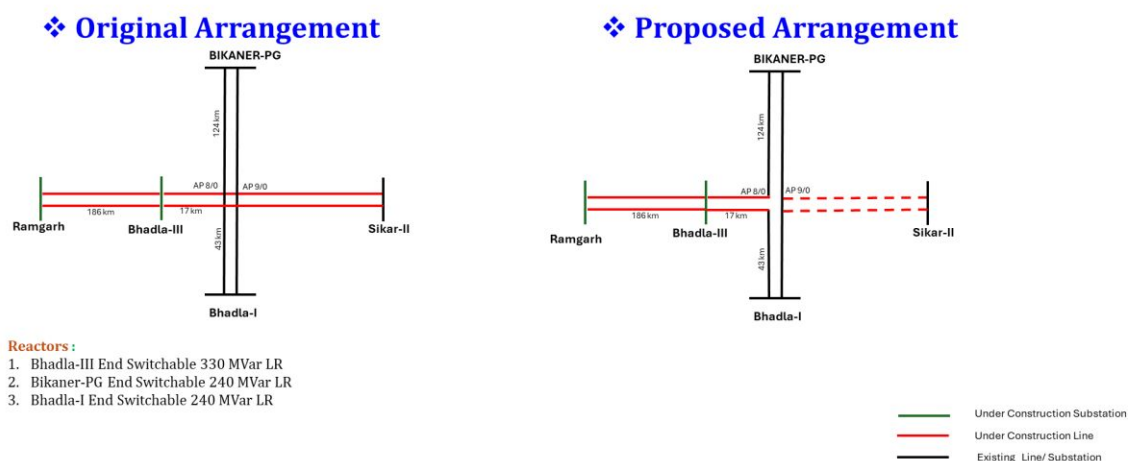
A.11.4. Considering the anticipated delay in commissioning of 765 kV D/C Bhadla III-Sikar II line and Bhadla III PS, it is thought prudent to make an interim arrangement to charge Ramgarh PS and 765 kV D/C Bhadla III-Ramgarh line at rated 765 kV voltage in order to commission these two elements.

A.11.5. POWERGRID's 765 kV D/C Bhadla- Bikaner line (Under O&M) is being over-crossed by under construction 765 kV D/C Bhadla III-Sikar II line at approximately 17.578 km from Bhadla III PS in between AP8/0 and AP9/0.

A.11.6. As part of proposed interim arrangement, one ckt of 765kV Bhadla-III PS -Sikar -II D/c line is tapped to one ckt of 765kV Bhadla (PG) – Bikaner (PG) line so as to form 765kV Bhadla (PG)-Bhadla-III-Bikaner (PG) line (one ckt) and 765kv Bhadla (PG) – Bikaner (PG) line (other ckt).

A.11.7. Considering the above, studies have been carried out by CTU for the immediate evacuation of power from Ramgarh PS/Bhadla-III PS through an interim arrangement as proposed with different case scenarios. (Report is attached as **Annexure-A.VII**). A schematic diagram of the proposed interim arrangement is as under:

Interim arrangement for charging of 765kV Bhadla-III & Ramgarh Substation



A.11.8. Considering the expected RE generation and delay in commissioning of 765 kV D/C Bhadla III-Sikar II line and Bhadla III PS, Powergrid has proposed to make an interim arrangement to charge Ramgarh PS and 765 kV D/C Bhadla III-Ramgarh line to facilitate RE power evacuation, as per the above arrangement.

Members may kindly deliberate.

A.13. Construction of Residential buildings in Ajmer city for 765/400 KV Ajmer Substation through Additional Capitalisation in Tariff Block 2024-29 (Agenda by Powergrid NR-1)

A.13.1. Powergrid NR-1 has submitted that the 765/400 KV Ajmer substation was constructed under Green Energy Corridors: Inter State Transmission Scheme (ISTS)-Part A". and commissioned in Dec-2017. As of now, the asset commissioned and under O&M at Ajmer S/S is as follows:-

1. 765/400 KV 1500 MVA ICT-02 Nos.
2. 765 KV 240 MVAR Bus reactor-01 Nos
3. 765 KV 240 MVAR switchable Line reactor-04 Nos
4. 400 KV 125 MVAR Bus Reactor-01 Nos
5. 765 KV Bays-12
6. 400 KV Bays-08
7. 400 KV D/C Ajmer (PGCIL)Ajmer (RRVPL) T/L
8. 765 KV D/C Ajmer-Chittorgarh T/L
9. 765 KV D/C Ajmer-Bhadla-II T/L
10. 765 KV D/C Ajmer-Phagi T/L

A.13.2. Establishment of 400 KV Ajmer S/S was envisaged in 1999 under the evacuation of power to be generated by Anta Gas power Plant. Accordingly, 41 hectares of Land for 400 KV Ajmer S/S was purchased by acquiring from the Rajasthan Govt. in the year 1999. However, 400 KV Ajmer has not come up with the Anta system.

A.13.3. Later, the New 765/400KV substation was envisaged under Green Energy Corridor Part-A and the same was commissioned in Dec-2017 on the aforesaid land.

A.13.4. POWERGRID has acquired a piece of Land (approx. 02 Hectare) in Ajmer City for the establishment of a residential colony for employees posted for the Ajmer Transmission system (Substation as well as Transmission Line). At the time of construction and commissioning of Ajmer S/S, the land was not handed over to POWERGRID by Ajmer Development Authority due to some dispute and the case against the same was registered in the Rajasthan High Court (Jaipur Bench). The Case has been resolved recently in Aug-25.

A.13.5. As planned, it is required to construct a residential township for employees engaged in maintenance activities of Ajmer substation and transmission line to accommodate all employees at a single location for timely mobilization of the maintenance team for effective asset Management of Ajmer Substation & Associated Transmission Lines.

A.13.6. In view of the above, an estimate has been prepared by POWERGRID for a residential township for employees engaged in maintenance activity pertaining to 765/400 KV Ajmer Substation & associated transmission line on land made available by the authority, in Ajmer city. The total estimated cost for the construction of 21 nos.

Quarters, 01 Nos. Transit camp and 01 Nos. The recreation club comes out to be Rs. 21.77 Crore /- only. The summary of the estimated cost is attached herewith at **Annexure-A.VIII.**

A.13.7. Powergrid NR-1 has submitted a proposal for the construction of Residential buildings on land available in Ajmer city for 765/400 KV Ajmer Substation, for effective O&M of Ajmer Substation & associated Transmission Lines, at an estimated cost of ₹21.77 crore under ADD-CAP (2024-29).

Members may kindly deliberate.

A.14. Deemed Availability for outages in respect of retrofitting work of the existing conventional control and protection system at 400/220KV Kanpur Substation (Agenda by Powergrid NR-3)

A.14.1. Powergrid NR-3 has submitted that as per existing CERC regulations, the useful life of substation equipment is 25 years and that of transmission lines is 35 years. Complete control and protection assets of the 400/220kV Substation Kanpur have completed their useful life. The equipment are periodically monitored/tested to ensure healthiness and reliable operation of the system. Even though condition monitoring and residual life assessment have been carried out, equipment needs to be replaced due to the breakdown failures or on account of obsolescence in technology and uneconomical operation before/after completion of life.

A.14.2. Towards bringing operational efficiency and digitalization, the development of a digital substation using Process Bus Technology has been introduced as a pilot project at 400/220kV Substation Kanpur. It has facilitated a significant reduction in copper cable requirement, commissioning time, downtime, as well as advanced diagnostics with the provision of online testing of protection schemes.

A.14.3. Keeping in view of the above, 400/220kV Substation Kanpur is under upgradation of the existing conventional control and protection system with a new IEC 61850 Process Bus-based Substation Automation System and Control & Protection System.

A.14.4. During installation and commissioning (complete retrofitting work), each associated feeder will undergo a shutdown for a minimum of 5 consecutive days, except ICTs, which will require 07 days of Shutdown. The outages of the respective feeders shall be submitted to the OCC for approval.”

A.14.5. POWERGRID has requested deemed availability for the planned long outages for the retrofitting work of the existing conventional control and protection system with a Process Bus-based system, as these outages are being utilised for system improvements.

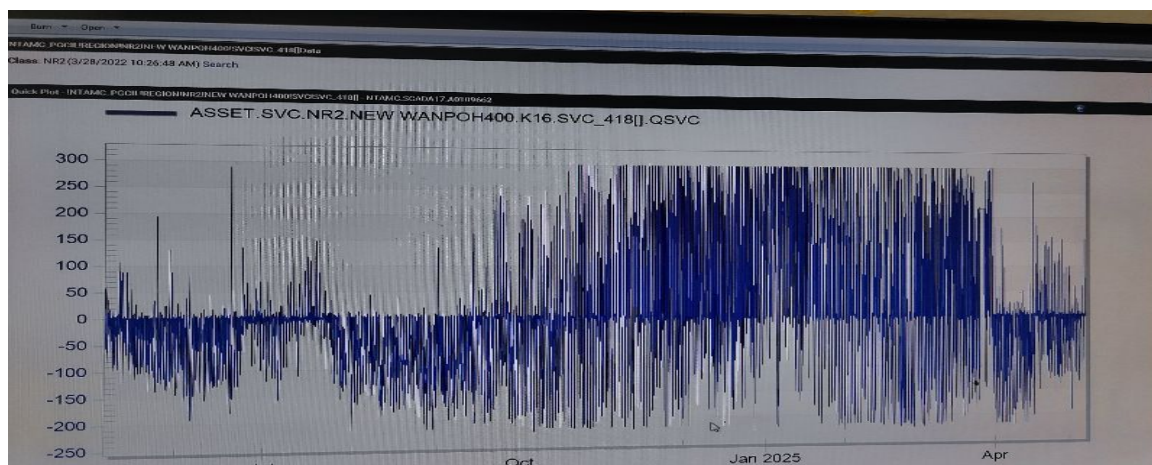
Members may kindly deliberate.

A.15. Utilisation of dynamic capability of SVCs and STATCOM to maintain GRID voltage (Agenda by Powergrid NR-2)

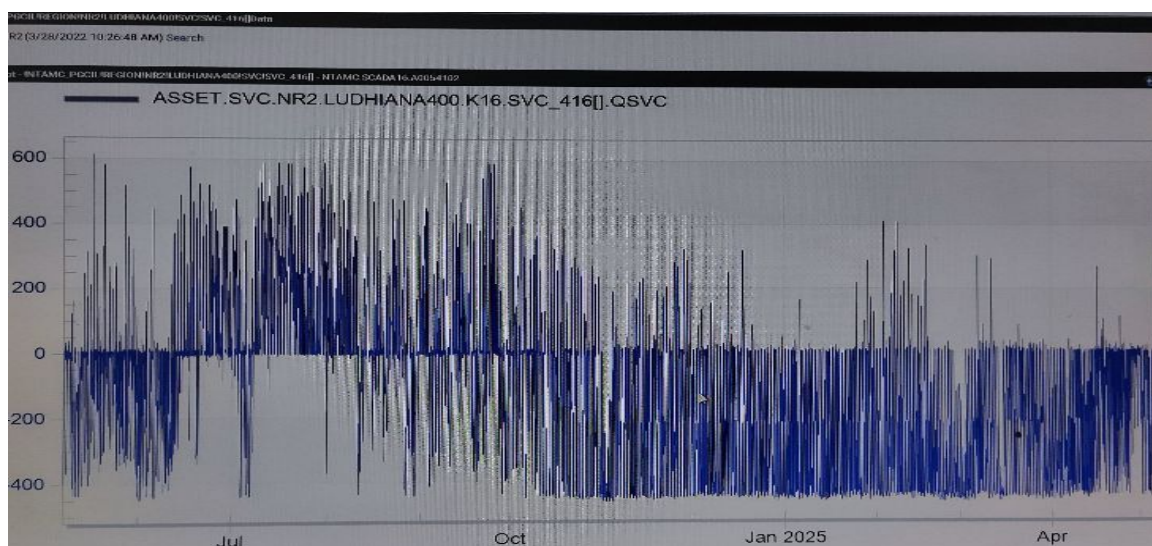
A.15.1. Powergrid NR-2 has submitted that SVCs and STATCOM have been installed to provide dynamic stability to the grid during extreme conditions.

- A.15.2. However, for most of the period in a year, SVC/STATCOM full capacity is consumed to maintain the GRID voltage and during the above period, there will be no dynamic compensation in case of any GRID instability.

New Wanpoh SVC (+300- 200MVAR)



Ludhiana SVC (+600- 400MVAR)



Members may kindly deliberate.

A.16. Increase in fault level at 400/220KV Substation Ludhiana and Moga Substations (Agenda by Powergrid NR-2)

- A.16.1. Powergrid NR-2 has submitted that on 02.05.2025 at 00:00:01:826 Hrs, in 220KV Shanewal ckt-1 of Ludhiana Substation, LBB operated due to a blast in 214 bay CB resulting in tripping of 220KV Bus 2. Fault current was above 40KA which persisted for about 250 milli sec.

- A.16.2. Fault current in different feeders was as under:

Feeders connected to Bus-1 at the time of fault

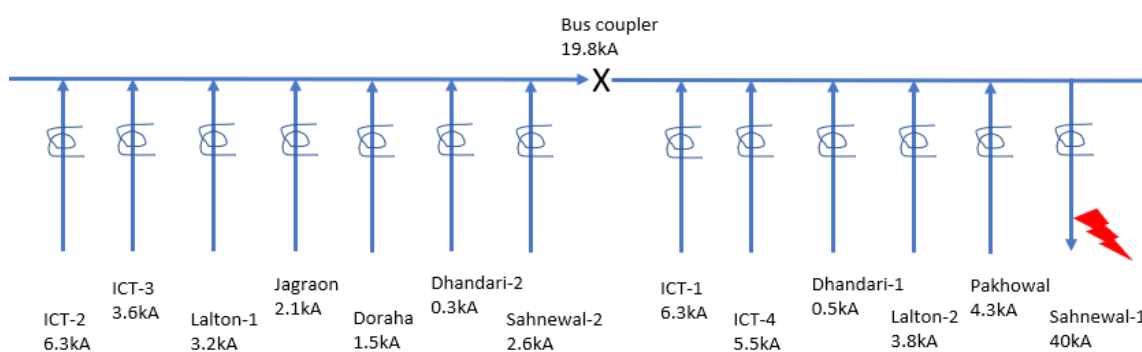
Bay	Feeder	Current	Remarks
202	ICT-2	6269	
204	ICT-3	3624	

209	Lalton-1	3213	
210	Jagraon	2126	
212	Doraha	1503	
213	Dhandari-2	348	
215	Sahnewal-2	2626	
203	Bus coupler	19753	

Feeders connected to Bus 2 at the time of fault

Bay	Feeder	Current	Remarks
201	ICT-1	6279	
206	ICT-4	5464	
207	Dhandari-1	488	
208	Lalton-2	3787	
211	Pakhowal	4299	
214	Sahnewal-1	40084	Faulty feeder
203	Bus coupler	19753	

Fault current distribution in SLD:



A.16.3. In view of the above, POWERGRID has proposed to keep 220KV Bus Coupler CB open at Ludhiana as a temporary measure.

Members may kindly deliberate.

खण्ड-ख: उ.क्षे.भा.प्रे.के.

Part-B: NRLDC

B.1. NR Grid Highlights for October 2025

Demand met and Consumption details of NR

S.No.	Constituent s	Max Demand met (in MW)	Date & Time of Max Demand met	All-time Max. Demand	Date & Time of All-time Max Demand met
1	Chandigarh	323	01-10-2025 15:00	482.0	18.06.24 at 15:28
2	Delhi	5956	01-10-2025 15:12	8656.0	19.06.24 at 15:06
4	Haryana	11372	01-10-2025 15:00	14662.0	31.07.24 at 14:30
3	H.P.	2003	29-10-2025	2273.0	17.01.25 at 09:00

			07:00		
5	J&K	2759	30-10-2025 19:00	3200.0	07.01.25 at 10:00
6	Punjab	12989	01-10-2025 12:00	16754.0	28.06.25 at 15:00
7	Rajasthan	14165	26-10-2025 10:00	19165.0	12.02.25 at 11:00
9	U.P.	26269	01-10-2025 19:17	31486.0	11.06.25 at 00:45
8	Uttarakhand	2466	03-10-2025 19:00	2910.0	11.06.25 at 22:00
10	Northern Region	74215	01-10-2025 19:00	91234.0	19.06.24 at 14:37

S.No	Constituents	Max Consumption (in MUs)	Date of Max Consumption	Average Demand met (in Mus)	All time Max consumption	Date of All time Max Consumption
1	Chandigarh	6.5	01-10-2025	4.2	9.3	12.06.2025
2	Delhi	123.4	01-10-2025	91.9	177.7	18.06.2024
4	Haryana	240.2	01-10-2025	176.1	293.4	30.07.2024
3	H.P.	35.9	01-10-2025	31.6	42.6	11.06.2025
5	J&K	54.9	29-10-2025	51.1	70.3	04.02.2025
6	Punjab	282.3	03-10-2025	175.5	366.8	21.07.2024
7	Rajasthan	302.4	01-10-2025	258.8	388.0	11.06.2025
9	U.P.	507.7	01-10-2025	404.7	658.7	17.06.2024
8	Uttarakhand	47.3	04-10-2025	40.0	62.1	14.06.2024
10	Northern Region	1590.8	01-10-2025	1234.1	2022.9	12.06.2025

In October'25,

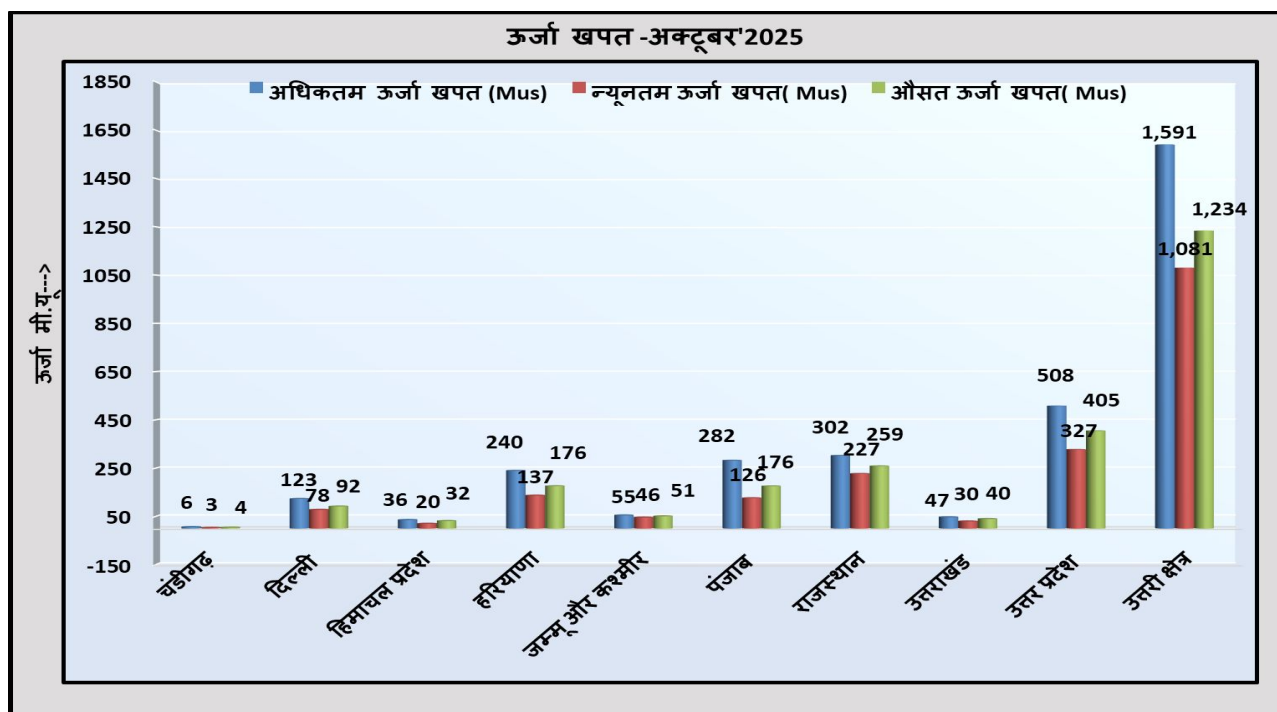
- Maximum energy consumption of Northern Region was **1590.8 MUs** on 01st October'25 and it was 4.49% lower than October'24 (1665.67 MU 04th October'24)
- Average energy consumption per day of Northern Region was **1234.1 MUs** and it was 12.96% lower than October'24 (1417.79 MUs/day)
- Maximum Demand met of Northern Region was **74215 MW** on 01st October'25 @19:00 Hrs as compared to **73686 MW** on 04th October'24 @20:00 Hrs.

Comparison of Average Energy Consumption (MUs/Day) – October '24 vs October '25

क्षेत्र/राज्य	अक्टूबर- 2024	अक्टूबर - 2025	% अंतर
चंडीगढ़	4.7	4.2	-0.4
दिल्ली	104.8	91.9	-12.9
हरियाणा	34.4	31.6	-2.8
हिमाचल प्रदेश	198.8	176.1	-22.7
जम्मू और कश्मीर	49.9	51.1	1.3
पंजाब	204.4	175.5	-28.9
राजस्थान	317.6	258.8	-58.7

उत्तराखंड	44.2	40.0	-4.2
उत्तर प्रदेश	459.0	404.7	-54.3
उत्तरी क्षेत्र	1417.8	1234.1	-183.7

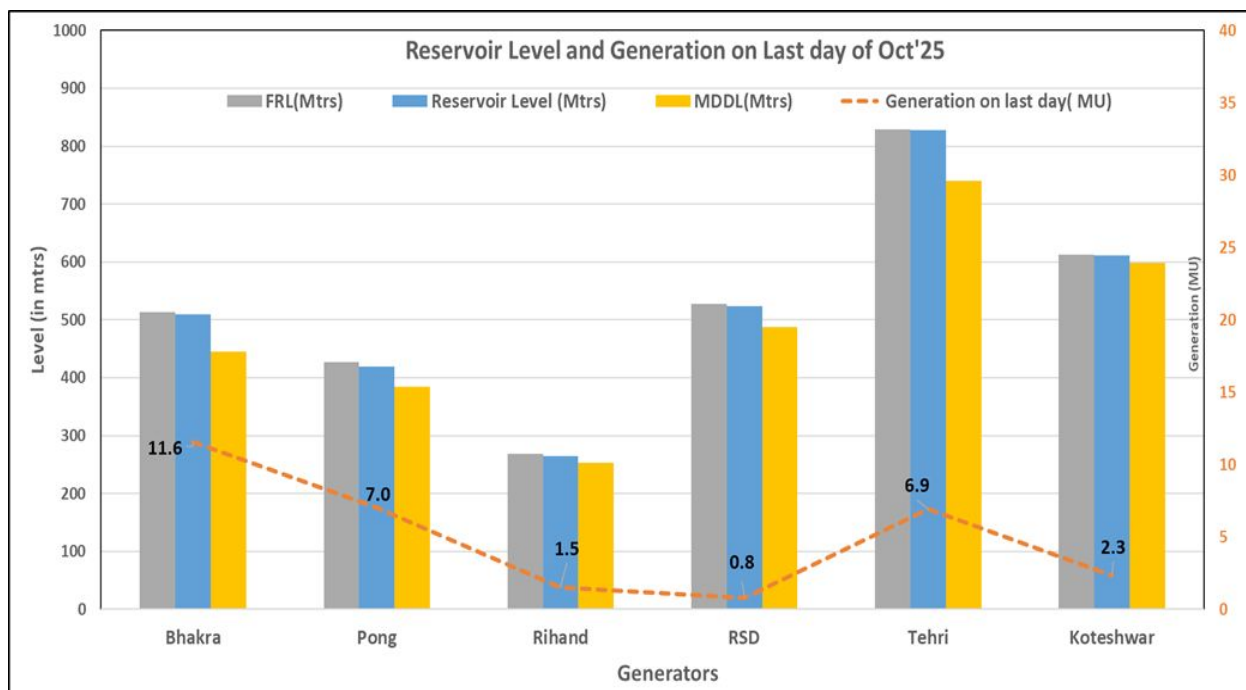
Energy Consumption



Frequency profile

Month	Avg. Freq. (Hz)	Max. Freq. (Hz)	Min. Freq. (Hz)	<49.90 (% time)	49.90 - 50.05 (% time)	>50.05 (% time)
Oct'25	49.999	50.305 (06.10.25 at 11:13:10 hrs)	49.419 (31.10.25 at 17:51:20 hrs)	6.60	78.59	14.81
Oct'24	50.00	50.388 (25.10.24 at 13:03:30 hrs)	49.585 (16.10.24 at 17:58:20 hrs)	4.9	80.3	14.8

Reservoir Level and Generation on Last Day of Month



Reservoir Level on last day of October month

(Low: -ve)

(High: +ve)

Year	Bhakra	Pong	Rihand HPS	RSD	Tehri	Koteswar
2025	510	420	265	524	827	612
2024	501	415	264.24	497	835	606
Diff (in m)	8.7	5.1	0.3	27.5	-7.6	6.0

B.2. Demand forecasting and resource adequacy related: CERC order dated 05.10.2025

Hon'ble CERC In the matter of Planning for safe, secure, and reliable integrated operation of the power system during critical periods arising on account of seasonal variations wherein the electricity demand increases rapidly by undertaking specific measures to mitigate the risks on the power system, under clause (h) of sub-section (1) of Section 79 of the Electricity Act, 2003 and the Regulation 31 of the Central Electricity Regulatory Commission (Indian Electricity Grid Code) Regulations, 2023 has issued suo-motto order 9/SM/2024 dated 07.10.2024.

Subsequently, a meeting was taken by Hon'ble CERC on 14.02.2025 with all NR SLDCs, NRLDC and NRPC to review the actions being taken at SLDC end on measures related to resource adequacy.

It is to be noted that CERC has also released "Report on Planning for safe, secure, and reliable integrated operation of the power system during critical periods arising on account of seasonal variations wherein the electricity demand increases rapidly by undertaking specific measures to mitigate the risks on the power system under Order dated 07.10.2024 in Suo-Moto Petition No. 9/SM/2024" on 29.04.2025.

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

Status of Day Ahead Forecasting, week ahead, month-ahead and year-ahead submission status for Oct-2025 as per Clause 31(4) (a) & (b) of IEGC-2023 is shown below:

State/Entity	Day Ahead (As on Sep-25)	Week Ahead	Month Ahead	Year-Ahead(2026-27)
Punjab	As per Format	As per Format	As per Format	Only Demand
Haryana	As per Format but irregular	As per Format but irregular	Not received	Not received
Delhi	As per Format	As per Format	As per Format	As per Format
Rajasthan	As per Format	As per Format	As per Format but irregular	As per Format
Uttar Pradesh	As per Format	As per Format	As per Format	As per Format
Uttarakhand	As per Format	As per Format	As per Format	Only Demand
Himachal Pradesh	As per Format	As per Format	As per Format	Not received
J&K and Ladakh (UT)	As per Format	Not received	Not received	Only Demand
Chandigarh (UT)	As per Format	Not received	Not received	Not received

In accordance with above, all SLDCs are requested to timely furnish the demand estimation data along with generation adequacy data as per the formats available at https://drive.google.com/drive/folders/1KWY4G9gTBLV5wTJkhGEleRptKP-QbhjL?usp=drive_link to NRLDC through mail (nrlcmis@grid-india.in) and FTP as per the above timeline.

All SLDCs need to take actions at their end for the timely submission of demand forecasting and resource adequacy data on a day-ahead, week-ahead, month-ahead ahead and year-ahead basis.

The portal has been prepared for the submission of data by states. The user credentials have been provided to all states of the Northern region.

Further, NRLDC has also carried out month month-ahead resource adequacy analysis on a regional basis for Nov 2025 as per data available at NRLDC through PRAS software. The results are attached as **Annexure-B.I.**

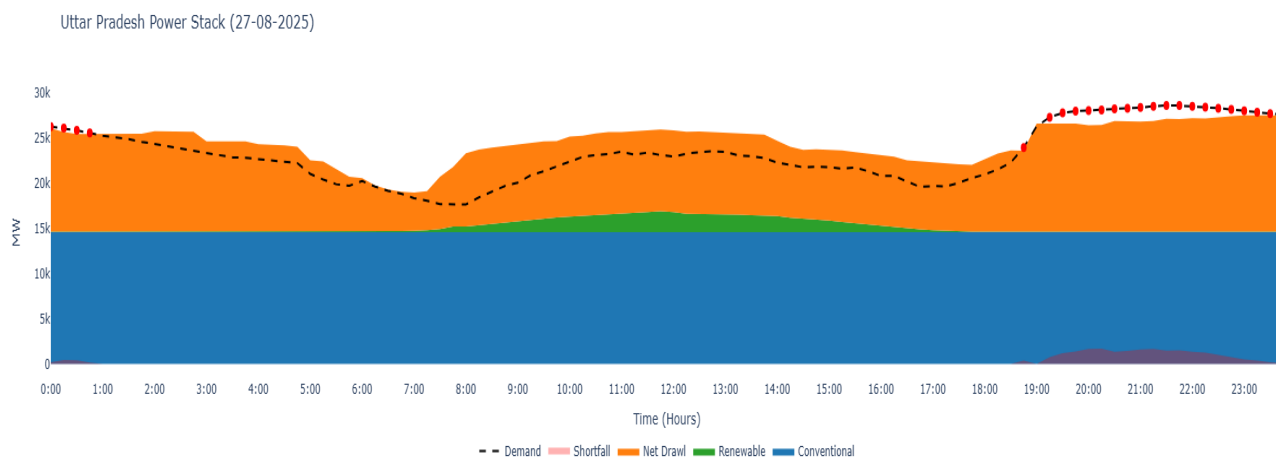
As per IEGC clause 31

Quote

(4) Adequacy of Resources (a) SLDCs shall estimate and ensure the adequacy of resources, identify generation reserves, demand response capacity and generation flexibility requirements with due regard to the resource adequacy framework as specified under Chapter 2 of these regulations.

Unquote

Accordingly, NRLDC is also regularly sending emails based on day day-ahead resource adequacy exercise being carried out at the NRLDC end. In case of a major shortfall seen for a state based on the demand forecast and generation adequacy data submitted by the state, NRLDC communicates the actions required from the state side in real-time also. Some sample snapshots emailed to respective states are shown below for reference:



However, it is being observed that states are only submitting the generation availability and not the actual internal generation schedule. This leads to a situation wherein only surplus/shortage values are checked. This does not take into account the schedule changes in internal thermal generation, which may be happening based on merit order to accommodate high solar generation during daytime.

During the 235 OCC meeting, the OCC forum discussed that:

- Data on day day-ahead basis received from some of the states (as shown in the table) is not as per NRLDC format. It was further mentioned that NRLDC is in the process of developing a code/program for the automation of day-ahead resource adequacy. In case data is not received in formats circulated by NRLDC, it would not be possible to map/utilize the data submitted by states in the internal program being developed at the NRLDC end.

- States should submit an actual generation schedule and not a generation availability as a flat/constant value throughout the day.

Further, CERC vide has issued a final order dated 05.10.2025 regarding 9/SM/2024. CERC has also issued Consolidated Record Notes of discussions held during the Workshop on addressing various challenges faced by the states in Operational Planning for safe, secure, and reliable integrated operation of the power system, dated 23.10.2025. The meeting for the Northern region was held on 11.08.2025. The RNOD mentions the discussions held in the meeting on various points, such as:

(i) Adequacy of workforce: The issue of the shortage of manpower across all the SLDCs in the northern region was discussed. SLDCs have submitted that they are taking up the issue of additional manpower as per the MoP Guidelines. HPSLDC mentioned that their manpower position has been restricted to 42 by the HPERC. Rajasthan SLDC mentioned that with the higher renewable penetration in Rajasthan, they are facing issues specifically in the field of cyber security, market operation and IT Logistics.

Representative of UPSLDC submitted that UPSLDC has framed an HR Management and Development Policy which aimed to structure the movement of officers in specialised functions without disrupting operations.

Punjab SLDC suggested that the minimum tenure of staff in SLDCs should be at least 5 years. It was discussed that all the SLDCs may develop a separate HR policy and a transfer policy for the SLDC staff.

(ii) Training and Certification of the SLDC staff: It was discussed that all the executives of SLDCs are required be adequately trained and certified. Representative of UPSLDC pointed out that basic level training is good but there are some gaps in advanced level training due to unavailability of slots. UPSLDC has around 20 staff who are to be trained. Punjab SLDC also added that they have the same number of staff who are to be trained. Grid-India was asked to take up the issue with the NPTI.

It was also suggested during the discussion that ideally, the trained staff should not be shifted from the SLDCs, and to attract the staff for working in SLDCs, incentive provisions can be incorporated under the Fee and Charges of the SLDCs.

In addition to the above, it was also suggested that cybersecurity is a critical area and with the growing concerns of cybersecurity threats, adequate staff are required to be trained in this area.

(iii) Backing down of intra-state thermal generating units: Haryana SLDC submitted that the Panipat old units are not able to operate at MTL of 55%. Rajasthan SLDC mentioned that they have started giving the schedule of 55% in some thermal generating stations. In this regard, it was suggested that representatives of intra-state thermal generating stations may visit NTPC plants, as even the older units of NTPC are able to operate at an MTL of 55%.

It was also suggested that the states should come up with a part-load compensation mechanism for thermal power plants and also explore the possibilities for the two-shift operation of the thermal generating stations, keeping in view the large RE integration.

(iv) Demand estimation and Resource Adequacy data submission: State SLDCs have submitted that there was some lag in data submission, and they are trying to improve.

(v) Alignment of the State Grid Code with IEGC 2023: It was discussed that CERC has notified the new Grid Code, which contains the various provisions with respect to AGC, Reserve requirement and part load compensation for the thermal generating stations. The state SERCs may align their respective Grid Code with the 2023 Grid Code of CERC.

(vi) Implementation of SAMAST: It was discussed that wherever the SAMAST has not been implemented yet, there is a need to speed up its implementation.

(vii) Fee and Charges Regulations for SLDCs: It was discussed that SERCs may formulate separate Fee and Charges Regulations for State Load Despatch Centers wherein the provision regarding training of the SLDC staff, as well as incentive provisions, can be incorporated.

It is suggested that as per IEGC clauses, SLDCs also carry out day ahead, week ahead and month ahead resource adequacy exercise and share their results with NRLDC. Further, all may take note of the recent CERC order dated 05.10.2025.

Members may please discuss.

B.3. Procedure for Scheduling Metering Accounting Deviation Settlement Transmission Charges Waiver and REC mechanism related to REGS and ESS

NLDC vide IOM dated 06.10.2025 has communicated that representations were received from stakeholders seeking clarity on the aspects of Scheduling, Metering, Accounting, Deviation Settlement, Transmission Charge Waiver, and the REC mechanism related to Renewable Energy Plants and Energy Storage Systems.

Accordingly, a detailed procedure was prepared in consultation with RLDCs and NLDC to address the issues raised by the stakeholders. The procedure was presented before the Hon'ble Central Commission on 30th July 2025. Based on the inputs received during the Commission's meeting, the revised procedure was circulated for stakeholder consultation on 6th August 2025. A workshop on the procedure was conducted for stakeholders on 11th August 2025.

Comments on the procedure were received from several stakeholders, including Renewable Energy developers and the Regional Power Committee. The comments received have been suitably incorporated, and the finalised procedure is prepared.

Accordingly, the Procedure for Scheduling, Metering, Accounting and Deviation Settlement, Transmission Charge Waiver and REC mechanism related to ESS is attached as **Annexure-B.II** for reference of all members.

Members may please discuss.

B.4. Database of transmission lines having terminal equipment rating lower than transmission line conductor capacity

For conducting studies for assessment of inter-control-area transfer capability or any other related simulation studies, thermal ratings of lines as specified in CEA's Manual on Transmission Planning Criteria 2023 are being considered as the safe capacity limit of lines based on anticipated ambient temperature.

However, it is being observed in a number of cases, such as in the RVPN control area, that the rating of terminal equipment is lower than the thermal capacity of the transmission line. This is leading to under-utilisation of line capacity due to limited switchgear rating and even leading to constraints in RE evacuation from the Western Rajasthan RE complex.

Some of the lines in the RVPN control area wherein this issue was observed are listed below:

- 400kV Bhadla-Bikaner D/C
- 400kV Jaisalmer-Kankani S/C
- 400kV Akal-Kankani S/C
- 400kV Akal-Jaisalmer S/C
- 400kV Suratgarh SCTPS-Babai D/C.

For these lines, thermal capacity is 1700MVA for design @ 75deg & 2180MVA for design @85deg. However, equipment rating is only 2kA which translates to $1.732 \times 400 \times 2 = 1385$ MVA only, thus limiting line power transfer capacity to 1385MVA only.

Similar issues were earlier observed at **400kV Mahendragarh, Dhanonda and Nawada** substation in the HVPN control area.

Further, as per information available with NRLDC in the case of **Vishnuprayag**, terminal equipment of only 1kA has been installed, whereas the line is having twin moose conductor. Therefore, the conductor can safely carry around 890MW of power, but due to a terminal equipment rating issue, the line can only be loaded up to $400 \times 1.732 \times 1 = 693$ MVA only thereby reducing line capacity in difficult hilly terrain.

Similar terminal equipment rating issues were also observed in **400kV lines from NJPC and Rampur** wherein the lines, such as 400kV NJPC-Panchkula D/C (further LILOed) and 400kV Rampura-Nallagarh sections of lines, have equipment rating is only 2kA, which translates to $1.732 \times 400 \times 2 = 1385$ MVA only, whereas transmission line has a triple snowbird conductor.

The issue of lower line equipment rating has also been discussed in the past in 2018 in the NRPC-OCC level, wherein NPC had asked RPCs to furnish such details. It was requested that the terminal equipment ratings of STUs and other transmission licensees' transmission lines in the region may be compiled and furnished to Grid-India with a copy to NPC Division, CEA, on a priority basis. Communication is attached as **Annexure-B.III**.

Subsequently, the agenda was discussed in number of OCC meetings and transmission utilities were asked to submit the data.

As per the data available at NRLDC, following are few transmission lines in Northern region having terminal equipments of lower capacity than conductor capacity:

Name of Transmission line	Line length (km)	Owner	Conductor Type	Conductor Rating @45deg for 75deg design	Switchgear rating End-1 (MVA)	Switchgear rating End-2 (MVA)
400kV Bhadla-Bikaner D/C	189	RRVPNL	Quad Moose	1701	1386	1386
400kV Jaisalmer-Kankani S/C	177	RRVPNL	Quad Moose	1701	1386	1386
400kV Akal-Kankani S/C	223	RRVPNL	Quad Moose	1701	1386	1386
400kV Akal-Jaisalmer S/C	61	RRVPNL	Quad Moose	1701	1386	1386
400kV Suratgarh SCTPS-Babai D/C	245	RRVPNL	Quad Moose	1701	1386	1386
400kV Manhendragarh-Dhanonda D/C	5	ATIL	Quad Moose	1701	1386	1386
400kV Gr. Noida-Nawada D/C	30	POWERGRID	Quad Bersimis	1978	1386	1386
400kV Vishnuprayag-Muzaffarnagar S/C	280	UPPTCL	Twin Moose	850	693	NA
400kV Vishnuprayag-Alakhnanda D/C	109	UPPTCL	Twin Moose	850	693	NA
400kV Rampur-Nallagarh D/C	128	POWERGRID	Triple Snowbird	1275/1625*	1386	1386
400kV Jhakri-Gumma D/C	55	POWERGRID	Triple Snowbird	1275/1625*	1386	NA
400kV Gumma-Panchkula D/C	112	POWERGRID	Triple Snowbird	1275/1625*	NA	1386
400kV Jhakri-Rampur D/C	21	POWERGRID	Triple Snowbird	1275/1625*	1386	1386

*Considering ambient temp of 40deg (lower in Hilly areas)

Given the issues arising due to limited switchgear rating in lines which have higher thermal capacity, it is requested that forum may:

- Advise all utilities to furnish the details of lines having terminal equipments of lower capacity to Grid-India /CTUIL/NRPC for consideration in future studies and planning of actions well in advance.
- Discuss for requirement of uprating switchgear ratings in existing lines to avoid issues in RE evacuation/ facilitating shutdowns.

- Advise for special attention by transmission utilities & CTUIL in this regard so as to avoid such issues in future, including for the cases of conductor upgradation.

Members may please discuss.

B.5. Shifting of Rihand-3 generation to WR

The agenda for the opening of the 400kV Singrauli-Anpara line and shifting of Rihand Stage-III generating units to the Northern region was discussed in the 50th TCC & 74th NRPC meetings held in Raipur on 28.06.2024 & 29.06.2024, respectively. In the meeting, UP SLDC and UPRVUN expressed concern regarding the possibility of a major grid event in case of multiple element outage (N-2/N-3) in UP Control area. Further, NTPC expressed concern on the healthiness of bus coupler at Rihand and also stated it would increase stress on Stage-1 & 2 switchyard equipment. Accordingly, the forum decided that a joint meeting would be convened with participants from NRPC, WRPC, CEA-PSPA I, CTUIL, NRLDC, WRLDC, NLDC, NTPC, POWERGRID, UP SLDC, UPPTCL, UPRVUN and Lanco Anpara.

After detailed deliberations in meeting on 09.07.2024, all members agreed for shifting of Rihand-3 to NR temporarily and discussed that as similar demand and line loading pattern is expected when NR imports high power from WR during summer 2025 & summer 2026 months, that there may be requirement of such changeovers for next 2-3 high demand seasons till approved transmission system of establishment of 765/400kV Prayagraj and 765/400kV Robertsganj is implemented. (approved by 52nd TCC & 77th NRPC Meeting held on 27-28 December 2024)

Shifting of Rihand-III generation to the Northern region reduced the loading of 765kV Vindhaychal-Varanasi D/C, due to which NR was able to import higher power from WR without major constraint. ATC/TTC limits on the WR-NR corridor and NR import were increased after the shifting exercise, which facilitated NR states to import higher power during the summer months.

Sl No	Corridor	Time Period	TTC with Rihand-III in NR (MW)	TTC with Rihand-III in WR (MW)	Increase in TTC due to the Shifting of Rihand from WR to NR (MW)
1	NR Import	00-09	28400	25700	2700
		09-15	20650	20250	400
		15-16	21750	21750	0
		16-24	28400	25700	2700
2	WR->NR	00-09	24800	22350	2450
		09-15	19450	19050	400
		15-16	20550	20550	0
		16-24	24800	22350	2450

In 53rd TCC 78th NRPC meetings held in Mar 2025, the forum granted approval for the shifting of Rihand-III to NR during the summer/monsoon 2025 & 2026 based on the requirement in the Northern region, upon discussion in OCC forum/separate meeting by NRPC so that in case of requirement, the exercise is carried out swiftly for the benefit of NR states.

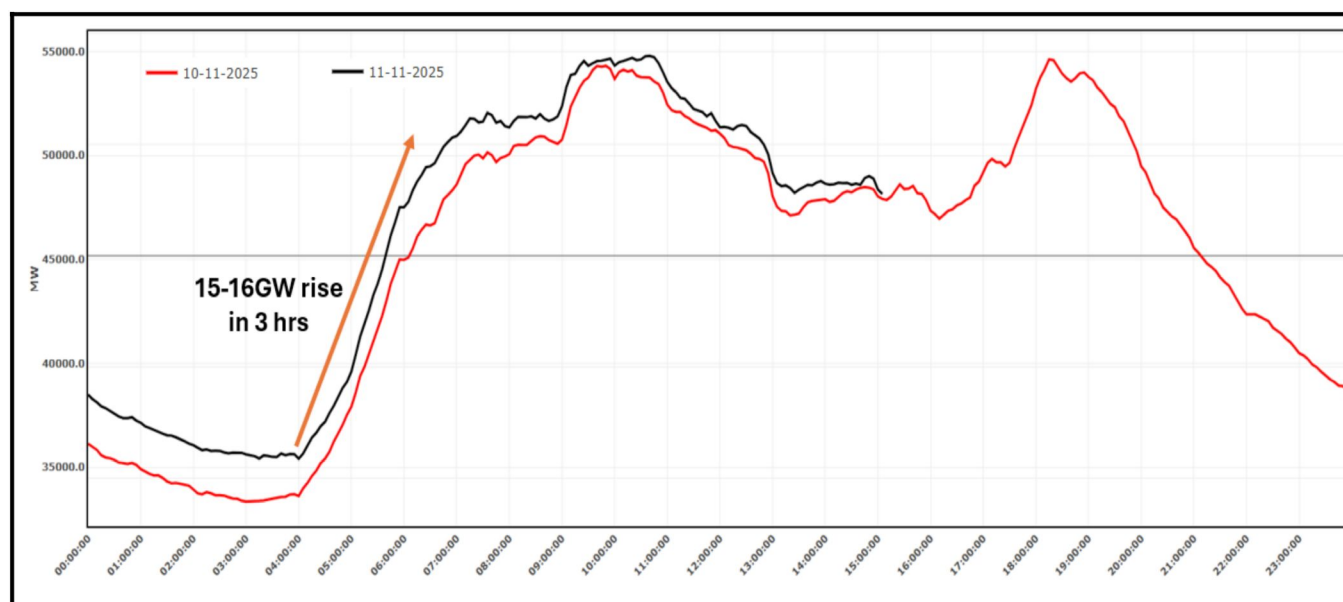
Accordingly, a separate meeting was convened on 22.05.2025 by NRPC to discuss the shifting of Rihand-3 to NR for the summer/monsoon season. Rihand-3 was successfully shifted from WR to NR on 27.05.2025 w.e.f. 09:25 hrs. with support from all stakeholders and evacuated its power in NR for 5 months.

Since major shutdowns are also planned in the upcoming weeks for generating units as well as transmission lines in Rihand-Singrauli area, it is proposed that shifting of Rihand-3 to NR may be carried out after discussion in this OCC meeting.

Members may please discuss.

B.6. Winter preparedness measures 2025-26

Winter in the 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, the demand of NR states except Rajasthan and hilly states is on the lower side. With decreasing temperatures and festivals, onset of winter also brings some severe challenges to NR grid operators. High ramp rate in demand during morning peak and evening peak is being observed which is likely to get further steeper.



Based on the detailed discussion held in the last OCC meeting, the following actions were suggested:

- To carry out tap change exercise at 220kV and below voltage level. NRLDC has also reviewed tap position of 400/220kV Abdullapur, 765/400kV Mainpuri and 220/132kV Chandigarh (PG) substation. Further, a study based on the voltage

profile of 400/220kV substations in NR for the month of Oct 2025 is in progress and would be carried out shortly.

- To ensure that all over flux settings of transformers and overvoltage settings of transmission lines are as per approved protection philosophy of NRPC. ***(HVPNL, PSTCL (partial implementation), NTPC, ADANI, Uttarakhand, J&K are yet to confirm the implementation of revised overvoltage settings (latest PSC deliberations))***
- It was requested that any planned commissioning of bus reactors may please be expedited before winter 2025.
- OCC expressed concern about the lack of progress of DTL reactors and asked them to expedite their work.
- Utilities to submit feedback on NRLDC reactive power document, including for line reactors which can be used as bus reactors as per requirement.
- Utilities to ensure maximum availability of bus reactors and line reactors, including the provision of using line reactors as bus reactors in case of opening of lines on high voltage
- Regarding synchronous condenser mode of operation in the 235th OCC meeting, it was discussed that,
 - NRLDC representative requested THDC, BBMB and Punjab SLDC to confirm the availability of their machines for synchronous condenser support.
 - THDC representative confirmed the availability of both Tehri Hydro Power Plant and Tehri Pumped Storage Plant generating units for synchronous condenser mode of operation. It was also confirmed that machines from both can be operated in synchronous condenser mode of operation simultaneously.
 - BBMB representative agreed to share confirmation through email after discussing with Pong Hydroplant.
 - Punjab SLDC confirmed availability of RSD Unit-3 for synchronous condenser mode of operation, as per grid requirement.
 - CGM NRLDC advised RSD to ensure availability of machine which runs as synchronous condenser during winter season. Further, it was mentioned that Punjab SLDC may ask RSD to operate other units also in synchronous condenser mode of operation with necessary modifications.
- Punjab SLDC agreed to take up the same.

OCC forum asked all concerned to carry out mock testing in synchronous condenser mode of operation by 31st Oct 2025. Concerned generators may provide an update.

Members may provide details regarding actions taken at their end as agreed in the 236th OCC meeting.

B.7. Insulator cleaning and replacement of damaged insulators/ porcelain insulator with polymer insulators

The importance of carrying out insulator cleaning and replacement of damaged insulators was discussed in past OCC meetings and recently in 56 TCC and 81 NRPC meetings held on 30th and 31st Oct 2025. Northern Regional power transmission lines are exposed to the high pollution levels along their routes. Such pollution levels with the onset of the winter season lead to the frequent tripping and finally to breakdown and long outages of the transmission lines. These outages make the grid weak, thereby endangering the grid's reliability and security.

Therefore, in order to avoid/mitigate tripping of lines during foggy (smog) weather in the winter season, preventive actions like cleaning/washing of insulators, replacement of conventional insulators with polymer insulators have been recommended and are being taken every year.

This being a regular activity, all the transmission licensees in the Northern Region are being requested in monthly OCC and NRPC meetings to update line-wise data for insulator replacement and cleaning in the format attached as **Annexure-B.IV**. NRLDC has already requested vide letter dated 22.09.2025 all transmission utilities to furnish the utility-wise latest status of the replacement of porcelain insulators with polymer insulators so that crucial lines for which such works are pending may be identified & prioritized..

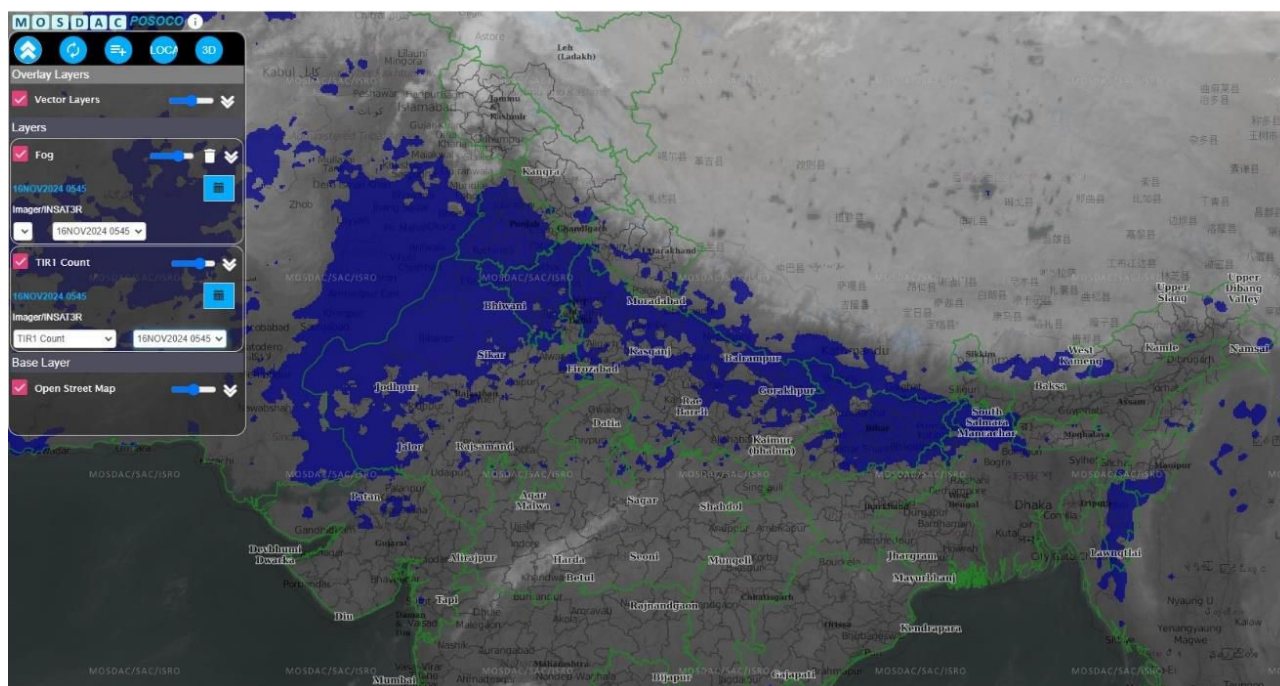
These tripping events were also discussed in past OCC and protection subcommittee meetings, wherein actions being taken at utility end were also discussed. All concerned transmission licensees are requested to ensure:

- Priority-wise cleaning & replacement is carried out. Priority to be given to the lines that have a historical record of tripping during foggy weather.
- Progress on cleaning and replacement of porcelain insulator with polymer insulator to be monitored and the latest status may be furnished to NRPC/NRLDC. NRLDC will also try and prioritize shutdowns for crucial lines that have had past instances of tripping during foggy weather.
- Examination of Disturbance record/Event log data, including analysis of any issues related to auto-reclosure operation (details also to be shared with NRLDC)
- Adequate manpower in control room during night shift of winter (vigilant and alert)

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 the OCC meeting. Members may please discuss.

