सत्यमेव जयते

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

विषय: प्रचालन समन्वय उप-समिति की 232 वीं बैठक की कार्यसूची।

Subject: Agenda of the 232nd OCC meeting.

प्रचालन समन्वय उप-समिति की **232 वीं** बैठक का आयोजन वीडियो कॉन्फ्रेंसिंग के माध्यम से दिनांक **17.06.2025** को **10:30** बजे से किया जायेगा । उक्त बैठक की कार्यसूची उत्तर क्षेत्रीय विद्युत् समिति की वेबसाइट http://164.100.60.165 पर उपलब्ध है ।

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

कृपया बैठक में उपस्थित होने की सुविधा प्रदान करें।

The **232nd** meeting of the Operation Co-ordination sub-committee will be conducted through Video Conferencing on **17.06.2025** from **10:30 Hrs**. The agenda of this meeting has been uploaded on the NRPC web-site http://164.100.60.165.

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

Kindly make it convenient to attend the meeting.

(डी. के. मीना) 3/6/25
अधीक्षण अभियंता (प्रचालन)

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

18-ए, शहीदजीतसिंहमार्ग, कटवारियासराय, नईदिल्ली- 110016 फोन:011-26513265 ई-मेल: seo-nrpc@nic.in वेबसाईट: www.nrpc.gov.in
18-A, Shaheed Jeet Singh Marg, Katwaria Sarai, New Delhi-110016 Phone: 011-26513265 e- mail: seo-nrpc@nic.in Website: www.nrpc.gov.in

List of addressee (via mail)

OCC Members for FY 2025-26			
S. No.	**OCC Member**	**Category**	**E-mail**
1	NLDC	National Load Despatch Centre	nomination awaited (susha@grid-india.in)
2	NRLDC	Northern Regional Load Despatch Centre	somara.lakra@grid-india.in
3	CTUIL	Central Transmission Utility	sandeepk@powergrid.in
4	PGCIL	Central Government owned Transmission Company	rtamc.nr1@powergrid.in rtamcjammu@powergrid.in cpcc.nr3@powergrid.in
5	NTPC	Central Generating Company	RAMESHSINGH@NTPC.CO.IN
6	BBMB		powerc@bbmb.nic.in
7	THDC		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 Company & State owned Distribution Company	ce-ppr@pspcl.in
32	DHBVN	State owned Distribution Company (alphabetical rotational basis/nominated by state govt.)	nomination awaited (md@dhbvn.org.in)
33	Ajmer Vidyut Vitran Nigam Ltd.		nomination awaited (md.avvnl@rajasthan.gov.in)
34	Purvanchal Vidyut Vitaran Nigam Ltd.		nomination awaited (mdpurvanchalvvnl@gmail.com)

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

Contents

खण्ड-क: उ.क्षे.वि.स. Part-A: NRPC

A.1. Confirmation of Minutes

231st OCC meeting was held on 14.05.2025. Minutes of the meeting were issued vide letter dt. 12.06.2025.

Decision required from Forum:

Forum may approve the minutes of 231st OCC meeting.

A.2. Status of action taken on decisions of 231st OCC meeting of NRPC

A.2.1. Status of action taken on decisions of 231st OCC meeting is attached as **Annexure- A.I**.

A.3. Review of Grid operations

A.3.1. **Power Supply Position (Provisional) for May 2025**

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

State / UT	Req. / Avl.	Energy (MU)			Peak (MW)		
		Anticipated	Actual	% Variation	Anticipated	Actual	% Variation
CHANDIGARH	(Avl)	170	191	12.5%	400	431	7.8%
	(Req)	216	191	-11.4%	460	431	-6.3%
DELHI	(Avl)	5563	3875	-30.4%	8450	7748	-8.3%
	(Req)	4400	3877	-11.9%	8450	7748	-8.3%
HARYANA	(Avl)	7241	6215	-14.2%	11475	12526	9.2%
	(Req)	7293	6229	-14.6%	12998	12526	-3.6%
HIMACHAL PRADESH	(Avl)	1225	1116	-8.9%	1948	1866	-4.2%
	(Req)	1243	1121	-9.8%	1937	1866	-3.7%
J&K and LADAKH	(Avl)	1800	1556	-13.5%	3420	2777	-18.8%
	(Req)	1854	1557	-16.0%	3182	2777	-12.7%
PUNJAB	(Avl)	6700	6608	-1.4%	13510	13969	3.4%
	(Req)	7627	6613	-13.3%	14643	13969	-4.6%
RAJASTHAN	(Avl)	10370	9732	-6.2%	20300	17336	-14.6%
	(Req)	10385	9732	-6.3%	18300	17336	-5.3%
UTTAR PRADESH	(Avl)	17360	15947	-8.1%	31100	29873	-3.9%
	(Req)	17515	15947	-9.0%	31100	29873	-3.9%
UTTARAKHAN	(Avl)	1674	1534	-8.3%	2860	2668	-6.7%

D	(Req)	1643	1535	-6.6%	2820	2668	-5.4%
NORTHERN REGION	(Avl)	52103	46775	-10.2%	94800	81800	-13.7%
	(Req)	52176	46802	-10.3%	93300	82400	-11.7%

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

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

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

A.4.1. Maintenance Programme for Generating Units

The meeting on proposed maintenance programme for Generating Units for the month of July-2025 is scheduled on 16-June-2025 via Video Conferencing.

A.4.2. Outage Programme for Transmission Elements

The meeting on proposed outage programme of Transmission elements for the month of July-2025 is scheduled on 16-June-2025 via Video conferencing.

A.5. Planning of Grid Operation

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

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

State / UT	Availability / Requirement	Revised Energy (MU)	Revised Peak (MW)	Date of revision
CHANDIGARH	Availability	220	430	No Revision submitted
	Requirement	248	465	
	Surplus / Shortfall	-28	-35	
	% Surplus / Shortfall	-11.3%	-7.5%	

State / UT	Availability / Requirement	Revised Energy (MU)	Revised Peak (MW)	Date of revision
	Availability	4040	9180	
DELHI	Requirement	4540	8781	No Revision submitted
	Surplus / Shortfall	-500	399	
	% Surplus / Shortfall	-11.0%	4.5%	
HARYANA	Availability	7550	14496	10-Jun-2025
	Requirement	8857	15558	
	Surplus / Shortfall	-1307	-1062	
	% Surplus / Shortfall	-14.8%	-6.8%	
HIMACHAL PRADESH	Availability	1256	1688	09-Jun-2025
	Requirement	1277	1693	
	Surplus / Shortfall	-21	-5	
	% Surplus / Shortfall	-1.7%	-0.3%	
J&K and LADAKH	Availability	2000	3370	No Revision submitted
	Requirement	1810	2839	
	Surplus / Shortfall	190	531	
	% Surplus / Shortfall	10.5%	18.7%	
PUNJAB	Availability	8910	16560	No Revision submitted
	Requirement	10915	17175	
	Surplus / Shortfall	-2005	-615	
	% Surplus / Shortfall	-18.4%	-3.6%	
RAJASTHAN	Availability	9820	19220	No Revision submitted
	Requirement	11022	17891	
	Surplus / Shortfall	-1202	1329	
	% Surplus / Shortfall	-10.9%	7.4%	
UTTAR PRADESH	Availability	19406	32000	06-Jul-2025
	Requirement	17205	32000	
	Surplus / Shortfall	2201	0	
	% Surplus / Shortfall	12.8%	0.0%	
UTTARAKHAND	Availability	1528	2476	06-Jul-2025
	Requirement	1550	2500	
	Surplus / Shortfall	-22	-24	
	% Surplus / Shortfall	-1.4%	-1.0%	

State / UT	Availability / Requirement	Revised Energy (MU)	Revised Peak (MW)	Date of revision
	Availability	54729	89600	
NORTHERN REGION	Requirement	57424	89100	
	Surplus / Shortfall	-2694	500	
	% Surplus / Shortfall	-4.7%	0.6%	

SLDCs are requested to update the anticipated power supply position of their respective state / UT for the month of July-2025 and submit the measures proposed to be taken to bridge the gap between demand & availability, as well to dispose-off the surplus, if any, in the prescribed format.

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

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

All utilities are requested to update the status.

A.7. NR Islanding scheme

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

Members may kindly deliberate.

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

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

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

Station	Capacity (MW)	PLF % (prev. months)	Normative Stock Reqd. (Days)	Actual Stock (Days)
ANPARA C TPS	1200	0.87	17	13.3
ANPARA TPS	2630	0.78	17	22.8
BARKHERA TPS	90	0.17	26	57.4
DADRI (NCTPP)	1820	0.36	26	21.6
GH TPS (LEH.MOH.)	920	0.60	26	31.8
GOINDWAL SAHIB TPP	540	0.61	26	36.4
HARDUAGANJ TPS	1265	0.61	26	36.4
INDIRA GANDHI STPP	1500	0.46	26	47.0

Station	Capacity (MW)	PLF % (prev. months)	Normative Stock Reqd. (Days)	Actual Stock (Days)
KAWAI TPS	1320	0.73	26	21.6
KHAMBARKHERA TPS	90	0.28	26	57.7
KOTA TPS	1240	0.61	26	20.0
KUNDARKI TPS	90	0.27	26	45.3
LALITPUR TPS	1980	0.70	26	23.2
MAHATMA GANDHI TPS	1320	0.69	26	32.4
MAQSOODPUR TPS	90	0.29	26	57.8
MEJA STPP	1320	0.64	26	24.7
OBRA TPS	1094	0.54	26	18.2
PANIPAT TPS	710	0.22	26	51.1
PARICHHA TPS	1140	0.59	26	20.5
PRAYAGRAJ TPP	1980	0.83	26	26.5
RAJIV GANDHI TPS	1200	0.31	26	41.0
RAJPURA TPP	1400	0.77	26	27.8
RIHAND STPS	3000	0.87	17	24.6
ROPAR TPS	840	0.72	26	42.0
ROSA TPP Ph-I	1200	0.69	26	32.1
SINGRAULI STPS	2000	0.80	17	22.2
SURATGARH TPS	1500	0.24	26	19.9
TALWANDI SABO TPP	1980	0.54	26	18.2
TANDA TPS	1760	0.81	26	30.8
UNCHAHAR TPS	1550	0.80	26	22.5
UTRAULA TPS	90	0.28	26	46.1
YAMUNA NAGAR TPS	600	0.69	26	26.5
CHHABRA-I PH-1 TPP	500	0.74	26	23.4
KALISINDH TPS	1200	0.77	26	18.9
SURATGARH STPS	1320	0.66	26	26.5
CHHABRA-I PH-2 TPP	500	0.76	26	23.6
CHHABRA-II TPP	1320	0.47	26	31.3
JAWAHARPUR STPP	660	0.22	26	24.6

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

A.9.1. Regulation 40 (1) of CERC (IEGC) Regulations, 2023 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.9.2. The tests shall be performed once every five (5) years or whenever major retrofitting is done. If any adverse performance is observed during any grid event, then the tests shall be carried out even earlier, if advised by SLDC or RLDC or NLDC or RPC, as the case may be.

A.9.3. Further, Regulation 40(1)(b) stipulate that “All equipment owners shall submit a testing plan for the next year to the concerned RPC by 31st October to ensure proper coordination during testing as per the schedule. In case of any change in the schedule, the owners shall inform the concerned RPC in advance.”

Extract of IEGC 2023 clause 40,

“40. PERIODIC TESTING

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

(2) General provisions

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

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

(c) The tests shall be performed once every five (5) years or whenever major retrofitting is done. If any adverse performance is observed during any grid event, then the tests shall be carried out even earlier, if so advised by SLDC 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.9.4. In accordance with above, Generators and HVDC/FACT owners were supposed to furnish the Testing schedule for 2025-26 by 31st October 2024.

A.9.5. In 73 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. However, the same is still pending.

A.9.6. In 230th OCC meeting, MS NRPC asked Generators and HVDC/FACT owners to furnish Testing schedule for 2025-26 in the format attached at **Annexure-A.IV.** to seo-nrpc@nic.in.

A.9.7. In view of the above Generators and HVDC/FACT owners are requested to furnish Testing schedule for 2025-26 in the format attached as **Annexure-A.IV to seo-nrpc@nic.in .**

Utilities to update status.

A.10. Proposed System Protection Scheme (SPS) at 400kV substation Panki (Agenda by UPSLDC)

A.10.1. UPSLDC vide its letter dated 11.06.2025 informed that 1X315MVA+1X500MVA ICTs at 400kV substation Panki are n-1 non-compliant.

A.10.2. In order to ensure the reliability of said substation, System Protection Scheme is required. Proposed logic for SPS of 1X315MVA+1X500MVA ICTs at 400kV substation Panki is **Annexure-A.V**.

Members may kindly deliberate.

A.11. Constraint in achieving the ram rate scheduled by UPSLDC (Agenda by Khurja STPP)

A.11.1. Khurja STPP has submitted that Khurja Unit's, 1% of the MCR Load is 92.32MW/block, which mean that unit can ramp up or down by 92.32MW in 15 min time block. For this ramp rate the block average load achievable is 46MW approximately. However, in current Load scheduling with UPSLDC they are getting 92.32MW as average load during ramp-up or down in every block instead of 46MW.

A.11.2. To achieve 92.32MW as average load in each block the machine has to increase/decrease load by approximately 140MW which is very high.

A.11.3. This high quantum of Load change in a 15-min time block is not desirable for safe and sustainable operation of the unit. The high rate has adverse effect on boiler and turbine due to high thermal stress as well as repeated expansion and contraction which may lead to deterioration of boiler tube life, LP turbine last stage blades.

A.11.4. Turbine driven feed pumps and all other major equipment's and has also commercial implications in terms of UI/OI as per DSM regulation.

A.11.5. The said matter was deliberated in 231st OCC meeting however, Representative from Khurja STPP was not present in the meeting.

A.11.6. In the said meeting, NRLDC stated that for the ISGS stations for which scheduling is done by NRLDC ramp-up or ramp-down schedule for the first block is given as half of the ramp rate of the generating station as per relevant CERC regulations.

A.11.7. In the said meeting, UPSLDC stated that in UP all generating stations are given same ramp-up or ramp-down schedule for all blocks as there is no provision in the UPERC regulations for different ramp-up or ramp-down schedule in different blocks.

A.11.8. In 231st OCC meeting, forum noted the concerns raised by Khurja STPP advised Khurja STPP to approach UPERC for resolution of their concerns.

A.11.9. Khurja STPP has requested OCC forum that the said agenda item may kindly be again deliberated, as THDC input is crucial for a comprehensive understanding and resolution of the issue.

Members may kindly deliberate.

A.12. 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. RVUNL has intimated that 400KV STPS Switchyard 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 switchyard.

