सत्यमेव जयते

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

विषय: उत्तर क्षेत्रीय विद्युत समिति की प्रचालन समन्वय उप-समिति की **229**वीं बैठक का कार्यवृत |

Subject: Minutes of the **229**th OCC meeting of NRPC.

उत्तर क्षेत्रीय विद्युत समिति की प्रचालन समन्वय उप-समिति की **229**वीं बैठक दिनांक 12.03.2025 को आयोजित की गयी थी। उक्त बैठक का कार्यवृत्त उत्तर क्षेत्रीय विद्युत समिति की वेबसाइट http://164.100.60.165 पर उपलब्ध है। यदि कार्यवृत पर कोई टिप्पणी हो तो कार्यवृत जारी करने के एक सप्ताह के अन्दर इस कार्यालय को भेजें |

The **229**th meeting of the Operation Co-ordination Sub-Committee (OCC) of NRPC was held on 12.03.2025. The Minutes of this meeting has been uploaded on the NRPC website http://164.100.60.165. Any comments on the minutes may kindly be submitted within a week of issuance of the minutes.

संलग्नक:यथोपरि।

Signed by Dharmendra Kumar Meena
Date: 04-04-2025 13:00:09

(डी. के. मीना)
निदेशक (प्रचालन)

सेवा में,

उ.क्षे.वि.स. के प्रचालन समन्वय उप-समिति के सभी सदस्य

Contents

List of addressee (via mail)

OCC Members for FY 2024-25			
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	kashish@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	hrastogi@ntpc.co.in
6	BBMB		powerc@bbmb.nic.in
7	THDC		ravindrasrana@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		cepso@upsldc.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		cetspkl@hvpn.org.in
20	RRVPNL		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	ce-ppr@pspcl.in

		Company & State owned Distribution Company	
32	UHBVN	State owned Distribution Company (alphabetical rotaional basis/nominated by state govt.)	nomination awaited (md@uhbvn.org.in)
33	Jodhpur Vidyut Vitran Nigam Ltd.		addlcehqjdvvnl@gmail.com
34	Paschimanchal Vidyut Vitaran Nigam Ltd.		nomination awaited (md@pvvnl.org)
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@gmail.com
39	Apraave Energy Ltd.,		rajneesh.setia@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	TATA POWER RENEWABLE	IPP having less than 1000 MW installed capacity (alphabetical rotational basis)	nomination awaited (dhmahabale@tatapower.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		cepdladakh@gmail.com
51	UT of Chandigarh		elop2-chd@nic.in
52	Noida Power Company limited	Private Distribution Company in region (alphabetical rotational basis)	nomination awaited (ssrivastava@noidapower.com)
53	Fatehgarh Bhadla Transmission Limited	Private transmission licensee (nominated by central govt.)	nomination awaited (nitesh.ranjan@adani.com)
54	NTPC Vidyut Vyapar Nigam Ltd.	Electricity Trader (nominated by central govt.)	nomination awaited (ceonvvn@ntpc.co.in)

उत्तर क्षेत्रीय विद्युत समिति की प्रचालन समन्वय उप-समिति की **229**वीं बैठक का कार्यवृत्त

The 229th OCC meeting of NRPC was held on 12.03.2025 through video conferencing. MS, NRPC welcomed all the participants connected through VC and requested for the presentation of the agenda items.

खण्ड-क:उ.क्षे.वि.स. **PART-A:NRPC**

A.1. Confirmation of Minutes

Minutes of the 228th OCC meeting was issued on 03.03.2025. OCC confirmed the minutes of the meeting.

A.2. Status of action taken on decisions of 228th OCC meeting of NRPC

A.2.1. MS, NRPC conveyed that the agenda has been taken to track the status of action taken as per decision of last meeting. Accordingly, issues may be resolved at the earliest.

A.2.2. Concerned utilities submitted the status of action taken.

Decision of OCC Forum:

Concerned utilities submitted the status of action taken and the same has been complied as ***Annexure- 0****.*

A.3. Review of Grid operations of February 2025

Anticipated vis-à-vis Actual Power Supply Position (Provisional) for February 2025

Reasons submitted by States for significant deviation of actual demand from anticipated figures during the month of February 2025 are as under:

- **Delhi**

The actual peak demand and energy consumption are much lower than expected due to mild winter. As per news report Delhi experienced a warm February this year, with both maximum and minimum temperatures showing a rise compared to the previous year.

- **Haryana**

It is intimated that agriculture load in Haryana was quite less than the load felt during the last year, resulting in decrease in demand.

- **Himachal Pradesh**

The negative variation in actual power supply position (provisional) vis-a-vis anticipated figures occurred due to the bad weather (rain & snowfall) conditions.

- **Rajasthan**

  The Actual Energy requirement and Peak Demand w.r.t. Anticipated Energy requirement and Peak Demand increased by 9.1% and 12.7% respectively for February' 2025 due to abrupt rise in temperature during the month in the state control area.

- **Punjab**

  It is intimated by Punjab SLDC that actual energy requirement and actual maximum demand are less as compared to anticipated energy requirement and anticipated maximum demand respectively because of scattered rainfall in the month of February 2025 in the state of Punjab.

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

The maintenance programme of generating units and transmission lines for the month of April 2025 was deliberated in the meeting on 11.03.2025.

A.5. Anticipated Power Supply Position in Northern Region for April 2025

The updated anticipated Power Supply Position for April 2025 is as below:

State / UT	Availability / Requirement	Revised Energy (MU)	Revised Peak (MW)	Date of revision
CHANDIGARH	Availability	150	390	No Revision submitted
	Requirement	140	288	
	Surplus / Shortfall	10	102	
	% Surplus / Shortfall	7.1%	35.4%	
DELHI	Availability	4122	6448	11-Mar-25
	Requirement	2950	5650	
	Surplus / Shortfall	1172	798	
	% Surplus / Shortfall	39.7%	14.1%	

State / UT	Availability / Requirement	Revised Energy (MU)	Revised Peak (MW)	Date of revision
	Availability	6360	11141	
HARYANA	Requirement	4889	9909	11-Mar-25
	Surplus / Shortfall	1471	1232	
	% Surplus / Shortfall	30.1%	12.4%	
HIMACHAL PRADESH	Availability	1053	1925	07-Mar-25
	Requirement	1057	1976	
	Surplus / Shortfall	-3	-51	
	% Surplus / Shortfall	-0.3%	-2.6%	
J&K and LADAKH	Availability	1270	2510	No Revision submitted
	Requirement	1711	3263	
	Surplus / Shortfall	-441	-753	
	% Surplus / Shortfall	-25.8%	-23.1%	
PUNJAB	Availability	6910	11230	11-Mar-25
	Requirement	4744	10410	
	Surplus / Shortfall	2166	820	
	% Surplus / Shortfall	45.7%	7.9%	
RAJASTHAN	Availability	9220	19210	11-Mar-25
	Requirement	9300	17000	
	Surplus / Shortfall	-80	2210	
	% Surplus / Shortfall	-0.9%	13.0%	
UTTAR PRADESH	Availability	13170	27700	07-Mar-25
	Requirement	12900	27700	
	Surplus / Shortfall	270	0	
	% Surplus / Shortfall	2.1%	0.0%	
UTTARAKHAND	Availability	1284	2320	06-Mar-25
	Requirement	1305	2360	
	Surplus / Shortfall	-21	-40	
	% Surplus / Shortfall	-1.6%	-1.7%	

State / UT	Availability / Requirement	Revised Energy (MU)	Revised Peak (MW)	Date of revision
	Availability	43539	76300	
NORTHERN REGION	Requirement	38996	72300	
	Surplus / Shortfall	4543	4000	
	% Surplus / Shortfall	11.7%	5.5%	

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

A.6.1. The updated status of agenda items is enclosed at ***Annexure-A.I.***

A.6.2. In 229th OCC, SLDCs were requested again to coordinate with respective Transmission Utilities of states/UTs and submit details about the updated status of Down Stream network by State Utilities from ISTS Station (enclosed as ***Annexure-A-I. I***) before every OCC meeting.

A.7. NR Islanding scheme

A.7.1. In the meeting (229th OCC), UPPTCL representative apprised that Unchahar-Lucknow Islanding scheme has been successfully implemented and same is visible at SCADA of UPSLDC also (except 01 Substation: 132 kV S/s Hussainganj. The data of above 01 substation is not available at UPSLDC due to lack of OPGW. The work of laying OPGW cable is under progress and same shall be completed by end of April.

A.7.2. With regard to Agra islanding scheme, UPPTCL representative apprised forum that they have submitted their proposal of procurement of UFRs for the Lalitpur-Agra islanding scheme to the PSDF Secretariat for PSDF funding. A meeting was held on 07.03.2025, during which some queries regarding the scheme were raised and UPPTCL was asked to submit their board approval. UPPTCL was requested to provide board approval for the proposal. The representative of UPPTCL stated that they are currently preparing responses to the PSDF Secretariat's queries and will resubmit the proposal once it has been approved by the UPPTCL board.

A.7.3. RRVPNL representative stated that they have submitted their proposal of Jodhpur-Barmer-Rajwest islanding scheme to PSDF Secretariat on 16.01.2025 for PSDF funding. A meeting was held on 07.03.2025, during which some queries regarding the scheme were raised. RRVPNL representative informed that responses to these queries are currently being prepared.

A.7.4. RRVPNL representative mentioned that DPR for implementation of Suratgarh islanding scheme would be submitted after confirmation of status of PSDF funding from PSDF Sectt. for Jodhpur-Barmer-Rajwest islanding scheme.

A.7.5. With regard to Patiala-Nabha Power Rajpura islanding scheme representative from Punjab SLDC informed that they have submitted their proposal to PSDF Secretariat. The PSDF Secretariat had raised some observation regarding the scheme which has been replied by Punjab.

A.7.6. HPSLDC representative apprised that proposed UFR scheme for Kullu- Manali islanding scheme has been recommended by the Appraisal Committee of the State PSDF for approval of Hon'ble HPERC. The islanding scheme would now be taken up in the Monitoring committee for State PSDF funding approval. Date of Meeting of Monitoring committee has not yet been decided.

A.7.7. Further, with regard to Shimla-Solan Islanding scheme, a separate meeting was conducted by NRPC Sect.. with HPSLDC, HPSEBL and M/s GE on 18.09.2024) wherein HPSEBL informed that payment to M/s GE would be made within two months and subsequently work regarding the implementation in revised setting of Bhaba HEP would be completed by M/s GE within one month. In the 227th OCC meeting, HPSLDC also informed that they had sent a letter to all concerned generators requesting them to lower the UFR settings of their generators to below 47.5 Hz. In this regard, HPSLDC has intimated vide letter dated 06.01.2025 (a copy of which is attached as **Annexure-A.II**) that expect generators under HPSEBL and Sandhya HEP (which is under force outage) all the rest generators have lower the UFR settings of their generators to below 47.5 Hz. In the 229th OCC Meeting, HPSLDC representative apprised that payment to M/s GE has not yet been done by GE.

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

A.8.1. In the meeting, NRPC representative apprised forum about the coal stock position of generating stations in northern region during current month (till 10th March 2025).

A.8.2. Average coal stock position of generating stations in northern region, having critical stock, during first ten days of March 2025 is NIL.

A.9. Updating outage Details by Generating Station/utilities (Agenda by CEA)

A.9.1 NRPC representative apprised forum that to enhance the monitoring of approved Planned Maintenance schedules, CEA has asked that information regarding actual maintenance availed against approved planned maintenance is to be updated on priority by respective RPCs regularly on monthly basis.

A.9.2 In the 221st OCC meeting of NRPC, forum asked generating stations of NR to update the status of Planned Maintenance schedules versus actual maintenance

availed for the previous month before every OCC meeting and it was decided that to enhance the monitoring of approved Planned Maintenance schedules the said agenda item shall be taken as rolling/follow-up agenda in OCC meetings.

A.9.3 In this regard, list of Planned Maintenance schedules versus actual maintenance availed for the year 2024-25 for the month of February-2025 attached as Annexure-A. IV of agenda was shared with the relevant generating stations of NR and based on the inputs received from them the updated information is attached as **Annexure-A.III**.

A.10. Implementation of AUFLS scheme in accordance with the report of Task Force on Automatic under Frequency Load Shedding (AUFLS) (Agenda by NRPC Sectt.)

A.10.1. NRPC representative apprised forum that in line with the report of Task Force on Automatic under Frequency Load Shedding (AUFLS) and df/dt scheme and Region wise quantum of load shedding in different stages of AUFLS communicated by NPC Secretariat, NRPC Sectt. has computed Stage-wise AUFLS relief quantum for each State/UT of NR. 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**
	Stage-1 Relief	Stage-2 Relief	Stage-3 Relief	Stage-4 Relief	
Chandigarh	15.850	19.020	22.190	22.190	**79.248**
Delhi	299.338	359.205	419.073	419.073	**1496.690**
Haryana	526.332	631.599	736.865	736.865	**2631.661**
Himachal Pradesh	97.246	116.695	136.145	136.145	**486.231**
UT J&K & Ladakh	145.406	174.487	203.569	203.569	**727.031**
Punjab	601.638	721.966	842.293	842.293	**3008.190**
Rajasthan	811.056	973.268	1135.479	1135.479	**4055.282**
Uttar Pradesh	1191.769	1430.122	1668.476	1668.476	**5958.843**
Uttarakhand	113.069	135.682	158.296	158.296	**565.343**
Total	**3801.704**	**4562.045**	**5322.386**	**5322.386**	**19008.52**

A.10.2. In 226th OCC and 227th OCC meeting, aforementioned relief was communicated to respective SLDC's of NR and forum asked States/UTs of NR to communicate

feeder-wise, Stage-wise AUFLS quantum to NRPC/NRLDC before next OCC meeting.

A.10.3. In 15th NPC meeting held on 14.11.2024 following was approved by the committee: -

- The AUFLS scheme must ensure Pumped storage hydro plants operating in pumping mode or ESS operating in charging mode shall be automatically disconnected before the first stage of UFR.
- Bulk consumers connected to ISTS and STU networks must implement the UFR scheme. Compliance should be ensured during the grant of connectivity by CTU and STU.
- The implementation of the **AUFLS must be completed by March 2025**. RPCs are required to regularly monitor the implementation of the UFR scheme as a whole including the bulk consumers connected at the ISTS level. RPCs may communicate above decisions to the respective States for implementation.

A.10.4. In 229th OCC meeting respective SLDCs of NR States/UTs have to confirm via mail the relief quantum at different stages of AUFLS as on present date.

A.10.5. As per the information received from SLDC's of NR States/UTs the current relief quantum at different stages of AUFLS is mentioned 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
	Stage-1 Relief	Stage-2 Relief	Stage-3 Relief	Stage-4 Relief	
Chandigarh	NIL	NIL	NIL	NIL	**NIL**
Delhi	350	335	330	435	**1450**
Haryana	308	309	312	314	**1243**
Himachal Pradesh	153	197	80	35	**465**
UT J&K & Ladakh	155.6	204.3	204.2	214.2	**778.3**
Punjab	249	298.49	1035.97	270	**1853.46**
Rajasthan	461	340	348	344	**1493**
Uttar Pradesh	2580.33	2187.72	2013	1757	**8538.05**
Uttarakhand	486	67	87	241	**881**
Total	**4742.93**	**3938.51**	**4410.17**	**3610.2**	**16701.81**

A.10.6. NRPC Representative informed states SLDC that there should not be any duplicity of feeders mapped in AUFLS with the feeders mapped under ADMS and df/dt.

Decision of OCC Forum:

Forum suggested to have a separate meeting before next NPC meeting to get the status of feeder-wise, Stage-wise AUFLS quantum data of states till March, 2025.

A.11. Planned Maintenance schedule of thermal generating stations for FY 2025-26 (Agenda by NRPC Sectt.)

A.11.1 NRPC representative apprised forum that CEA vide mail dated 27.02.205 has asked RPC's to communicate to all the thermal generators in their respective regions to adhere to the approved planned outages for FY 2025-26. No deviation should be entertained to generators. (copy of approved planned maintenance schedule of thermal generating stations for FY 2025-26 are attached as **Annexure-A. IV of agenda**)

Decision of OCC Forum:

All thermal generators in the NR region were directed to adhere to the approved planned outages for FY 2025-26.

A.12. Periodic testing of generators and FACTS/HVDC Devices (Agenda by NRPC Sectt.)

A.12.1 NRPC representative stated that Regulation 40 (1) of CERC (IEGC) Regulations, 2023 stipulate 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.12.2 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 or RLDC or NLDC or RPC, as the case may be.

A.12.3 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."

A.12.4 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 or RLDC or 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.12.5 In accordance with above, Generators and HVDC/FACT owners were supposed to furnish the Testing schedule for 2025-26 by 31st October 2024.

A.12.6 The procedure for testing is available at the NLDC website at https://posoco.in/wpcontent/uploads/2023/09/Final-Procedure-of-Periodic-Testing-for-Power-SystemElements-submitted-to-CERC.pdf. This may be used for testing.

A.12.7 In 73rd NRPC meeting, NRPC forum asked all Generators and HVDC/FACT owners to furnish the Testing schedule for 2024-25 and 2045-26 to NRPC/NRLDC at the earliest.

A.12.8 In view of this, a google sheet was prepared and it was requested that testing plan for 2024-25 and 2025-26 may be updated in the sheet provided at the earliest as per the requirement of IEGC 2023 and decision of 73rd NRPC meeting.

Google sheet link is:

https://docs.google.com/spreadsheets/d/18KTutJ66bK9LdOOhuHfzlmBeYH7_TgMs/edit?gid=849497112#gid=849497112

A.12.9 NRPC representative informed the forum that inputs were received from Mahi HEP, POWERGRID for TCR, HVDC Poles and NR-1 STATCOMS. Details were filled by Suratgarh TPS and NHPC, however, no timelines for testing were provided in this regard.

A.12.10 In view of the above, MS NRPC asked Generators and HVDC/FACT owners to furnish Testing schedule for 2024-25 and 2025-26 in the format attached as **Annexure-A.V. of agenda.**

Decision of OCC Forum:

OCC forum asked all Generators and HVDC/FACT owners to update the Testing schedule for 2024-25 and 2025-26 in the below mentioned google sheet link at the earliest

Google sheet link is:

https://docs.google.com/spreadsheets/d/18KTutJ66bK9LdOOhuHfzlmBeYH7_TgMs/edit?gid=849497112#gid=849497112

A.13. Implementation of SPS for 2X315 MVA, 400/220kV ICTs at 400kV GSS Merta (Agenda by RRVPNL)

A.13.1. NRPC representative apprised forum that RRVPNL vide letter dated 02.03.2025 has submitted that SPS for the 2X315 MVA, 400/220 kV ICTs at 400kV GSS Merta approved in the 194th OCC was based on taking the trip command from the 86 relay installed on 220kV side of both the 2X315 MVA, 400/220kV ICTs at 400kV GSS Merta.

A.13.2. The existing SPS give relief in the event of tripping of the lines and it does not take care of the ICT overloading. Hence, a generalized SPS is required which can take care of the tripping of the ICTs and overloading of the ICTs.

A.13.3. In this regard, revised SPS for the 2X315 MVA, 400/220 kV ICTs at 400kV GSS Merta has been formulated by RRVPNL (details of the SPS along with revised logic is attached as **Annexure-A.VI** of agenda).

A.13.4. NRLDC representative highlighted following points –

- Proposed SPS logic seems to be ok from operational point of view, however time delay settings may be discussed in upcoming Protection Sub-committee meeting.
- RVPN may also review SPS logic at other sub-stations having similar issues. Comprehensive proposal may be brought up in next Protection Sub-committee meeting.
- Grid disturbance event was observed in 10.03.2025 leading to Load loss of more than 500 MW. SPS operated at 400/220 KV Bikaner, then Merta ICTs will trip on overloading. Accordingly, RVPN to review all SPS in Rajasthan state so that operation of SPS (opening of feeders at 220 KV or 132 KV level to manage ICT loading) does not lead to cascade tripping.
- As discussed previously on many occasions, ICT capacity augmentation at RVPN substations is very essential.
- MS, NRPC mentioned that proposal of RRVPNL for revised SPS of 2X315 MVA, 400/220kV ICTs at 400kV GSS Merta seems to be in order. However, agenda may be discussed in protection sub-committee meeting for time delay settings. He further, asked RVPN to review SPS logic at other sub-stations having similar issues and submit a comprehensive proposal in next Protection Sub-committee meeting for the stations where SPS logic w.r.t to relay settings needs to be revised.

Decision of OCC Forum:

OCC Forum in principle agreed with proposal, however agenda may be discussed in protection sub-committee meeting for time delay settings. OCC Forum asked RVPN to review SPS logic at other sub-stations having similar issues and submit a comprehensive proposal in next Protection Sub-committee meeting for the stations where SPS logic w.r.t to relay settings needs to be revised.

A.14. To expedite the execution of the proposed temporary arrangement and provide the latest status of work progress of 400kV SCSTPS-Babai line (Agenda by RVUNL)

A.14.1. NRPC representative apprised the forum that RVUNL had intimated that 400KV STPS Switch-yard gets overloaded due to heavy import of power from 400KV SSTPS-SCSTPS interconnectors 1&2 which in turn imports power from 400kV SCSTPS-Bikaner-1&2 feeders. These Bikaner feeders feed the solar power during Solar hours and thus overloads the 400 KV Buses of STPS switch-yard.

A.14.2. 400 KV SCSTPS-Babai lines were proposed to carry out the power evacuation of SCSTPS/solar power. But these lines are under construction since last 6-7 years. Due to non-evacuation of power from Babai lines and low export or import power from Bikaner lines during solar hours the buses of 400KV switch-yard of SSTPS becomes heavily loaded. The Al. pipe buses are maintained and strengthened time to time but jumpers and isolator contacts are always prone to develop hotspot on overloading.

A.14.3. He also mentioned that a meeting in this regard was held on 19.10.2024 among NRPC, NRLDC and representatives of various power utilities of Rajasthan. In the meeting, RVPN representative had assured that work on 400 KV SCSTPS- Babai lines is likely to be completed by March,2025. In addition to this, Rajasthan SLDC had proposed of interconnecting 400 KV SCSTPS-Babai line to 400 KV SSTPS-Ratangarh line which will bypass the power from 400KV SSTPS switch-yard.

A.14.4. In the meeting (dtd. 19.10.2024), it was also decided that SLDC & RRVPNL will jointly study as per the revised actual data to check the load flow/loading condition of lines if the new arrangement is carried out so that the benefits are visible explicitly.

A.14.5. Rajasthan SLDC representative informed the forum that work for this temporary arrangement of interconnection has been started and had also applied for shutdown of 400 KV SSTPS-Ratangarh line to NRLDC.

A.14.6. SE(O), NRPC asked Rajasthan to share the study and field survey report for temporary arrangement with NRPC and NRLDC.

A.14.7. GM(SO), NRLDC asked Rajasthan to submit relevant documents for FTC approval for connectivity before availing shutdown.

A.14.8. Regarding timeline for the completion of construction of 400 KV SCSTPS-Babai lines, RVPNL representative informed the forum that out of 245 KM of line length, about 98 KM of line construction work is under progress and is expected to be commissioned by June, 2025.

Decision of OCC Forum:

Forum asked RVPNL & Rajasthan SLDC to expedite the completion of construction of 400 KV SCSTPS-Babai lines. Also, Rajasthan SLDC shall share the study and field survey report for temporary arrangement with NRPC and NRLDC.

A.15. Capacity Augmentation of existing ICT-1 & 2 at Hisar in place of commissioning of new ICT-4 (Agenda by Powergrid)

A.15.1. POWERGRID representative apprised forum that 400/200KV Hisar substation was commissioned in the year 1994. 315 MVA BHEL make ICT-1 & 2 were also commissioned during the same time. He mentioned that the ICT's are more than 30 years old & Capacitance & tan delta of the winding is deteriorating with age.

Also, frequent oil leakages are also observed which are being attended from time to time.

A.15.2. Further, Powergrid submitted that 01 number of additional 500MVA ICT (4th ICT) along with transformer bays for capacity augmentation was approved in 33rd CMETS held on 05.08.2024. Keeping in view of the ageing of existing ICTs 1 & 2 and lead time & resources required in construction of new bays, he proposed that the ICT-1 and ICT-2 may be replaced with upcoming new 500MVA ICT, and an additional ICT may also be sanctioned.

A.15.3. NRPC representative asked for a third-party report confirming the deterioration of windings etc. of transformer. POWERGRID agreed to provide the same.

A.15.4. GM(SO), NRLDC expressed the view that a study needs to be conducted to determine whether an additional ICT would be required if Powergrid proposes to replace the existing two 315 MVA ICTs with a 500 MVA ICT.

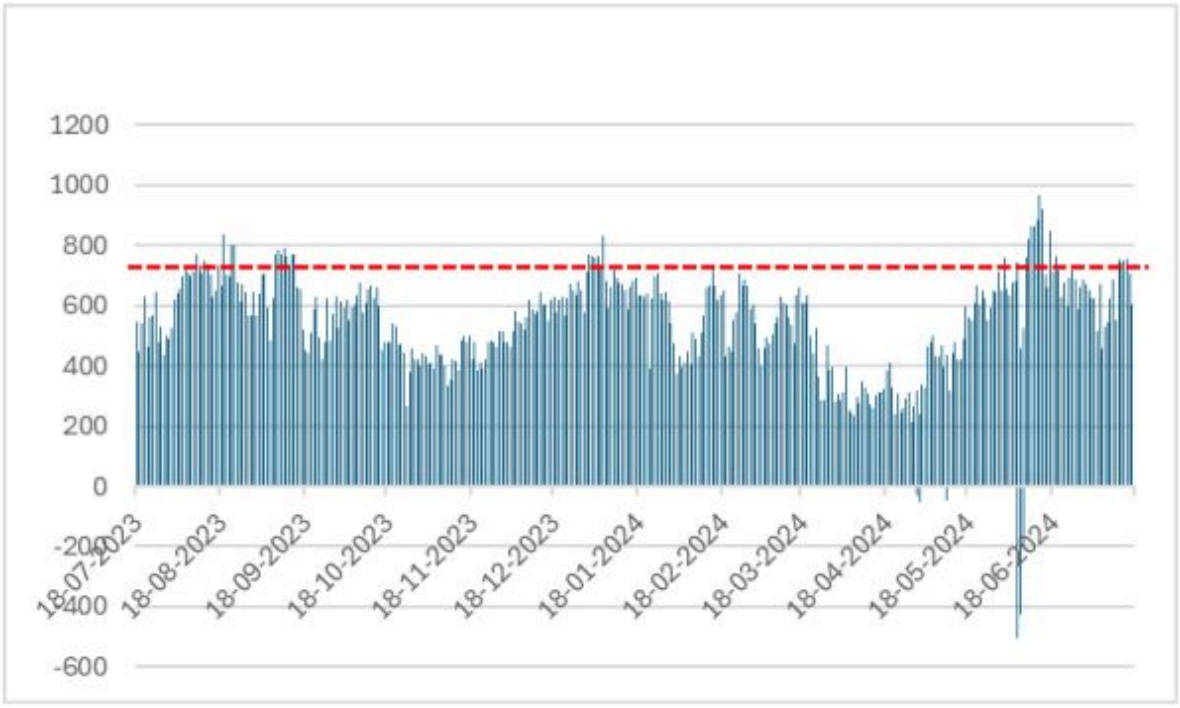
A.15.5. CTU representative suggested that if the ICT replacement is to be carried out, it should be done for all three ICTs in order to achieve an additional 500 MVA of relief.

Decision of OCC Forum:

Forum asked NRLDC and CTU to do load flow study and submit the observation before next OCC Meeting. POWERGRID was also directed to submit a third-party report confirming the condition of ICTs.

A.16. Complete Shutdown of 200KV Buses at Hisar substation for replacement of 200KV Jack bus Single Moose conductor with Twin Moose for capacity augmentation in view of high peak loading during summer season (Agenda by POWERGRID)

A.16.1. POWERGRID representative apprised forum that 400/220kV Hisar (PG) Substation have 3x315 MVA ICTs thus makes total transformation capacity of 945 MVA. From the loading pattern of Hisar ICTs (3x315 MVA), it is observed that maximum loading on 400/220 kV ICTs is about 965 MW (ICT-1-333MW, ICT-2-333 MW & ICT-3-297MW) in past one year. From the analysis, it emerged that peak loading of ICTs is breaching N-1 limit (about 770 MW) in summer season (May'24-Jul'24) for sufficient duration of time. The loading pattern of Hisar ICTs for past one year is as below:



Loading of Hisar ICTs of Past one year (Source: Grid-India)

A.16.2. The 220KV Jack bus has Single Moose conductor presently which shall be insufficient to handle the peak loading in summers. POWERGRID representative proposed that complete shutdown of 220KV Bus-1 & 2 may be allowed for replacement of single Moose conductor with Twin Moose to avoid hotspots and frequent shutdowns during the summer months.

A.16.3. MS, NRPC suggested POWERGRID to coordinate with HVPN, BBMB and Haryana SLDC and conduct a physical visit at site and to submit to this forum a joint proposal for discussion.

Decision of OCC Forum:

Forum asked POWERGRID to coordinate with HVPN, BBMB and Haryana SLDC and conduct a physical visit at site and to submit to this forum a joint proposal for discussion in next OCC Meeting.

A.17. Requirement of complete 400 kV Bus-1 &2 shutdown at Ballabgarh SS for replacement of damaged sections 400 kV jack buses (Agenda by POWERGRID)

A.17.1. Powergrid representative mentioned that in reference to the 224th OCC Meeting, a meeting was called at 400kV Ballabgarh Substation on Dated 20.01.2025 for consent of M/s BBMB and M/s HVPNL for according continuous shut down of 400kV Bus 1 & 2(Phase-I) and 400kV Bus 3 &4(Phase-II) and to discuss about

how M/s HVPNL/M/s BBMB will manage their loads during the complete shutdown of 400 kV Bus-1&2 and Bus-3&4 at Ballabgarh substations.