B.8. Multiple tripping during fog timing in Punjab state control area: Nov 2024

A snapshot of fog observed on 15 Nov 2024 is shown below:

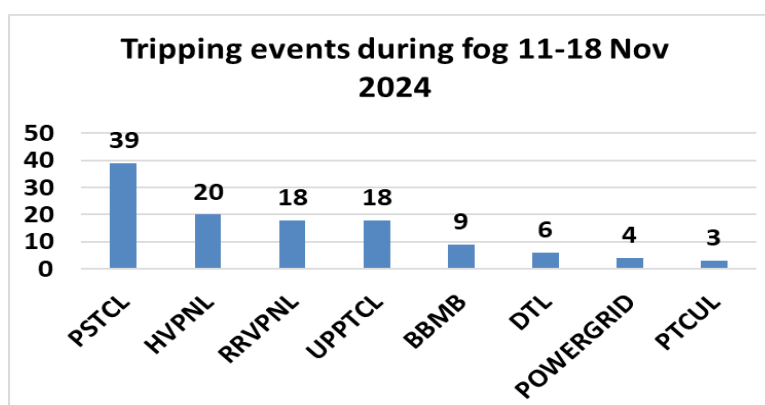


During 10-17 Nov 2024, fog was observed in November month itself, by which cleaning and washing of insulators was not done by several utilities. This resulted in numerous tripping during this week during 21:00-09:00hrs period of this week. List of lines which tripped on 3 or more occasions during this week are listed below:

- 400 KV Talwandi Saboo(PSG)-Nakodar(PSG) (PS) Ckt-1
- 220 KV RAPS_A(NP)-Sakatpura(RS) (RS) Ckt-1
- 400 KV Aligarh-Sikandrabad (UP) Ckt-1
- 220 KV Panipat(BB)-Chajpur(HV) (HVPNL) Ckt-2
- 400 KV Hindaun(RS)-Chhabra(RVUN) (RS) Ckt-1
- 400 KV Talwandi Saboo(PSG)-Dhuri(PS) (PS) Ckt-1

It is being seen that there is a higher number of tripping in lines passing through UP, Rajasthan, Punjab and Haryana.

During this week, major trippings (220kV & above) were reported in the Punjab, Haryana and Rajasthan control areas as shown below:



Number of PSTCL lines (under NRLDC jurisdiction) tripped from 12.11.2024 to 16.11.2024 during 21:00hrs to 10:00hrs

Date	Number of lines tripped
12-11-2024	9
13-11-2024	11
14-11-2024	10
15-11-2024	4
16-11-2024	2

PSTCL and other members requested to share their preparedness for this winter season to minimize tripping of lines during fog. Members may please discuss.

B.9. Reactive power performance of thermal generators in Northern region

During winter season, demand of Northern region is low and high voltages are a common phenomenon predominantly in Punjab, Haryana and Delhi area. Even after several actions being taken by control centers, it is seen that there is persistent high voltage in Northern region. The reactive power absorption by generators becomes an important resource that helps in managing high voltages in the grid. However, even after continuous follow up in OCC meetings, it is seen that MVAR data telemetry is poor/ inaccurate from most of the generating stations. For some of the generators it is seen that there is inadequate reactive power absorption based on their capability curve especially during night hours. The performance of generators in absorption of reactive power for last 10 days (01 Nov 2025 – 10 Nov 2025) is shown below:

S.No.	Station	Unit No.	Capacity	Geographical location	MVAR capacity as per capability curve (on LV side)	MVAR performance (-) Absorption (+) Generation (HV side data)	Voltage absorption above (in KV)
1	Dadri NTPC	1	490	Delhi-NCR	-147 to 294	Not on bar	Not on bar
		2	490		-147 to 294	-150 to 100	411
2	Singrauli NTPC	1	200	UP	-60 to 120	-20 to 5	404
		2	200		-60 to 120	-20 to 10	408
		3	200		-60 to 120	0 to 20	411, 416
		4	200		-60 to 120	-25 to 25	406, 412
		5	200		-60 to 120	Not on bar	Not on bar
		6	500		-150 to 300	-50 to 5	404
		7	500		-150 to 300	-60 to 0	402
3	Rihand NTPC	1	500	UP	-150 to 300	-65 to 15	402
		2	500		-150 to	-35 to 35	400

					300		
		3	500		-150 to 300	-130 to -40	396
		4	500		-150 to 300	Not on bar	Not on bar
4	Kalisindh RS	1	600	Rajasthan	-180 to 360	-80 to 80	402
		2	600		-180 to 360	-100 to 0	402
5	Anpara C UP	1	600	UP	-180 to 360	-90 to 50	775, 780
		2	600		-180 to 360	-90 to 40	775
6	Talwandi Saboo PB	1	660	Punjab	-198 to 396	-210 to -50	410
		2	660		-198 to 396	-210 to 0	410
		3	660		-198 to 396	-	-
7	Kawai RS	1	660	Rajasthan	-198 to 396	-70 to 30	404, 407
		2	660		-198 to 396	-80 to 10	402,406
8	IGSTPP Jhajjar	1	500	Haryana	-150 to 300	-125 to 75	412
		2	500		-150 to 300	Not on bar	Not on bar
		3	500		-150 to 300	-	-
9	Rajpura (NPL)	1	700	Punjab	-210 to 420	Not on bar	Not on bar
		2	700		-210 to 420	0 to 15	405
10	MGTPS	1	660	Haryana	-198 to 396	Not on bar	Not on bar
		2	660		-198 to 396	-130 to 70	410
11	Bawana	1	216	Delhi-NCR	-65 to 130	Not on bar	Not on bar
		2	216		-65 to 130	Not on bar	Not on bar
		3	216		-65 to 130	Not on bar	Not on bar
		4	216		-65 to 130	Not on bar	Not on bar
		5	253		-65 to 130	Not on bar	Not on bar
		6	253		-65 to 130	Not on bar	Not on bar
12	Bara PPGCL	1	660	UP	-198 to 396	-60 to 50	768, 775
		2	660		-198 to 396	0 to 80	775
		3	660		-198 to 396	-50 to 80	775
13	Lalitpur TPS	1	660	UP	-198 to 396	-70 to 20	755, 760
		2	660		-198 to	-40 to 60	762

					396		
		3	660		-198 to 396	-100 to 30	755, 760
14	Anpara D UP	1	500	UP	-150 to 300	-240 to 0	-
		2	500		-150 to 300	Not on bar	Not on bar
15	Chhabra TPS	1	250	Rajasthan	-75 to 150	5 to 60	416
		2	250		-75 to 150	-60 to 60	-
		3	250		-75 to 150	-80 to 40	-
		4	250		-75 to 150	-	-
		5	660		-198 to 396	-	-
		6	660		-198 to 396	-50 to 100	414

All generating stations are requested to resolve any issues related to telemetry and ensure that MVar absorption is as per the grid requirement and the capability curve of the machine.

Since with IEGC 2023 implementation, reactive energy performance also has a financial impact, it is desirable that all generating stations continue to support grid voltages by having reactive power performance as per their capability curve and grid requirement.

Some of the generating units, such as IGSTPP Jhajjar, MGTPS Jhajjar, and Bara need to explore the possibility of further MVAR absorption. Further, intrastate generators in the Rajasthan control area may be asked to support through adequate reactive power generation during daytime when the Rajasthan grid experiences low voltage.

The following are a few observations based on the data of 01Nov-10Nov 2025, analysed at NRLDC end:

- Machines at NTPC Singrauli & Rihand are generating different MVar compared to other machines at same location.
- Data of Rajpura TPS needs review.
- Unit-1 at MGTPS Jhajjar & IGSTPP Jhajjar performance needs review.
- Frequent GT tap position changes seem to be done at Chhabra TPS.
- Rajasthan SLDC to monitor performance of intrastate thermal units to obtain better voltage support during low voltage conditions in the grid.

All generating stations are requested to resolve any issues related to telemetry and ensure that MVar absorption is as per the grid requirement and the capability curve of the machine. Generators may also set their Vs_{sch} (voltage set point) such that units are absorbing MVAR as per their capability and grid requirement, with intimation to RLDC/SLDC.

B.10. Critical operation of Rajasthan Grid during the upcoming winter season:

Issues related to grid operation in the Rajasthan state control area have been highlighted from the NRLDC side in the last several OCC/TCC/NRPC meetings. It is to be noted that such issues get aggravated during the winter months when agricultural demand in state is on the higher side. Several issues were encountered in the Rajasthan control area during last winter season. The major issues in the Rajasthan transmission network include:

1. Augmentation in the transformation capacity of 11 intra-state stations to meet the increased drawl and RE absorption requirements. List is mentioned subsequently.
2. Augmentation of intrastate transmission network for relieving the constraints (power flow and voltage) and improving reliability. Necessary strengthening to relieve 220 kV Bassi (PG)-Sikar (RRVPN), 220 kV Kankroli (PG)-Kankroli(RRVN), Kankroli (PG)-Amberi (RRVPN), Sikar (PG)-Dhod(RRVN), Bhiwadi (PG)-Khuskhera (RRVPN) etc. may be planned and implemented on priority.
3. Augmentation of shunt compensation capacity near load centres like Bikaner, Jodhpur, Kankani, Merta, Hindaun, Alwar etc. to improve the voltage profile as well as reduce transmission losses. List of 400/220 kV substations in Rajasthan where power factor is enclosed.

ICTs MW drawl, MVar drawl, Power factor and S/s voltage for Solar hours (10:00-14:00hrs) for Rajasthan Control area (01-08 Dec 2024)					
400/220 Sub-Station ICTs	ICTs Capacity (MVA)	MW Drawl	MVar Drawl	Power factor	Voltage(kV)
Bikaner (RVN)	2*315	100-300	150-300	0.40-0.65	375-390
Jodhpur (RRVN)	315	400-500	200-300	0.85-0.90	375-385
Kankani (RRVN)	(315+500)	500-700	200-300	0.87-0.90	370-385
Merta (RRVN)	2*315	400-500	200-250	0.85-0.89	380-395
Bhinmal (PG)	2*315	500-600	200-300	0.87-0.90	360-370

4. Enforcement of adequate dynamic reactive support from RE plants connected to STU system as mandated in CEA technical standards. Further, other compliances of CEA technical standards with respect to fault ride through, harmonics, flicker, etc. for the existing and upcoming RE capacity in the intrastate network may be ensured for reliable operation of the integrated grid. The compliance verification process being followed by CTUIL and Grid-India for the interconnection of ISTS RE plants may be considered for adoption by STU/SLDC.

Issues were discussed in detail in 224 OCC meeting held on 18.10.2024 and a separate meeting organised on 19.10.2024. Some of the actions that were agreed upon are listed below:

1. SLDC to take up the matter with DISCOMs for shifting of non-essential demand being provided in daytime till transmission network capacity augmentation takes place
2. As Dholpur Gas plant has also been run in the recent past and significant improvement in Voltages and grid parameters have been observed, RVUNL to ensure the running of Dholpur units as the ultimate solution in the present condition.
3. RE plants installed in state control area should also provide MVAR support to RE plants as per the CEA standards as being implemented in ISGS RE plants.
4. For safely meeting the 18000 MW load of Rajasthan with voltage in IEGC band, 4000 MVAR support is additionally required. After installing 2500 MVAR of capacitor banks in the study files the base case is converging with voltages at a low of 360 KV at 400 KV sub-stations being observed. The base cases were simulated using the real-time data. Hence, there was an urgent requirement of the installation of capacitor banks to prevent system collapse.
5. DISCOMs were requested to approach MoP with a complete proposal for the installation of Capacitor banks through RDSS fund. It was also stated that the detailed proposal was already made for all 04 power companies of Rajasthan when funding through PSDF fund was envisaged earlier.
6. Low voltages in the Rajasthan network were a major area of concern it has to be flagged at the highest level. If PSDF/RDSS fund is not available, funding through other routes/schemes to be taken up for the installation of Capacitor banks.
7. Expediting capacity augmentation at substations and coordination with PGCIL/CTU to ensure N-1 compliance to prevent major grid disturbances and implementation of SPS before winter demand kicks in.

List of constrained 400/220kV ICTs in Rajasthan

Constrained location	Status as available with NRLDC
N-1 contingency of 3*315=945 MVA ICT at Bhiwadi(PG)	Additional 500MVA ICT approved in 29 CMETS on 17.05.2024
N-1 contingency of 2*315+500=1130 MVA ICT at Bassi(PG)	Additional 500MVA ICT has been approved. Same is anticipated by 14.12.2025.

N-1 contingency of 315+500=815 MVA ICT at Neemrana(PG)	Additional 500MVA ICT has been approved in 36 NR CMETS held on 15.01.2025.
N-1 contingency of 2*500=1000 MVA ICT at Jaipur South(PG)	Additional 500MVA ICT has been approved in 36 NR CMETS held on 15.01.2025.
N-1 contingency of 2*315+500=1130 MVA ICT at Sikar(PG)	Additional 500MVA ICT has been approved in 38 NR CMETS held on 28.05.2025..
N-1 contingency of 3*315=945 MVA ICT at Kankroli(PG)	ICT-4 has been approved and is expected to be commissioned by Dec 2025.
N-1 contingency of 2*315=630 MVA ICT at Kotputli(PG)	Augmentation by 400/220 kV 500 MVA (3rd) ICT at Kotputli (PG) is expected by 31.12.2025
N-1 contingency of 2*315=630 MVA ICT at Deedwana(RVPN)	As per latest status shared by Rajasthan SLDC order for 10 no. ICT has been placed recently. New 500MVA ICTs are expected to be commissioned at 400/220kV Merta, Ajmer and Bikaner by Oct 2025. SPS has been implemented as temporary measure for some of the stations such as Chittorgarh (RVPN), Ajmer (RVPN), Merta (RVPN), Bikaner (RVPN), Jodhpur (RVPN), Suratgarh(RVPN), Ratangarh(RVPN)
N-1 contingency of 3*250+315=1065 MVA ICT at Heerapura(RVPN)	
N-1 contingency of 3*315 =945 MVA ICT at Chittorgarh (RVPN)	
N-1 contingency of 2*315 =630 MVA ICT at Ajmer (RVPN)	
N-1 contingency of 2*315 =630 MVA ICT at Merta (RVPN)	
N-1 contingency of 2*315 =630 MVA ICT at Bikaner (RVPN)	
N-1 contingency of 2*315 =630 MVA ICT at Jodhpur (RVPN)	
N-1 contingency of 2*315=630 MVA ICT at Suratgarh(RVPN)	
N-1 contingency of 3*315=945 MVA ICT at Ratangarh(RVPN)	
N-1 contingency of 1*500+1*315 =815 MVA ICT at Bhilwara (RVPN)	

In 56 TCC and 81 NRPC meetings held on 30th and 31st Oct 2025, RRVNPL representative informed that:

- ICT at Bikaner (Raj) would be commissioned by December 2025 and at Merta end of October, Jodhpur erection and commissioning under progress..

- 151 Capacitor banks under installation and covered areas which have low power factor viz. Bikaner(Raj).
- RRVPNL informed that DISCOMs have also planned the installation of a capacitor but it may not come up this winter.
- 880 MVAR capacitor bank installation by Dec 2025.
- NRLDC representative highlighted that 400 KV Hindaun –Alwar sub-station, Voltages reaching lows of 320 KV.
- MS (NRPC) advised RRVPNL to run Dholpur plants and take up with their higher management in view of the present grid condition
- Low Voltages in the system also lead to huge payments under the reactive energy account.
- A capacitor bank should also be installed in Bhinmal area in view of low voltages.
- SPS implementation to be expedited in priority where SPS has not been installed.
- At Heerapura ICT will be commissioned this year and SPS may not be required.
- PGCIL informed that bay construction work is under progress at various locations and ICTs would be commissioned in next year.
- SPS can be installed at PGCIL sub-stations in one month time line with feeders emanating from PG.
- Non-essential load may be shifted to Non-solar hours

Rajasthan SLDC may please provide an update.

Shutdown of 400kV Bhadla-Bikaner D/C

400 KV Bhadla(Raj)-Bikaner(Raj) D/C lines were approved for planned outage from 16:00 hrs of 06.11.2025 (continuous for 40 days). Shutdown is for Rectification of defects of 400 KV Bhadla-Bikaner Quad moose D/C line. RRVPNL has availed the shutdown on evening of 10.11.2025.

NRLDC has earlier requested RRVPNL in 235 & 236 OCC meetings to expeditiously plan shutdown of this line so that shutdown period does not coincide with the high demand season of Rajasthan. When Rajasthan network also draws huge MVAR from the grid.

As discussed in the meeting held on 4.11.2025 attended by NRPC, NLDC, NRLDC, CTU and SLDC-Rajasthan following decisions were made:

- RE generation (solar + wind) will be restricted to a maximum of 5800MW between 11:30 to 13:30 (based on real-time conditions) till SPS is implemented by RRVPNL.
- SLDC-Rajasthan agreed to implement SPS of 1000MW solar generation tripping with N-1 of 400kV Jodhpur Kankroli S/C before 19th November (15days). After which RE generation (solar + wind) will be restricted to a maximum of 6800MW between 11:30 to 13:30 (based on real-time conditions).
- 400kV Bikaner-Sikar D/C will remain in service normally and may be opened by NRLDC control room as per system requirements.

- STATCOMs connected at various RE pooling stations may be kept in fixed Q mode as per system requirements.
- SLDC-Rajasthan agreed to complete all works within 40 days, and all compliances to be completed before the Shutdown period if required to prevent any delays.
- ***SLDC-Rajasthan will manage their voltage profile and limit their MVAr grid from ISTS points by taking various measures such as: MVAr support from RE generators, managing heavy MVAr-drawing loads from the grid, etc.***
- Members agreed on Rajasthan proposal of considering MVA capacity of 400kV Kankani-Merta Twin moose to be 979MVA with 40 degrees ambient temperature and 75 degrees conductor temperature.
- ***RE generation quantum allowed will be reviewed by NRLDC on the basis of observations after availing the shutdown and may be updated as per actual grid scenarios.***
- During the shutdown period, SLDC-Rajasthan has agreed to implement all instructions issued by the NRLDC control room.
- 400kV Bikaner-Bhadla D/C (under shutdown) will be anti-theft charged from both ends.
- During this period, during solar hours, no planned outage as well as non-auto reclosure, will be allowed.

It may be noted that just one day after the shutdown i.e. on 11.11.2025, when there was no reduction in ISTS solar generation due to TRAS down and ISTS-RE generation was close to 17000MW, there were oscillations of 3.5-4Hz with 35-40kV observed at 765kV voltage level. These oscillations immediately died down after taking STATCOMs at Fatehgarh-2 in Manual (Fixed-q) mode of operation, as had been seen earlier also.



Accordingly, Rajasthan SLDC may ensure above measures during planned shutdown of 400kV Bhadla-Bikaner D/C.

SPS proposals in Rajasthan

Majority of 400/220kV ICTs in Rajasthan state (both interstate as well as intrastate are N-1 non-compliant).

For intrastate substations, where SPS have not been planned and implemented, the same may be taken up. List of N-1 non-compliant substations is shown below:

Constrained location	SPS Status as available with NRLDC
3*315=945 MVA ICT at Bhiwadi(PG)	Not planned
2*315+500=1130 MVA ICT at Bassi(PG)	Not planned
315+500=815 MVA ICT at Neemrana(PG)	Not planned
2*500=1000 MVA ICT at Jaipur South(PG)	Not planned
2*315+500=1130 MVA ICT at Sikar(PG)	Not planned
3*315=945 MVA ICT at Kankroli(PG)	Not planned
2*315=630 MVA ICT at Kotputli(PG)	Not planned
2*315=630 MVA ICT at Deedwana(RVPN)	Not planned
3*250+315=1065 MVA ICT at Heerapura(RVPN)	Not planned
3*315 =945 MVA ICT at Chittorgarh (RVPN)	Implemented
2*315 =630 MVA ICT at Ajmer (RVPN)	Implemented
2*315 =630 MVA ICT at Merta (RVPN)	Implemented
2*315 =630 MVA ICT at Bikaner (RVPN)	Implemented
2*315 =630 MVA ICT at Jodhpur (RVPN)	Implemented
2*315=630 MVA ICT at Suratgarh(RVPN)	Implemented
3*315=945 MVA ICT at Ratangarh(RVPN)	Implemented

1*500+1*315 =815 MVA ICT at Bhilwara (RVPN)	Implemented
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Subsequently, NRLDC vide email dated 01.08.2025 had communicated to share simulation studies carried out at RRVPNL side for feeders identified for SPS at the earliest. Further, it was mentioned that NRLDC has also simulated feeders for SPS and need further discussion for feeders identified for Bassi SPS.

Rajasthan SLDC has shared the study results with NRLDC which are being reviewed at NRLDC end.

Rajasthan SLDC and NRLDC may provide an update.

B.11. State-wise transmission constraints during the high-demand season of 2025 and SPS proposals

During the high demand season, the transmission system in Northern region remains heavily loaded. Transmission constraints observed in the grid during high demand period are regularly being highlighted in OCC meetings. Same is also being submitted to CTUIL and CEA through quarterly operational feedback.

Even after several follow-ups, it is observed that progress of several transmission elements are not upto the mark and expeditious actions from transmission utilities are required so that minimal issues are observed at transmission level during the high demand season.

State-wise issues and measures required thereof are listed below. Concerned transmission utilities are requested to provide update and ensure that these transmission elements are expeditiously commissioned.

Punjab:

During OCC 236,

NRLDC proposed to increase ATC/TTC limits of Punjab state control area by 300MW presently and keeping it under observation and in case no issues are observed with ATC/TTC limits of 10700/11200MW, decision on further increase of ATC/TTC by 200MW would be taken by NRLDC in consultation with Punjab SLDC.

Punjab SLDC representative stated that they are awaiting management approval for the same. NRLDC proposal for enhancing ATC/TTC by 300MW and 200MW subsequently based on observation has been shared with higher officials and after their consent, same shall be communicated with NRLDC.

Comments from Punjab SLDC side could not be received in 236 OCC meeting. Punjab SLDC may provide update.

Haryana:

SPS proposals in Haryana

For SPS at 400/220kV Hissar(PG) ICTs:

During 236 OCC meeting,

NRLDC representative asked POWERGRID to plan & implement SPS in such a manner that SPS is surely implemented by Apr 2026.

POWERGRID representative stated that an offer has been received for DTPC panel procurement and the work is expected to be completed in next 3-4 months.

POWERGRID may provide an update.

For SPS at 400/220kV Panipat ICTs:

During 236 OCC meeting, Haryana SLDC stated that they have taken up the matter with their TS-wing and would provide update on SPS implementation at 400/220kV Panipat(BBMB) shortly after the meeting.

Haryana SLDC may provide update on SPS implementation at 400/220kV Panipat(BBMB).

Uttar Pradesh:

In 236 OCC meeting,

POWERGRID representative stated that 500MVA ICT-4 at Allahabad is expected to be commissioned by Nov 2025 as the work got delayed due to some rains and flood like situation.

It was also informed by UPPTCL representative that old 240MVA ICT at Obra is expected to be revived by Nov 2025 whereas 315MVA ICTs at Obra would be revived after some time due to requirement of procurement of ICTs.

SPS proposals in Uttar Pradesh

UP SLDC informed that work order for SPS logic of 400/220kV Bareilly S/s has been placed. SPS at both 400/220kV Panki and Bareilly substation are expected to be commissioned by Dec 2025.

OCC forum asked POWERGRID to implement SPS scheme at Agra(PG) at the earliest.

POWERGRID representative stated that SPS at Agra(PG) would be commissioned by Nov 2025 end.

POWERGRID and UP SLDC may provide update.

As discussed in previous OCC meetings, it is once again requested that:

- All SLDCs to take actions such that loading of ICTs and lines in their control areas are below their N-1 contingency limits.

- While requisitioning power from various sources, states should take care to limit their scheduled drawl as well as actual drawl in real time within the Available Transfer Capability (ATC) limits assessed by SLDC and NRLDC.
- SLDCs also need to ensure that their drawl from grid remains within these limits during real-time operation. In the past, it has been observed that some states have drawn power beyond their ATC limits as assessed by SLDCs and NRLDC.
- Further, all SLDCs need to make sure that loading of 220kV and below voltage level intrastate lines remain within safe limits during the high demand season.

Further, it may be noted that 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” which requires SLDCs to submit network data as well as PSSE basecases on M-12, M-6, M-1 basis. The monitoring of submission of these data by SLDCs is being done in OCC meetings on a monthly basis, where the response of some of the states needs improvement.

June 2025 Mails						
	ATC/TTC Declaration				Interconnection Studies	
	M-1 (July-25)		M-12 (June-26)		M-6 (December-25)	
	Data Values	Basecases	Data Values	Basecases	Data Values	Basecases
Chandigarh	No	No	No	No	No	No
Delhi	No	No	Yes	Yes	No	No
Haryana	Yes	Yes	Yes	Yes	Yes	Yes
Himachal	Yes	Yes	Yes	Yes	Yes	Yes
J & K	Yes	Yes	Yes	Yes	Yes	Yes
Ladakh	No	No	No	No	No	No
Punjab	Yes	Yes	Yes	Yes	Yes	Yes
Rajasthan	Yes	Yes	Yes	Yes	Yes	Yes
Uttar Pradesh	Yes	Yes	Yes	Yes	Yes	Yes
Uttarakhand	No	No	No	No	No	No

July 2025 Mails						
	ATC/TTC Declaration				Interconnection Studies	
	M-1 (August-25)		M-12 (July-26)		M-6 (January-26)	
	Data Values	Basecases	Data Values	Basecases	Data Values	Basecases
Chandigarh	No	No	No	No	No	No
Delhi	No	No	Yes	Yes	No	No
Haryana	Yes	Yes	Yes	Yes	Yes	Yes
Himachal	Yes	Yes	Yes	Yes	Yes	Yes
J & K	Yes	Yes	Yes	Yes	Yes	Yes
Ladakh	No	No	No	No	No	No
Punjab	Yes	Yes	Yes	Yes	Yes	Yes
Rajasthan	Yes	Yes	Yes	Yes	Yes	Yes
Uttar Pradesh	Yes	Yes	Yes	Yes	Yes	Yes
Uttarakhand	No	No	No	No	No	No

August 2025 Mails						
	ATC/TTC Declaration				Interconnection Studies	
	M-1 (Sep-25)		M-12 (August-26)		M-6 (February-26)	
	Data Values	Basecases	Data Values	Basecases	Data Values	Basecases
Chandigarh	No	No	No	No	No	No
Delhi	No	No	Yes	Yes	No	No
Haryana	Yes	Yes	Yes	Yes	Yes	Yes
Himachal	Yes	Yes	Yes	No	Yes	No
J & K	Yes	Yes	Yes	Yes	Yes	Yes
Ladakh	No	No	No	No	No	No
Punjab	Yes	Yes	Yes	Yes	Yes	Yes
Rajasthan	Yes	Yes	Yes	Yes	Yes	Yes
Uttar Pradesh	Yes	Yes	Yes	Yes	Yes	Yes
Uttarakhand	No	No	No	No	No	No

September 2025 Mails						
	ATC/TTC Declaration				Interconnection Studies	
	M-1 (Oct-25)		M-12 (September-26)		M-6 (March-26)	
	Data Values	Basecases	Data Values	Basecases	Data Values	Basecases
Chandigarh	No	No	No	No	No	No
Delhi	No	No	Yes	Yes	No	No
Haryana	Yes	Yes	Yes	Yes	No	No
Himachal	Yes	Yes	Yes	Yes	Yes	Yes
J & K	Yes	Yes	Yes	Yes	Yes	Yes
Ladakh	No	No	No	No	No	No
Punjab	Yes	Yes	Yes	Yes	Yes	Yes
Rajasthan	Yes	Yes	Yes	Yes	Yes	Yes
Uttar Pradesh	Yes	Yes	Yes	Yes	Yes	Yes
Uttarakhand	No	No	No	No	No	No

October 2025 Mails						
	ATC/TTC Declaration				Interconnection Studies	
	M-1 (Nov-25)		M-12 (October-26)		M-6 (April-26)	
	Data Values	Basecases	Data Values	Basecases	Data Values	Basecases
Chandigarh	No	No	No	No	No	No
Delhi	No	No	Yes	Yes	No	No
Haryana	Yes	Yes	No	No	No	No
Himachal	Yes	Yes	Yes	Yes	Yes	Yes
J & K	Yes	Yes	Yes	Yes	Yes	Yes
Ladakh	No	No	No	No	No	No
Punjab	Yes	Yes	Yes	Yes	Yes	Yes
Rajasthan	Yes	Yes	Yes	Yes	Yes	Yes
Uttar Pradesh	Yes	Yes	Yes	Yes	Yes	Yes
Uttarakhand	No	No	No	No	No	No

November 2025 Mails						
	ATC/TTC Declaration				Interconnection Studies	
	M-1 (Dec-25)		M-12 (Nov-26)		M-6 (May-26)	
	Data Values	Basecases	Data Values	Basecases	Data Values	Basecases
Chandigarh						
Delhi						
Haryana						
Himachal						
J & K	Yes	Yes	Yes	Yes	Yes	Yes
Ladakh						
Punjab	Yes	Yes			Yes	Yes
Rajasthan	Yes	Yes	Yes	Yes	Yes	Yes
Uttar Pradesh	Yes	Yes	Yes	Yes	Yes	Yes
Uttarakhand						

Submitted after 9th of current month						
Submitted in next month						

During 236 OCC meeting, Uttarakhand SLDC submitted that they had recently shared basecase file with NRLDC.

NRLDC representative stated that basecase need to submitted for four scenarios as per IEGC approved procedure. Only one scenario basecase has been received by NRLDC from Uttarakhand SLDC which was also submitted after due date.

Uttarakhand SLDC is requested to provide update.

Further, states submitting basecase with one month delay may note that the changes given by them do not get reflected in the All India/regional basecase file, as NRLDC prepares the basecase as per CERC approved timelines and goes ahead as per the data available as on date.

ATC/TTC limits of states for the month of December 2025 are attached as Annexure-B.V. Utilities are requested to go through these limits and provide comments.

Members may please discuss.

B.12. Mock testing of the islanding scheme and simulation studies

The following four islanding schemes are operational in the Northern Region: NAPP Islanding Scheme (Uttar Pradesh), RAPP Islanding Scheme (Rajasthan), Bawana Islanding Scheme (Delhi), and Unchahar Islanding Scheme (Uttar Pradesh).

During 236 OCC meeting, NRLDC representative presented the latest status of actions required on various islanding schemes.

Scheme	UFR testing done	Basecase shared	SCADA display made
NAPP Islanding scheme (UP)	☑ Yes	☑ Yes	☑ Yes
RAPP Islanding scheme (Raj)	☑ Yes	☑ Yes	☑ Yes
Bawana Islanding scheme (Delhi)	☑ Yes	☑ Yes	☑ Yes
Unchahar Islanding scheme(UP)	☑ Yes	✗ No	☑ Yes

POWERGRID representative stated that pending testing of UFR at POWERGRID has been carried out and report has been shared with NRLDC.

UP SLDC representative stated that Unchahar islanding scheme basecase has been shared with NRLDC. It was further informed that a meeting to review load and connectivity of the Islanding scheme is scheduled to be held on 17.10.2025. Basecase after incorporating details and discussions of the meeting will be shared again.

OCC forum noted the same and asked UP SLDC to share revised basecase at the earliest. UP SLDC is requested to provide update.

B.13. Self-audit related:

As per IEGC Clause 56.2(c),

Quote

“The self-audit reports by users, QCAs, and SNAs shall be submitted to the concerned RLDC or SLDC, as the case may be.”

Unquote

Failure to submit the self-audit report within the stipulated timeframe would be considered a non-compliance with IEGC regulations.

During 235 OCC meeting, it was discussed that Self-audit report has been received from NHPC and Koteswar THDC only for F.Y. 2023-24. As F.Y. 2024-25 has also completed recently, all utilities in Northern region are requested to carry out self-audit exercise and share report with NRLDC as per IEGC Clause 56.2(c).

As 31.07.2025 has already past, it is requested that all concerned users of NRLDC may carry out their self-audit and submit report to NRLDC at the earliest.

NRLDC communication in this regard to all concerned is attached as **Annexure-B.VI** for reference.

The self-audit report should inter alia include the following details:

1. Sufficient information on any instances of non-compliance, explaining how and why they occurred.
2. Extent of impact or damage caused by such non-compliance.
3. Corrective steps planned along with a timeline for rectification.
4. Measures taken to prevent recurrence in the future.

Self-audit reports are being received from some of the RE developers and Qualified Coordinating Agencies (QCA) but are still pending for NRLDC users which are part of OCC forum.

All concerned are requested to provide update. Members may please discuss.

B.14. Multiple element tripping events in Northern region in the month of October 2025:

A total of **13** grid events occurred in the month of October 2025 of which **8** are of GD-1 category **03** are of GI-2 Category and **02** are of GI-1 Category. The tripping report of all the events have been issued from NRLDC. A list of all these events along with the status of DR/EL & tripping detail submission, is attached at **Annexure-B.VII**.

Maximum delayed clearance of fault observed in event of tripping event at 400/220kV Daulatabad(HR) at 06:02 hrs on 31st October 2025 (As per PMU at Gurgaon(PG) end, B-N phase to earth fault with delayed clearance of ~660 msec is observed).

Delayed clearance of fault (more than 100ms for 400kV and 160ms for 220kV system) was observed in a total of **04** events out of **13** grid events that occurred in the month. In **02** (no.) of grid events, there was no fault in the grid.

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.

It is observed that DR/EL & tripping reports of most of the grid events are not being submitted as per the timeline specified in IEGC 2023. Non-availability to tripping details further hampers the grid event analysis at RLDC level.

Members may take necessary preventive measures to avoid such grid incidents/disturbances in future and share the report of actions taken by respective utilities. Moreover, utilities may impress upon all concerned to provide the Preliminary Report, DR/EL & Detailed Report of the events to RLDC in line with the IEGC clause 37.2 (c) & (e).

Members may like to discuss.

B.15. Status of submission of DR/EL and tripping report of utilities for the month of October 2025:

The status of receipt of DR/EL and tripping report of utilities for the month of **October 2025** is attached at **Annexure-B.VIII**. It is to be noted that as per the IEGC provision under clause 37.2 (c), the 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 of RE stations, SLDC-PS, SLDC-HR, SLDC-Delhi, SLDC-J&K, BBMB, NTPC, NHPC and RAPS is not satisfactory and needs improvement.**

Members may please note and advise the concerned for the timely submission of the information. It is requested that DR/EL of all the trippings shall be **uploaded on Web Web-Based Tripping Monitoring System “<https://postda.nrlldc.in/Default.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 (.cfg/.dat) may also be submitted in the tripping portal.

Members may like to discuss.

B.16. Frequency response performance for the reportable events of month of October 2025:

During the month of **October 2025, 1 no. of reportable event** was notified by NLDC for which FRC/ FRP need to be calculated. Description of the event is as given in the Table below:

S. No.	Event Date	Time (In hrs.)	Event Description	Starting Frequency (in Hz)	Nadir Frequency (in Hz)	End Frequency (in Hz)	$\Delta f(Hz)$	NR FRP during the event
1	15-Oct-25	12:11 hrs	As reported, at 12:11 Hrs on 15 th October 2025, and event of RE generation loss of ~1855 MW occurred in Rajasthan RE	50.023	49.833	49.959	- 0.064	0.62

			complex. Hence generation loss of 1855 MW was considered for FRC/FRP Calculation.					
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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 a 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 the 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 the 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."

Members are requested to share the FRC/FRP computation of their respective control area as per the timeline specified in IEGC 2023.

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 06th November 2025**, FRC/FRP as per NRLDC HDR data is used for computation of Average Monthly Frequency Response Performance, Beta ' β ' for Generating Stations.

From the FRP data, it is observed that FRP of many of the control areas are not satisfactory. Therefore, it is requested to review the FRC/FRP, governor actions of your respective control area, and necessary actions may be taken for improvement in the FRC/FRP.

Status of details received from constituents and FRP values as considered for the events of **October 2025** are attached as **Annexure-B.IX**.

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

Sl. No.	Entity	Governor Mode (FGMO as per IEGC 2023) Yes or No	Droop setting (%)	Remarks (if any)
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1	Dadri -1 (TH)	Yes	6%	
2	Dadri -2 (TH)	Yes	6%	
3	Jhajjar (TH)	Yes	5%	
4	Rihand-1 (TH)	Yes	5%	
5	Rihand-2 (TH)	Yes	5%	
6	Rihand-3 (TH)	Yes	5%	
7	Shree Cement (TH)			
8	Singrauli (TH)	Yes	5%	
9	Tanda-2 (TH)	Yes	6%	
10	Unchahar-I (TH)	Yes	5%	
11	Unchahar-II (TH)	Yes	5%	
12	Unchahar-III (TH)	Yes	5%	
13	Unchahar-IV (TH)	Yes	5%	
14	Anta (G)			
15	Auraiya (G)			
16	Dadri (G)			
17	AD Hydro (H)	Yes	4%	
18	Bairasiul (H)	Yes	4%	
19	Bhakra (H)			
20	Budhil (H)			
21	Chamera-1 (H)	Yes	5%	
22	Chamera-2 (H)	Yes	5%	
23	Chamera-3 (H)	Yes	4%	
24	Dehar (H)			
25	Dhauliganga (H)	Yes	5%	
26	Dulhasti (H)	Yes	5%	
27	Karcham (H)	Yes	5%	
28	Kishenganga	Yes	4%	
29	Koldam (H)	Yes	9%	
30	Koteshwar (H)			
31	Malana-2 (H)			
32	Nathpa Jhakri (H)	Yes	9%	
33	Parbati-2 (H)	Yes	4%	
34	Parbati-3 (H)	Yes	4%	
35	Pong (H)			
36	Rampur (H)			
37	Sainj (H)			
38	Salal (H)	Yes	5%	
39	Sewa-II (H)	Yes	4%	
40	Singoli Bhatwari (H)			
41	Sorang (H)	No	4%	ROR, no storage
42	Tanakpur (H)	Yes	4%	
43	Tehri (H)	Yes	4%	
44	Uri-1 (H)	Yes	6%	
45	Uri-2 (H)	Yes	5%	

Constituents are requested to share the details of the drop w.r.t. their generating stations.

Members 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 the timeline for ensuring IEGC compliance.

Members may like to discuss.

B.17. 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 shortcomings 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 a 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 **58 numbers of System Protection Schemes (SPS) approved** in Northern Region. These SPS are implemented at major generation complexes, important evacuation transmission lines and ICTs which are N-1 non-compliant. System Protection Scheme Document of Northern Region has been revised/updated on 31st January 2025. Revised version of the document is available on the NRLDC website in the Document section and can be accessed at below link: <https://nrlcdc.in/documents/Documents>.

In this regard, communication was sent to constituents through NRLDC letter dated 01.05.2024, 21.02.2025, 05.03.2025, 04.04.2025 & 28.05.2025 for conducting mock testing of SPS in their control area and continuous follow up is also being done in OCC & PSC meeting since May 2024.

During 2024-25, mock testing of 14 SPS out of total 55 SPS were not conducted. In view of high demand scenario during summer 2025-26, NLRDC vide letter dated 04.04.2025 requested all the concerned utility to conduct the mock testing of pending SPS by the end of April 2025. However, as reported, mock testing of 03 SPS out of pending 14 SPS have been done. In this regard, discussion was also held in 60th, 61st, 62nd & 63rd PSC meeting. PSC forum requested all the members to conduct the mock testing of all the SPS in their respective control area at the earliest.

Status of mock testing of all the SPS in NR is attached as **Annexure-B.X**.

Status of follow-up actions w.r.t. some of the SPS are as follows:

- i. **SPS of HVDC Rihand-Dadri:** During mock testing of SPS of HVDC Rihand-Dadri on 20.03.2025, issues i.e., faulty SPS hardware at Singrauli TPS (NTPC) and no receipt of SPS signal at 220/132kV Ratangarh(RS) were identified. Further, during recent operation of SPS on 21.05.2025 in incident of outage of both poles, desired SPS actions i.e., generation backdown at Singrauli TPS and load relief in UP, Delhi, Haryana & Punjab were not observed. Desired load / generation relief is

important to ensure the security and reliability of grid during such contingency. As per details received, SPS signal was sent to all the mapped stations from POWERGRID end; however, either due to non-receipt of signal or an error in SPS system at load/generation, SPS action didn't occur. NRLDC vide letter dated 02.07.2025, requested POWERGRID and Singrauli NTPC to take necessary remedial measures and make the complete SPS system healthy.

During 233rd OCC meeting, POWERGRID representative stated that the equipment at Singrauli TPS end is owned by NTPC and need to be revived by them. SPS system at Rihand(PG) is healthy and operational. NTPC representative stated that as per details received from site, NTPC Singrauli team have initiated necessary actions in coordination with the POWERGRID. SPS operation is crucial as it is planned for special contingencies, and its unavailability may lead to cascade tripping or major grid disturbance, especially in case of high-demand period.

NTPC Singrauli and POWERGRID(NR-1) may share the details of necessary corrective actions taken/planned to be taken to ensure the healthiness of SPS system at Singrauli TPS and load stations.

- ii. **SPS of Anta, Kawai, Chhabra generation complex:** In one of the SPS cases i.e., N-1-1/ N-2 of 765kV Anta-Phagi 1 & 2, instantaneous generation backdown of ~2100 MW is designed as SPS action. In such scenario, to avoid overloading of WR-NR corridor and over drawl by Rajasthan, it was agreed that RVPNL shall implement the automatic load shedding of ~750 MW by 28.02.2018. However, as per the details available, implementation of automatic load shedding as per SPS hasn't been done yet. This matter has already been discussed in PSC as well as OCC meetings on regular basis. The concern of grid security and reliability was also raised during request of the shutdown of 765kV Anta-Phagi line. is requested to expedite the implementation of the automatic load shedding of ~750 MW as per SPS (N-1-1/ N-2 contingency of 765kV Anta-Phagi-1 & 2).

During 235th OCC meeting, the SLDC-Rajasthan representative informed that automatic load shedding of ~750 MW has been implemented.

During 63rd PSC meeting, Rajasthan was requested to conduct the mock testing of load shed part of SPS and share the report. Rajasthan agreed the same.

RVPNL may share the details of load mapped under SPS for automatic load shedding and also share the mock test report.

- iii. **SPS of N.Jharkri, Karcham, Rampur hydro generation complex:** Status of implementation of case-6(i) and corrective actions w.r.t case-6 (ii) need to be shared.

During 235th OCC meeting, HPPTCL representative informed that the faulty communication card at Wangtoo S/s is to be replaced with new card. The case is at the procurement stage, and it is estimated that work will be completed by the end of December 2025.

Karcham(JSW) and HPPTCL may share the update in this regard.

- iv. **SPS of 765kV Agra-Gwalior D/C:** Mock testing of the SPS was conducted on 10.10.2025. During the testing, it was observed that there is a communication

issue at Bhiwadi(PG), Bamnauli(DTL), Kota, Debari, Chittorgarh, Ratangarh, Nunamajra, Safidon, Ajitwal, Dandhari-II, and Ablawal substations.

Mock test report has been received from Delhi, Rajasthan and Punjab. UP, BBMB, Haryana and POWERGRID have shared the partial details.

Concerned utilities are requested to share the SPS report of your respective control area at the earliest, so that the final SPS mock test report can be issued timely

Further, Clause 16.2 of IEGC 2023 also mandates the mock testing of SPS for reviewing SPS parameters & functions, at least once a year. Mock testing of all the SPS needs to be conducted in 2025-26. In view of this following is requested:

- i. **Concerned constituents/utility are requested to conduct the mock testing of pending SPS (whose mock testing was not conducted in 2024-25) at the earliest.**
- ii. **Utilities are also requested to conduct the mock testing of SPS schemes in their respective control area w.r.t. year 2025-26.**
- iii. **In compliance with IEGC clause 16.2, users shall ensure that mock testing along with the review of SPS logic of all the SPS is conducted at least once a year.**
- iv. **Further, in compliance with IEGC clause 16.3, users shall also share the detailed report of SPS operation in their respective control area within 3 days of its operation. Presently, no such report is being received.**

Further, during the 60th PSC meeting, the forum also decided to not disable the SPS where ICTs are now N-1 compliant after augmentation. It was decided that SPS may be kept enabled with logic based on loading instead of ICT tripping. Members are requested to share the confirmation in this regard.

Members may like to discuss.

B.18. Mock trial run and testing of black start facilities at generating stations in the 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 the above, regional entity generating stations shall conduct the dead bus charging of their units on a rotation basis as per the availability of the schedule under intimation to the NRLDC. Testing of Diesel generator sets and other standalone auxiliary supply sources 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 the 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 2025-26. The present status of mock black start of generating units is attached as **Annexure-B.XI**. Constituents are also requested to share the test report of diesel generators / auxiliary supply on a quarterly basis.

Therefore, ISGS and SLDCs are requested to take the following actions:

- To share the tentative schedule of the mock black start exercise of generating stations in their respective control area.
- SLDCs are requested to share the tentative schedule plan of mock black start exercise of generating stations in their respective control area.
- To conduct dead bus charging after self-starting the generating station if a schedule with load is not available.
- To share the test report of the mock black start exercise conducted along with weekly DG testing on a monthly/quarterly basis.

Members may like to discuss.

C.1. Presentation by Solvina on Simulated Island Operation Testing

NLDC has informed that during a recent meeting held at NLDC, M/s Solvina presented their experience and capability in conducting simulated island operation tests on generating units participating in islanding schemes.

Solvina's testing methodology enables validation of island operation performance across the full operating range and helps identify operating limits, safety margins, and potential weak components of the units. They informed that over 200 generating units worldwide have successfully undergone such simulated tests without any tripping incidents.

Further, Solvina suggested:

- Organizing a technical workshop or demonstration session at the RPC level to share the testing methodology and global experience.
- Exploring pilot testing of simulated island operation for one of the identified important city islanding schemes.

In line with the provisions of IEGC Regulation 29(11):

“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,”

NLDC has requested to discuss the feasibility of conducting a pilot test at one of the generating units in the Northern Region, at no cost.

In view of this, M/s Solvina may make a presentation to the forum on Simulated Island Operation Testing.

Members may like to discuss.

Status of action taken on decision of 236th OCC meeting of NRPC

S.N.	Agenda	Decision of 236 th OCC meeting of NRPC	Status of action taken
1.	Agenda. Rectification of the breaker and charging of the 220kV Sunam (PS)-Patran (IndiGrid) Circuit (Agenda by Punjab SLDC)	Representative of IndiGrid informed that OEM has dispatched circuit breaker after replacing power cord. He assured that circuit breaker would be replaced by 30 th October, 2025.	IndiGrid may update the status.
2.	A.15. ICT Installation and Connectivity at PGCIL Kankroli Substation – Hindustan Zinc Ltd (Dariba – 200 MW) (Agenda by Hindustan Zinc Ltd.)	OCC forum asked CTU to carry out a study before the next OCC meeting to explore the possibility of providing part GNA to Hindustan Zinc Limited. Further, the possibility of SPS may be explored by HZL in coordination with RRVPNL so that some non-essential load is shed in case of N-1 contingency.	CTU may update the status.
3.	A.17. LILO of 400 kV Delhi Ring main Ckt. at 400 kV switchyard of 765/400 kV Narela Substation for relieving the load of 765/400 kV Jhatikra Substation (Agenda by Powergrid NR-1)	OCC forum asked CTUIL to study the proposal in coordination with CEA, DTL and NRLDC before the next OCC meeting. Further, the forum requested DTL to provide their comments on the proposal in writing.	CTU may update the status.
4.	A.22. Over-voltage condition at Orai (GIS), Aligarh (GIS) and Agra	OCC forum asked CTU to carry out a comprehensive study to examine the	CTU may update the status.