A.14.2. RVUNL has informed that 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 switchyard

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. Further, RVUNL has mentioned that during the special meeting held on 19.10.2024 among NRPC, NRLDC and representatives of various power utilities of Rajasthan, it was assured by RVPN that 400KV SCSTPS-Babai lines work is likely to be completed by March 2025. RVPN is requested to update the status and expedite the work to avoid operational and overloading issues.

A.14.4. Moreover, RVUNL has stated that in the meeting held on 19.10.2025, a temporary solution of interconnecting 400 kV SCSTPS-Babai line to 400 KV SSTPS-Ratangarh line was also proposed by SLDC. It would bypass the power from 400KV SSTPS switchyard. RVPN has confirmed that this work can continue in parallel to the commissioning of 400KV Babai Lines.

A.14.5. In this regard, to expedite the execution of the proposed temporary arrangement and provide the latest status of work progress of 400kV SCSTPS-Babai line a letter was also written on dated 07/02/2025 by Chief Engineer (O&M), STPS, RVUN, Suratgarh to The Zonal Chief Engineer (T&C), RVPN, Jodhpur but no update has been provided by RVPN till date.

A.14.6. In the 229th OCC meeting held on 12.03.2025, Rajasthan SLDC representative informed that work for this temporary arrangement of interconnection has been started and had also applied for shutdown of 400KV SSTPS-Ratangarh lines to NRLDC. Temporary arrangement work has not been carried out till date creating regular problems at SSTPS.

A.14.7. Due to heavy loading on 400KV Buses during RE hours, shutdown are not allowed during day time at SSTPS and RVUNL has been forced to take emergency shutdown during night hours to attend the hotspots/defects of Isolators and other elements as per available opportunities On dated 24.5.2025 unit# 3 & 5 of SSTPS were under shutdown and as opportunity, SSTPS applied for emergency shutdown of 400K Main Bus-I with other elements on Bus-I to attend bus isolator defects but shutdown approval was not given.

A.14.8. In view of the above, RVUNL has requested to arrange completion of both above works by RVPN, at the earliest to avoid operational and overloading issues at SSTPS Switchyard.

Members may kindly deliberate.

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

B.1. NR Grid Highlights for May 2025

Detailed presentation on grid highlights of May'2025 will be shared by NRLDC in OCC meeting.

Demand met details of NR

S.No	Constituents	Max Demand met (in MW)	Date & Time of Max Demand met	Max Consumption (in MUs)	Date of Max Consumption	Average Demand met (in Mus)
1	Chandigarh	431	21.05.25 at 15:00	8.1	20.05.25	6.2
2	Delhi	7748	21.05.25 at 15:29	151.5	20.05.25	123.0
3	Haryana	12526	21.05.25 at 15:30	252.3	20.05.25	200.4
4	H.P.	1866	17.05.25 at 10:00	39.8	17.05.25	36.3
5	J&K	2777	01.05.25 at 06:00	57.2	23.05.25	50.2
6	Punjab	13969	21.05.25 at 15:30	281.0	20.05.25	214.5
7	Rajasthan	17220	28.05.25 at 12:00	365.7	27.05.25	309.3
8	UP	29873	20.05.25 at 21:30	577.8	15.05.25	515.0
9	Uttarakhand	2668	24.05.25 at 22:00	57.0	20.05.25	50.0
***10**	**Northern Region**	**82978**	**20.05.25 at 22:28**	**1784.6**	20.05.25	**1505.0**

*As per SCADA

- In May'25, the Maximum energy consumption of Northern Region was **1785 MUs** on 20th May'25 and it was 5.18 % lower than May'24 (1882 MU 29th May'24)

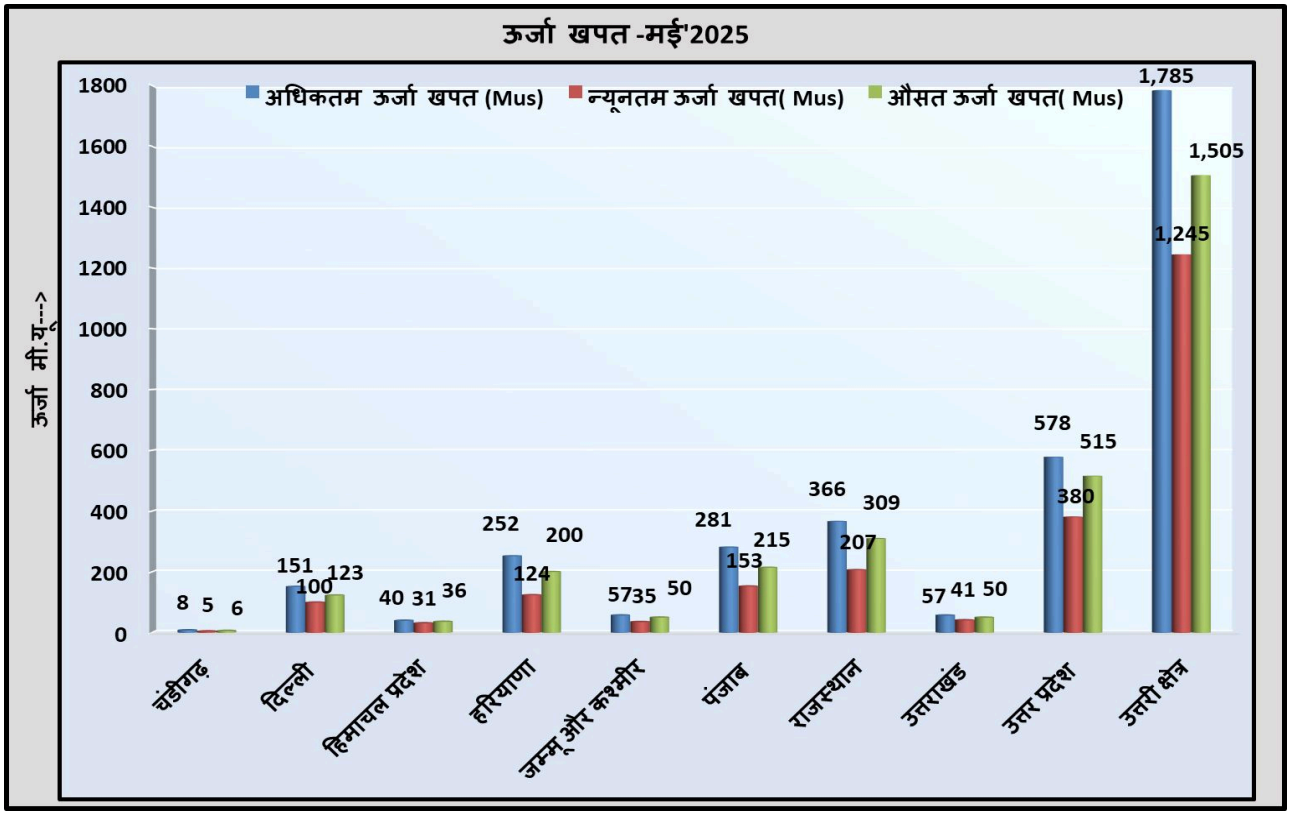
- In May'25, the Average energy consumption per day of Northern Region was **1505 MUs** and it was 8.06 % lower than May'24 (1637 MUs/day)

- In May'25, the Maximum Demand met of Northern Region was **82978 MW** on 20th May'25 @22:28 hours (*as per SCADA data)* as compared to 86773 MW on 30th May'24 @14:13hours.

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

क्षेत्र/राज्य	मई- 2024	मई- 2025	% अंतर
चंडीगढ़	6.76	6.2	-8.3%
दिल्ली	135.74	123	-9.4%
हिमाचल प्रदेश	34.61	36.6	5.7%
हरियाणा	220.61	200.4	-9.2%
जम्मू और कश्मीर	52.95	50.2	-5.2%
पंजाब	233.5	214.5	-8.1%
राजस्थान	331.61	309.3	-6.7%
उत्तराखंड	53.81	50	-7.1%
उत्तर प्रदेश	563.11	515	-8.5%
उत्तरी क्षेत्र	**1636.96**	**1505**	**-8.1%**

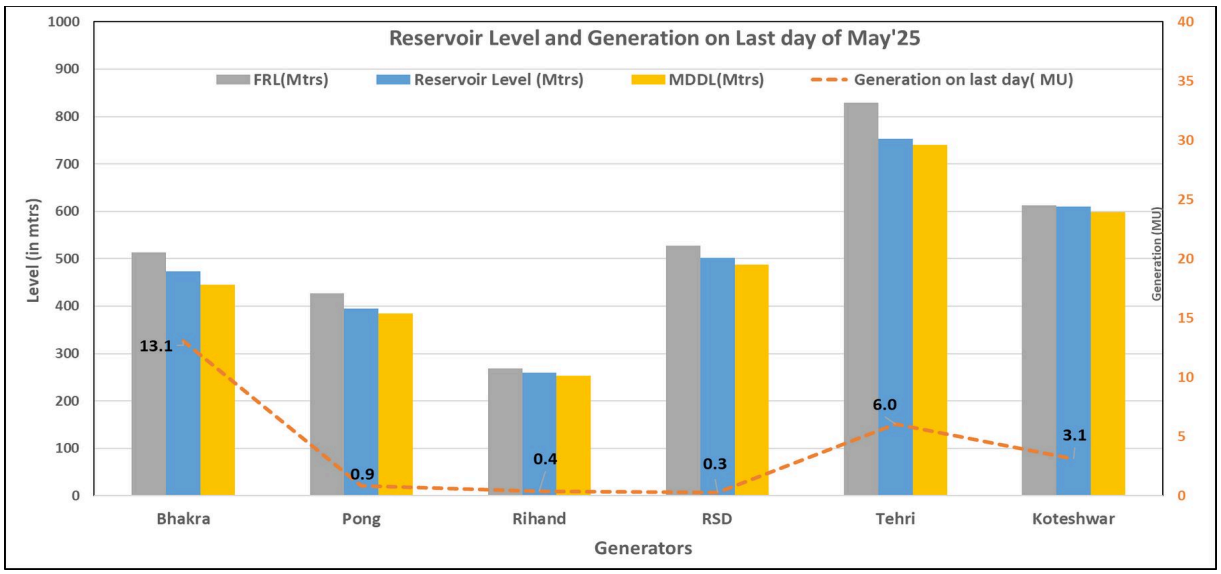
Energy Consumptions



Frequency profile

Month	Avg. Freq. (Hz)	Max. Freq. (Hz)	Min. Freq. (Hz)	<49.90 (% time)	49.90 – 50.05 (% time)	>50.05 (% time)
May'25	50.015	50.493 (22.05.25 at 07:58:30 hrs)	49.594 (22.05.25 at 19:38:40 hrs)	3.60	73.30	23.10
May'24	50.01	50.50 (07.05.24 at 18:02:40 hrs)	49.72 (11.05.24 at 00:02:40 hrs)	2.49	80.04	17.47

Reservoir Level and Generation on Last Day of Month



Reservoir Level on last day of May month (Low: -ve) (High: +ve)

Year	Bhakra	Pong	Rihand HPS	RSD	Tehri	Koteshwar
2025	474	394	259	502	754	610
2024	481	402	260	507	748	602
Diff (in m)	**-7.5**	**-7.4**	**-0.9**	**-4.6**	**5.6**	**8.3**

Detailed presentation on grid highlights of May'2025 will be shared by NRLDC in OCC meeting.

B.2. State-wise transmission constraints in summer 2025

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

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

State-wise anticipated issues and measures required thereof are listed below. Concerned transmission utilities are requested to provide update and ensure that these transmission elements are possibly commissioned before the high demand season.

Punjab:
During 231 OCC meeting,

NRLDC representative requested PSTCL to share:

- Status of commissioning of 400/220kV Dhanansu ICT-2.
- ATC/TTC assessment for paddy 2025 which becomes important as Punjab is configured as separate bid area.
- Requirement for SPS at 400/220kV Ludhiana(PG) based on anticipated loading during paddy 2025.
- Measures taken for minimising outages of Talwandi Saboo thermal generating units

Punjab SLDC representative informed that ICT at Dhanansu(PS) is planned to be commissioned by 30th May 2025. He further stated that with the commissioning of new ICT at Dhanansu(PS), ATC of Punjab will also increase by approx. 300 MW.

Punjab SLDC agreed to share their latest study w.r.t. ATC enhancement for paddy 2025 with NRLDC at the earliest.

It was further informed from Punjab side that communication have been sent from Punjab SLDC/ PSPCL side to Talwandi Saboo Thermal plant for minimizing outages.

NRLDC representative suggested that Punjab SLDC may also convene separate meeting with all state generators including IPP for their preparations for paddy 2025.

Punjab SLDC may provide update.

Haryana:

In the 231st OCC meeting, NRLDC representative requested HVPN regarding:

- Action plan for N-1 non-compliance being observed in real-time at 765/400kV Bhiwani, 400/220kV Panipat (BBMB), Kabulpur, Hisar ICTs by Haryana SLDC.
- SPS implementation till ICT capacity augmentation.
- Measures required for minimising MVAR drawl from ISTS to avoid low voltages.

It was mentioned that Haryana SLDC representatives had visited NRLDC on 13.05.2025 for discussion on SPS proposal at different HVPNL substations. Details mentioned in B.3 of MOM.

It was also mentioned that 220kV Hisar (PG) - Hisar (IA) reconductoring needs to be expedited by POWERGRID.

POWERGRID representative stated that works are in progress however, timeline will be shared through email.

NRLDC representative stated that POWERGRID should have carried out the reconductoring works before summer as it would be difficult to facilitate long shutdowns during this high demand period.

Haryana SLDC and NRLDC are in process for reviewing ATC/TTC limits of Haryana state for summer 2025.

Punjab SLDC may provide update.