A.17.2. Accordingly, as discussed during the said meeting, Jack bus replacement of 400KV Bus-3 & 4 has been completed on 07.03.2025. However, for Bus-1 & 2 M/s HVPNL stated that consent will be given after their load flow study and confirmation of load management by Haryana SLDC.

A.17.3. Powergrid mentioned that the subject work needs to be completed in March'25 before onset of summer season to avoid any untoward incident. Henceforth, it requested from M/s HVPNL & Haryana SLDC to provide their consent for S/d of Bus-1 & 2 for replacement of Jack bus from 17.03.2025.

A.17.4. Haryana SLDC representative stated that a change of 220kV connectivity arrangement is about to happen in the coming days in Gurugram & Faridabad area after which 220kV D/C connectivity will take place from 400kV Substation Kadarpur to 220kV Substation Palli and similarly from 400kV Substation Kadarpur to 220kV Substation Sec-65, Gurugram D/C.

A.17.5. Further, he mentioned that this will ensure a better redundant arrangement in the area to facilitate the proposed simultaneous shutdown of 400kV Bus-1 and Bus-2 at 400kV Substation Ballabgarh(PG). Presently, it is very difficult to manage area load as Gurugram & Faridabad area is majorly dependent upon 220kV supply from Samaypur BBMB which in turn is solely dependent upon 400kV Substation, Ballabgarh (PG).

Decision of OCC Forum:

Forum was of view that as suggested by Haryana SLDC after commissioning of 400kV Kadarpur substation, shutdown of 400kV Bus-1 and Bus-2 at 400kV Substation Ballabgarh(PG) to be facilitated so that work is completed before 30th April 2025.

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

B.1 NR Grid Highlights for February 2025 and demand forecasting related

NRLDC representative presented the following grid highlights for month of Feb'2025:

Demand met details of NR

S.No	Constituents	Max Demand met (in MW)	Date & Time of Max Demand met	Max Consumption (in MUs)	Date of Max Consumption	Average Demand met (in Mus)
1	Chandigarh	265	05.02.25 at 07:00	5.1	05.02.25	3.9

2	Delhi	4657	07.02.25 at 10:10	78.7	07.02.25	72.9
3	Haryana	9602	07.02.25 at 09:45	172.0	12.02.25	157.0
4	H.P.	2193	18.02.25 at 07:45	39.5	25.02.25	37.5
5	J&K	3057	05.02.25 at 10:00	70.3	04.02.25	61.7
6	Punjab	10165	07.02.25 at 11:15	180.0	07.02.25	154.4
7	Rajasthan	19165	12.02.25 at 11:00	355.0	08.02.25	344.6
8	UP	20456	08.02.25 at 18:53	363.7	26.02.25	346.9
9	Uttarakhand	2477	07.02.25 at 08:00	45.3	04.02.25	42.7
***10**	**Northern Region**	**69055**	**07.02.25 at 10:10**	**1275.8**	**08.02.25**	**1221.6**

*As per SCADA

- In Feb'25, the Maximum energy consumption of Northern Region was **1276 MUs** on 08th Feb'25 and it was 6.96 % higher than Feb'24 (1193 MU 16th Feb'24)

- In Feb'25, the Average energy consumption per day of Northern Region was **1221.6 MUs** and it was 5.91 % higher than Feb'24 (1153 MUs/day)

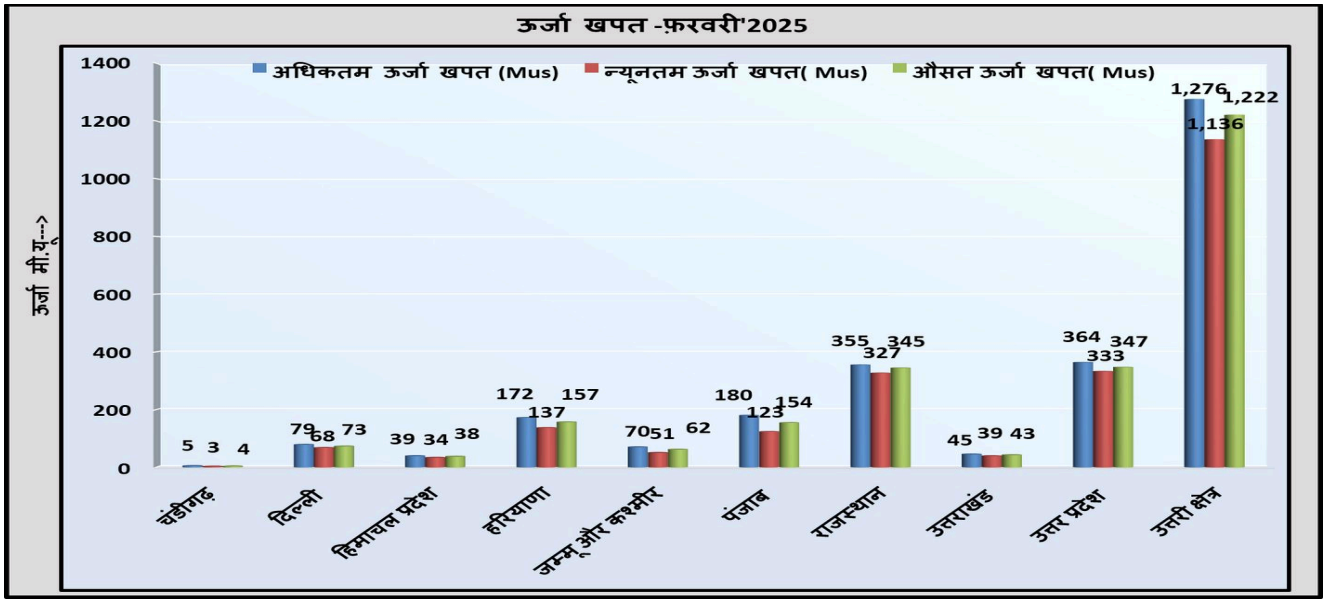
- In Feb'25, the Maximum Demand met of Northern Region was **68573 MW** on 07th Feb'25 @10:00 hours (*as per SCADA data)* as compared to 63481 MW on 16th Feb'24 @10:00hours.

Comparison of Average Energy Consumption (MUs/Day) of NR States for the Feb'24 vs Feb'25

क्षेत्र/राज्य	फ़रवरी- 2024	फ़रवरी- 2025	% अंतर
चंडीगढ़	4	3.9	-3.7%
दिल्ली	75	72.9	-2.8%
हिमाचल प्रदेश	35.5	157.0	5.7%
हरियाणा	146.7	37.5	7.0%

जम्मू और कश्मीर	57.7	61.7	6.9%
पंजाब	155.8	154.4	-0.9%
राजस्थान	315.8	344.6	9.1%
उत्तराखंड	42.4	346.9	0.7%
उत्तर प्रदेश	320.4	42.7	8.3%
उत्तरी क्षेत्र	1153.4	1221.6	5.9%

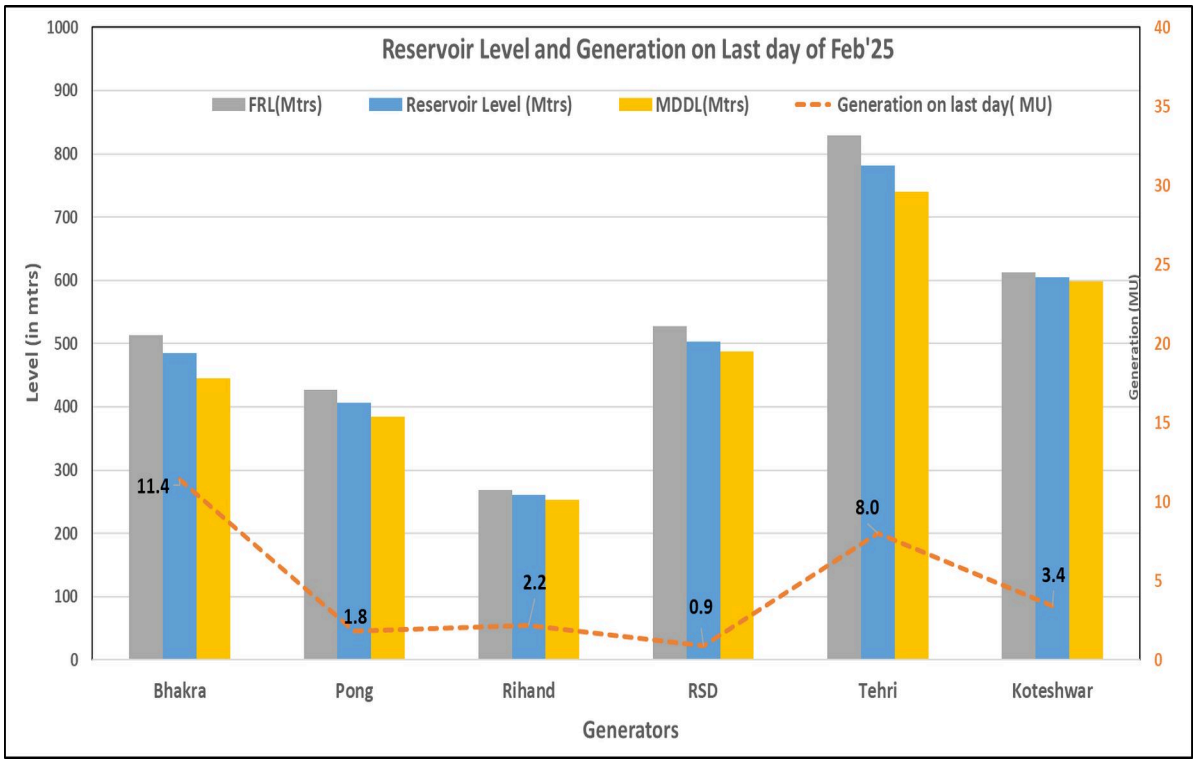
Energy Consumptions



Frequency profile

Month	Avg. Freq. (Hz)	Max. Freq. (Hz)	Min. Freq. (Hz)	<49.90 (% time)	49.90 – 50.05 (% time)	>50.05 (% time)
Feb'25	49.999	50.335 (24.02.25 at 08:00:00 hrs)	49.549 (19.02.25 at 12:43:30 hrs)	6.24	75.35	18.41
Feb'24	50.000	50.346 (01.02.24 at 06:03:00 hrs)	49.574 (18.02.24 at 09:18:50 hrs)	6.23	74.06	19.69

Reservoir Level and Generation on Last Day of Month



RESERVOIR	Parameters			Present Parameters		LAST YEAR	
	MDDL (Mts)	FRL (Mts)	Energy Content at FRL	Level (Mts)	Energy (MU)	Level (Mts)	Energy (MU)
Bhakra	445.62	513.59	1,728.8	480.68	475	485.33	594
Chamera-I	748.75	760	753.95	757.34	9	-	-
Gandhisagar	381	399.9	725	-	-	-	-
Jawahar Sagar	295.96	298.7	2.01	-	-	-	-
Koteshwar	598.5	612.5	610.73	611.4	5	604.33	2
Pong	384.05	426.72	1,084	396.09	146	406.6	389
RPS	343.81	352.81	175.66	-	-	-	-
RSD	487.91	527.91	390.3	492.72	37	502.6	137
Rihand	252.98	268.22	860.5	-	-	-	-
Tehri	740.04	830	1,164.11	781.38	347	781.16	344
TOTAL	-	-	-	-	1,019	-	1,466

Detailed presentation on grid highlights of Feb'2025 as shared by NRLDC in OCC meeting is attached as **Annexure-B.I.**

B.2 Demand forecasting and resource adequacy related

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.

Commission has issued the following directions to NLDC, RLDCs, and SLDCs in connection with the implementation of Regulations 31 and 33 of the Grid Code to address the anticipated surge in demand of electricity during October 2024 on account of seasonal variations:

a) All the State Load Despatch Centres and RLDCs shall furnish the details of operational planning undertaken by them in terms of Regulation 31(4) (a) of the Grid Code especially for October 2024. RLDC shall validate the adequacy of resources in terms of Regulation 31(4)(b) of the Grid Code.

b) All State Load Despatch Centres and Regional Load Despatch Centres shall prepare the worst-case scenario due to possible surge in demand during the period 1.10.2024 to 31.10.2024 in their respective control area and submit within seven days to the Commission with a copy to National Load Despatch Centre.

c) The State Load Despatch Centres or Regional Load Despatch Centres, as the case may be, should assess their demand-generation scenario in the upcoming months, ensure the optimum generation, avoid undesirable planned outages, and advise the generating company to offer their availability. The State Load Despatch Centre or Regional Load Despatch Centre shall ensure the optimum scheduling during the shortage period and surplus power to get despatched during the deficit period.

d) The Distribution Companies, in case of a shortage scenario, can procure the power from surplus or requisitioned capacity of other states so that optimum despatch can be ensured for safe and reliable power system operations. The State Load Despatch Centre shall monitor the generation-demand deficit of the respective distribution companies.

e) The generating companies operating their plant with capacity less than its installed capacity due to technical issues, i.e., capacity under partial outage or forced outage, are advised to fix the issues to ensure the maximum generation capacity on-bar.

f) The draw schedule of the respective control area needs to adhere to prevent the reduction of system frequency. The State Load Despatch Centre or Regional Load Despatch Centre, as the case may be, shall monitor the deviation of the key system parameters.

g) The State Load Despatch Centres or Regional Load Despatch Centres, as the case may be, shall issue the system alerts to their respective grid-connected entities for the possible deficit during the likely surge in demand

The Regional Load Despatch Centres and State Load Despatch Centres shall submit the report on the implementation of the above measures, a load-generation scenario in their respective control areas, and any other measures taken to address the deficit of power supply during the period 1.10.2024 to 31.10.2024.

NLDC, RLDCs, and SLDCs were directed to submit their responses to the measures contained in para 9 of this order by 16.10.2024.

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. Further, as per MOM (Annex B.I of agenda) issued by Hon'ble CERC on 05.03.2025, following points are to be noted:

(a) Only few of the NR SLDCs are furnishing the demand estimation and resource adequacy data as per the specified timelines.

(b) NRLDC shall hold discussions and interactions with NR SLDCs to ensure they are well-equipped to assess their resource adequacy and reserve requirements effectively. This may include providing the necessary tools and frameworks for better forecasting and planning.

(c) NR SLDCs are not maintaining the reserves as per the allocated quantum by the NLDC as per the Grid Code. If reserves are to be maintained, a specific portion of capacity must be earmarked exclusively as a reserve and that quantum may not be scheduled unless under contingency. All states must ensure maintaining the reserve for their control area as per the allocation done by the NLDC as per the Grid Code.

(d) To meet the required deficit for the upcoming peak months, the states should do the advance planning for power procurement including bilateral contract and short-term contract. The States should not be dependent on RTM/ DAM Purchases.

(e) The implementation of the SAMAST Project is required to be pushed by SLDCs of Haryana, Uttarakhand, Punjab, J&K, Punjab and Delhi. A specific timeline should be fixed for installation of the SAMAST Project.

(f) The SLDCs having shortage of manpower should proactively take up the matter with the concerned competent authorities for the requirement of additional manpower as per the present sanctioned strength and also for approval of revised sanction strength as per the MoP Workforce Adequacy Guidelines for Load Despatch Centres.

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 February-2025 as per Clause 31(4) (a) & (b) of IEGC-2023 as presented in 229 OCC meeting is shown below:

State/Entity	Day Ahead (2025-26)	Week Ahead	Month Ahead (Mar 2025)	Year-Ahead
Punjab	As per Format	As per Format but not as per timeline	As per Format	Not received
Haryana	Demand and Resource not as per format	Not received	Only Demand	Not received
Delhi	As per Format	As per Format	As per Format	Only Demand
Rajasthan	As per Format	Not received	Not received	Not received
Uttar Pradesh	As per Format	As per Format	As per Format	As per Format
Uttarakhand	Demand and Resource not as per format	Only Demand	Not received	Not received
Himachal Pradesh	As per Format	As per Format	As per Format	As per Format
J&K and Ladakh (UT)	As per Format	Not received	As per Format but not as per timeline	Not received
Chandigarh (UT)	As per Format	As per Format	Not received	Not received

In accordance with above, all SLDCs were 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/1KWY4G9gTBLV5wTJkhGEIeRptKP-QbhjL?usp=drive_link* to NRLDC through mail (nrldcmis@grid-india.in) and FTP as per above timeline.

In 229 OCC meeting, NRLDC representative stated that data on day ahead basis which is received from Haryana and Uttarakhand is not as per NRLDC format. It was further mentioned that NRLDC is in process of developing a code/program for 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 NRLDC end.

Haryana SLDC stated that they have taken up the matter with DISCOMS and they would be sharing data as per NRLDC format.

Uttarakhand SLDC stated that they have also asked their DISCOM for the same. DISCOM has taken up the matter with their consultant and it is expected that data would be provided in NRLDC format shortly.

The relevant clauses from IEGC 2023 related to demand forecasting exercise and resource adequacy exercise as discussed in 225 OCC meeting are enclosed in Annexure-B.II of agenda:

All SLDCs need to take actions at their end for timely submission of demand forecasting and resource adequacy data on day-ahead, week-ahead, month ahead and year ahead basis. It was also requested to share actions being taken at SLDC end to ensure compliance of listed clauses of IEGC 2023 as Annexure-B.II of agenda.

Resource Adequacy guidelines issued by the CEA outline the roles and responsibilities of all stakeholders and provide a framework for RA planning in India. This matter was also discussed during the 52nd NRPC TCC meeting under Agenda Item A.12 to sensitize stakeholders on the importance of RA activities as per the approved CEA guidelines and IEGC provisions to enhance grid reliability. The format for data submission for ST-NRAP is provided in Annexure-II of the NLDC operating procedure (Link: *https://posoco.in/wp-content/uploads/2024/08/NLDC-Operating-Procedure_2024.pdf*).

During the 228th OCC meeting, CGM, NRLDC, reiterated the importance of conducting the self-audit exercise within the timelines mandated by regulations. He informed that NRLDC has already submitted its self-audit report to CERC and urged all stakeholders to do the same.

As per IEGC Clause 56.2(c), 'The self-audit reports by users, QCAs, and SNAs shall be submitted to the concerned RLDC or SLDC, as the case may be.' Failure to submit the self-audit report within the stipulated time-frame would be considered a non-compliance with IEGC regulations.

It was mentioned from NRLDC side that self-audit report has been received from NHPC and Koteshwar THDC.

During 229 OCC meeting, OCC asked all states to take actions at their end to ensure compliance of all regulations and guidelines w.r.t. resource adequacy framework. It was further discussed that NRLDC may also plan separate workshop for NR SLDCs before next OCC meeting.

SLDCs were also asked to maintain the reserves as per the allocated quantum by the NLDC as per the Grid Code. SLDCs were also asked to submit data to CERC as mentioned in MoM issued by CERC on 05.03.2025.

B.3 Monitoring of Data center/Electrolysers and their compliances before connection to the grid

National Green Hydrogen Mission launched in Jan 2023 has included in its objective to build capabilities to produce at least 5 Million Metric Tonne (MMT) of Green Hydrogen per annum by 2030, with potential to reach 10 MMT per annum with growth of export markets. Achieving this goal will require an estimated 60-100 GW of electrolyzer capacity installations. A significant portion of this load is expected to get connected at the ISTS (Inter-State Transmission System) level, primarily in concentrated green hydrogen zones across the country. In addition to electrolyzer load, a large quantum of data centre load is also expected to be connected at intra-state level in Northern region.

Following aspects of data centers and electrolysers need to be studied in detail:

1. Classification and Load Interface Assessment

- State of the art technology for electrolyzers, data centres and their characteristics
- Classification of the nature of these bulk consumer loads - distinguishing between Inverter-Based Resources (IBR) and traditional synchronous connections.
- Analyse load characteristics to inform tailored connection requirements and grid support functions.

2. Connection Code/Standard Development

- Ride-Through Capabilities: Define fault ride-through standards to maintain grid connection during disturbances.
- Voltage and Frequency Support: Establish dynamic support criteria for voltage regulation and frequency stability.
- Harmonic Compliance: Set standards for harmonic distortion limits to mitigate power quality impacts on the grid.
- Grid Supportive Control Modes: Specify droop and other frequency-sensitive control modes to contribute to grid frequency containment. Any other technical requirement

3. Reactive Power and Voltage Support Requirements

- Define reactive power requirements, including dynamic reactive capability specifications, to support voltage stability and local grid requirements.
- Establish reactive power capability curves for bulk consumer loads, ensuring alignment with grid voltage regulation needs during both normal and contingency conditions.

4. Ramping Requirements

- Determine acceptable ramp rate limits for bulk loads to prevent adverse impacts on grid stability, considering rapid load variations typical of electrolyzers and similar facilities.
- Specify maximum permissible ramping rates based on load characteristics and grid operational needs.

5. Energy Management and Curtailment Mechanisms

- Outline requirements for curtailment capabilities during peak load and contingency conditions to enhance grid flexibility and renewable integration.

6. Requirements to be specified for approval of First-time energlzatIon and Integration

- Model submission, telemetry, metering, trial operation, COD, disturbance records etc.

Furthermore, it may be noted that a committee has been setup for the same under Member Power System, CEA.

During 229 OCC meeting, NRLDC representative stated that SLDCs are required to share the details of Data Centers/Electrolysers functional in their respective states. The below mentioned format may be referred for sharing the details. It was also requested to obtain the telemeter's data of active power and reactive power consumption of data centers for one complete year at highest time resolution possible.

S.No.	Data Centre Or Electrolysers	Owner	Capacity	State	Connectivity via line/ICT at 220 kV level	Telemetry available(Yes/No)
1						

NRLDC representative also stated that information on following points may also be shared and taken up by all SLDCs of Northern region:

1. Availability of PMU on radial feeders supplying to Data Centers/Electrolysers

2. Phase wise power consumption trend as obtained from PMU for at least three scenarios of a day

3. Action by NRLDC/SLDC/DISCOM for PMU placement on the radial supply feeder.

MS NRPC stated that data centers load will be growing rapidly in the coming years and urged SLDCs to get involved in data sharing and regulation formulation exercise.

OCC asked all SLDCs to submit the information on the points as requested by NRLDC for further actions.

B.4 Summer Preparedness 2025 measures:

With the increase in temperature, demand of Northern Region starts increasing from March onwards every year. Summer of Northern region are typically hot and demand is also high during this time, therefore advance actions help in better grid operation.

Due to extreme weather conditions, high demand is observed during summer/monsoon months in Northern region. Along with high demand, high loading of lines and transformers and low voltages especially at transmission & distribution level are big challenge to safe and secure grid operation.

To overcome the commonly encountered challenges during summer months and ensuring smooth grid operation, following are few points which have been discussed on many occasions in previous OCC and TCC/ NRPC meetings and are required to be followed by all:

S. No.	Issues	Action plan	Action by
1	**Maintenance of reserves** During summer, in anticipation of increasing demand, adequate reserves shall be maintained. During summer, sudden outage of hydro units on silt or other major generation outage affects frequency/voltage, line loading, reliability and security of the corridor/control area/Generation complex etc. In events of sudden load crash, ISGS generators are being instructed to back down to 55% of their installed capacity.	In such cases, apart from portfolio management based on proper forecast as discussed above, re-starting of units under reserve shutdown at state as well as Inter-state level through appropriate transactions is required. Moreover, display window showing reserve available in ISGS generators has been developed at NRLDC. SLDCs are also requested to arrange for such display window at their control centers so that system operators readily know quantum of reserve available and hence better real-time actions can be taken. Rajasthan, Punjab, Haryana, Uttarakhand and Delhi were requested to take actions to	NRLDC, SLDCs, Generators

		ensure backing down of generators to 55% of their capacity in case of critical situations. This would ensure reserves in the system and also make us prepared for extreme situations. **Uttarakhand SLDC representative stated that matter was discussed in internal grid-coordination committee meeting. Technically the generator can provide further flexibility support however, the matter would be discussed in UERC first.** **NRLDC representative asked Uttarakhand SLDC to further take up the matter for further support from intrastate gas generators at UERC level as per CERC MoM and for further grid flexibility requirements.**	
2	**Furnishing of coal stock position** Advance information of coal stock of thermal plants ensures generating units availability and it is very important during high demand season.	It has been observed in past years that sudden information of outage of thermal units on coal unavailability poses challenges to meet high demand. It is therefore requested to update & share coal stock position of thermal plants at least a week in advance as agreed earlier in TCC/NRPC meeting.	Generators, SLDCs
3	**Portfolio Management, load staggering** As discussed in previous OCC meetings states such as UP, Rajasthan and Haryana connect/	Apart from GNA based arrangements based on forecast, other short term arrangements should also be planned for real time imbalances.	SLDCs

	disconnect large quantum of load at hourly boundaries resulting in frequency spikes and instantaneous over voltages. This has also resulted in tripping of lines on over voltage in recent past. In view of high/increasing demand & transmission constraints (if any) in importing the power or in case of any contingency in the system, states are requested to maximize their internal generation to avoid low frequency/low voltage operation or other related issues.	For example, ensuring adequate margin while scheduling own thermal generation, units on bar, maintenance of reserves, technical minimum operation of thermal units in case of load crash, tie up with neighbor states or hydro rich states and utilization of real-time market etc. to bridge the load-generation gap in real time.	
4	**Tower Strengthening and availability of ERS** There have been number of instances of tower collapse & damage in the past during thunder storms which resulted in constraints in power transmission for extended duration of time. Number of tower collapse incidents occurred during last summer also in May/Jun 2023 & 2024 in which many EHV lines including 765kV lines were out on tower collapse. Number of 400kV lines were also out in Rajasthan control area leading to curtailment of RE in Western Rajasthan.	All utilities were requested to ensure availability of Emergency Restoration System (ERS) for early restoration of supply. Extra precautions need to be taken care for important lines which have history of tripping during thunderstorm/ windstorm. **It was categorically mentioned from NRLDC side that PTCUL, HPPTCL, RRVPNL, JKPTCL and HVPNL are not having ERS as per the government norms**. **Number of shutdowns are also being facilitated in Rajasthan control area for NHAI related works, wherein there is sometimes requirement of RE generation curtailment also, this can be minimized if lines can be made available using ERS.** **ERS procurement may be**	STUs and POWERGRID

		expedited by licensees having deficit ERS than requirement as per the Govt. norms. **Each utility were asked to work on plan for tower repairing work before April.**	
5	**Reactive power management** Over the years during summer months, it has been observed that voltage profile during summer has improved. However, it is always essential to remain alert and take all necessary precautions to avoid any issues arising due to low voltages during summer months.	To maintain the voltage profile of Grid within IEGC band during summer, following known actions are suggested: • Switching ON Capacitor/Switching OFF reactor as per system requirement • Tap Optimization at 400/220kV by NRLDC and 220/132kV by respective state control area based on scatter plots of ICTs, offline studies, NRPC RE account etc. • Dynamic reactive support from Generator as per their capability curve. SLDC to monitor the same for intrastate generators. • SCADA Displays for better visualization during real-time	NRLDC, SLDCs
6	**Defense Mechanism** Several defense mechanism schemes have been recommended by various committees and advantages of such defense schemes have been discussed in many fora too. Majority of defense mechanism are to cover protection for under voltage, under frequency, rate of change of frequency, SPS for line/ICTs loading/generator complex evacuation etc. It is pertinent to mention here that SPS is only for operational defense and should not be considered as long term solution.	Till date it has been observed that performance of SPS is considerably low. Accurate operation of SPS is very essential and hence, mapping of SPS in SCADA is also being done. It is suggested that all state control area/Users shall ensure before start of summer that their protection and defense system are in working conditions and settings are as per the recommendations of NRPC.	Transmission utilities (STU/ISTS) and SLDCs

		In addition, all states/user need to provide update for changes or modifications carried out if any.	
7	**Telemetry** It has been observed number of times, that telemetry of large nos of stations is affected during contingency, inclement weather, or in day to day switching operations etc.	All were requested to ensure the telemetry of all analog & digital points of all stations at respective control centers. Large number of telemetry issues are also encountered with newly commissioned elements.	SLDCs STUs

Due to unfavourable weather conditions during summer months, All India demand remains on the higher side. On several days, it is observed that frequency is below the band for most of the time. In order to maintain the Grid security under such scenarios, all SLDCs were requested to take proactive steps as follows:

- Ensure that ADMS is in service and expedite its implementation if not commissioned. Latest status for NR states is shown below:

◎	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

- Ensure healthiness and availability of AUFLS and df/dt load shedding.
- Ensure revival of intrastate generators under economic shutdown/RSD based on requirement
- Ensure portfolio balancing through T-GNA/RTM market segments
- Ensure no under injection by the generators from schedule
- In case of inadequate margins in intrastate generators measures for emergency load regulation measures may be taken in interest of grid security.
- Pursue generators to expedite revival of thermal units under forced outage wherever feasible.

In this case, the list of radial feeders becomes very important. Utilities were requested number of times to update list of radial feeders which can be opened on the directions of NRLDC to regulate the demand. List of such radial feeders has been provided by respective utilities and is part of 'Operating Procedure of Northern

Region'. Latest list of radial feeders is also attached as **Annexure-B.III of agenda**. Following are the attributes for such feeders:

- Feeders shall be radial in nature
- They should usually have substantial load flow so that reduction of drawal can be prominently noticed on opening of such lines.

The opening of feeders is generally an extreme step which shall be required in case of threat to grid security and non-adherence to RLDC instructions to manage overdrawl by SLDCs/ DISCOMs. In such a case, every utility needs to take actions to support RLDC by following their instructions including opening of feeders.