Status of action taken on decision of 236th OCC meeting of NRPC

	Substations (Agenda by Powergrid NR-3)	requirement of further reactive power devices for voltage control in this area.	
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Follow up issues from previous OCC meetings

Annexure-A. II

1	Down Stream network by State utilities from ISTS Station	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.	List of downstream networks is enclosed in Annexure-A. II. I.																																								
2	Progress of installing new capacitors and repair of defective capacitors	Information regarding installation of new capacitors and repair of defective capacitors is to be submitted to NRPC Secretariat.	Data upto following months, received from various states / UTs: <table><tr><td>CHANDIGARH</td><td>Sep-2019</td></tr><tr><td>DELHI</td><td>Sep-2025</td></tr><tr><td>HARYANA</td><td>Sep-2025</td></tr><tr><td>HP</td><td>Mar-2025</td></tr><tr><td>J&K and LADAKH</td><td>Not Available</td></tr><tr><td>PUNJAB</td><td>Jul-2025</td></tr><tr><td>RAJASTHAN</td><td>Sep-2025</td></tr><tr><td>UP</td><td>Sep-2025</td></tr><tr><td>UTTARAKHAND</td><td>Oct-2025</td></tr></table> All States/UTs are requested to update status on monthly basis.	CHANDIGARH	Sep-2019	DELHI	Sep-2025	HARYANA	Sep-2025	HP	Mar-2025	J&K and LADAKH	Not Available	PUNJAB	Jul-2025	RAJASTHAN	Sep-2025	UP	Sep-2025	UTTARAKHAND	Oct-2025																						
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3	Healthiness of defence mechanism: Self-certification	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” . In compliance of NPC decision, NR states/constituents agreed to raise the AUFR settings by 0.2 Hz in 47th TCC/49th NRPC meetings.	Data upto following months, received from various states / UTs: <table><tr><td>CHANDIGARH</td><td>Not Available</td></tr><tr><td>DELHI</td><td>Sep-2025</td></tr><tr><td>HARYANA</td><td>Jun-2025</td></tr><tr><td>HP</td><td>Jun-2025</td></tr><tr><td>J&K and LADAKH</td><td>Not Available</td></tr><tr><td>PUNJAB</td><td>Sep-2025</td></tr><tr><td>RAJASTHAN</td><td>Jun-2025</td></tr><tr><td>UP</td><td>Sep-2025</td></tr><tr><td>UTTARAKHAND</td><td>Sep-2025</td></tr><tr><td>BBMB</td><td>Sep-2025</td></tr></table> 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. Status: <table><tr><td>CHANDIGARH</td><td>Not Available</td></tr><tr><td>DELHI</td><td>Increased</td></tr><tr><td>HARYANA</td><td>Increased</td></tr><tr><td>HP</td><td>Increased</td></tr><tr><td>J&K and LADAKH</td><td>Increased</td></tr><tr><td>PUNJAB</td><td>Increased</td></tr><tr><td>RAJASTHAN</td><td>Increased</td></tr><tr><td>UP</td><td>Increased</td></tr><tr><td>UTTARAKHAND</td><td>Increased</td></tr><tr><td>BBMB</td><td>Increased</td></tr></table>	CHANDIGARH	Not Available	DELHI	Sep-2025	HARYANA	Jun-2025	HP	Jun-2025	J&K and LADAKH	Not Available	PUNJAB	Sep-2025	RAJASTHAN	Jun-2025	UP	Sep-2025	UTTARAKHAND	Sep-2025	BBMB	Sep-2025	CHANDIGARH	Not Available	DELHI	Increased	HARYANA	Increased	HP	Increased	J&K and LADAKH	Increased	PUNJAB	Increased	RAJASTHAN	Increased	UP	Increased	UTTARAKHAND	Increased	BBMB	Increased
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4	Status of Automatic Demand Management System in NR states/UT's	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:	The status of ADMS implementation in NR is enclosed in Annexure-A.II.II. <table><tr><td>⊙ DELHI</td><td>Scheme Implemented but operated in manual mode.</td></tr><tr><td>⊙ HARYANA</td><td>Scheme not implemented</td></tr><tr><td>⊙ HP</td><td>Scheme not implemented</td></tr><tr><td>⊙ PUNJAB</td><td>Scheme not implemented</td></tr><tr><td>⊙ RAJASTHAN</td><td>Under implementation.</td></tr><tr><td>⊙ UP</td><td>Scheme implemented by NPCIL only</td></tr><tr><td>⊙ UTTARAKHAND</td><td>Scheme not implemented</td></tr></table>		⊙ DELHI	Scheme Implemented but operated in manual mode.	⊙ HARYANA	Scheme not implemented	⊙ HP	Scheme not implemented	⊙ PUNJAB	Scheme not implemented	⊙ RAJASTHAN	Under implementation.	⊙ UP	Scheme implemented by NPCIL only	⊙ UTTARAKHAND	Scheme not implemented																														
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5	Status of availability of ERS towers in NR	As per the decesion of 68th NRPC and 211th OCC meeting, ERS availability monitoring is being taken as rolling/follow-up agenda in OCC meetings for regular monitoring of ERS under different utilities in Northern region.	As per the information received from different utilities in Northern region, updated status of availability of ERS towers in Northern Region attached as Annexure-A.II.III.																																													
6	Submission of breakup of Energy Consumption by the states	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>	Category→	Consumption by Domestic Loads	Consumption by Commercial Loads	Consumption by Agricultural Loads	Consumption by Industrial Loads	Traction supply load	Miscellaneous / Others	<Month>							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-25</td></tr><tr><td>⊙</td><td>HARYANA</td><td>Aug-25</td></tr><tr><td>⊙</td><td>HP</td><td>Jul-25</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>Jul-25</td></tr><tr><td>⊙</td><td>RAJASTHAN</td><td>Jul-25</td></tr><tr><td>⊙</td><td>UP</td><td>Jun-25</td></tr><tr><td>⊙</td><td>UTTARAKHAND</td><td>Feb-25</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			State / UT	Upto	⊙	CHANDIGARH	Not Submitted	⊙	DELHI	Jun-25	⊙	HARYANA	Aug-25	⊙	HP	Jul-25	⊙	J&K and LADAKH	JPDCL- Mar' 24 KPDCL- Not Submitted	⊙	PUNJAB	Jul-25	⊙	RAJASTHAN	Jul-25	⊙	UP	Jun-25	⊙	UTTARAKHAND	Feb-25
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9	Reactive compensation at 220 kV/ 400 kV level at 7 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	The Letter of Award for "Procurement of 125 MVAR Reactor, Online DGA, ODS, NIFPS along with its accessories at 400 KV Sub-station Kashipur" against Tender Specification no. PTCUL/E-Tender/C&P-II/SS-12/2024-25 has been issued to M/s Bharat Heavy Electricals Limited, New Delhi on 26.06.2025.

						Annexure-A-II.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.	-	02 No. of bays shall be utilized for LILO-II of 220kV Jatwal-Bishnah Transmission Line, the work of which is expected to begin on 16th July 2025. Updated in 233rd 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	Commissioned	Updated by HVPNL in 235th OCC.
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 Shahjahanpur (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.Commissioned 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'25	Issue related to ROW as intimated in 228th 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 since 30.11.2023 due to severe ROW issues. Expected to be completed by 31.03.2025. Foundation 209/212. Erection 193/212. Stinging 37.8/50.3 km
				• 220 kV Bhiwani (PG) - Dadhibana (HVPNL) D/c line.	Mar'26	Line work awarded to M/s R S Infra Projects Pvt. Ltd. Noida, Uttar Pradesh on dated 09.03.2024. Work of route plan and route alignment has been started by the firm as intimated in 234th 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	Sep'25	Erection and stringing work completed.The signing of Connection agreement amongst the Utilities is pending. Updated in 234th 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
12	400/220kV Kala Amb GIS (TBCB)	Commissioned: 6 Total: 6	Utilized: 2 Unutilized: 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
			Under Implementation:2	• 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 - Pali D/C line Kadarpur - Sec-65	Commissioned	Updated in 232nd OCC by HVPNL Status:- A-formats for FTC of line submitted on FTC portal of NRLDC on dated 09.04.25.

Sl. No.	Substation	Downstream network bays	Status of bays	Planned 220 kV system and Implementation status	Revised Target	Remarks
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	Oct'25	Line work completed, but commissioning of 220kV substation Roj ka Meo is pending till now.. However, this arrangement will not lead to usage of additional bays i.e. no of utilised bays at Sohna road will remain same.Updated in 230th 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 228th 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 Approved: 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	Dec'25	Contract awarded on 08.08.23 to M/s Skipper with completion in December 25.Updated in 230th 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	Dec'25	Issue related to ROW and Pending crossing approval from Northern Railways and DFCCIL. as intimated in 228th OCC by HVPNL.
				• Prithla - Sector 89 Faridabad 220kV D/c line	Dec'25	The work for construction of 220kV D/C Prithla-Sector-78 Faridabad line on multi circuit towers is delayed mainly due to severe resistance by local villagers & ROW problem at site during construction. Due to delay in construction of 220kV D/C Prithla-Sector-78 Faridabad line, the work for construction of 220kV D/C Prithla-Sector 89 Faridabad line might delay..Updated in 230th OCC by HVPNL
16	400/220kV Sonapat 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 Sonapat	Commissioned	Commissioned as updated by HVPNL in 233rd OCC
				• Sonapat - HSIISC Rai 220kV D/c line	Commissioned	Energization date: 31.05.2024 updated by HVPNL in 220th OCC
				• Sonapat - Kharkhoda Pocket A 220kV D/c line	Nov'25	Updated in 232nd 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.
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 Jalandhar Sub-station	Commissioned: 10 Total: 10	Utilized: 8 Unutilized: 2	• LILO of 220 kV BBMB Jalandhar - Butari line at 400 kV PGCIL Jalandhar	-	LILO of 220 kV BBMB Jalandhar - Butari line at 400 kV PGCIL Jalandhar being planned. Route plan and estimate of work sanctioned, DNIT has been sent to float tender as updated by PSTCL in 227th 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.
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	Commissioned	Ckt-1 commissioned at 16:13hrs on dated 06.08.24 & Ckt-2 commissioned at 20:10 hrs on dated 05.08.24. Updated in 223rd 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	Nov'25	Revised target date as confirmed by concerned XEN TS, Panchkula.Updated in 234th OCC by HVPNL

Sl. No.	Substation	Downstream network bays	Status of bays	Planned 220 kV system and Implementation status	Revised Target	Remarks
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	-	Draft connectivity agreements for 220kV Rashiana-Amritsar has been received from CTU and the same under processing. Draft connectivity agreements for 220kV Patti-Amritsar line is under consideration by CTU. CTU is processing the agreement and PSTCL has provided with the requisite inputs/data to CTU. Updated in 232nd 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)	-	Draft connectivity agreements for 220kV Rashiana-Amritsar & 220kV Patti-Amritsar lines are under consideration by CTU. CTU is processing the agreement and PSTCL has provided with the requisite inputs/data to CTU. Updated in 232nd 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 Bahadurgarh 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	-	Proposal turned down by CEA.Updated in 230th OCC by HVPNL.
				• Bahadurgarh - METL 220kV D/c line (Deposit work of M/s METL)	15.06.2026	Updated in 230th OCC by HVPNL. Status: The work stands awarded to the M/s KRR and the execution work has been started at site. Partial route stands approved by the competent authority of the HVPNL. Further, 06 no. Foundation has been casted.
				• Bahadurgarh - Kharkhoda Pocket B 220kV D/c line	30.11.2025	Updated in 234th OCC by HVPNL. Status: RoW issues which are being resolved with the help of Duty Magistrate.
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:- A proposal is being prepared for the creation of another 220kV D/C line from the 400kV substation Panchgaon (PG) to the 220kV substation Panchgaon (HVPNL), along with the LILO of one circuit of the 220kV D/C Panchgaon (PG) – Mau line at the 220kV substation Panchgaon to utilize two bays at the 400kV substation Panchgaon. The load flow study for this has already been completed.
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.
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	• 400 kV PGCIL Patiala - 220 kV Bhadson (D/C)	-	2 Nos. bays for 400 kV PGCIL Patiala - 220 kV Bhadson (D/C) line being planned. Construction of boundary wall has started at 220 kv ss bhadson.yard work could not be started as approval for dismantaling existing 517 no tress is pending at district level committee which is competent for giving approval of dismantling of trees. Chairman of committee is DC pataiala.. as updated by PSTCL in 233th OCC meeting

Status of ADMS implementation in NR:

Sl. No.	State / UT	Status	Remarks
1	DELHI	Scheme Implemented but operated in manual mode.	In 236th OCC meeting, Delhi SLDC representative stated that as informed by BRPL and BYPL, SCADA upgradation work of would be completed by Dec'25. Further, SCADA upgradation work of TPDDL would be completed by Dec'26.
2	HARYANA	Scheme not implemented	Haryana SLDC intimated that as per Joint Roadmap of implementation of ADMS in Haryana supplied to NRPC vide memo dated 17.10.2023 (Annexure-II), the implementation plan was proposed to be carried out in two parts, as mentioned below: PART-I: Control with Transmission Utility PART-II: Control with Distribution Utility It is pertinent to mention that as part of upcoming SCADA-EMS system i.e. upgradation of SCADA-EMS system, a feature in the name of LSS (Load Shedding Software)/ ADMS is part of the Technical Specification of project to be delivered. Therefore, the functionalities of ADMS application will be covered under 'Part-I: Control with Transmission Utility' will already be covered using the RTUs available at select substations along with the ADMS software being delivered by M/s GE under SCADA upgradation project. Hence, there is no need to acquire a separate ADMS application & associated hardware for data centre for implementation of PART-I. Further for Part -II a committee has been constituted for further finalization of the ADMS module with control with Discoms is under discussions for preparation of DPR.
3	HP	Scheme not implemented	In 236th OCC meeting, HPSLDC representative informed that revised feeders list is awaited from HPSEBL. MS, NRPC asked HPSLDC to have and meeting with Discoms in its control areas and finalize of feeder list before next OCC meeting.
4	PUNJAB	Scheme not implemented	In 236th OCC meeting, Punjab SLDC representative informed that testing of SCADA upgradation under ULDC phase III is underway. It is likely to be completed by Dec'25.
5	RAJASTHAN	Under implementation	RVPN has pilot tested the logic of ADMS which is to be implemented for Rajasthan. In 232th OCC meeting, RVPN informed that 286 nos. of circuit breakers have been mapped to ADMS, all 286 circuit breakers tested upto yard individually. Total 650CBs are to be mapped in phased manner.
6	UP	Scheme implemented by NPCIL only	In 236th OCC meeting, UP SLDC representative stated that 300 No. of 132 KV Substations have been integrated with SCADA. SCADA upgradation under ULDC phase III is likely to be completed in the next 3 to 4 months. List of 33kV feeders to be mapped under ADMS is required from the Discoms. In the meeting held in Aug'25, UPSLDC had requested Discoms to provide the feeders list. Reminders were also sent to Discoms. However, 33 kV feeder list is still pending from the Discoms. MS, NRPC asked HPSLDC to have and meeting with Discoms in its control areas and finalize of feeder list before next OCC meeting.
7	UTTARAKHAND	Scheme not implemented	i. UPCL has prepared a system architecture in which all the non-monitored sub-stations 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. Uttarakhand has intimated that It is bring to your notice that installation MFT(Multi Function Transducers) at various interstate points at PTCUL Substations under ADRS Project of UPCL is in progress. v. First Phase- Data Acquisition of 32 interstate points completed. vi. Second Phase-95 distribution side Substation work is on progress. vii In 230th OCC meeting Uttarakhand SLDC representative informed that Harbour installation and communication establishment has been done on 35 11kV feeders out of total 195 11kV feeders. The work is expected to be completed by December, 2025.

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 scraped due to single bidder.
		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 Ballabgarh	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 Ajmer.
		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 JKPTCL, Kashmir:10 tower procured (out of which 3 on loan to JKPTCL, Jammu)
15	HVPN						HVPN has apprised that purchase order for procurement of 2 sets of Emergency Restoration System (ERS) in HVPNL has been issued to M/s Jost's Engineering Company Ltd., Mumbai
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		Tied up with M/s INDIGRID for providing ERS on need basis.
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)

MIS Report for Status of Islanding Scheme Implemented Schemes

Sl. No.	Islanding Scheme	SLDC	Status	Submission of Self Certification of Healthiness	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	Lucknow-Unchahar IS	UP	Implemented				Data of 132 KV S/S Hsaininganj is made available through GPRS. The work of laying of OPGW cable is under progress.

Under Implementation/ Newly Proposed/Under Discussion

[illegible]

S. No.	Name of Plant	Unit	Installed Capacity	MVA Rating	Make of Units	COD	GT Details			Mode of Fuel Transport (Pit Head/No n Pit-head)	Name of Utility	Sector	Control Area	Type	Real and Reactive Power Capability assessment.			Assessment of Reactive Power Control Capability as per CEA Technical Standards for connectivity			Model Validation and verification test for the complete Generator and Excitation System model including PSS.			Model Validation and verification of Turbine/Governor and Load Control or Active Power/frequency Control Functions.			Testing of Governor performance and Automatic Generation Control		
							Voltage Ratio	GT MVA Capacity	Tap Ratio of GT (Present Tap/Total Taps)						Last tested on (dd/mm/yyyy)	Whether due?	Tentative Schedule date	Last tested on (dd/mm/yyyy)	Whether due?	Tentative Schedule date	Last tested on (dd/mm/yyyy)	Whether due?	Tentative Schedule date	Last tested on (dd/mm/yyyy)	Whether due?	Tentative Schedule date	Last tested on (dd/mm/yyyy)	Whether due?	Tentative Schedule date
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Revised Simulation Models

Whether Revised Models Submitted? Remarks

Hydro Generators

[illegible]

Revised Simulation Models

Whether Revised Models Submitted?	Remarks
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As per guidelines the OEM representative must remain present at the time of Generator periodic testing hence looking to the age and present status of Units at Mahi PH-I, Letters Dated 12/07/2024 and 19/12/2024 have been sent to the OEM M/s BHEL, Bhopal, and accordingly the plan may be scheduled .

Nuclear Generators

[illegible]

Revised Simulation Models

Whether Revised Models Submitted?	Remarks
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Gas Based Generators

[illegible]

Revised Simulation Models

Whether Revised Models Submitted?	Remarks
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Renewable Energy Plants

[illegible]

Revised Simulation Models

Whether Revised Models Submitted?	Remarks
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HVDC Links

S. No	Name of Link	Type (LCC/VSC/Back-to-Back)	HVDC_Voltage (kV)	Converter-1		Converter-2		Master Converter Station	Pole_number	Length (km)	Capacity (MW)	Owner	Forward Direction			Reverse Direction			Reactive Power Controller (RPC) Capability for HVDC/FACTS			Filter bank adequacy assessment based on present grid condition, in consultation with NLDC.		
				Station Name	Region	Station Name	Region						Maximum Capacity	Minimum Capacity	Ground_return_capacity	Maximum Capacity	Minimum Capacity	Ground_return_capacity	Last tested on (dd/mm/yyyy)	Whether due?	Tentative Schedule date	Last tested on (dd/mm/yyyy)	Whether due?	Tentative Schedule date
1			500	APL-Mundra	WR	Mohindargarh	NR		1	989	1,250	ATIL	150	500	1250					Due			Due	
2			500	APL-Mundra		Mohindargarh			2	989	1,250	ATIL	150	500	1250					Due			Due	
3		LCC	800	Champa_HVDC	WR	Kurukshetra	NR	Champa_HVDC	1	1,306	1,500	POWERGRID	150	1,500	DMR path	NA	NA	NA		Due	Apr-2025		Due	
4		LCC	800	Champa_HVDC	WR	Kurukshetra	NR	Champa_HVDC	2	1,306	1,500	POWERGRID	150	1,500	DMR path	NA	NA	NA		Due	Apr-2025		Due	
5		LCC	800	Champa_HVDC	WR	Kurukshetra	NR	Champa_HVDC	3	1,306	1,500	POWERGRID	150	1,500	DMR path	NA	NA	NA		Due	Apr-2025		Due	
6		LCC	800	Champa_HVDC	WR	Kurukshetra	NR	Champa_HVDC	4	1,306	1,500	POWERGRID	150	1,500	DMR path	NA	NA	NA		Due	Apr-2025		Due	

Revised Simulation Models

Whether Revised Models Submitted? Remarks

STATCOMs/SVCs

S.No	Station	Statcom	Capacity (MVAR)	Owner	Make	Reactive Power Controller (RPC) Capability for HVDC/FACTS			Filter bank adequacy assessment based on present grid condition, in consultation with NLDC			Validation of response by FACTS devices as per settings.		
						Last tested on (dd/mm/yyyy)	Whether due?	Tentative Schedule date	Last tested on (dd/mm/yyyy)	Whether due?	Tentative Schedule date	Last tested on (dd/mm/yyyy)	Whether due?	Tentative Schedule date
1	Kurukshetra	TCR	500	POWERGRID	GE Vernova T&D	NA		NA	NA	NA	NA	Nov-2023	No	Sep-2028
2	Fatehgarh-2	STATCOM	±/-600	POWERGRID	SIEMENS	Oct-2023	No	Sep-2028	NA	NA	NA	Oct-2023	No	Sep-2028
3	Bhadla-2	STATCOM	±/-600	POWERGRID	SIEMENS	Jun-2023	No	May-2028	NA	NA	NA	Jun-2023	No	May-2028
4	Bikaner-2	STATCOM	±/-300	POWERGRID	SIEMENS	Jul-2023	No	Jun-2028	NA	NA	NA	Jul-2023	No	Jun-2028

Revised Simulation Models

Whether Revised Models Submitted? Remarks

FSCs/TCSCs

[illegible]

Series Reactor

S.No	End 1	End 2	Line No.	End	Capacity	Make	Reactive Power Controller (RPC) Capability for HVDC/FACTS			Filter bank adequacy assessment based on present grid condition, in consultation with NLDC			Validation of response by FACTS devices as per settings.		
							Last tested on (dd/mm/yyyy)	Whether due?	Tentative Schedule date	Last tested on (dd/mm/yyyy)	Whether due?	Tentative Schedule date	Last tested on (dd/mm/yyyy)	Whether due?	Tentative Schedule date
1															

Revised Simulation Models

Whether Revised Models Submitted? Remarks

44	Kishanganga	UNIT-I	110 MW	122.22 MVA	M/S BHEL	13.03.2018	13.8kV/120 KV	45 MVA		Pondage	NHPC	Power/Energy	Northern	3/1/2018	Yes	Jan-Feb 2026	3/1/2018	Yes	Jan-Feb 2026	3/1/2018	Yes	Jan-Feb 2026	3/1/2018	Yes	Jan-Feb 2026			Jan-Feb 2026			Jan-Feb 2026
45	Kishanganga	UNIT-II	110 MW	122.22 MVA	M/S BHEL	21.03.2018	13.8kV/120 KV	45 MVA		Pondage	NHPC	Power/Energy	Northern	3/1/2018	Yes	Jan-Feb 2026	3/1/2018	Yes	Jan-Feb 2026	3/1/2018	Yes	Jan-Feb 2026	3/1/2018	Yes	Jan-Feb 2026			Jan-Feb 2026			Jan-Feb 2026
46	Kishanganga	UNIT-III	110 MW	122.22 MVA	M/S BHEL	30.03.2018	13.8kV/120 KV	45 MVA		Pondage	NHPC	Power/Energy	Northern	3/1/2018	Yes	Jan-Feb 2026	3/1/2018	Yes	Jan-Feb 2026	3/1/2018	Yes	Jan-Feb 2026	3/1/2018	Yes	Jan-Feb 2026			Jan-Feb 2026			Jan-Feb 2026
47	Parbati-II	UNIT-I	200 MW	222.22 MVA	M/S BHEL	01.04.2025	13.8kV/400 KV	82 MVA		Pondage	NHPC	Power/Energy	Northern	March/April 2025	No	2030	March/April 2025	No	2030	March/April 2025	No	2030	March/April 2025	No	2030	March/April 2025	No	2030	March/April 2025	No	2030
48	Parbati-II	UNIT-II	200 MW	222.22 MVA	M/S BHEL	01.04.2025	13.8kV/400 KV	82 MVA		Pondage	NHPC	Power/Energy	Northern	March/April 2025	No	2030	March/April 2025	No	2030	March/April 2025	No	2030	March/April 2025	No	2030	March/April 2025	No	2030	March/April 2025	No	2030
49	Parbati-II	UNIT-III	200 MW	222.22 MVA	M/S BHEL	01.04.2025	13.8kV/400 KV	82 MVA		Pondage	NHPC	Power/Energy	Northern	March/April 2025	No	2030	March/April 2025	No	2030	March/April 2025	No	2030	March/April 2025	No	2030	March/April 2025	No	2030	March/April 2025	No	2030
50	Parbati-II	UNIT-IV	200 MW	222.22 MVA	M/S BHEL	16.04.2025	13.8kV/400 KV	82 MVA		Pondage	NHPC	Power/Energy	Northern	March/April 2025	No	2030	March/April 2025	No	2030	March/April 2025	No	2030	March/April 2025	No	2030	March/April 2025	No	2030	March/April 2025	No	2030

51	Tehri JHPN(4*250 MW)	1	250 MW	278 MVA	Power Machine	09.07.2007	420 x 15.75 kV	306	0.4 (2-5)	THDC India Limited	Power Generation	Northern	-	Yes	Mar-26	-	Yes	Mar-26	-	Yes	Mar-26	Apr-23	No	Mar-28	Apr-23	No	Mar-28	Mar-2021	Yes	Mar-26
52		2	250 MW	278 MVA		30.03.2007	420 x 15.75 kV	306	0.4 (2-5)																					
53		3	250 MW	278 MVA		09.11.2006	420 x 15.75 kV	306	0.4 (2-5)																					
54		4	250 MW	278 MVA		22.09.2006	420 x 15.75 kV	306	0.4 (2-5)																					

55	NHPS	1	250 MW	278 MVA	EUCONA (Voith Siemens(Germany), GE Hydro (Oslo/Norway), Aalborg(Germany), VA Tech(Italy), BHEL(India))	18.05.2004	15.75kV/ 400kV	3 x 102 MVA	Tap Ratio - 2/5	RoR	SVN	Power/Energy	NRLDC	18.02.2023	No	-	18.02.2023	No	-	18.02.2023	No	-	05.05.2022	No	-	09.02.2021	Yes	08.02.2026	09.02.2021	Yes	08.02.2026
56	NHPS	2	250 MW	278 MVA		06.09.2004					SVN		NRLDC	28.02.2023	No	-	28.02.2023	No	-	28.02.2023	No	-	05.05.2022	No	-	09.02.2021	Yes	08.02.2026	09.02.2021	Yes	08.02.2026
57	NHPS	3	250 MW	278 MVA		31.03.2004					SVN		NRLDC	20.02.2023	No	-	20.02.2023	No	-	20.02.2023	No	-	05.05.2022	No	-	09.02.2021	Yes	08.02.2026	09.02.2021	Yes	08.02.2026
58	NHPS	4	250 MW	278 MVA		30.03.2004					SVN		NRLDC	19.02.2023	No	-	19.02.2023	No	-	19.02.2023	No	-	05.05.2022	No	-	09.02.2021	Yes	08.02.2026	09.02.2021	Yes	08.02.2026
59	NHPS	5	250 MW	278 MVA		06.10.2003					SVN		NRLDC	10.02.2023	No	-	10.02.2023	No	-	10.02.2023	No	-	05.05.2022	No	-	09.02.2021	Yes	08.02.2026	09.02.2021	Yes	08.02.2026
60	NHPS	6	250 MW	278 MVA		02.01.2004					SVN		NRLDC	11.02.2023	No	-	11.02.2023	No	-	11.02.2023	No	-	03.11.2023	No	-	09.02.2021	Yes	08.02.2026	09.02.2021	Yes	08.02.2026

61	Rampur MPS, SVN.	1	25 MW								SVN	Power/Energy	NRLDC	June. 2023	Yes	June. 2028	June. 2023	Yes	June. 2028	June. 2023	Yes	June. 2028	Nov. 2023	Yes	Nov. 2028	Nov. 2023	Yes	Nov. 2028			
62		2	25 MW								SVN		NRLDC	June. 2024	Yes	June. 2028	June. 2024	Yes	June. 2028	June. 2024	Yes	June. 2028	Nov. 2023	Yes	Nov. 2028	Nov. 2023	Yes	Nov. 2028			
63		3	25 MW								SVN		NRLDC	June. 2025	Yes	June. 2028	June. 2025	Yes	June. 2028	June. 2025	Yes	June. 2028	Nov. 2023	Yes	Nov. 2028	Nov. 2023	Yes	Nov. 2028			
64		4	25 MW								SVN		NRLDC	June. 2026	Yes	June. 2028	June. 2026	Yes	June. 2028	June. 2026	Yes	June. 2028	Jun. 2022	Yes	Jan. 2027	Jun. 2022	Yes	Jan. 2027			
65		5	25 MW								SVN		NRLDC	June. 2027	Yes	June. 2028	June. 2027	Yes	June. 2028	June. 2027	Yes	June. 2028	Jun. 2022	Yes	Jan. 2027	Jun. 2022	Yes	Jan. 2027			
66		6	25 MW								SVN		NRLDC	June. 2028	Yes	June. 2028	June. 2028	Yes	June. 2028	June. 2028	Yes	June. 2028	Jun. 2022	Yes	Jan. 2027	Jun. 2022	Yes	Jan. 2027			

67	Karcham Wangtoo Hydro-Electric Plant	1	261.25 MW								JSW Hydro	Power/Energy	NRLDC		Yes	Dec 2026 to Feb 2027		Yes	Dec 2026 to Feb 2027		Yes	Dec 2026 to Feb 2027		Yes	Dec 2026 to Feb 2027		Yes	Dec 2026 to Feb 2027			
68		2	261.25 MW								JSW Hydro		NRLDC		Yes	Dec 2026 to Feb 2027		Yes	Dec 2026 to Feb 2027		Yes	Dec 2026 to Feb 2027		Yes	Dec 2026 to Feb 2027		Yes	Dec 2026 to Feb 2027			
69		3	261.25 MW								JSW Hydro		NRLDC		Yes	Dec 2026 to Feb 2027		Yes	Dec 2026 to Feb 2027		Yes	Dec 2026 to Feb 2027		Yes	Dec 2026 to Feb 2027		Yes	Dec 2026 to Feb 2027			
70		4	261.25 MW								JSW Hydro		NRLDC		Yes	Dec 2026 to Feb 2027		Yes	Dec 2026 to Feb 2027		Yes	Dec 2026 to Feb 2027		Yes	Dec 2026 to Feb 2027		Yes	Dec 2026 to Feb 2027			

71	AD Hydro Power Ltd.	Unit-1	96MW	106.667 MVA	BHEL BHOPAL	16.09.2010	11kV/ 220kv	135MVA	4/9	ROR	AD Hydro Power Ltd.	Power/ Energy	NRLDC			Nov 26			Nov 26	2/9/2021		Nov 26	7/10/2021		Nov 26	N.A	N.A	N.A	N.A	N.A	N.A
72	AD Hydro Power Ltd.	Unit-2	96MW	106.667 MVA	BHEL BHOPAL	18.09.2010	11kV/ 220kv	135MVA	4/9	ROR	AD Hydro Power Ltd.	Power/ Energy	NRLDC			Nov 26			Nov 26	2/9/2021		Nov 26	7/10/2021		Nov 26	N.A	N.A	N.A	N.A	N.A	N.A

Notice: 1. Only P53 RG Mo testing done in 2021
2. AGC not implemented

73	MPCL	Unit-1	43MW	57.5 MVA	BHEL BHOPAL	05.07.2001	11kV/ 132kV	58MVA	3/9	ROR	MPCL	Power/ Energy	HPSLDC			Nov 26			Nov 26	6/11/2023		Nov 26			Nov 26	N.A	N.A	N.A	N.A	N.A	N.A
74	MPCL	Unit-2	43MW	57.5 MVA	BHEL BHOPAL	05.07.2001	11kV/ 132kV	58MVA	3/9	ROR	MPCL	Power/ Energy	HPSLDC			Nov 26			Nov 26	6/11/2023		Nov 26			Nov 26	N.A	N.A	N.A	N.A	N.A	N.A

Notice: 1. Only RG Mo testing done in 2023
2. AGC not implemented

Thermal Generators

S. No.	Name of Plant	Unit	Installed Capacity	MVA Rating	Make of Units	COD	GT Details			Mode of Fuel Transport (Pit Head/Non Pit-head)	Name of Utility	Sector	Control Area	Type	Real and Reactive Power Capability assessment.			Assessment of Reactive Power Control Capability as per CEA Technical Standards for connectivity			Model Validation and verification test for the complete Generator and Excitation System model including PSS.			Model Validation and verification of Turbine/Governor and Load Control or Active Power/Frequency Control Functions.			Testing of Governor performance and Automatic Generation Control			Revised Simulation Models	
							Voltage Ratio	GT MVA Capacity	Tap Ratio of GT (Present Tap/Total Taps)						Last tested on (dd/mm/yyyy)	Whether due?	Tentative Schedule date	Last tested on (dd/mm/yyyy)	Whether due?	Tentative Schedule date	Last tested on (dd/mm/yyyy)	Whether due?	Tentative Schedule date	Last tested on (dd/mm/yyyy)	Whether due?	Tentative Schedule date	Last tested on (dd/mm/yyyy)	Whether due?	Tentative Schedule date	Whether Revised Models Submitted?	Remarks
1	Rosa Power Supply Co Ltd	I	300 MW	353	Shanghai Electric Co Ltd, China	12.03.2010 00.00 Hrs	20KV / 220 KV	370 OFAF	5	Non-Pit Head	Rosa Power Supply Co Ltd	Private	Reliance Power	Coil Based	Real and Reactive Power Capability assessment was completed during unit commissioning. All units are running with dual channel auto mode AVR with governor in auto control mode.	FY 2028-29	Reactive Power Control Capability as per CEA Technical Standards for connectivity was completed during unit commissioning	FY 2028-29	24.09.2024	FY 2028-29	Turbine/Governor and Load Control or Active Power/Frequency Control Functions are enabled & working fine in all units. Load correction in auto as per frequency variation is enabled & same has been verified by UPSLDC.	FY 2028-29	Governor performance testing done during commissioning of the units , also all units are running in auto governor mode.	FY 2028-29	No						
2	Rosa Power Supply Co Ltd	II	300 MW	353	Shanghai Electric Co Ltd, China	30.06.2010	20KV / 220 KV	370 OFAF	5	Non-Pit Head	Rosa Power Supply Co Ltd	Private	Reliance Power	Coil Based		FY 2028-29		FY 2028-29	15.01.2022	FY 2028-29	FY 2028-29	FY 2028-29	No								
3	Rosa Power Supply Co Ltd	III	300 MW	353	Shanghai Electric Co Ltd, China	01.01.2012 24.00 hrs	20 KV / 400 KV	370 OFAF	5	Non-Pit Head	Rosa Power Supply Co Ltd	Private	Reliance Power	Coil Based		FY 2028-29		FY 2028-29	Not Tested	FY 2028-29	FY 2028-29	FY 2028-29	No								
4	Rosa Power Supply Co Ltd	IV	300 MW	353	Shanghai Electric Co Ltd, China	31.03.2012 24.00 hrs	20 KV / 400 KV	370 OFAF	5	Non-Pit Head	Rosa Power Supply Co Ltd	Private	Reliance Power	Coil Based		FY 2028-29		FY 2028-29	05.10.2021	FY 2028-29	FY 2028-29	FY 2028-29	No								
5	Barsingsar Thermal Power Station	I	125	147	BHEL	20.01.2012	230/10.5	150	7/9	Pit Head	J&V/VNL, AV/VNL, IV/VNL	Distribution	SLDC	SLDC	Yes	31.01.2026	Yes	31.01.2026	Yes	31.01.2026	Yes	31.01.2026	Yes	31.01.2026							
6	Barsingsar Thermal Power Station	II	125	147	BHEL	29.12.2011	230/10.5	150	7/9	Pit Head	J&V/VNL, AV/VNL, IV/VNL	Distribution	SLDC	SLDC	Yes	31.01.2026	Yes	31.01.2026	Yes	31.01.2026	Yes	31.01.2026	Yes	31.01.2026							
Remarks														Remarks: As per OEM (BHEL) recommendations, above tests may be completed by 31.01.2026								Remarks: As per OEM (BHEL) recommendations, as the modelling procedure to carry out the above tests is under development, and may be available after April-25, the above tests may be completed by 31.03.2026			Remarks: AGC is not a part of the original Main plant Erection package, hence the same may be excluded from the list of testing to be carried out by BTPS. However possibilities will be explored for completion of Testing of Governor performance by 31.03.2026						
7	LPGCL	1	660	777	BHEL	1-Oct-15	800~3/21~3	3x275	05/05	Railway	LPGCL, Lalitpur	Private	Northern region		Not applicable	10/25/2026	Not applicable	10/25/2026	Not applicable	10/25/2026	Not applicable	10/25/2026	Not applicable	10/25/2026	Not applicable	10/25/2026					
8	LPGCL	2	660	777	BHEL	14-Oct-16	800~3/21~3	3x275	05/05	Railway	LPGCL, Lalitpur	Private	Northern region		Not applicable	1/20/2027	Not applicable	1/20/2027	Not applicable	1/20/2027	Not applicable	1/20/2027	Not applicable	1/20/2027	Not applicable	1/20/2027					
9	LPGCL	3	660	777	BHEL	23-Dec-16	800~3/21~3	3x275	05/05	Railway	LPGCL, Lalitpur	Private	Northern region		Not applicable	12/15/2027	Not applicable	12/15/2027	Not applicable	12/15/2027	Not applicable	12/15/2027	Not applicable	12/15/2027	Not applicable	12/15/2027					

Renewable Energy Plants

S. No.	Name of Plant	Pooling Station Name	Installed Capacity	Type (Solar/Wind)	COD	Owner	Sector	Control Area	Inverter/ WTG Make	Inverter/ WTG Model	PPC Make	Real and Reactive Power Capability for Generator			Power Plant Controller Function Test			Frequency Response Test			Active Power Set Point change test			Reactive Power (Voltage / Power Factor / Q) Set Point change test			Whether Revised Models Submitted	Remarks
												Last tested on (dd/mm/yyyy)	Whether due?	Tentative Schedule date	Last tested on (dd/mm/yyyy)	Whether due?	Tentative Schedule date	Last tested on (dd/mm/yyyy)	Whether due?	Tentative Schedule date	Last tested on (dd/mm/yyyy)	Whether due?	Tentative Schedule date	Last tested on (dd/mm/yyyy)	Whether due?	Tentative Schedule date		
1	Clean Solar Power Bhadi_R-1 Pvt Ltd	220 KV SUCRL PSS-2	100	Solar	15-02-20	Clean Solar Power Bhadi_R-1 Pvt Ltd	MNRE		Huawei	SUN2000-95KTL	Siemens	15-02-20	Yes	Dec-25	15-02-20	Yes	Dec-25	15-02-20	Yes	Dec-25	15-02-20	Yes	Dec-25	15-02-20	Yes	Dec-25		
2	Clean Solar Power Bhadi_R-2 Pvt Ltd	220 KV SUCRL PSS-2	100	Solar	28-02-20	Clean Solar Power Bhadi_R-2 Pvt Ltd	MNRE		Huawei	SUN2000-95KTL	Siemens	28-02-20	Yes	Dec-25	28-02-20	Yes	Dec-25	28-02-20	Yes	Dec-25	28-02-20	Yes	Dec-25	28-02-20	Yes	Dec-25		
3	Clean Solar Power Bhadi_R-3 Pvt Ltd	220 KV SUCRL PSS-2	100	Solar	10-12-19	Clean Solar Power Bhadi_R-3 Pvt Ltd	MNRE		Huawei	SUN2000-95KTL	Adaptive	10-12-19	Yes	Dec-25	10-12-19	Yes	Dec-25	10-12-19	Yes	Dec-25	10-12-19	Yes	Dec-25	10-12-19	Yes	Dec-25		
4	Clean Solar Power Jodhpur Pvt Ltd	220 KV CSPJ PSS	250	Solar	21-04-22	Clean Solar Power Jodhpur Pvt Ltd	MNRE		Sungrow	SG250HX-IN & SG2500HV	Adaptive	21-04-22	NO	20-04-27	21-04-22	NO	20-04-27	21-04-22	NO	20-04-27	21-04-22	NO	20-04-27	21-04-22	NO	20-04-27		

HVDC Links

No	Name of Link	Type (LCC/VSC/ Back to-Back)	HVDC Voltage (kV)	Converter-1		Converter-2		Master Converter Station	Pole_number	Length (km)	Capacity (MW)	Owner	Forward Direction			Reverse Direction			Reactive Power Controller (RPC) Capability for HVDC/FACTS			Filter bank adequacy assessment based on present grid condition, in consultation with NLDC.			
				Station Name	Region	Station Name	Region						Maximum Capacity	Minimum Capacity	Ground_return_ capacity	Maximum Capacity	Minimum Capacity	Ground_return_ capacity	Last tested on (dd/mm/yyyy)	Whether due?	Tentative Schedule date	Last tested on (dd/mm/yyyy)	Whether due?	Tentative Schedule date	
	Rihand - Dadri																								
	Ballia-Bhiwadi																								
	NEA LCC																								
	Vindhyachal BTB																								
	Lucknow																								

Tentative schedule for Periodic testing of HVDC/Facts Devices iro NR-III Region of POWERGRID

Sr. No.	HVDC Link/ FACTS	Proposed date of periodic testing
1	Rihand - Dadri LCC	Mar'26
2	Ballia-Bhiwadi LCC	Apr'26
3	NEA LCC	Aug'25
4	Vindhyachal BtB	Sep'26
5	Lucknow STATCOM	Apr'26

Nuclear Generators

S. No.	Name of Plant	Unit	Installed Capacity	MVA Rating	Make of Units	COD	GT Details			Name of Utility	Sector	Control Area	Type	Real and Reactive Power Capability assessment.			Assessment of Reactive Power Control Capability as per CEA Technical Standards for connectivity			Model Validation and verification test for the complete Generator and Excitation System model including PSS.			Model Validation and verification of Turbine/Governor and Load Control or Active Power/frequency Control Functions.			Testing of Governor performance and Automatic Generation Control		
							Voltage Ratio	GT MVA Capacity	Tap Ratio of GT (Present Tap/Total Taps)					Last tested on (dd/mm/yyyy)	Whether due?	Tentative Schedule date	Last tested on (dd/mm/yyyy)	Whether due?	Tentative Schedule date	Last tested on (dd/mm/yyyy)	Whether due?	Tentative Schedule date	Last tested on (dd/mm/yyyy)	Whether due?	Tentative Schedule date	Last tested on (dd/mm/yyyy)	Whether due?	Tentative Schedule date

Revised Simulation Models

Whether Revised Models Submitted? Remarks

Gas Based Generators

[illegible]

STATCOMs/SVCs

S.No	Station	Statcom	Capacity (MVAR)	Owner	Make	Reactive Power Controller (RPC) Capability for HVDC/FACTS			Filter bank adequacy assessment based on present grid condition, in consultation with NLDC			Validation of response by FACTS devices as per settings.		
						Last tested on (dd/mm/yy yy)	Whether due?	Tentative Schedule date	Last tested on (dd/mm/yy yy)	Whether due?	Tentative Schedule date	Last tested on (dd/mm/yy yy)	Whether due?	Tentative Schedule date

Revised Simulation Models

Whether Revised Models Submitted? Remarks

FSCs/TCSCs

S.No	End 1	End 2	Line No.	Compensat or Location	Make	Fixed Compensat ion	Variable Compensat ion Positive	Variable Compensat ion Negative	Agency	Reactive Power Controller (RPC) Capability for HVDC/FACTS			Filter bank adequacy assessment based on present grid condition, in consultation with NLDC			Validation of response by FACTS devices as per settings.		
										Last tested on (dd/mm/y yyy)	Whether due?	Tentative Schedule date	Last tested on (dd/mm/y yyy)	Whether due?	Tentative Schedule date	Last tested on (dd/mm/y yyy)	Whether due?	Tentative Schedule date

Revised Simulation Models

Whether
Revised
Models
Submitted?

Remarks

Series Reactor

S.No	End 1	End 2	Line No.	End	Capacity	Make	Reactive Power Controller (RPC) Capability for HVDC/FACTS			Filter bank adequacy assessment based on present grid condition, in consultation with NLDC			Validation of response by FACTS devices as per settings.		
							Last tested on (dd/mm/y yyy)	Whether due?	Tentative Schedule date	Last tested on (dd/mm/y yyy)	Whether due?	Tentative Schedule date	Last tested on (dd/mm/y yyy)	Whether due?	Tentative Schedule date

Revised Simulation Mod
 whether
 Revised
 Models
 Submitted
 ? Remarks

State/UT		Stage-1 49.4 Hz (5%)	Stage-2 49.2 Hz (6%)	Stage-3 49.0 Hz (7%)	Stage-4 48.8 Hz (7%)	Total
		Stage-1 Relief	Stage-2 Relief	Stage-3 Relief	Stage-4 Relief	
Chandigarh	Planned (MW)	17	21	24	24	86
	Actual (MW)	0	0	0	0	0
	Difference (MW)	-17	-21	-24	-24	-86
	Difference (%)	-100%	-100%	-100%	-100%	-100%
Delhi	Planned (MW)	334	400	467	467	1668
	Actual (MW)	322	399	442	434	1597
	Difference (MW)	-11	-1	-25	-33	-71
	Difference (%)	-3%	0%	-5%	-7%	-4%
Haryana	Planned (MW)	586	704	821	821	2931
	Actual (MW)	735	730	815	897	3175
	Difference (MW)	148	26	-6	76	244
	Difference (%)	25%	4%	-1%	9%	8%
Himachal Pradesh	Planned (MW)	101	122	142	142	507
	Actual (MW)	432	365	183	97	1077
	Difference (MW)	331	244	41	-45	570
	Difference (%)	326%	200%	29%	-32%	112%
UT J&K & Ladhak	Planned (MW)	140	168	196	196	700
	Actual (MW)	156	204	204	214	778
	Difference (MW)	16	36	8	18	78
	Difference (%)	11%	22%	4%	9%	11%
Punjab	Planned (MW)	645	773	902	902	3223
	Actual (MW)	584	715	855	859	3014
	Difference (MW)	-61	-58	-47	-43	-209
	Difference (%)	-9%	-8%	-5%	-5%	-6%
Rajasthan	Planned (MW)	853	1024	1194	1194	4266
	Actual (MW)	812	974	1138	1142	4066
	Difference (MW)	-41	-50	-56	-52	-200
	Difference (%)	-5%	-5%	-5%	-4%	-5%
Uttar Pradesh	Planned (MW)	1297	1557	1816	1816	6486
	Actual (MW)	2580	2188	2013	1757	8538
	Difference (MW)	1283	631	197	-59	2052
	Difference (%)	99%	41%	11%	-3%	32%
Uttarakhand	Planned (MW)	127	152	177	177	633
	Actual (MW)	319	138	167	241	865
	Difference (MW)	192	-14	-10	64	232
	Difference (%)	152%	-9%	-6%	36%	37%
Total	Planned (MW)	4100	4920	5740	5740	20499
	Actual (MW)	5940	5713	5816	5642	23111
	Difference (MW)	1840	793	76	-98	2612
	Difference (%)	45%	16%	1%	-2%	13%

Annexure-A.VI.a

[illegible]

Annexure-A.VI.b

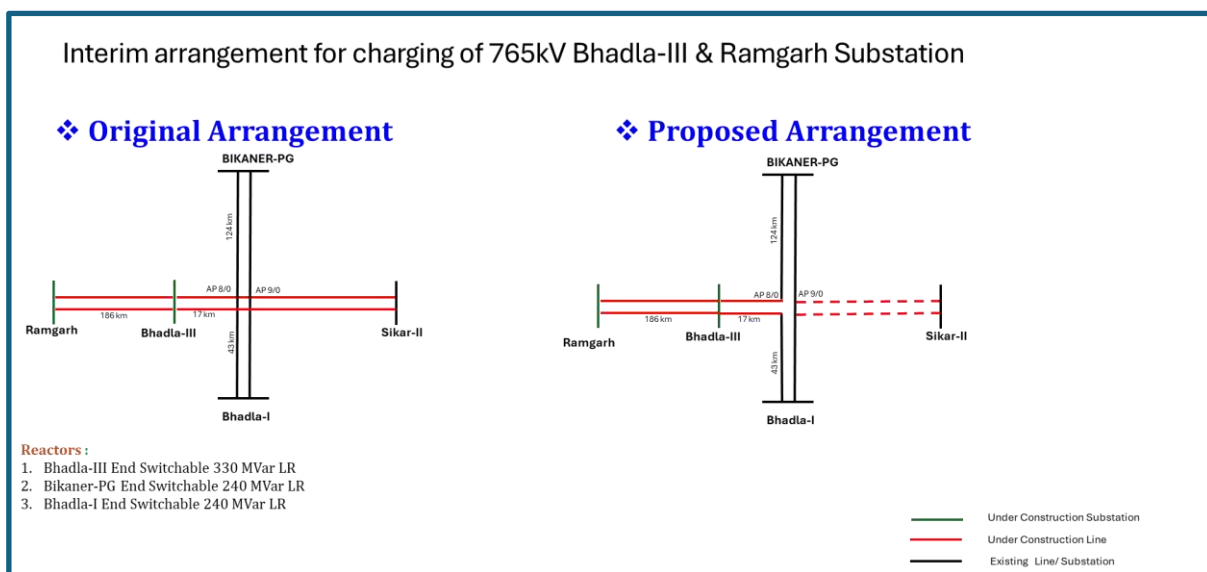
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Preliminary studies for interim arrangement to facilitate RE power evacuation from Ramgarh & Bhadla-III PS

Transmission system for evacuation of power from Ramgarh PS & Bhadla-III is under implementation as part of transmission system for evacuation of power from REZ in Rajasthan (20GW) under Part B1 & Part C1 package. As part of the Ph-III, Part B1 scheme, 765kV Bhadla-III PS – Sikar-II D/c line is being implemented with commissioning schedule of Dec'25 (Ant. SCOD)

As per the latest Status provided by RE applicants, RE generation is expected to be commissioned from Feb'26 onwards at Bhadla-III PS and Dec'25 onwards at Ramgarh PS

Considering above, studies has been carried out for immediate evacuation of power from Ramgarh PS/Bhadla-III PS through interim arrangement. As part of proposed interim arrangement, one ckt of 765kV Bhadla-III PS -Sikar -II D/c line is tapped to one ckt of 765kV Bhadla (PG) – Bikaner (PG) line so as to form 765kV Bhadla (PG)-Bhadla-III-Bikaner (PG) line (one ckt) and 765kv Bhadla (PG) – Bikaner (PG) line (other ckt). A schematic diagram of proposed interim arrangement is as under:



Case -1

- 1) Timeframe : Nov'25
- 2) Generation considered: 250MW at Ramgarh PS, No generation considered at Bhadla-III PS
- 3) **Tr. System for Narela and associated system (Part G/G1) and 765kV Bhadla-II-Sikar-II D/c line (Part E) is not considered in studies**
- 4) RE curtailment of about 4200MW in solar peak hours is considered in studies

Results

- Loading of 765kV Bikaner-Moga, 765kV Bikaner-Khetri & 765kV Bhadla-II - Ajmer increases marginally (35-40MW/ckt)- loading and angular separation on lines is in order
- **Loading of 400kV Bhadla(RVPN)-Bikaner (RVPN) increase marginally (~10MW/ckt) to 832MW/ckt.**

Case -2

- 1) Timeframe : Nov'25/Dec'25
- 2) Generation considered: 250MW at Ramgarh PS, No generation considered at Bhadla-III PS
- 3) Tr. System for Narela and associated system and 765kV Bhadla-II-Sikar-II D/c line is considered
- 4) RE curtailment of about 2200MW in solar peak hours is considered in studies (to be effective with Ph-III/ Ph-IV system)

Results

- 1) With commissioning of Tr. System for Narela and associated system and 765kV Bhadla-II-Sikar-II D/c line, Loading of 765kV Bikaner-Moga, 765kV Bikaner-Khetri & 765kV Bhadla-II - Ajmer is in order
- 2) **Loading of 400kV Bhadla(RVPN)-Bikaner (RVPN) increase marginally (~10MW/ckt) to 880MW/ckt.**

Case -3

- 1) Timeframe : Feb'26
- 2) Generation considered : 250MW at Ramgarh PS, Bhadla-III PS : 300MW
- 3) Tr. System for Narela and associated system and 765kv Bhadla-II-Sikar-II D/c line is considered
- 4) Ph-III System (Part A1,A3,E1,F,G & H) as under is considered in studies.
 - a. Establishment of 2x500 MVA400/220 kV pooling station at Fatehgarh-4
 - b. Fatehgarh-4- Fatehgarh-3 400 kV D/c twin HLTS line
 - c. Fatehgarh 3- Bhadla-3 400kV D/c line (Quad)
 - d. Establishment of 3x1500 MVA 765/400kV & 3x500 MVA 400/220 kV pooling station at Fatehgarh-3 (new section)
 - e. Establishment of 2x1500MVA 765/400kV Substation at suitable location near Beawar
 - f. LILO of both circuit of Ajmer-Chittorgarh 765 kV D/c at Beawar
 - g. LILO of 400kV Kota –Merta line at Beawar

- h. Fatehgarh-3– Beawar 765 kV D/c
 - i. Fatehgarh-3– Beawar 765 kV D/c(2nd)
 - j. Establishment of 2x1500 MVA 765/400kV substation at suitable location near Dausa
 - k. LILO of both circuits of Jaipur(Phagi)- Gwalior 765 kV D/c at Dausa
 - l. LILO of both circuits of Agra – Jaipur(south) 400kV D/c at Dausa
 - m. Beawar – Dausa 765 kV D/c line
- 5) RE curtailment of about 2200MW in solar peak hours is considered in studies (to be effective with Ph-III/ Ph-IV system)
- 6) Envisaged Ph-III generation of 4100MW at Fatehgarh-III (Sec-2)/Fatehgarh-IV (Sec-1) is considered in studies

Results

- 3) Loading of 765kV Bikaner-Moga, 765kV Bikaner-Khetri & 765kV Bhadla-II - Ajmer is in order
- **Loading of 400kV Bhadla(RVPN)-Bikaner (RVPN) is 860MW/ckt**

Additional comments:

- Considering line reactors at 765kV Ramgarh-Bhadla-III D/c, 765kV Bhadla-III-Sikar-II D/c & 765kV Bikaner (PG)- Bhadla (PG) D/c line, voltage rise is within stipulated limits during charging of 765kV Bhadla (PG)- Bhadla-III-Bikaner (PG) section and 765kV Ramgarh-Bhadla-III D/c line
- Upgradation of 400kV Bhadla (RVPN) – Bikaner (RVPN) D/c line is under implementation by RVPN with anticipated schedule of Dec'25. Studies may be reviewed w.r.t. shutdown requirement of above line.