Rajasthan:

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

N-1 contingency of 315+500=815 MVA ICT at Neemrana(PG)	Additional 500MVA ICT has been approved in 36 NR CMETS held on 15.01.2025.
N-1 contingency of 2*500=1000 MVA ICT at Jaipur South(PG)	Additional 500MVA ICT has been approved in 36 NR CMETS held on 15.01.2025.
N-1 contingency of 2*315+500=1130 MVA ICT at Sikar(PG)	ICT Augmentation may be taken up in discussion with CTUIL/RVPNL.
N-1 contingency of 3*315=945 MVA ICT at Kankroli(PG)	ICT-4 has been approved and is expected to be commissioned by 22.09.2025.
N-1 contingency of 2*315=630 MVA ICT at Kotputli(PG)	Augmentation by 400/220 kV 500 MVA (3rd) ICT at Kotputli (PG) is expected by 31.12.2025
N-1 contingency of 2*315=630 MVA ICT at Deedwana(RVPN)	As per latest status shared by Rajasthan SLDC order for 10 no. ICT has been placed recently. First ICT is expected at Jaisalmer-II in Apr'25. All others expected by Sep'25. SPS has been implemented as temporary measure for some of the stations such as Chittorgarh (RVPN), Ajmer (RVPN), Merta (RVPN), Bikaner (RVPN), Jodhpur (RVPN), Suratgarh(RVPN), Ratangarh(RVPN)
N-1 contingency of 3*250+315=1065 MVA ICT at Heerapura(RVPN)	
N-1 contingency of 3*315 =945 MVA ICT at Chittorgarh (RVPN)	
N-1 contingency of 2*315 =630 MVA ICT at Ajmer (RVPN)	
N-1 contingency of 2*315 =630 MVA ICT at Merta (RVPN)	
N-1 contingency of 2*315 =630 MVA ICT at Bikaner (RVPN)	
N-1 contingency of 2*315 =630 MVA ICT at Jodhpur (RVPN)	
N-1 contingency of 2*315=630 MVA ICT at Suratgarh(RVPN)	
N-1 contingency of 3*315=945 MVA ICT at Ratangarh(RVPN)	
N-1 contingency of 1*500+1*315 =815 MVA ICT at Bhilwara (RVPN)	

In 231 OCC meeting, NRLDC requested Rajasthan to share measures taken for:

- Bid opening for upgradation of terminal equipment in different lines and maintenance for improvement of line condition of 400kV Bhadla(RVPN)-Bikaner(RVPN) D/C line
- High MVAr drawl observed by intra-state network of Rajasthan at number of substations and poor power factor at various 400/220kV substations such as Bikaner, Kankani, Barmer, Jodhpur, Merta etc. (power factor of 0.55 observed at 400/220kV Bikaner during solar hours)

Further, tripping of 400kV Bhadla(RJ)-Bikaner(RJ) D/C in last one year were presented:

S. No.	CKT ID	Outage Date & Time		Revival Date & Time	
1	400kV Bhadla(RJ)-Bikaner(RJ) Ckt-1	08-05-2024	13:06	09-05-2024	14:36
2		11-05-2024	03:59	11-05-2024	10:22
3		04-07-2024	14:18	04-07-2024	15:53
4		05-07-2024	16:12	05-07-2024	20:05
5		11-07-2024	22:27	12-07-2024	09:42
6		23-11-2024	22:11	24-11-2024	00:15
7		07-04-2025	12:33	08-04-2025	08:51
8		01-05-2025	13:04	01-05-2025	19:37
9	400kV Bhadla(RJ)-Bikaner(RJ)Ckt-2	08-05-2024	16:29	09-05-2024	14:39
10		23-11-2024	22:11	24-11-2024	00:25
11		07-04-2025	12:24	07-04-2025	20:45
12		08-04-2025	18:19	09-04-2025	08:58

RRVPNL representative informed that:

- Approvals have been accorded, however bid process is under progress. Bid floated for work for improvement of condition of 400kV Bhadla-Bikaner D/C and would be awarded by 30.05.2025. Terminal equipment upgradation works are expected to be awarded by next month.
- Supply of 100no. total 5.43MVAr capacitors have begun and are now being received at site. Further, order has been placed for 5.43MVAr of capacitor banks recently for which supply will begin Sep 2025 onwards.
- Proposal of 100MVAr capacitor banks through PSDF funding are under development.
- Proposal of nearly 1000MVAr MVAR capacitor banks have been received from DISCOMS which are being studied, and would be shared for PSDF approval.

Rajasthan SLDC may provide update.

Uttar Pradesh:

In the 231st OCC meeting, POWERGRID was asked to provide status of commissioning of 400/220kV Allahabad(PG) ICT.

POWERGRID representative stated that around 4-5 months would further be required for commissioning of 500MVA ICT-4 at Allahabad.

NRPC, UP SLDC and NRLDC representatives expressed concern on the same and POWERGRID was asked to ensure healthiness of SPS installed at 400/220kV Allahabad(PG)

UP SLDC was asked to share measures being taken for relieving loading of highly loaded 220kV lines such as RaiBarelli-Bachrawan, Saharanpur-Saharanpur, RaiBarelli-Unchahar, Allahabad-Jhusi, Kanpur-Rania, Meerut-Modipuram etc. by UPPTCL

UP SLDC representative informed that monitoring of loading of 220kV lines is being done at SLDC and STU level (Zonal offices) and necessary actions are being taken in real-time and as of now no major issues are seen. However, with increase in demand, several pockets may observe issues.

Further, due to forced outage of one ICT at 400/220kV Jaunpur, radial supply is being provided as only one 315MVA ICT is available. Moreover, some load has been shifted to 400/220kV Sahupuri.

NRLDC representative expressed concern on the non-implementation of SPS at 400/220kV Jaunpur S/s. No firm timeline could be provided from UPPTCL side.

UP SLDC stated that there is high drawl by Uttarakhand and as a result high loading of 220kV Saharanpur-Saharanpur line is seen especially when generation is low at Khodri. It was mentioned that there has also been some connectivity changes in Himachal area due to which there is high power flow from UP to Uttarakhand to HP.

HP SLDC agreed to check for the same.

NRLDC requested UP SLDC to share their concern in detail with NRLDC, Uttarakhand SLDC and HP SLDC. Thereafter, a separate meeting may also be convened on the matter, if required.

POWERGRID and UP SLDC may provide update.

Uttarakhand:

In the 231st OCC meeting, PTCUL representative was asked to provide status of new ICT procurement at 400/220kV Kashipur and capacitor commissioning expected before summer 2025.

PTCUL representative stated that few capacitors which were damaged were revived, but new capacitors were not commissioned. No update on procurement of new 400/220kV Kashipur ICT.

Uttarakhand SLDC/ PTCUL may provide update on status of new ICT procurement at capacitors commissioned in last 2 months.

In view of above transmission constraints for all states, it is requested that:

- All SLDCs to take actions such that loading of ICTs and lines in their control area are below their N-1 contingency limits.
- While requisitioning power from various sources, states should take care to limit their scheduled drawl as well as actual drawl in real time within the Available Transfer Capability (ATC) limits assessed by SLDC and NRLDC.
- SLDCs also need to ensure that their drawl from grid remains within these limits during real-time operation. In the past, it has been observed that some states have drawn power beyond their ATC limits as assessed by SLDCs and NRLDC.
- Further, all SLDCs need to make sure that loading of 220kV and below voltage level intrastate lines remain within safe limits during the high demand season.

Further, it may be noted that CERC vide their order dated 29.09.2023 has granted approval of "'Detailed Procedure for Allocation of Transmission Corridor for Scheduling of General Network Access and Temporary General Network Access under Central Electricity Regulatory Commission (Connectivity and General Network Access to the inter-State Transmission System) Regulations, 2022" which requires SLDCs to submit network data as well as PSSE basecases on M-12, M-6, M-1 basis. The monitoring of submission of these data by SLDCs is being done in OCC meetings on monthly basis where response of some of the states needs improvement.

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

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	No	No	No	No	No	No
Delhi	No	No	Yes	Yes	No	No
Haryana	No	No	Yes	Yes	No	No
Himachal	Yes	No	Yes	No	Yes	No
J &K	Yes	No	Yes	Yes	Yes	No
Ladakh	No	No	No	No	No	No
Punjab	Yes	Yes	Yes	Yes	Yes	Yes
Rajasthan	Yes	Yes	Yes	Yes	Yes	Yes
Uttar Pradesh	Yes	Yes	Yes	Yes	Yes	Yes
Uttarakhand	No	No	No	No	No	No

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

Submitted with one month delay

May 2025 Mails						
	ATC/TTC Declaration				Interconnection Studies	
	M-1 (June-25)		M-12 (May-26)		M-6 (November-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	No	No	No	No	No	No
J &K	Yes	Yes	Yes	Yes	Yes	Yes
Ladakh	No	No	No	No	No	No
Punjab	Yes	Yes	Yes	Yes	Yes	Yes
Rajasthan	No	No	No	No	No	No
Uttar Pradesh	Yes	Yes	Yes	Yes	Yes	Yes
Uttarakhand	No	No	No	No	No	No

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

Haryana, HP, Rajasthan, Delhi and Uttarakhand SLDCs are requested to provide update.

ATC/TTC limits of states for the month of July 2025 are attached as Annexure-B.I.

Members may please discuss.

B.3. Expediting SPS implementation before summer 2025:

Very high demand in Northern region is expected 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.

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 in case of outage of one or more transmission element.

Haryana

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

During 231 OCC meeting, it was discussed that Haryana SLDC representatives had visited NRLDC on 13.05.2025 for discussion on SPS proposal at different HVPNL substations. Following was discussed in the meeting:

- 765/400kV 2*1000MVA Bhiwani ICTs (two ICT section): Required load relief is not observed with feeders proposal from HVPNL. HVPNL was asked to review the same.
- 400/220kV 450+500MVA Panipat ICTs (BBMB): Feeders identified by HVPNL are also supplying power to DTL. HVPNL and DTL to jointly discuss and converge.
- 400/220kV 3*315MVA Hissar ICTs: Feeders identified by HVPNL are also supplying power to Rajasthan and Punjab. HVPNL to discuss the feeders with RRVPNL and PSTCL also.
- 400/220kV 2*315MVA Kabulpur ICTs: Load will be shifted to 400/220kV Sonepat after LILO of Mohana-Samalkha line at Sonepat(PG). 1no. 315MVA

ICT under long outage since Aug 2024. Remaining single 315MVA ICT will radially feed load.

Haryana SLDC was asked to discuss with concerned states for SPS at 400/220kV Panipat(BBMB) and Hissar ICTs. Further, additional feeders need to be identified for 765/400kV 2*1000MVA Bhiwani ICTs. NRLDC representative suggested that Haryana may bilaterally discuss with concerned states first, thereafter NRLDC may also be intimated.

Haryana SLDC may provide update.

Rajasthan

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

During 231 OCC meeting, NRLDC representative stated that details of feeders to be wired under SPS is yet to be received from Rajasthan SLDC.

Rajasthan SLDC/RVPN were also requested 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).

Rajasthan SLDC may provide update.

Delhi

POWERGRID may provide update on the implementation of SPS at 765/400kV Jhatikara and mock testing report of SPS.

Parbati-II evacuation related

NRLDC had received letter from NHPC side regarding evacuation of power from Parbati-II HEP through deemed T-GNA till commissioning of 400/200kV 500MVA ICT-4 at Nallagarh(PG).

Subsequently, NRLDC carried out simulation studies and following are inputs:

Major Impact on Line and ICT Loadings:

- 765/400kV ICTs at Moga: Decrease in loading by ~75 MW per ICT.
- 400kV Amritsar – Banala: Increase in loading by ~175 MW.
- 400kV Koldam – Ludhiana: Increase in loading by ~145 MW.
- 400kV Koldam – Ropar: Increase in loading by ~195 MW.
- 765/400kV ICTs at Bhiwani: Decrease in loading by ~95 MW per ICT (2 ICT section).
- 400kV Rampur – Nallagarh: Decrease in loading by ~95 MW per circuit.
- 400kV KWHEP – Wangtoo: Increase in loading by ~58 MW per circuit.

Critical Observation at Nallagarh ICTs:

The loading of 400/220kV ICTs at Nallagarh is expected to increase by approximately 33 MW per ICT.

- Considering the last year's maximum loading of ~245-250 MW per ICT, the loading is projected to reach around 280-285 MW per ICT.
- The N-1 loading of the ICTs is estimated to be around 255 MW, which indicates that the ICTs will be significantly stressed post-commissioning of Parbati-II generation.
- To mitigate potential overloading risks, implementation of a SPS is needed.

During 231 OCC meeting, POWERGRID was asked to update status of 500MVA ICT-IV at Nallagarh. Incase commissioning schedule of ICT is not expected by mid-June 2025, SPS proposal to be taken with Punjab, HP, Chandigarh and POWERGRID.

POWERGRID representative stated that ICT is expected to be commissioned by 3rd week of June 2025.

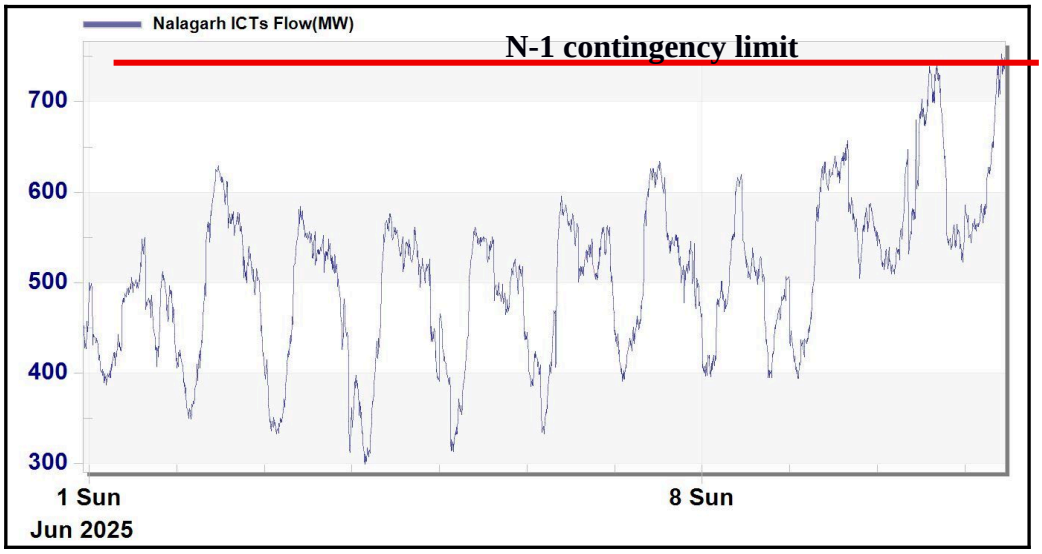
NHPC representative stated that during connectivity grant, timeline of 8th June 2025 was provided and requested POWERGRID to commission ICT by 8th June 2025.

OCC asked POWERGRID to commission 500MVA ICT-4 at Nallagarh at the earliest. It was discussed that incase SPS at Nallagarh ICT-4 does not get commissioned by 10th June 2025, proposal for SPS at Nallagarh ICTs would be taken up.