During 229 OCC meeting, SLDCs were once again requested to verify that

- ***list of feeders are actually radial in nature and are likely to provide the expected relief***
- ***such feeders are not part of any other scheme such as any SPS, UFR or df/dt actuated shedding***
- ***In case of less number of radial feeders, feeders with dual supply may also be identified and same may be disconnected from both supply stations (with due care to avoid disturbance) so as to make sure that over drawl of state is controlled in case of sustained over drawl and low frequency operation upon instruction from NRLDC.***

Further, Telemetry is to be ensured for all such feeders for monitoring in real time by SLDC/ NRLDC. States were also advised to take remedial measures for minimizing sustained over drawl at low frequencies as per the IEGC.

B.5 Expediting SPS implementation before summer 2025:

As mentioned in previous agenda point, there is expected to be very high demand in Northern region during the month of May-Sep months. During the high demand period, it is observed that often the transmission system remains heavily loaded and may become N-1 non-compliant on several occasions. To overcome this N-1 non-compliance, planning for new transmission system is being carried out by CTUIL and CEA. However, it is observed that there are certain occasions when the transmission elements approved will take considerable time for commissioning. Due to this delay, the existing transmission system may get overloaded.

It was discussed that to address the issue and avoid major contingency due to cascading tripping, SPS are being designed to minimize impact of outage of one or more transmission elements. As per clause 29.14 of IEGC 2023,

"NLDC, RLDCs, SLDCs, CTU, STUs or users may identify the requirement of System Protection Schemes (SPS) (including inter-tripping and run-back) in the power system to operate the transmission system within operating limits and to protect against situations such as voltage collapse, cascade tripping and tripping of important corridors/flow-gates. Any such SPS at the intra-regional level shall be finalized by the concerned RPC. SPS at the inter-regional and cross-border levels shall be finalized by the NLDC in coordination with the concerned RPCs. SPS shall be installed and commissioned by the concerned users. SPS shall always be kept in

service. If any SPS at the intra-regional level is to be taken out of service, the permission of the concerned RLDC shall be required. If any SPS at the inter-regional and cross-border levels is to be taken out of service, permission of NLDC shall be required."

As per NRLDC, SPS at following substations need to be commissioned before summer 2025 so as to avoid major contingency incase of outage of one or more transmission element.

- Delhi SLDC to provide feeder details to be wired under SPS:

  - 765/400kV 2*1500MVA Jhatikara ICTs (Mundka section):
  - 765/400kV 2*1500MVA Jhatikara ICTs (Dwarka/Bamnauli section)
  - 400/220kV 4*500MVA Mandola ICTs
  - 400/220kV 2*315+2*500MVA Maharanibagh ICTs

During 229 OCC meeting, NRLDC representative also presented the studies done at their end for SPS at 765/400kV Jhatikara ICTs:

Load relief through proposed SPS required for 765/400kV ICTs @ Jhatikara

2 X 1500 MVA 765/400kV ICTs @ Jhatikara (Dwarka - Bamnauli Section)	
Max cummulative loading reached during 2024	N-1 Loading limit
2400 MW	1920 MW
Case 1 : Loading of both ICTs > 1920 MW but < 2200 MW and 1 ICT trips **Load shedding required :** *Bamnauli : 580 MW or* *Dwarka : 580 MW or* *Tughlakabad : 1080 MW*	
Case 2 : Loading of both ICTs > 2200* MW and 1 ICT trips **Load shedding required :** *Bamnauli : 1200 MW or* *Dwarka : 1200 MW or* *Tughlakabad : 2250 MW*	

2 X 1500 MVA 765/400kV ICTs @ Jhatikara (Mundka Section)	
Max cummulative loading reached during 2024	N-1 Loading limit
2470 MW	1950 MW
Case 1 : Loading of both ICTs > 1950 MW but < 2200 MW and 1 ICT trips Load shedding required : *Mundka : 520 MW* Case 2 : Loading of both ICTs > 2200* MW and 1 ICT trips Load shedding required : *Mundka : 1150 MW*	

***NOTE:** *Above load relief quantum is calculated based on maximum loading of ICTs observed during 2024.*

POWERGRID representative stated that ICT-5 at 765/400kV Jhatikara is not expected before this summer. NRLDC representative expressed concern on the same.

CTUIL representative stated that if 765/400kV Narela substation is commissioned before summer, load shedding incase of SPS operation would reduce as some load would be fed through 765/400kV Narela ICTs.

NRLDC representative also mentioned that DTL may preferably identify feeders at 220kV level or 66kV for wiring under SPS such that SPS is implemented before this summer season. Incase only 66kV level load is to be wired under SPS, same may be taken up in phase-II when required equipments are procured by SPS installing agency.

During the meeting, it was discussed that Delhi SLDC/DTL identifies feeders to be wired under SPS before next OCC meeting. Further, in case of any difference of opinion between Delhi SLDC and NRLDC regarding load quantum that is to be wired, Delhi SLDC and DTL were asked to visit NRLDC at the earliest to identify load quantum that were required to be wired under SPS.

- Haryana SLDC to provide feeder details to be wired under SPS

    - 765/400kV 2*1000MVA Bhiwani ICTs (two ICT section)
    - 400/220kV 450+500MVA Panipat ICTs (BBMB)
    - 400/220kV 2*315MVA Kabulpur ICTs
    - 400/220kV 3*315MVA Hissar ICTs

No update could be received from Haryana SLDC.

POWERGRID representative informed that new ICT at Bhiwani is not expected before summer 2025. NRLDC representative expressed concern on the same.

OCC asked Haryana SLDC to identify feeders to be wired under SPS before next OCC meeting and share with NRLDC/NRPC for further studies.

Further, as discussed earlier on numerous occasions, as majority of 400/220kV ICTs in Rajasthan state (both interstate as well as intrastate are N-1 non-compliant, RVPNL may identify feeders and discuss with POWERGRID for finalisation of SPS at interstate substations. 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

OCC asked Delhi and Haryana SLDC to identify feeders for SPS wiring and share with POWERGRID/NRLDC/NRPC at the earliest. Delhi SLDC was asked to visit NRLDC and converge on load quantum to be wired under SPS, in case of divergent views.

Rajasthan SLDC/RVPN were also asked to identify feeders for SPS at pending 400/220kV POWERGRID and RVPN substations supplying power to Rajasthan. While identification of feeders it needs to be ensured that in case of SPS operation and tripping of one/two feeders, any other element should not get overloaded (no cascade tripping).

Feeders details to be shared by respective SLDCs well in advance so that feeders and SPS logics are prepared and finalised in next OCC meeting.

B.6 Actions taken based on committee recommendation report on 17th June load loss event

On 17th June 2024, a grid event occurred at 13:53 hours in the Northern Region, leading to a substantial load reduction of approximately 16.5 GW. This event started with the tripping of both bipoles of the +/-800 kV HVDC Champa (WR) – Kurukshetra (NR) link, which was transferring 4500 MW of power from the Western Region (WR) to the Northern Region (NR). The tripping of this HVDC link triggered a series of events. There was a sudden voltage drop across the stations in the Northern region which resulted in a significant load drop of around 16.5 GW in the Northern region. There was simultaneous reduction of around 2800 MW of RE-based generation in the Rajasthan RE complex. There was also trippings of conventional generating units leading to a generation loss of 3909 MW at the allIndia level. The significantly higher load loss resulted in the rise in frequency of the Indian power system from 50.03 Hz to 50.68 Hz. The load drop resulted in a rise in the voltages of stations in the Northern region. This high voltage resulted in the tripping of 18 nos. of EHVAC lines in the Northern Region on over-voltage protection. The power system was normalised after the revival of all the poles of HVDC Champa-Kurukshetra by 15:51 Hrs.

A Committee under the Chairmanship of Member (GO&D), CEA with members from CEA, IIT-Delhi, NRPC, NLDC, NRLDC, POWERGRID, SLDC Delhi & DISCOMs was set up to analyse the above-mentioned issues during which about 16.5 GW of consumer load in Northern Region got interrupted for a brief period.

NRLDC representative stated that the committee recommended the following remedial measures for avoiding the recurrence of such grid event:

- **Reactive Power Management (Dynamic/Static) by STU and DISCOMs**: In order to maintain voltage stability, reactive power support is desired from all grid connected utilities without leaning over each other so as to ensure minimum reactive exchange at different voltage levels.

- **Planning for dynamic reactive power sources near load centers based on load composition**: Adequate static/dynamic reactive devices may be planned at the distribution level near loads so that there is minimum drawl from reactive sources at the transmission (STU) level. The dynamic reactive power sources shall be commissioned near load centre stations based on the composition and quantum of individual load type.

- **Enhance reliability of HVDC Link**: Committee recommended POWERGRID to the followings

  a. Review of protection schemes to avoid frequent outages.
  b. Review of transmission line design including cross arms, jumpers, etc.
  c. Design of filter switching logic to support system voltage.

- **Implementation of Overvoltage protection setting**: A committee has already been set up by NRPC protection subgroup for the

same and progress is being tracked in protection subcommittee meetings.

- **Frequency Response by Generating Units as per IEGC 2023**: It was recommended that the performance of generating units where inadequate primary response was observed shall be discussed at RPC level.

- **Compliance of CEA Standards by Renewable Generating Plants:** Performance is being monitored by RLDCs for interstate RE plants and SLDCs for intrastate RE plants. NRLDC has already filed petition in Hon'ble CERC regarding non-compliances observed for ISTS connected RE plants.

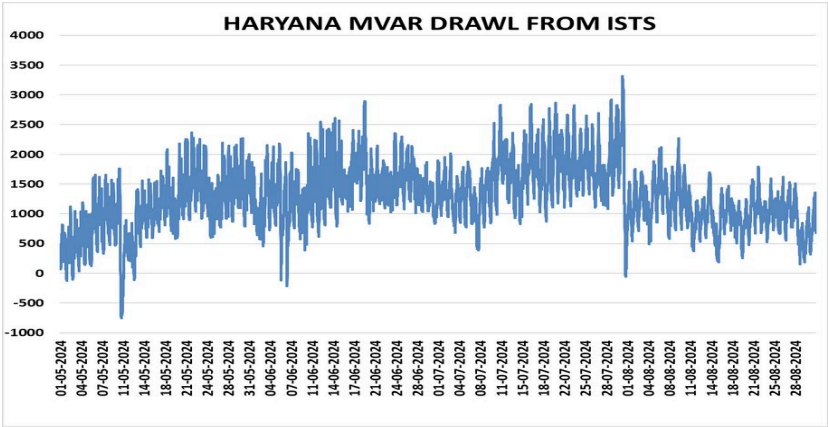
- **Retain of Conventional generators near load centers for providing grid support during such events:** The presence of thermal generators near the load centres may significantly improve the voltage profile and can provide dynamic reactive power support in case of contingencies improving the stability.

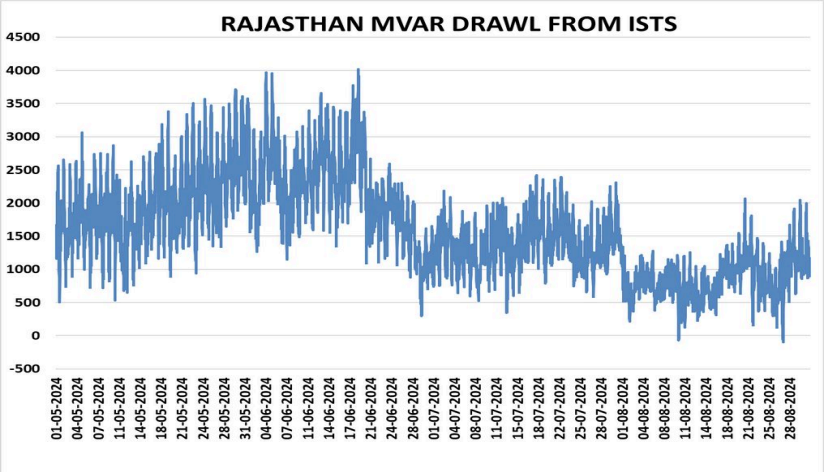
The above agenda point was also discussed in 75th NRPC Meeting held on 28 August 2024 through online mode. Forum acknowledged the sensitivity of event and directed the concerned to take appropriate actions based on the recommendations of Committee.

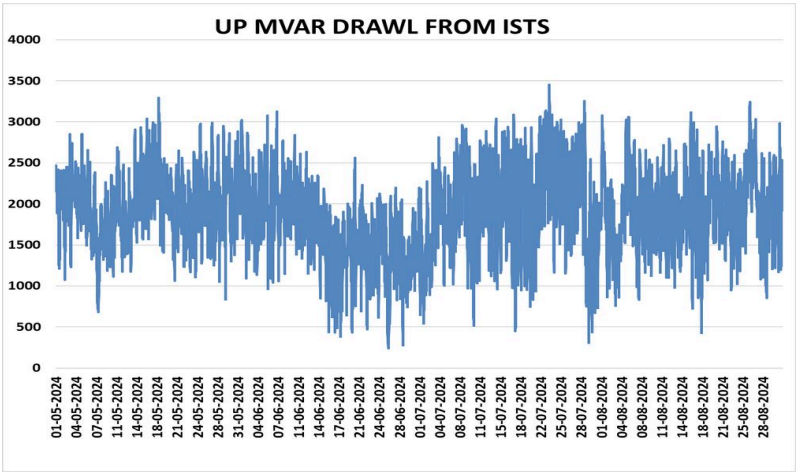
Measures for Low voltages

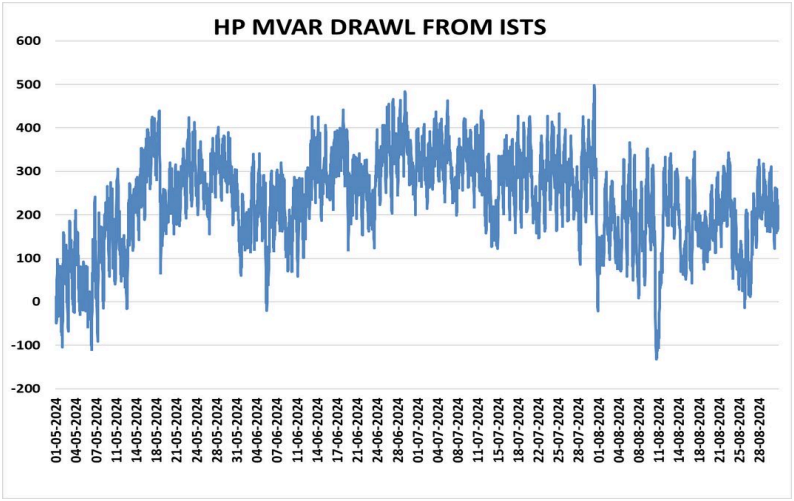
During summer months, reactive power requirement by load also increases due to increased cooling and pumping requirement. Due to lack of sufficient compensation at distribution and transmission level, huge reactive power is being drawn from ISTS network. Due to this high reactive power requirement during day-time and high loading of existing transmission lines from RE complex, low voltages are seen in the grid during afternoon time. Sample snapshot of low voltage observed in the grid during summer 2024 is shown below:

Reactive power drawl by states during May-Jul months was also presented in 229 OCC meeting where it can be clearly seen that there is huge MVAR drawl by some of the states such as Haryana, Rajasthan, HP and UP during these months. These huge MVAR drawl leads to low voltages in the grid especially during the day-time as there is high agricultural as well as cooling load requirement during this time.









During the meeting, NRLDC representative requested STUs/SLDCs/POWERGRID to provide update on the actions taken at their end based on committee recommendations.

POWERGRID representative informed that they had availed shutdown of HVDC Champa-Kurukshetra poles last year during Sep to attend few issues

that were observed in committee recommendations and assured that all identified issues have been attended.

NRLDC and NRPC representative requested that POWERGRID may submit brief report on actions taken at their end on improvement of reliability of HVDC Champa-Kurukshetra poles based on committee recommendations.

MS NRPC stated that NRPC had also formed a committee to review overvoltage settings as per committee recommendation of 17th June event. The overvoltage settings would be finalized in upcoming protection subcommittee meeting and utilities may implement those settings at the earliest.

OCC forum discussed that it seems that actions on other recommendations listed at s.no. (i) & (ii) have not been taken from STU/SLDC side. In this case, there is likelihood of low voltages in the grid again during summer 2025.

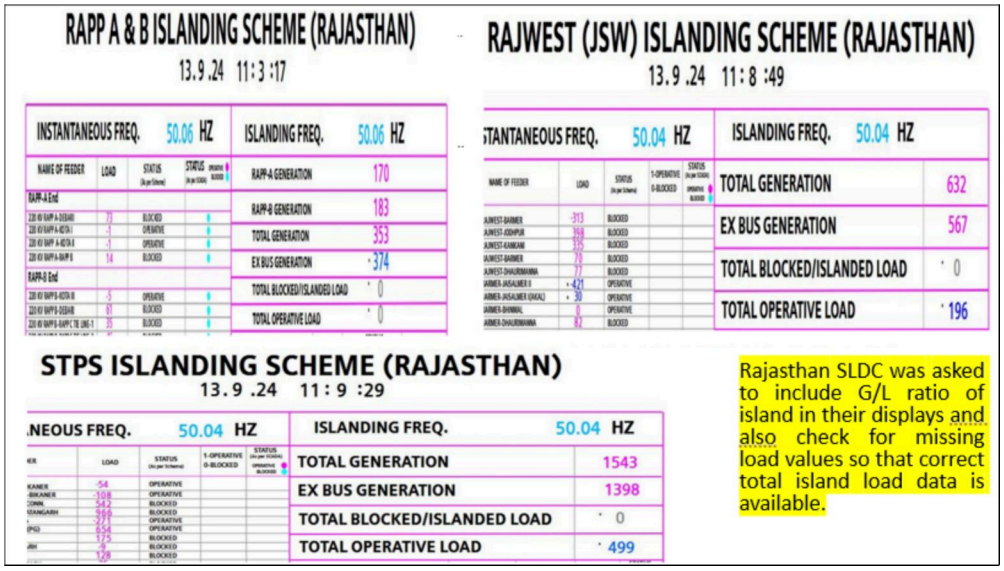
It was highlighted from NRLDC side that in case no major capacitor banks are added before summer, and as NR load is projected to rise to 98GW during this summer season, therefore there is high probability of low voltages during upcoming summer season.

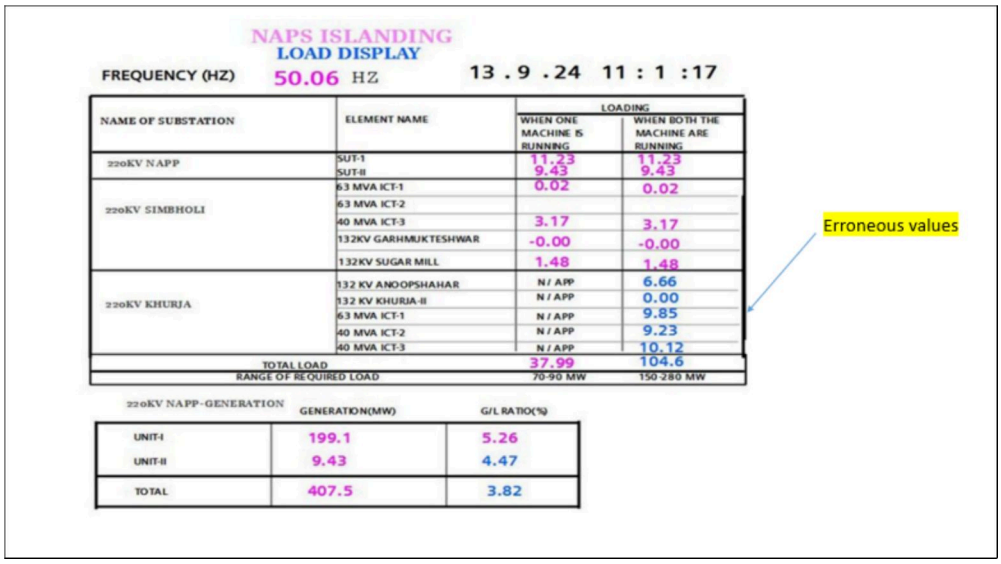
OCC asked all STUs and SLDC to ensure maximum reactive power support at underlying network to minimize low voltage issues during summer season.

B.7 Mock testing of islanding scheme and simulation studies

Following four islanding schemes are operational in the Northern Region: NAPP Islanding Scheme (Uttar Pradesh), RAPP Islanding Scheme (Rajasthan), Bawana Islanding Scheme (Delhi), and Pathankot-RSD Islanding Scheme (Punjab). As per the SOP for mock islanding schemes approved in the recently concluded OCC 223, SLDCs are requested to prepare and share their plans for conducting mock testing of islanding schemes in their control areas.

None of the four utilities have yet created a SCADA network map for their island areas. However, Uttar Pradesh and Rajasthan have developed SCADA displays with partial island summaries, although telemetry issues still need resolution.





During 224 OCC meeting, NRLDC representative mentioned that only the NAPS Islanding Scheme of UP has incorporated the G/L ratio in its SCADA display according to the shared format. UP representative added that due to a recent fire incident at Khurja S/S, the telemetry from the 220kV Khurja S/S is currently unavailable, and they promised to share an update on the restoration of telemetry from Khurja as soon as possible.

NRLDC representative also requested that all concerned utilities provide updated islanding base cases for different load-generation balance scenarios (Summer: Peak/Off-peak and Winter: Peak/Off-peak) along with dynamic data of the generators in the island for conducting dynamic simulation studies. He reiterated that the Islanding SCADA display should be made available at NRLDC as per the format shared in previous OCC meetings.

During 225 OCC meeting, UP, Rajasthan, Punjab and Delhi SLDC were requested to provide update.

UP SLDC representative informed that NAPS has been asked to carry out mock testing of ufr which are part of islanding scheme. After receiving testing report from NAPS, same shall be shared with OCC forum.

No other update could be received from other SLDCs.

OCC asked all SLDCs to proactively take actions as discussed in the meeting.
Further, NRLDC had also conducted an online meeting on 03.12.2024 with all relevant stakeholders from UP, Rajasthan, Delhi and Punjab regarding any issues being faced in carrying out mock testing exercise of islanding scheme.

Following updates were received in the meeting:

1. Uttar Pradesh (NAPS Islanding Scheme)
   - Field testing of relays has been completed; a detailed report will be shared by 15th December 2024.
   - PSSE basecase files will be submitted within one month.
   - NRLDC demonstrated modelling the island in PSSE using the Bawana Island example (Delhi SLDC).
2. Rajasthan (RAPS Islanding Scheme)
   - Regular UFR testing is ongoing and will extend to Islanding UFR relays.
   - A detailed report as per the SOP will be submitted by the first week of January 2025.
   - PSSE basecase files will be provided within one month.
3. Delhi (Bawana Islanding Scheme)
   - DTL will conduct field mock testing as per the SOP within one month and submit a detailed report accordingly.
   - PSSE basecase files will be shared within one month.
4. Punjab (RSD Islanding Scheme)
   - Field mock testing as per SOP will be conducted within one month, and a detailed report will follow.
   - PSSE basecase files will be submitted within one month.

Recently, a meeting was also convened by NRLDC with states on 06.02.2025 to review the progress.

Following was discussed during the meeting:

Updates from States:

1. Uttar Pradesh (NAPS Islanding Scheme)
   - Dynamic testing done on basecase shared by UP-SLDC.
   - UFR testing report submitted by UP-SLDC
   - SCADA display made by UP-SLDC, however some telemetry data is not coming in display.

2. Rajasthan (RAPS Islanding Scheme)
   - UFR testing report submitted on 06.02.2025 by Rajasthan SLDC
   - PSSE basecase files will be provided by 14.02.2025

3. Delhi (Bawana Islanding Scheme)
   - Mock testing of islanding scheme UFR relays was withheld due to scheduled assembly elections in Delhi. UFR testing report will be submitted by 14.02.2025
   - PSSE basecase files will be shared by 14.02.2025
   - SCADA display is outdated and new one will be made operational by 21.02.2025

4. Punjab (RSD Islanding Scheme)
   - Punjab SLDC is awaiting dynamic data of RSD and load data from site for islanding scheme and will be shared after receiving them. No firm timeline provided.
   - UFR testing report and SCADA display update will be provided on mail to NRLDC due to non-availability of concerned person in the meeting.

NLDC Recommendations:

The NLDC emphasized the urgency of receiving the PSSE files for the four scenarios to facilitate a dynamic health assessment of the islands and urged all NR states to prioritize sharing these files promptly.

During 228 OCC meeting,

Rajasthan representative informed that the islanding basecase will be submitted to NRLDC within a week.

Punjab representative stated that they are in the process of aggregating dynamic data from the site. Regarding UFR testing and SCADA display, they confirmed that both will be completed and submitted within a week.

Delhi representative informed that UFR testing was delayed due to the legislative assembly elections in Delhi during January-February 2025. Now that the elections are over, the pending UFR testing at Maharanibagh, Bawana, and Electric Lane will be completed within a week, and a consolidated UFR testing report will be submitted to NRLDC thereafter.

OCC Forum urged all concerned SLDCs to expedite the mock testing of the islanding scheme, submission of PSSE islanding basecase, dynamic data, preparation of SCADA display/SCADA map and complete the associated studies before the next OCC meeting***.***

During 229 OCC meeting, NRLDC representative presented the status of mock testing of islanding and studies:

Current Status

Scheme	UFR testing done	Basecase shared	SCADA display made
NAPP Islanding scheme (UP)	Yes	Yes	Yes*
RAPP Islanding scheme (Raj)	Yes	Yes#	No
Pathankote-RSD Islanding scheme (Pun)	No	No	No
Bawana Islanding scheme (Delhi)	No	Yes	Yes

**Telemetry not coming properly*
 # one basecase received

DTL representative informed that UFR testing is pending for POWERGRID Maharanibagh substation and thereafter testing report would be submitted to NRLDC/NRPC.

No update could be received from Punjab SLDC.

Rajasthan SLDC assured that they will be sharing basecases for other scenarios also shortly.

NRLDC representative requested that as per IEGC, load flow and dynamic studies and mock testing need to be carried out once every year. Accordingly, incase same is not completed before march 2025, same would be treated as non-compliance in self/ third party audit for 2024-25.

OCC asked all SLDCs to ensure that all testing and basecase sharing for islanding studies as per IEGC 2023 is done at the earliest.

B.8 Sharing of ATC/TTC assessment and basecase with NRLDC

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

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

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

Purpose	S No	Action of Stakeholder	Responsibility	Submission to	Data/ Information Submission Time line
1. Revision 0 TTC/ATC Declaration for Month 'M'	1(a)	Submission of node wise Load and generation data along with envisaged scenarios for assessment of transfer capability Assessment of TTC/ATC of the import/export capability of the state and intra-state system and sharing of updated network simulation models	SLDC	RLDC	10th Day of 'M-12' month
	1(b)	Declaration of TTC/ATC of the intra- state system by SLDC in consultation with RLDC			26th Day of 'M-12' month
2. Interconnection Studies for elements to be integrated in the month 'M'	2(a)	Submission of node-wise load and generation data & sharing of network simulation models for intra-state elements coming in the next six months	SLDC	RLDC	8th Day of 'M- 6' month
	2(b)	Sharing of inter-connection study results			21st Day of 'M-6' month
3. Month Ahead TTC/ATC Declaration & Base case for Operational Studies for Month 'M'	3(a)	Submission of node wise Load and generation data along with envisaged scenarios for assessment of transfer capability Assessment of TTC/ATC of the intra- state system and sharing of updated network simulation models	SLDC	RLDC	8th Day of 'M- 1' month
	3(b)	Declaration of TTC/ATC of the intra- state system in consultation with RLDC	SLDC	RLDC	22nd Day of 'M-1' month

To encourage participation from SLDCs regarding basecase preparation and ATC/TTC assessment, two workshops have been conducted from

Grid-India/NRLDC side. One workshop was conducted 31.08.2023 before the finalization of the procedure and another on 10.01.2024 recently to involve further participation from SLDCs. Subsequently, workshops were organized (latest on 9-11 December 2024 & **3-4 February 2025** at NRLDC) for all SLDCs.

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

B.8.1 ATC/TTC assessment sharing 11 months in advance

The procedure mentions that:

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

Accordingly, SLDCs are requested to send the PSSE cases for four scenarios i.e. Afternoon Peak, Solar Peak, Evening Peak & Off-Peak hours as communicated from NRLDC side. It is requested that the basecases as well as ATC/TTC assessments may be shared with NRLDC as per CERC approved procedure. Further, the above exercise needs to be carried out regularly monthly.

It was discussed in last several OCC meetings & all states were requested to share basecase as well as ATC/TTC assessments for M-12 scenarios on monthly basis with NRLDC as per CERC approved procedure. Accordingly, it is requested to submit the basecase as well as ATC/TTC assessments.

B.8.2 Sharing of Data and study results for interconnection studies

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

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

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

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

B.8.3 TTC/ATC of state control areas for Mar 2025 (M-1)

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

Based on simulation studies and discussions between SLDCs and NRLDC, ATC/TTC limits for NR states for the month of Apr'2025 are attached as **Annexure-B.IV of agenda**.