BOQ (Tentative) for construction of new township (Quaretes, transit camp, RC, severage system etc.) for 400/220kV Ajmer s/s at Ajmer city

SI No	Type of Building	Tower conf.	Unit	Nos	Unit Rate	Amount	Remarks
A) Construction of Building Works							
1	D Type	G+1	Each	1	90,00,102.00	90,00,102.00	
2	C Type - Stilt area	S+2	Block	1	60,64,126.00	60,64,126.00	Two unit per one floor
3	C Type		Each	2	39,53,481.00	79,06,962.00	
4	B3 Type - Stilt area	S+2	Block	1	52,63,660.00	52,63,660.00	Two unit per one floor
5	B3 Type		Each	4	34,31,622.00	1,37,26,488.00	
6	B2 Type - Stilt area	S+2	Block	1	1,36,07,898.00	1,36,07,898.00	six unit per one floor
7	B2 Type		Each	10	29,57,204.00	2,95,72,040.00	
8	B1 Type - Stilt area	S+2	Block	1	80,91,968.00	80,91,968.00	four unit per one floor
9	B1 Type		Each	4	26,37,763.00	1,05,51,052.00	
10	Transit camp	G+1	Each	1	2,32,99,620.00	2,32,99,620.00	
11	Recreation Club	G	Each	1	2,42,42,533.00	2,42,42,533.00	
TOTAL FOR BUILDINGS						15,13,26,449.00	
B) Development of Site							
SI No	Description of work	PAR 2023 Ref	Unit	Qty	Unit rate	Amount	
1	Site Levelling	5.1	Sqm	20000	340	68,00,000.00	
2	Internal road WMM & RCC	DSR Rate analysis	Sqm	3750	3263.40	1,22,37,760.00	
3	External sewerage	5.3	MTR	1000	3810	38,10,000.00	
4	Water supply - Distribution line	5.4.1	MTR	500	1930	9,65,000.00	
5	Storm water drains	5.5	MTR	2000	10150	2,03,00,000.00	
6	Rain water harvesting	DSR Rate analysis	Each	2	14,03,794	28,07,588.40	
7	Rain water storage tank	DSR Rate analysis	Each	1	4,98,912	4,98,912.00	
8	S&I of roof top solar system	6.8.1	KW	150	58,480	87,72,000.00	
9	Trenches for services	5.7	MTR	500	7280	36,40,000.00	
Total for Development of Site						5,98,31,260.40	
Including cost index @ 3% as on 01.04.2025						6,16,26,199.00	
C) Other major works							
1	Installation of STP plant of 20 KLD for recycle of water.	As per Bhiwadi cost estimate approved	Unit	1	37,80,459	37,80,459.00	
2	Construction of Main Gate with provision of Security Room alongwith toilet	LS	LS	1	10,00,000	10,00,000.00	
TOTAL for Other major works (Incl. 18 % GST)						47,80,459.00	
NET TOTAL - A+B+C (Incl. 18 % GST)						21,77,33,107.00	

Resource Adequacy

PRAS results- Northern Region
Month ahead for Dec-2025

Resource Adequacy - PRAS

- The Probabilistic Resource Adequacy Study (PRAS) for the month of Dec 2025 has been carried out for the Northern Region to assess the sufficiency of available generation resources to meet the projected demand under varying scenarios. The study was conducted using 1000 probabilistic scenarios, with median results presented to reflect expected system behavior under typical conditions.
- To evaluate the net load that must be met by dispatchable thermal generation, the projected regional demand for Dec 2025 was first estimated. From this demand, the expected contribution from non-thermal resources **solar, wind, hydro, and nuclear** was subtracted, based on historical generation profiles observed for these sources during the same period in past years. This approach ensures that the inherent variability and diurnal patterns of renewable generation are accurately captured in the analysis.
- For thermal generation, a detailed availability assessment was carried out using the following assumptions:

Planned Outages:

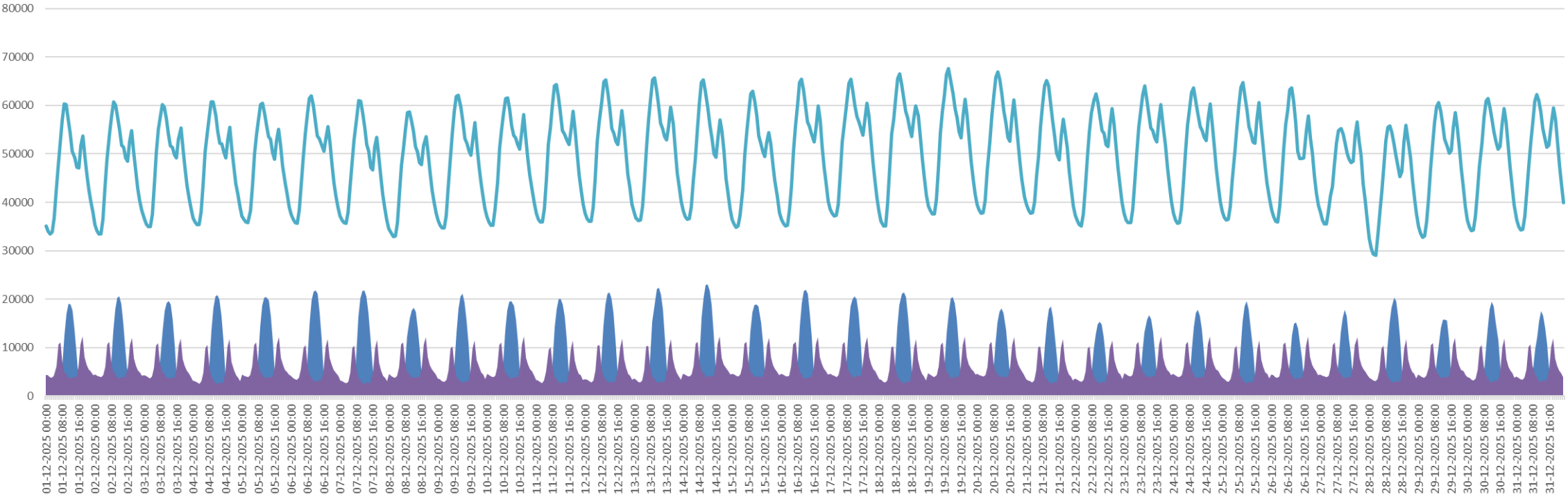
Unit-wise planned outages for the month of Dec 2025 were incorporated as per the data available in the latest LGBR. This reflects scheduled maintenance and other operational constraints known in advance.

Forced Outages:

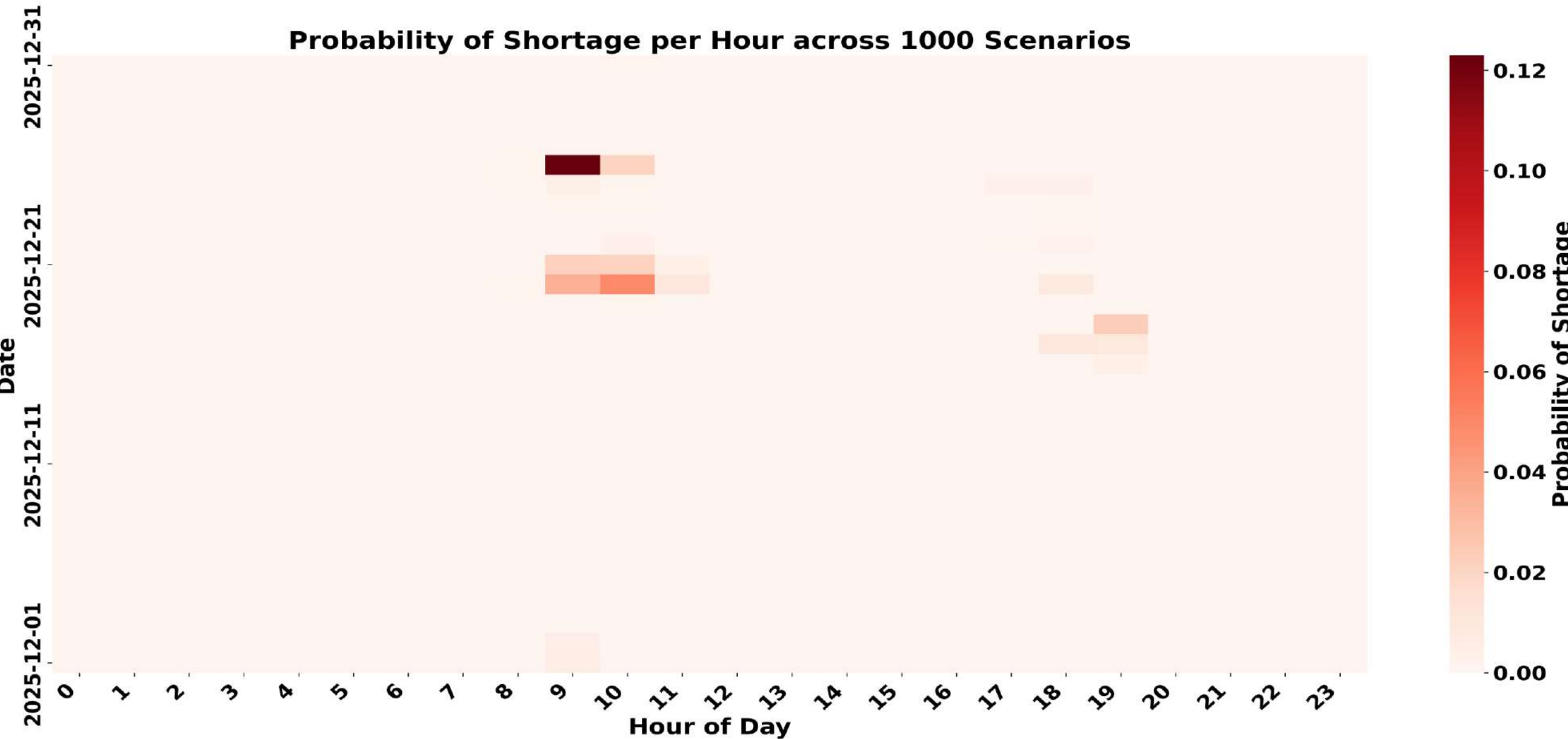
A Monte Carlo simulation approach was adopted to model forced outages of thermal generating units. This stochastic simulation utilized historical outage and revival rates specific to each unit and capacity. The probabilistic nature of this method allows for modeling of unplanned events, enhancing the robustness of the adequacy assessment.

Source wise Generation and Demand Forecast inputs for RA Planning of December 2025

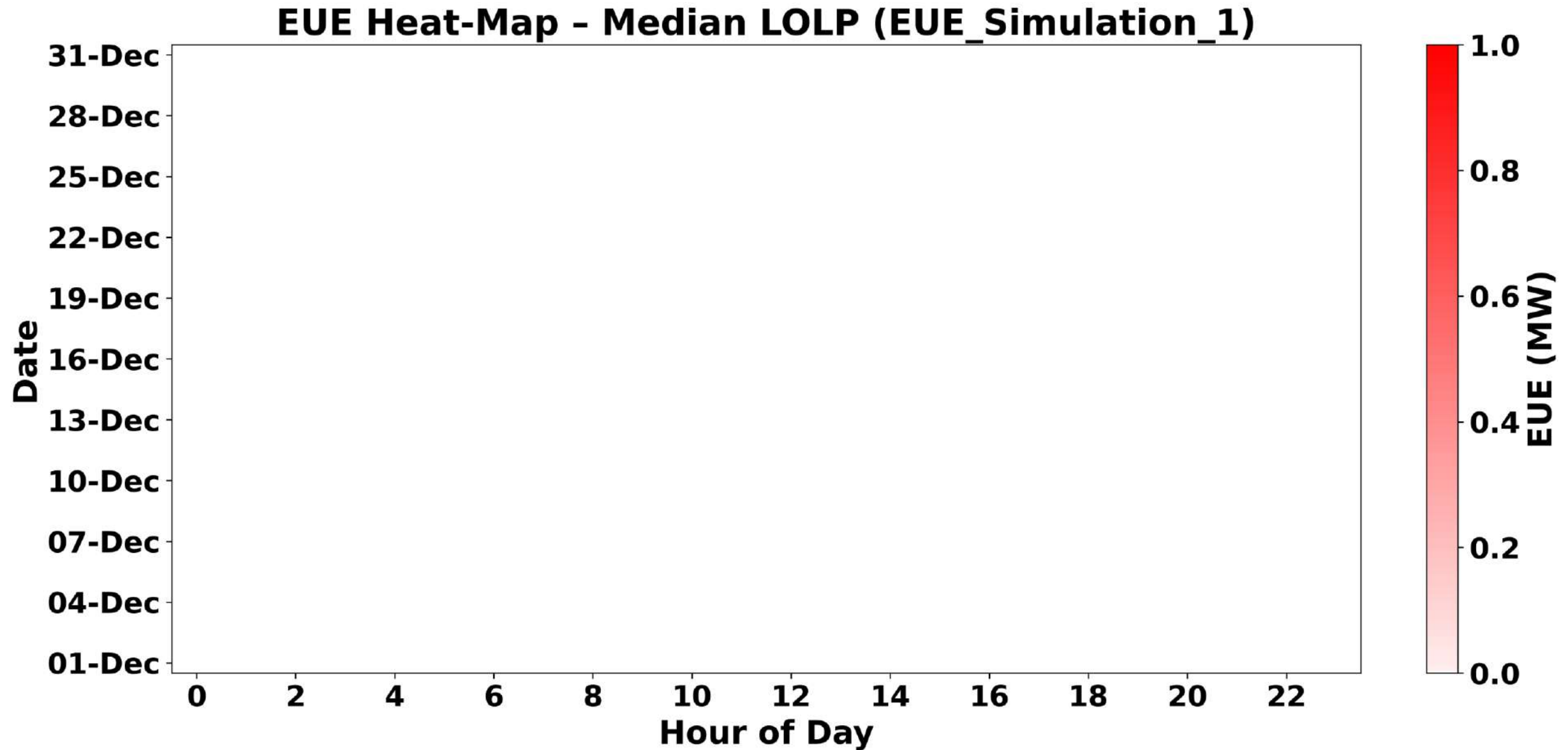
Solar Wind Nuclear Hydro Dec 2025- Demand Forecast



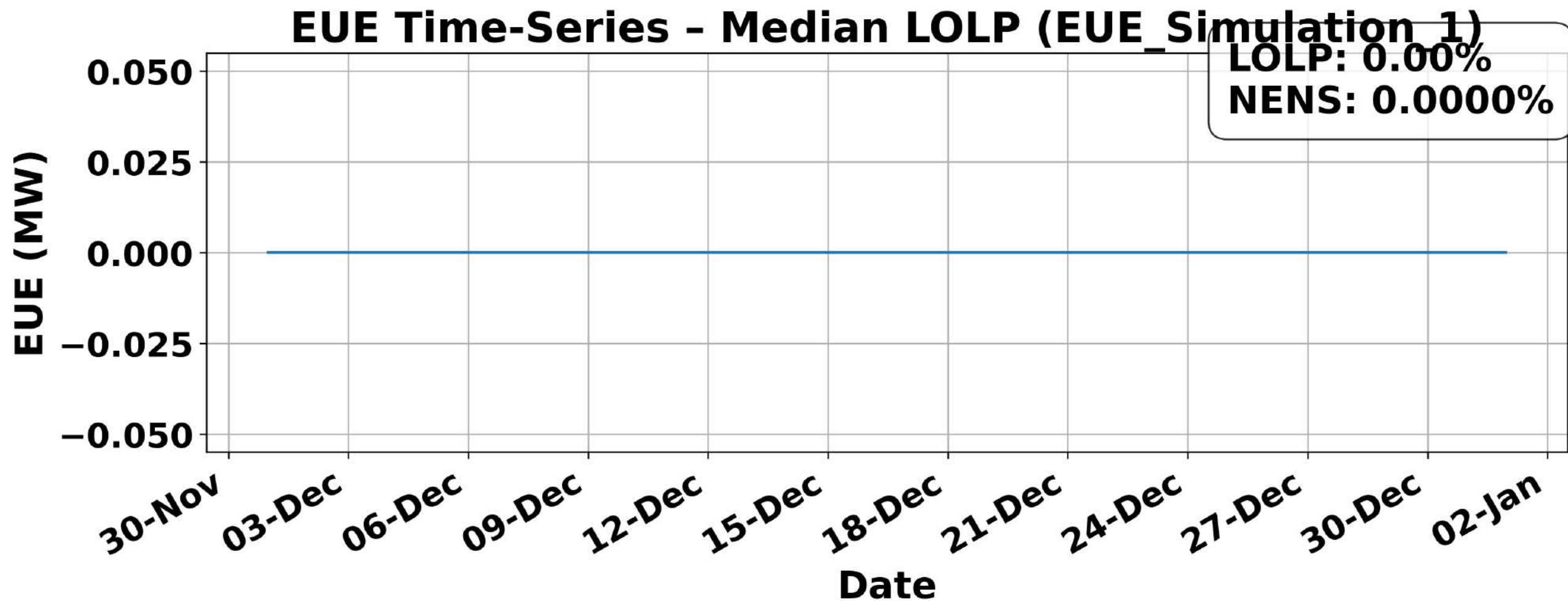
2. (A) Resource Adequacy results



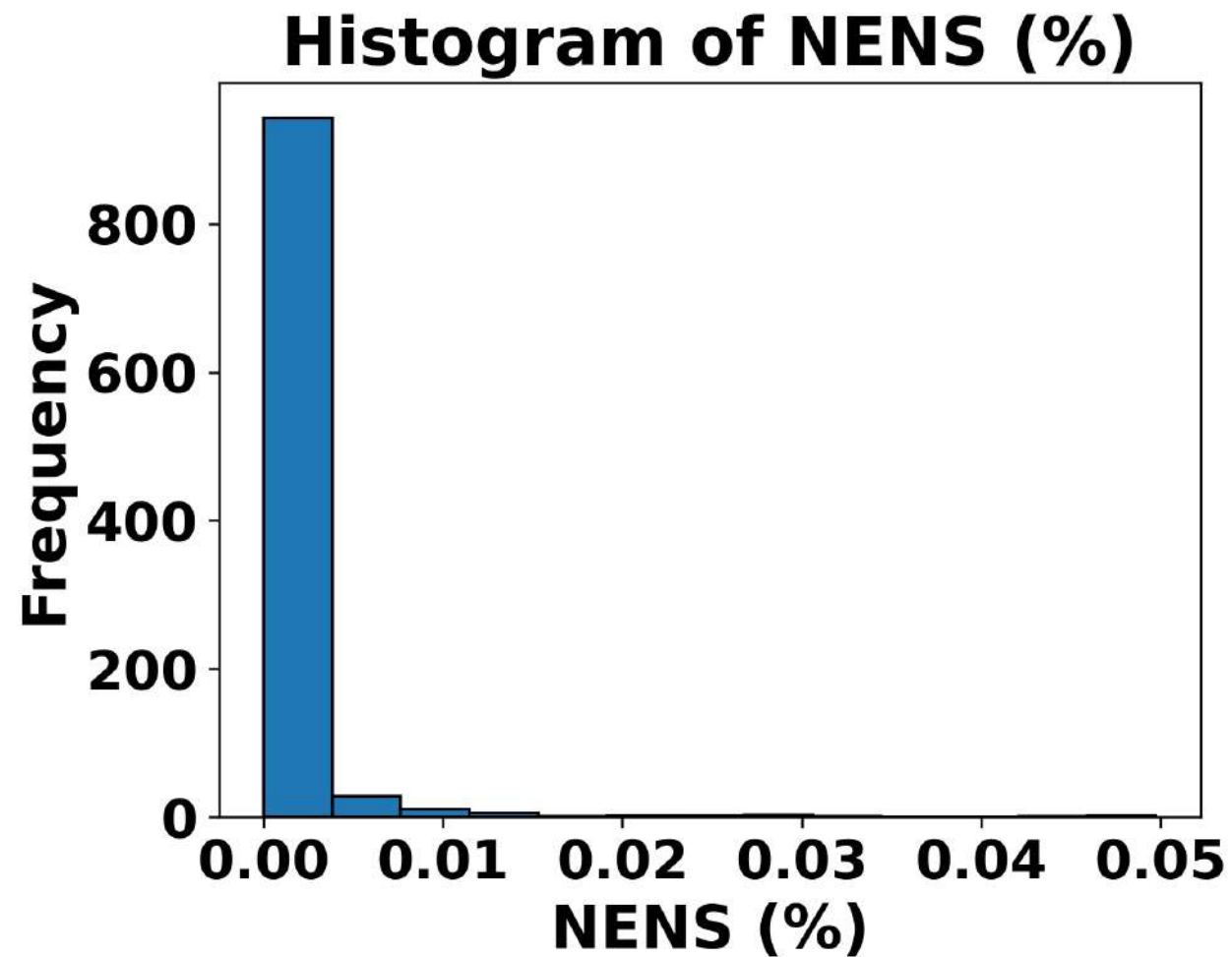
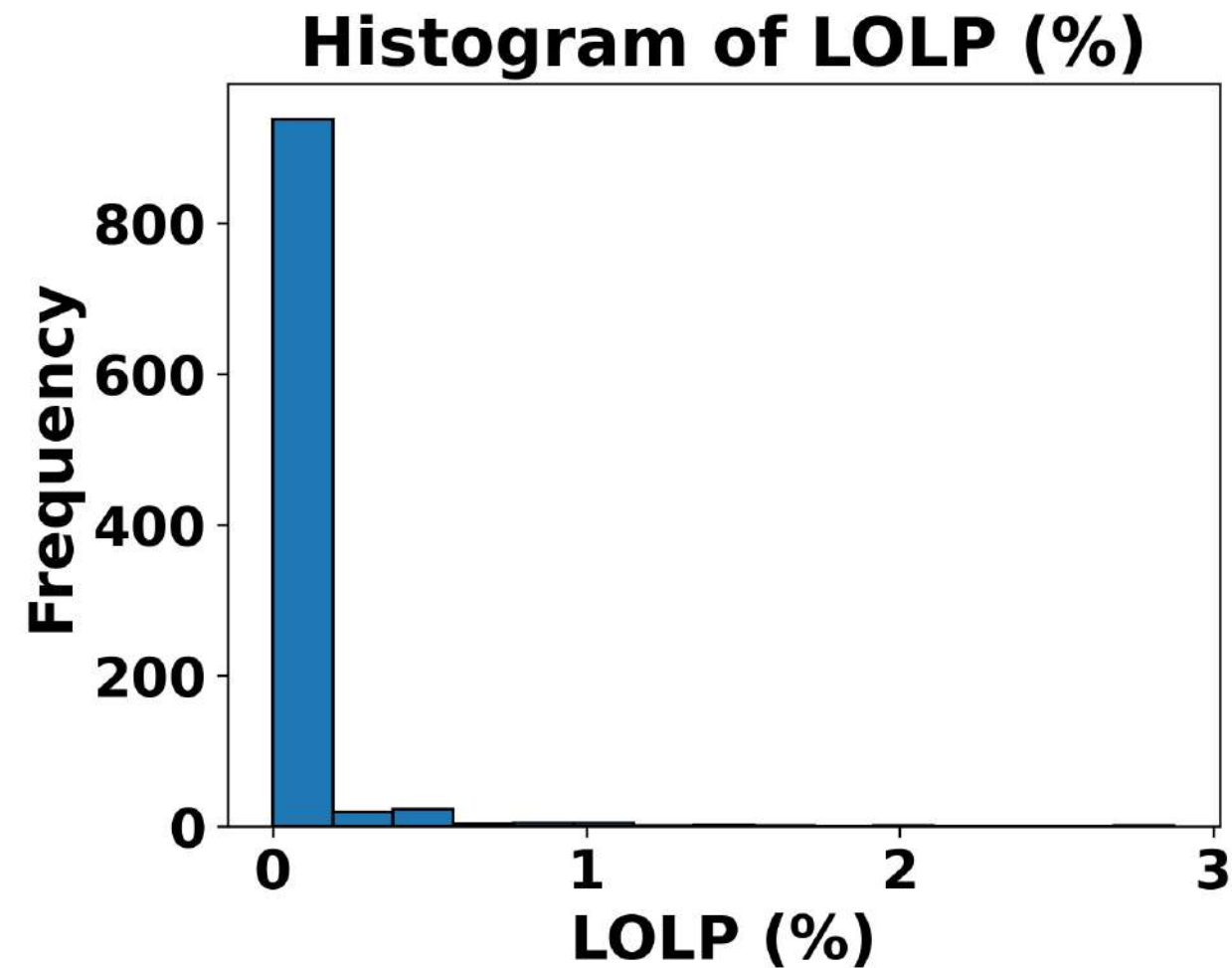
2. (B) Resource Adequacy results



2.(C) Resource Adequacy results



2. (D) Resource Adequacy results



Grid Controller of India Limited
National Load Despatch Center, New Delhi

Inter-Office Memo

From: ED, NLDC

To: Head of NRLDC/WRLDC/SRLDC/ERLDC/NERLDC

Dated: 06th October 2025

Copy: CMD, Grid-India

Director (System Operation)

Subject: Procedure for Scheduling, Metering, Accounting, Deviation Settlement, Transmission Charge Waiver and REC mechanism related to Renewable Energy plants and Energy Storage System:

1. Representations were received from stakeholders seeking clarity on the aspects of Scheduling, Metering, Accounting, Deviation Settlement, Transmission Charge Waiver, and the REC mechanism related to Renewable Energy Plants and Energy Storage Systems.
2. Accordingly, a detailed procedure was prepared in consultation with RLDCs and NLDC to address the issues raised by the stakeholders.
3. The procedure was presented before the Hon'ble Central Commission on 30th July 2025.
4. Based on the inputs received during the Commission's meeting, the revised procedure was circulated for stakeholder consultation on 6th August 2025.
5. A workshop on the procedure was conducted for stakeholders on 11th August 2025.
6. Comments on the procedure were received from several stakeholders, including Renewable Energy developers and Regional Power Committee.
7. The comments received have been suitably incorporated, and the finalised procedure is enclosed as Annexure.
8. It is requested that this procedure may kindly be annexed to the RLDC and NLDC Operating Procedures and uploaded on the respective websites for reference of all concerned.



(S. Usha)

Procedure for Scheduling, Metering, Accounting and Deviation Settlement,
Transmission Charge Waiver and REC mechanism related to ESS

A. Scheduling:

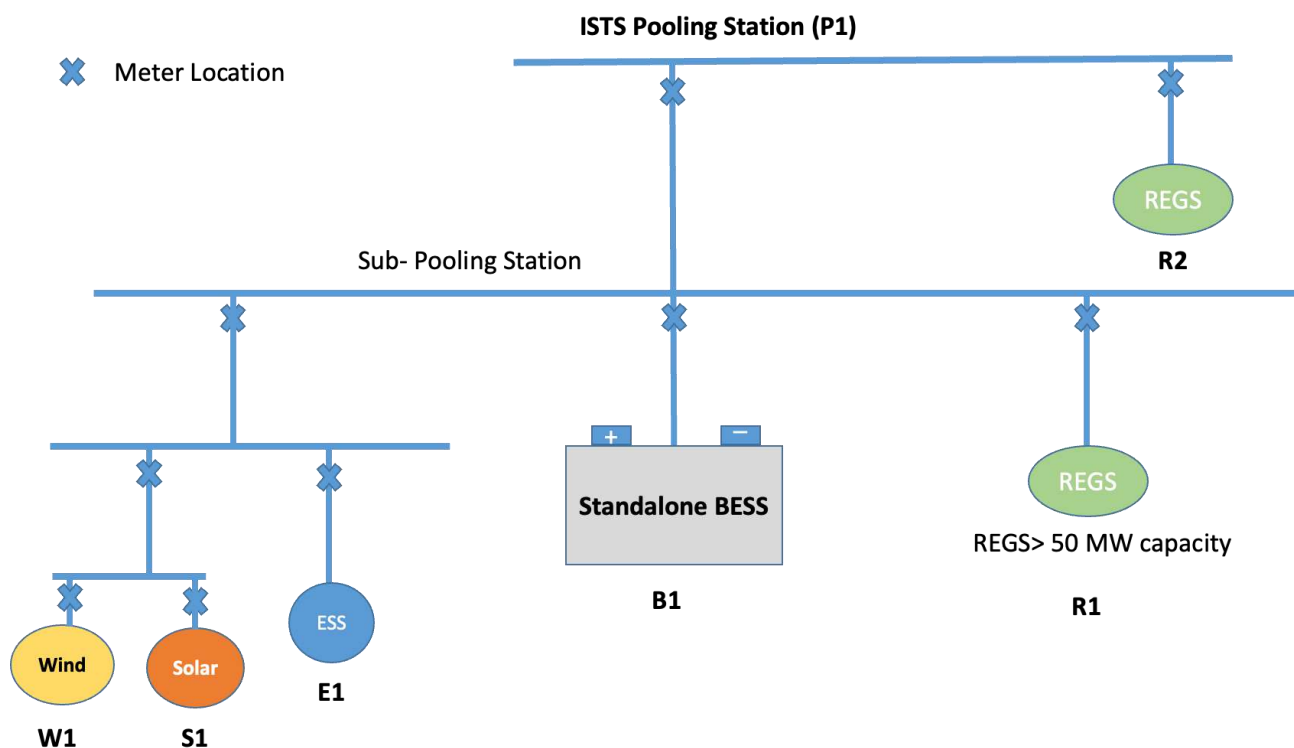


Figure 1: Schematic arrangement of RE sources with and without ESS

- (i) Co-located ESS: ESS connected at the sub-pooling station (below the ISTS pooling station) or at same ISTS sub-station along with wind/solar/hybrid RE plants shall be considered as co-located.
 Explanation: As per Figure 1, E1 and B1 both are co-located with W1, S1, R1, R2
- (ii) Pumping or Charging power of E1 and charging power of B1 from W1, S1, R1, R2 and from the ISTS grid shall be scheduled by concern RLDC.
- (iii) For Pumping or Charging power of E1 and charging power of B1 from W1, S1, R1 and R2 no ISTS loss shall be applicable on the schedule.
 Provided that schedule from other ISTS points (other than P1) or schedule through collective transaction, ISTS loss shall be applicable for Pumping or Charging power of E1 and charging power of B1.
- (iv) Scheduling of standalone ESS and co-located ESS (both injection and drawl) shall be done up to the connectivity limit under provisions of GNA Regulation at ISTS point. In case part capacities of ESS are located at different locations, but connected to same sub-pooling station, a single consolidated schedule may be submitted for all such ESS system.

- (v) ESS co-located with REGS and connected within the quantum of Connectivity granted to the REGS, can schedule power from the grid under GNA or T-GNA as the case may be under provision of GNA Regulation.
- (vi) However, for scheduling of power among the entities below the ISTS pooling station, there will be no requirement of seeking GNA or T-GNA, as no ISTS network is being utilised.
- (vii) Explanation: As per Figure 1, scheduling of power from W1, S1, R1, R2 to E1, B1 there will be no requirement of seeking GNA or T-GNA.
- (viii) In case of requirement for tagging of RE power stored at co-located or standalone ESS is required as per PPA terms, the same information shall be shared by concerned RLDC to RPC for publishing it in the REA.
- (ix) The transmission loss for the transmission system below the ISTS pooling station (P1) shall be considered as zero while preparing the schedule. However, the actual transmission loss of the internal system shall be accounted in the actual injection/drawal while preparing the Deviation Settlement Mechanism (DSM) statement.
- (x) In case of congestion in the transmission system, if the RE power cannot be evacuated beyond the congestion point/pooling substation, the scheduling of same power can be done to the drawal entities, including ESS below the congestion point/pooling substation.

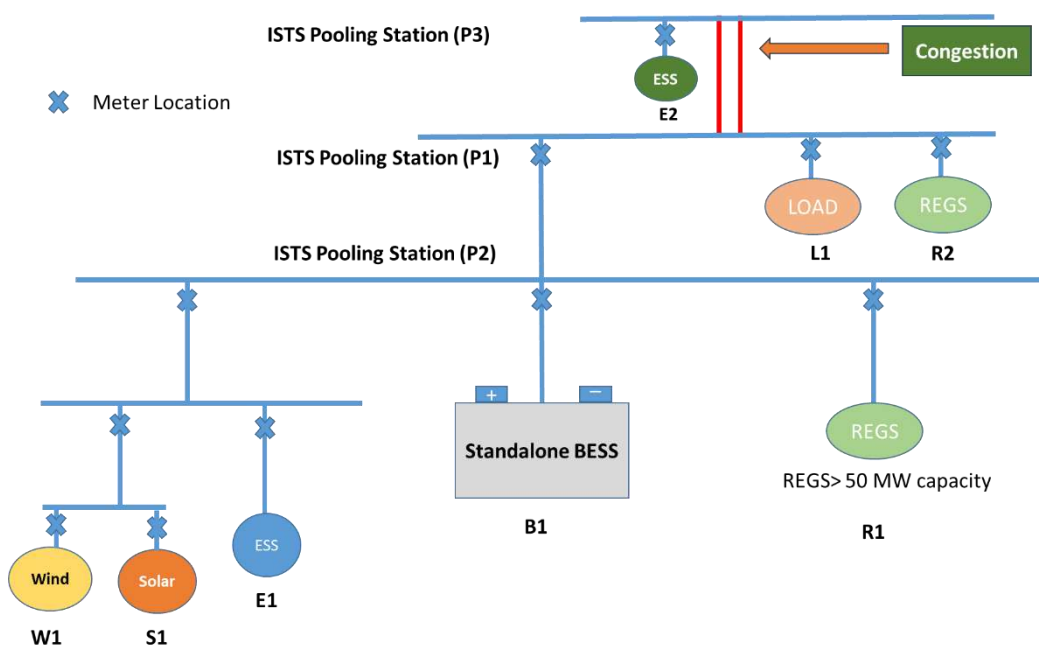


Figure 2: Schematic arrangement of RE sources with and without ESS, congestion scenario

In case of congestion, if power from W1, S1, R1, R2 cannot be evacuated entirely, the same can be scheduled to E1, B1 and L1 without any curtailment, as these drawal points are below the congestion point/pooling substation (P1).

- (xi) In case Pumping or Charging power of E1 is obtained 100% of the time from S1 only, then scheduling of power for the transaction from S1 to E1 is not required to be done by RLDC. This will be same for both AC and DC coupling of E1 and S1.

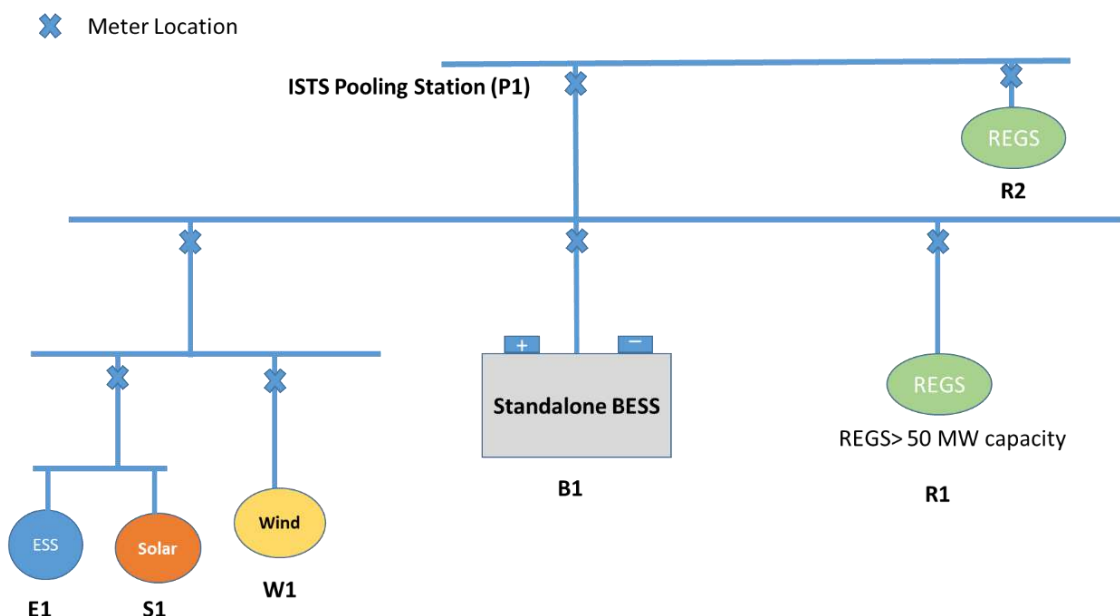


Figure 3: Schematic arrangement of RE sources with and without ESS, where ESS is charged 100% from the collocated RE (both AC or DC coupling)

- (xii) In case the collocated ESS is participating under Ancillary Service, the energy scheduled under SRAS/TRAS Down shall not be consider as drawal from the grid under contingency.

B. Metering:

- (i) Each generator and ESS shall be metered with Interface Energy Meter (IEM) so that individual actual injection/drawl can be captured.
- (ii) In case pumping or charging power of ESS is obtained 100% of the time from collocated RE plant and there is no requirement for pumping or charging power of ESS from grid, then IEM could be installed at the sub-pooling or pooling station end, as the case may be. This will be same for both AC or DC coupling between REGS and BESS.

Provided that in case AC or DC couple BESS want to draw power from grid for charging as per GNA Regulation, then each generator and ESS shall be metered with IEM so that individual actual injection/drawl can be captured.

- (iii) The entity shall apply for the metering scheme approval, along with the details of connectivity, complete SLD and PPA/LOA details etc. at concerned RLDC and ensure the installation of IEMs as per approved metering scheme before applying for the first time energization of the REGS/ESS.

(iv) All meters shall be installed as per CEA metering regulations as amended to

C. Deviation Settlement Mechanism:

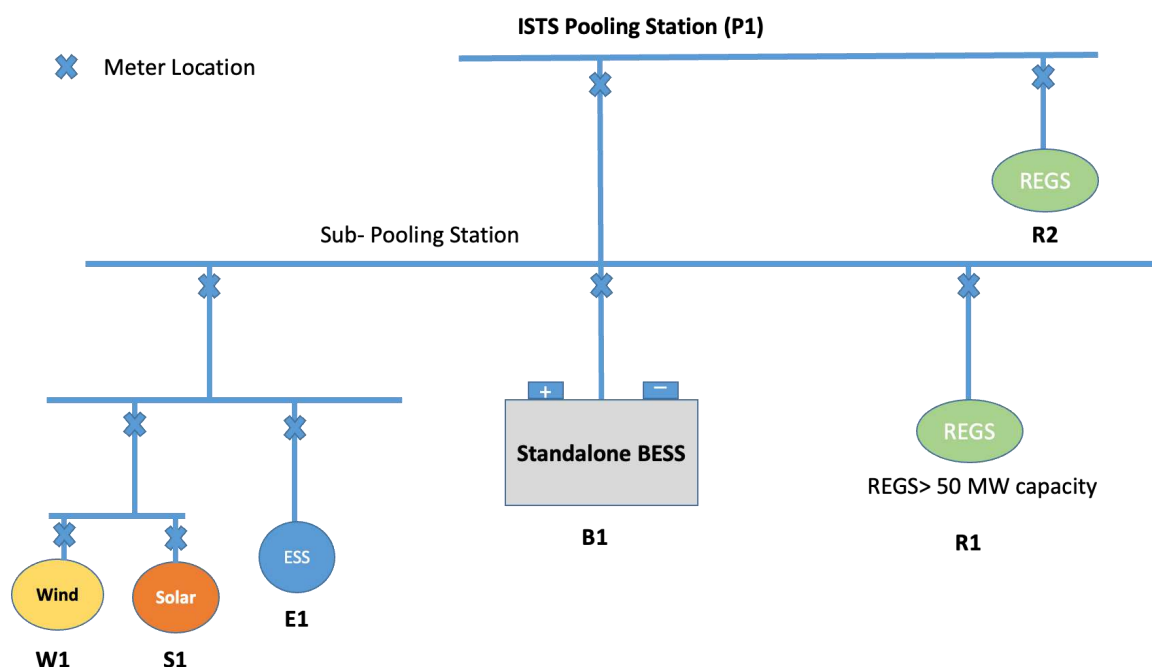


Figure 4: Schematic arrangement of RE sources with and without ESS

Suppose W1, S1, E1 has been granted a combined connectivity for 300 MW at ISTS point with following configuration:

Wind: 200 MW, Solar: 100 MW, ESS: 50 MW

B1 has connectivity of 100 MW at ISTS point

R1 has connectivity of 150 MW at ISTS point

The deviation of entities at ISTS point may be calculated as below:

Sl. No.	Entity	Availability at ISTS (MW)	Schedule at ISTS (MW)	Actual at ISTS (MW)	Deviation at ISTS (MW)	Remarks
1.	W1	300	250	150	$(280-250)/300 = 10\%$	The injection from E1 shall be counted as behind the Point of Interconnection, for injection from W1, S1
	S1			80		
	E1	50		50		

Sl. No.	Entity	Availability at ISTS (MW)	Schedule at ISTS (MW)	Actual at ISTS (MW)	Deviation at ISTS (MW)	Remarks
						sellers the AVC shall not include ESS capacity
2.	W1	0	0	0	$[(50-40)/40] \times 100 = 25\%$	Injection schedule from ESS only
	S1	0		0		
	E1	50	40	50		
3.	W1	300	250	200	$[(260-250-50+45)/300] \times 100 = 1.67\%$	Drawl schedule for E1, from W1 and S1 only
	S1			60		
	E1	-50	-45	-50		
4.	W1	300	250	200	$[(260-250)/300] \times 100 = 3.33\%$	Drawl schedule for E1, other than W1, S1 and R1
	S1			60		
	E1	-50	-45	-50	$[(50-45)/45] \times 100 = 11.11\%$	
5.	W1	300	250	200	$[(260-250-44.44+40)/300] \times 100 = 1.85\%$	Drawl schedule for E1, from W1 and S1 and from ISTS points simultaneously
	S1			60		
	E1	-50	-40 (from W1, S1)	- (50*40/45) = -44.44		
			-5 (from ISTS)	-(50*5/45) -5.56	$[(5.56-5)/5] \times 100 = 11.2\%$	

+ve sign means injection and -ve sign means drawal

- (i) The transmission charge waiver calculation for the transaction from ESS to buyer (s), the drawl schedule of E1 shall be accounted.
- (ii) Deviation of B1, R1, R2 shall be calculated as per DSM Regulation considering standalone system. In case QCA is appointed by all entities, then DSM quantum at the ISTS point shall be calculated by RPC. Subsequently, QCA shall apportion the DSM charges as per QCA agreement.

D. Waiver of Transmission Charges:**(i) Considering E1 is BESS:**

Sl. No.	Category	Period of COD	Number of years from COD	% of drawl Schedule for drawee DIC when seller is ESS
1.	Battery ESS connected at a substation where REGS is connected and is charged from such REGS	On or before 30.6.2028	12 years	100
2.	Battery ESS connected at a substation where no REGS is connected, or Battery ESS connected at a substation where REGS is connected but Battery ESS is charged from Grid or source other than REGS or any other battery ESS not covered under S.No.1 of this Table.	On or before 30.6.2025	12 years	100
		1.7.2025 to 30.6.2026	12 years	75
		1.7.2026 to 30.6.2027	12 years	50
		1.7.2027 to 30.6.2028	12 years	25
		After 30.6.2028	NA	0

The waiver of ISTS transmission charges on the drawl of power from E1, B1 shall be as per S. No. 1 of the above Table, in case energy drawl by E1, B1 from the grid (other than W1, S1, R1, R2) under contingency is up to 10% of the total energy requirement in a year (Financial Year).

If energy drawl from the grid (other than W1, S1, R1, R2) is more than 10% of the annual energy requirement, then the waiver of ISTS transmission charges on the drawl of power from E1, B1 shall be as per S. No. 2 of the above Table.

B1, E1 shall be considered for waiver of transmission charges, when B1, E1 is meeting at least 51% of its annual electricity requirement for charging of battery with electricity generated from REGS or RHGS based on wind or solar sources.

(ii) Considering E1 is PSP:

The waiver of ISTS transmission charges on the drawl of power from E1 (considering its PSP) shall be considered in case the construction work of E1 has been awarded on or before 30.6.2028, shall be eligible for a waiver of transmission charges for a period of 25 years from the COD.

E1 shall be considered for waiver of transmission charges, when E1 meets at least 51% of its annual electricity requirement for pumping of water with electricity generated from REGS or RHGS based on wind or solar sources.

- (iii) No transmission charge shall be levied on the GNA or TGNA transactions for drawl of power for charging by BESS or pumping of water by Hydro PSP.

E. Renewable Energy Certificate:

- (i) The energy used for charging of ESS from any REGS shall be considered as green transactions and no REC shall be issued to the REGS equivalent to schedule of such transactions.
- (ii) The REC for injection of power from W1, S1 or any other eligible RE source shall be issued in case green attributes (51% charging from REGS to ESS and/or RPO attribute to buyers/DISCOMs) have not been claimed for such transactions, as per CERC REC Regulation.

Illustration:

Say yearly 51% RE energy requirement for E1 is 100 MUs

Scheduled RE power from W1, S1 to E1 is 140 MUs, out of which 100 MUs energy has been scheduled to E1 with green attributes.

The actual Energy injection from W1 and S1 is 150 MUs

Drawal of power from E1 shall be eligible for RE waiver for that particular year (financial year)

W1, S1 shall be eligible for issuance of RECs for $(150-100) = 50$ MUs, subject to other eligibility conditions as per REC Regulation.

F. Storage Obligation:

- (i) In case the ESS is used as a warehouse/storage system for energy generated from any plant/CGP, the same power shall be tagged separately in the scheduling system of RLDC.
- (ii) RLDCs shall share such data to the concerned RPCs for publishing the same in the monthly REA.
- (iii) The same may also be used while verifying the captive status of such generating plant, where captive generating plant and its captive user(s) are located in more than one state.

G. Study Requirement:

- (i) The REGS shall submit at least three months in advance, the revised modelling studies data and compliance of CEA Technical standard to CTUIL and RLDC, for the quantum corresponding to ESS capacity connected behind the Point of Interconnection under Regulation 5.2 and/or 5.11 of CERC Connectivity and GNA Regulation.
- (ii) CTUIL and RLDC shall carry out joint connection studies for the CEA Technical Standard Compliances considering the excess capacity.
- (iii) Based on the recommendation of CTUIL, RLDC shall issue a standing clearance to REGS for allowing scheduling of ESS behind the Point of Interconnection.



भारत सरकार/Government of India

विद्युत मंत्रालय/Ministry of Power

केंद्रीय विद्युत प्राधिकरण/Central Electricity Authority

राष्ट्रीय विद्युत समिति प्रभाग/National Power Committee Division

सं.: 3/NRCE/NPC/CEA/2018/ १५२ - १५४

दिनांक: 20.09.2018

To

1. Member Secretary, NRPC, 18-A, SJSS Marg, Katwaria Sarai, New Delhi-110016
2. Member Secretary, WRPC, MIDC Area Marol, Andheri(East), Mumbai - 400093
3. Member Secretary, SRPC, No. 29, Race Course Cross Road, Bengaluru - 560009
4. Member Secretary, ERPC, 14, Golf Club Road, Tolly Gunge, Kolkata-700033
5. Member Secretary, NERPC, Dong Parmaw, Lapalang Shillong-793006

विषय: Ambient temperature adjusted TTC -Reg.

संदर्भ: NLDC letter No. NLDC/SO/NPC/TempadjustedTTC/222 dated 31.08.2018

Sir,

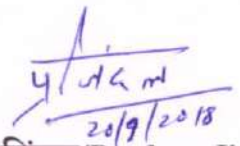
In line with the decisions in the meetings of Sub-Group of NRCE for finalizing the methodology for computation of TTC/ATC/TRM, PGCIL vide letter dated 18.04.2018 has submitted the details of current rating of terminal equipment for high capacity 400kV lines owned by POWERGRID.

In response to the NPC Division letter dated 17.08.2018, seeking status report regarding compliance/implementation of ambient temperature adjusted TTC for all the transmission corridors of the country, POSOCO vide letter dated 31.08.2018 (copy enclosed) has informed that the terminal equipment rating of both ends for the lines were available only for 99 Nos. of 400 kV lines, out of 183 lines as per the data submitted by PGCIL. Therefore, we are again taking up with PGCIL to send the complete information.

POSOCO has further requested that terminal equipment ratings of the STU and other transmission licensees would also be required for full implementing of temperature adjusted TTC.

It is, therefore, requested that the terminal equipment ratings of STUs' and other transmission licensees' transmission lines in your region, may please be compiled and furnished to POSOCO with a copy to NPC Division, CEA on priority basis.

Encl.: As Above.


(प्रदीप जिंदल/Pardeep Jindal)
मुख्य अभियन्ता / Chief Engineer

Copy to:

ED, NLDC, New Delhi- With request that while calculating the TTC for Short Term Transactions the terminal equipment rating as available may please be considered.

Copy for kind information to:

Member (GO&D), CEA, New Delhi

पावर सिस्टम ऑपरेशन कॉर्पोरेशन लिमिटेड

(भारत सरकार का उद्यम)

POWER SYSTEM OPERATION CORPORATION LIMITED

(A Govt. of India Enterprise)



पंजीकृत एवं केन्द्रीय कार्यालय : प्रथम तल, बी-9, कुतुब इंस्टीट्यूशनल एरिया, कटवारिया सराय, नई दिल्ली-110016

Registered & Corporate Office : 1st Floor, B-9, Qutab Institutional Area, Katwaria Sarai, New Delhi -110016

CIN : U40105DL2009GOI188682, Website : www.posoco.in, E-mail : posococo@posoco.in, Tel.: 011- 41035696, Fax : 011- 26536901

Ref: NLDC/SO/NPC/TempadjustedTTC/222

Date: 31st August 2018

To
The Chief Engineer,
National Power Committee (NPC),
NRPC Building, 18-A,
Shaheed Jeet Singh Marg, Katwaria Sarai,
New Delhi – 110016

Annexure-32/A

Sub: Review of Ambient temperature adjusted TTC

Ref:

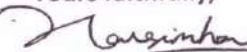
1. NPC letter 3/NRCE/NPC/CEA/2017/827-834 dtd. 17.08.2018
2. PGCIL letter no. C/CTU/N/01/NRCE dtd. 18.04.2018

Sir,

- I. This is in reference to the above communication from NPC. In the meetings of sub-group of NRCE, it was decided to finalise the methodology for computation of TTC/ATC/TRM, taking into account variations in thermal capability of lines with respect to variations of ambient temperature.
- II. Examining the details furnished by POWERGRID vide letter dtd. 18.04.2018, it was observed that details of terminal equipment ratings of both ends for the line were available for 99 nos. of 400 kV lines, out of total 183 lines. Regionwise summary is given at **Annexure-I**. Details of lines for which terminal equipment ratings of both ends are available is given at **Annexure-II**.
- III. For conducting studies in PSSE for assessment of inter control-area transfer capability, POSOCO considers thermal ratings of lines as specified in CEA's Manual on Transmission Planning Criteria 2013. These ratings are considering ambient temperature of 45° C.
- IV. Amongst the lines in Annexure-II, 20 nos. of lines had terminal equipment rated higher than the thermal ratings considered by POSOCO in studies. The list of lines are indicated as per **Annexure - III**. Consequently there is scope for considering temperature adjusted thermal ratings in these lines. POSOCO is in the process of populating the temperature adjusted thermal rating for these lines in the PSSE study cases. It is also to mention that most of the lines were not found to be in the path of inter-regional transfer.
- V. ✓ NPC may take up with POWERGRID, STUs and other transmission licensees to furnish terminal equipment ratings at all transmission lines at 400 kV and above to ensure that there is no gap in security assessment.