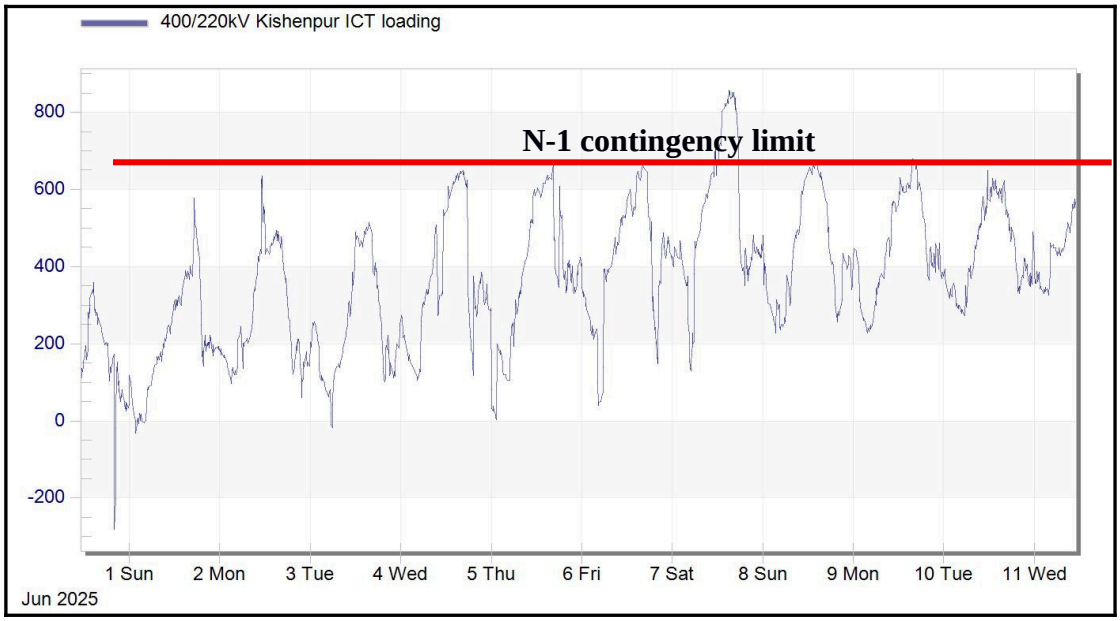
As of now, loading of 400/220kV Nallagarh ICTs has not been seen to be high due to lower demand in Northern region and Parbati-2 generation is also running during

evening hours, when loading of 400/220kV Nallagarh ICTs is well below the N-1 contingency limits.

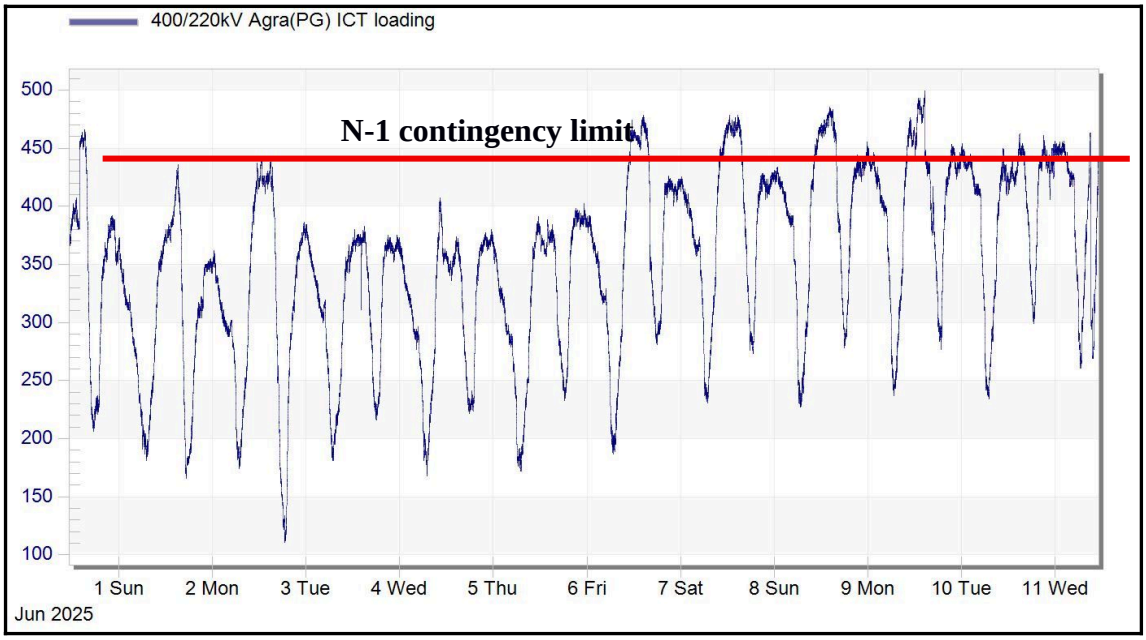
The loading pattern of 400/220kV 3*315MVA Nallagarh ICTs for June 2025 is shown below. It can be seen that loading is beyond the N-1 contingency limits during day-time. Further, with expected increase in generation at Parbati-II during day-time, the loading of 400/220kV Nallagarh ICTs will further increase. Therefore, a separate meeting is planned on 18.06.2025 by NRLDC with participation from HP, Punjab, Chandigarh and POWERGRID.



Further, loading of 400/220kV ICTs at Kishenpur is also observed to be on the higher side during June 2025. Accordingly, it is proposed that J&K may provide the reasons for the same as it was not observed last year. Moreover, in case of persistent high loading of existing 4000/220kV ICTs at Kishenpur, SPS proposal may also be deliberated.



Further, NRLDC has also received a request from UP SLDC vide email dated 24.05.2025 regarding implementation of SPS at 400/220kV Agra(PG) ICTs. The loading pattern of June 2026 is shown below.

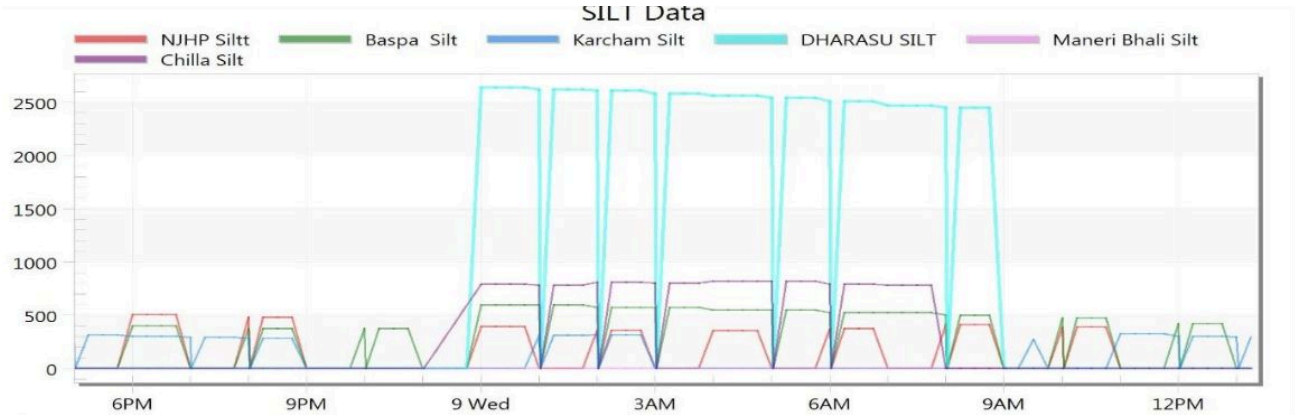


Accordingly, UP SLDC is requested to identify feeders to be wired under SPS for 400/220kV Agra(PG) ICTs. Thereafter, proposal of SPS can be deliberated.

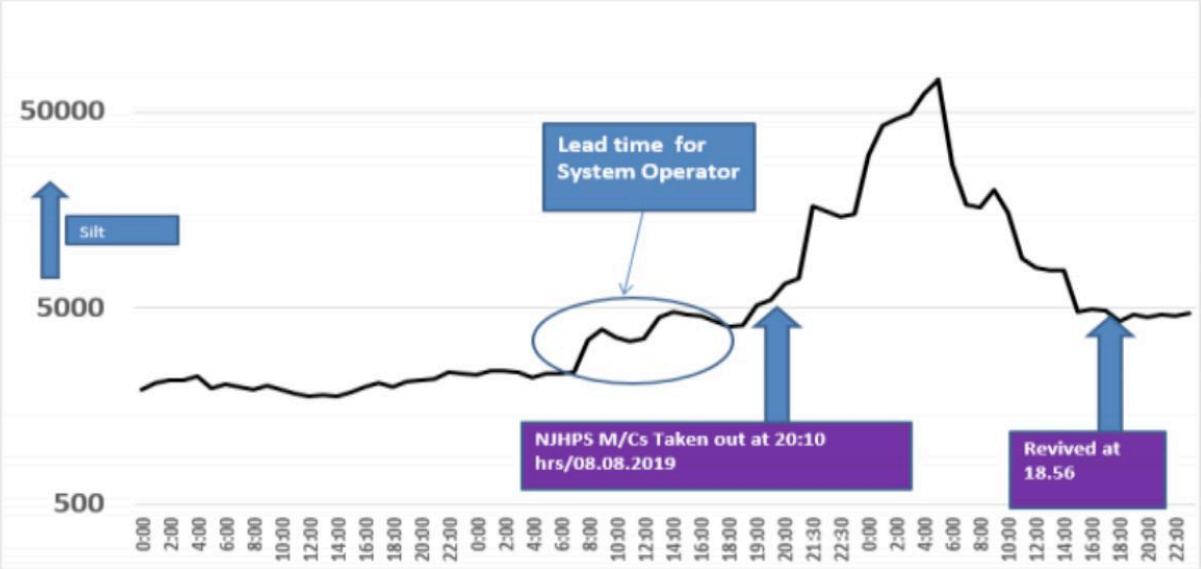
Concerned utilities are requested to provide update. Members may please discuss.

B.4. Near real-time monitoring of silt at NRLDC for hydro generating stations

Availability of near real time silt measurement data to NRLDC/ SLDCs will be helpful for real time system operation in view of frequent hydro generation outage due to silt. PPM numbers are being punched directly from the site/control room at NRLDC server providing silt measurement at NRLDC control room. During previous years also, for Nathpa Jhakri, Baspa, Karcham and other small HEPs of Uttarakhand, trends of silt data were made available at NRLDC & being monitored by system operators in real-time.



Sample available data of silt shown below suggests that there is some lead-time (varying from few hours to several hours) available with system operators to accommodate outage of hydro generators on account of high silt level.



In view of upcoming silt scenario, all hydro stations are requested to furnish the silt forecast data (near-real time silt measurement) for operational planning measures to control centers (RLDCs/SLDCs) as this would help them gain some lead-time for better tackling of hydro generator outage on silt.

Large hydro outage in short duration during monsoon on silt is a common phenomenon and the associated challenges have been highlighted in regular OCC/TCC meeting. The agreed action based on deliberation in various meetings are given below:

- Action for Generator
  - Silt monitoring/Silt forecasting for planned hydro outage [Advance information]
  - Reduction of Generation/Tripping of Units as per protocol (Staggering of units)
  - Slow ramping down of generation on the units to be closed as per protocol.

- Action by SLDC/Constituents
  - Generation reserve to be maintained
    - Own Generation
    - Contracted Generation from Other State/Traders
  - Load management to be planned
  - Optimization of Hydro generation as per demand requirement

It has been experienced that states those have major share in hydro e.g. Himachal Pradesh over draw from the grid during such condition. As deviation mechanism is also strict, it is gentle reminder for each state to plan in advance for such eventualities.

Hydro generating stations of NR may provide update. Members may please discuss.

B.5. Grid Operation related issues in Northern region

a) Long outage of transmission elements

It is requested to expedite restoration of the Grid elements under long outage at the earliest and also provide an update regarding their expected restoration date/time in the meeting/ NRLDC outage portal.

Some of the key elements that need to be revived at the earliest:

S. No.	Element Name	Owner	Date	Reason / Remarks
1	400/220 kV 315 MVA ICT 1 at Muradnagar_1(UP)	UPPTCL	13-03-2020	Buccholz relay alarm and Local Breaker Backup protection operated. Tripped along with Hapur-Muradnagar line. Flags are not reset because of cable flashover.
2	220 KV SHAHJAHANPUR(PG)-HARDOI(UP) (UP) CKT-1	UPPTCL	05-06-2024	Tower collapse at loc no. 86 & 87
3	400 KV MORADABAD(UP)-KASHIPUR(UK) (UK) CKT-1	PTCUL	18-04-2025	Tower collapsed at Loc. no. 94.
4	400/220 kV 240 MVA ICT 3 at Moradabad(UP)	UPPTCL	13-12-2021	Due to high DGA values, Hydrogen gas is above permissible limit.
5	400 KV JAISALMER-BARMER (RS) CKT-2	RRVPNL	01-05-2025	Tower collapsed from Location No. 70 to 81-12 Nos.
6	400 KV JAISALMER-BARMER (RS) CKT-1	RRVPNL	01-05-2025	
7	400 KV DADRI(NT)-LONI HARSH VIHAR(DV) (NT) CKT-1	NTPC	21-05-2025	Tower No. 24 Collapse
8	400 KV DADRI(NT)-LONI HARSH VIHAR(DV) (NT) CKT-2	NTPC	21-05-2025	
9	400 KV Noida Sec 148-Noida Sec 123 (UP) Ckt-2	UPPTCL	09-03-2023	Flashover Y-phase earth switch compartment at Noida Sector-148.
10	400 KV UNNAO-PANKI (UP) CKT-1	UPPTCL	30-05-2025	Tower damaged at Loc. No. 108-112
11	400/220 kV 500 MVA ICT 1 at Rasra (UP)	UPPTCL	26-10-2023	Y-phase bushing has got damaged.
12	400/220 kV 315 MVA ICT 1 at Kabulpur(HV)	HVPNL	11-08-2024	Operation of transformer protection . Differential protection trip.

It is requested to provide update regarding the likely revival date for these in the meeting/ NRLDC outage portal and expedite revival of these transmission elements.

Member may like to discuss.

b) Update of Operating Procedure document in line with IEGC:

In compliance with Regulation 28.4 of Indian Electricity Grid Code-2023, Operating Procedure document would be updated by NRLDC in mid-July 2025. Latest available document is available at

https://drive.google.com/file/d/16HHfg_YbGHl9XuP4vkO9Drxy-rUZmUlA/view?usp=drive_link

Utilities are requested to provide their inputs/comments for any suggested changes in the document. It is requested that inputs/comments may be provided by 30th June 2025.

Utilities may provide update.

B.6. 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. 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.

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

In the report following actions have been suggested:

B.6.1 Power supply position during the month of October 2024 and preparedness of the SLDCs for the next upcoming power shortage:

➢SLDCs need to adopt a proactive approach to plan their power procurement in advance and to minimize their dependence on last-minute Day-Ahead Market (DAM) and Real-Time Market (RTM) purchases, as these do not guarantee power availability during high-demand periods

➢Power may be tied up well in advance through banking arrangements, short term contracts, and long-term agreements to ensure reliable supply.

B.6.2 Submission of Resource Adequacy data:

➢ Enhanced coordination between RLDCs and SLDCs for improving forecasting capabilities of SLDCs.

➢ Access to advanced forecasting tools should be facilitated to ensure better accuracy and reliability.