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

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

In 229 OCC meeting,

- ***NRLDC representative stated that the agenda was also discussed in last several OCC meeting wherein all states agreed to send the data as well as PSSE basecases on time for all three (M-1, M-6, M-11) scenarios.***
- ***NRLDC representative presented the status of basecase and data sharing by NR states for the last six months. Latest status for Mar 2025 is shown below:***

October 2024 Mails

	ATC/TTC Declaration				Interconnection Studies	
	M-1 (November-24)		M-12 (October-25)		M-6 (Apr-25)	
	Data Values	Basecases	Data Values	Basecases	Data Values	Basecases
Chandigarh	No	No	No	No	No	No
Delhi	No	No	No	No	No	No
Haryana	Yes	Yes	No	No	No	No
Himachal	Yes	No	Yes	No	No	No
J &K	Yes	Yes	Yes	Yes	Yes	Yes
Ladakh	No	No	No	No	No	No
Punjab	No	No	Yes	Yes	Yes	Yes
Rajasthan	Yes	Yes	Yes	Yes	Yes	Yes
Uttar Pradesh	Yes	Yes	Yes	Yes	Yes	Yes
Uttarakhand	Shared only TTC value and TTC case, no data regarding cardinal points		No	No	No	No

November 2024 Mails

	ATC/TTC Declaration				Interconnection Studies	
	M-1 (December-24)		M-12 (November-25)		M-6 (May-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	No	No	No	No
Himachal	Yes	No	Yes	No	No	No
J &K	Yes	Yes	Yes	Yes	Yes	Yes
Ladakh	No	No	No	No	No	No
Punjab	No	No	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

December 2024 Mails

	ATC/TTC Declaration				Interconnection Studies	
	M-1 (January-25)		M-12 (December-25)		M-6 (June-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	No	Yes	No	No	No	No
Himachal	Yes	No	Yes	No	No	No
J &K	Yes	Yes	Yes	Yes	Yes	Yes
Ladakh	No	No	No	No	No	No
Punjab	No	No	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

January 2025 Mails

	ATC/TTC Declaration				Interconnection Studies	
	M-1 (February-25)		M-12 (January-26)		M-6 (July-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	No	Yes	No	No
Himachal	Yes	No	Yes	No	Yes	No
J &K	Yes	Yes	Yes	Yes	Yes	Yes
Ladakh	No	No	No	No	No	No
Punjab	No	No	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

Submitted with one month delay

February 2025 Mails

	ATC/TTC Declaration				Interconnection Studies	
	M-1 (March-25)		M-12 (February-26)		M-6 (August-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	No	No	No	No	No	No
Himachal	Yes	No	Yes	No	Yes	No
J &K	Yes	Yes	Yes	Yes	Yes	Yes
Ladakh	No	No	No	No	No	No
Punjab	No	No	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

March 2025 Mails

	ATC/TTC Declaration				Interconnection Studies	
	M-1 (April-25)		M-12 (March-26)		M-6 (September-25)	
	Data Values	Basecases	Data Values	Basecases	Data Values	Basecases
Chandigarh						
Delhi			Yes	Yes		
Haryana						
Himachal						
J &K	Yes		Yes	Yes	Yes	
Ladakh						
Punjab	Yes	Yes	Yes	Yes	Yes	Yes
Rajasthan	Yes	Yes	Yes	Yes	Yes	Yes
Uttar Pradesh	Yes	Yes	Yes	Yes	Yes	Yes
Uttarakhand						

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

B.9 Multiple element tripping events in Northern region in the month of February 2025:

A total of 16 grid events occurred in the month of February 2025 of which 06 are of GD-1 category, 05 are of GI-2 Category and 05 is of GI-1 Category. The tripping report of all the events have been issued from NRLDC. A list of all these events is attached at Annexure-B.V of agenda.

Maximum delayed clearance of fault observed in event of multiple elements tripping at 400/220kV Daulatabad(HS) at 08:11 hrs on 27th February, 2025 (As per PMU at Gurgaon(PG), B-N phase to earth fault with delayed fault clearing time of ~1080 msec is observed).

Delayed clearance of fault (more than 100ms for 400kV and 160ms for 220kV system) observed in total 04 events out of 16 grid events occurred in the month. In 04 (no.) of grid events, there was no fault in the grid.

NRLDC representative presented the reporting status of DR/EL & tripping reports w.r.t. grid events occurred in February 2025. It was highlighted that detailed report of majority of the tripping events have not received.

NRLDC requested utilities to start preparing the detailed report of the tripping events as per timeline mentioned in IEGC 2023 and share the report with NRLDC, NRPC and PSC forum. Remedial actions taken by constituents to avoid such multiple elements tripping may also be included in the detail report.

NRLDC representative further highlighted the multiple elements tripping event at 220/66kV Narela(DTL) which occurred due to lack of coordination between DTL & BBMB during switching operation. DTL representative highlighted the wrong switching process done by the BBMB team during the event by closing both the isolators even during off load condition. NRLDC representative requested BBMB to ensure that correct switching philosophy is used during switching operation. DTL & BBMB shall ensure proper communication and coordination during any switching operation at the stations to avoid any unwanted tripping incident.

Details of the two (No's) of multiple elements tripping occurred at 220kV Bhakhra(BBMB) not received. BBMB representative assured to upload the Tripping Monitoring System(TMS) at the earliest.

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.

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

B.10 Status of submission of DR/EL and tripping report of utilities for the month of February 2025:

The status of receipt of DR/EL and tripping report of utilities for the month of **February 2025** is attached at Annexure-B.VI of agenda. It is to be noted that as per the IEGC provision under clause 37.2 (c), tripping report along with DR/EL has to be furnished within 24 hrs of the occurrence of the event. However, it is evident from the submitted data that reporting status is not satisfactory and needs improvement.

NRLDC representative stated that on the basis of status of February month it is evident that reporting status of some of the constituents i.e., SLDC-J&K, SLDC-PS, SLDC-HR, SLDC-UP and RE stations are not satisfactory and needs improvement. The status of Punjab is persistently unsatisfactory. Further, persistent unsatisfactory reporting status of Punjab was also highlighted.

Members may please note and advise the concerned for timely submission of the information. It is requested that DR/EL of all the tripping shall be **uploaded on Web Based Tripping Monitoring System (TMS) "https://postda.nrldc.in/Default.aspx"** within 24 hours of the events as per IEGC clause 37.2(c) and clause 15.3 of CEA grid standard.

NRLDC representative requested SLDC-J&K, SLDC-PS, SLDC-HR, SLDC-UP and RE stations to improve the status of submission of DR/EL & tripping reports. Further, it was also suggested to organize training programs for site engineers regarding DR/EL extraction and their uploading on TMS. Timely submission of tripping details (DR, EL, tripping report etc.) helps in detailed analysis of the grid event.

OCC forum emphasized the importance of DR/EL & tripping report data for analysis of the tripping. In addition, these data are also the base for the

availability verification. The unavailability of these details delays the availability verification process also. Hence, timely submission of DR/EL & tripping report is very much necessary. Members were requested to comply with IEGC 37.2(c) and submit the details in time. Members agreed to take necessary follow-up actions to improve the reporting status.

Members may please note and advise the concerned for timely submission of the information. It is requested that DR/EL of all the tripping shall be uploaded on Web Based Tripping Monitoring System "http://103.7.128.184/Account/Login.aspx" within 24 hours of the events as per IEGC clause 37.2.c and clause 15.3 of CEA grid standard.

B.11 Frequency response performance for the reportable events of month of February 2025:

In the month of February 2025, only 1 no. of reportable event on 20th February 2025 was notified by NLDC for which FRC/ FRP need to be calculated and the same along with high resolution data need to be submitted to RLDC. Description of the event is as given 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)	*Δf*	NR FRP during the event
1	20-Feb-25	16:20 hrs	As reported, at 16:20 hrs on 20th February 2025, generation loss event of 1777 MW occurred at 400 kV GMR and JITPL generating station (ER). Hence net generation loss of 1777 MW is considered for FRC/FRP Calculation.	49.944	49.800	49.909	-0.035	1.71

As per IEGC 2023 Clause 30.8, "The primary response of the generating units shall be verified by the Load Despatch Centres (LDCs) during grid events. The concerned generating station shall furnish the requisite data to the LDCs within two days of notification of reportable event by the NLDC."

As per IEGC 2023 Clause 30.10.(n), "Each control area shall assess its frequency response characteristics and share the assessment with the concerned RLDC along with high resolution data of at least 1 (one) second for regional entity generating stations and energy storage systems and 10 (ten) seconds for the state control area."

As per sub-clause (a(v)) of clause (9) of IEGC 2023 Annexure-2, "All the SLDCs shall work out FRC for all the intra-state entities (for events indicated by the Regional Load Despatch Centres) based on the HDR available at their respective SLDCs and submit the same to respective RLDC within six (6) working days after the event. (Format as per Table-B)."

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

Status of details received from constituents as on 04th March 2025 is:

S. No	Control Area	Event Date
		20-02-2025
1	Punjab	Not Received
2	Haryana	Not Received
3	Rajasthan	Received
4	Delhi	Not Received
5	Uttar Pradesh	Received
6	Uttarakhand	Received
7	Chandigarh*	NA
8	Himachal Pradesh	Not Received
9	J&K(UT) and Ladakh(UT)	Not Received
10	Dadri -1 (TH)	Received
11	Dadri -2 (TH)	Received
12	Jhajjar (TH)	Received
13	Rihand-1 (TH)	Received
14	Rihand-2 (TH)	Received
15	Rihand-3 (TH)	Received
16	Shree Cement (TH)	Not Received
17	Singrauli (TH)	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)	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)**	Not Received
29	**Budhil (H)**	No Gen
30	**Chamera-1 (H)**	No Gen
31	**Chamera-2 (H)**	No Gen
32	**Chamera-3 (H)**	No Gen
33	**Dehar (H)**	No Gen
34	**Dhauliganga (H)**	No Gen
35	**Dulhasti (H)**	No Gen
36	**Karcham (H)**	No Gen
37	**Kishanganga**	No Gen
38	**Koldam (H)**	No Gen
39	**Koteshwar (H)**	Received
40	**Malana-2 (H)**	NA
41	**Nathpa Jhakri (H)**	No Gen
42	**Parbati-2 (H)**	Not Received
43	**Parbati-3 (H)**	No Gen
44	**Pong (H)**	Not Received
45	**Rampur (H)**	No Gen
46	**Sainj (H)**	No Gen
47	**Salal (H)**	Received
48	**Sewa-II (H)**	No Gen
49	**Singoli Bhatwari (H)**	No Gen
50	**Sorang (H)**	No Gen
51	**Tanakpur (H)**	Received
52	**Tehri (H)**	Received
53	**Uri-1 (H)**	Not Received
54	**Uri-2 (H)**	No Gen

NRLDC representaitve higlighted the list of generating stations and control area who haven't shared the FRC/FRP computation details. Details are pending from mainly BBMB generating stations. Members were requested to share the FRC/FRP computation as per timeline. Haryana, Punjab, Delhi & HP SLDCs were also requested to share the FRC compuation of their respecive control area as per stipulated timeline.

NHPC, BBMB and SLDCs representatives assured that timely submission of details shall be ensured.

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 04th March 2025, FRC/FRP as per NRLDC HDR data is used for computation of Average Monthly Frequency Response Performance, Beta 'β' for Generating Stations.

FRP values as considered (as per NRLDC HDR data/ generator high resolution data) for the event of February 2025 is as follows:

S. No	Control Area	Event Date
		20-02-2025
1	Punjab	1.62
2	Haryana	2.52
3	Rajasthan	0.68
4	Delhi	6.07
5	Uttar Pradesh	2.00
6	Uttarakhand	-0.19
7	Chandigarh*	NA
8	Himachal Pradesh	-1.48
9	J&K(UT) and Ladakh(UT)	0.12
10	Dadri -1 (TH)	15.07
11	Dadri -2 (TH)	23.49
12	Jhajjar (TH)	20.72
13	Rihand-1 (TH)	10.92
14	Rihand-2 (TH)	5.04
15	Rihand-3 (TH)	2.58
16	Shree Cement (TH)	2.19
17	Singrauli (TH)	5.80
18	Tanda-2 (TH)	3.62
19	Unchahar-I (TH)	5.80
20	Unchahar-II (TH)	-7.07
21	Unchahar-III (TH)	1.38
22	Unchahar-IV (TH)	3.66
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)	0.08
29	Budhil (H)	No Gen
30	Chamera-1 (H)	No Gen
31	Chamera-2 (H)	No Gen
32	Chamera-3 (H)	No Gen
33	Dehar (H)	No Gen
34	Dhauliganga (H)	No Gen
35	Dulhasti (H)	No Gen
36	Karcham (H)	No Gen
37	Kishenganga	No Gen
38	Koldam (H)	No Gen
39	Koteshwar (H)	25.44
40	Malana-2 (H)	NA
41	Nathpa Jhakri (H)	No Gen
42	Parbati-2 (H)	0.00

43	**Parbati-3 (H)**	No Gen
44	**Pong (H)**	-0.68
45	**Rampur (H)**	No Gen
46	**Sainj (H)**	No Gen
47	**Salal (H)**	0.00
48	**Sewa-II (H)**	No Gen
49	**Singoli Bhatwari (H)**	No Gen
50	**Sorang (H)**	No Gen
51	**Tanakpur (H)**	-2.92
52	**Tehri (H)**	0.79
53	**Uri-1 (H)**	1.56
54	**Uri-2 (H)**	No Gen

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

NRLDC representative requested NTPC to share the complete plant data of Singrauli TPS otherwise it can't be considered for FRP computation. Presently, data of only 2 units are being submitted by Singrauli TPS.

NTPC representatives were not present in the meeting.

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

Sl. No	Entity	Capacity(MW)	Governor Mode (FGMO as per IEGC 2023) Yes or No	Droop setting (%)	Remarks (if any)
1	Dadri-1 (TH)	4*200			
2	Dadri -2 (TH)	2*490			
3	Jhajjar (TH)	3*500			
4	Rihand-1 (TH)	2*500	Yes	5.0	Under Implementation
5	Rihand-2 (TH)	2*500	Yes	5.0	Under Implementation
6	Rihand-3 (TH)	2*500	Yes	5.0	Under Implementation
7	Shree Cement (TH)	(2 * 150)			
8	Singrauli (TH)	2*500+5*200			
9	Tanda-2 (TH)	2*660			
10	Unchahar stg-4 (TH)	1*500			

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

Members were requested to ensure implementation of FGMO as per IEGC 2023 at generating stations in their respective control area and share the present status of droop setting.

NRLDC representative highlighted unsatisfactory response of some of the generating stations during the event and requested to take necessary remedial actions to improve the governor response.

Members were requested to share the data and analysis of FRC of their control area. ISGS stations were requested to share the FRC/FRP calculations of each reportable event and also share the 01 sec data of respective generating stations. It was further requested to take remedial actions to improve the governor response if necessary. States were also requested to follow-up with the generating stations of their respective control area and share the unit wise 01 sec data of respective generating stations along with the anaysis of FRC response for the aforementioned event.

OCC forum requested members to share the FRC/FRP computation data as per timeline and also analyse the FRC response of their respective control area. Necessary action for improvement in governor response need be taken to ensure the proper frequency response in compliance w.r.t. IEGC 2023.

B.12 Mock trial run and testing of black start facilities at generating stations in Northern Region

As per Indian Electricity Grid Code (IEGC) clause 34.3

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

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

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

Therefore, regional entity generating stations and SLDCs were requested to share the annual schedule plan for conducting dead bus charging / mock black start exercise of

generating stations / sub-systems during 2024-25 in the format attached as Annexure-B.VII of agenda. Constituents were also requested to share the test report of diesel generators / auxiliary supply on a quarterly basis. In this regard, communication has already been sent to constituents through NRLDC letter dated 24.04.2024.

NRLDC representative informed that details received from AD Hydro HEP, Tehri HEP, Karcham Wangtoo HEP, Koteshwar HEP, SJVN, NHPC, Budhil, Auraiya GPS, Singoli Bhatwari HEP, Koldam HEP, Dadri GPS, Delhi, Punjab and Uttarakhand.

Mock black start exercises conducted during 2024-25 till date area are as follows:

a) GTPS (IPGCL) on 10.04.2024 (black start, Island operation and synchronisation)

b) Ranjit Sagar Dam(RSD) HEP on 07.05.2024 (black start, Island operation and synchronisation)

c) Kishenganga HEP on 09.11.2024 (black start & dead bus charging)

d) Tehri HEP on 13.11.2024 (black start, dead bus charging and synchronisation)

e) Koteshwar HEP on 27.11.2024 (black start, dead bus charging and synchronisation)

f) N.Jhakri & Rampur HEP on 08.12.2024 (black start, Island operation and synchronisation)

g) Chamera-I HEP on 12.12.2024 (black start & dead bus charging)

h) Dhauliganga HEP on 13.12.2024 (black start & dead bus charging)

i) Bairasiul HEP on 14.12.2024 (black start & dead bus charging)

j) Tanakpur HEP on 19.12.2024 (black start & dead bus charging)

k) Obra & Rihand HEP on 13.02.2025 (black start, dead bus charging and island operation)

NRLDC representative requested ISGS and SLDCs to take following actions:

- *To share the report of testing of DG sets.*
- *To share the tentative schedule of 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 schedule with load is not available.*
- *To share the test report of mock black start exercise conducted along with weekly DG testing on monthly/quarterly basis.*

NRLDC representative requested Rajasthan to follow-up for the mock black start exercise of hydro/gas stations in Rajasthan control area i.e. Ramgarh GPS, RPS HEP, JS HEP & Mahi Sagar HEP and share the schedule plan.

Rajasthan representative stated that continuous follow ups are being done with generating station. Ramgarh GPS have assured to conduct dead bus charging as per opportunity. NRLDC representative requested Rajasthan to conduct the mock black start exercise of Ramgarh GPS in before pick up of summer demand. Ramgarh GPS is the only black start capable generating station in Rajasthan RE complex and healthiness of its black start facility is important.

NRLDC representative requested all the control areas to conduct the mock testing of black start facilities in their respective control area.

OCC forum requested all the concerned generating stations and state to conduct the mock black start exercise of black start facilities in your respective control area. Members were also requested to share the report of testing of DG sets on quarterly basis.

B.13 Mock testing of System Protection Schemes (SPS) in Northern Region

As per IEGC clause 16.2

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

As per IEGC clause 16.3

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

There are 56 numbers of System Protection Scheme (SPS) approved in Northern Region. These SPS are implemented at major generation complexes, important evacuating transmission lines and ICTs which are N-1 non-complaint. 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 Document section and can be accessed at below link: https://newnr.nrldc.in/documents/Documents.

SPS is designed to detect abnormal system conditions and take predetermined, corrective action to preserve system integrity and provide acceptable system

performance. Therefore, correct operation of SPS as per designed logic is important to serve its purpose. To ensure this, mock testing of SPS needs to be conducted at a regular period. Clause 16.2 of IEGC 2023 also mandates the mock testing of SPS for reviewing SPS parameters & functions, at least once a year.

In view of the above, concerned constituents / utility were requested to share the tentative schedule plan for conducting mock testing of SPS in their respective control area during 2024-25 in format attached as Annexure-B.VIII of agenda. In this regard, communication has already been sent to constituents through NRLDC letter dated 01.05.2024. Update in this regard received only from UP and Uttarakhand.

NRLDC representative informed that UP & Rajasthan has conducted ~70-80% of SPS schemes in their control area. With the confirmation of POWERGRID, SPS mock testing of HVDC Rihand-Dadri and 765kV Agra-Gwalior is scheduled in March 2025. Mock testing of remaining SPS also need to be conducted on priority.

POWERGRID representative stated that they are following up on this subject and will share the tentative schedule plan of other SPS in their control area.

DTL representative informed that mock testing of SPS of Mundka S/s has been conducted. Mock testing of SPS at Bawana is yet to be done and same will be done at the earliest. Further, SPS at Bamnuali(DTL) is not needed now on account of shifting of feeders to Jhatikara.

SLDC-UP representative informed that SPS at CB Ganj(UP) has been shifted and not in service. Further mock testing of SPS at Agra(UP) shall be conducted during March 2025.

NRLDC representative also presented the list of stations where network augmentation has been occurred in recent past and further review on the SPS need to be done whether SPS at these stations is still required or not.

NRLDC study team representative stated that the SPS kept on ICTs which are having logic based on percentage loading may be kept in service. It will help in case one of the ICT goes under shutdown. Further, SPS with other logics may be reviewed.

Updated status of Mock testing of SPS on the basis of input received in meeting is attached as Annexure-B.II

NRLDC representative also stated that SPS at NTPC Dadri has also been reviewed and with the changes in network configuration (bus split between stage-I&II), line loading are well within safe limit during N-1-1 contingency also. In view of this, forum may decide on disabling the SPS at NTPC Dadri.

NTPC representatives were not present in the meeting.

OCC forum requested members to conduct the mock testing of SPS in their respective control area, share the report of the mock testing conducted. Members were also requested to review the SPS scheme in their respective control area if there is any change in network configuration and load profile.

Status of action taken on decision of 228th OCC meeting of NRPC

S.N.	Agenda	Decision of 228th OCC meeting of NRPC	Status of action taken
1	A.10. Implementation of AUFLS scheme in accordance with the report of Task Force on Automatic under Frequency Load Shedding (AUFLS) (Agenda by NRPC Sectt.)	Forum asked SLDC to identify and communicate feeder-wise, Stage-wise load relief to RPC/RLDC.	There is separate agenda A.10 on the said matter.
2	A.13. Implementation of SPS arrangement at Jhatikra for load shedding is required to ensure stable transmission in case of contingency of 765/400 kV ICTs in upcoming summer loading (Agenda by POWERGRID NR-1)	Forum asked DTL to identify the feeders for implementing SPS at 765/400kV Jhatikra. Meanwhile, NRLDC was asked to conduct the study and inform, before the next OCC meeting, the amount of load shedding required to provide relief on the 765/400kV ICT at Jhatikra.	There is separate agenda B.5 on the said matter.

Follow up issues from previous OCC meetings

Annexure-A.I

<table>
<tr><td>1</td><td>Down Stream network by State utilities from ISTS Station</td><td>Augmentation of transformation capacity in various existing substations, addition of new substations along with line bays as well as requirement of line bays by STUs for downstream network are under implementation at various locations in Northern Region. Further, 220kV bays have already been commissioned at various substations in NR. For its utilization, downstream 220kV system needs to be commissioned.</td><td colspan="3">List of downstream networks is enclosed in Annexure-A.I.I.</td></tr>
<tr><td>2</td><td>Progress of installing new capacitors and repair of defective capacitors</td><td>Information regarding installation of new capacitors and repair of defective capacitors is to be submitted to NRPC Secretariat.</td><td colspan="3">Data upto following months, received from various states / UTs:
◎ CHANDIGARH — Sep-2019
◎ DELHI — Nov-2024
◎ HARYANA — Dec-2024
◎ HP — Sep-2024
◎ J&K and LADAKH — Not Available
◎ PUNJAB — Jan-2025
◎ RAJASTHAN — Jan-2025
◎ UP — Feb-2025
◎ UTTARAKHAND — Feb-2025
All States/UTs are requested to update status on monthly basis.</td></tr>
<tr><td rowspan="2">3</td><td rowspan="2">Healthiness of defence mechanism: Self-certification</td><td>Report of mock exercise for healthiness of UFRs carried out by utilities themselves on quarterly basis is to be submitted to NRPC Secretariat and NRLDC. All utilities were advised to certify specifically, in the report that “All the UFRs are checked and found functional”.</td><td colspan="3">Data upto following months, received from various states / UTs:
◎ CHANDIGARH — Not Available
◎ DELHI — Dec-2024
◎ HARYANA — Dec-2024
◎ HP — Oct-2024
◎ J&K and LADAKH — Not Available
◎ PUNJAB — Dec-2024
◎ RAJASTHAN — Dec-2024
◎ UP — Dec-2024
◎ UTTARAKHAND — Dec-2024
◎ BBMB — Dec-2024
All States/UTs are requested to update status for healthiness of UFRs on monthly basis for islanding schemes and on quartely basis for the rest.</td></tr>
<tr><td>In compliance of NPC decision, NR states/constituents agreed to raise the AUFR settings by 0.2 Hz in 47th TCC/49th NRPC meetings.</td><td colspan="3">Status:
◎ CHANDIGARH — Not Available
◎ DELHI — Increased
◎ HARYANA — Increased
◎ HP — Increased
◎ J&K and LADAKH — Increased
◎ PUNJAB — Increased
◎ RAJASTHAN — Increased
◎ UP — Increased
◎ UTTARAKHAND — Increased
◎ BBMB — Increased</td></tr>
</table>

<table>
<tr><td>4</td><td>Status of Automatic Demand Management System in NR states/UT's</td><td>The status of ADMS implementation in NR, which is mandated in clause 5.4.2 (d) of IEGC by SLDC/SEB/DISCOMs is presented in the following table:</td><td>The status of ADMS implementation in NR is enclosed in Annexure-A.I.II.<table><tr><td>◎</td><td>DELHI</td><td>Scheme Implemented but operated in manual mode.</td></tr><tr><td>◎</td><td>HARYANA</td><td>Scheme not implemented</td></tr><tr><td>◎</td><td>HP</td><td>Scheme not implemented</td></tr><tr><td>◎</td><td>PUNJAB</td><td>Scheme not implemented</td></tr><tr><td>◎</td><td>RAJASTHAN</td><td>Under implementation.</td></tr><tr><td>◎</td><td>UP</td><td>Scheme implemented by NPCIL only</td></tr><tr><td>◎</td><td>UTTARAKHAND</td><td>Scheme not implemented</td></tr></table></td></tr>
<tr><td>5</td><td>Status of availability of ERS towers in NR</td><td>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.</td><td>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.I.III.</td></tr>
<tr><td>6</td><td>Submission of breakup of Energy Consumption by the states</td><td>All states/UTs are requested to submit the requisite data as per the billed data information in the format given as under:<table><tr><td>Category→</td><td>Consumption by Domestic Loads</td><td>Consumption by Commercial Loads</td><td>Consumption by Agricultural Loads</td><td>Consumption by Industrial Loads</td><td>Traction supply load</td><td>Miscellaneous / Others</td></tr><tr><td><Month></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table></td><td>Status of the information submission (month) from states / utilities is as under:<table><tr><td></td><td>State / UT</td><td>Upto</td></tr><tr><td>◎</td><td>CHANDIGARH</td><td>Not Submitted</td></tr><tr><td>◎</td><td>DELHI</td><td>Feb-25</td></tr><tr><td>◎</td><td>HARYANA</td><td>Feb-25</td></tr><tr><td>◎</td><td>HP</td><td>Jan-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>Jan-25</td></tr><tr><td>◎</td><td>RAJASTHAN</td><td>Dec-24</td></tr><tr><td>◎</td><td>UP</td><td>Feb-25</td></tr><tr><td>◎</td><td>UTTARAKHAND</td><td>Dec-24</td></tr></table>Chandigarh is requested to submit the requisite data w.e.f. April 2018 as per the billed data information in the given format</td></tr>
<tr><td>7</td><td>Status of FGD installation vis-à-vis installation plan at identified TPS</td><td>List of FGDs to be installed in NR was finalized in the 36th TCC (special) meeting dt. 14.09.2017. All SLDCs were regularly requested since 144th OCC meeting to take up with the concerned generators where FGD was required to be installed.
Further, progress of FGD installation work on monthly
basis is monitored in OCC meetings.</td><td>Status of the information submission (month) from states / utilities is as under:<table><tr><td>◎</td><td>HARYANA</td><td>Jun-2024</td></tr><tr><td>◎</td><td>PUNJAB</td><td>Feb-2025</td></tr><tr><td>◎</td><td>RAJASTHAN</td><td>Feb-2025</td></tr><tr><td>◎</td><td>UP</td><td>Jan-2024</td></tr><tr><td>◎</td><td>NTPC</td><td>Mar-2025</td></tr></table>FGD status details are enclosed as Annexure-A.I.IV.
All States/utilities are requested to update status of FGD installation progress on monthly basis.</td></tr>
<tr><td>8</td><td>Information about variable charges of all generating units in the Region</td><td>The variable charges detail for different generating units are available on the MERIT Order Portal.</td><td>All states/UTs are requested to submit daily data on MERIT Order Portal timely.</td></tr>
</table>

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	Tender for Procurement of 125 MVAR Reactor has been floated on 04.11.2024 and tender opening date is 30.12.2024.