Thanking you,

Yours faithfully,


(S.R.Narasimhan) 31/8/2018

Executive Director, NLDC

Copy To: Executive Director, WRDLC / ERLDC / NERLDC / NRDLC / SRLDC

Annexure - I**Summary of details of terminal equipment ratings of 400 kV lines furnished by
POWERGRID**

Region	No. of lines for which data furnished	No. of lines with terminal equipment ratings of both ends	No. of lines requiring review
NR	65	31	8
WR	32	14	4
SR	38	26	2
ER	34	16	4
NER	2	2	0
Inter-regional	12	10	2
Total	183	99	20

Annexure - II

400 kV transmission lines with information of terminal equipment ratings at both ends

Name of the Transmission Line	Length in Ckt KM	Voltage Level in kV	Type of Conductor	Configuration	Temp Deg C	End-1 Rating (MVA)	End-2 Rating (MVA)	Line rating (MVA)	Line rating as per CEA Tx Planning Criteria (MVA)
Ballabgarh-M. Bagh	60.68	400	Bersimis	Quad	75	1385.6	2078.4	1385.6	2029
Lucknow(Old)-Lucknow(New)-I	2.862	400	ACSR Moose	Quad	85	2078.4	2078.4	2078.4	2211
Lucknow(Old)-Lucknow(New)-II	2.862	400	ACSR Moose	Quad	85	2078.4	2078.4	2078.4	2211
Sikar-Agra-I	386	400	ACSR Moose	Quad	85	2078.4	2078.4	2078.4	2211
Sikar-Agra-2	386	400	ACSR Moose	Quad	85	2078.4	2078.4	2078.4	2211
Bareilly (New) - Bareilly (Old) I	1.7	400	ACSR Moose	Quad	85	2078.4	2078.4	2078.4	2211
Bareilly (New) - Bareilly (Old) I	1.7	400	ACSR Moose	Quad	85	2078.4	2078.4	2078.4	2211
Roorkee-Saharanpur-I	36.535	400	ACSR Moose	Quad	85	2078.4	2078.4	2078.4	2211
Roorkee-Saharanpur-II	36.535	400	ACSR Moose	Quad	85	2078.4	2078.4	2078.4	2211
Varanasi-Sarnath I	107.577	400	ACSR Moose	Quad	85	2182.32	2182.32	2182.32	2211
Varanasi-Sarnath II	107.577	400	ACSR Moose	Quad	85	2182.32	2182.32	2182.32	2211
Kanpur-Kanpur GIS I	21.233	400	ACSR Moose	Quad	85	2078.4	2078.4	2078.4	2211
Kanpur-Kanpur GIS II	21.233	400	ACSR Moose	Quad	85	2078.4	2078.4	2078.4	2211
Hissar-Kaithal I	113.12	400	ACSR	Tripple	75	1385.6	1385.6	1385.6	1270
Hissar-Kaithal I	113.12	400	ACSR	Tripple	75	1385.6	1385.6	1385.6	1270
Kaithal- Patiala I	126	400	ACSR	Tripple	75	1385.6	1385.6	1385.6	1270
Kaithal- Patiala II	126	400	ACSR	Tripple	75	1385.6	1385.6	1385.6	1270
Nalagarh- Patiala I	93.78	400	ACSR	Tripple	75	1385.6	1385.6	1385.6	1270
Nalagarh- Patiala II	93.78	400	ACSR	Tripple	75	1385.6	1385.6	1385.6	1270
Bahadurgah- Sonapat I	53.4	400	ACSR	Tripple	75	1385.6	1385.6	1385.6	1270
Bahadurgah- Sonapat II	53.4	400	ACSR	Tripple	75	1385.6	1385.6	1385.6	1270
Baghpat-Kaithal-2	153.672	400	ACSR Moose	Quad	85	2078.4	2078.4	2078.4	2211
Baghpat-Kaithal-2	153.672	400	ACSR Moose	Quad	85	2078.4	2078.4	2078.4	2211
Merrut-Baghpat-I	70.976	400	ACSR Moose	Quad	85	2078.4	2078.4	2078.4	2211
Merrut-Baghpat-2	70.976	400	ACSR Moose	Quad	85	2078.4	2078.4	2078.4	2211
Abdullapur-Kurukshetra- I	51.65	400	ACSR	Tripple	85	1385.6	1385.6	1385.6	1623
Kurukshetra- Sonapat I	124.66	400	ACSR	Tripple		2078.4	1385.6	1385.6	1623
Abdullapur-Kurukshetra- II	51.65	400	ACSR	Tripple	85	1385.6	1385.6	1385.6	1623
Kurukshetra- Sonapat I	124.66	400	ACSR	Tripple		2078.4	1385.6	1385.6	1623
Abdullapur-Panchkula- I	63	400	ACSR	Tripple	85	1385.6	1385.6	1385.6	1623
Abdullapur-Panchkula- II	63	400	ACSR	Tripple	85	1385.6	1385.6	1385.6	1623
Nalagarh-Parbati PS	47.264	400	ACSR Moose	Quad	85	1385.6	2182.32	1385.6	2211
400kV Kurukshetra- Jalandhar	267	400	ACSR Moose	Quad	85	2078.4	2078.4	2078.4	2211
Gooty - Raichur-I (PG)	128.7	400	ACSR Moose	Quad	85	2078.4	2078.4	2078.4	2211
Raichur (PG) - Raichur-I	22.219	400	ACSR Moose	Quad	85	2078.4	2078.4	2078.4	2211
Gooty - Raichur-II (PG)	128.7	400	ACSR Moose	Quad	85	2078.4	2078.4	2078.4	2211
Raichur (PG) - Raichur-II	22.219	400	ACSR Moose	Quad	85	2078.4	2078.4	2078.4	2211
Nellore - Nellore PS I	3.65	400	ACSR Moose	Quad	85	2078.4	2078.4	2078.4	2211
Nellore - Nellore PS II	3.65	400	ACSR Moose	Quad	85	2078.4	2078.4	2078.4	2211
Nellore PS - SEPL	3.83	400	ACSR Moose	Quad	85	2078.4	2078.4	2078.4	2211
Nellore PS - MEPL	3.85	400	ACSR Moose	Quad	85	2078.4	2078.4	2078.4	2211
Neylore PS - Gooty I	289.004	400	ACSR Moose	Quad	85	2078.4	2078.4	2078.4	2211
Neylore PS - Gooty II	289.004	400	ACSR Moose	Quad	85	2078.4	2078.4	2078.4	2211
Neylore PS - TPCIL I	32.488	400	ACSR Moose	Quad	85	2078.4	2078.4	2078.4	2211
Neylore PS - TPCIL II	32.73	400	ACSR Moose	Quad	85	2078.4	2078.4	2078.4	2211
Kurnool - Nannoor (Kurnool) I	9.881	400	ACSR Moose	Quad	85	2078.4	2078.4	2078.4	2211
Kurnool - Nannoor (Kurnool) II	9.881	400	ACSR Moose	Quad	85	2078.4	2078.4	2078.4	2211
Nellore - Tiruvellur-I	172.964	400	ACSR Moose	Quad	85	2078.4	2078.4	2078.4	2211
Nellore - Tiruvellur-II	172.964	400	ACSR Moose	Quad	85	2078.4	2078.4	2078.4	2211
Nellore PS - NCC I	33.58	400	ACSR Moose	Quad		2078.4	2078.4	2078.4	2211
Nellore PS - NCC II	33.58	400	ACSR Moose	Quad		2078.4	2078.4	2078.4	2211
Thirunelveli - Kudankulam I	72.489	400	ACSR Moose	Quad	85	2182.32	2182.32	2182.32	2211
Tuticorin PS - Madurai I	94.924	400	ACSR Moose	Quad	85	2182.32	2182.32	2182.32	2211
Tuticorin PS - Madurai II	94.924	400	ACSR Moose	Quad	85	2182.32	2182.32	2182.32	2211

S. No.	Name of the Transmission Line	Length in Ckt KM	Voltage Level in kV	Type of Conductor	Configuration	Temp Deg C	End-1 Rating (MVA)	End-2 Rating (MVA)	Line rating (MVA)	Line rating as per CEA Tx Planning Criteria (MVA)
94	Kochi - Trichur I	78.197	400	ACSR Moose	Quad	85	2182.32	2182.32	2182.32	2211
95	Kochi - Trichur II	78.197	400	ACSR Moose	Quad	85	2182.32	2182.32	2182.32	2211
97	Tiruvellam - Chittoor II	21.022	400	ACSR Moose	Quad	85	2182.32	1385.6	1385.6	2211
100	Jeypore - Gazuwaka-I	220	400	AAAC	Twin	75	1385.6	1385.6	1385.6	874
101	Jeypore - Gazuwaka-II	220	400	AAAC	Twin	75	1385.6	1385.6	1385.6	874
106	Narendra - Kudgi I	176.13	400	Zebra	Quad	85	2078.4	2182.32	2078.4	1948
107	Narendra - Kudgi II	176.13	400	Zebra	Quad	85	2078.4	2182.32	2078.4	1948
108	Aurangabad(PG) - Aurangabad I	52.563	400	ACSR Moose	Quad	85	2078.4	2078.4	2078.4	2211
109	Aurangabad(PG) - Aurangabad II	52.563	400	ACSR Moose	Quad	85	2078.4	2078.4	2078.4	2211
110	Wardha - Parli I	336.939	400	ACSR Moose	Quad	85	2078.4	2078.4	2078.4	2211
111	Wardha - Parli II	336.939	400	ACSR Moose	Quad	85	2078.4	2078.4	2078.4	2211
120	Jabalpur - Itarsi-I	232	400	ACKC	Twin	75	1385.6	1385.6	1385.6	874
121	Jabalpur - Itarsi-II	232	400	ACKC	Twin	75	1385.6	1385.6	1385.6	874
122	Seoni - Khandwa-I	351.729	400	AAAC	Quad	75	2182.32	2182.32	2182.32	1680
123	Seoni - Khandwa-II	351.729	400	AAAC	Quad	75	2182.32	2182.32	2182.32	1680
128	Indore - Indore II (MP)	49.73	400	ACSR Moose	Quad	85	2182.32	2182.32	2182.32	2211
129	Indore - Indore I (MP)	49.73	400	ACSR Moose	Quad	85	2182.32	2182.32	2182.32	2211
132	Jabalpur PS - Jabalpur I	15.456	400	ACSR Moose	Quad	85	2182.32	2182.32	2182.32	2211
133	Jabalpur PS - Jabalpur II	15.456	400	ACSR Moose	Quad	85	2182.32	2182.32	2182.32	2211
134	Pirana - Vadodara I	131.549	400	ACSR Moose	Quad	85	2078.4	2078.4	2078.4	2211
136	Pirana - Vadodara II	131.549	400	ACSR Moose	Quad	85	2078.4	2078.4	2078.4	2211
142	Ballia-Biharsharif I	241.79	400	ACSR	Quad	85	2078.4	2078.4	2078.4	2211
143	Ballia-Biharsharif II	241.79	400	ACSR	Quad	85	2078.4	1385.6	1385.6	2211
144	Patna-Ballia I	195.323	400	ACSR	Quad	85	2078.4	2078.4	2078.4	2211
145	Patna-Ballia II	195.323	400	ACSR	Quad	85	2078.4	2078.4	2078.4	2211
148	Patna-Ballia III	185	400	ACSR Moose	Quad	85	2078.4	2078.4	2078.4	2211
149	Patna-Ballia IV	185	400	ACSR Moose	Quad	85	2078.4	2078.4	2078.4	2211
150	Biharsharif - Sasaram III (now purnea-I)	324.185	400	ACSR Moose	Quad	85	1385.6	1385.6	1385.6	2211
151	Biharsharif - Sasaram IV(now purnea-II)	324.185	400	ACSR Moose	Quad	85	1385.6	1385.6	1385.6	2211
158	Ranchi (New) - Ranchi I	78.617	400	ACSR Moose	Quad	85	2078.4	2078.4	2078.4	2211
159	Ranchi (New) - Ranchi II	78.617	400	ACSR Moose	Quad	85	2078.4	2078.4	2078.4	2211
160	Ranchi (New) - Ranchi III	78.542	400	ACSR Moose	Quad	85	2078.4	2078.4	2078.4	2211
161	Ranchi (New) - Ranchi IV	78.542	400	ACSR Moose	Quad	85	2078.4	2078.4	2078.4	2211
162	Patna-Kishanganj I	346.72	400	ACSR Moose	Quad	85	2078.4	2078.4	2078.4	2211
163	Patna-Kishanganj II	346.72	400	ACSR Moose	Quad	85	2078.4	2078.4	2078.4	2211
166	New Ranchi - Chandwa I	68	400	ACSR Moose	Quad	85	2078.4	2078.4	2078.4	2211
168	New Ranchi - Chandwa II	68	400	ACSR Moose	Quad	85	2078.4	2078.4	2078.4	2211
172	New Purnea - New Siliguri I	168	400	HTLS	Twin	75	2078.4	2078.4	2078.4	1748
173	New Purnea - New Siliguri II	168	400	HTLS	Twin	75	2078.4	2078.4	2078.4	1748
174	Newpurnea - Kishanganj-I (LILO portion)		400	ACSR Moose	Quad		1385.6	2078.4	1385.6	2211
176	Newpurnea - Kishanganj-II (LILO portion)		400	ACSR Moose	Quad		1385.6	2078.4	1385.6	2211
78	Durgapur-Maithon I	70.77	400	ACSR	Twin	85	1385.6	1385.6	1385.6	1106
79	Durgapur-Maithon II	70.77	400	ACSR	Twin	85	1385.6	1385.6	1385.6	1106
82	Balipara - Bongaingaon III	309	400	ACSR Moose	Quad	85	2078.4	2078.4	2078.4	2211
83	Balipara - Bongaingaon IV	309	400	ACSR Moose	Quad	85	2078.4	2078.4	2078.4	2211

Note : Sl.Nos. in this document are as per Annexure to letter received from POWERGRID on 18.04.18

Annexure - III

400 kV Transmission lines with need for review considering variation in ambient temperature

Sl.No.	Line	Thermal rating as per limitations on terminal equipment	Thermal rating as per CEA's Manual on Tx Planning criteria (45°C ambient temperature)
1	400 kV Hissar - Kaithal I	1386	1270
2	400 kV Hissar - Kaithal II	1386	1270
3	400 kV Kaithal - Patiala I	1386	1270
4	400 kV Kaithal - Patiala II	1386	1270
5	400 kV Nalagarh - Patiala I	1386	1270
6	400 kV Nalagarh - Patiala II	1386	1270
7	400 kV Bahadurgarh - Sonapat I	1386	1270
8	400 kV Bahadurgarh - Sonapat II	1386	1270
9	400 kV Jeypore - Gazuwaka I	1386	874
10	400 kV Jeypore - Gazuwaka II	1386	874
11	400 kV Narendra - Kudugi I	2078	1948
12	400 kV Narendra - Kudugi II	2078	1948
13	400 kV Jabalpur - Itarsi I	1386	874
14	400 kV Jabalpur - Itarsi II	1386	874
15	400 kV Seoni - Khandwa I	2182	1680
16	400 kV Seoni - Khandwa II	2182	1680
17	400 kV New Purnea - New Siliguri I	2078	1748
18	400 kV New Purnea - New Siliguri II	2078	1748
19	400 kV Durgapur-Maithon I	1386	1106
20	400 kV Durgapur-Maithon II	1386	1106



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.nrlc.in, E-mail : nrlc@grid-india.in, Tel: 011 26519406, 26523859, Fax: 011 26852747

संदर्भ सं.: 30क्ष0भा0प्रे0कें0/प्र0सं0/151/ 983

दिनांक : 22-09-2025

सेवा मे,
As per distribution list.

विषय : Regarding utmost priority to Insulator replacement and cleaning in view of upcoming Winter season.

महोदय,

Frequent outage of EHV lines have been observed in the Northern Region during winter months in foggy weather conditions in the past years. In view of the same, constituents have been regularly asked to expedite the insulator cleaning works and replace porcelain insulators with polymer insulators in the fog prone areas. The same has also been discussed regularly in the OCC/NRPC forum as part of winter preparedness.

In the recently concluded OCC 235 meeting on 16.09.2025 also NRLDC has sensitized the constituents about the trippings observed in the past during winter months and requested ensuring the following measures:

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

It is also again being reiterated that tripping of lines leads to network depletion, Further the tripping of lines emanating from generation complex such as Singrauli-Anpara-Rihand complex, Bara-Meja Complex, Chhabra-Kalisindh-Kawai complex etc. pose serious challenges in safe evacuation of generation and reliable grid operation.

It is also to emphasize that frequent auto reclosures events (ARs) and trippings due to de-capping of insulators have been observed in the Northern Region in the past years during winter months. Further, transmission utilities should also take into notice that frequent tripping and ARs in the lines may affect the healthiness of running units at the generating plants and may lead to undesirable consequences.

The list of EHV lines where emergency shutdowns to replace damaged insulator and trippings observed due to broken insulator in the last winter season in fog prone months (01-12-2024 to 31-01-2025) is enclosed as Annexure-I.

The latest status regarding insulator replacement as available with NRLDC is attached as Annexure-II. As discussed in various OCC/NRPC forums, it is again requested to furnish the utility-wise latest status of the replacement of porcelain insulators with polymer insulators so that crucial lines for which such works are pending may be identified & prioritized.

सादर धन्यवाद

भवदीय
सोमारा लोकरा
22/09/2025

मुख्य महाप्रबंधक (प्रणाली संचालन)
उत्तरी क्षेत्र भार प्रेषण केन्द्र, नई दिल्ली

विनम्र सूचनार्थ :

1. सदस्य सचिव, उत्तरी क्षेत्र विद्युत् समिति, नई दिल्ली
2. कार्यपालक निदेशक, उत्तरी क्षेत्र भार प्रेषण केन्द्र, नई दिल्ली
3. कार्यपालक निदेशक, कार्यकारी निदेशक, राष्ट्रीय भार प्रेषण केन्द्र, नई दिल्ली

Details of Transmission Elements under Emergency Shutdown and Transmission lines tripped(01.01.2025 to 31.01.2025)							
S.No.	Element Name	Type	Voltage Level	Owner	Outage	Revival	Reason / Remarks
1	400 KV Banda-Orai (UP) Ckt-1	Line	400KV	UPPTCL	01-01-2025	11-10	19-18 Insulator broken . Emergency shutdown for replacement of broken insulators at Tower no. 206 (Y-phase) & Tower no. 189 (B-phase).
2	400 KV Anta(RS)-Kawal SCTPS(APR) (RS) Ckt-1	Line	400KV	RRVPNL	01-01-2025	12-49	19-18 Insulator broken . Emergency shutdown for replacement of damaged suspension insulator string at Tower at Tower no. 27.
3	220 KV Jaipur South(PG)-Varitika(RS) (RS) Ckt-2	Line	220KV	RRVPNL	01-01-2025	14-47	18-37 Insulator broken . Emergency shutdown for replacement of damaged suspension insulator string of R-phase at Loc. no. 43.
4	220 KV Jaipur South(PG)-Varitika(RS) (RS) Ckt-2	Line	220KV	RRVPNL	02-01-2025	12-05	17-42 Insulator flashover . Emergency shutdown for replacement of flashover Y-phase insulator at Tower no. 272.
5	400 KV Muradnagar_2-Mathura (UP) Ckt-1	Line	400KV	UPPTCL	03-01-2025	10-51	18-40 Insulator broken . Emergency shutdown for replacement of broken insulator at Loc. no. 532.
6	500 KV HVDC Ballia-Bhiwadi (PG) Ckt-1	HVDC Line	500KV	POWERGRID	03-01-2025	16-04	08-35 Insulator broken . Emergency shutdown for attending broken insulator string at Loc. no. 241.
7	765 KV Ballia-Lucknow_2 (PG) Ckt-1	Line	765KV	POWERGRID	03-01-2025	17-40	20-08 Insulator flashover . Emergency shutdown for insulator cleaning work by ER-1.
8	765 KV Ballia-Gaya (PG) Ckt-1	Line	765KV	POWERGRID	04-01-2025	11-10	16-06 Insulator flashover . Emergency shutdown for replacement of flashover polymer insulator (R-phase) at Tower no. 124.
9	400 KV Aligarh-Sikandrabad (UP) Ckt-1	Line	400KV	UPPTCL	04-01-2025	13-51	18-33 Insulator broken . Emergency shutdown for replacement of broken pilot insulator string at Loc. no. 687.
10	765 KV Ballia-Lucknow_2 (PG) Ckt-1	Line	765KV	POWERGRID	04-01-2025	16-12	19-16 Insulator broken . Emergency shutdown for replacement of de-capped Y-phase pilot string insulator at Loc. no. 278.
11	765 KV Agra-Fatehpur (PG) Ckt-1	Line	765KV	POWERGRID	04-01-2025	16-32	20-24 Insulator broken . Emergency shutdown for replacement of broken insulator string by ER-1.
12	400 KV Ballia(PG)-Naubatpur (BS) (PG) Ckt-2	Line	400KV	POWERGRID	05-01-2025	09-46	21-45 Insulator broken . Emergency shutdown for replacement of de-capped insulator at Loc. no. 272.
13	500 KV HVDC Ballia-Bhiwadi (PG) Ckt-1	HVDC Line	500KV	POWERGRID	05-01-2025	10-31	19-50 Insulator broken . Emergency shutdown for replacement of B-phase damaged insulator at multi circuit Tower no. 5.
14	220 KV Gorakhpur(PG)-Gola(UP) (UP) Ckt-2	Line	220KV	UPPTCL	05-01-2025	11-45	19-24 Insulator broken . Emergency shutdown to replace de-capped insulator at Loc. no. 273 & 668.
15	500 KV HVDC Ballia-Bhiwadi (PG) Ckt-2	HVDC Line	500KV	POWERGRID	06-01-2025	08-04	19-57 Insulator broken . Emergency shutdown for replacement of broken insulator string (B-phase) at Tower no. 704.
16	400 KV Gorakhpur(PG)-Motihari(BS) (PG) Ckt-2	Line	400KV	POWERGRID	07-01-2025	12-50	17-16 Insulator broken . Emergency shutdown for replacement of broken insulator at Tower no. 28.
17	220 KV Sonawal(PG)-Barabanki(UP) (UP) Ckt-1	Line	220KV	UPPTCL	08-01-2025	12-22	21-51 Insulator broken . Emergency shutdown for replacement of broken CLR polymer insulator at Tower no. 05.
18	220 KV Hamirpur(PG)-Hamirpur(HP) (PG) Ckt-1	Line	220KV	POWERGRID	08-01-2025	12-26	16-43 Insulator broken . Emergency shutdown for replacement of de-capped R-phase polymer insulator at Tower no. 30.
19	400 KV Moga-Hisar (PG) Ckt-3	Line	400KV	POWERGRID	09-01-2025	16-41	22-09 Insulator broken . Emergency shutdown for replacement of broken insulator (B-phase) at Loc. no. 151.
20	400 KV Bassi-Sikar (PG) Ckt-1	Line	400KV	POWERGRID	10-01-2025	15-53	00-47 Insulator flashover . Emergency shutdown for replacement of flashover Y-phase polymer insulator at Tower no. 276.
21	400 KV Muradnagar_2-Mathura (UP) Ckt-1	Line	400KV	UPPTCL	11-01-2025	11-12	19-43 Insulator flashover For safety reason during insulator replacement work of 400KV Balliabgarh-Tughlakabad-1 SD of top circuit 400KV Tughlakabad-Bamauli-2 (Both lines are on same tower)
22	400 KV Bammol(DV)-Tughlakabad(PG) (DTL) Ckt-2	Line	400KV	POWERGRID	13-01-2025	13-27	22-34 Insulator broken For attending /replacing damaged Suspension disc insulator string at Loc.no.129 (R-phase)
23	400 KV Anta(RS)-Kawal SCTPS(APR) (RS) Ckt-2	Line	400KV	RRVPNL	13-01-2025	14-07	20-02 Hotspot to attend a broken insulator Y String found at tower no. 184 in B-Phase.
24	765 KV Koteswar-Meerut (PG) Ckt-1	Line	765KV	POWERGRID	14-01-2025	10-29	16-46 Insulator broken Shutdown will be taken for attending broken disc insulator at tower location no 206 B phase
25	400 KV Banda-Orai (UP) Ckt-2	Line	400KV	UPPTCL	14-01-2025	11-48	18-57 Insulator broken During inspection of Jalandhar -Ludhiana Line 01 no polymer insulator found damage at Loc no. 156 R-phase and needs to replace immediately
26	400 KV Ludhiana-Jalandhar (PG) Ckt-1	Line	400KV	POWERGRID	14-01-2025	13-18	16-22 Insulator broken to attend de-capped insulator replace with Polymer insulator at location no 265
27	500 KV HVDC Ballia-Bhiwadi (PG) Ckt-2	HVDC Line	500KV	POWERGRID	14-01-2025	14-08	19-33 Insulator broken To replace de-capped porcelain insulator with Polymer insulator at location no 292
28	500 KV HVDC Ballia-Bhiwadi (PG) Ckt-1	HVDC Line	500KV	POWERGRID	15-01-2025	09-33	18-03 Insulator broken attending broken disc insulators at location 41, R-Phase
29	400 KV Banda-Orai (UP) Ckt-1	Line	400KV	UPPTCL	15-01-2025	11-54	15-42 Insulator broken for attending broken disc insulators at location 56,B-Phase of 400KV Orai-Banda ckt-2 line
30	400 KV Banda-Orai (UP) Ckt-2	Line	400KV	UPPTCL	15-01-2025	16-05	21-14 Insulator broken . Emergency shutdown for safety purpose during replacement of broken insulator in 400KV Abdullapur-Kurukshetra Ckt-2 at Multi-Circuit Tower no. 05.
31	400 KV Kurukshetra-Sonapat (PG) Ckt-1	Line	400KV	POWERGRID	16-01-2025	11-44	16-43 Insulator broken . Emergency shutdown for replacement of broken insulator at Tower no. 42.
32	220 KV Auraiya(NT)-Malanpur(MP) (PG) Ckt-1	Line	220KV	POWERGRID	16-01-2025	13-04	18-26 Insulator flashover . Emergency shutdown for replacement of flashover R-phase polymer insulator at Tower no. 275.
33	400 KV Muradnagar_2-Mathura (UP) Ckt-1	Line	400KV	UPPTCL	17-01-2025	10-58	18-44 Insulator flashover . Emergency shutdown for replacement of punctured polymer at Tower no. 178.
34	220 KV Baghat(PG)-Mandla Vihar(UP) (UP) Ckt-1	Line	220KV	UPPTCL	17-01-2025	13-07	15-37 Insulator broken . Emergency shutdown for attending B-phase broken insulator at Tower no. 185.
35	400 KV Banda-Orai (UP) Ckt-2	Line	400KV	UPPTCL	17-01-2025	13-35	19-28 Insulator broken . Emergency shutdown for replacement of broken insulator string at Loc. no. 236 (near Bundelkhand highway crossing).
36	765 KV Ballia-Lucknow_2 (PG) Ckt-1	Line	765KV	POWERGRID	19-01-2025	10-14	19-22 Insulator broken . Emergency shutdown for replacement of broken insulator at Loc. 162 and 158.
37	220 KV Anta(NT)-Sakatpura(RS) (RS) Ckt-1	Line	220KV	RRVPNL	19-01-2025	12-15	16-44 Insulator broken . Emergency shutdown for replacement of broken CLR insulator in line.
38	765 KV Orai-Aligarh (PG) Ckt-2	Line	765KV	POWERGRID	20-01-2025	14-28	19-38

39	220 KV Kanpur(PG)-Unchahar(NT) (PG) Ckt-2	Line	220KV	POWERGRID	21-01-2025	15:40	21-01-2025	17:55	Insulator broken . Emergency shutdown for replacing broken insulator at Loc. no. 438.
40	400 KV Noida Sec 148-Noida Sec 123 (UP) Ckt-1	Line	400KV	UPPTCL	23-01-2025	13:05	23-01-2025	17:08	Insulator flashover . Emergency shutdown for replacement of flashover B-phase polymer insulator at Tower no. 45.
41	400 KV Ballabgarh(PG)-Tughlakabad(PG) (DTL) Ckt-1	Line	400KV	POWERGRID ,DTL	25-01-2025	15:36	26-01-2025	08:14	Insulator broken . Emergency shutdown for safety purpose during replacement of broken insulator at Tower no. 74 in 400KV Tughlakabad - Bannaui Ckt-2 (Multi-Circuit Tower).
42	400 KV Bammoli(DV)-Tughlakabad(PG) (DTL) Ckt-2	Line	400KV	POWERGRID ,DTL	25-01-2025	15:56	26-01-2025	08:12	Insulator broken . Emergency shutdown for replacement of broken insulator at Tower no. 74.
43	400 KV Bammoli(DV)-Tughlakabad(PG) (DTL) Ckt-1	Line	400KV	POWERGRID ,DTL	27-01-2025	10:50	27-01-2025	16:37	Insulator broken . Emergency shutdown for replacement of broken insulator at Tower no. 75.
44	220 KV Sohawal(PG)-Bahraich(UP) (UP) Ckt-1	Line	220KV	UPPTCL	30-01-2025	15:08	30-01-2025	17:56	Insulator broken . Emergency shutdown for replacement of broken insulator at Loc no. 68 (R-phase).
45	220 KV Palwal(HV)-Samaypur(BB) (HVPNL) Ckt-2	Line	220KV	HVPNL	01-01-2025	03:16	01-01-2025	12:20	Phase to earth fault B-N , Zone-1, Dist. 2.90km, Fault current 24.74kA from Samaypur(BBMB). Insulator broken at Tower no. 15.
46	400 KV Ballabgarh(PG)-Tughlakabad(PG) (DTL) Ckt-1	Line	400KV	POWERGRID ,DTL	13-01-2025	09:36	14-01-2025	05:35	Phase to Ground Fault R-N Tripped at 09:36Hrs 13-01-2025 on R-N Fault. Tughlakabad: 2.2kM, 16.8kA. charging attempt failed from ballabgarh end at 10:26hrs.Puncture insulator found at location no 8
47	220 KV AHEJAL PSS 2 HB_FGRAH_FBTL (AHEJAL)-Adani RenewPark_SL_FGRAH_FBTL (AHEJAL) Ckt-1	Line	220KV	AHEJAL	13-01-2025	14:04	14-01-2025	00:31	Insulator broken line tripped in BRC (broken conductor) Fault, we checked & found insulator broken at PSS gantry.
48	220 KV AHEJAL PSS 2 HB_FGRAH_FBTL (AHEJAL)-Adani RenewPark_SL_FGRAH_FBTL (AREPRL) (AHEJAL) Ckt-1	Line	220KV	AHEJAL	13-01-2025	14:04	14-01-2025	00:31	Insulator broken line tripped in BRC (broken conductor) Fault, we checked & found insulator broken at PSS gantry.

Details of Transmission Elements under Emergency Shutdown and Transmission lines tripped (01.12.2024 to 31.12.2024)

1	220 KV Abdullahapur(PG)-Tepla(HV) (HVPNL) Ckt-2	Line	220KV	HVPNL	03-12-2024	08:36	03-12-2024	17:14	Insulator flashover . Emergency shutdown for replacement of old porcelain disc insulators with silicon polymer type insulators in line near Tepla.
2	220 KV Fatehabad(PG)-Sirsa(HV) (HVPNL) Ckt-1	Line	220KV	HVPNL	03-12-2024	12:06	03-12-2024	14:19	Insulator broken . Emergency shutdown for replacement of broken R-phase insulator at Tower no. 31.
3	765 KV Varanasi-Kanpur_GIS (PG) Ckt-2	Line	765KV	POWERGRID	10-12-2024	14:09	10-12-2024	19:30	Insulator broken for replacement of damaged CLR insulator at loc no. 846
4	220 KV Meerut(PG)-Nara(UP) (PG)	Line	220KV	,UPPTCL	11-12-2024	14:00	11-12-2024	20:26	Insulator flashover For replacement of damaged R phase disc at tower no 51
5	400 KV RAPS_C(NP)-Kota(PG) (PG) Ckt-1	Line	400KV	POWERGRID	11-12-2024	16:10	11-12-2024	20:03	Insulator flashover for replacement of loc no.110 of Y-phase insulator.
6	220 KV Bhadla(PG)-AzureMaplePSS SL_BHD_PG (APMPL) (APMPJ) Ckt-1	Line	220KV	APMPL	12-12-2024	18:50	13-12-2024	03:39	Insulator broken . Emergency shutdown for replacement of faulty insulator in multi-circuit tower (Azure Maple & MSEDCL also on the same multi-circuit tower).
7	220 KV Bhadla(PG)-AzureMaplePSS SL_BHD_PG (APMPL) (APMPJ) Ckt-1	Line	220KV	APMPL	12-12-2024	18:50	13-12-2024	03:39	Insulator broken . Emergency shutdown for replacement of faulty insulator in multi-circuit tower (Azure Maple & MSEDCL also on the same multi-circuit tower).
8	220 KV Bhadla(PG)-Azure Power 34 Solar(APTFL) (APTFL) Ckt-1	Line	220KV	APTFL	12-12-2024	20:15	13-12-2024	03:37	Insulator broken . Emergency shutdown for replacement of faulty insulator in multi-circuit tower (Azure 41, Azure Maple & Azure 34 are on same multi-circuit tower).
9	220 KV Bhadla(PG)-Azure Power 34 Solar(APTFL) (APTFL) Ckt-1	Line	220KV	APTFL	12-12-2024	20:15	13-12-2024	03:37	Insulator broken . Emergency shutdown for replacement of faulty insulator in multi-circuit tower (Azure 41, Azure Maple & Azure 34 are on same multi-circuit tower).
10	220 KV Bhiwani-Hissar (BB) Ckt-2	Line	220KV	BBMB	13-12-2024	14:52	13-12-2024	21:59	Flashover 220KV Bwn-Hisar Ckt-II w.e.f. 14:00hrs to 17:00hrs on dated 13.12.2024 to replace the 220KV post insulator & Isolator connected with 220KV Bus-II (B-phase)
11	765 KV Fatehpur-Saaram (PG) Ckt-1	Line	765KV	POWERGRID	17-12-2024	13:28	17-12-2024	20:20	Flashover heavy bird beat pollution observed on insulator at Loc 631
12	220 KV Ratangarhi(RS)-Sikar(PG) (PG) Ckt-2	Line	220KV	POWERGRID	21-12-2024	15:24	21-12-2024	19:13	Insulator broken . Emergency shutdown for replacement of damaged disc insulator (I-string) at Tower no. 26.
13	400 KV RAPS_C(NP)-Kota(PG) (PG) Ckt-1	Line	400KV	POWERGRID	23-12-2024	11:42	23-12-2024	16:26	Insulator flashover . Emergency shutdown for replacement of flashed insulator of Y-phase at Loc. no. 105.
14	220 KV Meerut(PG)-Nehtaur(UP) (UP) Ckt-1	Line	220KV	UPPTCL	24-12-2024	14:48	24-12-2024	18:22	Insulator flashover . Emergency shutdown for replacement of flashed polymer at Tower no 132 and 146 (B-phase).
15	220 KV NAPP(NP)-Simbholi(UP) (UP) Ckt-1	Line	220KV	UPPTCL	25-12-2024	11:22	25-12-2024	18:48	Insulator flashover.Emergency shutdown for changing the Y-phase polymer at Tower no. 138.
16	400 KV Phagi-Aimer (RS) Ckt-1	Line	400KV	RRVNL	27-12-2024	11:55	27-12-2024	17:10	Insulator broken . Emergency shutdown for safety purpose, during replacement of broken disc insulator
17	400 KV Muradnagar_2-Mathura (UP) Ckt-1	Line	400KV	UPPTCL	27-12-2024	12:42	27-12-2024	18:43	Insulator flashover . Emergency shutdown for replacement of damaged insulator (R-phase) at Tower no.
18	400 KV Jalandhar-Hamirpur (PG) Ckt-1	Line	400KV	POWERGRID	28-12-2024	09:46	28-12-2024	14:33	Insulator broken . Emergency shutdown for replacement of damaged CLR polymer insulator near Jalandhar.
19	400 KV Kaithal-Hissar (PG) Ckt-2	Line	400KV	POWERGRID	28-12-2024	11:16	28-12-2024	17:51	Insulator broken . Emergency shutdown to attend broken CLR insulator of B-phase at Loc. no. 71.
20	220 KV Jaipur_South(PG)-Varika(RS) (RS) Ckt-2	Line	220KV	RRVNL	28-12-2024	12:30	28-12-2024	17:04	Insulator broken . Emergency shutdown for replacement of damaged suspension disc string of R-phase at Insulator broken at Loc. no. 35.
21	765 kv agra-fatehpur (pg) ckt-1	Line	765KV	POWERGRID	29-12-2024	07:14	29-12-2024	19:13	Insulator flashover . Emergency shutdown to replace flashed disc insulator at Tower no. 79 (Y phase).
22	220 KV Meerut(PG)-Gajraula(UP) (UP)	Line	220KV	UPPTCL	29-12-2024	12:30	29-12-2024	17:08	Insulator broken . Emergency shutdown for replacement of broken insulator at Loc no. 501 (LULO Point).
23	400 KV Jalandhar-Hamirpur (PG) Ckt-1	Line	400KV	POWERGRID	29-12-2024	14:09	29-12-2024	18:17	Insulator broken . Emergency shutdown for replacement of broken insulator at Loc no. 501 (LULO Point).
24	400 KV Amritsar-Jalandhar (PG) Ckt-2	Line	400KV	POWERGRID	29-12-2024	14:13	29-12-2024	18:23	Emergency shutdown for cleaning of insulator at Loc. no. 114 to avoid tripping of the line.
25	765 KV Balia-Gaya (PG) Ckt-1	Line	765KV	POWERGRID	30-12-2024	12:07	30-12-2024	18:39	Insulator broken . Emergency shutdown for attending broken disc insulator at Tower no. 218 (R-phase).
26	400 KV Banda-Orai (UP) Ckt-2	Line	400KV	UPPTCL	30-12-2024	13:05	31-12-2024	20:23	Insulator broken . Emergency shutdown for replacement of broken disc insulator string at Loc. no. 26 (In
27	400 KV Phagi-Aimer (RS) Ckt-2	Line	400KV	RRVNL	30-12-2024	14:50	30-12-2024	18:38	Insulator broken . Emergency shutdown for replacement of broken disc insulator string at Loc. no. 26 (In

28	765 KV Obra_C_TPS-Ummao (UP) Ckt-1	Line	765KV	UPPTCL	31-12-2024	12:01	31-12-2024	19:32	Emergency shutdown for tower-top patrolling and insulator cleaning work as the line auto reclosed 04
29	765 KV Obra_C_TPS-Ummao (UP) Ckt-1	Line	765KV	UPPTCL	31-12-2024	12:01	31-12-2024	19:32	Emergency shutdown for tower-top patrolling and insulator cleaning work as the line auto reclosed 04
30	400 KV Patiala(PG)-Patran(PATR) (PATRAN) Ckt-1	Line	400KV	WERGRID/PATR	31-12-2024	12:03	31-12-2024	16:51	Insulator broken . Emergency shutdown for replacement of broken polymer insulator of Y-phase at Loc. no. 321.
31	500 KV HVDC Ballia-Bhiwadi (PG) Ckt-2	HVDC Line	500KV	POWERGRID	29-12-2024	05:01	29-12-2024	17:51	Insulator broken at Loc no. 161.
32	500 KV HVDC Ballia-Bhiwadi (PG) Ckt-1	HVDC Line	500KV	POWERGRID	29-12-2024	07:18	30-12-2024	02:09	Insulator broken at Loc no. 160.

ISTS LINES											
A. POWERGRID											
1	765kV charged at 400kV	Kishenpur-Moga	1	S/C	275	POWERGRID	POWERGRID	POWERGRID	Quad Bersimis		Partial (1%)
2		Kishenpur-Moga	2	S/C	287	POWERGRID	POWERGRID	POWERGRID	Quad Bersimis		Partial (1%)
3		Tehri-Koteswar(PG)	1	S/C	15	POWERGRID	THDC	POWERGRID	Quad Bersimis		Conventional
4		Tehri-Koteswar(PG)	2	S/C	17	POWERGRID	THDC	POWERGRID	Quad Bersimis		Conventional
5		Rihand-Vindhyachal Pool	1	S/C	31	POWERGRID	NTPC	POWERGRID	Quad Bersimis		Not Available
6		Rihand-Vindhyachal Pool	2	S/C	31	POWERGRID	NTPC	POWERGRID	Quad Bersimis		Not Available
4. 400kV HVAC Transmission Line											
ISTS LINES											
A. POWERGRID											
1	400kV	Abdullapur- Bawana	1	D/C	167	POWERGRID	POWERGRID	DTL	Triple Snowbird		Partial (99%)
2	400kV	Abdullapur- Deepalpur	1	D/C	141	POWERGRID	POWERGRID	KT Jhajjar	Triple Snowbird	LILO of Abdullapur-Bawana one ckt at Deepalpur by Jhajjar KT	Partial (99%) LILO of Abdullapur-Bawana one ckt at Deepalpur
3	400kV	Abdullapur-Kurukshetra	1	D/C	52	POWERGRID	POWERGRID	POWERGRID	Triple Snowbird+Twin HTLS for LILO	LILO of Abdullapur-Sonepat line at Kurukshetra	Polymer Insulator LILO of Abdullapur-Sonepat cmts at Kurukshetra
4	400kV	Abdullapur-Kurukshetra	2	D/C	52	POWERGRID	POWERGRID	POWERGRID		LILO of Abdullapur-Sonepat line at Kurukshetra	Polymer Insulator
5	400kV	Agra-Agra(Fatehabad)	1	S/C	45	POWERGRID	POWERGRID	UPPTCL	Twin Moose	LILO of Agra(PG)-Agra(UP) ckt-2 at Fatehabad (765kV Agra line)	Polymer Insulator
6	400kV	Agra(UP)-Agra(Fatehabad)	1	S/C	56	POWERGRID	UPPTCL	UPPTCL	Twin Moose		Polymer Insulator
7	400kV	Agra-Agra(UP)	1	D/C	30	POWERGRID	POWERGRID	UPPTCL	Twin Moose		Polymer Insulator
8	400kV	Agra-Ballabgarh	1	S/C	181	POWERGRID	POWERGRID	POWERGRID	Twin Moose		Polymer Insulator
9	400kV	Agra-Bassi	1	S/C	211	POWERGRID	POWERGRID	POWERGRID	Twin Moose		Conventional Planned for insulator replacement in 321nos towers under NR3
10	400kV	Agra-Bhiwadi	1	D/C	209	POWERGRID	POWERGRID	POWERGRID	Twin Moose		Polymer Insulator
11	400kV	Agra-Bhiwadi	2	D/C	209	POWERGRID	POWERGRID	POWERGRID	Twin Moose		Polymer Insulator
12	400kV	Agra-Jaipur South	1	D/C	254	POWERGRID	POWERGRID	POWERGRID	Twin Moose	LILO of Agra-Bassi D/C at Jaipur South	Partial (4%) LILO of Agra-Bassi D/C at Jaipur South
13	400kV	Agra-Jaipur South	2	D/C	254	POWERGRID	POWERGRID	POWERGRID	Twin Moose	LILO of Agra-Bassi D/C at Jaipur South	Partial (4%)
14	400kV	Agra-Sikar	1	D/C	386	POWERGRID	POWERGRID	POWERGRID	Twin Moose		Partial (3%)
15	400kV	Agra-Sikar	2	D/C	386	POWERGRID	POWERGRID	POWERGRID	Twin Moose		Partial (3%)
16	400kV	Ajmer-Ajmer(PG)	1	D/C	66	POWERGRID	RRVPNL	POWERGRID	Quad Moose		Not Available
17	400kV	Ajmer-Ajmer(PG)	2	D/C	66	POWERGRID	RRVPNL	POWERGRID	Quad Moose		Not Available
18	400kV	Allahabad-Fatehpur	3	S/C	154	POWERGRID	POWERGRID	POWERGRID	Twin Moose	LILO of Allahabad-Kanpur one ckt at Fatehpur	Polymer Insulator
19	400kV	Allahabad-Fatehpur	1	D/C	140	POWERGRID	POWERGRID	POWERGRID	Twin Moose	Lilo of Allahabad-Mainpuri (PG) D/C at Fatehpur	Conventional
20	400kV	Allahabad-Fatehpur	2	D/C	140	POWERGRID	POWERGRID	POWERGRID	Twin Moose	Lilo of Allahabad-Mainpuri (PG) D/C at Fatehpur	Conventional
21	400kV	Allahabad-Varanasi	1	D/C	99	POWERGRID	POWERGRID	POWERGRID	Twin Moose	Allahabad-Sarnath shifted from Sarnath to Varanasi	Conventional
22	400kV	Allahabad-Kanpur	1	S/C	225	POWERGRID	POWERGRID	POWERGRID	Twin Moose		Polymer Insulator
23	400kV	Allahabad-Kanpur(New 765)	1	D/C	240	POWERGRID	POWERGRID	POWERGRID	Twin Moose		Not Available
24	400kV	Allahabad-Kanpur(New 765)	2	D/C	240	POWERGRID	POWERGRID	POWERGRID	Twin Moose		Not Available
25	400kV	Allahabad-Meja(NTPC)	1	D/C	28	POWERGRID	POWERGRID	MUNPL	Twin Moose		Polymer Insulator
26	400kV	Allahabad-Meja(NTPC)	2	D/C	28	POWERGRID	POWERGRID	MUNPL	Twin Moose		Polymer Insulator
27	400kV	Amritsar-Jalandhar	1	S/C	60	POWERGRID	POWERGRID	POWERGRID	Twin Moose		Polymer Insulator
28	400kV	Amritsar-Jalandhar	2	D/C	71	POWERGRID	POWERGRID	POWERGRID	Twin Moose		Polymer Insulator
29	400kV	Amritsar-Parbati(Pooling (Banala)	1	D/C	251	POWERGRID	POWERGRID	POWERGRID	Twin Moose		Partial (49%)
30	400kV	Auraiya-Agra	1	D/C	166	POWERGRID	NTPC	POWERGRID	Twin Moose		Partial (86%)
31	400kV	Auraiya-Agra	2	D/C	166	POWERGRID	NTPC	POWERGRID	Twin Moose		Partial (90%)
32	400kV	Baglihar II-Kishenpur	1	S/C	130	POWERGRID	JKSPDCL	POWERGRID	Twin Moose	LILO of 400kV Kishenpur-New Wanpoh ckt-2 at Baglihar. LILO portion is of JK PDD	Conventional
33	400kV	Baglihar II-New Wanpoh	1	S/C	130	POWERGRID	JKSPDCL	POWERGRID	Twin Moose		Not Available
34	400kV	Bagpat-Kaithal	1	D/C	154	POWERGRID	POWERGRID	POWERGRID	Quad Moose	LILO of Meerut-Kaithal DC at Baghpat	Polymer Insulator
35	400kV	Bagpat-Kaithal	2	D/C	154	POWERGRID	POWERGRID	POWERGRID	Quad Moose	LILO of Meerut-Kaithal DC at Baghpat	Polymer Insulator
36	400kV	Bagpat-Saharanpur	1	D/C	121	POWERGRID	POWERGRID	POWERGRID	Quad Moose		Partial (41%)
37	400kV	Bagpat-Dehradun	1	D/C	165	POWERGRID	POWERGRID	POWERGRID	Quad Moose		Partial (40%)
38	400kV	Bahadurgarh-Kabulpur	1	S/C	42	POWERGRID	POWERGRID	HVPNL	Twin Moose		Polymer Insulator
39	400kV	Bahadurgarh-Sonepat	1	D/C	53	POWERGRID	POWERGRID	POWERGRID	Triple Snowbird		Polymer Insulator
40	400kV	Bahadurgarh-Sonepat	2	D/C	53	POWERGRID	POWERGRID	POWERGRID	Triple Snowbird		Polymer Insulator
41	400kV	Balia-Mau	1	D/C	9	POWERGRID	POWERGRID	UPPTCL	Twin Moose		Conventional
42	400kV	Balia-Sohawal	1	D/C	229	POWERGRID	POWERGRID	POWERGRID	Twin Moose	LILO of Balia-LUCKNOW D/C at Sohawal	Conventional
43	400kV	Balia-Sohawal	2	D/C	229	POWERGRID	POWERGRID	POWERGRID	Twin Moose	LILO of Balia-LUCKNOW D/C at Sohawal	Conventional
44	400kV	Ballabgarh-Tughlakabad	1	M/C	40	DTL	POWERGRID	POWERGRID	HTLS INVAR (LILO portion) & Bersimis (before LILO)	Tower is quad circuit tower	Polymer
45	400kV	Ballabgarh-Tughlakabad	2	M/C	40	DTL	POWERGRID	POWERGRID		Tower is quad circuit tower	Polymer
46	400kV	Ballabgarh-Gurgaon	1	S/C	43	POWERGRID	POWERGRID	POWERGRID	Twin Moose		Polymer Insulator
47	400kV	Ballabgarh-Maharaniabagh	1	D/C	61	POWERGRID	POWERGRID	POWERGRID	Quad Bersimis	Bypassed at Maharaniabagh to form Dadri-Ballabgarh	Polymer Insulator
48	400kV	Ballabgarh-Nawada	1	D/C	13	POWERGRID	POWERGRID	HVPNL	Quad Bersimis		Polymer Insulator
49	400kV	Bareilly PG-Moradabad	1	D/C	93	POWERGRID	POWERGRID	UPPTCL	Twin Moose		Partial (3%)
50	400kV	Bareilly PG-Rampur_PRSTL	1	S/C	40	POWERGRID	POWERGRID	UPPTCL	Twin Moose	After LILO of 400 KV BAREILLY(PG)-MORADABAD(UPPTCL) CIRCUIT-II at RAMPUR(PRSTL)	Not Available
51	400kV	Rampur_PRSTL-Moradabad	1	S/C	57	POWERGRID	UPPTCL	UPPTCL	Twin Moose	After LILO of 400 KV BAREILLY(PG)-MORADABAD(UPPTCL) CIRCUIT-II at RAMPUR(PRSTL)	Not Available
52	400kV	Bareilly PG-Bareilly (765kV)	1	D/C	2	POWERGRID	POWERGRID	POWERGRID	Quad Moose		Conventional
53	400kV	Bareilly PG-Bareilly (765kV)	2	D/C	2	POWERGRID	POWERGRID	POWERGRID	Quad Moose		Conventional
54	400kV	Bareilly PG(765kV)-Kashipur	1	D/C	101	POWERGRID	POWERGRID	PTCUL	Quad Moose		Partial (90%)
55	400kV	Bareilly PG(765kV)-Kashipur	2	D/C	101	POWERGRID	POWERGRID	PTCUL	Quad Moose		Partial (90%)
56	400kV	Bassi-Bhiwadi	2	S/C	220	POWERGRID	POWERGRID	POWERGRID	Twin Moose		Polymer Insulator
57	400kV	Bassi-Heerapura	1	D/C	48	POWERGRID	POWERGRID	RRVPNL	Twin Moose		Polymer Insulator
58	400kV	Bassi-Heerapura	2	D/C	49	POWERGRID	POWERGRID	RRVPNL	Twin Moose		Polymer Insulator
59	400kV	Bassi-Kotputli	1	S/C	106	POWERGRID	POWERGRID	POWERGRID	Twin Moose		Polymer Insulator
60	400kV	Bassi-Phagi	1	D/C	48	POWERGRID	POWERGRID	RRVPNL	Quad Moose		Partial (26%)
61	400kV	Bassi-Phagi	2	D/C	48	POWERGRID	POWERGRID	RRVPNL	Quad Moose		Partial (26%)
62	400kV	Bassi-Sikar	1	D/C	170	POWERGRID	POWERGRID	POWERGRID	Twin Moose		Partial (16%)
63	400kV	Bassi-Sikar	2	D/C	170	POWERGRID	POWERGRID	POWERGRID	Twin Moose		Partial (17%)