➢ SLDCs facing manpower challenges should leverage automation and training programs to strengthen forecasting and data management capabilities and should make best efforts to submit the requisite data with the available manpower till the availability of additional manpower.

➢ SLDC to take up the matter of non- submission of data with concerned Discerns in their control area and as a short gap arrangement SLDC should submit the requisite information based on historical data.

➢ **The issue of submission of Resource Adequacy data including demand estimation and generation data by the states should be taken up as a regular agenda in the RPC meeting of concerned region.**

➢ An issue was highlighted that ISTS drawl of some of the states were more than their ATC limit. In case of inadequate ATC, a State may not be able to draw power from identified sources outside the state and would not be able to meet the demand. States need to ensure their intra-state transmission resource adequacy and needs to plan and implement their intra-state transmission system adequately.

B.6.3 Shortage of manpower in SLDCs:

➢SLDCs to take up the matter with their management to provide the manpower as per their current sanctioned strength.

➢ SLDCs to take up the matter with their management for approval of revised sanction strength considering the MoP Workforce Adequacy Guidelines for Load Despatch Centres

➢Forum of Regulator can take up with the State Regulatory Commissions for determining the Fees and Charges for the Load Dispatch Centers which will provide financial autonomy to the Load Dispatch Centers. The possibility of establishing separate cadre system for SLDCs may also be explored.

➢RLDCs, in collaboration with NLDC, to conduct structured capacity-building programs to equip SLDC personnel with the required technical skills.

➢ SLDCs to post their employees at RLDCs temporarily to enhance their technical expertise.

B.6.4 Reserve estimation and management

➢ SLDCs to take up the issue of maintaining the reserves with their respective Discoms to maintain the reserves as allocated to them by NLDC as per the provisions of the Grid Code.

➢ RLDCs to hold discussions with respective SLDCs, in coordination with NLDC to explain the exact process of estimation and allocation of reserve quantum of each state.

➢ NLDC to review the quantum of reserves allocated to North-Eastern Region states, where the reserve requirement appears disproportionately high compared to their demand.

➢ The regulations enabling implementation of AGC and recovery of cost of maintaining reserves may be taken up at FOR level on recommendations and requirements cited by States.

B.6. 5 Backing down of state-owned thermal generating stations up to Minimum Turndown level (MTL) (i.e., 55% of the MCR)

➢SLDCs to take up the issue of operation of intra-state thermal generating stations with intra-state generators to investigate the technical issues and work towards addressing the issues of operation at MTL of 55%. Intra-State generators to collaborate with the Inter-State Generating Stations in overcoming the various technical issues involved in achieving MTL of 55%.

➢Forum of Regulator to take up the issue with respective SERC regarding formulation of regulatory framework at state level to compensate the generators for part load operation of thermal generation station.

B.6.6 Implementation of SAMAST (Scheduling, Accounting, Metering, and Settlement of Transactions) Scheme

➢ Implementation of the SAMAST framework in the 9 control areas needs to be closely monitored and implemented in the timeframe or earlier as indicated in table under para 5.8.

➢ The states where the scheme is under initial stage, the scheme needs to be awarded within two months and its implementation in period not exceeding one year after the award.

➢ In Puducherry the SAMAST framework has not been yet initiated. Puducherry may be directed to implement the scheme in a period not exceeding 15 months after issue of order.

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 Jun-2025 as per Clause 31(4) (a) & (b) of IEGC-2023 is shown below:

State/Entity	Day Ahead (As on Jun-25)	Week Ahead	Month Ahead (Jul 2025)	Year-Ahead
Punjab	As per Format	Demand and Resource not as per format & timeline	Not received	Not received
Haryana	Demand and Resource not as per format	Only demand & irregular	Only demand	Not received
Delhi	Demand and Resource not as per format	As per Format	As per Format	Only Demand
Rajasthan	As per Format but irregular	As per Format	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 and irregular	As per Format	As per Format	Not received
Himachal Pradesh	As per Format	As per Format	As per Format	As per Format
J&K and Ladakh (UT)	Demand and Resource not as per format & irregular	Not received	Not received	Not received
Chandigarh (UT)	Demand and Resource not as per format	Not received	Not received	Not received

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

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:

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 is also requested to share actions being taken at your end to ensure compliance of listed clauses of IEGC 2023 as Annex-B.II.

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 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 timeframe would be considered a non-compliance with IEGC regulations.

Self-audit report has been received from NHPC and Koteshwar THDC.

During last two OCC meetings,

NRLDC representative stated that data on day ahead basis received from some of the states (as shown in table) 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. Incase 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.

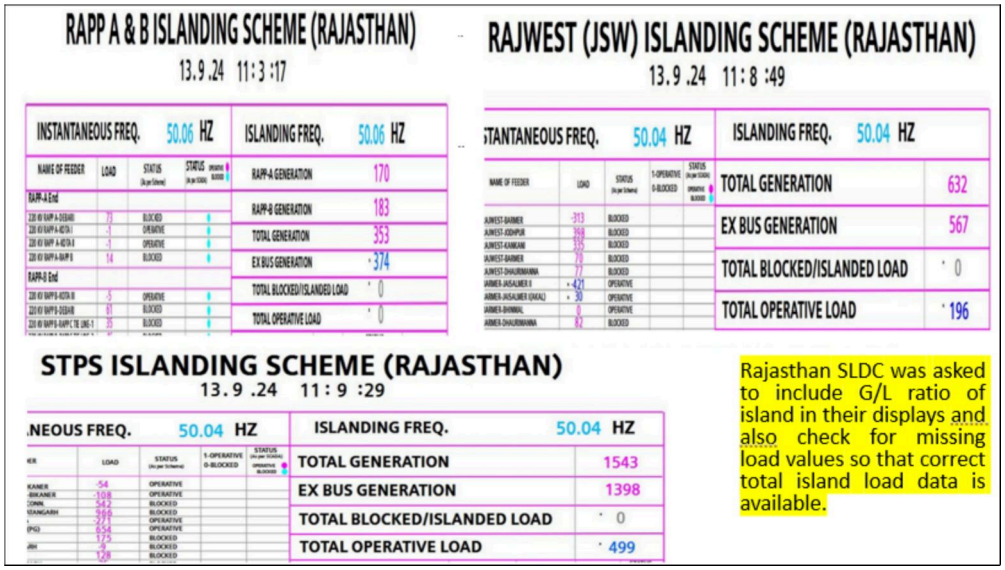
OCC forum requested all the states to take actions at their end to ensure compliance of all regulations and guidelines w.r.t. resource adequacy framework. SLDCs were also asked to maintain the reserves as per the allocated quantum by the NLDC as per the Grid Code.

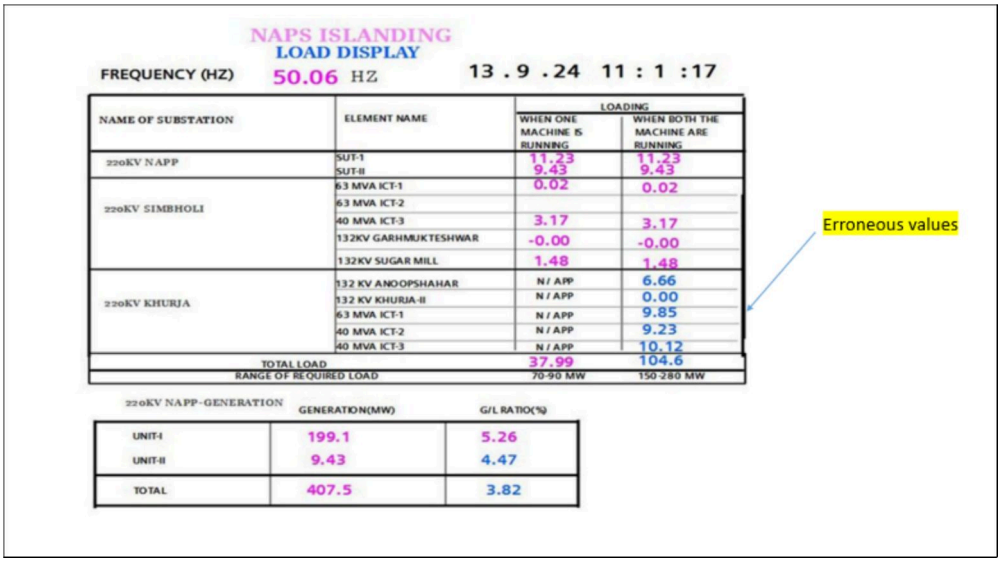
All SLDCs are requested to provide update. Members may please discuss.

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.

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

During 230 OCC meeting, NRLDC representative presented the status of mock testing of islanding and studies:

NRLDC representative stated that, after 229 OCC meeting, Punjab SLDC has shared basecase files for islanding schemes, however only steady state files have been shared and dynamic data of generators is yet to be shared. UFR testing has been carried out by Punjab and report has been shared with NRLDC. SCADA display for RSD scheme is being developed at Punjab SLDC end (G/L ratio is pending)

Moreover, pending basecase files have been received from Rajasthan SLDC.

Delhi representative stated that testing is pending at 400kV only, all the testing at 220kV & below has been completed. They will submit the report at the earliest.
No further updates received from Punjab and Rajasthan.

OCC requested Rajasthan and Punjab to complete the work related to SCADA display of islanding scheme and Delhi was requested to complete the UFR testing and submit testing report.

During 231 OCC meeting, OCC requested Rajasthan and Punjab to complete the work related to SCADA display of islanding scheme and Delhi was requested to complete the UFR testing and submit testing report.

MS NRPC stated that ERS availability and implementation of islanding schemes were deliberated thoroughly in MoP and all concerned were asked to ensure ERS availability and also expedite implementation of islanding schemes along with mock testing of existing islanding schemes.

Punjab SLDC informed that Pathankote-RSD islanding scheme was disabled recently. OCC forum expressed concern on the same and stated that no prior approval was taken by PSTCL from NRPC forum.

MS NRPC asked DTL and POWERGRID to coordinate and carry out field testing of pending UFRs of Bawana islanding scheme.

Further, Rajasthan SLDC was asked to ensure availability of SCADA display at SLDC/NRLDC end at the earliest.

Rajasthan SLDC stated that display has been created at SLDC end, however there are some pending telemetry related issues.

OCC forum asked Rajasthan to resolve the telemetry related issues and ensure availability of SCADA display at SLDC/NRLDC end at the earliest. Further,

POWERGRID and DTL to coordinate and carry out mock testing of UFRs part of Bawana islanding scheme.

Subsequently, Rajasthan SLDC vide email dated 04.06.2025 have shared the SCADA display made at SLDC end for the islanding scheme.

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

B.8. Tripping of HVDC Champa-Kurukshetra poles on 09.06.2025.

HVDC Champa-Kurukshetra Pole 1,3 and 4 tripped on 09.06.2025. Pole 2 was already under forced outage from 28.05.2025. The tripping of the 03 poles led to severe low voltages, load and generation loss at various nodes and high loading of 765 KV Aligarh-G. Noida line in the Northern Grid (3100 MW). Loading 765 KV Bhiwani PG ICTs (2&3) which are already N-1 non-compliant further increased to 1071 MW. The tripping caused alarming conditions in the Northern Region grid.

Tripping of all poles on 17.06.2024 led to severe low voltages and committee was formed under the Chairmanship of Member (GO&D), CEA to analyse the various issues observed during the event. Committee recommendation report on the 17th of June load loss event in 2024 of Northern region, following important points are again being reiterated to maintain reliability of HVDC link:

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.

NRPC forum has also acknowledged the sensitivity of the event and directed the concerned to take appropriate actions based on the recommendations of Committee.

Also, The Northern region import capability has been reduced by 1500 MW in view of the continuous outage of Pole 2 of HVDC Champa-Kurukshetra.

Members may discuss the progress in light of recommendations made by the aforementioned Committee and any further suitable measures.

B.9. High demand of Northern Region.

Northern Region demand reached 90 GW on 12.06.2025. Demand is hovering 90 GW in day time and 88 GW in the Evening/Night hours.

Constituents again requested to maintain high alertness, monitor line and ICT loadings and manage their portfolio during the high demand period to avoid overdrawl and shortages. With further dry spell coupled with hot and humid conditions along with agriculture load, rise in demand is expected. States also requested to manage their MVAR drawl and not lean on grid as lower voltages are also being observed at various nodes in the grid.

Members may discuss.

B.10. Multiple element tripping events in Northern region in the month of May 2025:

A total of 21 grid events occurred in the month of May 2025 of which 15 are of GD-1 category and 06 are of GI-2 Category. The tripping report of all the events have been issued from NRLDC. A list of all these events along with the status of DR/EL & tripping detail submission is attached at **Annexure-B.III.**

Maximum delayed clearance of fault observed in event of multiple elements tripping at 765/400kV Meerut(PG), 400kV Koteshwar(PG), 400kV Koteshwar HEP & Tehri HEP at 19:55 hrs on 21st May 2025. (As per PMU at Meerut(PG), B-N fault at 19:55:19 hrs (cleared within 100msec) and R-N fault with delayed clearance of ~1640msec is observed).

Delayed clearance of fault (more than 100ms for 400kV and 160ms for 220kV system) observed in total 08 events out of 21 grid events occurred in the month. In 04 (no.) of grid event, there was no fault in the grid.

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

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

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

Members may like to discuss.

B.11. Status of submission of DR/EL and tripping report of utilities for the month of May 2025:

The status of receipt of DR/EL and tripping report of utilities for the month of **May 2025** is attached at **Annexure-B.IV**. It is to be noted that as per the IEGC provision under clause 37.2 (c), the tripping report along with DR/EL has to be furnished within 24 hrs of the occurrence of the event. However, it is evident from the submitted data that reporting status of RE stations, SLDC-HR, SLDC-PS, SLDC-J&K, SLDC-HP, INDIGRID, NTPC, BBMB, POWERGRID(NR-1) and RAPS is not satisfactory and needs improvement.

Members may please note and advise the concerned for timely submission of the information. It is requested that DR/EL of all the trippings shall be **uploaded on Web**

Based Tripping Monitoring System "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. Apart from prints of DR outputs, the corresponding COMTRADE files (.cfg/.dat) may please also be submitted in tripping portal.

Members may like to discuss.