Annexure-A-I.I

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

Sl. No.	Substation	Downstream network bays	Status of bays	Planned 220 kV system and Implementation status	Revised Target	Remarks
1	400/220kV, 3x315 MVA Samba	Commissioned: 8 Total: 8	Utilized: 6 Unutilized: 2	• Network to be planned for 2 bays.	Mar'25	02 No. of bays shall be utilized for LILO-II of 220kV Jatwal-Bishnah Transmission Line, the work of which is delayed due to persisting RoW issues. expected date of completion is Mar 2025 subject to availability of funds and resolving of RoW issues), Updated in 220th OCC by JKPTCL.
2	400/220kV, 2x315 MVA New Wanpoh	Commissioned: 6 Total: 6	Utilized: 2 Unutilized: 4	• 220 kV New Wanpoh - Alusteng D/c Line	Mar'25	02 No. of bays are to be utilized for connecting 220kV New Wanpoh-Alusteng D/c Line. RoW issues persisting; At present new-wampoh-mirbazar 5km and harwan-alstung 16km have been completed, expected date of completion is Mar 2025 subject to availability of funds and resolving of RoW issues), Updated in 214th OCC by JKPTCL.
				• 220 kV New Wanpoh - Mattan D/c Line	End of 2024	02 No. of bays are to be utilized for connecting 220kV New Wanpoh-Mattan D/c Line. The funding source for the project is being identified and the project is expected to be completed by ending 2024. Updated in 204th OCC by JKPTCL.
3	400/220kV, 2x315 MVA Amargarh	Commissioned: 6 Total: 6	Utilized: 4 Unutilized: 2	• 220kV D/C line from 400/220kV Kunzar - 220/33kV Sheeri	End of 2024	02 No. of bays are proposed to be utilized for connecting 220/132 kV GSS Loolipora. The funding source for the project is being identified and the project is expected to be completed by ending 2024. Updated in 204th OCC by JKPTCL.
4	400/220kV, 2x500 MVA Kurukshetra (GIS)	Commissioned: 8 Total: 8	Utilized: 6 Unutilized: 2	• 220kV Bhadson (Kurukshetra) – Ramana Ramani D/c line	Mar'25	Under construction.Updated in 222nd OCC by HVPNL
5	400/220 kV, 2x315 MVA Dehradun	Commissioned: 6 Total: 6	Utilized: 2 Unutilized: 4	• Network to be planned for 4 bays	-	PTCUL to update the status.
6	Shahjahanpur, 2x315 MVA 400/220 kV	Commissioned: 6 Approved/Under Implementation:1	Utilized: 7	• 220 kV D/C Shahajahanpur (PG) - Gola line	Commissioned	Energization date: 26.10.2023 updated by UPPTCL in 215th OCC
				• LILO of Sitapur – Shahjahanpur 220 kV SC line at Shahjahanpur (PG)	Commissioned	Energization date: 25.02.2022 updated by UPPTCL in 196th OCC
7	Hamirpur 400/220 kV Sub-station	Commissioned: 8 Total: 8	Utilized: 4 Unutilized: 4	• 220 kV Hamirpur-Dehan D/c line	Commissioned	HPPTCL has commissioned the Planned 220kV Dehan-Hamirpur TL utilizing 2 No. 220kV Bays.Commisioned date: 09.06.2022. Updated in 198th OCC by HPPTCL
				• Network to be planned for 4 bays	-	HPPTCL to update the status.
8	Sikar 400/220kV, 1x 315 MVA S/s	Commissioned: 8 Total: 8	Utilized: 6 Unutilized: 2	• LILO of 220 kV Sikar (220 kV GSS)-Dhod S/c line at Sikar (PG)	Commissioned	LILO of 220 kV S/C Sikar-Dhod line at 400 kV GSS PGCIL, Sikar has been charged on dt. 31.03.2022
				• Network to be planned for 2 bays.	-	Against the 3rd ICT at 400 kV GSS Sikar, only 2 bays were constructed and same has been utilized by RVPN by constructing LILO of 220 kV S/C Sikar – Dhod line as updated by RVPNL in 195th OCC
9	Bhiwani 400/220kV S/s	Commissioned: 6 Total: 6	Utilized: 2 Unutilized: 4	• 220 kV D/C line Bhiwani (PG) – Bhiwani (HVPNL) line	Commissioned	Updated in 202nd OCC by HVPNL
				• 220 kV Bhiwani (PG) - Isherwal (HVPNL) D/c line.	Mar'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 since30.11.2023 due to severe ROW issues. Expected to be completed by 31.12.2024. Foundation 209/212. Erection 193/212. Stinging 37.8/50.3 km
				• 220 kV Bhiwani (PG) - Dadhibana (HVPNL) D/c line.	Oct'25	Line work awarded to M/s R S Infra Projects Pvt. Ltd. Noida, Uttar Pardesh on dated 09.03.2024. Work of route plan and route alignment has been started by the firm as intimated in 218th OCC by HVPNL.
10	Jind 400/220kV S/s	Commissioned: 4 Approved:4 Total: 8	Utilized: 4 Unutilized: 0	• LILO of both circuits of 220 kV Jind HVPNL to PTPS D/C line at 400 kV substation PGCIL Khatkar (Jind) with 0.5 sq inch ACSR conductor	Mar'25	Erection and stringing work will be completed by 18.12.2024. However, the signing of Connection agreement amongst the Utilities is pending. Updated in 228th 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 Under Implementation:2	• HPPTCL has planned one no. of 220kV D/c line from Kala Amb 400/220kV S/s to 220/132kV Kala Amb S/s	Commissioned	Energization date: 31.05.2024 updated by HPPTCL in 220th OCC
				• HPPTCL has planned one no. of 220kV D/c line from Kala Amb 400/220kV S/s to 220/132kV Giri S/s	-	Tendering process is yet to be started.Updated in 219th OCC by HPPTCL
				• Network to be planned for 2 bays	-	HPPTCL to update the status.
13	400/220kV Kadarpur Sub-station	Commissioned: 8 Total: 8	Utilized: 0 Unutilized: 8	• D/C line Kadarpur - Pali D/C line Kadarpur - Sec-65	20.03.2025	Updated in 229th OCC by HVPNL **Status:-** Connectivity agreement remaining to be signed with CTU expected to be completed by last week of March 2025

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	Mar'25	Roj Ka Meo station is yet to be commissioned. However, this arrangement will not lead to usage of additional bays i.e. no of utilitsed bays at Sohna road will remain same.Updated in 228th 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 Aprroved: 2 Total: 10	Utilized: 4 Unutilized: 4 Under Implementation:2	• 220kV D/C line from Prithla to Harfali with LILO of one circuit at 220kV Meerpur Kurali	Mar'25	Contract awarded on 08.08.23 to M/s Skipper with completion in March 25.Updated in 218th OCC by HVPNL
				• LILO of both ckt of 220kV D/c Ranga Rajpur – Palwal line	Commissioned	Energization date: 31.12.2021. Updated in 198th OCC by HVPNL
				• 220kV D/C for Sector78, Faridabad	31.03.2025	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	Jul'25	Work awarded to M/s Man Structurals Pvt Ltd. JV M/s Aquarian Enterprises on 09.01.2024. Contractual date: 06.05.2025 and Tentative date of completion :06.05.2025 Route has been approved and further work is in progress.Updated in 218th OCC by HVPNL
16	400/220kV Sonepat Sub-station	Commissioned: 6 Under Implementation:2 Total: 8	Utilized: 2 Unutilized: 4 Under Implementation:2	• LILO of both circuits of 220kV Samalkha - Mohana line at Sonepat	Mar'25	Updated in 228th OCC by HVPNL. **Status:** The stringing work between TL No. 19 & 20, TL No. 22 & 23 and TL No. 22 & 24 is pending for want of necessary consent from the forest department. Forest approval is pending. Presently, forest case is pending in the O/o Technical officer IRO, Chandigarh.
				• Sonepat - HSIISC Rai 220kV D/c line	Commissioned	Energization date: 31.05.2024 updated by HVPNL in 220th OCC
				• Sonepat - Kharkhoda Pocket A 220kV D/c line	08.03.2025	Updated in 228th 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 Jallandhar Sub-station	Commissioned: 10 Total: 10	Utilized: 8 Unutilized: 2	• Network to be planned for 2 bays	-	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.

Sl. No.	Substation	Downstream network bays	Status of bays	Planned 220 kV system and Implementation status	Revised Target	Remarks
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	Mar'25	Revised target date as confirmed by concerned SDO Construction, Panchkula.Updated in 228th OCC by HVPNL
26	400/220kV Amritsar S/s	Commissioned:7 Approved in 50th NRPC- 1 no. Total: 8	Utilized: 6 Under Implementation:2	• Amritsar – Patti 220kV S/c line	31.08.2024	Issue in connectivity agreement with CTU. CTU asked PSTCL to approach CEA and thereafter CEA may plan a meeting with PSTCL and CTU to resolve the issue. Updated in 225th OCC by PSTCL.
				• Amritsar – Rashiana 220kV S/c line (2 bays shall be required for above lines. However, 1 unutilized bay shall be used for Patti and requirement of one additional bay approved for Rashiana by NRPC)	31.08.2024	Issue in connectivity agreement with CTU. CTU asked PSTCL to approach CEA and thereafter CEA may plan a meeting with PSTCL and CTU to resolve the issue. Updated in 225th OCC by PSTCL.
27	400/220kV Bagpat S/s	Commissioned: 8 Total: 8	Utilized:6 Unutilized: 2	• Bagpat - Modipuram 220kV D/c line	Commissioned	Updated in 201st OCC by UPPTCL
28	400/220kV Bahardurgarh S/s	Commissioned: 4 Approved: 4 Total: 8	Utilized:2 Unutilized: 2	• LILO of 220 kV Nunamajra- Daultabad S/c line at 400 kV Bahadurgarh PGCIL	Mar'25	Proposal turned down by CEA.Updated in 228th OCC by HVPNL.
				• Bahadurgarh - METL 220kV D/c line (Deposit work of M/s METL)	Dec'25	Updated in 228th OCC by HVPNL. **Status:** Tender awarded, but work is yet to be started
				• Bahadurgarh - Kharkhoda Pocket B 220kV D/c line	08.03.2025	Updated in 228th OCC by HVPNL. **Status:** Contract awarded on 09.08.23 to M/s R S Infra Noida. Work has been started.
29	400/220kV Jaipur (South) S/s	Commissioned: 4 Total: 4	Utilized:2 Unutilized: 2	• LILO of 220 kV S/C Dausa – Sawai Madhopur line at 400 kV GSS Jaipur South (PG)	06.10.2025	Work order has been issued on 06.10.2023, work under progress as updated by RVPNL in 215th OCC
30	400/220kV Sohawal S/s	Commissioned: 8 Total: 8	Utilized: 8	• Sohawal - Barabanki 220kV D/c line	Commissioned	Energization date: 14.04.2018 updated by UPPTCL in 196th OCC
				• Sohawal - New Tanda 220kV D/c line	Commissioned	Energization date: 28.05.2019 updated by UPPTCL in 196th OCC
				• Network to be planned for 2 bays	Commissioned	• Sohawal - Gonda 220kV S/c line (Energization date: 27.04.2020) updated by UPPTCL in 196th OCC • Sohawal - Bahraich 220kV S/c line (Energization date: 15.02.2021) updated by UPPTCL in 196th OCC
31	400/220kV, Kankroli	Commissioned: 6 Total: 6	Utilized: 4 Unutilized: 2	• 220 kV D/C Kankroli(PG) - Nathdwara line	-	Standard bid document has been finalized on 13.08.2024 and bid is under preparation as updated by RVPN in 222nd OCC.
32	400/220kV, Manesar	Commissioned: 8 Total: 8	Utilized: 4 Unutilized: 4	• Network to be planned for 2 bays	-	Status:- 2nos bays are being utilised for 220 kV D/C Panchgaon (PGCIL)-Panchgaon Ckt-I & 220 kV D/C Panchagon (PGCIL)-Panchgaon Ckt-II, charged on dated 05.09.2022 & 20.10.2022 respectively. The 2nos bays may be utilised by HVPNL in future.
33	400/220kV, Saharanpur	Commissioned: 6 Under Implementation:2 Total: 8	Utilized: 6 Unutilized: 0 Under Implementation:2	• Network to be planned for 2 bays	Commissioned	Saharanpur(PG)-Devband D/c line (Energization date: 20.04.2023) updated by UPPTCL in 207th OCC
34	400/220kV, Wagoora	Commissioned: 10 Total: 10	Utilized: 6 Unutilized: 4	• Network to be planned for 4 bays	-	PDD, J&K to update the status.
35	400/220kV, Ludhiana	Commissioned: 9 Total: 9	Utilized: 8 Unutilized: 1	• Network to be planned for 1 bay	Commissioned	Direct circuit from 220 kV Lalton Kalan to Dhandari Kalan to be diverted to 400 kV PGCIL Ludhiana. Work completed , final agrrement is expected to be signed by May'24. Updated in 218th OCC by PSTCL.
36	400/220kV, Chamba (Chamera Pool)	Commissioned: 3 Under tender:1 Total: 4	Utilized:3 Unutilized: 0 Under tender:1	• Stringing of 2nd ckt of Chamera Pool – Karian 220kV D/c line	Commissioned	Stringing of 2nd Circuit of Chamera Pool-Karian Tansmission line has been completed & terminal bay at 400/220 kV chamera pooling substation (PGCIL) is commissioned on 20.01.2024. Updated in 217th OCC by HPPTCL.
37	400/220kV, Mainpuri	Commissioned: 6 Under Implementation:2 Total: 8	Utilized: 6 Unutilized: 0 Under Implementation:2	• Network to be planned for 2 bays	-	• 02 no. of bays under finalization stage updated by UPPTCL in 196th OCC. Mainpuri S/s planned. Land is not finalized, therefore timeline not available as intimated by UPPTCL in 201st OCC.
38	400/220kV, Patiala	Commissioned: 8 Total: 8	Utilized: 6 Unutilized: 2	• Network to be planned for 2 bays	May'25	2 Nos. bays for 400 kV PGCIL Patiala - 220 kV Bhadson (D/C) line being planned. The civil work not started , the civil tender is in process as updated by PSTCL in 220th OCC meeting

Sl. No.	Substation	Downstream network bays	Status of bays	Planned 220 kV system and Implementation status	Revised Target	Remarks

Status of ADMS implementation in NR:

Sl. No.	State / UT	Status	Remarks
1	DELHI	Scheme Implemented but operated in manual mode.	In 225th OCC meeting NRPC representative apprised forum that revised Standard Operating Procedure (SOP) of Automatic Demand ManagementScheme (ADMS) by the DISCOMs in NCT of Delhi has been approved in 51st TCC and 76th NRPC meeting. In 52nd TCC and 77th NRPC DTL intimated that tentative timeline for implemenation is 28th February 2025.DTL intimated that TPPDL has informed that they have engaged SCADA OEM for the implementation of ADMS. However, OEM has confirmed that incorporation of ADMS logic into the current SCADA system is not feasible and it would require an upgrade or refresh of the system, necessitating additional expenditure for which DERC has been approached. The complete implementation cycle is expected to be within 2 years. However, in the meantime considering the criticality, their in-house team is working to develop a trigger notification/alarm system for manual operation of breaker triggering from the control room and thereafter exploring the possibility of automatically triggering the breaker using the trigger notification. TPPDL has stated that they expect to complete it by August 2025, if materialized. BRPL and BYPL have informed that their existing SCADA system is obsolete and it is in the up-gradation phase by OEM. After the up-gradation of SCADA system, the ADMS is expected to be implemented in BRPL & BYPL by Oct 25.
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	HP SLDC imentioned that HPSEB had intimated that initially 142 Nos. of feeders were identified for operation under ADMS functionality but most of these feeders were from same sub-station. Therefore, now they have increased the no. of sub-station and identified the non-critical feeders. Load relief to be given through these feeders is under finalization. The revised feeder list from HPSEBL is awaited as intimated by HPSLDC.

4	PUNJAB	Scheme not implemented	i. A committee comprising of following officers of PSPCL & PSTCL has been constituted to finalize the logic regarding implementation of Automatic Demand Management System in Punjab Control Area. A meeting in this regard was held on dated 26-02-2024 at PSLDC Complex, Patiala. The committee deliberated various loading scenarios and proposed the following logic for the management of demand: 1. If the frequency sustains below 49.90 Hz for duration of 3 minutes, the Automatic Demand Management System will initiate a 50% reduction in the Over Drawl. 2. In case the frequency falls further below 49.85 Hz, the Over Drawl will be reduced to zero. 3. The software at the SLDC end for ADMS shall be available with ULDC phase –III SCADA system which is under implementation. ii. In 222nd OCC, MS NRPC asked Punjab to co-ordiante with Powergrid for integration of their propsoed logic with the ULDC phase-III SCADA system for timely implementation.
5	RAJASTHAN	Under implementation	In 227th OCC meeting, RVPN informed that 215 nos. of circuit breakers have been mapped to ADMS, all 215 circuit breakers tested upto yard individually. Total 650CBs are to be mapped in phased manner.
6	UP	Scheme implemented by NPCIL only	i. A meeting regarding ADMS was held on 15.01.2023 with the UPPCL under the chairmanship of MD UPPTCL ii. A committee formed for identification of load at 33 kV level under the chairmanship of Director (Distribution), UPPCL. iii. Another committee under the chairmanship of Director UPSLDC shall identify the technical and operational requirement for ADMS implementation iv. The software at the SLDC end for ADMS shall be available with ULDC phase –III SCADA system which is under implementation and likely to be commissioned by March 2025. v. In order to operate identified 33 kV feeders under ADMS scheme, integration of 132 kV substations with SCADA system is under implementation in the Reliable Communication Scheme and expected date of completion of the scheme is October 2024. vi. MS, NRPC apprised forum that a letter has been written to Director, SLDC for co-odinatng with Director (Distribution), UPPCL for expediting the finalization of feeder list at 33kV for ADMS implementation. vii. Response from UPPCL regarding the finalization of feeder list at 33kV for ADMS implementation is awaited. vili. UPSLDC intimated that they plan to have a meeting with UPPCL in the month of April 2025 for the finalization of feeder list at 33kV.
7	UTTARAKHAND	Scheme not implemented	i. UPCL has prepared a system architecture in which all the non-monitored sub-stions have been selected and 11kV feeders have been considered for ADMS operation. For the scheme, discom has also done group-wise selection of feeders and quantum of MW relief to be given for automatic demand response at 11kV level has also been decided. UPCL has awarded the tender for implementation of the aforementioned scheme to M/s Metergy Pvt.Ltd. ii. As per the status report submitted by M/s Metergy Pvt.Ltd, the survey work of 30 nos. incomer sites have been completed and order has been placed by UPCL for hardware equipments. iii. Uttarakhand SLDC informed that feeder list at 11kV level has been finalized and logic of ADMS implementation is under finalization. iv. 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.

Annexure-A.I.III.

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

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
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		In the advance stage of process of finalising arrangement for providing ERS on need basis with other transmission utility (M/s INDIGRID).
30	ARAVALI POWER COMPANY PVT LTD	765 kv HVAC					

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

FGD COMMISSIONING STATUS						
S.No.	Utility	Plant Name	Unit	Target Commissioning Date (As updated by utility in OCC)	If commissioned , Actual Date of Commissioning	If not commissioned , Target Date of Commissioning
1	Adani Power Ltd.	KAWAI TPS	1	31-Dec-24		31-Dec-29
2			2	31-Dec-24		31-Dec-29
3	APCPL	INDIRA GANDHI STPP	1		3-May-24	
4			2	30-Sep-23	27-Jan-25	
5			3	30-Jun-23		31-May-25
6	GVK	GOINDWAL SAHIB	1	30-Apr-20	INFO NOT RECEIVED	
7			2	29-Feb-20		
8	NTPC	DADRI NCTPP	1	31-Dec-20	31.12.2019,(DSI - Dry FGD)	
9			2	31-Oct-20	27.12.2019,(DSI - Dry FGD)	
10			3	31-Aug-20	27.07.2020,(DSI - Dry FGD)	
11			4	30-Jun-20	14.07.2020,(DSI - Dry FGD)	
12			5	30-Jun-22	15-Jun-22	
13			6	31-Mar-23	8-Feb-24	
14		RIHAND STPS	1	31-Dec-24		30-Nov-26
			2	30-Jun-26		31-Aug-26
			3	31-Dec-24		31-Dec-26
			4	31-Mar-25		30-Sep-26
			5	30-Jun-25		30-Jun-26
15			6	31-Mar-25		31-Mar-25
16		SINGRAULI STPS	1	31-Dec-24		30-Sep-25
17			2	31-Dec-24		30-Sep-25
18			3	31-Dec-24		30-Sep-25
19			4	31-Dec-24		31-Dec-25
20			5	31-Mar-25		31-Dec-25
21			6	30-Jun-24		31-Aug-25
22			7	31-Mar-24	Hot Gas In completed on 26.03.2025	30-Jun-25
23		UNCHAHAR TPS	1	31-Dec-23	22-Feb-25	
24			2	31-Dec-23	22-Feb-25	
25			3	30-Sep-23		30-May-25
26			4	30-Sep-23		30-May-25
27			5	30-Sep-23		30-May-25
28			6	31-Aug-22	11-Oct-22	
29		MEJA STAGE- 1	1	31-Oct-23	16-Jan-25	
30			2	30-Jun-23	28-Feb-25	
31		TANDA STAGE -1	1	No FGD		
			2	No FGD		
			3	No FGD		
32			4	No FGD		
33		TANDA STAGE -2	5	31-Mar-23	28-Nov-24	
34			6	30-Sep-23		30-May-25
35	L&T POWER DEVELOPMENT	NABHA TPP (RAJPURA TPP)	1	30-Apr-21	NPL has completed construction of FGD units for both	
36			2	28-Feb-21	of its units, which have been ready for commissioning	
37	TALWANDI SABO POWER LTD.	TALWANDI SABO TPP	1	28-Feb-21	INFO NOT RECEIVED	
38			2	31-Dec-20		
39			3	31-Oct-20		
40	HGPCL	PANIPAT TPS	6	31-Dec-25		
41			7	31-Dec-25		
42			8	31-Dec-25		
43		RAJIV GANDHI TPS	1	31-Aug-27		
44			2	31-Aug-27		
45		YAMUNA NAGAR TPS	1	31-Aug-27		
46			2	31-Aug-27		
47	Lalitpur Power Gen. Company Ltd.	LALITPUR TPS	1	31-Dec-26		
48			2	30-Sep-26		
49			3	30-Jun-26		
50	Lanco Anpara Power Ltd.	ANPARA C TPS	1	31-Dec-25		
51			2	31-Dec-25		
52	Prayagraj Power Generation Company Ltd.	PRAYAGRAJ TPP	1	31-Dec-26		
53			2	31-Dec-26		
54			3	31-Dec-26		
55	PSPCL	GH TPS (LEH.MOH.)	1	31-Dec-26		
56			2	31-Dec-26		
57			3	31-Dec-26		
58			4	31-Dec-26		
59		GGSSTP, Ropar	3	31-Dec-26		
60			4	31-Dec-26		

61		GGSSTP, Ropar	5	31-Dec-26		
62			6	30-Dec-26		
63	Rosa Power Supply Company	ROSA TPP PH-I	1	31-Dec-26		
64			2	31-Dec-26		
65			3	31-Dec-26		
66			4	31-Dec-26		
67	RRVUNL	KOTA TPS	5	30-Nov-25		
68			6	30-Nov-25		
69			7	30-Nov-25		
70		SURATGARH TPS	1	31-Dec-29		
71			2	31-Dec-29		
72			3	31-Dec-29		
73			4	31-Dec-29		
74			5	31-Dec-29		
75			6	31-Dec-29		
76		SURATGARH SCTPS	7	28-Feb-26		
77			8	28-Feb-26		
78		CHHABRA TPP	1	31-Dec-29		
79			2	31-Dec-29		
80			3	31-Dec-29		
81			4	31-Dec-29		
82		CHHABRA SCPP	5	28-Feb-26		
83			6	28-Feb-26		
84		KALISINDH TPS	1	28-Feb-26		
85			2	28-Feb-26		
86	UPRVUNL	ANPARA TPS	1	31-Dec-25		
87			2	31-Dec-25		
88			3	31-Dec-25		
89			4	31-Dec-25		
90			5	31-Dec-25		
91			6	31-Dec-25		
92			7	31-Dec-25		
93		HARDUAGANJ TPS	8	31-Dec-26		
94			9	31-Dec-26		
95		OBRA TPS	9	31-Dec-26		
96			10	31-Dec-26		
97			11	31-Dec-26		
98			12	31-Dec-26		
99			13	31-Dec-26		
100		PARICHHA TPS	3	31-Dec-26		
101			4	31-Dec-26		
102			5	31-Dec-26		
103			6	31-Dec-26		

Annexure-A.II

HIMACHAL PRADESH STATE LOAD DESPATCH CENTRE

(an Apex body)

GOVERNMENT OF HIMACHAL PRADESH

No. HPSLDC/SLDC-75 (Vol.-III)/2024-25- 8925-33 **Dated:** 06-01-2025

To

The Superintending Engineer (Operation),
Northern Regional Power Committee,
18-A, Shaheed Jeet Singh Marg,
Katwaria Sarai, New Delhi-110016.
Email: seo-nrpc@nic.in

Subject: **Implementation of Islanding Scheme in the HP Control Area.**

Reference: **1 MoM held through VC mode on 18.09.2024 to discuss the implementation of Shimla -Solan Islanding Scheme in HP.**
2 This office letter of even file No. 7004-13, dated: 29.10.2024

Sir,

In compliance to the point No. 7 of the above referred MoM, this office, vide letter mentioned at Sr. No. 2 of the reference, requested all concerned generators (excluding the generators under HPSEBL) involved in the islanding schemes to decrease the under frequency relay (UFR) settings of their generating units to 47.5 Hz and compliance of the same be intimated to this office at the earliest.

Subsequently, the concerned generators, except Sandhya HEP which is under forced outage, have carried out necessary action and intimation of the same has submitted to this office. The details of the under frequency relay (UFR) settings which have been received from the concerned generators (excluding the Generators under HPSEBL) are as under: -

Name of the Generators	Under Frequency Relay Setting (Hz)	Remarks
A. Shimla Solan Islanding Scheme		
Nanti HEP (Upper Nanti)	47.5	Plant's office email attached as **Annexure –A**
Kurmi HEP	47.5	Plant's office letter attached as **Annexure – B**
Kut HEP (Goodwill Energy)	47.5	Plant's office email attached as **Annexure –C**
A. Kullu Mandi Manali Islanding Scheme		
Sandhya HEP	-	Presently, the plant is under shutdown condition; however, they will take the necessary action once the plant operation resume. Plant's office email attached as **Annexure-D**
Malana – I HEP	47.5	Plant's office email attached as **Annexure –E**
Chaski HEP	47.5	Plant's office email attached as **Annexure –F**
Toss HEP	47.5	Plant's office email attached as **Annexure –G**
Jirah HEP	47.5	Plant's office email attached as **Annexure –H**

This is for your kind information and necessary action please.

Yours sincerely,

DA: As above

Superintending Engineer,
O/o Managing Director,
HPSLDC, GoHP, Totu, Shimla-11.

RK.

SLDC Complex, Totu, Shimla-171011
Phone: 0177-2838666, Telefax: 0177-2837649 GST No. 02AAAAH7757E1ZX
Email: sehpsldc@gmail.com, cehpsldc@gmail.com, mdhpsldc@gmail.com, Web: www.hpsldc.com

Copy of the above is forwarded to the following for kind information please: -

1. M/s Sandhya Hydro Power Project (Balargha-3x3 MW SHEP), Reg. Office- H. No. 24, Behind HPSEB Bhuntar Substation, Bhuntar, Kullu (HP)-175125.Email:kumar.abhinav@continuumenergy.in
2. M/s Nanti Hydro Power Pvt. Ltd. (Uper Nanti – 2x6.5 MW HEP), Gymba House, New Shimla – 9. Email: nanti.nhppl@gmail.com
3. M/s Malana Power Company Ltd. (2x43 MW HEP), MDR 30, Village Chauki, P.O. Jari Distt. Kullu – 175105. Email: malanageneration@injbhilwara.com
4. M/s Kurmi Energy Pvt. Ltd., V.P.O Phancha, Tehsil Rampur BSR, Distt. Shimla (HP) – 172101.Email: avtarsingh13021983@gmail.com
5. M/s Puri Oil Mills Ltd. Chaski 2 MW SHEP, V.P.O. Barshani, Distt. Kullu (HP) – 175105.Email: ajmer@purioilmills.com
6. M/s Toss Mini Hydel Power Project, Vill. Toss P.O. Barsheni Distt. Kullu (HP). Email: tossmhep@gmail.com
7. M/s Jirah Hydro Electric Project (4 MW SHEP), Village Tosh, P.O. Barshaini, Tehsil Bhunter, Distt. Kullu (H.P.) Email: binny195@gmail.com
8. M/s Kundan Green Energy Private Limited,Village Suru, PO Kut, Tehsil Rampur Bushahr,District Shimla (H.P).Email: kut@kundangreenenergy.com

Superintending Engineer,
O/o Managing Director,
HPSLDC, GoHP, Totu, Shimla-11.

'Annexure-A'

Gmail

Se Sldc <sehpsldc@gmail.com>

Request to decrease the Under-Frequency Relay (UFR) settings of generators.

Nanti Hydro <uppernantihydro11102017@gmail.com> 13 November 2024 at 13:09
To: Se Sldc <sehpsldc@gmail.com>
Cc: sanjay thakur <sanjay.thakur@greenkogroup.com>, pratul.g@greenkogroup.com, "dev.r" <dev.r@greenkoassetmanagement.com>

Dear sir,

Upper Nanti plant is concerned, team has already told that relay setting is below 47.50Hz (point No.3 of MOM on dated 11-01-2023).

Thanks & Rewards
Nanti Team
[Quoted text hidden]

KURMI ENERGY (P) LTD.

CORRESPONDENCE ADDRESS : S.C.O. 140-141, SECTOR 34-A, CHANDIGARH
TELEPHONE No. : +91-172-505999 FAX No. : +91-172-2602863

KEPL/HPSLDC/2024-25/102 **DATE: 07.11.2024**

To,

The Superintending Engineer,
O/o Managing Director,
HPSLDC, GoHP, Totu, Shimla - 11

Subject: Regarding decrease the Under Frequency Relay (UFR) settings of generators of Kurmi energy Pvt. Ltd (8 MW).

Reference: Your office Letter No. HPSLDC/SLDC – 75 (VOL – III) / 2024 -25 – 7004 – 13, Dated: - 29.10.2024

Respected Sir,

This has reference to the subject cited above, In this regard, we would like to inform to your good office is that Under Frequency Relay setting of our generating units are 47.5 Hz and Over Frequency relay setting of our generating units are 52.5 Hz. Further, Generator protection Relay Over & Under frequency relay setting Photographs is attached herewith for your reference.

This is for your kind information and further necessary action please.

Thanking You

Your Truly

For Kurmi Energy (P) Ltd.
For KURMI ENERGY (P) LTD.

(Authorized Signatory)
AUTHORIZED SIGNATORY

CC to:

1. The General Manager (SO – 1), Northern Regional Load Dispatch Centre for kind information please.
2. The Superintending Engineer (Operation), Northern Regional Power Committee for kind information please.