64	400kV	Bawana(CCGT)-Bahadurgarh	1	D/C	49	POWERGRID	DTL/Pragati CCGT	POWERGRID	Twin Moose		Polymer Insulator	
65	400kV	Bhadla-Bhadla(PG)	1	D/C	27	POWERGRID	RRVNL	POWERGRID	Quad Moose		Not Available	
66	400kV	Bhadla-Bhadla(PG)	2	D/C	27	POWERGRID	RRVNL	POWERGRID	Quad Moose		Not Available	
67	400kV	Bhadla-Bhadla II	1	D/C	52	POWERGRID	POWERGRID	POWERGRID	Twin HTLS+Hexa Zebra	48.309KM Twin HTLS conductor of POWERGRID and 3.73 KM HEXA Zebra of FBTL	Not Available	
68	400kV	Bhadla-Bhadla II	2	D/C	52	POWERGRID	POWERGRID	POWERGRID	Twin HTLS+Hexa Zebra		Not Available	
69	400kV	Bhimnal-Kankroli	1	D/C	202	POWERGRID	POWERGRID	POWERGRID	Twin Moose	Bypassed at Bhimnal to form 400kV Kankroli Zerdia ckt-2	Polymer Insulator	
70	400kV	Bhiwadi-Gurgaon	1	S/C	83	POWERGRID	POWERGRID	POWERGRID	Twin Moose		Polymer Insulator	
71	400kV	Bhiwadi-Hissar	1	S/C	212	POWERGRID	POWERGRID	POWERGRID	Twin Moose		Polymer Insulator	
72	400kV	Bhiwadi-Hissar	2	D/C	144	POWERGRID	POWERGRID	POWERGRID	Twin Moose		Polymer Insulator	LILO of Bhiwadi-Moga both ckt at Hissar
73	400kV	Bhiwadi-Hissar	3	D/C	144	POWERGRID	POWERGRID	POWERGRID	Twin Moose		Polymer Insulator	
74	400kV	Bhiwadi-NeemranaPG	1	D/C	48	POWERGRID	POWERGRID	POWERGRID	Twin Moose		Polymer Insulator	
75	400kV	Bhiwadi-NeemranaPG	2	D/C	48	POWERGRID	POWERGRID	POWERGRID	Twin Moose		Polymer Insulator	
76	400kV	Bhiwani BBMB - Hissar	1	S/C	35	POWERGRID	POWERGRID	POWERGRID	Twin Moose	Bypassed at Hissar to form Bhiwani BBMB-Fatehabad	Polymer Insulator	
77	400kV	Bhiwani (PG) - Hissar	1	S/C	64	POWERGRID	POWERGRID	POWERGRID	Twin Moose	Bypassed at Hissar to form Moga-Bhiwani(PG)	Polymer Insulator	LILO of Bawana-Hisar (132KM) at Bhiwani PG
78	400kV	Bhiwani (PG) - Hissar	2	D/C	57	POWERGRID	POWERGRID	POWERGRID	Twin Moose	Bypassed at Bhiwani(PG) to form	Polymer Insulator	
79	400kV	Bhiwani (PG) - Hissar	3	D/C	57	POWERGRID	POWERGRID	POWERGRID	Twin Moose		Polymer Insulator	
80	400kV	Bhiwani PG - Jind	1	D/C	82	POWERGRID	POWERGRID	POWERGRID	Twin Moose		Polymer Insulator	
81	400kV	Bhiwani PG - Jind	2	D/C	82	POWERGRID	POWERGRID	POWERGRID	Twin Moose		Polymer Insulator	
82	400kV	Bhiwani PG- BawanaCCGT	1	D/C	97	POWERGRID	POWERGRID	DTL/ CCGT	Twin Moose		Polymer Insulator	LILO of Bawana-Hisar
83	400kV	Bhiwani PG- Bhiwani BBMB	1	S/C	34	POWERGRID	POWERGRID	BBMB	Twin Moose		Polymer Insulator	LILO of Bhiwani (BBMB)-Bahadurgarh (84km) at Bhiwani (PG)
84	400kV	Bhiwani PG-Kabulpur	1	S/C	48	POWERGRID	POWERGRID	HVNL	Twin Moose		Polymer Insulator	LILO of Bahadurgarh-Bhiwani at Kabulpur
85	400kV	Bikaner_2 (PBTS)-Bikaner(PG)	1	D/C	43	POWERGRID	PBTL	POWERGRID	Quad Moose		Not Available	
86	400kV	Bikaner_2 (PBTS)-Bikaner(PG)	2	D/C	43	POWERGRID	PBTL	POWERGRID	Quad Moose		Not Available	
87	400kV	Chamba pool - Jalandhar	1	D/C	162	POWERGRID	POWERGRID	POWERGRID	Twin Moose		Partial (48%)	
88	400kV	Chamba pool - Jalandhar	2	D/C	162	POWERGRID	POWERGRID	POWERGRID	Twin Moose		Partial (48%)	
89	400kV	Chamera-II - Chamba Pool	1	S/C	0.38	POWERGRID	NHPC	POWERGRID	Twin Moose		Conventional	Two tower is S/C and one tower is D/C
90	400kV	Chamera-II-Chamera-I	1	S/C	36	POWERGRID	NHPC	NHPC	Twin Moose		Conventional	
91	400kV	Chamera-II-Kishengpur	1	S/C	135	POWERGRID	NHPC	POWERGRID	Twin Moose		Conventional	
92	400kV	Chamera-I-Jalandhar	1	D/C	152	POWERGRID	NHPC	POWERGRID	Twin ACAR		Partial (43%)	
93	400kV	Chamera-I-Jalandhar	2	D/C	152	POWERGRID	NHPC	POWERGRID	Twin ACAR		Partial (43%)	
94	400kV	Chittorgarh-Chittorgarh(PG)	1	D/C	49	POWERGRID	RRVNL	POWERGRID	Quad Moose		Not Available	
95	400kV	Chittorgarh-Chittorgarh(PG)	2	D/C	49	POWERGRID	RRVNL	POWERGRID	Quad Moose		Not Available	
96	400kV	Chittorgarh-Kankroli	1	D/C	71	POWERGRID	RRVNL	POWERGRID	Twin Moose		Polymer Insulator	LILO of 400 kV Rapp C-Kankroli at Chittorgarh
97	400kV	Dadri NCTPP-G. Noida	1	D/C	13	POWERGRID	NTPC	UPPCL	Quad Bersimis		Polymer Insulator	
98	400kV	Dadri NCTPP-Maharabagh	1	D/C	54	POWERGRID	NTPC	POWERGRID	Quad Bersimis	Bypassed at Maharabagh to form Dadri-Ballabgarh	Polymer Insulator	
99	400kV	Dadri NCTPP-Kaithal	1	S/C	213	POWERGRID	NTPC	POWERGRID	Twin Moose	LILO of Dadri-Malerkotia at Kaithal	Polymer Insulator	
100	400kV	Dadri NCTPP-Mandola	1	D/C	46	POWERGRID	NTPC	POWERGRID	Quad Bersimis		Polymer Insulator	
101	400kV	Dadri NCTPP-Mandola	2	D/C	46	POWERGRID	NTPC	POWERGRID	Quad Bersimis		Polymer Insulator	
102	400kV	Dadri NCTPP-Muradnagar New	1	S/C	33	POWERGRID	NTPC	UPPTCL	Twin Moose		Polymer Insulator	Line shifted from Muradnagar to Muradnagar New (UPPTCL)
103	400kV	Dadri NCTPP-Panipat	1	S/C	112	POWERGRID	NTPC	BBMB	Twin Moose		Polymer Insulator	
104	400kV	Dadri NCTPP-Panipat	2	S/C	117	POWERGRID	NTPC	BBMB	Twin Moose		Polymer Insulator	
105	400kV	Deepalpur-Bawana	1	D/C	26	POWERGRID	KT-Jhajjar	DTL	Triple Snowbird	LILO of 400kV Bawana-Abdullapur one circuit at Deepalpur by Jhajjar KT	Polymer Insulator	
106	400kV	Dehradun-Abdullapur	1	D/C	89	POWERGRID	POWERGRID	POWERGRID	Quad Moose		Not Available	
107	400kV	Dehradun-Abdullapur	2	D/C	89	POWERGRID	POWERGRID	POWERGRID	Quad Moose		Not Available	
108	400kV	Dulhasi-Kishengpur	1	S/C	120	POWERGRID	NHPC	POWERGRID	Quad Moose		Conventional	
109	400kV	Dulhasi-Kishengpur	2	S/C	120	POWERGRID	NHPC	POWERGRID	Quad Moose		Conventional	
110	400kV	Dwarka-Jhatikara	1	S/C	18	POWERGRID	POWERGRID	POWERGRID	Twin HTLS	After LILO of 400kV Jhatikara-Bamnoli-I at	Not Available	
111	400kV	Dwarka-Bamnoli	1	S/C	10	POWERGRID	POWERGRID	DTL	Twin HTLS		Not Available	
112	400kV	Fatehabad PG-Hissar	1	D/C	89	POWERGRID	POWERGRID	POWERGRID	Twin Moose	Bypassed at Hissar to form Bhiwani BBMB-Fatehabad	Polymer Insulator	
113	400kV	Fatehpur-Kanpur	1	S/C	100	POWERGRID	POWERGRID	POWERGRID	Twin Moose	Bypassed at Kanpur to form Fatehpur-Panki	Polymer Insulator	LILO of Singrauli-LILO of Allahabad-Kanpur one ckt at Fatehpur
114	400kV	Fatehpur-Kanpur	2	S/C	107	POWERGRID	POWERGRID	POWERGRID	Twin Moose		Partial (64%)	
115	400kV	Kanpur-Panki	1	S/C	6	POWERGRID	POWERGRID	UPPTCL	Twin Moose	Bypassed at Kanpur to form Fatehpur-Panki	Polymer Insulator	
116	400kV	Kanpur-Panki	2	S/C	6	POWERGRID	POWERGRID	UPPTCL	Twin Moose		Polymer Insulator	
117	400kV	Fatehpur-Mainpuri	1	D/C	260	POWERGRID	POWERGRID	POWERGRID	Twin Moose		Conventional	LILO of Allahabad-Mainpuri (363 KM) D/C at Fatehpur Series compensated line (Degree of comp. - 40%)
118	400kV	Fatehpur-Mainpuri	2	D/C	260	POWERGRID	POWERGRID	POWERGRID	Twin Moose		Conventional	
119	400kV	G.Noida-Nawada	1	D/C	30	POWERGRID	UPPTCL	HVNL	Quad Bersimis	Lilo of Ballabgarh-G.Noida at Nawada	Polymer Insulator	Ballabgarh-G.Noida LILoed at Nawada (Faridabad,Haryana)
120	400kV	Gorakhpur PG-Gorakhpur UP	1	D/C	46	POWERGRID	POWERGRID	UPPCL	Twin Moose		Polymer Insulator	Partial Planning has been completed
121	400kV	Gorakhpur PG-Gorakhpur UP	2	D/C	46	POWERGRID	POWERGRID	UPPCL	Twin Moose		Polymer Insulator	Partial Planning has been completed
122	400kV	Gorakhpur PG-Lucknow PG	1	D/C	264	POWERGRID	POWERGRID	POWERGRID	Twin Moose		Partial (3%)	At crossing
123	400kV	Gorakhpur PG-Lucknow PG	2	D/C	264	POWERGRID	POWERGRID	POWERGRID	Twin Moose		Partial (3%)	At crossing
124	400kV	Gorakhpur PG-Basti (UP)	1	D/C	117	POWERGRID	POWERGRID	UPPTCL	Twin Moose	LILO of 400kV Gorakhpur PG- Lucknow PG ckt-4 at Basti (UP). LILO portion is of UP	Not Available	
125	400kV	Gorakhpur PG-Basti (UP)	2	D/C	108	POWERGRID	POWERGRID	UPPTCL	Twin Moose	LILO of 400kV Lucknow Gorakhpur-3 at Basti. LILO portion is of UP	Not Available	
126	400kV	Basti (UP)-Lucknow PG	1	D/C	204	POWERGRID	UPPTCL	POWERGRID	Twin Moose		Not Available	
127	400kV	Gurgaon-Sohna Road	1	D/C	7	POWERGRID	POWERGRID	GPTL	Quad Moose	LILO of 400kV Gurgaon Manesar D/C at Sohna	Not Available	
128	400kV	Gurgaon-Sohna Road	2	D/C	7	POWERGRID	POWERGRID	GPTL	Quad Moose		Not Available	
129	400kV	Hamirpur-ParbatiPooling (Banala)	1	D/C	77	POWERGRID	POWERGRID	POWERGRID	Twin Moose		Conventional	LILO of Amritsar- Banala 1 at Hamirpur

130	400kV	Jaipur South-Bassi	1	D/C	37	POWERGRID	POWERGRID	POWERGRID	Twin Moose	LILO of Agra-Bassi D/C at Jaipur South	Polymer Insulator	LILO of Agra-Bassi D/C at Jaipur South
131	400kV	Jaipur South-Bassi	2	D/C	37	POWERGRID	POWERGRID	POWERGRID	Twin Moose	LILO of Agra-Bassi D/C at Jaipur South	Polymer Insulator	
132	400kV	Jaipur South-Kota	1	D/C	180	POWERGRID	POWERGRID	POWERGRID	Twin Moose		Not Available	
133	400kV	Jaipur South-RAPP D	1	D/C	228	POWERGRID	POWERGRID	NPCL	Twin Moose		Not Available	
134	400kV	Jalandhar-Nakodar	1	D/C	42	POWERGRID	POWERGRID	PTCL	Quad Moose		Polymer Insulator	
135	400kV	Jalandhar-Hamirpur	1	D/C	135	POWERGRID	POWERGRID	POWERGRID	Twin Moose		Partial (43%)	LILO of 400kV Amritsar-Hamirpur at Jalandhar
136	400kV	Kaithal-Hissar	1	D/C	113	POWERGRID	POWERGRID	POWERGRID	Triple Snowbird		LILO of Patiala-Hissar at Kaithal	
137	400kV	Kaithal-Hissar	2	D/C	113	POWERGRID	POWERGRID	POWERGRID	Triple Snowbird		LILO of Patiala-Hissar at Kaithal	
138	400kV	Kaithal-Malerkotla	1	S/C	135	POWERGRID	POWERGRID	POWERGRID	Twin Moose		Polymer Insulator	
139	400kV	Kankrol-Jodhpur	1	S/C	188	POWERGRID	POWERGRID	RRVNL	Twin HTLS		Conventional	
140	400kV	Kanpur-Agra	1	S/C	240	POWERGRID	POWERGRID	POWERGRID	Twin Moose		Conventional	
141	400kV	Kanpur-Auraiya	1	D/C	73	POWERGRID	POWERGRID	NTPC	Twin Moose		Conventional	
142	400kV	Kanpur-Auraiya	2	D/C	73	POWERGRID	POWERGRID	NTPC	Twin Moose		Conventional	
143	400kV	Kanpur-Ballabgarh	1	S/C	386	POWERGRID	POWERGRID	POWERGRID	Twin Moose		Polymer Insulator	*Series Compensated, Ckt 1-35%, Ckt-2 & 3-40%
144	400kV	Kanpur-Ballabgarh	2	D/C	371	POWERGRID	POWERGRID	POWERGRID	Twin Moose		Polymer Insulator	*Series Compensated, Ckt 1-35%, Ckt-2 & 3-40%
145	400kV	Kanpur-Ballabgarh	3	D/C	371	POWERGRID	POWERGRID	POWERGRID	Twin Moose		Polymer Insulator	*Series Compensated, Ckt 1-35%, Ckt-2 & 3-40%
146	400kV	Kanpur-Kanpur (GIS)	1	D/C	21	POWERGRID	POWERGRID	POWERGRID	Quad Moose		Polymer Insulator	
147	400kV	Kanpur-Kanpur (GIS)	2	D/C	21	POWERGRID	POWERGRID	POWERGRID	Quad Moose		Polymer Insulator	
148	400kV	Kanpur (GIS)-Lucknow (765)	1	D/C	160	POWERGRID	POWERGRID	POWERGRID	Twin Moose		Not Available	
149	400kV	Kanpur (GIS)-Lucknow (765)	2	D/C	160	POWERGRID	POWERGRID	POWERGRID	Twin Moose		Not Available	
150	400kV	Kishenpur-NewWanpoh	1	D/C	130	POWERGRID	POWERGRID	POWERGRID	Twin Moose		Conventional	
151	400kV	Kishenpur-NewWanpoh	3	D/C	135	POWERGRID	POWERGRID	POWERGRID	Twin Moose		Conventional	
152	400kV	Kishenpur-NewWanpoh	4	D/C	135	POWERGRID	POWERGRID	POWERGRID	Twin Moose		Not Available	
153	400kV	Kishenpur-Samba	1	D/C	35	POWERGRID	POWERGRID	POWERGRID	Twin Moose		Not Available	
154	400kV	Kishenpur-Samba	2	D/C	35	POWERGRID	POWERGRID	POWERGRID	Twin Moose		Conventional	
155	400kV	Kota-Merta	1	D/C	256	POWERGRID	POWERGRID	RRVNL	Twin Moose		Conventional	
156	400kV	Kotputli-Bhiwadi	1	S/C	132	POWERGRID	POWERGRID	POWERGRID	Twin Moose		Polymer Insulator	LILO of Bassi-Bhiwadi-2 at Kotputli
157	400kV	Kurukshetra-Jind	1	D/C	103	POWERGRID	POWERGRID	POWERGRID	Quad Moose		Not Available	
158	400kV	Kurukshetra-Jind	2	D/C	103	POWERGRID	POWERGRID	POWERGRID	Quad Moose		Not Available	
159	400kV	Kurukshetra-Sonapat	1	D/C	125	POWERGRID	POWERGRID	POWERGRID	Triple Snowbird (Twin HTLS for LIO portion)	LILO of Abdullapur-Sonapat line at	Partial (99%)	LILO of Abdullapur-Sonapat line at
160	400kV	Kurukshetra-Sonapat	2	D/C	125	POWERGRID	POWERGRID	POWERGRID	Quad Moose	Kurukshetra-Jalandhar (LIO portion is of	Partial (99%)	
161	400kV	Kurukshetra (PG)-Dhanansu (PS)	1	D/C	165	POWERGRID	POWERGRID	PTCL	Quad Moose		Polymer Insulator	LILO portion to be checked
162	400kV	Dhanansu (PS)-Jalandhar (PG)	1	D/C	106	POWERGRID	PTCL	POWERGRID	Quad Moose		Polymer Insulator	
163	400kV	Kurukshetra-Nakodar	1	D/C	234	POWERGRID	POWERGRID	PTCL	Quad Moose		Polymer Insulator	
164	400kV	Lucknow-Basti	1	D/C	203	POWERGRID	POWERGRID	UPPTCL	Twin Moose		Not Available	
165	400kV	Lucknow-Basti	2	D/C	203	POWERGRID	POWERGRID	UPPTCL	Twin Moose		Not Available	
166	400kV	Lucknow PG-Lucknow UP	1	S/C	63	POWERGRID	POWERGRID	UPPTCL	Twin Moose		Conventional	
167	400kV	Lucknow PG-Unnao	1	D/C	74	POWERGRID	POWERGRID	UPPTCL	Twin Moose		Conventional	
168	400kV	Lucknow PG-Unnao	2	D/C	74	POWERGRID	POWERGRID	UPPTCL	Twin Moose		Conventional	
169	400kV	Lucknow UP-Bareilly PG	1	S/C	279	POWERGRID	UPPTCL	POWERGRID	Twin Moose		Conventional	
170	400kV	765 Lucknow (PG) - Lucknow (PG)	1	D/C	3	POWERGRID	POWERGRID	POWERGRID	Quad Moose		Polymer Insulator	
171	400kV	765 Lucknow (PG) - Lucknow (PG)	2	D/C	3	POWERGRID	POWERGRID	POWERGRID	Quad Moose		Polymer Insulator	
172	400kV	LucknowPG-Sohawal	1	D/C	98	POWERGRID	POWERGRID	POWERGRID	Twin Moose		Conventional	LILO of Balla-Lucknow (316 KM) D/C at Sohawal
173	400kV	LucknowPG-Sohawal	2	D/C	98	POWERGRID	POWERGRID	POWERGRID	Twin Moose		Conventional	
174	400kV	Lucknow PG-Shahjahanpur	1	D/C	170	POWERGRID	POWERGRID	POWERGRID	Twin Moose		Partial (10%)	
175	400kV	Lucknow PG-Shahjahanpur	2	D/C	170	POWERGRID	POWERGRID	POWERGRID	Twin Moose		Partial (10%)	
176	400kV	Lucknow-Jehta	1	D/C	32	POWERGRID	POWERGRID	UPPTCL	Twin Moose	LILO of 400kV Lucknow Unnao DC at Jehta (UP).	Not Available	
177	400kV	Lucknow-Jehta	2	D/C	32	POWERGRID	POWERGRID	UPPTCL	Twin Moose		Not Available	
178	400kV	Ludhiana-Jalandhar	1	S/C	85	POWERGRID	POWERGRID	POWERGRID	Twin Moose		Polymer Insulator	
179	400kV	Ludhiana-Malerkotla	1	S/C	36	POWERGRID	POWERGRID	POWERGRID	Twin Moose		Polymer Insulator	
180	400kV	Ludhiana-Patiala	1	D/C	76	POWERGRID	POWERGRID	POWERGRID	Twin Moose		Polymer Insulator	
181	400kV	Ludhiana-Patiala	2	D/C	76	POWERGRID	POWERGRID	POWERGRID	Twin Moose		Polymer Insulator	
182	400kV	Mainpuri-Ballabgarh	1	D/C	236	POWERGRID	POWERGRID	POWERGRID	Twin Moose		Polymer Insulator	
183	400kV	Mainpuri-Ballabgarh	2	D/C	236	POWERGRID	POWERGRID	POWERGRID	Twin Moose		Polymer Insulator	
184	400kV	Malerkotla-Patiala	1	S/C	62	POWERGRID	POWERGRID	POWERGRID	Twin Moose		Polymer Insulator	
185	400kV	Manesar- Sohna Road	1	D/C	17	POWERGRID	POWERGRID	GPCL	Quad Moose	LILO of 400kV Gurgaon Manesar D/C at Sohna	Not Available	
186	400kV	Manesar- Sohna Road	2	D/C	17	POWERGRID	POWERGRID	GPCL	Quad Moose		Not Available	
187	400kV	Mandola-Maharanibagh	1	D/C (LIO towers are M/C)	29	POWERGRID	POWERGRID	POWERGRID	Twin HTLS	After LILO of 400kV Mandola-Bawana D/C Lines at 400kV Maharanibagh (PG)	Not Available	
188	400kV	Mandola-Maharanibagh	2	D/C (LIO towers are M/C)	29	POWERGRID	POWERGRID	POWERGRID	Twin HTLS		Not Available	
189	400kV	Maharanibagh-Bawana	1	D/C	29	POWERGRID	POWERGRID	DTL	Twin HTLS		Not Available	
190	400kV	Maharanibagh-Bawana	2	D/C	29	POWERGRID	POWERGRID	DTL	Twin HTLS		Not Available	
191	400kV	Meerut-Bagpat	1	D/C	71	POWERGRID	POWERGRID	POWERGRID	Twin Moose	LILO of Meerut-Kaithal DC at Bagpat	Polymer Insulator	
192	400kV	Meerut-Bagpat	2	D/C	71	POWERGRID	POWERGRID	POWERGRID	Twin Moose	LILO of Meerut-Kaithal DC at Bagpat	Polymer Insulator	
193	400kV	Meerut-Mandola	1	D/C	60	POWERGRID	POWERGRID	POWERGRID	Twin Moose		Polymer Insulator	
194	400kV	Meerut-Mandola	2	D/C	60	POWERGRID	POWERGRID	POWERGRID	Twin Moose		Polymer Insulator	
195	400kV	Meerut-Muzaffarnagar	1	S/C	37	POWERGRID	POWERGRID	UPPTCL	Twin Moose		Polymer Insulator	
196	400kV	Moga-Fatehabad	1	D/C	179	POWERGRID	POWERGRID	POWERGRID	Twin Moose		Polymer Insulator	
197	400kV	Moga-Hissar	1	D/C	209	POWERGRID	POWERGRID	POWERGRID	Twin Moose	Bypassed at Hissar to form Moga-Bhiwani (PG)	Polymer Insulator	
198	400kV	Moga-Hissar	2	D/C	206	POWERGRID	POWERGRID	POWERGRID	Twin Moose		Polymer Insulator	LILO of Bhiwadi-Moga both ckt at Hissar
199	400kV	Moga-Hissar	3	D/C	206	POWERGRID	POWERGRID	POWERGRID	Twin Moose		Polymer Insulator	
200	400kV	Moga-Jalandhar	1	D/C	85	POWERGRID	POWERGRID	POWERGRID	Twin ACAR		Polymer Insulator	
201	400kV	Moga-Jalandhar	2	D/C	85	POWERGRID	POWERGRID	POWERGRID	Twin ACAR		Polymer Insulator	
202	400kV	Muradnagar-Hapur	1	S/C	28	POWERGRID	UPPTCL	UPPTCL	Twin Moose	Moradabad-Muradnagar LILoed at	Not Available	
203	400kV	Moradabad-Hapur	2	S/C	109	POWERGRID	UPPTCL	UPPTCL	Twin Moose		Not Available	
204	400kV	Nallagarh-Koldam	1	D/C	46	POWERGRID	POWERGRID	NTPC	Quad Moose		Conventional	Koldam to Parbati
205	400kV	Nallagarh-Patiala	1	D/C	94	POWERGRID	POWERGRID	POWERGRID	Triple Snowbird		Polymer Insulator	
206	400kV	Nallagarh-Patiala	2	D/C	94	POWERGRID	POWERGRID	POWERGRID	Triple Snowbird		Polymer Insulator	
207	400kV	Nathpa Jhakri-Gumma	1	D/C	55	POWERGRID	SIVNL	HPPTCL	Triple Snowbird	LILO of DC Jhakri-Panchkula line at Gumma	Not Available	
208	400kV	Nathpa Jhakri-Gumma	2	D/C	55	POWERGRID	SIVNL	HPPTCL	Triple Snowbird		Not Available	
209	400kV	Gumma-Panchkula	1	D/C	112	POWERGRID	HPPTCL	POWERGRID	Triple Snowbird		Not Available	
210	400kV	Gumma-Panchkula	2	D/C	112	POWERGRID	HPPTCL	POWERGRID	Triple Snowbird		Not Available	
211	400kV	Nathpa Jhakri-RampurHEP	1	D/C	21	POWERGRID	SIVNL	SIVNL	Triple Snowbird	Nathpa Jhakri-Nallagarh LILoed at	Conventional	LILO of Jhakri-Nallagarh
212	400kV	Nathpa Jhakri-RampurHEP	2	D/C	21	POWERGRID	SIVNL	SIVNL	Triple Snowbird		Conventional	
213	400kV	NeemranaPG-Manesar	1	D/C	67	POWERGRID	POWERGRID	POWERGRID	Twin Moose		Polymer Insulator	
214	400kV	NeemranaPG-Manesar	2	D/C	67	POWERGRID	POWERGRID	POWERGRID	Twin Moose		Polymer Insulator	
215	400kV	NeemranaPG-Babai	1	D/C	85	POWERGRID	POWERGRID	RRVNL	Twin Moose	LILO PORTION IF OF NRSS36(B), LILO of 400kV Neemrana-Sikar 1 at Babai	Not Available	LILO of 400kV Neemrana-Sikar at Babai by NRSSXXXVI (Esseel group): Earlier 29% of Neemrana- Sikar PG
216	400kV	NeemranaPG-Sikar	2	D/C	176	POWERGRID	POWERGRID	POWERGRID	Twin Moose		Not Available	

217	400kV	NewWanpoh-Wagoora	1	D/C	57	POWERGRID	POWERGRID	POWERGRID	Twin Moose		Conventional	
218	400kV	NewWanpoh-Wagoora	2	D/C	57	POWERGRID	POWERGRID	POWERGRID	Twin Moose		Conventional	
219	400kV	Orail(PG)-Orail	1	D/C	42	POWERGRID	POWERGRID	UPPTCL	Quad Moose		Not Available	
220	400kV	Orail(PG)-Orail	2	D/C	42	POWERGRID	POWERGRID	UPPTCL	Quad Moose		Not Available	
221	400kV	Panchkula -Abdullapur	1	D/C	63	POWERGRID	POWERGRID	POWERGRID	Triple Snowbird		Polymer Insulator	LILO of Jhakri- Abdullapur at Panchkula
222	400kV	Panchkula -Abdullapur	2	D/C	63	POWERGRID	POWERGRID	POWERGRID	Triple Snowbird		Polymer Insulator	LILO of Jhakri-
223	400kV	Patiala-Panchkula	1	D/C	65	POWERGRID	POWERGRID	POWERGRID	Twin Moose		Polymer Insulator	
224	400kV	Patiala-Panchkula	2	D/C	65	POWERGRID	POWERGRID	POWERGRID	Twin Moose		Polymer Insulator	
225	400kV	Patiala-Patran	1	D/C	79	POWERGRID	POWERGRID	PTCL	Triple Snowbird	LILO of 400kV D/C Patiala - Kaithal Line at Patran SS under the ownership of PTCL	Polymer Insulator	LILO of 400 kV Kaithal-
226	400kV	Patiala-Patran	2	D/C	79	POWERGRID	POWERGRID	PTCL	Triple Snowbird		Polymer Insulator	
227	400kV	Patran-Kaithal	1	D/C	47	POWERGRID	PTCL	POWERGRID	Triple Snowbird		Polymer Insulator	
228	400kV	Patran-Kaithal	2	D/C	47	POWERGRID	PTCL	POWERGRID	Triple Snowbird		Polymer Insulator	
229	400kV	RampurHEP-Nallagarh	1	D/C	128	POWERGRID	SIVNL	POWERGRID	Triple Snowbird	Nathpa Jhakri- Nallagarh LILOOed at	Conventional	LILO of Jhakri-Nalagarh
230	400kV	RampurHEP-Nallagarh	2	D/C	128	POWERGRID	SIVNL	POWERGRID	Triple Snowbird		Conventional	
231	400kV	RAPS-C-Chittorgarh	1	D/C	155	POWERGRID	NPCL	RRVPNL	Twin Moose		Partial (38%)	LILO of 400 kV Rapp C- Kankroli at Chhitorgarh
232	400kV	RAPS-C-Kankroli	1	D/C	199	POWERGRID	NPCL	POWERGRID	Twin Moose		Partial (51%)	
233	400kV	RAPS-C-Kota	1	S/C	51	POWERGRID	NPCL	POWERGRID	Twin Moose		Partial (55%)	400kV RAPS-Jaipur line whose work was completed till Kota section is connected with 400kV Raps- Kota#2 (for anthieft purpose) and hence 400kV RapsC-Kota #2 is now two twin moose lines connected in parallel paths
234	400kV	RAPS-C-Kota	2	D/C	55	POWERGRID	NPCL	POWERGRID	Twin Moose	D/C with 400kV Jaipur- RAPP D line	Not Available	
235	400kV	Rasa-Balia	1	S/C	46	POWERGRID	UPPTCL	POWERGRID	Twin Moose	LILO of 400kV Balia- Mau-II at Rasara. LILo	Not Available	
236	400kV	Rasa-Mau	1	S/C	38	POWERGRID	UPPTCL	UPPTCL	Twin Moose		Not Available	
237	400kV	Rihand-Allahabad	1	D/C	279	POWERGRID	NTPC	POWERGRID	Twin Moose		Conventional	
238	400kV	Rihand-Allahabad	2	D/C	279	POWERGRID	NTPC	POWERGRID	Twin Moose		Conventional	
239	400kV	Roorkee-Kashipur	1	D/C	151	POWERGRID	POWERGRID	PTCUL	Quad Moose		Partial (72%)	
240	400kV	Roorkee-Kashipur	2	D/C	151	POWERGRID	POWERGRID	PTCUL	Quad Moose		Partial (72%)	
241	400kV	Roorkee-Saharanpur	1	D/C	36	POWERGRID	POWERGRID	POWERGRID	Quad Moose		Polymer Insulator	
242	400kV	Roorkee-Dehradun	1	D/C	80	POWERGRID	POWERGRID	POWERGRID	Quad Moose		Partial (50%)	
243	400kV	Sarnath-Varanasi	1	D/C	70	POWERGRID	UPPTCL	POWERGRID	Quad Moose		Partial (52%)	LILO of Sarnath- Allahabad (144 KM) at 765/400kV Varanasi
244	400kV	Sarnath-Varanasi	2	D/C	107	POWERGRID	UPPTCL	POWERGRID	Quad Moose		Partial (52%)	
245	400kV	Shahjahanpur-Bareilly PG	1	D/C	116	POWERGRID	POWERGRID	POWERGRID	Twin Moose		Conventional	
246	400kV	Shahjahanpur-Bareilly PG	2	D/C	116	POWERGRID	POWERGRID	POWERGRID	Twin Moose		Conventional	
247	400kV	Shahjahanpur-Rosa	1	D/C	8	POWERGRID	POWERGRID	UPPCL	Twin Moose		Not Available	
248	400kV	Shahjahanpur-Rosa	2	D/C	8	POWERGRID	POWERGRID	UPPCL	Twin Moose		Not Available	
249	400kV	Shree Cement-Kota	1	D/C	208	POWERGRID	Sh. Cement	POWERGRID	Twin Moose		Polymer Insulator	
250	400kV	Shree Cement-Merta	2	D/C	103	POWERGRID	Sh. Cement	RRVPNL	Twin Moose		Polymer Insulator	
251	400kV	Sikar-Babai	1	D/C	95	POWERGRID	POWERGRID	RRVPNL	Twin Moose	LILO PORTION IF OF NRSS36(8), LILo of 400kV Neemrana-Sikar 1 at Babai	Not Available	
252	400kV	Sikar-Ratangarh	1	D/C	76	POWERGRID	POWERGRID	RRVPNL	Twin Moose		Conventional	
253	400kV	Sikar-Ratangarh	2	D/C	76	POWERGRID	POWERGRID	RRVPNL	Twin Moose		Conventional	
254	400kV	Singrauli-Allahabad	1	S/C	224	POWERGRID	NTPC	POWERGRID	Twin Moose		Conventional	
255	400kV	Singrauli-Allahabad	2	S/C	202	POWERGRID	NTPC	POWERGRID	Twin Moose		Conventional	
256	400kV	Singrauli-Allahabad	3	S/C	215	POWERGRID	NTPC	POWERGRID	Twin Moose		Not Available	
257	400kV	Singrauli-Anpara	1	S/C	25	POWERGRID	NTPC	UPPTCL	Twin Moose		Partial (91%)	
258	400kV	Singrauli-Fatehpur	1	S/C	331	POWERGRID	NTPC	POWERGRID	Twin Moose		Conventional	LILO of Singrauli- Kanpur at Fatehpur
259	400kV	Singrauli-LucknowUP	1	S/C	409	POWERGRID	NTPC	UPPTCL	Twin Moose		Conventional	
260	400kV	Singrauli-Rihand	1	S/C	42	POWERGRID	NTPC	NTPC	Twin Moose		Conventional	
261	400kV	Singrauli-Rihand	2	S/C	44	POWERGRID	NTPC	NTPC	Twin Moose		Conventional	
262	400kV	Singrauli-Vindhyachal	1	S/C	3	POWERGRID	NTPC	POWERGRID	Twin Moose		Conventional	
263	400kV	Singrauli-Vindhyachal	2	S/C	5	POWERGRID	NTPC	POWERGRID	Twin Moose		Conventional	
264	400kV	Koteswar(PG)-Koteswar(THDC)	1	D/C	3	POWERGRID	POWERGRID	THDC	Twin Moose		Conventional	
265	400kV	Koteswar(PG)-Koteswar(THDC)	2	D/C	3	POWERGRID	POWERGRID	THDC	Twin Moose		Conventional	
266	400kV	Tehri-Koteswar(PG)	3	S/C	14	POWERGRID	THDC	POWERGRID	Quad Moose		Not Available	
267	400kV	Unnao-Jehta	1	D/C	70	POWERGRID	UPPTCL	UPPTCL	Twin Moose	LILO of 400kV Lucknow Unnao DC at Jehta (UP). LILo portion is of UP	Not Available	
268	400kV	Unnao-Jehta	2	D/C	70	POWERGRID	UPPTCL	UPPTCL	Twin Moose	LILO of 400kV Lucknow Unnao DC at Jehta (UP). LILo portion is of UP	Not Available	
269	400kV	Uri-II - Uri-I	1	S/C	10	POWERGRID	NHPC	NHPC	Twin Moose		Conventional	LILO of 400kV Uri-I - Wagoora D/C at Amargarh
270	400kV	Uri-II - Wagoora	1	S/C	105	POWERGRID	NHPC	POWERGRID	Twin Moose		Conventional	
271	400kV	Jauljivi-Bareilly_2	1	D/C	205	POWERGRID	POWERGRID	POWERGRID	Twin Moose	After LILo of 400kV Dhaulianga - Bareilly(UP) Double circuit line(Initially LILoed at Pithoragarh and charged at 220kV level) at Jauljivi(PG) After LILo of 400kV Dhaulianga - Bareilly(UP) Double circuit line(Initially LILoed at Pithoragarh and charged at 220kV level) at Jauljivi(PG)	Not Available	
272	400kV	Jauljivi-Bareilly_2	2	D/C	205	POWERGRID	POWERGRID	POWERGRID	Twin Moose		Not Available	
B. POWERLINK Transmission Ltd												
1	400kV	Bareilly PG-Meerut	1	D/C	250	POWERLINK	POWERGRID	POWERGRID	Twin Moose		Conventional	LILO of Bareilly PG-
2	400kV	Bareilly PG-Meerut	2	D/C	250	POWERLINK	POWERGRID	POWERGRID	Twin Moose		Conventional	Mandola-1 (241 Km) at
3	400kV	Bareilly UP-Bareilly PG	1	D/C	14	POWERLINK	UPPTCL	POWERGRID	Twin Moose		Polymer Insulator	
4	400kV	Bareilly UP-Bareilly PG	2	D/C	14	POWERLINK	UPPTCL	POWERGRID	Twin Moose		Polymer Insulator	
5	400kV	Gorakhpur PG-Lucknow PG	1	D/C	246	POWERLINK	POWERGRID	POWERGRID	Twin Moose		Conventional	*Series compensated
6	400kV	Gorakhpur PG-Lucknow PG	2	D/C	246	POWERLINK	POWERGRID	POWERGRID	Twin Moose		Conventional	line
7	400kV	Meerut-Mandola	3	D/C	102	POWERLINK	POWERGRID	POWERGRID	Twin Moose		Conventional	LILO of Bareilly PG-
8	400kV	Meerut-Mandola	4	D/C	102	POWERLINK	POWERGRID	POWERGRID	Twin Moose		Conventional	Mandola-182 (241 Km)
C. PKTSL												
1	400kV	Khetri-Sikar	1	D/C	78	PKTSL	PKTSL	POWERGRID	Twin HTLS		Not Available	
2	400kV	Khetri-Sikar	2	D/C	78	PKTSL	PKTSL	POWERGRID	Twin HTLS		Not Available	
D. Adani Transmission India Lte												
1	400kV	Mahindergarh (APL)-Bhiwani PG	1	D/C	50	ATIL	APL	POWERGRID	Twin Moose		Conventional	
2	400kV	Mahindergarh (APL)-Bhiwani PG	2	D/C	50	ATIL	APL	POWERGRID	Twin Moose		Conventional	
3	400kV	Mahindergarh (APL)-Bhiwani PG	3	D/C	56	ATIL	APL	POWERGRID	Twin Moose	Bypassed at 400kV	Not Available	
4	400kV	Mahindergarh (APL)-Bhiwani PG	4	D/C	56	ATIL	APL	POWERGRID	Twin Moose	Bhiwani to form 400kV	Not Available	
5	400kV	MahindergarhVDC-Dhanonda	1	D/C	5	ATIL	APL	HVPNL	Quad Moose	Bypassed at Dhanonda	Conventional	
6	400kV	MahindergarhVDC-Dhanonda	2	D/C	5	ATIL	APL	HVPNL	Quad Moose	to form	Conventional	
E. APCL (Aravali Power Corporation Pvt Ltd.)												
1	400kV	Jhajjar (IGSTPS)-Mundka	1	D/C	66	APCL	APCL	DTL	Twin Moose		Polymer	
2	400kV	Jhajjar (IGSTPS)-Mundka	2	D/C	66	APCL	APCL	DTL	Twin Moose		Polymer	

7	400kV	Dhanoda-Daultabad	1	D/C	73	HVPNL	HVPNL	HVPNL	Quad Moose		Already had Polymer Insulator	
8	400kV	Dhanoda-Daultabad	2	D/C	73	HVPNL	HVPNL	HVPNL	Quad Moose			
9	400kV	Gurgaon-Daultabad	1	D/C	21	HVPNL	POWERGRID	HVPNL	Quad Moose			Six towers multi-circuit with Barnnault
10	400kV	Gurgaon-Daultabad	2	D/C	21	HVPNL	POWERGRID	HVPNL	Quad Moose			
11	400kV	Jhajjar-Daultabad	1	D/C	64	HVPNL	APCPL	HVPNL	Twin Moose		Polymer Insulator	Partial (84%), Remaining pending
12	400kV	Jhajjar-Daultabad	2	D/C	64	HVPNL	APCPL	HVPNL	Twin Moose		Polymer Insulator	
13	400kV	Khedar-Fatehabad	1	D/C	40	HVPNL	HPGCL	POWERGRID	Twin Moose		Conventional	Presently there is no planning of replacement of Convection disc Insulator with Polymer Insulators
14	400kV	Jind-Kirori	1	D/C	51	HVPNL	POWERGRID	HVPNL	Twin Moose		Polymer Insulator	
15	400kV	Jind-Kirori	2	D/C	51	HVPNL	POWERGRID	HVPNL	Twin Moose		Polymer Insulator	
16	400kV	Khedar-Kirori	1	D/C	6.2	HVPNL	HPGCL	HVPNL	Twin Moose		Conventional	Presently there is no planning of replacement
17	400kV	Khedar-Kirori	2	D/C	6	HVPNL	HPGCL	HVPNL	Twin Moose			
18	400kV	Khedar-Nuhiawali	1	D/C	114	HVPNL	HPGCL	HVPNL	Twin Moose		Conventional	Existing disc insulator are of Porcelain
19	400kV	Nuhiawali-Fatehabad	1	D/C	78	HVPNL	HVPNL	POWERGRID	Twin Moose		Conventional	
C. PDD (Jammu & Kashmir)												
1	400kV	Baglihar(stage 1)-Kishenpur	1	D/C	68	JK PDD	JKSPDCL	POWERGRID	Twin Moose		Conventional	
2	400kV	Baglihar(stage 1)-Kishenpur	2	D/C	68	JK PDD	JKSPDCL	POWERGRID	Twin Moose		Not Available	
D. PSTCL												
1	400kV	Behman Jassa- HMEL	1	D/C	17	PSTCL	PSTCL	PSTCL	Twin Moose		Not Available	
2	400kV	Behman Jassa- HMEL	2	D/C	17	PSTCL	PSTCL	PSTCL	Twin Moose		Not Available	
3	400kV	Behman Jassa- Moga	1	S/C	113	PSTCL	PSTCL	PSTCL	Twin Moose	After LILO of 400 KV TSP to 400 KV Moga at 400 KV Behman Jassa Singh	Not Available	
4	400kV	Makhu-Amritsar	1	D/C	64	PSTCL	PSTCL	PSTCL	Twin Moose		Partial (10%)	
5	400kV	Makhu-Amritsar	2	D/C	64	PSTCL	PSTCL	PSTCL	Twin Moose		Partial (10%)	
6	400kV	Muktsar-Makhu	1	D/C	96	PSTCL	PSTCL	PSTCL	Twin Moose		Conventional	
7	400kV	Muktsar-Makhu	2	D/C	96	PSTCL	PSTCL	PSTCL	Twin Moose		Polymer	
8	400kV	Nakodar-Makhu	1	D/C	52	PSTCL	PSTCL	PSTCL	Twin Moose		Conventional	
9	400kV	Nakodar-Makhu	2	D/C	52	PSTCL	PSTCL	PSTCL	Twin Moose		Conventional	
10	400kV	Nakodar-Moga	1	S/C	78	PSTCL	PSPCL	POWERGRID	Twin Moose		Not Available	LILO of 400kV Talwandi sabo-Nakodar at Moga
11	400kV	Rajpura-Dhuri	1	D/C	86	PSTCL	PSTCL	PSTCL	Twin Moose		Conventional	
12	400kV	Rajpura TPS- Rajpura	1	D/C	9	PSTCL	PSPCL	PSTCL	Twin Moose		Conventional	Lilo of Rajpura th-Dhuri 1 at 400kV Rajpura
13	400kV	Rajpura-Dhuri	2	D/C	86	PSTCL	PSTCL	PSTCL	Twin Moose		Conventional	Lilo of Rajpura th-Dhuri 2 at 400kV Rajpura
14	400kV	Rajpura TPS- Rajpura	2	D/C	9	PSTCL	PSPCL	PSTCL	Twin Moose		Not Available	
15	400kV	Rajpura TPS-Nakodar	1	D/C	139	PSTCL	PSPCL	PSTCL	Twin Moose		Conventional	
16	400kV	Rajpura TPS-Nakodar	2	D/C	139	PSTCL	PSPCL	PSTCL	Twin Moose		Conventional	
17	400kV	Talwandi Saboo- Dhuri	1	D/C	175	PSTCL	PSPCL	PSTCL	Twin Moose		Partial (22%)	
18	400kV	Talwandi Saboo- Dhuri	2	D/C	175	PSTCL	PSPCL	PSTCL	Twin Moose		Partial (22%)	
19	400kV	Talwandi Saboo- Behman Jassa	1	D/C	20	PSTCL	PSPCL	PSTCL	Twin Moose	After LILO of 400 KV TSP to 400 KV Moga at 400 KV Behman Jassa Singh	Polymer	
20	400kV	Talwandi Saboo- Nakodar	1	D/C	180	PSTCL	PSPCL	PSTCL	Twin Moose		Conventional	
21	400kV	Talwandi Saboo- Muktsar	1	D/C	100	PSTCL	PSPCL	PSTCL	Twin Moose		Polymer	
22	400kV	Talwandi Saboo- Muktsar	2	D/C	100	PSTCL	PSPCL	PSTCL	Twin Moose		Polymer	
E. PTCUL												
1	400kV	Alankanda(GVK)-Srinagar(PTCUL)	1	D/C	14	PTCUL	GVPKIL	PTCUL	Twin Moose		Conventional	
2	400kV	Alankanda(GVK)-Srinagar(PTCUL)	2	D/C	14	PTCUL	GVPKIL	PTCUL	Twin Moose		Conventional	
3	400kV	Muradabad-Kashipur	1	S/C	108	PTCUL	UPPTCL	PTCUL	Twin Moose		Conventional	
4	400kV	Rishikesh-Nehtau	1	D/C	124	PTCUL	PTCUL	UPPTCL	Twin Moose		Not Available	LILO of 400kV Rishikesh-Kashipur
5	400kV	Nehtau-Kashipur	2	D/C	80	PTCUL	UPPTCL	PTCUL	Twin Moose		Not Available	
6	400kV	Roorkee-Rishikesh	1	S/C	50	PTCUL	POWERGRID	PTCUL	Twin Moose	LILO portion is of POWERGRID	Not Available	
7	400kV	Roorkee-Muzaffarnagar	1	S/C	71	PTCUL	POWERGRID	UPPTCL	Twin Moose		Not Available	
F. RRVPNL												
1	400kV	Ajmer-Bhilwara	1	D/C	160	RRVPNL	RRVPNL	RRVPNL	Twin Moose		Not Available	
2	400kV	Ajmer-Bhilwara	2	D/C	160	RRVPNL	RRVPNL	RRVPNL	Twin Moose		Not Available	
3	400kV	Akal-Barmer	1	S/C	124	RRVPNL	RRVPNL	RRVPNL	Twin Moose		Conventional	
4	400kV	Akal-Jodhpur	1	S/C	225	RRVPNL	RRVPNL	RRVPNL	Twin Moose		Conventional	
5	400kV	Akal-Ramgarh	1	D/C	99	RRVPNL	RRVPNL	RRVPNL	Twin Moose		Not Available	
6	400kV	Akal-Ramgarh	2	D/C	99	RRVPNL	RRVPNL	RRVPNL	Twin Moose		Not Available	
7	400kV	Anta-Chhabra	1	S/C	90	RRVPNL	RRVPNL	RVUNL	Quad Moose	Bypassed at Anta to form Chhabra-Kota(PG)	Not Available	
8	400kV	Anta-Chhabra SC	1	D/C	89	RRVPNL	RRVPNL	RVUNL	Quad Moose		Not Available	
9	400kV	Anta-Chhabra SC	2	D/C	89	RRVPNL	RRVPNL	RVUNL	Quad Moose		Not Available	
10	400kV	Anta-Kalisindh	1	D/C	80	RRVPNL	RRVPNL	RVUNL	Quad Moose		Not Available	
11	400kV	Anta-Kalisindh	2	D/C	80	RRVPNL	RRVPNL	RVUNL	Quad Moose		Not Available	
12	400kV	Anta-Kawai	1	D/C	50	RRVPNL	RRVPNL	Kawai(Adani)	Quad Moose		Not Available	
13	400kV	Anta-Kawai	2	D/C	50	RRVPNL	RRVPNL	Kawai(Adani)	Quad Moose		Not Available	
14	400kV	Anta-Kota (PG)	1	S/C	91	RRVPNL	RRVPNL	POWERGRID	Twin Moose	Bypassed at Anta to form Chhabra-Kota(PG)	Not Available	
15	400kV	Barmer-Bhimnal	1	D/C	144	RRVPNL	RRVPNL	POWERGRID	Twin Moose		Not Available	
16	400kV	Barmer-Bhimnal	2	D/C	144	RRVPNL	RRVPNL	POWERGRID	Twin Moose		Not Available	
17	400kV	Barmer-Jaisalmer-II (Bhaesada)	1	D/C	117	RRVPNL	RRVPNL	RRVPNL	Twin Moose		Not Available	
18	400kV	Barmer-Jaisalmer-II (Bhaesada)	2	D/C	117	RRVPNL	RRVPNL	RRVPNL	Twin Moose		Not Available	
19	400kV	Barmer-Rajwest	1	D/C	15	RRVPNL	RRVPNL	RAJWEST	Twin Moose		Conventional	
20	400kV	Bhadla-Jodhpur	1	D/C	106	RRVPNL	RRVPNL	RRVPNL	Twin Moose		Not Available	
21	400kV	Bhilwara-Chhabra	1	S/C	303	RRVPNL	RRVPNL	RVUNL	Twin Moose		Conventional	
22	400kV	Bhilwara-Chittorgarh(RRVPNL)	1	D/C	49	RRVPNL	RRVPNL	RRVPNL	Twin Moose		Not Available	
23	400kV	Bhilwara-Chittorgarh(RRVPNL)	2	D/C	49	RRVPNL	RRVPNL	RRVPNL	Twin Moose		Not Available	
24	400kV	Bikaner-Bhadla	1	D/C	189	RRVPNL	RRVPNL	RRVPNL	Quad Moose		Not Available	
25	400kV	Bikaner-Bhadla	2	D/C	189	RRVPNL	RRVPNL	RRVPNL	Quad Moose		Not Available	
26	400kV	Bikaner-Merta	1	S/C	172	RRVPNL	RRVPNL	RRVPNL	Twin Moose		Not Available	
27	400kV	Bikaner-Sikar(PG)	1	D/C	171	RRVPNL	RRVPNL	POWERGRID	Twin Moose		Not Available	
28	400kV	Bikaner-Sikar(PG)	2	D/C	171	RRVPNL	RRVPNL	POWERGRID	Twin Moose		Not Available	
29	400kV	Chhabra - Kawai SCTPS	1	S/C	45	RRVPNL	RVUNL	APRL	Twin Moose		Conventional	
30	400kV	Chhabra-Chhabra SC	1	D/C	2	RRVPNL	RRVPNL	RVUNL	Quad Moose		Not Available	
31	400kV	Chhabra-Chhabra SC	2	D/C	2	RRVPNL	RRVPNL	RVUNL	Quad Moose		Not Available	
32	400kV	Heerapura-Hindaun	1	S/C	192	RRVPNL	RRVPNL	RRVPNL	Twin Moose		Conventional	
33	400kV	Hindaun-Chhabra	1	S/C	305	RRVPNL	RRVPNL	RVUNL	Twin Moose		Conventional	
34	400kV	Kakani (Jodhpur New)-Jodhpur	2	S/C	102	RRVPNL	RRVPNL	RRVPNL	Twin Moose		Not Available	
35	400kV	Kankani (Jodhpur New)-Akali	1	D/C	223	RRVPNL	RRVPNL	RRVPNL	Quad Moose		Not Available	
36	400kV	Kankani(Jodhpur New)-Jaisalmer-II(Bhainsra)	1	D/C	177	RRVPNL	RRVPNL	RRVPNL	Quad Moose	LILO of 400kV Kankani(Jodhpur New)-Akali ckt-2	Not Available	
37	400kV	Jaisalmer-II(Bhainsra)-Akali	1	D/C	61	RRVPNL	RRVPNL	RRVPNL	Quad Moose		Not Available	
38	400kV	Kankani (Jodhpur New)-Jodhpur	1	S/C	67	RRVPNL	RRVPNL	RRVPNL	Twin Moose		Not Available	
39	400kV	Kankani (Jodhpur New)-Merta	1	S/C	140	RRVPNL	RRVPNL	RRVPNL	Twin Moose	LILO of 400kV Jodhpur-Merta-1 at Kakani	Not Available	
40	400kV	Merta-Bhadla	1	D/C	175	RRVPNL	RRVPNL	RRVPNL	Twin Moose	LILO of 400kV Jodhpur-Merta-2 at Bhadla	Not Available	
41	400kV	Merta-Heerapura	1	S/C	175	RRVPNL	RRVPNL	RRVPNL	Twin Moose		Conventional	
42	400kV	Merta-Ratangarh	1	S/C	173	RRVPNL	RRVPNL	RRVPNL	Twin Moose		Conventional	
43	400kV	Phagi-Ajmer(RRVPNL)	1	D/C	109	RRVPNL	RRVPNL	RRVPNL	Twin Moose		Not Available	
44	400kV	Phagi-Ajmer(RRVPNL)	2	D/C	109	RRVPNL	RRVPNL	RRVPNL	Twin Moose		Not Available	
45	400kV	Phagi-Heerapura	1	D/C	52	RRVPNL	RRVPNL	RRVPNL	Quad Moose		Not Available	
46	400kV	Phagi-Heerapura	2	D/C	52	RRVPNL	RRVPNL	RRVPNL	Quad Moose		Not Available	
47	400kV	Rajwest - Kankani (Jodhpur New)	1	S/C	209	RRVPNL	RRVPNL	RRVPNL	Twin Moose	LILO of 400kV Jodhpur-Rajwest-1 at Kakani	Not Available	