B.12. Frequency response performance for the reportable events of month of May 2025:

In the month of May 2025, 1 no. of reportable event was notified by NLDC for which FRC/ FRP need to be calculated. FEC/FRP computation along with the 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	11-May-25	16:51 hrs	As reported, at 16:51 hrs on 11th May 2025, generation loss event of 2832 MW occurred in APL Mundra (WR). Hence generation loss of 2832 MW is considered for FRC/FRP Calculation.	49.992	49.771	49.966	-0.03	0.64

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 06th June 2025 is:

FRC computation and data submission status		
S. No	Control Area	Event Date
		11-05-2024
1	Punjab	Not Received
2	Haryana	Received
3	Rajasthan	Not Received
4	Delhi	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)	Not Received
18	Tanda-2 (TH)	Received
19	Unchahar-I (TH)	Received
20	Unchahar-II (TH)	Received
21	Unchahar-III (TH)	Received
22	Unchahar-IV (TH)	Received
23	Anta (G)	Received
24	Auraiya (G)	Not Received
25	Dadri (G)	Not Received
26	AD Hydro (H)	Received
27	Bairasiul (H)	Received
28	Bhakra (H)	Received
29	Budhil (H)	Not Received
30	Chamera-1 (H)	Received
31	Chamera-2 (H)	Received
32	Chamera-3 (H)	Not Received
33	Dehar (H)	Received
34	Dhauliganga (H)	Not Received
35	Dulhasti (H)	Received
36	Karcham (H)	Not Received
37	Kishenganga	Not Received
38	Koldam (H)	Received
39	Koteshwar (H)	Received

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

FRC/FRP computation sheet haven't received from Punjab, Rajasthan, HP, J&K, Shree Cement TPS, Singrauli TPS, Auraiya GPS, Dadri GPS, Budhil HEP, Chamera-III HEP, Dhauliganga HEP, Karcham HEP, Kishenganga HEP, Sainj HEP, Singoli Bhatwari HEP, Sorang HEP and Uri-2 HEP.

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 07th April 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 May 2025 is as follows:

Frequency response Performance		
S. No	**Control Area**	**Event Date**
		11-05-2024
1	**Punjab**	4.83
2	**Haryana**	4.89
3	**Rajasthan**	21.55
4	**Delhi**	2.08
5	**Uttar Pradesh**	1.32
6	**Uttarakhand**	0.56
7	**Chandigarh***	NA
8	**Himachal Pradesh**	-5.69
9	**J&K(UT) and Ladakh(UT)**	-2.60
10	**Dadri -1 (TH)**	20.35
11	**Dadri -2 (TH)**	47.48
12	**Jhajjar (TH)**	48.45
13	**Rihand-1 (TH)**	40.65
14	**Rihand-2 (TH)**	16.87
15	**Rihand-3 (TH)**	31.17
16	**Shree Cement (TH)**	-10.81

17	**Singrauli (TH)**	10.90
18	**Tanda-2 (TH)**	8.04
19	**Unchahar-I (TH)**	32.66
20	**Unchahar-II (TH)**	31.78
21	**Unchahar-III (TH)**	34.02
22	**Unchahar-IV (TH)**	51.88
23	**Anta (G)**	No Gen
24	**Auraiya (G)**	No Gen
25	**Dadri (G)**	No Gen
26	**AD Hydro (H)**	0.96
27	**Bairasiul (H)**	4.59
28	**Bhakra (H)**	0.00
29	**Budhil (H)**	No Gen
30	**Chamera-1 (H)**	6.86
31	**Chamera-2 (H)**	-1.46
32	**Chamera-3 (H)**	7.73
33	**Dehar (H)**	0.06
34	**Dhauliganga (H)**	No Gen
35	**Dulhasti (H)**	4.34
36	**Karcham (H)**	17.10
37	**Kishenganga**	-2.52
38	**Koldam (H)**	23.63
39	**Koteshwar (H)**	11.62
40	**Malana-2 (H)**	NA
41	**Nathpa Jhakri (H)**	6.29
42	**Parbati-2 (H)**	11.77
43	**Parbati-3 (H)**	2.02
44	**Pong (H)**	0.30
45	**Rampur (H)**	13.62
46	**Sainj (H)**	-0.61
47	**Salal (H)**	-0.18
48	**Sewa-II (H)**	No Gen
49	**Singoli Bhatwari (H)**	-0.58
50	**Sorang (H)**	-0.27
51	**Tanakpur (H)**	3.32
52	**Tehri (H)**	4.57
53	**Uri-1 (H)**	-0.90
54	**Uri-2 (H)**	0.00

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

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

Sl. No.	Entity	Capacity(MW)	Governor Mode (FGMO as per IEGC 2023) Yes or No	Droop setting (%)	Remarks (if any)
1	Dadri-1 (TH)	4*200			
2	Dadri -2 (TH)	2*490			
3	Jhajjar (TH)	3*500			
4	Rihand-1 (TH)	2*500	Yes	5.0	Under Implementation
5	Rihand-2 (TH)	2*500	Yes	5.0	Under Implementation
6	Rihand-3 (TH)	2*500	Yes	5.0	Under Implementation
7	Shree Cement (TH)	(2 * 150)			
8	Singrauli (TH)	2*500+5*200			
9	Tanda-2 (TH)	2*660			
10	Unchahar stg-4 (TH)	1*500			
11	Unchahar (TH)	2*210			
12	Anta (G)	(1 * 153.2 + 3 * 88.71)			
13	Auraiya (G)	(2 * 109.3 + 4 * 111.19)			
14	Dadri (G)	(2 * 154.51 + 4 * 130.19)			
15	AD Hydro (H)	(2 * 96)	YES	4.0	-
16	Bairasiul (H)	(3 * 60)	Yes	4.0	
17	Bhakra (H)	(5 * 126 + 5 * 157)			
18	Budhil (H)	(2 * 35)			
19	Chamera-1 (H)	(3 * 180)	Yes	5.0	
20	Chamera-2 (H)	(3 * 100)	Yes	5.0	
21	Chamera-3 (H)	(3 * 77)	Yes	4.0	
22	Dehar (H)	(6 * 165)			
23	Dhauliganga (H)	(4 * 70)	Yes	5.0	
24	Dulhasti (H)	(3 * 130)	Yes	5.0	
25	Karcham (H)	(4 * 261.25)	Yes	5.0	
26	Kishenganga	(3 * 110)	Yes	4.0	
27	Koldam (H)	(4 * 200)	Yes	4.0	
28	Koteswar (H)	(4 * 100)	Yes	4.0	
29	Malana-2 (H)	(2 * 50)			
30	Nathpa Jhakri (H)	(6 * 250)	Yes	5.5	
31	Parbati-2 (H)	(4 * 200)			
32	Parbati-3 (H)	(4 * 130)	Yes	4.0	
33	Pong (H)	(6 * 66)			

34	Rampur (H)	(6 * 68.67)			
35	Sainj (H)	(2 * 50)			
36	Salal (H)	(6 * 115)	Yes	3.0	
37	Sewa-II (H)	(3 * 40)	Yes	4.0	
38	Singoli Bhatwari (H)	(3 * 33)			
39	Sorang (H)	(2 * 50)			
40	Tanakpur (H)	(1 * 31.42 + 2 * 31.4)	Yes	4.0	
41	Tehri (H)	(4 * 250)	Yes	4.0	
42	Uri-1 (H)	(4 * 120)	Yes	6.0	
43	Uri-2 (H)	(4 * 60)	Yes	5.0	

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

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

Members may like to discuss.

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 February 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.

In this regard, communication was sent to constituents through NRLDC letter dated 01.05.2024, 21.02.2025 & 05.03.2025 for conducting mock testing of SPS in their

control area and continuous follow up is also being done in OCC & PSC meeting since May 2024.

During 2024-25, mock testing of 14 SPS out of total 55 SPS were not conducted. In view of high demand scenario during summer 2025-26, NLRDC vide letter dated 04.04.2025 requested all the concerned utility to conduct the mock testing of pending SPS by the end of April 2025. However, as reported, mock testing of 03 SPS out of pending 14 SPS have been done. In this regard, discussion was also held in 60th PSC meeting conducted on 26.05.2025. PSC forum requested all the members to conduct the mock testing of all the SPS in their respective control area at the earliest.
Status of mock testing of all the SPS in NR is attached as **Annexure-B.V**.

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

i. **Concerned constituents / utility are requested to conduct the mock testing of pending SPS (whose mock testing was not conducted in 2024-25) at the earliest.**

ii. **Utilities are also requested to conduct the mock testing of SPS schemes in their respective control area w.r.t. year 2025-26.**

iii. **In compliance with IEGC clause 16.2, users shall ensure that mock testing along with the review of SPS logic of all the SPS is conducted at least once a year.**

iv. **Further In compliance with IEGC clause 16.3, users shall also share the detailed report of SPS operation in their respective control area within 3 days of its operation. Presently, no such report is being received.**

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

Members may like to discuss.

B.14. Severe voltage fluctuation during multiple elements tripping event in 400/220kV Bareilly(UP), 220kV Tanakpur HEP complex on 31.05.2025

On 31.05.2025 at 20:24 hrs, multiple elements tripping (2*315 MVA ICT) at Bareilly(UP) occurred. Due to this tripping of ICTs at 400/220 kV Bareilly (UP), line loading of 220KV CB Ganj-Sitarganj ckt reached up to the level of 270MW, it leads to voltage oscillation/ fluctuation in the Tanakpur-Sitarganj-CB Ganj

complex. Voltage fluctuation was in the range of 125kV to 218kV on 220KV bus. Severe variation in voltage continued till 20:42 hrs when 400/220kV ICT-1 was charged. Again, ICT-1 at Bareilly(UP) tripped leading to fluctuation in voltage in the complex and 220kV Sitarganj and CB Ganj line from Tanakpur tripped at 20:52 hrs. This led to blackout of 220kv Tanakpur HEP and supply to Nepal through 132kV Mahendergarh feeder also lost. Analysis of the event is attached as **Annexure-B.VI.**

Few observation w.r.t. event is as follows:

i. Bus bar protection maloperated at 400/220kV Bareilly(UP) due to wrong CT connection (as informed). Thorough review need to be done after any testing and maintenance work.
ii. SPS at 400/220kV Bareilly(UP) has been disabled and shifted without approval of the OCC forum. There is requirement of SPS at Bareilly(UP), SPS at Bareilly(UP) may be enabled at the earliest.
iii. Significant overloading (~275MW) of 220kV Rampur-CB Ganj line and 220kV CB Ganj-Sitarganj line is observed after tripping of ICTs at Bareilly(UP). This followed by severe fluctuation in 220kV voltage.
iv. Overvoltage protection is enabled on 220kV Tanakpur-Sitarganj line at Tanakpur end. It needs to be disabled. For safety purpose from overvoltage, overvoltage setting may be kept at stage-2 level 9140% with 100msec delay).
v. 400/220kV ICT-1 was charged at 20:42 hrs without taking code from NRLDC. Violation of operating procedure need to be avoided. Later at 20:51 hrs, ICT-1 tripped on overcurrent protection. If additional load would have taken after charging of ICT-3 then tripping of ICT-1 could have avoided.

SLDC-UP, NHPC and POWERGRID(NR-3) may further analyse the event and share their observations. Necessary remedial action may be taken to avoid such event in future. Members may also share their inputs / observation w.r.t. the event and further remedial actions.

Members may like to discuss.

Status of action taken on decision of 231st OCC meeting of NRPC

S.N.	Agenda	Decision of 231st OCC meeting of NRPC	Status of action taken
1	Table Agenda A.17. Rectification of the breaker and charging of the 220kV Sunam (PS)-Patran (indiGrid) Circuit (Agenda by Punjab SLDC)	IndiGrid informed that they have procured new circuit breaker and the failed Circuit Breaker at 400kv Patran S/s (IndiGrid) would be replaced by first week of Jun'25.	IndiGrid representative may kindly update the status.

Follow up issues from previous OCC meetings

Annexure-A.II

<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.II.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 May-2025
◎ HARYANA Mar-2025
◎ HP Mar-2025
◎ J&K and LADAKH Not Available
◎ PUNJAB Mar-2025
◎ RAJASTHAN Mar-2025
◎ UP Apr-2025
◎ UTTARAKHAND May-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 Mar-2025
◎ HARYANA Mar-2025
◎ HP Mar-2025
◎ J&K and LADAKH Not Available
◎ PUNJAB Mar-2025
◎ RAJASTHAN Dec-2024
◎ UP Apr-2025
◎ UTTARAKHAND Mar-2025
◎ 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.II.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.II.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>Apr-25</td></tr><tr><td>◎</td><td>HP</td><td>Apr-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>Mar-25</td></tr><tr><td>◎</td><td>RAJASTHAN</td><td>Mar-25</td></tr><tr><td>◎</td><td>UP</td><td>Feb-25</td></tr><tr><td>◎</td><td>UTTARAKHAND</td><td>Jan-25</td></tr></table>Chandigarh is requested to submit the requisite data w.e.f. April 2018 as per the billed data information in the given format</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.II.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-II.I

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

Sl. No.	Substation	Downstream network bays	Status of bays	Planned 220 kV system and Implementation status	Revised Target	Remarks
1	400/220kV, 3x315 MVA Samba	Commissioned: 8 Total: 8	Utilized: 6 Unutilized: 2	• Network to be planned for 2 bays.	Jul'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	Contractual completion date on 04.08.2025.	Under construction.Updated in 230rd 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.	-	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 31.03.2025. 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	Oct'25	Erection and stringing work completed.The signing of Connection agreement amongst the Utilities is pending. Updated in 230th 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	May'25	Updated in 230th OCC by HVPNL **Status:-** A-formats for FTC of line submitted on FTC portal of NRLDC on dated 09.04.25.