Actual setting
Operation mode
=f</f> 2 timers
Voltage limit
=0.3 x Un
Start frequency
=47.50 Hz
Operate time 1
=001.00 s
Start df/dt
=01.0 Hz/s
Operate time 2
=003.00 s
↑,↓ Move cursor
←Prev. E set
I
F
L
R
R/L
C
E
Order No:REM543CG214AAAA
Serial No:368049
Uaux = 110-240 Vac
Uaux = 110-220 Vdc
In = 50/60 Hz
REM-GENERATOR
PROTECTION RELAY
EMERGENCY
TRIP


ABB
MACHINE TERMINAL REM543
Actual setting
=f</f> 2 timers
Voltage limit
=0.3 x Un
Start frequency
=52.50 Hz
Operate time 1
=001.00 s
Start df/dt
=01.0 Hz/s
Operate time 2
=003.00 s
↑,↓ Move cursor
←Prev. E set
I
L
R
F
C
E
REM-GENERATOR
PROTECTION RELAY
EMERGENCY
TRIP
NIS OFF

('Annexure - C')

Gmail

Se Sldc <sehpsldc@gmail.com>

Under frequency relay settings

1 message

Kut Energy <kutgoodwill@kundangroup.com> 14 November 2024 at 14:54
To: Power Controller HP-SLDC <pchpsldcshimla@gmail.com>, Se Sldc <sehpsldc@gmail.com>
Cc: Gaurav Agarwal <gaurav.agarwal@kundangroup.com>, Kundan Kut <kut@kundangreenenergy.com>

Respected Sir,

Please find herewith the attached copy of under/over frequency relay setting of Kut HEP generating units.

Thanks and Regards,
Ajay Kumar
Kundan Green Energy Pvt Ltd
Kut HEP

DOC-20241114-WA0016..pdf
351K

Kundan Green Energy Pvt Ltd

Kut HEP

A. For Under Frequnecy Relay (UFR) Setting

Sr.No	Name of the Generator	Existing Under Frequency Relay(UFR) setting of your Generating Units	Whether the Generator decrease its UFR Setting to 47.5Hz(Note: Ony for those Generators having UFR settings above 47.5Hz) (Yes/No)	If No then please give the reasons	Remarks if any
1	8000KW, 11000V, 8 Pole, 50HZ Horizontal Brushless Generator	47.50HZ	No	UFR realy setting is 47.5HZ in the P343 Realy installled at Generator Panel	

B. For Over Frequency Relay (OFR) Setting

Sr.No	Name of the Generator	Existing Under Frequency Relay(OFR) setting of your Generating Units	Whether the Generator decrease its UFR Setting to 52.5Hz(Note: Ony for those Generators having UFR settings above 52.5Hz) (Yes/No)	If No then please give the reasons	Remarks if any
1	8000KW, 11000V, 8 Pole, 50HZ Horizontal Brushless Generator	52.50Hz	No	OFR Realy setting is 52.5HZ in the P343 Realy installled at Generator Panel	

'Annexure-D'

Gmail

Se Sldc <sehpsldc@gmail.com>

Request to decrease the Under-Frequency Relay (UFR) settings of generators.

Kumar Abhinav <kumar.abhinav@continuumenergy.in> 13 November 2024 at 16:16
To: Se Sldc <sehpsldc@gmail.com>
Cc: NRLDC Power Grid <nrldcso2@posoco.in>, NRPC <seo-nrpc@nic.in>, Mohan Thakur <mohan.thakur@continuumenergy.in>

Dear Ma'am/ Sir,

I would like to submit that the project is currently in a shutdown condition. The necessary actions will be taken once operations resume.

Regards,

Kumar Abhinav

+919910317105

From: Se Sldc <sehpsldc@gmail.com>
Sent: Tuesday, October 29, 2024 4:03 PM
To: Kumar Abhinav <kumar.abhinav@continuumenergy.in>; nanti.nhppl <nanti.nhppl@gmail.com>; Malana Generation <malanageneration@lnjbhilwara.com>; avtarsingh13021983@gmail.com; ajmer@purioilmills.com; tossmhep@gmail.com; Vinay Parmar <binny195@gmail.com>; Kundan Kut <kut@kundangreenenergy.com>
Cc: NRLDC Power Grid <nrldcso2@posoco.in>; NRPC <seo-nrpc@nic.in>
Subject: Request to decrease the Under-Frequency Relay (UFR) settings of generators.

Dear Sir,

[Quoted text hidden]

'ANNEXURE-E'

Gmail

Se Sldc <sehpsldc@gmail.com>

Request to decrease the Under-Frequency Relay (UFR) settings of generators.

Malana Generation <malanageneration@lnjbhilwara.com> 16 November 2024 at 11:34
To: Se Sldc <sehpsldc@gmail.com>
Cc: Mohmad Rafiq <ma.rafiq@lnjbhilwara.com>

Respected Sir,

Please find the enclosed Unit #1 and Unit#2 Relay Test report(Under-Frequency Relay (UFR)) .

Thanks & Regards,

(Shift In-charge)

Power House Control Room,
Malana Hydro Electric Plant (Stage - I)
Phone: 09816099653
Fax: 01902276078
Mail id:- malanageneration@lnjbhilwara.com

From: "Se Sldc" <sehpsldc@gmail.com>
To: "Kumar Abhinav" <kumar.abhinav@continuumenergy.in>, "nanti.nhppl" <nanti.nhppl@gmail.com>, "Malana Generation" <malanageneration@lnjbhilwara.com>, avtarsingh13021983@gmail.com, ajmer@purioilmills.com, tossmhep@gmail.com, "Vinay Parmar" <binny195@gmail.com>, "Kundan Kut" <kut@kundangreenenergy.com>,
Cc: "NRLDC Power Grid" <nrldcso2@posoco.in>, "NRPC" <seo-nrpc@nic.in>
Date: 29-10-2024 16:04
Subject: Request to decrease the Under-Frequency Relay (UFR) settings of generators.

EXTERNAL EMAIL : **Open any attachment or URL only if sender is reliable.**
[Quoted text hidden]

[attachment "REQUEST TO DECREASE THE 125.pdf" deleted by Malana Generation/Gen/Mpclsite/LNJB] [attachment "Annexure - I..pdf" deleted by Malana Generation/Gen/Mpclsite/LNJB]

2 attachments

FIELD INSPECTION AND TEST REPORT

UNIT PROTECTION RELAY

ANDRITZ Hydro

CUSTOMER	: MALANA POWER COMPANY LTD.	LOCATION	: UNIT-1
ERECTION SITE	: MALANA H.E.P	PANEL No.	
FEEDER	: UNIT-1 GENERATOR	DEVICE No.	: F111 (MAIN-I)

TECHNICAL DATA

Manufacture	ANDRITZ	Rated Current In	5	A
Type	HIPASE	Rated Voltage In	110	Vac
Software Ref.1	V1.47.01	Rated Frequency	50	Hz
Serial No.	GGP004-03225B004	Auxiliary Voltage Vx	110 - 250	Vdc
IP Address	172.16.215.63			

VISUAL CHECK

	Checked
1.1 Relay undamaged and clean.	☑
1.2 Wiring check, cable and terminal fastened properly.	☑
1.3 Check relay case earthed	☑
1.4 Test block connect check	☑
1.5 Verify relay rated information correct to installation	☑
1.6 Checking HMI&LCD	☑

TEST EQUIPMENT USED

Manufacturer	:	OMICRON
Type / Model	:	CMC256
Serial No.	:	KE722D
Cal. Date	:	23.02.2024 to 22-02-2025

Responsibility	Tested by	Approved by
Company	Andritz Hydro Pvt. Ltd.	Malana H.E.P(2X43MW)
Name	Sathiyaseelan T	Mohd Abdul Rafi
Signature		
Date		

FIELD INSPECTION AND TEST REPORT

UNIT PROTECTION RELAY

ANDRITZ Hydro

CUSTOMER	: MALANA POWER COMPANY LTD.	LOCATION	: UNIT-1
ERECTION SITE	: MALANA H.E.P	PANEL No.	:
FEEDER	: UNIT-1 GENERATOR	DEVICE No.	: F111 (MAIN-I)

1. **Measurement Check**

Parameter setting :

CT AND VT RATIOS

GEN PHASE SIDE CT

Polarity	=	Standard	
Primary	=	3200	A
Secondary	=	5.000	A

GEN NEUTRAL SIDE CT

Polarity	=	Standard	
Primary	=	3200	A
Secondary	=	5.000	A

GT HV PHASE CT

Polarity	=	Standard	
Primary	=	320	A
Secondary	=	5.000	A

UAT CT

Polarity	=	Standard	
Primary	=	50	A
Secondary	=	1.000	A

GENERATOR PT

Polarity	=	Standard	
Primary	=	11000	V
Secondary	=	110.000	V

NGT FOR 64S

Polarity	=	Standard	
Primary	=	11000	V
Secondary	=	110.000	V

SHAFT CT 51SC

Polarity	=	Standard	
Primary	=	100.0	
Secondary	=	1.00	

Responsibility	Tested by	Approved by
Company	Andritz Hydro Pvt. Ltd.	Malana H.E.P(2X43MW)
Name	Sathiyaseelan T	Mohd Abdul Rafik
Signature		
Date		

FIELD INSPECTION AND TEST REPORT

UNIT PROTECTION RELAY

ANDRITZ Hydro

CUSTOMER : MALANA POWER COMPANY LTD.		LOCATION : UNIT-1	
ERECTION SITE : MPCL H.E.P		PANEL No. :	
FEEDER : UNIT-1 GENERATOR		DEVICE No. : F112 (MAIN-2)	

10. Under Frequency Protection.

Parameter setting :

81U

Start Value stage-1	=	48.00	Hz
Start Value stage-2	=	47.50	Hz
Blocking undervoltage	=	40.40	V
Blocking Overvoltage	=	140.00	V
Operate time delay stage-1	=	5.00	s
Operate time delay stage-2	=	1.00	s
Reset Time delay	=	0.10	s

- Pickup Test

Function	Phase	Relay operate (Hz)		
		Should be	As found	
			Pick up	Drop off
81U	ABC	48.00	*48.010*	*47.990*
81U	ABC	47.50	*47.510*	*47.400*

- Pickup Test - Block under voltage

Function	Phase	Relay operate (V)		
		Should be	As found	
			Pick up	Drop off
81U	ABC	40.40	*40.390*	*40.410*

- Pickup Test - Block Over voltage

Function	Phase	Relay operate (V)		
		Should be	Pick up	Drop off
81U	ABC	140.00	*140.010*	*139.900*

- Operating test

Function	Injected	Should be	Operating time (s)
	Frequency (Hz)	(s)	
81U	47.9	5.000	*5.0*
81U	47.4	1.000	*1.1*

Responsibility	Tested by	Approved by
Company Name	Andritz Hydro Pvt. Ltd.	Malana H.E.P(2X43MW)
Signature	Sathiyaseelan T	Mohd Abdul Rafiq
Date		

FIELD INSPECTION AND TEST REPORT

UNIT PROTECTION RELAY

ANDRITZ Hydro

CUSTOMER	: MALANA POWER COMPANY LTD.	LOCATION	: UNIT-1
ERECTION SITE	: MPCL H.E.P	PANEL No.	:
FEEDER	: UNIT-1 GENERATOR	DEVICE No.	: F112 (MAIN-2)

11. Over Frequency Protection.

Parameter setting :

81O

Start Value stage-1	=	52.00	Hz
Start Value stage-2	=	52.50	Hz
Blocking undervoltage	=	40.40	V
Blocking Overvoltage	=	140.00	V
Operate time delay stage-1	=	5.00	s
Operate time delay stage-2	=	1.00	s

- Pickup Test

Function	Phase	Relay operate (Hz)		
		Should be	As found	
			Pick up	Drop off
81O	ABC	52.00	*52.002*	*51.950*
81O	ABC	52.50	*52.510*	*52.490*

- Pickup Test - Block under voltage

Function	Phase	Relay operate (V)		
		Should be	As found	
			Pick up	Drop off
81O	ABC	40.40	*40.390*	*40.410*

- Pickup Test - Block Over voltage

Function	Phase	Relay operate (V)		
		Should be	As found	
			Pick up	Drop off
81O	ABC	140.00	*140.100*	*139.900*

- Operating test

Function	Injected Frequency (Hz)	Should be (s)	Operating time (ms)
81O	52.1	5.0	*5042.0*
81O	52.6	1.0	*1042.0*

Responsibility	Tested by	Approved by
Company Name	Andritz Hydro Pvt. Ltd.	Malana H.E.P(2X43MW)
Signature	Sathiyaseelan T	Mohd Abdul Rafiq
Date		

FIELD INSPECTION AND TEST REPORT

UNIT PROTECTION RELAY

ANDRITZ Hydro

CUSTOMER : MALANA POWER COMPANY LTD.		LOCATION : UNIT-2	
ERECTION SITE : MPCL H.E.P		PANEL No. :	
FEEDER : UNIT-2 GENERATOR		DEVICE No. : F112 (MAIN-2)	

TECHNICAL DATA

Manufacture	ANDRITZ	Rated Current In	5	A
Type	HIPASE	Rated Voltage In	110	Vac
Software Ref.1	V1.47.01	Rated Frequency	50	Hz
Serial No.	GGP004-03225B004	Auxiliary Voltage Vx	110 - 250	Vdc
IP Address	172.16.215.64			

VISUAL CHECK

	Checked
1.1 Relay undamaged and clean.	☑
1.2 Wiring check, cable and terminal fastened properly.	☑
1.3 Check relay case earthed	☑
1.4 Test block connect check	☑
1.5 Verify relay rated information correct to installation	☑
1.6 Checking HMI&LCD	☑

TEST EQUIPMENT USED

Manufacturer	:	OMICRON
Type / Model	:	CMC256
Serial No.	:	KE722D
Cal. Date	:	23.02.2024 to 22.02.2025

Responsibility	Tested by	Approved by
Company	Andritz Hydro Pvt. Ltd.	Malana H.E.P(2X43MW)
Name	Sathiyaseelan T	Mohd Abdul Rafiq
Signature		
Date		

FIELD INSPECTION AND TEST REPORT

UNIT PROTECTION RELAY

ANDRITZ Hydro

CUSTOMER	: MALANA POWER COMPANY LTD.	LOCATION	: UNIT-2
ERECTION SITE	: MPCL H.E.P	PANEL No.	:
FEEDER	: UNIT-2 GENERATOR	DEVICE No.	: F112 (MAIN 2)

1. Measurement Check

Parameter setting :

CT AND VT RATIOS

GEN PHASE SIDE CT

Polarity	=	Standard	
Primary	=	3200	A
Secondary	=	5.000	A

GEN NEUTRAL SIDE CT

Polarity	=	Standard	
Primary	=	3200	A
Secondary	=	5.000	A

GT HV PHASE CT

Polarity	=	Standard	
Primary	=	320	A
Secondary	=	5.000	A

UAT CT

Polarity	=	Standard	
Primary	=	50	A
Secondary	=	1.000	A

GENERATOR PT

Polarity	=	Standard	
Primary	=	11000	V
Secondary	=	110.000	V

NGT FOR 64S

Polarity	=	Standard	
Primary	=	11000	V
Secondary	=	110.000	V

SHAFT CT 51SC

Polarity	=	Standard	
Primary	=	100.0	
Secondary	=	1.00	

Responsibility	Tested by	Approved by
Company	Andritz Hydro Pvt. Ltd.	Malana H E P(2X43MW)
Name	Sathiyaseelan T	Mohd Abdul Rafiq
Signature		
Date		

FIELD INSPECTION AND TEST REPORT

UNIT PROTECTION RELAY

ANDRITZ Hydro

CUSTOMER	: MALANA POWER COMPANY LTD.	LOCATION	: UNIT-2
ERECTION SITE	: MALANA H.E.P	PANEL No.	:
FEEDER	: UNIT-2 GENERATOR	DEVICE No.	: F111 (MAIN-I)

10. Under Frequency Protection.

Parameter setting :

81U

Start Value stage-1	=	48.00	Hz
Start Value stage-2	=	47.50	Hz
Blocking undervoltage	=	40.40	V
Blocking Overvoltage	=	140.00	V
Operate time delay stage-1	=	5.00	s
Operate time delay stage-2	=	1.00	s
Reset Time delay	=	0.10	s

- Pickup Test

Function	Phase	Relay operate (Hz)		
		Should be	As found	
			Pick up	Drop off
81U	ABC	48.00	*48.010*	*48.090*
81U	ABC	47.50	*47.510*	*47.500*

- Pickup Test - Block under voltage

Function	Phase	Relay operate (V)		
		Should be	As found	
			Pick up	Drop off
81U	ABC	40.40	*40.390*	*40.420*

- Pickup Test - Block Over voltage

Function	Phase	Relay operate (V)		
		Should be	Pick up	Drop off
81U	ABC	140.00	*140.020*	*139.910*

- Operating test

Function	Injected	Should be	Operating time (s)
	Frequency (Hz)	(s)	
81U	47.9	5.000	*5.03*
81U	47.4	1.000	*1.02*

Responsibility	Tested by	Approved by
Company	Andritz Hydro Pvt. Ltd.	Malana H.E.P(2X43MW)
Name	Sathiyaseelan T	Mohd Abdur Rafiq
Signature		
Date		

FIELD INSPECTION AND TEST REPORT

UNIT PROTECTION RELAY

ANDRITZ Hydro

CUSTOMER	: MALANA POWER COMPANY LTD.	LOCATION	: UNIT-2
ERECTION SITE	: MALANA H.E.P	PANEL No.	:
FEEDER	: UNIT-2 GENERATOR	DEVICE No.	: F111 (MAIN-I)

11. Over Frequency Protection.

Parameter setting :

81O

Start Value stage-1	=	52.00	Hz
Start Value stage-2	=	52.50	Hz
Blocking undervoltage	=	40.40	V
Blocking Overvoltage	=	140.00	V
Operate time delay stage-1	=	5.00	s
Operate time delay stage-2	=	1.00	s

- Pickup Test

Function	Phase	Relay operate (Hz)		
		Should be	As found	
			Pick up	Drop off
81O	ABC	52.00	*52.003*	*51.960*
81O	ABC	52.50	*52.520*	*52.480*

- Pickup Test - Block under voltage

Function	Phase	Relay operate (V)		
		Should be	As found	
			Pick up	Drop off
81O	ABC	40.40	*40.390*	*40.410*

- Pickup Test - Block Over voltage

Function	Phase	Relay operate (V)		
		Should be	As found	
			Pick up	Drop off
81O	ABC	140.00	*140.100*	*139.900*

- Operating test

Function	Injected Frequency (Hz)	Should be (s)	Operating time (ms)
81O	52.1	5.0	*5048.0*
81O	52.6	1.0	*1039.0*

Responsibility	Tested by	Approved by
Company Name	Andritz Hydro Pvt. Ltd.	Malana H.E.P(2X43MW)
	Sathiyaseelan T	Mohd Abdul Rafiq
Signature		
Date		

(Annexure-J)

Gmail

Se Sldc <sehpsldc@gmail.com>

Request to decrease the Under-Frequency Relay (UFR) settings of generators.

Ajmer Singh <ajmerengineer123@gmail.com> 26 December 2024 at 11:55
To: Se Sldc <sehpsldc@gmail.com>

Dear Sir,

As per our telephonic discussion regarding Chakshi under frequency relay, I am referring to the meeting held on 11.1.2023, wherein we submitted a letter with reference number HPSLDC/SLDC(VOL111-75)7004-13. As requested, the necessary charges have been applied. (Generator management relay 489 Photograph attached for your reference.)
Thank you for your attention to this matter.

Sincerely,
Ajmer Singh
Manager
[Quoted text hidden]

SR 489 UFR.jpeg
114K


UNDERFREQUENCY
ALARM LEVEL: 47.50Hz
489 STATUS
RELAY IN SERVICE
SETPOINT ACCESS
COMPUTER RS232
COMPUTER RS485
AUXILIARY RS485
ALT. SETPOINTS
RESET POSSIBLE
MESSAGE
GENERATOR STATUS
BREAKER OPEN
BREAKER CLOSED
HOT STATOR
NEG. SEQUENCE
GROUND
LOSS OF FIELD
VT FAILURE
BREAKER FAILURE
OUTPUT STATUS
1 TRIP
2 AUXILIARY
3 AUXILIARY
4 AUXILIARY
5 ALARM
6 SERVICE
7
8
9
4
5
6
1
2
3
.
0
HELP
MESSAGE
ENTER
ESCAPE
VALUE
489 Generator Management Relay

'Annexure-G'

Gmail

Se Sldc <sehpsldc@gmail.com>

Request to decrease the Under-Frequency Relay (UFR) settings of generators.

toss mhep <tossmhep@gmail.com> 13 November 2024 at 12:19
To: Se Sldc <sehpsldc@gmail.com>
Cc: Kumar Abhinav <kumar.abhinav@continuumenergy.in>, "nanti.nhppl" <nanti.nhppl@gmail.com>, Malana Generation <malanageneration@lnjbhilwara.com>, Avtar Singh <avtarsingh13021983@gmail.com>, ajmer@purioilmills.com, Vinay Parmar <binny195@gmail.com>, Kundan Kut <kut@kundangreenenergy.com>, NRLDC Power Grid <nrldcso2@posoco.in>, NRPC <seo-nrpc@nic.in>

Respected/Sir

As per your mail the setting of Under Frequency Relay(UFR) is 47.50HZ & Over Frequency Relay(OFR) is 52.60HZ for your reference. Please find the attachment for the same.

Best Regards
Pankaj Thakur
Toss Mini Hydel Power Project
9418764081, 9882681658

Show quoted text

[Quoted text hidden]

Format of Realy setting (2).xlsx
10K

A. For Under Frequnecy Relay (UFR) Setting

Sr.No	Name of the Generator	Existing Under Frequency Relay(UFR) setting of your Generating Units	Whether the Generator decrease its UFR Setting to 47.5Hz(Note: Ony for those Generators having UFR settings above 47.5Hz) (Yes/No)	If No then please give the reasons	Remarks if any
1	5000KW, 6600V, 12 Pole, 50HZ Vertical Brushless Generator	47.50HZ	No	UFR realy setting is 47.5HZ in the REM543 Realy installled at Generator Panel	

B. For Over Frequency Relay (OFR) Setting

Sr.No	Name of the Generator	Existing Under Frequency Relay(OFR) setting of your Generating Units	Whether the Generator decrease its UFR Setting to 52.5Hz(Note: Ony for those Generators having UFR settings above 52.5Hz) (Yes/No)	If No then please give the reasons	Remarks if any
1	5000KW, 6600V, 12 Pole, 50HZ Vertical Brushless Generator	52.60Hz	No	OFR Realy setting is 52.6HZ in the REM543 Realy installled at Generator Panel	

'Annexure-H'

Gmail

Se Sldc <sehpsldc@gmail.com>

Request to decrease the Under-Frequency Relay (UFR) settings of generators.

Vinay Parmar <binny195@gmail.com> 13 November 2024 at 15:05
To: Se Sldc <sehpsldc@gmail.com>
Cc: NRLDC Power Grid <nrldcso2@posoco.in>, NRPC <seo-nrpc@nic.in>, Parveen Thakur <pthakur874@gmail.com>

Respected/Sir

As per your mail the setting of Under Frequency Relay(UFR) is 47.50HZ & Over Frequency Relay(OFR) is 52.60HZ for your reference. Please find the attachment for the same

Thanks with rgds..

[Quoted text hidden]

--

Vinay Parmar
Manager (O&M)
Kapil Mohan & Asso. Hydro Power Pvt Ltd.
Jirah HEP
9805012776,8894704216

Format of Realy setting Jirah SHEP 4mw.xlsx
10K

A. For Under Frequnecy Relay (UFR) Setting

Sr.No	Name of the Generator	Existing Under Frequency Relay(UFR) setting of your Generating Units	Whether the Generator decrease its UFR Setting to 47.5Hz(Note: Ony for those Generators having UFR settings above 47.5Hz) (Yes/No)	If No then please give the reasons	Remarks if any
1	2500KW, 6600V, 8 Pole, 50HZ Vertical Brushless Generator	47.50HZ	No	UFR realy setting is 47.5HZ in the REM543 Realy installled at Generator Panel	

B. For Over Frequency Relay (OFR) Setting

Sr.No	Name of the Generator	Existing Under Frequency Relay(OFR) setting of your Generating Units	Whether the Generator decrease its UFR Setting to 52.5Hz(Note: Ony for those Generators having UFR settings above 52.5Hz) (Yes/No)	If No then please give the reasons	Remarks if any
1	2500KW, 6600V, 8 Pole, 50HZ Vertical Brushless Generator	52.60Hz	No	OFR Realy setting is 52.6HZ in the REM543 Realy installled at Generator Panel	

Annexure-A.III

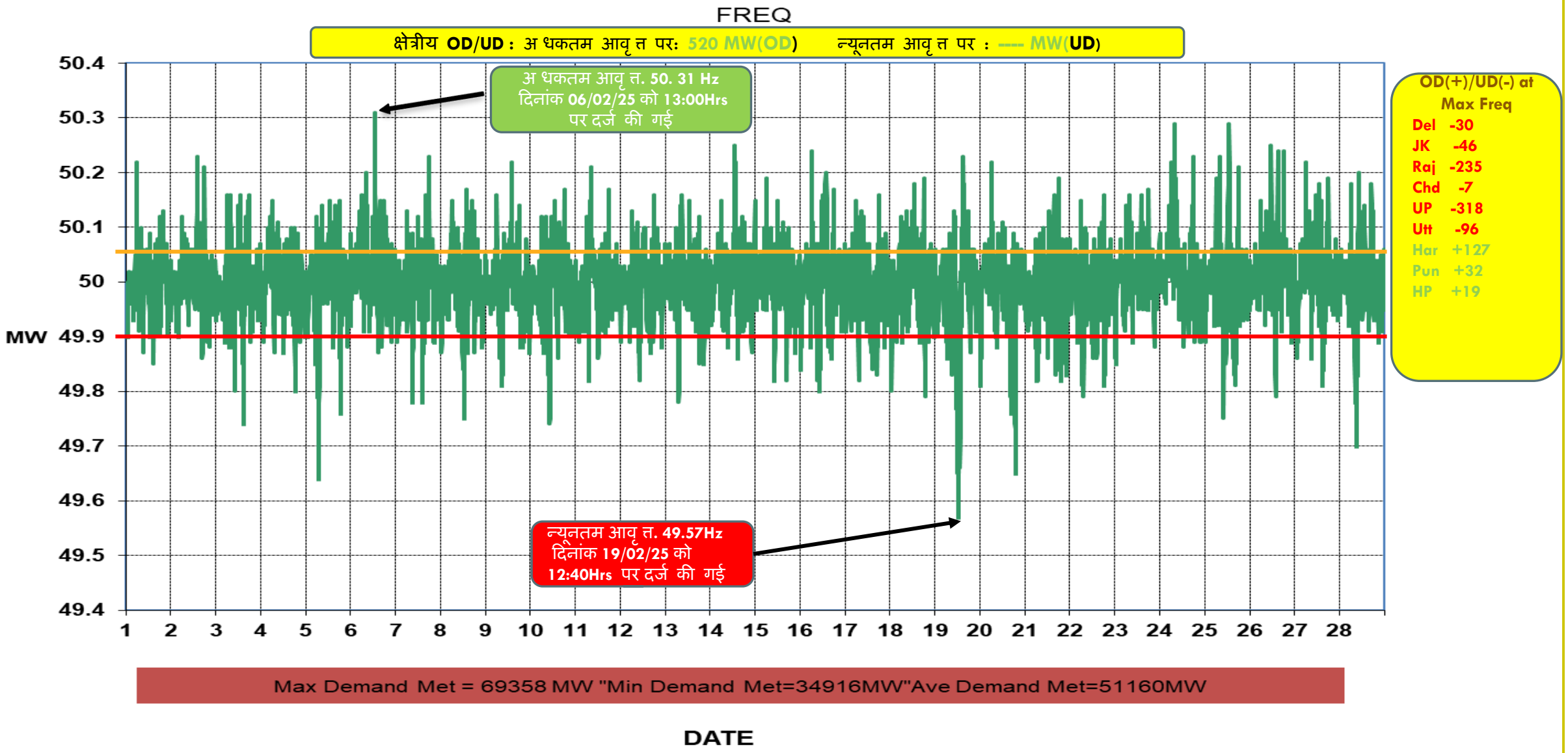
											Approved Planned Outage-1			Actual Planned Outage-1		
Capacity (MW) 30-11-2023	Name of Station	UNIT_NM	STN_TYPE_ID	SECTOR	REGION_NM	ST_NM	SH_NM	IPP	FUEL_NM	Capacity (MW) 31-03-2025	Start Date	End Date	Reason	Start Date	End Date	Reason for any deviation
500	INDIRA GANDHI STPP	2	T	CENTRAL SECTOR	Northern	Haryana	APCPL	FALSE	COAL	500	16-Feb-25	22-Feb-25	Boiler License Renewal			Planned outage was not required as the license renewal was completed during an opportunity shutdown.
660	TALWANDI SABO TPP	1	T	IPP SECTOR	Northern	Punjab	TSPL	FALSE	COAL	660	1-Feb-25	25-Feb-25	AOH	14-Nov-24	25-Nov-24	
210	KOTA TPS	4	T	STATE SECTOR	Northern	Rajasthan	RRVUNL	FALSE	COAL	210	2-Jan-25	15-Feb-25	COH			Deferred due to ongoing Rabi season, huge Power demand in State is running.
660	SURATGARH TPS	8	T	STATE SECTOR	Northern	Rajasthan	RRVUNL	FALSE	COAL	660	1-Feb-25	25-Feb-25	AOH	28-Jul-24	3-Oct-24	Preponed due to rectification of Boiler design defects by M/s BHEL (OEM)
200	OBRA TPS	11	T	STATE SECTOR	Northern	Uttar Pradesh	UPRVUNL	FALSE	COAL	200	25-Jan-25	23-Feb-25	AOH			S/d not taken.ESP Spare Parts not suplied
660	HARDUAGANJ TPS	10	T	STATE SECTOR	Northern	Uttar Pradesh	UPRVUNL	FALSE	COAL	660	15-Dec-24	12-Feb-25	COH	1-Feb-25	4-Mar-25	Due to Anpara Unit 5 and 6 was under S/D
210	UNCHAHAR TPS	1	T	CENTRAL SECTOR	Northern	Uttar Pradesh	NTPC Ltd.	FALSE	COAL	210	10-Jan-25	13-Feb-25	AOH	14-Jan-25	19-Feb-25	Coal nozzles supply delayed, seepage observed in water wall tube during commissioning.
210	DADRI (NCTPP)	4	T	CENTRAL SECTOR	Northern	Uttar Pradesh	NTPC Ltd.	FALSE	COAL	210	1-Feb-25	25-Feb-25	Boiler Overhauling	5-Feb-25	1-Mar-25	Boiler licence was expiring on 05.02.2025
300	ROSA TPP Ph-I	2	T	IPP SECTOR	Northern	Uttar Pradesh	RPSCL	FALSE	COAL	300	7-Feb-25	28-Feb-25	Boiler Overhauling	11-Nov-24	6-Dec-24	Unit 3 was aviled from 18.02.2025 to 28.02.2025
111.19	AURAIYA CCPP	1	T	CENTRAL SECTOR	Northern	Uttar Pradesh	NTPC Ltd.	FALSE	NATURAL GAS	111.19	2-Feb-25	2-Feb-25	Boiler License Renewal	2-Feb-25	2-Feb-25	Boiler License Renewal
111.19	AURAIYA CCPP	4	T	CENTRAL SECTOR	Northern	Uttar Pradesh	NTPC Ltd.	FALSE	NATURAL GAS	111.19	2-Feb-25	2-Feb-25	Boiler License Renewal	2-Feb-25	2-Feb-25	Boiler License Renewal
135	JALIPA KAPURDI TPP	1	T	IPP SECTOR	Northern	Rajasthan	JSWBL	FALSE	LIGNITE	135	7-Feb-25	14-Feb-25	AOH	18-Feb-25	25-Feb-25	
135	JALIPA KAPURDI TPP	4	T	IPP SECTOR	Northern	Rajasthan	JSWBL	FALSE	LIGNITE	135	15-Feb-25	26-Feb-25	Boiler Inspection			Deffered due to other unit forced outages
135	JALIPA KAPURDI TPP	8	T	IPP SECTOR	Northern	Rajasthan	JSWBL	FALSE	LIGNITE	135	13-Jan-25	6-Feb-25	COH			COH Deffered in FY 2025-26.