48	400kV	Rajwest-Jodhpur	1	D/C	209	RRVPNL	RWPL	RRVPNL	Twin Moose		Conventional	
49	400kV	Rangarh-Bhadla	1	D/C	160	RRVPNL	RRVPNL	RRVPNL	Twin Moose		Not Available	
50	400kV	Rangarh-Bhadla	2	D/C	160	RRVPNL	RRVPNL	RRVPNL	Twin Moose		Not Available	
51	400kV	Suratgarh-Bikaner	1	S/C	146	RRVPNL	RVUNL	RRVPNL	Twin Moose		Conventional	
52	400kV	Suratgarh-Ratangarh	1	S/C	144	RRVPNL	RVUNL	RRVPNL	Twin Moose		Conventional	
53	400kV	Suratgarh-Ratangarh	2	S/C	144	RRVPNL	RVUNL	RRVPNL	Twin Moose		Conventional	
54	400kV	Suratgarh-Suratgarh SC	1	S/C	2	RRVPNL	RVUNL	RVUNL	Quad Moose		Not Available	
55	400kV	Suratgarh SC-Bikaner	1	D/C	140	RRVPNL	RVUNL	RRVPNL	Twin Moose		Not Available	
56	400kV	Suratgarh SC-Bikaner	2	D/C	140	RRVPNL	RVUNL	RRVPNL	Twin Moose		Not Available	
G. UPPTCL												
1	400kV	Agra (Fatehabad)-Agra South	1	D/C	70	UPPTCL	UPPTCL	UPPTCL	Twin Moose		Not Available	
2	400kV	Agra (UP)-Agra(Fatehabad)	1	S/C	104	UPPTCL	UPPTCL	UPPTCL	Twin Moose		Not Available	LILO of 400 kV Agra(UP)- Muradnagar(N) at Fatehabad(UP)
3	400kV	Agra UP-Unnao	1	S/C	279	UPPTCL	UPPTCL	UPPTCL	Twin Moose		Partial (25%)	
4	400kV	Agra(Fatehabad)-Mathura	1	S/C	142	UPPTCL	UPPTCL	UPPTCL	Twin Moose		Not Available	
5	400kV	Agra(Fatehabad)-Mathura	2	D/C	151	UPPTCL	UPPTCL	UPPTCL	Twin Moose		Not Available	LILO of 400 kV Fatehabad(UP)- Muradnagar at Mathura
6	400kV	Alakhnanda-Vishnuprayag	1	D/C	109	UPPTCL	GVKPL	JPVL	Twin Moose		Not Available	
7	400kV	Aligarh-Mainpuri	1	D/C	93	UPPTCL	UPPTCL	UPPTCL	Quad Moose		Not Available	
8	400kV	Aligarh-Mainpuri	2	D/C	93	UPPTCL	UPPTCL	UPPTCL	Quad Moose		Not Available	
9	400kV	Aligarh-Muradnagar	1	S/C	177	UPPTCL	UPPTCL	UPPTCL	Twin Moose		Not Available	*Series Compensated line (40%). It would be shifted
10	400kV	Aligarh-Sikandrabad	1	D/C	95	UPPTCL	UPPTCL	UPPTCL	Twin Moose		Not Available	
11	400kV	Aligarh-Harduaaganj	1	S/C	40	UPPTCL	UPPTCL	UPPTCL	Twin Moose		Not Available	
12	400kV	AnparaB-AnparaC	1	D/C	0.05	UPPTCL	UPRVUNL	LANCO	Quad Moose		Conventional	
13	400kV	AnparaB-AnparaC	2	D/C	0.05	UPPTCL	UPRVUNL	LANCO	Quad Moose		Conventional	
14	400kV	AnparaB-AnparaD	1	D/C	5	UPPTCL	UPRVUNL	UPPTCL	Twin Moose		Not Available	
15	400kV	AnparaB-AnparaD	2	D/C	5	UPPTCL	UPRVUNL	UPPTCL	Twin Moose		Not Available	
16	400kV	AnparaB-Mau	1	S/C	262	UPPTCL	UPRVUNL	UPPTCL	Twin Moose		Partial (13%)	
17	400kV	AnparaB-Obra B	1	S/C	40	UPPTCL	UPRVUNL	UPPTCL	Twin Moose		Partial	
18	400kV	AnparaB-Samath	1	D/C	158	UPPTCL	UPRVUNL	UPPTCL	Twin Moose		Partial	
19	400kV	AnparaB-Samath	2	D/C	158	UPPTCL	UPRVUNL	UPPTCL	Twin Moose		Conventional	
20	400kV	Ataur-Hapur	1	D/C	52	UPPTCL	UPPTCL	UPPTCL	Twin Moose		Not Available	
21	400kV	Ataur-Hapur	2	D/C	52	UPPTCL	UPPTCL	UPPTCL	Twin Moose		Not Available	
22	400kV	Ataur-Indrapuram	1	D/C	15	UPPTCL	UPPTCL	UPPTCL	Quad Moose		Not Available	
23	400kV	Ataur(UP)-Noida Sec 123(UP)	1	D/C	19	UPPTCL	UPPTCL	UPPTCL	Quad Moose (LILO portion Twin HTLS)	LILO of 400 KV ATAUR-INDIRAPURAM OKT-II at 400 KV NOIDA SECTOR 123	Not Available	
24	400kV	Indrapuram(UP)-Noida Sec 123(UP)	1	D/C	17	UPPTCL	UPPTCL	UPPTCL	Quad Moose (LILO portion Twin HTLS)		Not Available	
25	400kV	Azamgarh-Mau	1	S/C	48	UPPTCL	UPPTCL	UPPTCL	Twin Moose		Partial (79%)	
26	400kV	Azamgarh-Tanda	1	D/C	153	UPPTCL	UPPTCL	NTPC	Twin Moose		Not Available	
27	400kV	Badaun-Sambhal	1	D/C	77	UPPTCL	UPPTCL	UPPTCL	Twin Moose		Not Available	
28	400kV	Badaun-Sambhal	2	D/C	77	UPPTCL	UPPTCL	UPPTCL	Twin Moose		Not Available	
29	400kV	Banda-Orai	1	D/C	108	UPPTCL	UPPTCL	UPPTCL	Quad Moose		Not Available	
30	400kV	Banda-Orai	2	D/C	108	UPPTCL	UPPTCL	UPPTCL	Quad Moose		Not Available	
31	400kV	Banda-Rewa road	1	D/C	177	UPPTCL	UPPTCL	UPPTCL	Quad Moose		Not Available	
32	400kV	Banda-Rewa road	2	D/C	177	UPPTCL	UPPTCL	UPPTCL	Quad Moose		Not Available	
33	400kV	Bara-Meja	1	D/C	32	UPPTCL	UPPTCL	MUNPL	Quad Moose		LILO of 400kV Bara-Rewa road D/C at Meja	
34	400kV	Bara-Meja	2	D/C	32	UPPTCL	UPPTCL	MUNPL	Quad Moose			
35	400kV	Bareilly UP-Unnao	1	D/C	271	UPPTCL	UPPTCL	UPPTCL	Twin Moose		Partial (15%)	*Series Compensated line (45%)
36	400kV	Bareilly UP-Unnao	2	D/C	271	UPPTCL	UPPTCL	UPPTCL	Twin Moose		Partial (15%)	*Series Compensated line (45%)
37	400kV	Gorakhpur UP-Azamgarh	1	S/C	90	UPPTCL	UPPTCL	UPPTCL	Twin Moose		Partial (76%)	
38	400kV	Gr. Noida(765)-Sector 148	1	D/C	47	UPPTCL	UPPTCL	UPPTCL	Quad Moose		Not Available	
39	400kV	Gr. Noida(765)-Sector 148	2	D/C	47	UPPTCL	UPPTCL	UPPTCL	Quad Moose		Not Available	
40	400kV	Gr. Noida-Gr. Noida (765)	1	D/C	45	UPPTCL	UPPTCL	UPPTCL	Quad Moose		Not Available	
41	400kV	Gr. Noida-Gr. Noida (765)	2	D/C	45	UPPTCL	UPPTCL	UPPTCL	Quad Moose		Not Available	
42	400kV	Gr.Noida-Sikandrabad	1	D/C	17	UPPTCL	UPPTCL	UPPTCL	Quad Moose		Not Available	
43	400kV	Gr.Noida-Sikandrabad	2	D/C	17	UPPTCL	UPPTCL	UPPTCL	Quad Moose		Not Available	
44	400kV	Hapur-Dasna	1	D/C	14	UPPTCL	UPPTCL	UPPTCL	Quad Moose		Not Available	
45	400kV	Hapur-Dasna	2	D/C	14	UPPTCL	UPPTCL	UPPTCL	Quad Moose		Not Available	
46	400kV	Hapur-Moradabad	1	S/C	109	UPPTCL	UPPTCL	UPPTCL	Twin Moose		Not Available	
47	400kV	Hapur-Muradnagar	1	S/C	28	UPPTCL	UPPTCL	UPPTCL	Twin Moose		Not Available	
48	400kV	Harudaganj-Sikandrabad	1	S/C	115	UPPTCL	UPPTCL	UPPTCL	Twin Moose		Not Available	
49	400kV	Mainpuri(UP)-Mainpuri(PG)	1	D/C	25	UPPTCL	UPPTCL	POWERGRID	Twin Moose		Not Available	LILO of 400kV Orai-Mainpuri(PG) at Mainpuri(UP)
50	400kV	Mainpuri(UP)-Mainpuri(PG)	2	D/C	26	UPPTCL	UPPTCL	POWERGRID	Twin Moose		Not Available	
51	400kV	Meja-Musauli	1	D/C	65	UPPTCL	MUNPL	UPPTCL	Quad Moose		Not Available	
52	400kV	Meja-Rewa road	1	D/C	45	UPPTCL	MUNPL	UPPTCL	Quad Moose		Not Available	
53	400kV	Muradnagar New- Mathura	1	D/C	246	UPPTCL	UPPTCL	UPPTCL	Twin Moose		Not Available	LILO of 400 kV Fatehabad(UP)- Muradnagar at Mathura
54	400kV	Muradnagar-Ataur	2	D/C	18	UPPTCL	UPPTCL	UPPTCL	Twin Moose		Not Available	
55	400kV	Musauli-Rewa road	1	D/C	34	UPPTCL	UPPTCL	UPPTCL	Quad Moose		Not Available	
56	400kV	Muzaffarnagar-Alakhnanda	1	D/C	189	UPPTCL	UPPTCL	GVKPL	Twin Moose		Not Available	
57	400kV	Muzaffarnagar-Ataur	1	D/C	121	UPPTCL	UPPTCL	UPPTCL	Twin Moose		Not Available	
58	400kV	Muzaffarnagar-Vishnuprayag	1	D/C	280	UPPTCL	UPPTCL	JPVL	Twin Moose		Conventional	
59	400kV	Noida Sec 148 - Noida Sec 123	1	D/C	20	UPPTCL	UPPTCL	UPPTCL	Twin Moose		Not Available	
60	400kV	Noida Sec 148 - Noida Sec 123	2	D/C	20	UPPTCL	UPPTCL	UPPTCL	Twin Moose		Not Available	
61	400kV	Noida Sec 148-Noida Sec 123	1	D/C	20	UPPTCL	UPPTCL	UPPTCL	Twin Moose		Not Available	
62	400kV	Noida Sec 148-Noida Sec 123	2	D/C	20	UPPTCL	UPPTCL	UPPTCL	Twin Moose		Not Available	
63	400kV	Obra-Rewa road	1	S/C	179	UPPTCL	UPPTCL	UPPTCL	Twin Moose		Not Available	
64	400kV	Obra-Sultanpur	1	S/C	230	UPPTCL	UPRVUNL	UPPTCL	Twin Moose		Conventional	
65	400kV	Obra B - Obra C	1	S/C	1	UPPTCL	UPRVUNL	UPRVUNL	Twin Moose		Not Available	
66	400kV	Orai-Mainpuri(UP)	1	D/C	176	UPPTCL	UPPTCL	UPPTCL	Twin Moose		Not Available	
67	400kV	Orai-Mainpuri(UP)	2	D/C	176	UPPTCL	UPPTCL	UPPTCL	Twin Moose		Not Available	
68	400kV	Orai-Paricha	1	D/C	111	UPPTCL	UPPTCL	UPRVUNL	Twin Moose		Not Available	
69	400kV	Orai-Paricha	2	D/C	111	UPPTCL	UPPTCL	UPRVUNL	Twin Moose		Not Available	
70	400kV	Panki-Allahgarh	1	S/C	285	UPPTCL	UPPTCL	UPPTCL	Twin Moose		Partial (24%)	
71	400kV	Rewa road -Panki	1	S/C	210	UPPTCL	UPPTCL	UPPTCL	Twin Moose		Not Available	LILO of Bara-Panki at 400kV Rewa Road
72	400kV	Rosa-Badaun	1	D/C	85	UPPTCL	UPPTCL	UPPTCL	Twin Moose		Not Available	
73	400kV	Rosa-Badaun	2	D/C	85	UPPTCL	UPPTCL	UPPTCL	Twin Moose		Not Available	
74	400kV	Sarnath-Azamgarh	1	S/C	97	UPPTCL	UPPTCL	UPPTCL	Twin Moose		Not Available	
75	400kV	Lucknow -1(PG)-Mohanlalaganj (PGYTL)	1	S/C	58	UPPTCL	POWERGRID	UPPTCL	Twin Moose	LILO of 400kV LUCKNOW(PG)-	Conventional	
76	400kV	Sultanpur(UP)-Mohanlalaganj (PGYTL)	1	S/C	133	UPPTCL	UPPTCL	UPPTCL	Twin Moose		Conventional	
77	400kV	Sultanpur-Tanda	1	D/C	103	UPPTCL	UPPTCL	NTPC	Twin Moose		Not Available	
78	400kV	Tanda-Basti	1	D/C	44	UPPTCL	UPPTCL	UPPTCL	Quad Moose		Not Available	
79	400kV	Tanda-Basti	2	D/C	44	UPPTCL	UPPTCL	UPPTCL	Quad Moose		Not Available	
80	400kV	Mohanlalaganj (PGYTL)-Unnao(UP)	1	S/C	104	UPPTCL	UPPTCL	UPPTCL	Twin Moose	LILO of 400 KV SAROJANI	Partial (13%)	Status after LILO?
81	400kV	Lucknow(UP)-Mohanlalaganj (PGYTL)	1	S/C	89	UPPTCL	UPPTCL	UPPTCL	Twin Moose		Partial (13%)	
82	400kV	Unnao-Panki	1	S/C	49	UPPTCL	UPPTCL	UPPTCL	Twin Moose		Partial (41%)	
83	400kV	Varanasi-Jaunpur	1	D/C	73	UPPTCL	POWERGRID	UPPTCL	Twin Moose		Not Available	

84	400kV	Varanasi-Jaunpur	2	D/C	73	UPPTCL	POWERGRID	UPPTCL	Twin Moose		Not Available	
85	400kV	Jaunpur (UP)-Obra_B(UP)	1	D/C	177	UPPTCL	UPPTCL	UPPTCL	Twin Moose	After LILO of 400 KV	Not Available	
86	400kV	Obra_C_TPS(UP)-Jaunpur (UP)	1	D/C	176	UPPTCL	UPPTCL	UPPTCL	Twin Moose	OBRA B- OBRA-C CKT-	Not Available	
87	400kV	Sambhal-Rampur	1	D/C	74	UPPTCL	UPPTCL	UPPTCL	Twin Moose		Not Available	
88	400kV	Sambhal-Rampur	2	D/C	74	UPPTCL	UPPTCL	UPPTCL	Twin Moose		Not Available	
89	400kV	Simbholi-Meerut_P MSTL	1	D/C	29	UPPTCL	UPPTCL	UPPTCL	Twin Moose		Not Available	
90	400kV	Simbholi-Meerut_P MSTL	2	D/C	29	UPPTCL	UPPTCL	UPPTCL	Twin Moose		Not Available	
91	400kV	Simbholi_P MSTL (UP)-Muradnagar_2(UP)	1	D/C	71	UPPTCL	UPPTCL	UPPTCL	Twin Moose		Not Available	
92	400kV	Simbholi_P MSTL (UP)-Muradnagar_2(UP)	2	D/C	71	UPPTCL	UPPTCL	UPPTCL	Twin Moose		Not Available	
93	400kV	Panki-Panki_TPS	1	S/C	1	UPPTCL	UPPTCL	UPPTCL	Twin Moose		Not Available	
H. PJFTL												
1	400kV	Firozabad-Jawaharpur	1	D/C	40	PJFTL	PJFTL	UPRVUNL	Quad Moose	Anti-theft charging	Not Available	
2	400kV	Firozabad-Jawaharpur	2	D/C	40	PJFTL	PJFTL	UPRVUNL	Quad Moose	from Firozabad(PJFTL)	Not Available	
3	400kV	Agra South-Firozabad PJFTL	1	D/C	79	PJFTL	UPPTCL	PJFTL	Twin Moose	LILO of 400kV Agra South-Agra Fatehabad ckt-2 at Firozabad PJFTL	Not Available	
4	400kV	Agra(Fatehabad)-Firozabad PJFT	1	D/C	79	PJFTL	UPPTCL	PJFTL	Twin Moose		Not Available	
I. GTL												
1	400kV	Kanpur(PG)-Ghatampur_TPS(UP)	1	D/C	49	GTL	POWERGRID	UPPTCL	Twin Moose	Antitheft charging from Kanpur(PG) Upto DEAD	Not Available	
2	400kV	Kanpur(PG)-Ghatampur_TPS(UP)	2	D/C	49	GTL	POWERGRID	UPPTCL	Twin Moose		Not Available	
J. HPPTCL												
1	400kV	Lahar-Chamba	1	D/C	35	HPPTCL	HPPTCL	POWERGRID	Twin Moose		Not Available	
2	400kV	Lahar-Chamba	2	D/C	35	HPPTCL	HPPTCL	POWERGRID	Twin Moose		Not Available	
K. NTPC IV												
1	400kV	Dadri-Loni (Harsh Vihar)	1	D/C	54	NTPC	NTPC	DTL	Twin Moose		Polymer	
2	400kV	Dadri-Loni (Harsh Vihar)	2	D/C	54	NTPC	NTPC	DTL	Twin Moose		Polymer	
L. MTSL												
1	400kV	Ajmer-Deedwana	1	S/C	110	MTSCL	RRVPNL	MTSCL	Twin Moose		Not Available	
2	400kV	Bikaner-Deedwana	1	S/C	129	MTSCL	RRVPNL	MTSCL	Twin Moose		Conventional	
M. Aravali Transmission Service Company Ltd (ATSCL)												
1	400kV	Alwar-Hindaun	1	S/C	96	ATSCL	ATSL	RRVPNL	Twin Moose		Not Available	Partly owned by Aravali Transmission Services Ltd.
N. BBMB												
1	400kV	Dehar-Rajpura	1	S/C	129	BBMB	BBMB	PSCL	Twin Morkulla+ LILO portion is of twin moose	Dehar-Bhiwani LILOed at Rajpura	Antifog	LILO of Dehar-Bhiwani at Rajpura
2	400kV	Bhiwani(BBMB)-Rajpura	1	S/C	213	BBMB	BBMB	PSCL		Dehar-Bhiwani LILOed at Rajpura	Antifog	
3	400kV	Dehar-Panchkula	1	S/C	125	BBMB	BBMB	POWERGRID	Twin Morkulla+ LILO portion is of twin moose	POWERGRID owned LILO portion of 9.034Km	Antifog	LILO of Dehar-Panipat at Panchkula
4	400kV	Panchkula-Panipat	1	S/C	155	BBMB	POWERGRID	BBMB			Antifog	
OTHER DEDICATED LINES												
A. THDC												
1	400kV	Aligarh-Khurja	1	D/C	35	THDC	POWERGRID	THDC	Twin Moose		Not Available	
2	400kV	Aligarh-Khurja	2	D/C	35	THDC	POWERGRID	THDC	Twin Moose		Not Available	
5. 400kV Transmission Line charged at 220kV												
STATE LINES												
A. RRVPNL												
1	400kV charged at 220kV	Dholpur-Hindaun	1	S/C	100	RRVPNL	RRVUNL	RRVPNL	Twin Moose		Conventional	
2	400kV charged at 220kV	Kota-KTPS	1	D/C	7	RRVPNL	POWERGRID	RRVUNL	Twin Moose		Conventional	
3	400kV charged at 220kV	Kota-KTPS	2	D/C	7	RRVPNL	POWERGRID	RRVUNL	Twin Moose		Conventional	

National Load Despatch Centre

Import Capability of Punjab for December 2025

National Load Despatch Centre

Import Capability of Uttar Pradesh for December 2025

Issue Date: -

Issue Time: 1600

Revision No. 0

[illegible]

National Load Despatch Centre

Import Capability of Haryana for December 2025

Issue Date: -

Issue Time: 1600

Revision No. 0

[illegible]

National Load Despatch Centre

Import Capability of Rajasthan for December 2025

Issue Date: -

Issue Time: 1600

Revision No. 0

[illegible]

National Load Despatch Centre

Import Capability of Delhi for December 2025

Issue Date: -

Issue Time: 1600

Revision No. 0

[illegible]

National Load Despatch Centre

Import Capability of Uttarakhand for December 2025

Issue Date: -

Issue Time: 1600

Revision No. 0

[illegible]

National Load Despatch Centre

Import Capability of HP for December 2025

Issue Date: -

Issue Time: 1600

Revision No. 0

[illegible]

National Load Despatch Centre

Import Capability of J&K for December 2025

Issue Date: -

Issue Time: 1600

Revision No. 0

[illegible]



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: उ.क्षे.भा.प्रे.कें/अनुपालन निगरानी/2025

30th सितम्बर 2025

सेवा में,

वितरण सूची के अनुसार

विषय: IEGC विनियम की धारा 56 के अनुसार वार्षिक स्व-मूल्यांकन (Self-Audit) रिपोर्ट प्रस्तुत करने हेतु

महोदय / महोदया,

भारतीय विद्युत ग्रिड संहिता (IEGC) विनियम की धारा 56 के अनुसार, सभी संबंधित पक्षों – जैसे कि उपयोगकर्ता (Users), केंद्रीय पारेषण उपयोगकर्ता (CTU), राज्य पारेषण उपयोगकर्ता (STUs), एनएलडीसी, आरएलडीसी, आरपीसी, एसएलडीसी, पावर एक्सचेंज, क्यूसीए एवं एसएनए— को प्रत्येक वर्ष एक स्व-मूल्यांकन (Self-Audit) करना आवश्यक है, ताकि इन विनियमों के अनुपालन की समीक्षा की जा सके।

As per Clause 56 of the Indian Electricity Grid Code (IEGC) Regulations, all stakeholders involved in grid operations and market functions—including Users, CTU, STUs, NLDC, RLDCs, RPCs, SLDCs, Power Exchanges, QCAs, and SNAs—are required to conduct an annual self-audit to assess their compliance with the applicable provisions of the regulations.

ध्यान दिलाया जाता है कि वर्ष 2024-25 के लिए सेल्फ-ऑडिट रिपोर्ट 31 जुलाई 2025 तक अनिवार्य रूप से प्रस्तुत की जानी थी, जैसा कि भारतीय विद्युत ग्रिड संहिता (IEGC) विनियम की धारा 56(2)(a) में वर्णित है।

In accordance with IEGC Clause 56(2)(a), the self-audit report for the year 2024-25 was required to be submitted by 31st July 2025.

कृपया रिपोर्ट में निम्नलिखित बिंदुओं को अवश्य शामिल करें:

1. किसी भी गैर-अनुपालन (Non-Compliance) की स्थिति में उसके कारण और प्रक्रिया की स्पष्ट जानकारी;
2. ऐसे गैर-अनुपालन से हुई क्षति या प्रभाव की सीमा;
3. सुधारात्मक कदम तथा समाधान हेतु प्रस्तावित समय-सीमा;
4. भविष्य में ऐसी पुनरावृत्ति को रोकने के लिए उठाए गए कदम।

The self-audit report should inter alia include the following details:

1. Sufficient information on any instances of non-compliance, explaining how and why they occurred.
2. Extent of impact or damage caused by such non-compliance.
3. Corrective steps planned along with a timeline for rectification.
4. Measures taken to prevent recurrence in the future.

रिपोर्ट प्रस्तुत करने के निर्देश:

- उपयोगकर्ता, क्यूसीए, एसएनए - संबंधित आरएलडीसी या एसएलडीसी को रिपोर्ट भेजें।
- पावर एक्सचेंज - रिपोर्ट एनएलडीसी को भेजें।
- एनएलडीसी, आरएलडीसी, सीटीयू, आरपीसी - रिपोर्ट सीईआरसी को भेजें।
- एसटीयू और एसएलडीसी - रिपोर्ट संबंधित एसईआरसी को भेजें।

Submission Guidelines:

- Users, QCAs, SNAs are to submit their self-audit reports to the respective RLDC or SLDC, depending on their jurisdiction.
- Power Exchanges shall submit their reports to the NLDC.
- NLDC, RLDCs, CTU, and RPCs shall submit their reports to the CERC.
- STUs and SLDCs shall submit their reports to the respective SERC.

सभी घटकों से यह भी अपेक्षा की जाती है कि धारा 56(2)(f) के अनुसार, चिन्हित कमियों को एक निश्चित और उचित समय-सीमा के भीतर ठीक किया जाए।

All constituents are also reminded that as per Clause 56(2)(f), any deficiencies identified during the self-audit must be rectified in a time-bound and reasonable manner.

यह उल्लेख करना उचित है कि ओसीसी बैठकों, टीसीसी-एनआरपीसी बैठक तथा अन्य बैठकों में कई बार चर्चा होने के बावजूद, उत्तर क्षेत्र के विभिन्न घटकों से स्व-मूल्यांकन रिपोर्ट (Self-Audit Report) अब तक प्राप्त नहीं हुई है। सभी घटकों से पुनः अनुरोध किया जाता है कि वे शीघ्रता से अपनी-अपनी Self-Audit रिपोर्ट प्रस्तुत करें, क्योंकि इसकी नियत तिथि 31 जुलाई 2025 पहले ही समाप्त हो चुकी है।

It is pertinent to mention that despite multiple discussions in the OCC meetings, TCC-NRPC meeting and other meetings the Self-Audit reports from various constituents of the Northern Region are still awaited. All constituents are once again urged to expedite the submission of their respective Self-Audit reports at the earliest, as the deadline of 31st July 2025 has already passed.

संबंधित जानकारी एवं स्व-मूल्यांकन रिपोर्ट प्रस्तुत करने हेतु कृपया निम्न ईमेल आईडी का उपयोग करें:

nrlcdc-compliance@grid-india.in

nrlcdcso2@grid-india.in

For submission of information and self-audit reports, the following email IDs may be used:

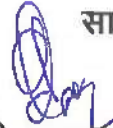
nrlcdc-compliance@grid-india.in

nrlcdcso2@grid-india.in

आपके शीघ्र सहयोग की अपेक्षा है।

Your prompt cooperation in this matter is earnestly requested.

धन्यवाद।

सादर,

सोमनाथ लोहरा
मुख्य महाप्रबंधक
उ.क्षे.भा.प्रे.के., नई दिल्ली

प्रतिलिपि सूचनार्थः

1. कार्यकारी निदेशक, राष्ट्रीय भार प्रेषण केंद्र, नई दिल्ली
2. सदस्य सचिव, उत्तर क्षेत्रीय विद्युत समिति, नई दिल्ली
3. निदेशक (प्रणाली संचालन), ग्रिड-इंडिया, नई दिल्ली

Distribution List:

1. Head (State Load Dispatch Centre), Delhi Transco Limited, SLDC Building (Behind Zakir Husain College), Tagore Hostel Lane, Minto Road, New Delhi – 110002
2. Head (State Load Dispatch Centre), Haryana Vidyut Prasaran Nigam Limited, Shakti Bhawan, Sector-6, Panchkula – 134109
3. Chief Engineer, Haryana Power Purchase Centre, Room No. 308, Shakti Bhawan, Sector-6, Panchkula – 134109, Haryana
4. Chief Engineer, State Load Dispatch Centre (Nodal agency for Himachal Pradesh), Himachal Pradesh State Load Dispatch Centre, Totu, Shimla – 171011, Himachal Pradesh
5. Head (State Load Dispatch Centre), Punjab State Load Dispatch Centre, Punjab State Transmission Corporation Limited, 220 kV Sub Station Ablawal, Patiala, Punjab – 147001
6. Chairman and Managing Director, Punjab State Power Corporation Limited, The Mall, Patiala, Punjab – 147001
7. Head (State Load Dispatch Centre), Rajasthan Rajya Vidyut Prasaran Nigam Limited, Heerapura, Jaipur, Rajasthan – 302024
8. Chairman, Rajasthan Urja Vikas Nigam Limited, Vidyut Bhawan, Janpath, Jyoti Nagar, Jaipur – 302005, Rajasthan
9. Chief Engineer, Electricity Department, Union Territory of Chandigarh, Sector 9-D, Chandigarh – 160019
10. Managing Director, Jammu and Kashmir Power Corporation Limited, State Load Dispatch Centre Building, First Floor, Gladni Grid Station, Nanval Bala, Jammu – 180004
11. Chairman, Uttar Pradesh Power Corporation Limited, Shakti Bhawan, 14-Ashok Marg, Lucknow – 226001
12. Managing Director, Uttarakhand Power Corporation Limited, Kanwli Road, Urja Bhawan, Dehradun – 248001, Uttarakhand
13. Chief Electrical Engineer, North Central Railway, General Manager Office, Subedarganj, Uttar Madhya Railway, Allahabad, Uttar Pradesh – 211011
14. Head of Project, Singrauli Super Thermal Power Station, NTPC, Post Office – Shakti Nagar, District Sonebhadra, Uttar Pradesh – 231222
15. Head of Project, Singrauli Solar Photovoltaic Power Project, NTPC, Post Office – Shakti Nagar, District Sonebhadra, Uttar Pradesh – 231222
16. Head of Project, Singrauli Small Hydro Power Project, NTPC, Post Office – Shakti Nagar, District Sonebhadra, Uttar Pradesh – 231222
17. Head of Project, Rihand Super Thermal Power Station-I, NTPC, Post Office – Rihand Nagar, District Sonebhadra, Uttar Pradesh – 231223
18. General Manager, Rihand Super Thermal Power Station-II, NTPC, Post Office – Rihand Nagar, District Sonebhadra, Uttar Pradesh – 231223

19. Head of Project, Rihand Super Thermal Power Station-III, NTPC, Post Office – Rihand Nagar, District Sonebhadra, Uttar Pradesh – 231223
20. Head of Project, Dadri, National Capital Power Project, NTPC-Dadri, Vidyut Nagar, District Gautam Budh Nagar, Uttar Pradesh – 201008
21. Head of Project, Dadri – Stage II, National Capital Power Project, NTPC-Dadri, Vidyut Nagar, District Gautam Budh Nagar, Uttar Pradesh – 201008
22. Head of Project, Dadri Gas Power Project, NTPC-Dadri, Vidyut Nagar, District Gautam Budh Nagar, Uttar Pradesh – 201008
23. Head of Project, Dadri Solar Photovoltaic Power Project, NTPC-Dadri, Vidyut Nagar, District Gautam Budh Nagar, Uttar Pradesh – 201008
24. Head of Project, Firoz Gandhi Unchahar Thermal Power Project-I, NTPC, Post Office – Unchahar, District Raebareilly, Uttar Pradesh – 229406
25. Head of Project, Firoz Gandhi Unchahar Thermal Power Project-II, NTPC, Post Office – Unchahar, District Raebareilly, Uttar Pradesh – 229406
26. Head of Project, Firoz Gandhi Unchahar Thermal Power Project-III, NTPC, Post Office – Unchahar, District Raebareilly, Uttar Pradesh – 229406
27. Head of Project, Firoz Gandhi Unchahar Thermal Power Project-IV, NTPC, Post Office – Unchahar, District Raebareilly, Uttar Pradesh – 229406
28. Head of Project, Firoz Gandhi Unchahar Solar Photovoltaic Power Project, NTPC, Post Office – Unchahar, District Raebareilly, Uttar Pradesh – 229406
29. Head of Project, Auraiya Gas Power Project (Gas Fired, Re-gasified Liquefied Natural Gas Fired, Liquid Fired), NTPC, Post Office – Dibiyapur, District Auraiya, Uttar Pradesh – 206244
30. Head of Project, Auraiya Solar Power Plant, NTPC Limited, Post Office – Dibiyapur, District Auraiya, Uttar Pradesh – 206244
31. Head of Project, Anta Gas Power Project (Gas Fired, Re-gasified Liquefied Natural Gas Fired, Liquid Fired), NTPC, Post Office – Anta, District Baran, Rajasthan – 325209
32. Head of Project, Koldam Hydroelectric Power Project, NTPC, Post – Barmana, District Bilaspur, Himachal Pradesh – 174013
33. Head of Project, NTPC Limited, Tanda Stage-II, Post Office – Vidyut Nagar, District Ambedkar Nagar, Uttar Pradesh – 224238
34. General Manager, Nidan Solar Power Plant, NTPC Limited, Fatehgarh Solar Project, Village – Nidan, Tehsil – Pokharan, District Jaisalmer – 345021, Rajasthan
35. Deputy General Manager, Devikot Solar Power Plant, NTPC Green Energy Limited, Plot No. 929, Barmer-Jaisalmer Highway, Devikot, Fatehgarh, District Jaisalmer, Rajasthan – 345027
36. General Manager (Head of Project), Nokhra Solar Plant, NTPC Green Energy Limited, D-903, Tirupati Apartment, Near Kothari Hospital, Gajner Road, District Bikaner, Rajasthan – 334001
37. General Manager, Kolayat Solar Plant, NTPC Green Energy Limited, Nokhra Solar Plant, NTPC Limited, Pethado Ki Dhani, Tehsil Kolayat, District Bikaner, Rajasthan – 334303

38. Station Director, Narora Atomic Power Station, Nuclear Power Corporation of India Limited, Narora, District Bulandshahar, Uttar Pradesh – 203389
39. Station Director, Rajasthan Atomic Power Station-B, Nuclear Power Corporation of India Limited, Rawatbhata, Post Office – Anu Shakti Vihar, District Kota, Rajasthan – 323303
40. Station Director, Rajasthan Atomic Power Station-C (Units 5 and 6), Nuclear Power Corporation of India Limited, Rawatbhata, Post Office – Anushakti Vihar, District Kota, Rajasthan – 323303
41. Station Director, Rajasthan Atomic Power Project Units 7 and 8, Nuclear Power Corporation of India Limited, Rawatbhata, Post Office – Anushakti Vihar, District Kota, Rajasthan – 323303
42. Head of Power Station, Bairasiul Hydroelectric Project, National Hydroelectric Power Corporation Limited, Surangini, District Chamba, Himachal Pradesh – 176317
43. Head of Power Station, Salal Hydroelectric Project, National Hydroelectric Power Corporation Limited, Jyotipuram, District Udhampur, Jammu and Kashmir – 182312
44. Head of Power Station, Tanakpur Hydroelectric Project, National Hydroelectric Power Corporation Limited, Banbassa, District Champawat, Uttarakhand – 262310
45. Head of Power Station, Chamera-I Hydroelectric Project, National Hydroelectric Power Corporation Limited, Khairi, District Chamba, Himachal Pradesh – 176310
46. Head of Power Station, Uri Hydroelectric Project, National Hydroelectric Power Corporation Limited, Mohra, District Baramulla, Jammu and Kashmir – 193122
47. Head of Power Station, Chamera-II Hydroelectric Project, National Hydroelectric Power Corporation Limited, Karian, District Chamba, Himachal Pradesh – 176310
48. Head of Power Station, Chamera-III Hydroelectric Project, National Hydroelectric Power Corporation Limited, Dharwala, District Chamba, Himachal Pradesh – 176311
49. Head of Power Station, Dhauliganga Hydroelectric Project, National Hydroelectric Power Corporation Limited, Tapovan, Dharchula, District Pithoragarh, Uttarakhand – 262545
50. Head of Power Station, Dulhasti Hydroelectric Project, National Hydroelectric Power Corporation Limited, Chenab Nagar, District Kishtwar, Jammu and Kashmir – 182206
51. Head of Power Station, Uri-II Hydroelectric Project, National Hydroelectric Power Corporation Limited, Nowpura, District Baramulla, Jammu and Kashmir – 193123
52. Head of Power Station, Parbati Hydroelectric Project Stage-III, National Hydroelectric Power Corporation Limited, Behali, Post Office – Larji, District Kullu, Himachal Pradesh – 175122
53. Head of Power Station, Sewa-II Power Station, National Hydroelectric Power Corporation Limited, Mashke, Post Bag No. 2, Post Office – Khari, District Kathua, Jammu and Kashmir – 176325
54. Head of Power Station, Kishanganga Hydroelectric Project, National Hydroelectric Power Corporation Limited, Office-cum-Residential Colony, Kralpora, District Bandipora, Jammu and Kashmir – 193502

55. Head of Power Station, Parbati-II Hydroelectric Project, National Hydroelectric Power Corporation Limited, Electrical and Mechanical Complex, Sainj, District Kullu, Himachal Pradesh – 175134
56. Head of Project, Nathpa Jhakri Hydroelectric Power Project, Satluj Jal Vidyut Nigam Limited, Post Office – Jhakri, District Shimla, Himachal Pradesh – 172201
57. Head of Project, Rampur Hydroelectric Power Project, Satluj Jal Vidyut Nigam Limited, Bayal, Post Office – Koyal, Nirmand, District Kullu, Himachal Pradesh – 172203
58. Head of Power Station, Tehri Hydroelectric Power Project, Tehri Hydro Development Corporation Limited, Bhagirath Puram, Tehri, Uttarakhand – 249001
59. Head of Power Station, Koteswar Hydroelectric Power Project, Tehri Hydro Development Corporation Limited, Koteswerpuram, Post Office – Pokhari, District Tehri Garhwal, Uttarakhand – 249146
60. Project In-charge, Allain Duhangan Hydroelectric Power Limited, Village – Prini, Post Office – Jagat Sukh, Tehsil – Manali, District Kullu, Himachal Pradesh – 175143
61. Chief Executive Officer, Indira Gandhi Super Thermal Power Project, Aravali Power Company Private Limited, Post Office – Jharli, Tehsil – Matanhail, District Jhajjar, Haryana – 124125
62. Project Head, Karcham Wangtoo Hydroelectric Power Project, JSW Hydro Energy Limited, Sholtu Colony, Post Office – Tapti, District Kinnaur, Himachal Pradesh – 172104
63. Company Secretary, Shree Cement Thermal Power Project, Bangurnagar, Beawar, District Ajmer, Rajasthan – 305901
64. Company Secretary, Greenko Budhil Hydroelectric Power Station Limited, Greenko Hub, Number 13, Hitech City, Madhapur, Hyderabad, Telangana – 500081
65. Project Head, Himachal Sorang Power Limited, D-7, Lane-I, Sector-I, New Shimla, District Shimla, Himachal Pradesh – 171009
66. Head of Project, Sainj Hydroelectric Power Project, Himachal Pradesh Power Corporation Limited, Sarabai, District Kullu, Himachal Pradesh – 175125
67. Head of Operation and Maintenance, Singoli-Bhatwari Hydroelectric Power Project, Renew Jal Urja Limited, Village – Bedubagar, Post Office – Augustmuni, District Rudraprayag, Uttarakhand – 246421
68. Director (Power Regulation), Bhakra Power House, Bhakra Beas Management Board, State Load Dispatch Centre Complex, 66 kV Substation, Industrial Area Phase-I, Madhya Marg, Chandigarh – 160002
69. Director (Power Regulation), Dehar Hydroelectric Power Project, Bhakra Beas Management Board, State Load Dispatch Centre Complex, 66 kV Substation, Industrial Area Phase-I, Madhya Marg, Chandigarh – 160002
70. Director (Power Regulation), Pong Power House Circle, Bhakra Beas Management Board, State Load Dispatch Centre Complex, 66 kV Substation, Industrial Area Phase-I, Madhya Marg, Chandigarh – 160002

71. Executive Director, Power Grid Corporation of India Limited, Northern Region Transmission System-I, B-9, Qutab Institutional Area, New Delhi – 110016
72. Director, Operations, Powerlinks Transmission Limited, 10th Floor, DLF Tower-A, District Centre, Jasola, New Delhi – 110044
73. Chief Financial Officer, Powergrid Himachal Transmission Limited, B-9, Qutab Institutional Area, New Delhi – 110016
74. Director, Business Development, Adani Transmission India Limited, Shantigram, Near Vaishno Devi Circle, S.G. Highway, Khodiyar, Ahmedabad, Gujarat – 382421
75. Managing Director, Parbati Koldam Transmission Company Limited, 5th Floor 1A, JMD Galleria, Sector-48, Sohna Road, Gurugram, Haryana – 122018
76. Chief Executive Officer, Aravali Power Company Private Limited (Transmission Licensee), Post Office – Jharli, District Jhajjar, Haryana – 124141
77. Vice President (Regulatory and Contracts), Northern Region System Strengthening XXIX Transmission Limited, Unit No. 101, First Floor, Windsor, Village Kole Kalyan, Off CST Road, Vidyanagari Marg, Santacruz (East), Mumbai, Maharashtra – 400098
78. Vice President (Regulatory and Contracts), Rajasthan Atomic Power Project Transmission Company Limited, Unit No. 101, First Floor, Windsor, Village Kole Kalyan, Off CST Road, Vidyanagari Marg, Santacruz (East), Mumbai, Maharashtra – 400098
79. Vice President (Regulatory and Contracts), Patran Transmission Company Limited, Unit No. 101, First Floor, Windsor, Village Kole Kalyan, Off CST Road, Vidyanagari Marg, Santacruz (East), Mumbai, Maharashtra – 400098
80. Vice President (Regulatory and Contracts), Gurugram Palwal Transmission Limited, Unit No. 101, First Floor, Windsor, Village Kole Kalyan, Off CST Road, Vidyanagari Marg, Santacruz (East), Mumbai, Maharashtra – 400098
81. Associate Director – Commercial and Regulatory, Northern Region System Strengthening XXXI (B) Transmission Limited, 504 and 505, 5th Floor, Windsor, Off CST Road, Kalina, Santacruz (East), Mumbai, Maharashtra – 400098
82. Assistant General Manager, Northern Region System Strengthening XXXVI Transmission Limited, Tata Power Company Limited, Shatabdi Bhawan, B-12 and 13, Sector-4, Noida, Uttar Pradesh – 201301
83. Chief Executive Officer, Powergrid Unchahar Transmission Limited, 765/400/220 kV Substation, Village – Chauferava, Post and District – Fatehpur, Uttar Pradesh – 212601
84. Chief Executive Officer, Powergrid Kala Amb Transmission Limited, 400/220 kV Gas Insulated Substation, Village – Meerpur Kotla, Post Office – Trilokpur, Tehsil – Nahan, District Sirmour, Himachal Pradesh – 173030
85. Director, Fatehgarh Bhadla Transmission Limited, 3rd Floor, South Wing, Adani Corporate House, Shantigram, S.G. Highway, Khodiyar, Ahmedabad, Gujarat – 382421
86. Director, Bikaner-Khetri Transmission Limited, 3rd Floor, South Wing, Adani Corporate House, Shantigram, S.G. Highway, Khodiyar, Ahmedabad, Gujarat – 382421

87. Project In-Charge, Powergrid Ajmer Phagi Transmission Limited, Powergrid, B-9, Qutab Institutional Area, New Delhi – 110016
88. Chief Engineer (Communication and Relay), Power Transmission Corporation of Uttarakhand Limited, Vidyut Bhawan, Near ISBT Crossing, Saharanpur Road, Majra, Dehradun, Uttarakhand – 248002
89. Project In-Charge, Powergrid Fatehgarh Transmission Limited, Village – Sanwata, Devikot Sankra Road, 8 Kilometer Milestone, District Jaisalmer, Rajasthan – 345027
90. Project In-Charge, Powergrid Khetri Transmission System Limited, Village – Jasrapur, Tehsil – Khetri, District Jhunjhunu, Rajasthan – 333514
91. Chief Executive Officer, Powergrid Varanasi Transmission System Limited, C-27/210, Kailgad House, Jagatganj, District Varanasi, Uttar Pradesh – 221002
92. Project In-Charge, Powergrid Bikaner Transmission System Limited, 765/400 kV Substation, Village – Jalalsar, Post – Jamsar, District Bikaner, Rajasthan – 334601
93. Chief Engineer (Communication and Relay), Power Transmission Corporation of Uttarakhand Limited, Vidyut Bhawan, Near ISBT Crossing, Saharanpur Road, Majra, Dehradun, Uttarakhand – 248002