Sl. No.	Substation	Downstream network bays	Status of bays	Planned 220 kV system and Implementation status	Revised Target	Remarks
14	400/220kV Sohna Road Sub-station	Commissioned: 8 Total: 8	Utilized: 4 Unutilized: 4	• LILO of both circuits of 220kV D/c Sohna-Rangla Rajpur at Roj Ka Meo line at 400kV Sohna Road	Oct'25	Line work completed, but commissioning of 220kV substation Roj ka Meo is pending till now.. However, this arrangement will not lead to usage of additional bays i.e. no of utilitsed bays at Sohna road will remain same.Updated in 230th OCC by HVPNL
				• LILO of both circuits of 220kV D/c Badshahpur-Sec77 line at 400kV Sohna Road	-	The matter is subjudice in Hon'ble Punjab & Haryana High court, Chandigarh Updated in 228th OCC by HVPNL. **Status:-** Earlier 02 nos 220 kV line bays were to be utilized for the 220 kV GIS S/Stn. Sec-77, Gurugram but due to denotification of land of the 220 kV GIS S/Stn. Sec-77 the said substation is now going to be dismantled and a new substation is proposed at Sec-75A, Gurugram. Now, these 02 no. 220 kV line bays may be utilized at 220 kV GIS S/Stn Sec-75A, Gurugram.
15	400/220kV Prithla Sub-station	Commissioned: 8 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	Dec'25	Contract awarded on 08.08.23 to M/s Skipper with completion in December 25.Updated in 230th OCC by HVPNL
				• LILO of both ckt of 220kV D/c Ranga Rajpur – Palwal line	Commissioned	Energization date: 31.12.2021. Updated in 198th OCC by HVPNL
				• 220kV D/C for Sector78, Faridabad	31.07.2025	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	The work for construction of 220kV D/C Prithla-Sector-78 Faridabad line on multi circuit towers is delayed mainly due to severe resistance by local villagers & ROW problem at site during construction. Due to delay in construction of 220kV D/C Prithla-Sector-78 Faridabad line, the work for construction of 220kV D/C Prithla-Sector 89 Faridabad line might delay..Updated in 230th OCC by HVPNL
16	400/220kV 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	May'25	Updated in 230th OCC by HVPNL. **Status:** A-formats for FTC of line submitted on FTC portal of NRLDC on dated 09.04.25.
				• 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	May'25	Updated in 230th 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	• LILO of 220 kV BBMB Jalandhar - Butari line at 400 kV PGCIL Jalandhar	-	LILO of 220 kV BBMB Jalandhar - Butari line at 400 kV PGCIL Jalandhar being planned. Route plan and estimate of work sanctioned, DNIT has been sent to float tender as updated by PSTCL in 227th OCC
20	400/220kV Roorkee Sub-station	Commissioned: 6 Total: 6	Utilized: 4 Unutilized: 2	• Roorkee (PG)-Pirankaliyar 220kV D/c line	Commissioned	Roorkee (PG)-Pirankaliyar 220kV D/c line commissioned in 2020 as intimated by PTCUL in 197th OCC
21	400/220kV Lucknow Sub-station	Commissioned: 8 Total: 8	Utilized: 4 Unutilized: 4	• Network to be planned for 2 bays	Commissioned	• Lucknow -Kanduni, 220 kV D/C line work energized on 05.10.2023. Updated in 212th OCC by UPPTCL. _____ • No planning for 2 no. of bays upated by UPPTCL in 196th OCC. The same has been communicated to Powergrid.
22	400/220kV Gorakhpur Sub-station	Commissioned: 6 Total: 6	Utilized: 4 Unutilized: 2	• Network to be planned for 2 bays	Commissioned	• Gorakhpur(PG)- Maharajganj, 220 kV D/C line energized on 27.09.2023 updated by UPPTCL in 212th OCC
23	400/220kV Fatehpur Sub-station	Commissioned: 8 Under Implementation:2 Total: 10	Utilized: 6 Unutilized: 2 Under Implementation:2	• Network to be planned for 2 bays	-	• UPPTCL intimated that 02 no. of bays under finalization stage. In 201st OCC, UPPTCL intimated that it is finalized that Khaga s/s will be connected (tentative time 1.5 years). _____ • No planning for 2 no. of bays updated by UPPTCL in 196th OCC. The same has been communicated to Powergrid.

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	Jun'25	Revised target date as confirmed by concerned XEN TS, Panchkula.Updated in 230th 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	Draft connectivity agreements for 220kV Rashiana-Amritsar has been received from CTU and the same under processing. Draft connectivity agreements for 220kV Patti-Amritsar line is under consideration by CTU. CTU is processing the agreement and PSTCL is providing with the requisite inputs/data to CTU from time to time, as and when required. Updated in 231st 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	Draft connectivity agreements for 220kV Rashiana-Amritsar & 220kV Patti-Amritsar lines are under consideration by CTU. CTU is processing these agreements and PSTCL is providing with the requisite inputs/data to CTU from time to time, as and when required.. 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	-	Proposal turned down by CEA.Updated in 230th OCC by HVPNL.
				• Bahadurgarh - METL 220kV D/c line (Deposit work of M/s METL)	15.06.2026	Updated in 230th OCC by HVPNL. **Status:** The work stands awarded to the M/s KRR and the execution work has been started at site. Partial route stands approved by the competant authority of the HVPNL. Further, 06 no. Foundation has been casted.
				• Bahadurgarh - Kharkhoda Pocket B 220kV D/c line	30.06.2025	Updated in 230th OCC by HVPNL. **Status:** RoW issues which are being resolved with the help of Duty Magistrate.
29	400/220kV Jaipur (South) S/s	Commissioned: 4 Total: 4	Utilized:2 Unutilized: 2	• LILO of 220 kV S/C Dausa – Sawai Madhopur line at 400 kV GSS Jaipur South (PG)	06.10.2025	Work order has been issued on 06.10.2023, work under progress as updated by RVPNL in 215th OCC
30	400/220kV Sohawal S/s	Commissioned: 8 Total: 8	Utilized: 8	• Sohawal - Barabanki 220kV D/c line	Commissioned	Energization date: 14.04.2018 updated by UPPTCL in 196th OCC
				• Sohawal - New Tanda 220kV D/c line	Commissioned	Energization date: 28.05.2019 updated by UPPTCL in 196th OCC
				• Network to be planned for 2 bays	Commissioned	• Sohawal - Gonda 220kV S/c line (Energization date: 27.04.2020) updated by UPPTCL in 196th OCC _____ • Sohawal - Bahraich 220kV S/c line (Energization date: 15.02.2021) updated by UPPTCL in 196th OCC
31	400/220kV, Kankroli	Commissioned: 6 Total: 6	Utilized: 4 Unutilized: 2	• 220 kV D/C Kankroli(PG) - Nathdwara line	-	Standard bid document has been finalized on 13.08.2024 and bid is under preparation as updated by RVPN in 222nd OCC.
32	400/220kV, Manesar	Commissioned: 8 Total: 8	Utilized: 4 Unutilized: 4	• Network to be planned for 2 bays	-	Status:- A proposal is being prepared for the creation of another 220kV D/C line from the 400kV substation Panchgaon (PG) to the 220kV substation Panchgaon (HVPNL), along with the LILO of one circuit of the 220kV D/C Panchgaon (PG) – Mau line at the 220kV substation Panchgaon to utilize two bays at the 400kV substation Panchgaon. The load flow study for this has already been completed.
33	400/220kV, Saharanpur	Commissioned: 6 Under Implementation:2 Total: 8	Utilized: 6 Unutilized: 0 Under Implementation:2	• Network to be planned for 2 bays	Commissioned	Saharanpur(PG)-Devband D/c line (Energization date: 20.04.2023) updated by UPPTCL in 207th OCC
34	400/220kV, Wagoora	Commissioned: 10 Total: 10	Utilized: 6 Unutilized: 4	• Network to be planned for 4 bays	-	PDD, J&K to update the status.
35	400/220kV, Ludhiana	Commissioned: 9 Total: 9	Utilized: 8 Unutilized: 1	• Network to be planned for 1 bay	Commissioned	Direct circuit from 220 kV Lalton Kalan to Dhandari Kalan to be diverted to 400 kV PGCIL Ludhiana. Work completed , final agrrement is expected to be signed by May'24. Updated in 218th OCC by PSTCL.

Sl. No.	Substation	Downstream network bays	Status of bays	Planned 220 kV system and Implementation status	Revised Target	Remarks
36	400/220kV, Chamba (Chamera Pool)	Commissioned: 3 Under tender:1 Total: 4	Utilized:3 Unutilized: 0 Under tender:1	• Stringing of 2nd ckt of Chamera Pool – Karian 220kV D/c line	Commissioned	Stringing of 2nd Circuit of Chamera Pool-Karian Tansmission line has been completed & terminal bay at 400/220 kV chamera pooling substation (PGCIL) is commissioned on 20.01.2024. Updated in 217th OCC by HPPTCL.
37	400/220kV, Mainpuri	Commissioned: 6 Under Implementation:2 Total: 8	Utilized: 6 Unutilized: 0 Under Implementation:2	• Network to be planned for 2 bays	-	• 02 no. of bays under finalization stage updated by UPPTCL in 196th OCC. Mainpuri S/s planned. Land is not finalized, therefore timeline not available as intimated by UPPTCL in 201st OCC.
38	400/220kV, Patiala	Commissioned: 8 Total: 8	Utilized: 6 Unutilized: 2	• 400 kV PGCIL Patiala - 220 kV Bhadson (D/C)	-	2 Nos. bays for 400 kV PGCIL Patiala - 220 kV Bhadson (D/C) line being planned. Technical bid for civil work of 66kV to 220kV Bhadson upgradation has been opened and further processed for opening of financial bid. Work likely to be started by 15.05.2025. as updated by PSTCL in 230th 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 230th OCC meeting, RVPN informed that 247 nos. of circuit breakers have been mapped to ADMS, all 247 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. ix. In 230th OCC meeting UP SLDC representative informed that feeder list at 33kV level for ADMS is awaited from UPPCL.
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. vii In 230th OCC meeting Uttarakhand SLDC representative informed that Harbour installation and communication establishment has been done on 35 11kV feeders out of total 195 11kV feeders. The work is expected to be completed by December, 2025.

Annexure-A.II.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 bidder.
		220kV	1045.135	NIL	1		
2	Powergrid NR-1	220 KV	1842.88	NIL	1		
		400 KV	11074.26	12 Towers	3	All 400kV ERS at 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 Ajmer
		220 kV	16227.979		3		
		400 kV	6899.386		2		
		765 kV	425.498		1		

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

Annexure-A.II.IV

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	
36			2	28-Feb-21	both of its units, which have been ready for	
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			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			5	30-Nov-25		

68	RRVUNL	KOTA TPS	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		

MIS Report for Status of Islanding Schemes

Implemented Schemes

Sl. No.	Islanding Scheme	SLDC	Status	Submission of Self Certification of Healitheness	SOP	SCADA Display Page	Remarks
1	NAPS IS	UP	Implemented	Yes (08-10-2021)	Yes	Yes	-
2	RAPS IS	Rajasthan	Implemented	16-Aug-21	Yes	Yes	List of officials in-charge, format for generation, islanding scheme sld and relays in RAPP IS submitted by RVPN on 04.12.2021.
3	Delhi IS	Delhi	Implemented				
4	Lucknow-Unchahar IS	UP	Implemented				The data of 132 kV S/s Hussainganj 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 May 2025.

Under Implementation/ Newly Proposed/Under Discussion

Sl. No.	Islanding Scheme	SLDC	Status	Details of progress	DPR for PSDF funding (Required / Not Required)	Timelines Status - Proposed/Actual									
						Study		Design		Approval		Procurement		Commissioning	
						Proposed	Actual	Proposed	Actual	Proposed	Actual	Proposed	Actual	Proposed	Actual
1	Pathankot-RSD IS	Punjab	No longer exist	In 231st OCC meeting Punjab SLDC informed that the Pathankot-RSD islanding scheme has been dismantled/disolved during works of control room extension.		-		-	-	-	-	-	-	-	-
2	Agra IS	UP	Under Implementation	Scheme has been approved in 71th NRPC meeting held on 29.01.2024. In 228th OCC, UPPTCL representative apprised forum that management is of view that procurement of UFRs for the Lalitpur-Agra islanding scheme should be explored through PSDF funding. During the meeting held on 07.03.2025, PSDF Secretariat raised some queries regarding the scheme and UPPTCL was asked to submit their board approval. UPPTCL is currently preparing responses to the PSDF Secretariat's queries and will resubmit the proposal once it has been approved by the UPPTCL board.		-		-	-	-	-	-	-	-	-
3	Jodhpur-Barmer-Rajwest IS	Rajasthan	Under Implementation	Scheme has been approved in 60th NRPC meeting held on 30.11.2022. In 228th OCC, RRVPNL representative mentioned that they have submitted their proposal of Jodhpur-Barmer- Rajwest islanding scheme to PSDF Secretariat on 16.01.2025 for PSDF funding. During the meeting held on 07.03.2025, PSDF Secretariat raised some queries regarding the scheme. Responses to these queries are currently being prepared by RRVPNL.	-	-		-	-	-	-	-	-	-	-
4	Suratgarh IS	Rajasthan	Under Implementation	Scheme has been approved in 60th NRPC meeting held on 30.11.2022. In 228th OCC, 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 IS.	-	-		-	-	-	-	-	-	-	-
5	Patiala-Nabha Power Rajpura IS	Punjab	Under Implementation	Scheme has been approved in 60th NRPC meeting held on 30.11.2022. In 227th OCC, Punjab SLDC apprised forum that they have submitted their proposal to PSDF Secretariat . During the meeting held on 07.03.2025, PSDF Secretariat raised some observations regarding the scheme which has been replied by Punjab.		-		-	-	-	-	-	-	-	-
6	Kullu-Manali-Mandi IS	HP	Under Implementation	Scheme has been approved in 60th NRPC meeting held on 30.11.2022. In 231st OCC, HPSLDC representative informed that the Monitoring committee of State PSDF has provided approval for State PSDF funding for implementation of proposed UFR scheme for Kullu-Manali islanding scheme in the meeting held on 22nd April, 2025. He further stated that the procurement of UFRs will be undertaken by HPSEBL. The tentative timeline for the implementation of the schemes will be obtained from HPSEBL and shared with the forum in due course.		-		-	-	-	-	-	-	-	-
7	Shimla-Solan IS	HP	Under Implementation	Scheme has been approved in 60th NRPC meeting held on 30.11.2022. In 231st OCC, HPSLDC representative informed that HPSEBL has done the testing and requisite frequency settings of their generators for Shimla-Solan islanding scheme. HPSLDC representative further informed that the Monitoring committee of State PSDF has provided approval for State PSDF funding for implementation of proposed UFR scheme for Shimla-Solan islanding scheme in the meeting held on 22nd April, 2025. He further stated that the procurement of UFRs will be undertaken by HPSEBL. The tentative timeline for the implementation of the schemes will be obtained from HPSEBL and shared with the forum in due course.											