Annexure-B.I

प्रचालन समन्वय उपस मति की बैठक
फ़रवरी- 2025

फ़रवरी-2025 के दौरान आवृत्ति की स्थिति
(As per 5 Minute SCADA data)

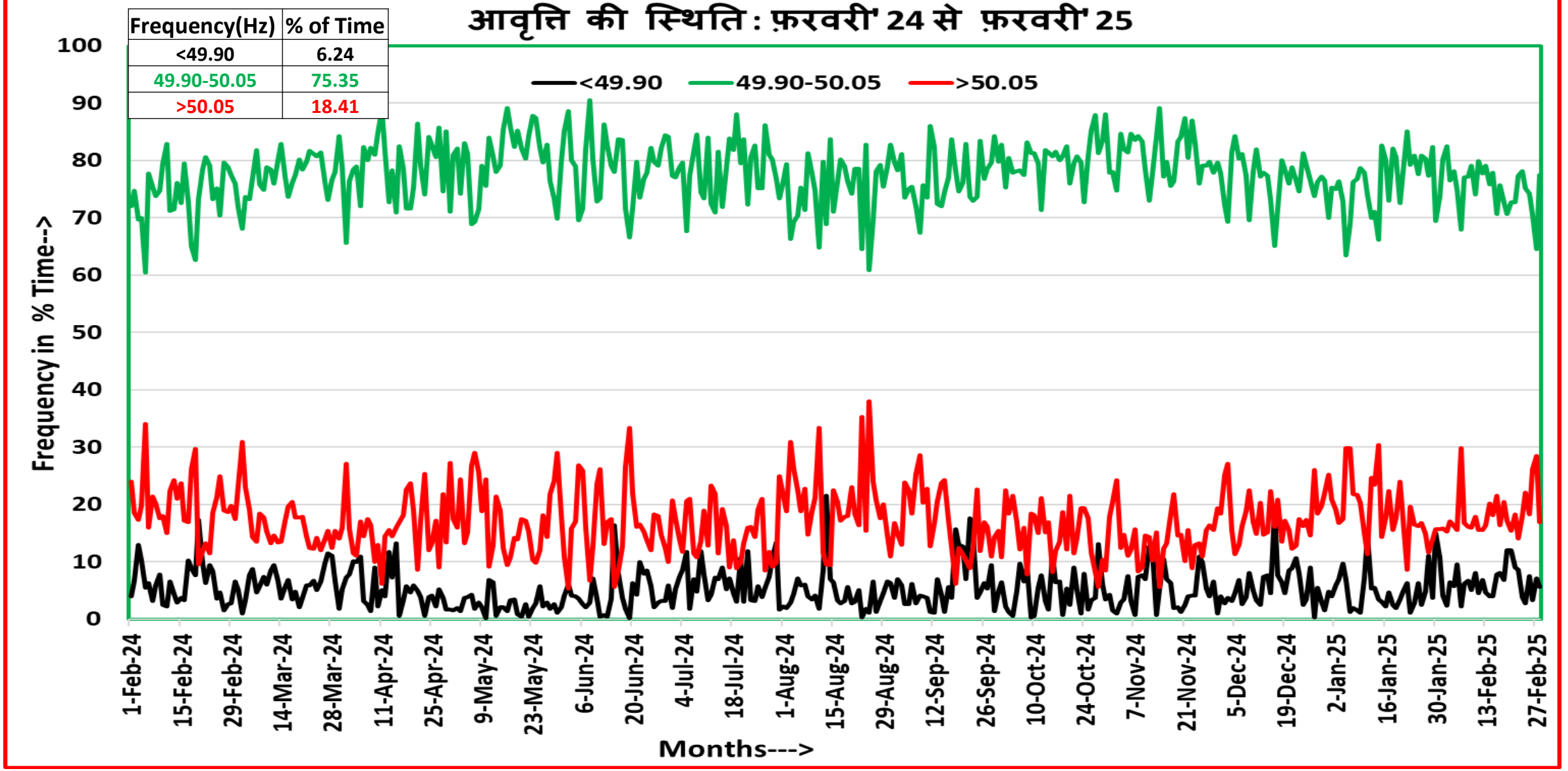
ग्रिड-इंडिया GRID-INDIA



आवृत्ति की स्थिति: फ़रवरी -2024 से 2025

ग्रिड-इंडिया
GRID-INDIA

Frequency(Hz)	% of Time
<49.90	6.24
49.90-50.05	75.35
>50.05	18.41



पिछले एक साल मे आवृत्ति की स्थिति

ग्रिड-इंडिया GRID-INDIA

आवृ त्त बैंड	फ़रवरी 2024	मार्च 2024	अप्रैल 2024	मई 2024	जून 2024	जुलाई 2024	अगस्त 2024	सतम्बर 2024	अक्टूबर 2024	नवम्बर 2024	दिसंबर 2024	जनवरी 2025	फ़रवरी 2025
< 49.7 Hz(%)	0.095	0.065	0.030	0.000	0.02	0.054	0.176	0.18	0.14	0.10	0.29	0.18	0.12
<49.8 Hz(%)	0.797	0.479	0.432	0.059	0.31	0.621	0.631	0.89	0.60	0.66	0.97	0.92	0.73
<49.9 Hz(%)	6.239	6.022	5.254	2.490	4.50	6.406	4.660	6.09	4.86	5.15	5.58	5.23	6.24
49.90-50.05 Hz(%)	***74.06***	***77.51***	***78.56***	***80.045***	***79.177***	***78.424***	***75.012***	***77.130***	***80.27***	***80.80***	***76.45***	***76.05***	***75.35***
50.05-50.10 Hz(%)	14.118	12.262	11.178	13.839	13.34	12.122	13.334	10.36	12.18	10.90	14.59	15.09	14.23
>50.10 Hz(%)	5.581	4.204	5.010	3.627	2.99	3.047	6.992	6.42	2.49	3.15	3.38	3.63	4.18
>50.20 Hz(%)	0.565	0.657	0.539	0.285	0.12	0.280	1.725	1.03	0.20	0.21	0.37	0.33	0.55
औसत आवृ त्त	50.00	50.00	50.00	50.00	50.002	49.997	50.008	50.000	49.998	49.995	49.998	49.998	49.999

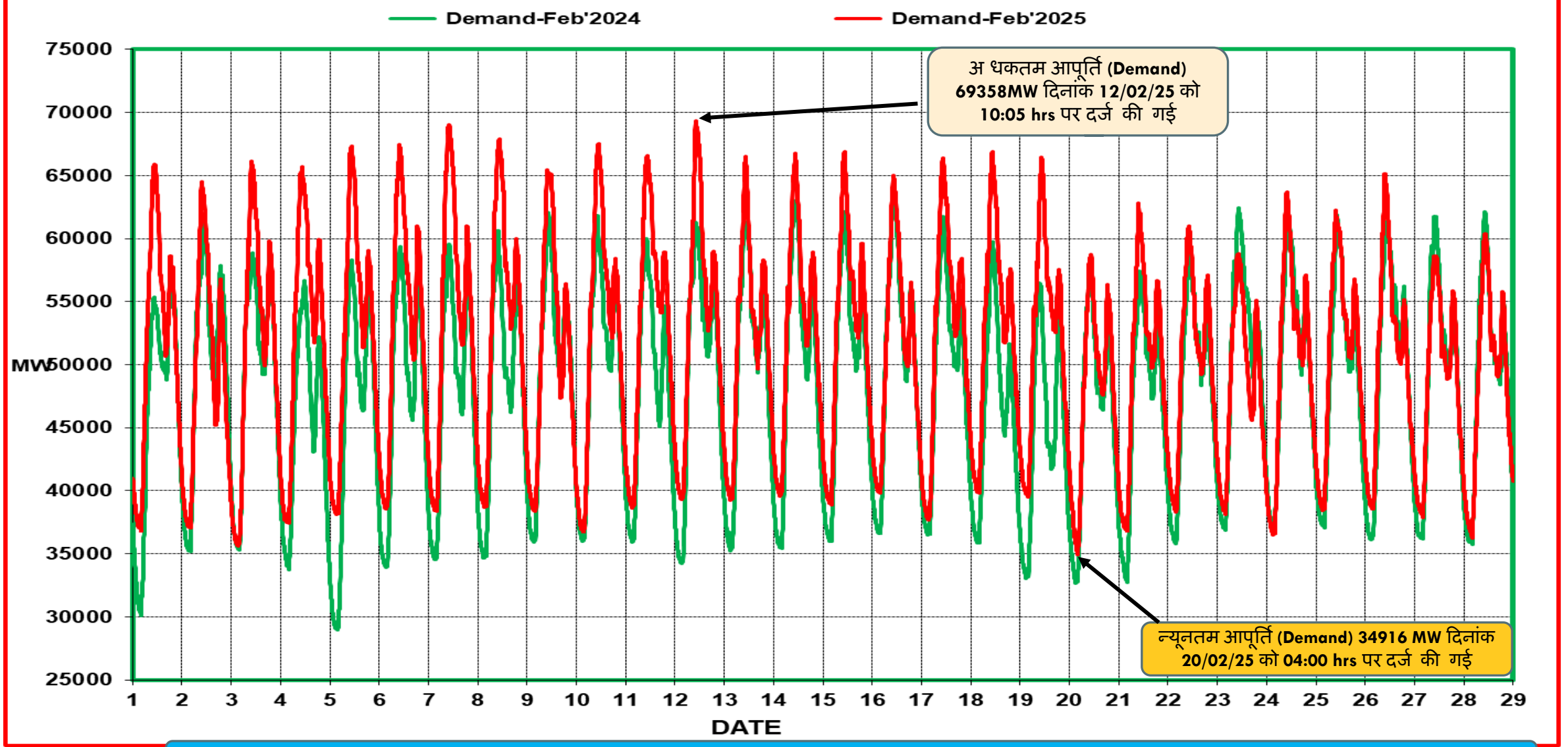
फ़रवरी-2025 के दौरान अधिकतम मांग (Demand Met), अधिकतम ऊर्जा खपत (Energy consumption) और अब तक का कीर्तिमान (राज्यों द्वारा जमा आंकड़ों के अनुसार)

ग्रिड-इंडिया GRID-INDIA

राज्य	अ धकतम मांग (MW) (in Feb'25)	दिनांक / समय	रिकॉर्ड अ धकतम मांग (in MW) (upto Jan'25)	दिनांक / समय	अ धकतम ऊर्जा खपत (MU) (in Feb'25)	दिनांक	रिकॉर्ड अ धकतम ऊर्जा खपत (MU) (Upto Jan'25)	दिनांक
पंजाब	10165	07.02.25 at 11:15	16089	29.06.24 at 12:45	180.0	07.02.25	366.8	21.07.2024
हरियाणा	9602	07.02.25 at 09:45	14662	31.07.24 at 14:30	172.0	12.02.25	293.4	30.07.2024
राजस्थान	19165	12.02.25 at 11:00	18643	19.12.24 at 09:45	355.0	08.02.25	379.1	30.05.2024
दिल्ली	4657	07.02.25 at 10:10	8656	19.06.24 at 15:06	78.7	07.02.25	177.7	18.06.2024
उत्तर प्रदेश	20456	08.02.25 at 18:53	30618	13.06.24 at 22:00	363.7	26.02.25	658.7	17.06.2024
उत्तराखंड	2477	07.02.25 at 08:00	2863	14.06.24 at 22:00	45.3	04.02.25	62.1	14.06.2024
हिमाचल प्रदेश	2193	18.02.25 at 07:45	2273	17.01.25 at 09:00	39.5	25.02.25	41.3	20.12.24
जम्मू और कश्मीर (UT) तथा लद्दाख़ (UT)	3057	05.02.25 at 10:00	3200	07.01.25 at 10:00	70.3	04.02.25	69.3	10.01.25
चंडीगढ़	265	05.02.25 at 07:00	482	18.06.24 at 15:28	5.1	05.02.25	9.1	18.06.2024
उत्तरी क्षेत्र #	69358	06.02.25 at 13:00	91234	19.06.24 at 14:37	1275.8	08.02.25	1990.4	18.06.2024

उत्तरी क्षेत्र अ धकतम मांग (Demand Met) as per 1 min SCADA Data

क्षेत्रीय विद्युत आपूर्ति (Demand) फ़रवरी 2024 बनाम फ़रवरी 2025 (As per 5 Minute SCADA data)

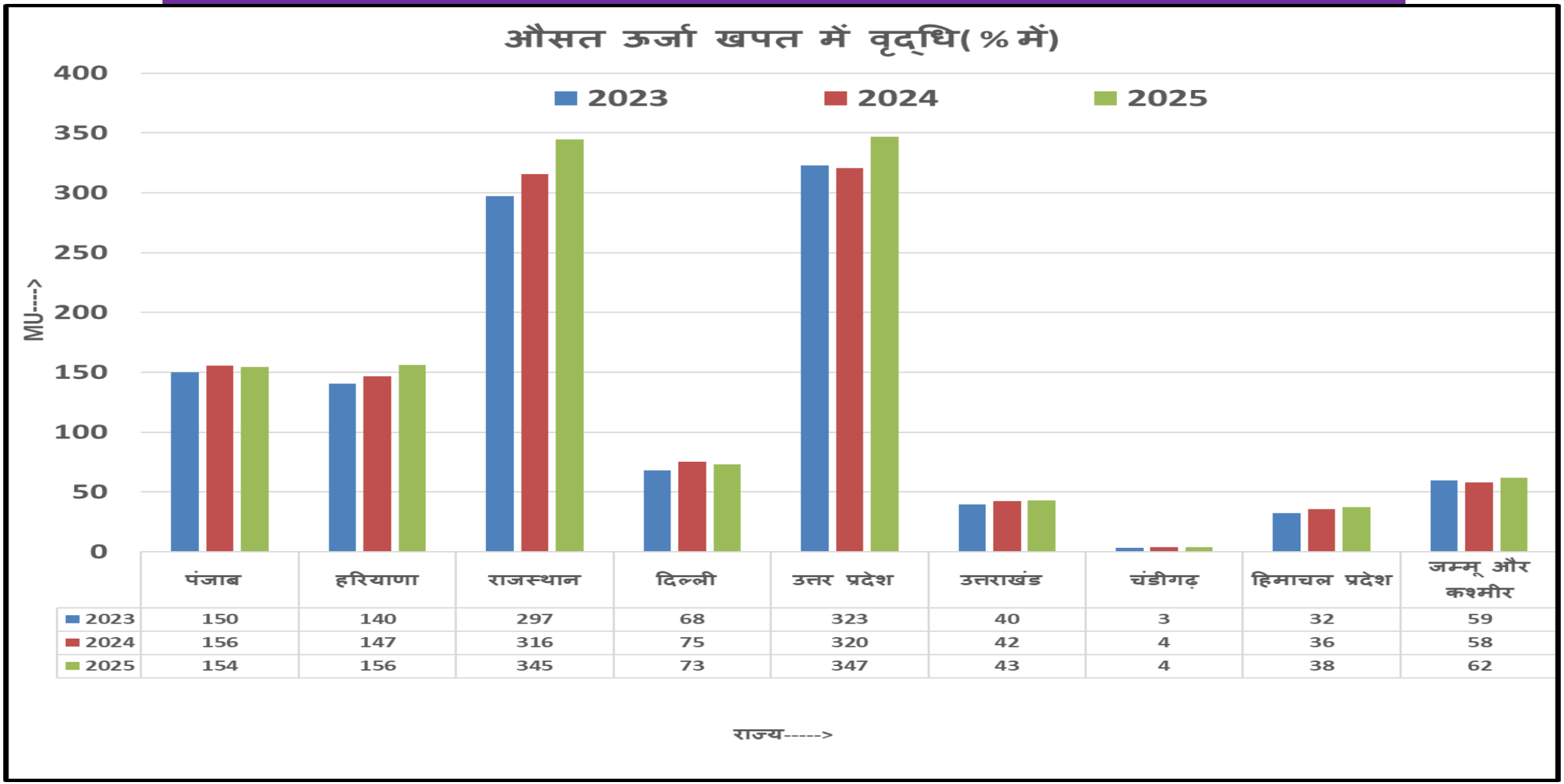


फ़रवरी -2024 की तुलना में फ़रवरी -2025 की औसत वद्युत आपूर्ति में 6 % (~2958MW) वृद् ध हुई

उत्तरी क्षेत्र की औसत ऊर्जा खपत में वृदधि(% में) फ़रवरी -2025/ फ़रवरी -2024 / फ़रवरी -2023

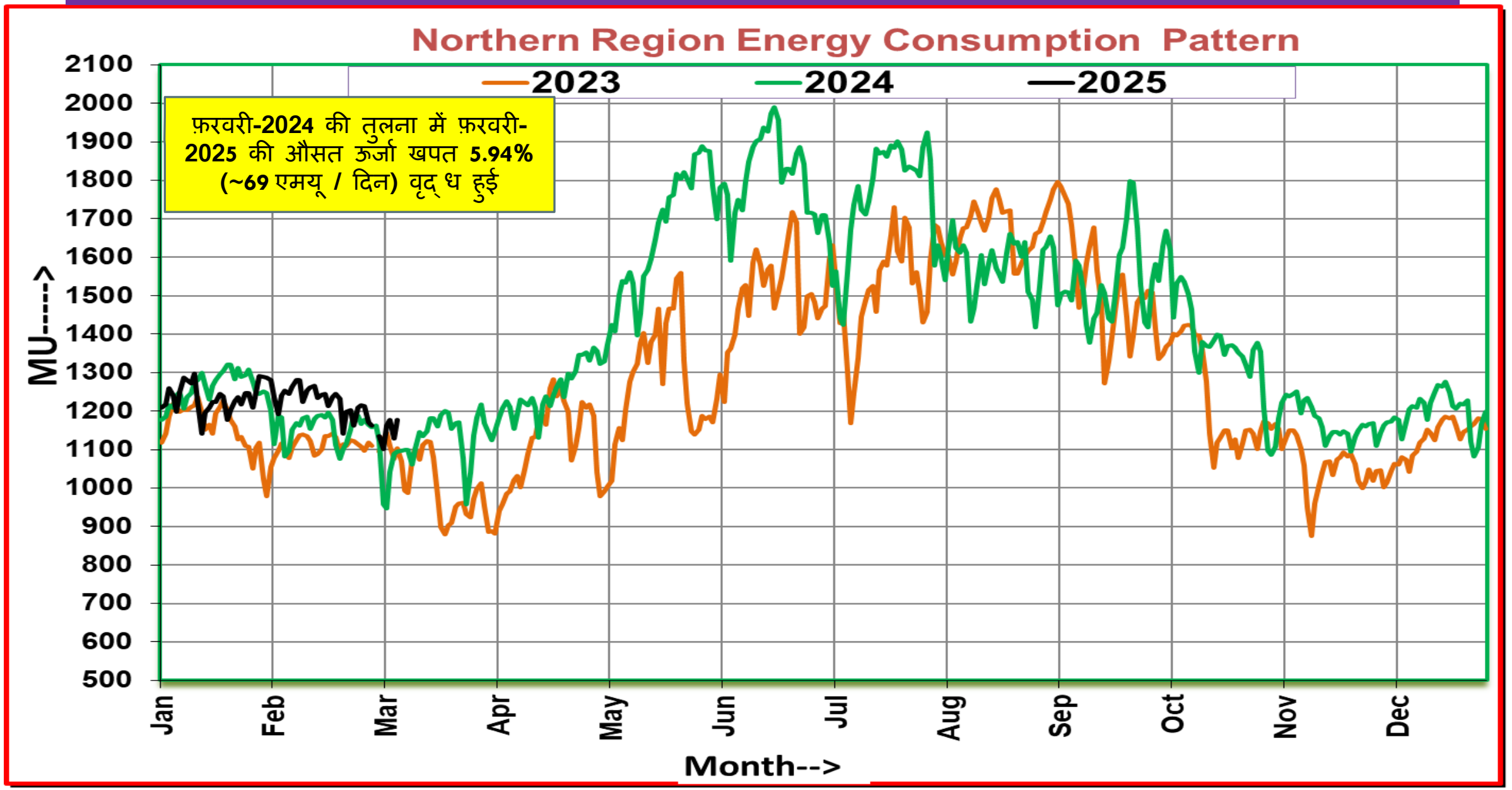
राज्य	फ़रवरी -2023	फ़रवरी -2024	फ़रवरी -2025	% वृद् ध (फ़रवरी -2024 vs फ़रवरी -2023)	% वृद् ध (फ़रवरी -2025 vs फ़रवरी -2024)
पंजाब	150	156	154	4.0%	-0.9%
हरियाणा	140	147	156	4.6%	6.4%
राजस्थान	297	316	345	6.2%	9.1%
दिल्ली	68	75	73	10.4%	-2.8%
उत्तर प्रदेश	323	320	347	-0.7%	8.3%
उत्तराखंड	40	42	43	7.0%	0.6%
चंडीगढ़	3	4	4	15.1%	-3.7%
हिमाचल प्रदेश	32	36	38	10.3%	5.6%
जम्मू और कश्मीर (UT) तथा लद्दाख़ (UT)	59	58	62	-3.0%	7.0%
उत्तरी क्षेत्र	1113	1157	1226	4.0%	5.9%

उत्तरी क्षेत्र की औसत ऊर्जा खपत में वृद्धि(% में) फ़रवरी-2025/ फ़रवरी-2024 / फ़रवरी-2023

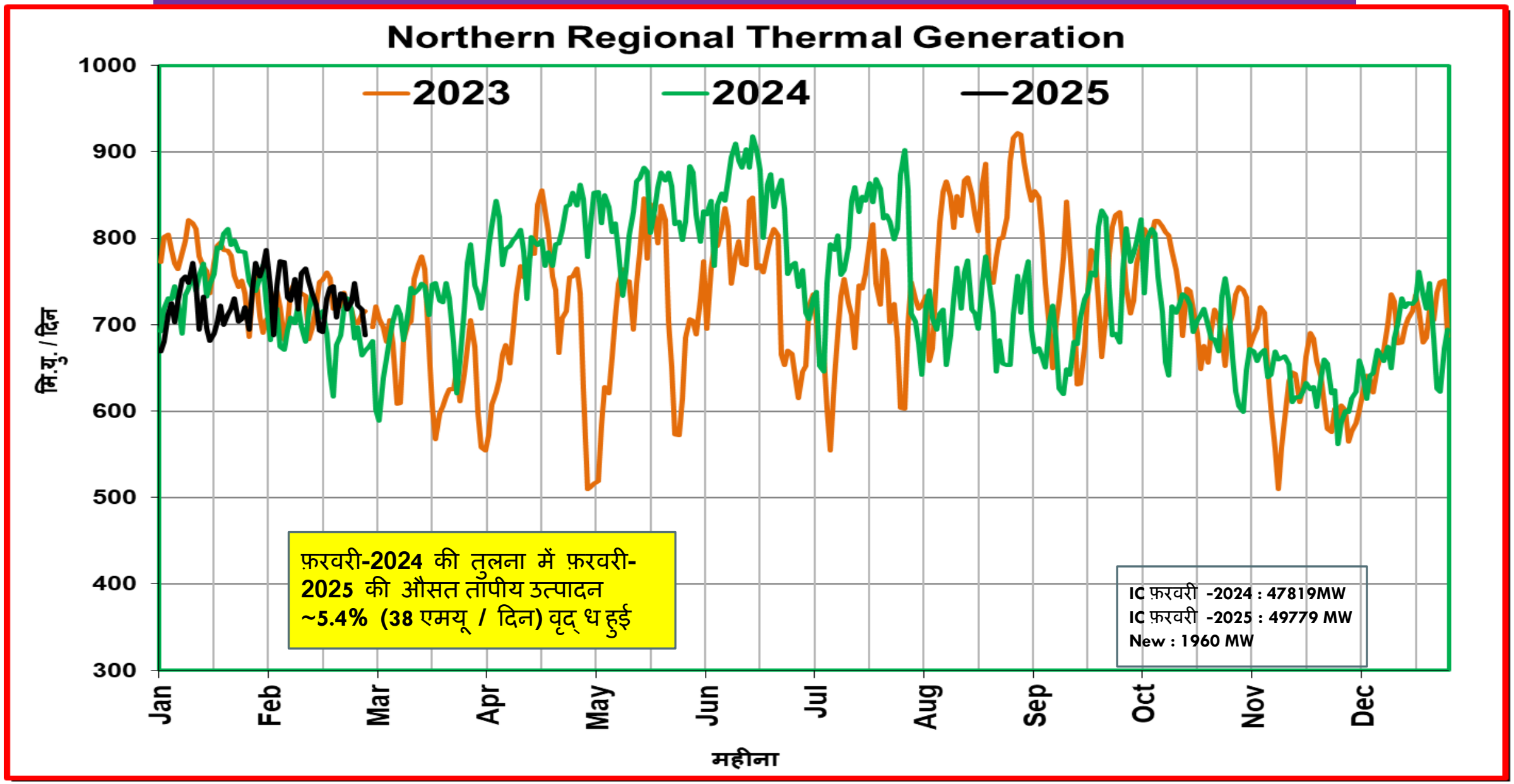


	पंजाब	हरियाणा	राजस्थान	दिल्ली	उत्तर प्रदेश	उत्तराखंड	चंडीगढ़	हिमाचल प्रदेश	जम्मू और कश्मीर
2023	150	140	297	68	323	40	3	32	59
2024	156	147	316	75	320	42	4	36	58
2025	154	156	345	73	347	43	4	38	62