Grid Event summary for October 2025													
S.No.	Category of Grid Incident/ Disturbance	Name of Elements (Tripped/Manually opened)	Affected Area	Owner/ Agency	Outage		Event (As reported)	Loss of generation / loss of load during the Grid Disturbance		Fault Clearance time (in ms)	Compliance of Protection Protocol/Standard		
	(GI-I to GD-V)				Date	Time		Generation Loss(MW)	Load Loss (MW)		Flash Report Submission (Y/N)	DR/EL Submission (Y/N)	Detail Tripping Report Submission (Y/N)
1	GD-1	1) 220 KV Khodri(UK)-Majri(HP) (UK) Ckt-1 2) 220 KV Khodri(UK)-Majri(HP) (UK) Ckt-2 3) 220 KV Khodri - Chhibro (UK) Ckt-1 4) 220 KV Khodri - Chhibro (UK) Ckt-2 5) 220 KV Sarsawan(UP)-Khodri(UK) (UP) Ckt 6) 220 KV Saharanpur(UP)-Khodri(UK) (UP) Ckt 7) 220 KV Jhajra-Khodri (UK) Ckt 8) 220/132 kv 100 MVA ICT at Khodri(UK) 9) 30 MW Unit-1 at Khodri(UK) 10) 30 MW Unit-3 at Khodri(UK) 11) 30 MW Unit-4 at Khodri(UK) 12) 60 MW Unit-1 at Chhibro(UK) 13) 60 MW Unit-2 at Chhibro(UK) 14) 60 MW Unit-3 at Chhibro(UK) 15) 220 KV Saharanpur(UP)- Saharanpur(PG) Ckt	Uttarakhand	PTCUL, HPPTCL, UPPTCL, PGCIL	2-Oct-25	04:59	i)220KV Khodri(UK) and 220kv Chhibro(UK) generating station have 4 generating units each of 30MW and 60MW respectively and have double main bus scheme. ii)During antecedent condition, 30 MW Unit-1, 3 & 4 at Khodri(UK) were in running condition and were generating approx. 23 MW, 22 MW and 21 MW respectively. Also, 60 MW Unit-1, 2, 3 & 4 at Chhibro(UK) were in running condition and were generating approx. 45 MW, 43 MW and 42 MW respectively (as per SCADA). iii)As reported, at 04:59 hrs, standby earth fault (51N) initiated on generator protection relays of 30 MW Unit-1, 3 & 4 at Khodri(UK) (exact reason, location and nature of fault yet to be shared). iv)CB of Unit-3 opened correctly on standby earth fault protection operation. But Unit-1 and 4 experienced delayed opening of CB due to which LBB protection operated (as also confirmed from DR). v)LBB protection issued tripping commands to all the 220kv feeders and 220/132 kv 100 MVA ICT at Khodri(UK) to isolate the fault and complete blackout occurred at 220kv Khodri(UK). vi)On this fault, 220 KV Saharanpur(UP)- Saharanpur(PG) Ckt also tripped sensing the fault in zone-2 at Shaharanpur(UP) end with fault distance of 9.7 km (105.6%) from Shaharanpur(UP). vii)Due to tripping of both 220 KV Khodri - Chhibro (UK) Ckt-1 & 2, 60 MW Unit-1, 2, 3 & 4 at Chhibro(UK) tripped on loss of evacuation path and complete blackout occurred 220kv Chhibro(UK). viii)As per SCADA SOE, 132 KV Giri-KalaAmb (HP) Ckt also tripped during the same time (exact reason of tripping yet to be shared). ix)As per PMU at Dehradun(PG), Y-N phase to earth fault with fault clearing time of 440 ms was observed. x)As per SCADA, generation loss of approx. 196 MW and change in demand of approx. 55 MW was observed in Uttarakhand control area.	196	55	440	Y	Y	N
2	GD-1	1) 220/33 kv 150 MVA ICT 1 at AHEJ4L PSS2 HB_FGRAH_FBTL (AHEJ4L) 2) 220/33 kv 150 MVA ICT 2 at AHEJ4L PSS2 HB_FGRAH_FBTL (AHEJ4L) 3) 220/33 kv 150 MVA ICT 3 at AHEJ4L PSS2 HB_FGRAH_FBTL (AHEJ4L)	Rajasthan	AHEJ4L	3-Oct-25	12:53	i)Generation of 220kv AHEJ4L PSS2 (ASPS2) (IP) station evacuates through 220 KV Adani Renew Park SL_FGARH_FBTL (AREPRL)-AHEJ4L PSS2 HB_FGRAH_FBTL (AHEJ4L) (AREPRL) Ckt which is further connected to 220/33 kv 150 MVA ICT 1, 2 & 3 at AHEJ4L PSS2 HB_FGRAH_FBTL (AHEJ4L). ii)During antecedent condition, 220kv AHEJ4L PSS2 (ASPS2) (IP) station was generating approx. 70 MW (as per SCADA). iii)As reported, at 12:53hrs, 220/33 kv 150 MVA ICT 1, 2 & 3 at AHEJ4L PSS2 HB_FGRAH_FBTL (AHEJ4L) tripped on over-flux protection operation (exact reason of tripping yet to be shared) which led to complete blackout out of 220kv AHEJ4L PSS2 (ASPS2) (IP) S/s. iv)As per PMU at Fatehgarh(IP), no fault was observed in the system. v)As per SCADA, NR solar generation loss of approx. 70 MW was observed at AHEJ4L PSS2 (ASPS2) (IP).	70	0	NA	N	N	N
3	GD-1	1) 400 KV Alaknanda GVK(UPC)-Srinagar(UK) (UK) Ckt-1 2) 400/220 kv 315 MVA ICT 2 at Srinagar(UK) 3) 82.5 MW Alaknanda GVK (UPC) Unit-2 4) 82.5 MW Alaknanda GVK (UPC) Unit-3 5) 82.5 MW Alaknanda GVK (UPC) Unit-4 6) 220 KV Singoli Bhatwari (Singoli(LTUHP)) (end)-Srinagar(UK) (PTCUL) Ckt-1 7) 220 KV Singoli Bhatwari (Singoli(LTUHP)) (end)-Srinagar(UK) (PTCUL) Ckt-2 8) 33 MW Singoli Bhatwari (Singoli(LTUHP)) HPS - UNIT 1 9) 33 MW Singoli Bhatwari (Singoli(LTUHP)) HPS - UNIT 2 10) 33 MW Singoli Bhatwari (Singoli(LTUHP)) HPS - UNIT 3	Uttarakhand	PTCUL, UPPTCL, Singoli	3-Oct-25	19:00	i)Power of 33*3MW Singoli Bhatwari HEP evacuates through 220 KV Singoli Bhatwari (Singoli(LTUHP)) (end)-Srinagar(UK) (PTCUL) Ckt-1 & 2. ii)During antecedent condition, 82.5 MW Unit-2, 3 & 4 at Alaknanda GVK (UPC) and 33MW unit-1, 2 & 3 at Singoli Bhatwari HEP were in running condition and generating approx. 85 MW, 83 MW, 84 MW, 35 MW, 28 MW and 27 MW respectively. 400 KV Alaknanda GVK(UPC)-Srinagar(UK) (UK) Ckt-2 was not in service. iii)As reported, at 19:00 hrs, 400 KV Alaknanda GVK(UPC)-Srinagar(UK) (UK) Ckt-1 tripped on Y-B-N double phase to earth fault with fault distance of 14.25 km from Alaknanda end. As per DR, fault current was Iy=~5.45kA and Ib=~5.23kA from Alaknanda; fault sensed in Z-2 at Alaknanda end. 400/220 kv 315 MVA ICT 2 at Srinagar(UK) also tripped due to tripping of 400 KV Alaknanda GVK(UPC)-Srinagar(UK) (UK) Ckt-1. iv)During the same time, 82.5 MW Alaknanda GVK (UPC) Unit-2, 3 & 4 also tripped (exact reason and nature of protection operated yet to be shared). v)As further reported, 220 KV Singoli Bhatwari(Singoli(LTUHP))-Srinagar(UK) (PTCUL) Ckt-1 & 2 also tripped due to DT received at Singoli Bhatwari end (exact reason yet to be shared). vi)Due to tripping of 220 KV Singoli Bhatwari(Singoli(LTUHP))-Srinagar(UK) (PTCUL) Ckt-1 & 2, 33 MW Singoli Bhatwari(Singoli (LTUHP)) HPS - UNIT 1, 2 & 3 tripped due to unavailability of power evacuating path. As per DR, over-frequency protection operated at all three units of Singoli Bhatwari HEP. vii)Due to this event, complete blackout occurred at 220kv Singoli Bhatwari HEP(Singoli(LTUHP)) S/s. viii)As per PMU at Rishikesh(UP), Y-B-N double phase to earth fault with fault clearance time of 120 ms is observed. ix)As per SCADA, change in demand of approx. 105 MW in Uttarakhand control area and generation loss of approx. 252 MW and 90 MW at Alaknanda HEP and Singoli Bhatwari HEP respectively were observed.	342	105	120	Y(d)	Y(d)	N
4	GD-1	1) 400 KV Alaknanda GVK(UPC)- Muzaffarnagar (UP) Ckt 2) 82.5 MW Alaknanda GVK (UPC) Unit-2 3) 82.5 MW Alaknanda GVK (UPC) Unit-3 4) 82.5 MW Alaknanda GVK (UPC) Unit-4	Uttar Pradesh	Alaknanda, UPPTCL	8-Oct-25	13:54	i)Power of 82.5*4 MW Alaknanda HEP evacuates through 400 KV Alaknanda GVK (UPC)-Muzaffarnagar(UP) Ckt and 400 KV Alaknanda GVK(UPC)- Vishnuprayag(UP) (UP) Ckt. ii)During antecedent condition, 82.5 MW Unit-2, 3 & 4 at Alaknanda GVK (UPC) were in running condition and generating approx. 83 MW, 84 MW and 83 MW respectively. 400 KV Alaknanda GVK(UPC)- Vishnuprayag(UP) (UP) Ckt was already under emergency shutdown for re-adjustment of conductor sag and 82.5 MW Alaknanda GVK (UPC) Unit-1 was under shutdown due to low availability of water. iii)As reported, at 13:54 hrs, 400 KV Alaknanda GVK(UPC)- Muzaffarnagar (UP) Ckt tripped on B-N phase to earth fault with fault distance of 20.27 km from Alaknanda end. iv)As per DR, fault current was Ib=~2.42kA from Alaknanda end and Ib=~3.37kA from Muzaffarnagar end; fault sensed in Z-1 at both ends; unsuccessful A/R was observed at both ends with different A/R dead time (~700ms at Muzaffarnagar end and ~1s at Alaknanda end). v)Due to tripping of 400 KV Alaknanda GVK(UPC)- Muzaffarnagar (UP) Ckt, 82.5 MW Alaknanda GVK (UPC) Unit-2, 3 & 4 tripped due to loss of power evacuating path. vi)Due to this event, complete blackout occurred at 400KV Alaknanda GVK(UPC) S/s. vii)As per PMU at Muzaffarnagar(UP), B-N phase to earth fault with unsuccessful A/R and fault clearance time of 80 ms is observed. viii)As per SCADA, generation loss of approx. 250 MW was observed at Alaknanda HEP.	250	0	80	Y(d)	Y(Partial)	N
5	GI-1	1) 220 KV Tanakpur(NH)-CBGanj(UP) (PG) Ckt 2) 132 KV Mahendra Nagar(NP)-Tanakpur(NH) (PG) Ckt 3) 31.4 MW Tanakpur(NH) Unit-1 4) 31.4 MW Tanakpur(NH) Unit-2 5) 31.4 MW Tanakpur(NH) Unit-3	Uttarakhand	UPPTCL, PGCIL, NHPC	8-Oct-25	15:45	i)During antecedent condition, 31.4 MW Tanakpur(NH) Unit-1, 2 & 3 were in running condition and generating approx. 35 MW, 36 MW and 34 MW respectively. ii)To attend to a hotspot in the 220kv Bus-2 isolator of the bus coupler bay at Tanakpur(NH), shutdown of Bus-2 was required for which all elements connected to Bus-2 were being transferred to Bus-1. iii)As reported, 220 KV Tanakpur(NH)-Sitarganj(PG) (PG) Ckt was successfully transferred from Bus-2 to Bus-1. At 15:45 hrs, during the transfer of 31.4 MW Tanakpur(NH) Unit-2 from Bus-2 to Bus-1, busbar differential (zone-A) protection operated and tripped all elements connected to 220kv Bus-2 at Tanakpur(NH). iv)As per DR, Busbar differential current of ~300A was present before the event (persisting Id alarm) which matched the load current of 220 KV Tanakpur(NH)-Sitarganj(PG) (PG) Ckt. After investigation, it was found that feedback status of the Bus-1 isolator for 220 KV Tanakpur(NH)-Sitarganj(PG) (PG) Ckt was missing. As a result, the relay treated the load current of ~300 A as differential current in all three phases as per existing relay configuration. v)Similarly, the feedback status of the Bus-2 isolator for Unit-2 was also missing. Hence, during the shifting of Unit-2 (carrying ~90 A) from Bus-2 to Bus-1, the differential current in all three phases increased to around 390 A which exceeded the permissible pickup threshold for the busbar protection relay, which was set at 360 A. vi)Due to the non-availability of the feedback status of the Bus-1 isolator and the Bus-2 isolator status being in the OFF condition for 220 KV Tanakpur(NH)-Sitarganj(PG) (PG) Ckt, the relay did not consider the line as an active element connected to Bus-1. Accordingly, as per the existing relay configuration, no trip command was initiated and the line didn't trip. Hence, though busbar differential (zone-A) protection operated, 220kv Bus-1 at Tanakpur(NH) remained charged through 220 KV Tanakpur(NH)-Sitarganj(PG) (PG) Ckt. vii)As per PMU at CB Ganj(UP), no fault was observed in the system. viii)As per SCADA, generation loss of approx. 105 MW was observed at Tanakpur HEP(NH). ix)As remedial action taken, the feedback status of bus isolators of 220 KV Tanakpur(NH)-Sitarganj(PG) (PG) Ckt & 31.4 MW Tanakpur(NH) Unit-2 has been rectified.	105	0	NA	Y	Y	Y
6	GD-1	1) 220 KV Fatehgarh_II(PG)-AHEJ2L PSS HB_FGRAH_PG (AHEJ2L) (AHEJ2L) Ckt	Rajasthan	AHEJ2L	15-Oct-25	13:15	i)Generation of 220kv AHEJ2L(IP) station evacuates through 220 KV Fatehgarh_II(PG)-AHEJ2L PSS HB_FGRAH_PG (AHEJ2L) (AHEJ2L) Ckt which is further connected to 220/33 kv 150 MVA ICT 1 & 2 at AHEJ2L(IP). ii)During antecedent condition, 220kv AHEJ2L(IP) station was generating approx. 282 MW (as per PMU). iii)As reported, at 13:15hrs, 220 KV Fatehgarh_II(PG)-AHEJ2L PSS HB_FGRAH_PG (AHEJ2L) (AHEJ2L) Ckt tripped on R-Y phase to phase fault (exact nature, location and reason of fault yet to be shared) which led to complete blackout out of 220kv AHEJ2L(IP) S/s. iv)As per PMU at Fatehgarh2(PG), R-Y phase to phase fault was observed with fault clearing time of 120ms. Voltage dipped upto 0.788 pu during fault. v)As per PMU, solar generation loss of approx. 282 MW was observed at AHEJ2L(IP).	282	0	120	Y(d)	Y(d)	Y(d)
7	GD-1	1) 220 KV Bhadla(PG)-CS_Jodhpur SL_BHD_PG (CSPJP) (Cleansolar_Jodhpur) Ckt 2) 220 KV Bhadla(PG)-Saurya Urja Solar(SU) (Saurya Urja) Ckt-2	Rajasthan	PGCIL, CSPJP, Saurya Urja	15-Oct-25	12:11	i)Generation of 220kv Clean Solar Power Jodhpur (CSPJP) (IP) and 220kv Saurya Urja(IP) station evacuates respectively through 220 KV Bhadla(PG)-CS_Jodhpur SL_BHD_PG (CSPJP) (Cleansolar_Jodhpur) Ckt and 220 KV Bhadla(PG)-Saurya Urja Solar(SU) (Saurya Urja) Ckt-1 & 2. ii)During antecedent condition, 220kv Clean Solar Power Jodhpur (CSPJP) (IP) and 220kv Saurya Urja(IP) station were generating approx. 246 MW and 463 MW (Ckt-1 carrying 190 MW and Ckt-2 carrying 273 MW) respectively (as per PMU). iii)As reported, at 12:11hrs, 220 KV Bhadla(PG)-CS_Jodhpur SL_BHD_PG (CSPJP) (Cleansolar_Jodhpur) Ckt tripped on Y-B Phase to phase fault due to snapping of jumper (exact location yet to be shared). As per DR at Bhadla(PG) end, line differential protection operated in Main-2 relay with fault current of Iy=~28.22kA, Ib=~28.30kA from Bhadla(PG) end; fault sensed in zone-1 in main-1 relay; fault clearing time was ~56 ms. iv)During the same time, 220 KV Bhadla(PG)-Saurya Urja Solar(SU) (Saurya Urja) Ckt-2 also tripped from Saurya Urja(IP) end only (exact reason and nature of protection operated yet to be shared). v)As per PMU at Bhadla(PG), Y-B Phase to phase fault was observed with fault clearing time of ~120ms. Voltage dipped upto 0.775 pu. Frequency decreased from 50.023 Hz to 49.833 Hz (max change in frequency=~0.19 Hz). vi)As per PMU at CSPJP(IP) and Saurya Urja(IP), solar generation loss of approx. 246 MW and 273 MW were observed at CSPJP(IP) and Saurya Urja(IP) respectively. vii)As per SCADA, change in NR total Solar generation of approx. 1855 MW was observed among which dip in Rajasthan solar generation was approx. 295 MW.	1855	0	120	N (CSPJ, ADANI)	N (CSPJ, ADANI)	N (CSPJ, ADANI)

S.No.	Category of Grid Incident/ Disturbance	Name of Elements (Tripped/Manually opened)	Affected Area	Owner/ Agency	Outage		Event (As reported)	Loss of generation / loss of load during the Grid Disturbance		Fault Clearance time (in ms)	Compliance of Protection Protocol/Standard		
	(GI-I to GD-V)				Date	Time		Generation Loss(MW)	Load Loss (MW)		Flash Report Submission (Y/N)	DR/EL Submission (Y/N)	Detail Tripping Report Submission (Y/N)
8	GD-1	1) 220 KV Meerut(PG)-Nehtaur(UP) (UP) Ckt 2) 220 KV Amroha-Nehtaur (UP) Ckt	Uttar Pradesh	PGCIL, UPPTCL	15-Oct-25	11:58	i)220/132kV Nehtaur(UP) S/s has main and transfer bus scheme at both 220kV and 132kV level. During antecedent condition, 220 KV Amroha- Morabadbad Ckt had already tripped (at 10:30 Hrs), hence no supply feed was present from 220 KV Amroha. ii)As reported, at 11:58 hrs, Y-N fault appeared in 220 KV Meerut(PG)-Nehtaur(UP) (UP) Ckt and line auto-reclosed successfully. But Y-N phase to earth fault again appeared within reclaim time and finally the line tripped. As per DR at Nehtaur(UP), fault current was 1.8kA and fault distance was 22.7km (31.0 %) from Nehtaur(UP) end; zone-1 distance protection operated at Nehtaur(UP) end. iii)As no supply feed was present from 220 KV Amroha, supply fail occurred at 220/132kV Nehtaur(UP). 220 KV Amroha-Nehtaur (UP) Ckt was hand tripped for safety purpose and complete blackout occurred at 220/132kV Nehtaur(UP) S/s. iv)As per PMU at Meerut(PG), three consecutive Y-N, R-N and Y-N Phase to earth faults were observed with fault clearing time of 120 ms each. v)As per SCADA, change in demand of approx. 230 MW was observed in UP control area.	0	230	120	Y(d)(PG) Y(UP)	Y(d)(PG) Y(UP)	Y(d)(PG) Y(UP)
9	GI-1	1) 220 KV Khodri(UK)-Majri(HP) (UK) Ckt-2 2) 220 KV Khodri - Chhibro (UK) Ckt-2 3) 220 KV Saharanpur(UP)-Khodri(UK) (UP) Ckt 4) 220/132 kV 100 MVA ICT at Khodri(UK)	Uttarakhand	PTCUL, HPPTCL, UPPTCL	18-Oct-25	12:09	i)220KV Khodri(UK) generating station have 4 generating units each of 30MW and have double main bus scheme. ii)During antecedent condition, only 30 MW Unit-3 at Khodri(UK) was in running condition and was generating approx. 22 MW (as per SCADA). iii)As reported, at 12:09 hrs, during the synchronisation of 30 MW Unit-2 at Khodri(UK), restricted earth fault protection of UAT operated (exact reason, location and nature of fault yet to be shared). However, due to delayed opening of CB of Unit-2, LBB protection operated. iv)LBB protection issued tripping commands to 220 KV Khodri(UK)-Majri(HP) (UK) Ckt-2, 220 KV Khodri - Chhibro (UK) Ckt-2, 220 KV Saharanpur(UP)-Khodri(UK) (UP) Ckt and 220/132 kV 100 MVA ICT at Khodri(UK) to isolate the fault. v)As per PMU at Saharanpur(PG), three phase to earth fault with fault clearing time of 280 ms was observed. vi)As per SCADA, change in demand of approx. 65 MW was observed in Uttarakhand control area.	0	65	280	Y(d)	Y(d)	N
10	GI-2	1)220kV Agra-IOCL line-I 2)220kV Bus-1 at Agra(UP) 3)400/220kV 500 MVA ICT-2 at Agra(UP) 4)400/220kV 315 MVA ICT-3 at Agra(UP) 5)220kV Agra-Agra220kV line-I 6)220kV Agra-Gokul line 7)220/132kV 160 MVA ICT-6 at Agra(UP) 8)220kV Agra-Agra220kV line-II 9)220kV Agra-IOCL line-II 10)400/220kV 500 MVA ICT-1 at Agra(UP)	Uttar Pradesh	UPPTCL	21-Oct-25	19:16	i)400/220kV Agra(UP) S/s has double main and transfer bus scheme at both 400kV & 220kV level and double bus scheme at 132kV level. During antecedent condition, 400/220kV 500MVA ICT-2, 315 MVA ICT-3, 220kV feeder to IOCL-I, Agra220kV-I, Gokul-I & 220/132kV ICT-6 were connected to 220kV Bus-1 and rest of the elements were connected to 220kV Bus-2 at Agra(UP). ii)As reported, at 19:16 hrs, R & Y phase CT of 220kV Agra-IOCL line-1 at Agra end damaged. Distance protection at Agra end operated in Z-1 however, due to delay in decay of complete fault current, LBB protection operated. Current more than 200 Amp persisted for more than 200msec. iii)Due to LBB protection operation, all the elements connected to 220kV Bus-1 i.e., 400/220kV 500MVA ICT-2, 315 MVA ICT-3, 220kV feeder to IOCL-I, Agra220kV-I, Gokul-I & 220/132kV ICT-6 at Agra(UP) tripped. iv)At the same time, due to tripping of 500 MVA ICT-2 and 315 MVA ICT-3, case-5 of SPS of transformers at Agra(UP) operated. 220kV feeder to Agra220kV-II, IOCL-II and 132kV feeders to Foundry Nagar, Sadabad, Agra Taj, Dayalbagh-I & Bhimnagri tripped on SPS operation. 220kV feeder to Shamsabad and Mitai didn't trip on SPS. During inspection, it was found that CB status of both the feeders was not showing in SPS system. v)Further, at 19:16:16 hrs, 400/220kV 500 MVA ICT-1 at Agra(UP) also tripped on differential protection operation. As reported, no fault was found during inspection. vi)As per PMU at Agra765(PG), R-N & Y-N fault at 19:16:14 hrs with delayed clearance of ~200 msec followed by R-N fault at 19:16:16 hrs is observed. vii)As per SCADA change in demand of ~100 MW is observed in UP control area.	0	109	200	Y(d)	Y(Partial)	Y(d)
11	GD-1	1)220kV Reserve Bus (Bus-4) at GGSTPS(PS) 2)220kV GGSTPS-Ghulal (PS) line 3)220kV GGSTPS-Jadla (PS) line-I 4)220kV GGSTPS-Jadla (PS) line-II 5)220kV GGSTPS-Kharar (PS) line-I 6)220kV GGSTPS- Ropar400 (PS) line-I 7)220kV GGSTPS- Ropar400 (PS) line-II 8)220/132kV 100 MVA ICT-1 at GGSTPS (PS) 9)220/132kV 100 MVA ICT-2 at GGSTPS (PS) 10)210 MW GGSTPS (Ropar) - UNIT 3 11)210 MW GGSTPS (Ropar) - UNIT 6 12)220kV ST-3 13)220kV ST-4 14)210 MW GGSTPS (Ropar) - UNIT 4 15)210 MW GGSTPS (Ropar) - UNIT 5	Punjab	PS TCL	29-Oct-25	14:59	i)220/132kV GGSTPS (Ropar TPS) has 3 main bus and 1 reserve bus. During antecedent condition, 220kV Bus-I&II were already under shutdown for ongoing construction work in switchyard. 220kV feeders to Ghulal, Jadla-I&II, Ropar400-I&II, Khara, 210 MW Unit-3 & 6, ST-3 & 4 and 100MVA ICT-1&2 were connected to 220kV Reserve bus and remaining feeders and 210 MW Unit-4 & 5 were connected to 220kV Bus-2. 210 MW Unit-1&2 were under shutdown and 220kV Gobindgarh-I feeder was also taken under shutdown to attend air leakage from the compressor. ii)During antecedent condition, 210 MW Unit-3,4,5&6 at GGSTPS were running and generating ~146 MW, ~147 MW, ~142 MW & ~153 MW respectively. iii)As reported, at 14:59 hrs, while hanging earth stick on 220kV Gobindgarh-I feeder, the earth stick inadvertently got induction voltage from the nearby live feeder of Interlinking 220/132kV 100MVA Transformer-2 and created bus fault. iv)On this fault, bus bar protection of 220kV Reserve bus (bus bar Z-4) operated leading to tripping of all the elements connected to 220kV Reserve bus. v)At the same time, 210 MW Unit-4 & 5 which were connected to 220kV Bus-3 also tripped due to tripping of allied auxiliaries running on ST-3 and ST-4. vi)As per PMU at Nallagarh(PG), R-N fault which cleared within 100msec is observed. vii)As per SCADA change in demand of approx. 35 MW in Punjab control area and generation loss of approx. 590 MW at GGSTPS (Ropar TPS) is observed.	590	35	80	Y(d)	N	N
12	GI-2	1)220kV Bus-1 at Ludhiana(PG) 2)220kV Bus-1 at Ludhiana(PG) 3)400/220kV 500 MVA ICT-1 at Ludhiana(PG) 4)400/220kV 500 MVA ICT-2 at Ludhiana(PG) 5)400/220kV 315 MVA ICT-3 at Ludhiana(PG) 6)400/220kV 500 MVA ICT-4 at Ludhiana(PG) 7)220kV Ludhiana(PG)-Laltokalan line-I 8)220kV Ludhiana(PG)-Laltokalan line-II 9)220kV Ludhiana(PG)-Sahnawal line-I 10)220kV Ludhiana(PG)-Sahnawal line-II 11)220kV Ludhiana(PG)-Dandhari line-II 12)220kV Ludhiana(PG)-Jagraon line 13)220kV Ludhiana(PG)-Doraha line 14)220kV Ludhiana(PG)-Pakhowal line	Punjab	POWERGRID, PSTCL	30-Oct-25	12:58	i)400/220kV Ludhiana(PG) has one & half breaker scheme at 400kV level and double main & transfer bus scheme at 220kV level. ii)During antecedent condition, 400/220kV ICT-1, 2, 3 & 4 were carrying ~181 MW, 169 MW, 111 MW & 168 MW respectively. iii)As reported, at 12:58 hrs, flashover occurred in R & Y phase bus isolators of 206 bay (ICT-4 bay). This happened during onload operation of 86B isolator of 206 bay (ICT-4 bay). iv)On this fault bus bar protection of both the 220kV Bus-1&2 operated leading to tripping of all the elements connected to 220kV bus-1&2 at Ludhiana(PG). v)From the event logger record, it was observed that prior to BB tripping, condition of Zone Merge was formed which has resulted in extending tripping in both Busbars. At 12:49:51:149, DC earth fault in source-1 is observed in event list. vi)As per PMU at Ludhiana(PG), R-Y double phase fault which cleared within 120msec is observed. vii)As per SCADA change in demand of approx. 245 MW in Punjab control area is observed. viii)As a precautionary measure, AC & DC supply of all 220kV isolators has been kept OFF. Further investigation is under progress. Suspected cause of tripping is currently attributable to 206 Schnieder make BCU i.e., maloperation of BO card)	0	245	120	Y(d)	Y(d)	Y(d)
13	GI-2	1)400/220kV 315 MVA ICT-1 at Daulatabad(HR) 2)400/220kV 315 MVA ICT-2 at Daulatabad(HR) 3)400/220kV 315 MVA ICT-3 at Daulatabad(HR) 4)400/220kV 315 MVA ICT-4 at Daulatabad(HR)	Haryana	HVPNL	31-Oct-25	06:02	i)400/220kV Daulatabad(HR) has one & half breaker scheme at 400kV level and double main bus scheme at 220kV level. ii)During antecedent condition, 400/220kV ICT-1, 2, 3 & 4 were carrying 83 MW, 82 MW, 82 MW & 84 MW respectively. iii)As reported, at 06:02 hrs, B-ph CT of 220kV bus coupler burst resulting into 220kV bus fault. iv)As bus bar protection was not in working condition due to issue in cables, bus bar protection didn't operate and fault cleared with the tripping of all four 400/220kV 315 MVA ICTs at Daulatabad(HR). v)As per PMU at Gurgaon(PG), B-N fault with delayed clearance of 660 msec is observed. vi)As per SCADA change in demand of approx. 440 MW in Haryana control area is observed. vii)As reported by Daulatabad(HR), issues with the bus bar protection has already been taken up with the relay OEM.	0	440	660	Y(d)	Y	N

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

Time Period: 1st October 2025 - 31st October 2025

[illegible]

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

Time Period: 1st October 2025 - 31st October 2025

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	%										
22	DULHASTI-NH	2	5	250	2	0	100	2	0	100	2	0	100	DR, EL & Tripping report not submitted
23	GORBEA SOLAR PRIVATE LIMITED(GSPL)	1	0	0	1	0	100	1	0	100	1	0	100	
24	INDIGRID	4	11	275	4	0	100	4	0	100	4	0	100	
25	JUNA RENEWABLE ENERGY PRIVATE LIMITED(JREPL)	4	3	75	4	0	100	4	0	100	4	0	100	
26	KOLDAM-NT	1	2	200	1	0	100	1	0	100	1	0	100	
27	NAPP	6	3	50	4	0	67	3	0	50	1	0	17	
28	PARBATI-III-NH	2	4	200	2	0	100	2	0	100	2	0	100	
29	PARBATI-II-NH	2	34	1700	2	0	100	2	0	100	2	0	100	
30	RAPPA	5	0	0	0	5	0	0	0	0	5	0	100	
31	RAPPB	4	1	25	4	0	100	4	0	100	4	0	100	DR, EL & Tripping report not submitted
32	RAPPC	1	0	0	0	0	0	0	0	0	0	0	0	
33	RAPPD	1	2	200	1	0	100	1	0	100	1	0	100	
34	RENEW SURYA JYOTI PRIVATE LIMITED(RSJPL)	2		0	1	0	50	1	0	50	1	0	50	
35	RIHAND-NT	1		0	1	0	100	1	0	100	1	0	100	
36	SAURYA	3		0	3	0	100	3	0	100	3	0	100	
37	SEWA-2-NH	3		0	1	0	33	1	0	33	1	0	33	Details received
38	SHREE CEMENT	2	1	50	2	0	100	2	0	100	2	0	100	
39	SINGOLI	5	3	60	0	0	0	0	0	0	0	0	0	DR, EL & Tripping report not submitted
40	SJVN GREEN ENERGY LIMITED	1	0	0	1	0	100	1	0	100	1	0	100	
41	SLDC-CHD	1	0	0	1	0	100	1	0	100	1	0	100	
42	SLDC-DV	17	2	12	9	2	60	9	2	60	10	0	59	
43	SLDC-HP	13	1	8	7	0	54	10	0	77	0	0	0	Details received

Status of submission of FIR/DR/EL/Tripping Report on NR Tripping Portal	
1	2
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Time Period: 1st October 2025 - 31st October 2025

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		%	
44	SLDC-HR	25	1	4	13	2	57	14	2	61	11	2	48	DR, EL & Tripping report not submitted
45	SLDC-JK	9	19	211	3	4	60	4	3	67	3	3	50	
46	SLDC-PS	44	0	0	35	6	92	35	6	92	42	0	95	
47	SLDC-RS	56	17	30	9	1	16	9	1	16	12	0	21	
48	SLDC-UK	28	1	4	4	5	17	9	3	36	4	0	14	
49	SLDC-UP	109	29	27	36	10	36	35	18	38	36	1	33	
50	TANAKPUR-NH	3	6	200	0	0	0	0	0	0	0	0	0	Details received
51	TATAPOWER	1	2	200	1	0	100	1	0	100	1	0	100	DR, EL & Tripping report not submitted
52	TEHRI	20	39	195	0	19	0	0	9	0	1	0	5	
53	UNCHAHAAR-NT	2	1	50	2	0	100	2	0	100	2	0	100	
Total in NR Region		581	223	38	211	84	42	217	74	43	217	18	39	

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

FRC computation and data submission status		
S. No	Control Area	Event Date
		15-10-2025_1211
1	Punjab	Received
2	Haryana	Received
3	Rajasthan	Not Received
4	Delhi	Not Received
5	Uttar Pradesh	Received
6	Uttarakhand	Received
7	Chandigarh*	NA
8	Himachal Pradesh	Received
9	J&K(UT) and Ladakh(UT)	Not Received
10	Dadri -1 (TH)	Received
11	Dadri -2 (TH)	Received
12	Jhajjar (TH)	Not Received
13	Rihand-1 (TH)	Received
14	Rihand-2 (TH)	Received
15	Rihand-3 (TH)	Received
16	Shree Cement (TH)	Not Received
17	Singrauli (TH)	Not Received
18	Tanda-2 (TH)	Received
19	Unchahar-I (TH)	Received
20	Unchahar-II (TH)	Received
21	Unchahar-III (TH)	Received
22	Unchahar-IV (TH)	Received
23	Anta (G)	Not Received
24	Auraiya (G)	Not Received
25	Dadri (G)	Not Received
26	AD Hydro (H)	Received
27	Bairasiul (H)	Received
28	Bhakra (H)	Not Received
29	Budhil (H)	Not Received
30	Chamera-1 (H)	Received
31	Chamera-2 (H)	Received
32	Chamera-3 (H)	Received
33	Dehar (H)	Not Received
34	Dhauliganga (H)	Received
35	Dulhasti (H)	Received
36	Karcham (H)	Received
37	Kishenganga	Received
38	Koldam (H)	Received
39	Koteshwar (H)	Received
40	Malana-2 (H)	NA
41	Nathpa Jhakri (H)	Not Received
42	Parbati-2 (H)	Received
43	Parbati-3 (H)	Received
44	Pong (H)	Not Received
45	Rampur (H)	Received
46	Sainj (H)	Not Received
47	Salal (H)	Received
48	Sewa-II (H)	Received
49	Singoli Bhatwari (H)	Received
50	Sorang (H)	Not Received
51	Tanakpur (H)	Received
52	Tehri (H)	Received
53	Uri-1 (H)	Received
54	Uri-2 (H)	Not Received

Frequency response Performance		
S. No	Control Area	Event Date
		15-10-2025_1211
1	Punjab	0.93
2	Haryana	0.80
3	Rajasthan	-3.33
4	Delhi	-1.30
5	Uttar Pradesh	0.57
6	Uttarakhand	-4.40
7	Chandigarh*	NA
8	Himachal Pradesh	0.35
9	J&K(UT) and Ladakh(UT)	-0.45
10	Dadri -1 (TH)	11.36
11	Dadri -2 (TH)	4.93
12	Jhajjar (TH)	7.43
13	Rihand-1 (TH)	8.31
14	Rihand-2 (TH)	1.91
15	Rihand-3 (TH)	3.98
16	Shree Cement (TH)	2.87
17	Singrauli (TH)	1.81
18	Tanda-2 (TH)	6.15
19	Unchahar-I (TH)	7.80
20	Unchahar-II (TH)	0.55
21	Unchahar-III (TH)	4.26
22	Unchahar-IV (TH)	12.07
23	Anta (G)	No Gen
24	Auraiya (G)	No Gen
25	Dadri (G)	No Gen
26	AD Hydro (H)	No Gen
27	Bairasiul (H)	No Gen
28	Bhakra (H)	0.18
29	Budhil (H)	No Gen
30	Chamera-1 (H)	No Gen
31	Chamera-2 (H)	-1.13
32	Chamera-3 (H)	No Gen
33	Dehar (H)	0.28
34	Dhauliganga (H)	0.00
35	Dulhasti (H)	0.34
36	Karcham (H)	0.24
37	Kishenganga	0.00
38	Koldam (H)	No Gen
39	Koteswar (H)	0.00
40	Malana-2 (H)	NA
41	Nathpa Jhakri (H)	0.37
42	Parbati-2 (H)	No Gen
43	Parbati-3 (H)	0.00
44	Pong (H)	0.01
45	Rampur (H)	0.92
46	Sainj (H)	No Gen
47	Salal (H)	0.56
48	Sewa-II (H)	15.00
49	Singoli Bhatwari (H)	-0.87
50	Sorang (H)	1.33
51	Tanakpur (H)	-2.41
52	Tehri (H)	No Gen
53	Uri-1 (H)	1.64
54	Uri-2 (H)	0.00

	FRP>=1
	0.85<=FRP<1
	0.75<=FRP<0.85
	0.5<=FRP<0.75
	FRP<0.5

Status of Mock Test of SPS in NR during 2025-26

Sr. No.	Scheme Name	Owner / Agency	Commission Year	Last Review	Mock testing conducted before 2025-26	Tentative Schedule of SPS Mock testing to be conducted during 2025-26	Date of SPS Mock testing conducted during 2025-26	Remarks
1	SPS for WR-NR corridor - 765kV Agra-Gwalior D/C	POWERGRID			27-03-2025	10.10.2025	10.10.2025	Communication issue at Bhiwadi(PG), Bamnauli(DTL), Kota, Debari, Chittorgarh, Ratangarh, Nunamajra, Safidon, Ajitwal, Dandhari-II, Ablawal.
2	SPS for contingency due to tripping of HVDC Mundra-Mahendergarh	ADANI				SPS Unhealthy		As reported by ADANI, work order has been placed and action plan also have been received. Tentative timeline for revival of SPS is by December 2025.
3	SPS for high capacity 400 kV Muzaffarpur-Gorakhpur D/C Inter-regional tie-line related contingency	POWERGRID				SPS Under Review		Not conducted in 2024-25 also.
4	SPS for 1500 MW HVDC Rihand-Dadri Bipole related contingency	POWERGRID			19-03-2025 and 20-03-2025	Oct-25		During mock testing, issue identified at Singrauli, Malerkotla. During recent operation on 21.05.2025, non-operation of SPS at Muradnagar, Modipuram, Malerkotla, Singrauli observed.
5	System Protection Scheme (SPS) for HVDC Balia-Bhiwadi Bipole	POWERGRID				SPS Under Review		Not conducted in 2024-25 also
6	SPS for reliable evacuation of power from NJPS, Rampur, Sawra Kuddu, Baspa Sorang and Karcham Wangtoo HEP	SJVN/HPPTCL/JS W/POWERGRID/SORANG			19-12-2024	Dec-25	04-09-2025 (Partial: Case-1, 3 & 5 conducted)	Case-6(i): Under implementation stage (tentative by 15th August 2025), Case 6(ii): communication card issue at Wangtoo(HP)
7	SPS for Reliable Evacuation of Ropar Generation	PSTCL				SPS Under Review		As reported by PSTCL, SPS need to be reviewed whether it is required or not.
8	SPS for Reliable Evacuation of Rosa Generation	UPPTCL			20-04-2024	conducted	12-04-2025	Mock test report received (Review to be done in view of commissioning of 400kV Rosa-Badaun D/C in April 2021.)
9	SPS for contingency due to tripping of evacuating lines from Narora Atomic Power Station	NAPS / UPPTCL				SPS Under Review		Not conducted in 2024-25 also. As reported by UPPTCL, no SPS system is in service at Narora S/s.
10	SPS for evacuation of Kawai TPS, Kalisindh TPS generation complex	RVPNL			14-03-2025 (Partial)	conducted	26-04-2025	Study w.r.t. Automatic load shedding part has been done. Proposed Will be put up in 234 OCC
11	SPS for evacuation of Anpara Generation Complex	UPPTCL			08-10-2024 (unit-7) and 19-10-2024 (unit-6)	Schedule awaited		
12	SPS for evacuation of Lalitpur TPS Generation	UPPTCL			21-05-2024	conducted	09-04-2025	Mock test report received
13	SPS for Reliable Evacuation of Bara TPS Generation	UPPTCL			20-11-2024	conducted	23-05-2025	Mock test report received
14	SPS for Lahal Generation	HPPTCL			08-07-2020	SPS Under Review		As reported by HPPTCL, SPS at Lahal not required now.
15	SPS for Transformers at Ballabgarh (PG) substation	POWERGRID				Schedule awaited		Not conducted in 2024-25 also. SPS. SPS may be kept with revised logic (logic based on the loading)
16	SPS for Transformers at Maharanibagh (PG) substation	POWERGRID				conducted	Apr-25	Mock test report received
17	SPS for Transformers at Mandola (PG) substation	POWERGRID				conducted	Apr-25	Mock test report received
18	SPS for Transformers at Bamnauli (DTL) Substation	DTL				Dec-25		Not conducted in 2024-25 also. SPS. SPS of 400/220kV Bamnauli was taken out after charging of 4th ICT, will be rewired and taken into service at the earliest.
19	SPS for Transformers at Moradabad (UPPTCL) Substation	Uttar Pradesh			20-04-2024	conducted	02-04-2025	Mock test report pending
20	SPS for Transformers at Muradnagar (UPPTCL) Substation	UPPTCL			27-03-2025	Mar-26		
21	SPS for Transformers at Muzaffarnagar (UPPTCL) Substation	UPPTCL			27-03-2025	Mar-26		

22	SPS for Transformers at Greater Noida(UPPTCL) Substation	UPPTCL				SPS Unhealthy		SPS Unhealthy; SPS may be kept with revised logic (logic based on the loading)
23	SPS for Transformers at Agra (UPPTCL) Substation	UPPTCL			21-03-2025	Schedule awaited		
24	SPS for Transformers at 400kV Sarojininagar (UPPTCL) Substation	UPPTCL			15-05-2024	conducted	23-07-2025	Mock test report received
25	SPS for Transformers at 220kV Sarojininagar (UPPTCL) Substation	UPPTCL			06-06-2024	conducted	23-07-2025	Mock test report received
26	SPS for Transformers at 400kV Unnao (UPPTCL) Substation	UPPTCL			19-05-2023	SPS made healthy on 27.05.2025	27.05.2025	Mock test report received
27	SPS for Transformers at 400kV Sultanpur (UPPTCL) Substation	UPPTCL				SPS made healthy on 05.05.2025		Mock test report pending
28	SPS for Transformers at 400kV Bareilly (UPPTCL) Substation	UPPTCL				Revised SPS approved in 234 OCC		SPS yet to be implemented
29	SPS for Transformers at 400kV Azamgarh (UPPTCL) Substation	UPPTCL			06-05-2024	conducted	19-04-2025	Mock test report received
30	SPS for Transformers at 400kV Mau (UPPTCL) Substation	UPPTCL			27-04-2024	conducted	21-04-2025	Mock test report received
31	SPS for Transformers at 400kV Gorakhpur (UPPTCL) Substation	UPPTCL			27-04-2024	conducted	21-04-2025	Mock test report pending
32	SPS for Transformers at 400kV Sarnath (UPPTCL) Substation	UPPTCL			23-05-2024	conducted	01-04-2025	Mock test report received
33	SPS for Transformer at 400kV Rajpura (PSTCL) Substation	PSTCL			31-01-2025	Schedule awaited		
34	SPS for Transformers at 400kV Mundka (DTL) Substation	DTL			03-02-2025	Dec-25		
35	SPS for Transformers at 400kV Deepalpur (JKTPL) Substation	HVPNL				conducted	08-05-2025	Mock test report pending
36	SPS for Transformers at 400kV Ajmer (RVPN) Substation	RVPNL			10-09-2024	conducted	20-08-2025	Mock test report received.
37	SPS for Transformers at 400kV Merta (RVPN) Substation	RVPNL			12-09-2024	conducted	09-09-2025	Mock test report received.
38	SPS for Transformers at 400kV Chittorgarh (RVPN) Substation	RVPNL			31-08-2024 and 05-09-2024	conducted	11-09-2025 & 12-09-2025	Mock test report received.
39	SPS for Transformers at 400kV Jodhpur (RVPN) Substation	RVPNL			24-09-2024	24-09-2025		
40	SPS for Transformers at 400kV Bhadla (RVPN) Substation	RVPNL			27-09-2024	conducted	27-09-2025	
41	SPS for Transformers at 400kV Ratangarh (RVPN) Substation	RVPNL			20-09-2024	conducted	25-09-2025	
42	SPS for Transformers at 400kV Nehtaur(WUPPTCL) Substation	UPPTCL			11-01-2025	Dec-25		
43	SPS for Transformers at Obra TPS	UPPTCL			20-05-2024	Schedule awaited		ICTs failed during fire incident
44	SPS for Transformers at 400KV Kashipur (PTCUL) substation	PTCUL			Septemeber 2024	Sep-25		
45	SPS for Transformers at 400KV Fatehgarh Solar Park (AREPRL)	ADANI				conducted	19-04-2025	Mock test report received.
46	SPS to relive transmission congestion in RE complex (Bhadla2)	POWERGRID				conducted	26-08-2025	Mock test report pending
47	SPS for Transformers at 400kV Bikaner (RVPN) Substation	RVPNL			26-09-2024	conducted	13-09-2025 & 17-09-2025	
48	SPS for Transformers at 400kV Bawana (DTL) Substation	DTL			04-01-2025	Dec-25		
49	SPS for Transformers at 400kV Bhilwara (RVPN) Substation	RVPNL			09-07-2024 and 10-07-2024	conducted	19-09-2025 & 23-09-2025	Mock test report received.
50	SPS for Transformers at 400kV Hindaun (RVPN) Substation	RVPNL			26-09-2024	conducted	11-09-2025	Mock test report received.
51	SPS for Transformers at 400kV Suratgarh (RVPN) Substation	RVPNL			20-10-2024	20-10-2025		
52	SPS for Transformers at 400kV Babai(RS) Substation	RVPNL			20-10-2024	conducted	07-08-2025	Mock test report received.
53	SPS for Transformers at 400kV Allahabad(PG) Substation	UPPTCL			25.07.2024	Schedule awaited		
54	SPS for Transformers at 400kV Jaunpur(UP) Substation	UPPTCL						Yet to be implemented
55	SPS for Transformers at 765kV Jhatikara(PG) Substation (Bamnauli section)	POWERGRID				conducted	Jun-25	Mock test report received.
	SPS for Transformers at 765kV Jhatikara(PG) Substation (Mundka section)					conducted	Jun-25	
56	SPS for Transformers at 765kV Bhiwani(PG) Substation	POWERGRID				SPS implemented		Mock test report received.
57	SPS for Transformers at 400kV Panki (UPPTCL) Substation	UPPTCL				Approved in 234 OCC		Yet to be implemented

58	SPS for Transformers at 400kV Agra(PG) Substation	POWERGRID/UPP TCL				Approved in 234 OCC		Yet to be implemented
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S.No.	Power Station	Sector	Ownership	Fuel Type	Black Start Source	Capacity of Black Start Source	Date of last mock drill before FY 25-26	Date of mock drill during FY 25-26	Remarks
1	Bhakra (L)	Central	BBMB	Hydro	DG Set		08-11-2024		
2	Bhakra (R)	Central	BBMB	Hydro	DG Set	500kVA	08-11-2024		
3	Pong	Central	BBMB	Hydro	DG Set	500kVA, 380kVA	09-11-2024		
4	Bairasuil	Central	NHPC	Hydro	DG Set	2X1010 KVA	14-12-2024		
5	Chamera HPS-I	Central	NHPC	Hydro	DG Set	1X1010 KVA & 2x1000 KVA	12-12-2024		
6	Chamera HPS-II	Central	NHPC	Hydro	DG Set	2x1250 KVA	02-12-2022		
7	Chamera HPS-III	Central	NHPC	Hydro	DG Set	2x725 KVA	04-12-2017		Evacuating line was not available
8	Dhauliganga	Central	NHPC	Hydro	DG Set	2x625 KVA	13-12-2024		
9	Kishanganga	Central	NHPC	Hydro	DG Set	2x1010 KVA	09-11-2024		
10	Parbati-2	Central	NHPC	Hydro	DG Set	2x1000 KVA	22-12-2020	26-05-2025	
11	Parbati-3	Central	NHPC	Hydro	DG Set	2x1010 KVA	-	17-05-2025	
12	Salal Stage-I	Central	NHPC	Hydro	DG Set	2X875 KVA	16-12-2024		
13	Salal Stage-II	Central	NHPC	Hydro	DG Set	3X1020 KVA	16-12-2024		
14	Sewa-II	Central	NHPC	Hydro	DG Set	2x500 KVA	-	16-05-2025	
15	Tanakpur HPS	Central	NHPC	Hydro	DG Set	2X625 KVA & 1X312.5 KVA	19-12-2024		
16	URI-I	Central	NHPC	Hydro	DG Set	2x1000 KVA	20-12-2016		Readiness from J&K for availability of load not received
17	URI-II	Central	NHPC	Hydro	DG Set	2x1010 KVA	20-12-2016		
18	Anta GPS	Central	NTPC	Gas	DG Set	2.968 MW	29-02-2024		
19	Auraiya GPS	Central	NTPC	Gas	DG Set	2900 kVA	Not conducted		Because of railway line connection
20	Dadri GPS	Central	NTPC	Gas	DG Set	2.4 MW	15-12-2023		
21	Faridabad GPS	Central	NTPC	Gas	DG Set	3.3 MW / 4.125 MVA	25-11-2024		
22	Koldam HEP	Central	NTPC	Hydro	DG Set	2X1250 KVA	14-03-2024		
23	Nathpa-Jhakri	Central	SJVNL	Hydro	DG Set	2*750kVA	08-12-2024		
24	Rampur	Central	SJVNL	Hydro	DG Set	2*1010kVA	08-12-2024		
25	Tehri	Central	THDC	Hydro	DG Set	2*1000kVA	13-11-2024	11.11.2025	
26	Koteshwar	Central	THDC	Hydro	DG Set	2*1010kVA	27-11-2024		
27	AD Hydro	IPP	AD Hydro Power Ltd.	Hydro	DG Set	750 KVA	27-01-2023		
28	Malana-II	IPP	Everest Power Company Ltd.	Hydro	DG Set	725kVA	27-01-2023		
29	Budhil	IPP	Greenco	Hydro	DG Set	2*800kVA	Not conducted		
30	Alaknanda IPP	IPP	GVK (UP)	Hydro			Not conducted		Due to unavailability of load. Unit is at 400kV level.
31	I.P. Gas Turbine (IPGCL G.T.)	State	IPPGCL/Delhi Gencos	Gas	DG Set	500kVA	10-04-2024		
32	Vishnu Prayag IPP	IPP	Jaiprakash power Venture Ltd. (UP)	Hydro			Not conducted		Due to unavailability of load. Unit is at 400kV level.
33	Baghlihar-I	State	Jammu & Kashmir	Hydro			Not conducted		No update received from SLDC-J&K
34	Baghlihar-II	State	Jammu & Kashmir	Hydro			Not conducted		No update received from SLDC-J&K
35	Lower Jhelum	State	Jammu & Kashmir	Hydro			20-12-2016		No update received from SLDC-J&K
36	Upper Sindh	State	Jammu & Kashmir	Hydro			20-12-2016		No update received from SLDC-J&K
37	Karcham Wangtoo	IPP	JSW	Hydro	DG Set	2*1500kVA	29-12-2021		Scheduled in 2024-25, however couldn't performed due to SCADA upgradation work at Station.
38	Baspa	IPP	JSW	Hydro	DG Set	2*625kVA	29-12-2021		Scheduled in 2024-25, however couldn't performed due to SCADA upgradation work at Station.
39	Singoli Bhatwari	IPP	L&T	Hydro	DG set	2*500kVA	Not conducted		Due to non availability of load
40	Ranjit Sagar (Thein Dam)	State	Punjab	Hydro	DG Set	2*500kVA	07-05-2024		
41	Ramgarh GPS	State	Rajasthan	Gas	DG Set	625kVA	-	11-05-2025	
42	Mahi Bajaj Sagar I	State	Rajasthan	Hydro	DG Set	200kVA	20-03-2025		
43	Mahi Bajaj Sagar II	State	Rajasthan	Hydro	DG Set	2*200kVA	21-03-2025		
44	Rana Pratap Sagar(RPS)	State	Rajasthan	Hydro	DG Set	250kVA	16-01-2011		All 4 Units got submerged in 2019. Units were restored in phases. Last unit revived in March 2025. Remainig 3 units revived by 2022 however, AVR systme is not there. Mock testing of 4th unit may be performed during 2025-26.
45	Rihand (H) or Pipri	State	Uttar Pradesh	Hydro	DG Set	2*320kVA	13-02-2025	02-06-2025	
46	Obra(H)	State	Uttar Pradesh	Hydro	DG Set	1*320kVA & 1*250kVA	16-02-2024	02-06-2025	
47	Khara HEP	State	Uttar Pradesh	Hydro			Not conducted		Due to unavailability of nearby load
48	Matatila	State	Uttar Pradesh	Hydro	DG Set	2*190kVA	Not conducted		
49	Khodri	State	Uttarakhand	Hydro	DG Set	2*500kVA	Not conducted		Due to issue in governing system(old units, R&M work is proposed).
50	Chibro	State	Uttarakhand	Hydro	DG Set	2*500kVA	Not conducted		