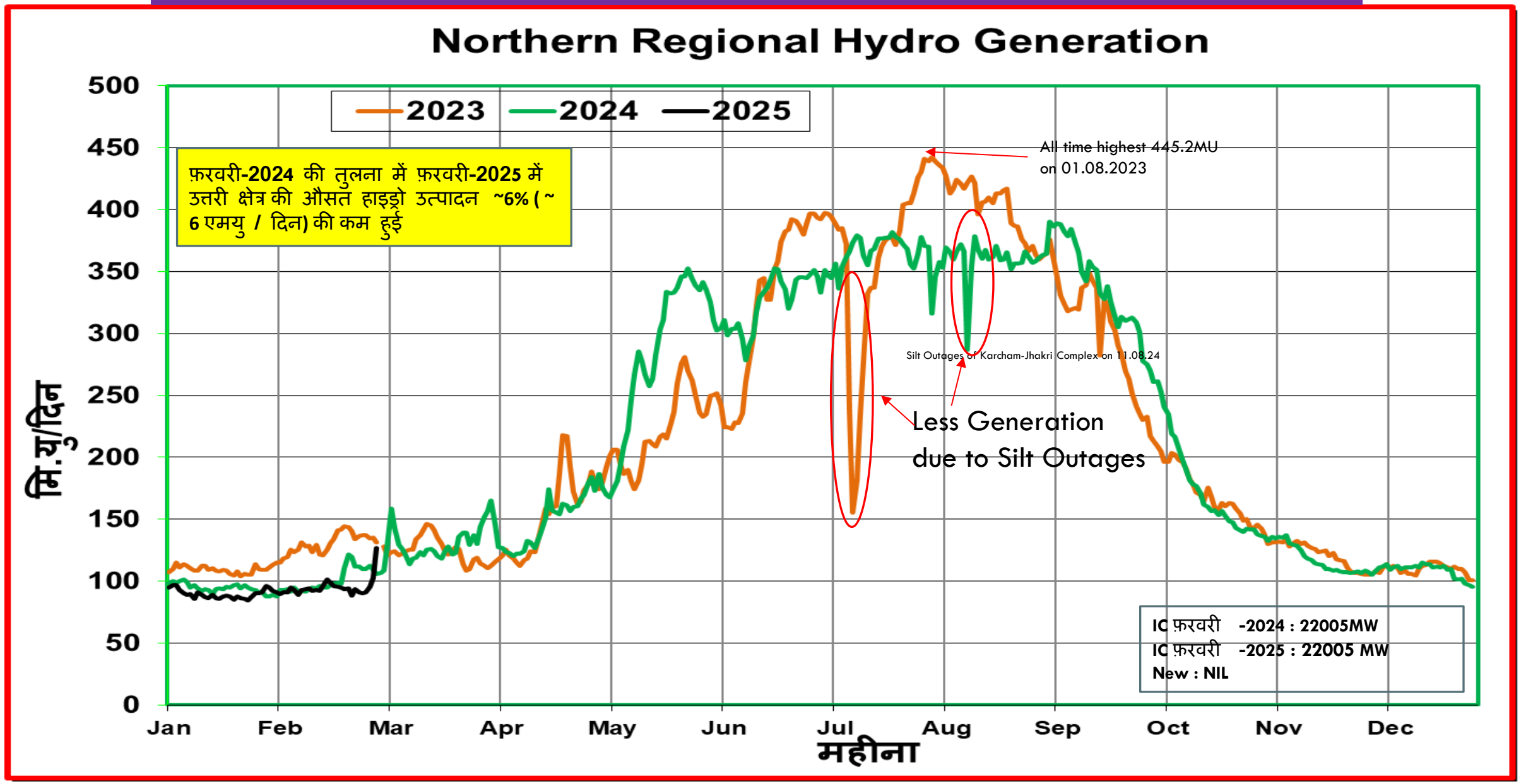
उत्तरी क्षेत्र की ऊर्जा खपत(MUs)



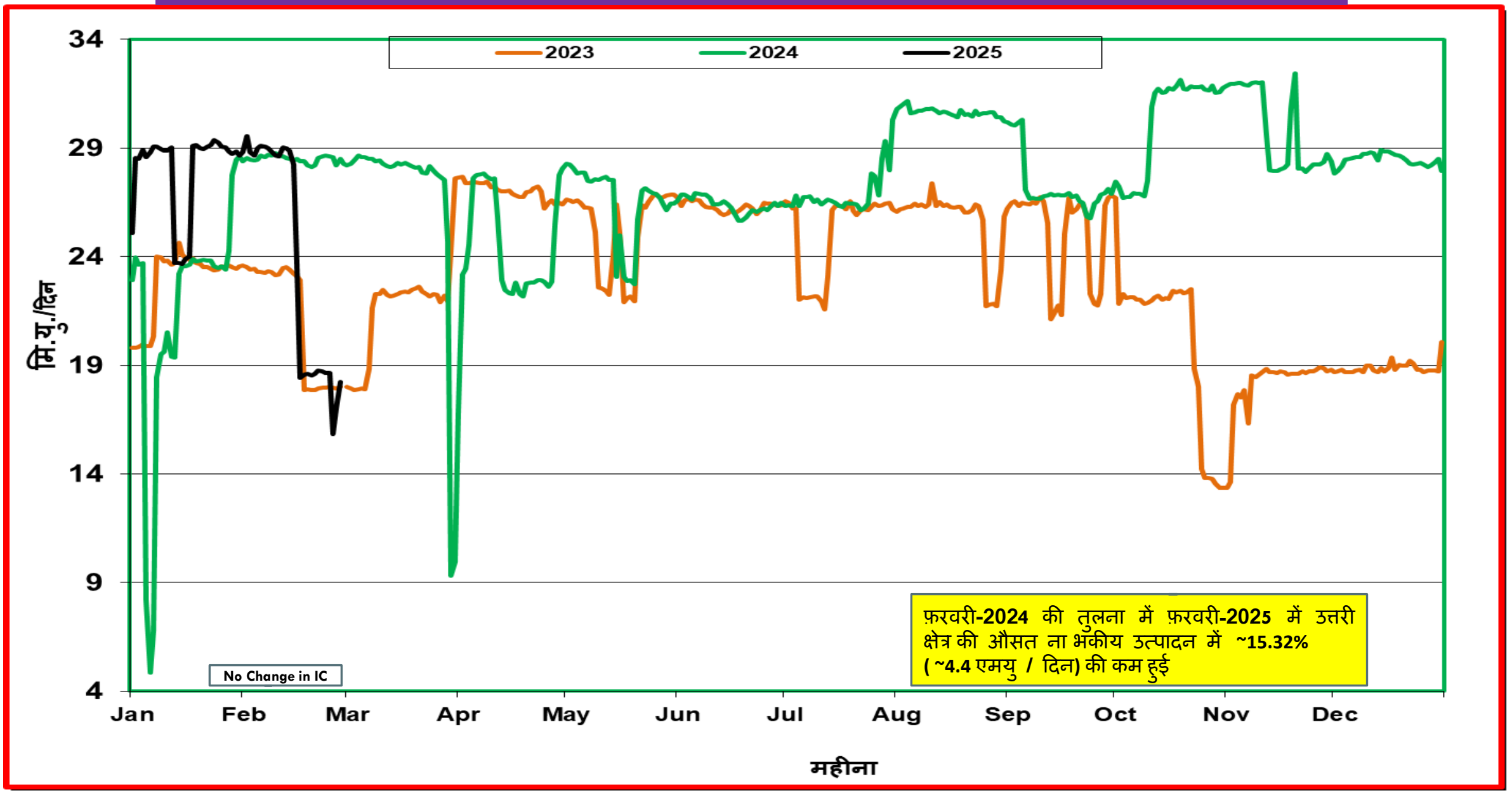
उत्तरी क्षेत्र की तापीय (Thermal) उत्पादन की स्थिति(MUs/Day)



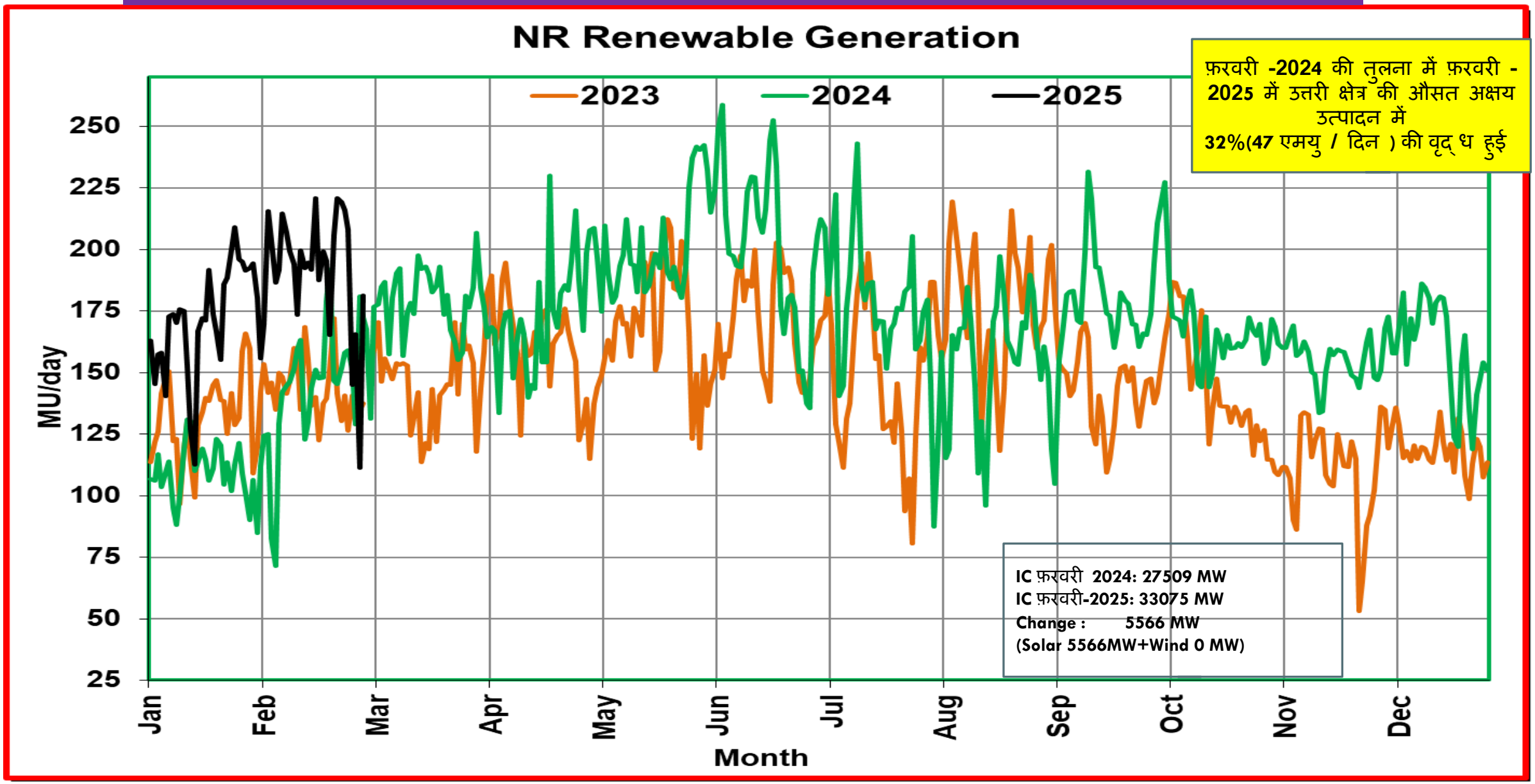
उत्तरी क्षेत्र की जलीय (हाइड्रो) उत्पादन की स्थिति(MUs/Day)



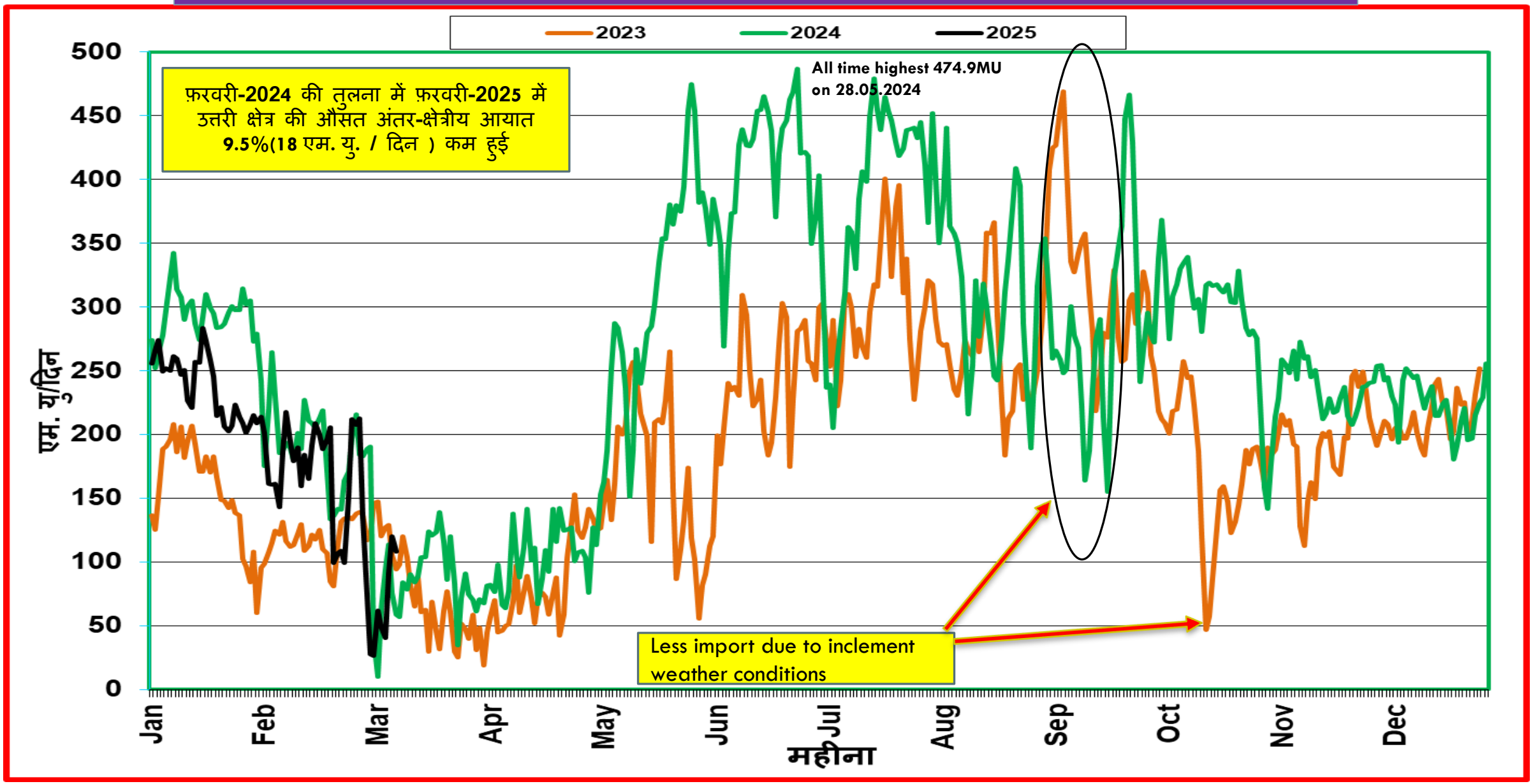
उत्तरी क्षेत्र की नाभिकीय उत्पादन की स्थिति (MUs/Day)



उत्तरी क्षेत्र की अक्षय (Renewable) उत्पादन की स्थिति (MUs/Day)



अंतर-क्षेत्रीय आयात(MUs/Day) की स्थिति



वास्तविक सारांश -
फ़रवरी-2024 बनाम फ़रवरी-2025

	फ़रवरी-2024 (म.यु. /दिन)	फ़रवरी-2025 (म.यु. /दिन)	फ़रवरी माह में वृद् ध (म.यु./दिन)
तापीय (Thermal) उत्पादन	694	732	38
जलीय (Hydro) उत्पादन	101	95	-6
ना भकीय (Nuclear) उत्पादन	28	24	-4
अंतर-क्षेत्रीय (Inter-Regional) कुल आयात	191	173	-18
अक्षय (Renewable) उत्पादन	145	192	47

RE Penetration

	Maximum Daily MU Penetration			
	Jan '2025		Record upto Dec '2024	
	Max % Penetration	Date	Max % Penetration	Date
Punjab	4.64	23-02-2025	12.28	01-04-2020
Rajasthan	16.73	21-02-2025	36.47	22-10-2021
UP	4.56	25-02-2025	5.50	05-03-2024
NR	18.53	23-02-2025	20.69	02-04-2023

Feb-25	Peak (Solar hrs)				
	Peak Demand(MW)	Time & Date	Wind(%)	Solar(%)	RE(%)
Northern Region	69358	06-02-2025 13:00:00	0.91%	13.84%	14.76%

DEMAND FORECAST STATUS OF SLDC

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

Type of Demand Estimation	Timeline
Daily	10:00 hours of previous day
Weekly	First working day of previous week
Monthly	Fifth day of previous month
Yearly	30th September of previous year

- The following is the status regarding forecast data submission.

State/Entity	Day Ahead (2025-26)	Week Ahead	Month Ahead (Mar 2025)	Year-Ahead
Punjab	As per Format	As per Format but not as per timeline	As per Format	Not received
Haryana	Demand and Resource not as per format	Only Demand	Only Demand	Not received
Delhi	As per Format	As per Format	As per Format	Only Demand
Rajasthan	As per Format	Not received	Not received	Not received
Uttar Pradesh	As per Format	As per Format	As per Format	As per Format
Uttarakhand	Demand and Resource not as per format	Only Demand	Not received	Not received
Himachal Pradesh	As per Format	As per Format	As per Format	As per Format
J&K and Ladakh (UT)	As per Format	Not received	As per Format but not as per timeline	Not received
Chandigarh (UT)	As per Format	As per Format	Not received	Not received

- In accordance with above, all SLDCs are requested to furnish the demand estimation data as per the formats to NRLDC through mail (nrldcmis@grid-india.in) and SFTP as per above timeline.

OUTAGE SUMMARY OF LAST THREE MONTHS

MONTH	PLANNED	FORCED OUTAGES	EMERGENCY SHUTDOWNS	TRIPPING	% PLANNED as of TOTAL S/D	% EMERGENCY SHUTDOWNS	TOTAL OUTAGES (A+B)
	(A)	(B=C+D)	(C)	(D)	(A/(A+C))	(C/(A+C))	
Nov-24	1117	818	425	393	72.4%	27.6%	1935
Dec-24	1131	882	450	432	71.5%	28.5%	2013
Jan-25	965	813	445	368	68.4%	31.6%	1778
Feb-25	**1000**	**658**	**355**	**303**	**73.8%**	**26.2%**	**1658**

Outage Summary For February 2025									
CONSTITUENTS	PLANNED (A)	FORCED OUTAGES (B=C+D)	EMERGENCY SHUTDOWNS (C)	TRIPPING (D)	% PLANNED SHUTDOWNS (A/(A+C))	% EMERGENCY SHUTDOWNS(C/(A+C)	% ESD SHUTDOWNS(C/B)	% TRIPPING (D/B)	TOTAL OUTAGES (A+B)
POWERGRID	464	194	132	62	77.9%	22.1%	68.0%	32.0%	658
UPPTCL	161	127	45	82	78.2%	21.8%	35.4%	64.6%	288
RRVPNL	84	122	69	53	54.9%	45.1%	56.6%	43.4%	206
PSTCL	79	26	14	12	84.9%	15.1%	53.8%	46.2%	105
HVPNL	42	40	16	24	72.4%	27.6%	40.0%	60.0%	82
BBMB	32	49	27	22	54.2%	45.8%	55.1%	44.9%	81
SJVNL	42	3	3	0	93.3%	6.7%	100.0%	0.0%	45
DTL	15	18	11	7	57.7%	42.3%	61.1%	38.9%	33
NTPC	16	11	3	8	84.2%	15.8%	27.3%	72.7%	27
PTCUL	16	8	0	8	100.0%	0.0%	0.0%	100.0%	24
PDD JK	14	7	3	4	82.4%	17.6%	42.9%	57.1%	21
HPPTCL	6	14	4	10	60.0%	40.0%	28.6%	71.4%	20
ADHPL	16	3	0	3	100.0%	0.0%	0.0%	100.0%	19
NRSS36	1	16	16	0	5.9%	94.1%	100.0%	0.0%	17
NHPC	1	6	3	3	25.0%	75.0%	50.0%	50.0%	7
THDC	4	3	3	0	57.1%	42.9%	100.0%	0.0%	7
AHEJ4L	1	4	1	3	50.0%	50.0%	25.0%	75.0%	5
Cleansolar_Jodhpur	3	1	0	1	100.0%	0.0%	0.0%	100.0%	4
NRSS XXIX	1	3	3	0	25.0%	75.0%	100.0%	0.0%	4
PKTCL	1	2	1	1	50.0%	50.0%	50.0%	50.0%	3
Adani	1	1	1	0	50.0%	50.0%	100.0%	0.0%	2
Total	1000	658	355	303	73.8%	26.2%	54.0%	46.0%	1658

New Elements First Time Charged During Feb 2025

S. No.	Type of transmission element	Total No
1	AC Lines	1
2	Transformer	7
3	Solar Plant	3
4	Thermal plant	3
Total New Elements charged		14

Solar plant

S.No	Plant Name	Pooling Sub-station	Total Capacity charged(MW)	Total Installed Capacity of Plant(MW)	Type of RE	Total No. of Solar ICR/Block Charged	Agency/ Owner	Actual date of charging
1	Adani Green Energy Twenty Five Limited	Bhadla_2(PG)	95 MW	500 MW	Solar	8	AGE25L	05-Feb-2025
2	Adani Green Energy Twenty Four Limited	Fatehgarh_2	60 MW	500 MW	Solar	5	AGE24L	12-Feb-2025
3	Juniper Nirjara Energy Private Limited	Bikaner_2(PG)	50MW	50MW	Solar	6	Juniper_NEPL	24-Feb-25

Thermal plant

S.No	Name of element	Owner	Voltage Level	Installed Capacity (MW)	MVA Capacity	Actual date of charging
1	19 MW, 20 MVA 11 KV Make TDPS Unit No 3 at 19 Shree Cement Limited	Sh. Cement	11kV	19 MW	20 MVA	01-Feb-2025
2	1X19 MW, 20 MVA 11 KV Make TDPS Unit No 2 at 1X 19 MW Shree Cement Limited	Sh. Cement	11kV	19 MW	20 MVA	01-Feb-2025
3	1X 6MW, 6.5 MVA 11 KV Make TDPS Unit No 1 X 6 MW at 1 X 6MW Shree Cement Limited	Sh. Cement	11kV	6MW	6.5 MVA	01-Feb-2025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Status of Mock Test of SPS in NR

Sr. No.	Scheme Name	Control Area	Mock testing conducted before 2024-25	Date of SPS Mock testing conducted during 2024-25	Remarks
1	SPS for WR-NR corridor - 765kV Agra-Gwalior D/C	POWERGRID	12-03-2024	Conducted on 27.03.2025	
2	SPS for contingency due to tripping of HVDC Mundra-Mahendergarh	ADANI		Not conducted for FY 24-25	Review is being done at OCC/PSC forum
3	SPS for high capacity 400 kV Muzaffarpur-Gorakhpur D/C Inter-regional tie-line related contingency	POWERGRID			Schedule yet to be received
4	SPS for 1500 MW HVDC Rihand-Dadri Bipole related contingency	POWERGRID		Conducted on 19-03-2025 and 20-03-2025	Conducted for FY 24-25
5	System Protection Scheme (SPS) for HVDC Balia-Bhiwadi Bipole	POWERGRID		Not conducted for FY 24-25	Schedule yet to be received
6	SPS for contingency due to tripping of multiple lines at Dadri(NTPC)	NTPC			Review is being done at OCC/PSC forum (SPS Not required)
7	SPS for reliable evacuation of power from NJPS, Rampur, Sawra Kuddu, Baspa Sorang and Karcham Wangtoo HEP	SJVN/HPPTCL/JSW		conducted on 19-12-2024	Conducted for FY 24-25
8	SPS for Reliable Evacuation of Ropar Generation	Punjab		Not conducted for FY 24-25	Schedule yet to be received
9	SPS for Reliable Evacuation of Rosa Generation	Uttar Pradesh	07-05-2022	conducted on 20-04-2024	Conducted for FY 24-25
10	SPS for contingency due to tripping of evacuating lines from Narora Atomic Power Station	NAPS		Not conducted for FY 24-25	Schedule yet to be received
11	SPS for evacuation of Kawai TPS, Kalisindh TPS generation complex	Rajasthan		Partially conducted on 14-03-2025	Conducted for FY 24-25
12	SPS for evacuation of Anpara Generation Complex	Uttar Pradesh	06-07-2020	conducted on 08.10.2024 (unit-7) and 19.10.2024 (unit-6)	Conducted for FY 24-25
13	SPS for evacuation of Lalitpur TPS Generation	Uttar Pradesh	14-07-2018	conducted on 21.05.2024	
14	SPS for Reliable Evacuation of Bara TPS Generation	Uttar Pradesh		conducted on 20.11.2024	
15	SPS for Lahal Generation	Himachal Pradesh	08-07-2020	Not conducted for FY 24-25	Schedule yet to be received
16	SPS for Transformers at Ballabhgarh (PG) substation	POWERGRID			Not in service, Review is being done in OCC/PSC forum
17	SPS for Transformers at Maharanibagh (PG) substation	POWERGRID			
18	SPS for Transformers at Mandola (PG) substation	POWERGRID			
19	SPS for Transformers at Bamnauli (DTL) Substation	Delhi			Review is being done at OCC/PSC forum
20	SPS for Transformers at Moradabad (UPPTCL) Substation	Uttar Pradesh		conducted on 20-04-2024	Conducted for FY 24-25
21	SPS for Transformers at Muradnagar (UPPTCL) Substation	Uttar Pradesh	07-02-2023	conducted on 20-04-2024	
22	SPS for Transformers at Muzaffarnagar(UPPTCL) Substation	Uttar Pradesh		conducted on 20-04-2024	
23	SPS for Transformers at Greater Noida(UPPTCL) Substation	Uttar Pradesh		**SPS Unhealthy**	**SPS not required now, as informed by Transmission wing; Hence SPS may be reviewed**
24	SPS for Transformers at Agra (UPPTCL) Substation	Uttar Pradesh	12-07-2023	Not conducted for FY 24-25	Schedule yet to be received
25	SPS for Transformers at 400kV Sarojininagar (UPPTCL) Substation	Uttar Pradesh	17-05-2023		
26	SPS for Transformers at 220kV Sarojininagar (UPPTCL) Substation	Uttar Pradesh	18-05-2022		
27	SPS for Transformers at 400kV Unnao (UPPTCL) Substation	Uttar Pradesh	19-05-2023	SPS Unhealthy	SPS need to be made healthy; Expected functioning before 20.03.2025, as informed by Transmission wing.
28	SPS for Transformers at 220kV Unnao (UPPTCL) Substation	Uttar Pradesh		Not conducted for FY 24-25	Schedule yet to be received
29	SPS for Transformers at 400kV Sultanpur (UPPTCL) Substation	Uttar Pradesh		**SPS Unhealthy**	**SPS not required now, as informed by Transmission wing; Hence SPS may be reviewed**
30	SPS for Transformers at 400kV Bareilly (UPPTCL) Substation	Uttar Pradesh		**NA**	**SPS has been shifted (Not in service)**
31	SPS for Transformers at 400kV Azamgarh (UPPTCL) Substation	Uttar Pradesh	14-05-2023	conducted on 06-05-2024	Conducted for FY 24-25
32	SPS for Transformers at 400kV Mau (UPPTCL) Substation	Uttar Pradesh	17-01-2019	conducted on 27-04-2024	
33	SPS for Transformers at 400kV Gorakhpur (UPPTCL) Substation	Uttar Pradesh	14-05-2023	conducted on 27-04-2024	
34	SPS for Transformers at 400kV Sarnath (UPPTCL) Substation	Uttar Pradesh	19-05-2023	conducted on 23-05-2024	
35	SPS for Transformer at 400kV Rajpura (PSTCL) Substation	Punjab		conducted on 31-01-2025	
36	SPS for Transformers at 400kV Mundka (DTL) Substation	Delhi	19-06-2023	conducted*	
37	SPS for Transformers at 400kV Deepalpur (JKTPL) Substation	Haryana		Not conducted for FY 24-25	Schedule yet to be received
38	SPS for Transformers at 400kV Ajmer (RVPN) Substation	Rajasthan		conducted on 10.09.2024	Conducted for FY 24-25
39	SPS for Transformers at 400kV Merta (RVPN) Substation	Rajasthan		conducted on 12.09.2024	
40	SPS for Transformers at 400kV Chittorgarh (RVPN) Substation	Rajasthan		conducted on 31.08.2024 & 05.09.2024	
41	SPS for Transformers at 400kV Jodhpur (RVPN) Substation	Rajasthan		conducted on 24.09.2024	
42	SPS for Transformers at 400kV Bhadla (RVPN) Substation	Rajasthan		conducted on 27.09.2024	
43	SPS for Transformers at 400kV Ratangarh (RVPN) Substation	Rajasthan		Conducted on 20.09.2024	
44	SPS for Transformers at 400kV Nehtaur(WUPPTCL) Substation	Uttar Pradesh	05-07-2022	Conducted on 11.01.2025	
45	SPS for Transformers at Obra TPS	Uttar Pradesh		conducted on 20-05-2024	
46	SPS for Transformers at 400KV Kashipur (PTCUL) substation	Uttarakhand	03-09-2023	Septemeber 2024	
47	SPS for Transformers at 400KV Fatehgarh Solar Park (AREPRL)	ADANI		Not conducted for FY 24-25	Schedule yet to be received
48	SPS to relive transmission congestion in RE complex (Bhadla2)	POWERGRID			
49	SPS for Transformers at 400kV Bikaner (RVPN) Substation	Rajasthan		conducted on 26.09.2024	Conducted for FY 24-25
50	SPS for Transformers at 400kV Bawana (DTL) Substation	Delhi	06-09-2023		Schedule yet to be received
51	SPS for Transformers at 400kV Bhilwara (RVPN) Substation	Rajasthan		conducted on 09.07.2024 & 10.07.2024	Conducted for FY 24-25
52	SPS for Transformers at 400kV Hinduan (RVPN) Substation	Rajasthan		conducted on 26.09.2024	
53	SPS for Transformers at 400kV Suratgarh (RVPN) Substation	Rajasthan		**NA**	**Implemented in 2024-25**
54	SPS for Transformers at 400kV Babai(RS) Substation	Rajasthan			
55	SPS for Transformers at 400kV Allahabad(PG) Substation	Uttar Pradesh			
56	SPS for Transformers at 400kV Jaunpur(UP) Substation	Uttar Pradesh			**Yet to be implemented**