Thermal Generators

Annexure-A.IV

S. No.	Name of Plant	Unit	Installed Capacity	MVA Rating	Make of Units	COD	GT Details			Mode of Fuel Transport (Pit Head/Non Pit-head)	Name of Utility	Sector	Control Area	Type	Real and Reactive Power Capability assessment.			Assessment of Reactive Power Control Capability as per CEA Technical Standards for connectivity			Model Validation and verification test for the complete Generator and Excitation System model including PSS.			Model Validation and verification of Turbine/Governor and Load Control or Active Power/frequency Control Functions.			Testing of Governor performance and Automatic Generation Control			Revised Simulation Models		
							Voltage Ratio	GT MVA Capacity	Tap Ratio of GT (Present Tap/Total Taps)						Last tested on (dd/mm/yyyy)	Whether due?	Tentative Schedule date	Last tested on (dd/mm/yyyy)	Whether due?	Tentative Schedule date	Last tested on (dd/mm/yyyy)	Whether due?	Tentative Schedule date	Last tested on (dd/mm/yyy)	Whether due?	Tentative Schedule date	Last tested on (dd/mm/yyyy)	Whether due?	Tentative Schedule date	Whether Revised Models Submitted?	Remarks	
1																																
2																																
3																																
4																																
5																																
6																																
7																																
8																																
9																																
10																																

Hydro Generators

S. No.	Name of Plant	Unit	Installed Capacity	MVA Rating	Make of Units	COD	GT Details			Type (Pondage/RoR etc.)	Name of Utility	Sector	Control Area	Real and Reactive Power Capability assessment.			Assessment of Reactive Power Control Capability as per CEA Technical Standards for connectivity			Model Validation and verification test for the complete Generator and Excitation System model including PSS.			Model Validation and verification of Turbine/Governor and Load Control or Active Power/frequency Control Functions.			Testing of Governor performance and Automatic Generation Control			Revised Simulation Models		
							Voltage Ratio	GT MVA Capacity	Tap Ratio of GT (Present Tap/Total Taps)					Last tested on (dd/mm/yyyy)	Whether due?	Tentative Schedule date	Last tested on (dd/mm/yyyy)	Whether due?	Tentative Schedule date	Last tested on (dd/mm/yyyy)	Whether due?	Tentative Schedule date	Last tested on (dd/mm/yyyy)	Whether due?	Tentative Schedule date	Last tested on (dd/mm/yyyy)	Whether due?	Tentative Schedule date	Whether Revised Models Submitted?	Remarks	
1	Mahi Power House-I	UNIT-I	25 MW	27.778 MVA	BHEL, Bhopal	22/01/1986	11kV/132kV	31.5 MVA	3/5	RoR	RVUN	Power/ Energy																			
2	Mahi Power House-I	UNIT-II	25 MW	27.778 MVA	BHEL, Bhopal	06/02/1986	11kV/132kV	31.5 MVA	3/5	RoR	RVUN	Power/ Energy																			

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

Nuclear Generators

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

Gas Based Generators

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

Renewable Energy Plants

S. No.	Name of Plant	Pooling Station Name	Installed Capacity	Type (Solar/Wind)	COD	Owner	Sector	Control Area	Inverter/ WTG Make	Inverter/ WTG Model	PPC Make	Real and Reactive Power Capability for Generator			Power Plant Controller Function Test			Frequency Response Test			Active Power Set Point change test			Reactive Power (Voltage / Power Factor / Q) Set Point change test			Revised Simulation Models		
												Last tested on (dd/mm/yyyy)	Whether due?	Tentative Schedule date	Last tested on (dd/mm/yyyy)	Whether due?	Tentative Schedule date	Last tested on (dd/mm/yyyy)	Whether due?	Tentative Schedule date	Last tested on (dd/mm/yyyy)	Whether due?	Tentative Schedule date	Last tested on (dd/mm/yyyy)	Whether due?	Tentative Schedule date	Whether Revised Models Submitted?	Remarks	

HVDC Links

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

STATCOMs/SVCs

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

FSCs/TCSCs

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

Series Reactor

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

Annexure-A.V

Superintending Engineer
(R&A)

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

No: 18 /SE(R&A)/EE-II/ SPS

Dated: - 11/06/ 2025

SE (Operations), NRPC
18 – A SJSS Marg,
Katwaria Sarai, New Delhi,
110016. (seo-nrpc@nic.in)

Subject: - Agenda for approval of Proposed System Protection Scheme (SPS) at 400kV substation Panki.

It is to inform that 1X315MVA+1x500MVA ICTs at 400 kV substation Panki are N-1 non-compliant. In order to ensure the reliability of said substation, System Protection Scheme is required. Proposed logic for SPS of 1X315MVA+1x500MVA ICT at 400 kV substation Panki is enclosed.

It is requested to kindly include Proposed SPS logic as an agenda of 232th OCC meeting of NRPC, so that the same may be discussed and approved.

Encl: As above

(Vipin)
Superintending Engineer (R&A)

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

Dated: - 2025

Copy forwarded to following via-email for information and necessary action:-

1. Director (Operation), UPPTCL, 11th Floor, Shakti Bhawan Extn.,Lucknow.
2. Chief Engineer (PSO), UPSLDC Vibhuti Khand – II, Gomti Nagar, Lucknow.
3. Chief Engineer, (Trans South - west), UPPTCL, near Amar Ujala Press, Kakraitha Road, Agra
4. General Manager, NRLDC 18-A, SJSS Marg, Katwaria Sarai, New Delhi–110016.
5. Superintending Engineer (System Control), UPSLDC, Vibhuti Khand – II, Gomti Nagar, Lucknow.

(Vipin)
Superintending Engineer (R&A)

Logic for proposed SPS (System Protection Scheme) for ICTs at 400kV Substation Panki

Name of Substation	ICT Rating	Tripping Logic-I			Tripping Logic-II		
		% Setting	Time Delay	Priority of feeder for load cut off	% Setting	Time Delay	Priority of feeder for load cut off
400kV Substation Panki	315MVA ICT- I	100-110% of rated current	5 sec	1. 220kV Chibramau 2. 220kV RPH 3. 220kV Bithoor 4. 220kV Raniya 5. 132kV Dibiyapur 6. 132kV Dadanagar 7. 132kV Azad Nagar Ckt II 8. 132kV Azad Nagar Ckt II	Above 110% of rated current	1500 msec	1. 220kV Chibramau 2. 220kV RPH 3. 220kV Bithoor 4. 220kV Raniya 5. 132kV Dibiyapur 6. 132kV Dadanagar 7. 132kV Azad Nagar Ckt II 8. 132kV Azad Nagar Ckt II
	500MVA ICT- II	100-110% of rated current	5 sec	1. 220kV Chibramau 2. 220kV RPH 3. 220kV Bithoor 4. 220kV Raniya 5. 132kV Dibiyapur 6. 132kV Dadanagar 7. 132kV Azad Nagar Ckt II 8. 132kV Azad Nagar Ckt II	Above 110% of rated current	1500 msec	1. 220kV Chibramau 2. 220kV RPH 3. 220kV Bithoor 4. 220kV Raniya 5. 132kV Dibiyapur 6. 132kV Dadanagar 7. 132kV Azad Nagar Ckt II 8. 132kV Azad Nagar Ckt II

Overcurrent setting of ICTs at Panki

Fault current with respect to full load (FL) current	OC trip time (in Sec)
100% of FL	Pickup
105% of FL	43.026
110% of FL	22.012
120% of FL	11.498
130% of FL	7.983
140% of FL	6.22

National Load Despatch Centre
Import Capability of Punjab for July 2025

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

Date	Time Period in IST (hrs)	Total Transfer Capability (TTC) (MW)	Reliability Margin (MW)	Available Transfer Capability (ATC) (MW)	Approved General Network Access (MW)	Margin Available for Temporary General Network Access(MW)	Changes in TTC w.r.t. Last Revision	Comments
1 July 2025 to 31 July 2025	00-24	10600	500	10100	5497	4603		https://www.punjabsldc.org/ATC_TTC.aspx
Limiting Constraints		N-1 contigency of 400/220KV ICT at Rajpura, Ludhiana, Jalandhar, Muktsar Loading close to N-1 contingency limits of 400/220kV Malerkotla and Patiala ICTs 220 kV underlying network at Jalandhar, Ludhiana and Amritsar						

National Load Despatch Centre
Import Capability of Uttar Pradesh for July 2025

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

Date	Time Period in IST (hrs)	Total Transfer Capability (TTC) (MW)	Reliability Margin (MW)	Available Transfer Capability (ATC) (MW)	Approved General Network Access (MW)	Margin Available for Temporary General Network Access(MW)	Changes in TTC w.r.t. Last Revision	Comments
1 July 2025 to 31 July 2025	00-24	17700	600	17100	10165	6935		https://www.upsldc.org/documents/20182/0/ttc_atc_24-11-16/4c79978e-35f2-4aef-8c0f-7f30d878dbde
Limiting Constraints	N-1 contingency of 400/220kV Panki, Allahabad(PG), Agra(PG), Lucknow (PG) ICTs							

National Load Despatch Centre
Import Capability of Haryana for July 2025

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

Date	Time Period in IST (hrs)	Total Transfer Capability (TTC) (MW)	Reliability Margin (MW)	Available Transfer Capability (ATC) (MW)	Approved General Network Access (MW)	Margin Available for Temporary General Network Access(MW)	Changes in TTC w.r.t. Last Revision	Comments
1 July 2025 to 31 July 2025	00-24	10300	300	10000	5418	4582		https://hvpn.org.in/#/atcttc
Limiting Constraints	N-1 contingency of 400/220kV ICT at Deepalpur, Hisar, Kabulpur and Panipat(BBMB)							

National Load Despatch Centre
Import Capability of Rajasthan for July 2025

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

Date	Time Period in IST (hrs)	Total Transfer Capability (TTC) (MW)	Reliability Margin (MW)	Available Transfer Capability (ATC) (MW)	Approved General Network Access (MW)	Margin Available for Temporary General Network Access(MW)	Changes in TTC w.r.t. Last Revision	Comments
1 July 2025 to 31 July 2025	00-24	7600	600	7000	5755	1245		https://sldc.rajasthan.gov.in/rrvpnl/scheduling/downloads
Limiting Constraints	N-1 contingency of 400/220kV Heerapura, Jodhpur, Bikaner, Ajmer, Merta, Hindaun and Ratangarh ICTs							

National Load Despatch Centre
Import Capability of Delhi for July 2025

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

Date	Time Period in IST (hrs)	Total Transfer Capability (TTC) (MW)	Reliability Margin (MW)	Available Transfer Capability (ATC) (MW)	Approved General Network Access (MW)	Margin Available for Temporary General Network Access(MW)	Changes in TTC w.r.t. Last Revision	Comments
1 July 2025 to 31 July 2025	00-24	7300	300	7000	4810	2190		https://www.delhisldc.org/resources/atcttcreport.pdf
Limiting Constraints	N-1 contingency of 400/220kV Mundka, HarshVihar and Bawana (bus-split) ICTs.							

National Load Despatch Centre
Import Capability of Uttarakhand for July 2025

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

Date	Time Period in IST (hrs)	Total Transfer Capability (TTC) (MW)	Reliability Margin (MW)	Available Transfer Capability (ATC) (MW)	Approved General Network Access (MW)	Margin Available for Temporary General Network Access(MW)	Changes in TTC w.r.t. Last Revision	Comments
1 July 2025 to 31 July 2025	00-24	1710	100	1610	1402	208		https://uksldc.in/ttc-atc
Limiting Constraints		N-1 contingency of 400/220kV Kashipur ICTs. High loading of 220kV Roorkee-Roorkee and 220kV CBGanj-Pantnagar lines						

National Load Despatch Centre
Import Capability of HP for July 2025

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

Date	Time Period in IST (hrs)	Total Transfer Capability (TTC) (MW)	Reliability Margin (MW)	Available Transfer Capability (ATC) (MW)	Approved General Network Access (MW)	Margin Available for Temporary General Network Access(MW)	Changes in TTC w.r.t. Last Revision	Comments
1 July 2025 to 31 July 2025	00-24	2386	100	2286	1130	1156		https://hpsldc.com/mrm_category/ttc-atc-report/
Limiting Constraints		Overloading of 2*100MVA Giri transformers High loading of 220kV Nallagarh-Upernangal D/C						

National Load Despatch Centre
Import Capability of J&K for July 2025

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

Date	Time Period in IST (hrs)	Total Transfer Capability (TTC) (MW)	Reliability Margin (MW)	Available Transfer Capability (ATC) (MW)	Approved General Network Access (MW)	Margin Available for Temporary General Network Access(MW)	Changes in TTC w.r.t. Last Revision	Comments
1 July 2025 to 31 July 2025	00-24	2800	100	2700	1977	723		
Limiting Constraints		N-1 contigency of 400/220KV ICTs at Amargarh, Kishenpur 220 kV underlying network at Amargarh, Wagoora Low voltages in J&K control area due to high MVAR drawl						

National Load Despatch Centre
Import Capability of Chandigarh for July 2025

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

Date	Time Period in IST (hrs)	Total Transfer Capability (TTC) (MW)	Reliability Margin (MW)	Available Transfer Capability (ATC) (MW)	Approved General Network Access (MW)	Margin Available for Temporary General Network Access(MW)	Changes in TTC w.r.t. Last Revision	Comments
1 July 2025 to 31 July 2025	00-24	480	20	460	342	118		
Limiting Constraints		N-1 contigency of 220kV Nallagarh-Kishengarh						

Clause No.	Responsible Entity	Compliance Assignment
5.2(i)	Each distribution licensee within a State	Estimate the demand in its control area including the demand of open access consumers and factoring in captive generating plants, energy efficiency measures, distributed generation, demand response, in different time horizons, namely long-term, medium term and short-term.
5.2(ii)	STU (on behanlf of distribution licensee)/other designated agency	Estimate the demand for the entire State duly considering the diversity in different time horizons, namely long-term, medium term and short-term.
5.3(a)	Each distribution licensee	(i) assess the existing generation resources and identify the additional generation resource requirement to meet the estimated demand in different time horizons, (ii) prepare generation resource procurement plan.
5.3(c)	Each distribution licensee	Generation resource procurement planning (specifying procurement from resources under State control area and regional control area) shall be undertaken in different time horizons, namely long-term, medium term and short-term to ensure (i) adequacy of generation resources and (ii) planning reserve margin (PRM) taking into account loss of load probability and energy not served as specified by CEA.
5.3(d)	STU (on behalf of distribution licensee)/other designated agency	STU or other designated agency by state comission shall provide to NLDC, •the details regarding demand forecasting, •assessment of existing generation resources •such other details as may be required for carrying out a national level simulation for generation resource adequacy for States.
5.3(e)	NLDC	Based on the information received, NLDC shall carry out a simulation to assist the States in drawing their optimal generation resource adequacy plan.
5.3(f)	Each distribution licensee	Each distribution licensee shall ensure demonstrable generation resource adequacy for such period as specified by the respective SERC
31.1(a)	NLDC/RLDC/SLDC	Operational planning in advance by NLDC, RLDCs and SLDCs within their respective control areas: Monthly and Yearly time horizons in co-ordination with CTU, RPCs or STUs, as applicable.
31.1(b)	NLDC/RLDC/SLDC	Operational planning shall be carried out in advance by NLDC, RLDCs and SLDCs within their respective control areas on Intra-day, Day Ahead, Weekly time horizons.

31.1(c)	NLDC/RLDC	Procedure and data format by NLDC/RLDC for following activity •Operational planning analysis •Real-time monitoring, •Real-time assessments. Format is available at *https://posoco.in/wp-content/uploads/2024/03/Final-NLDC-Operating-Procedure_as-submitted-to-CERC-dated-290923.pdf*
31.1(d)	SLDC	SLDC may also issue procedures and formats for data collection for the above purposes.
31.2(a)	SLDC	Each SLDC shall carry out demand estimation (active & reactive) as part of operational planning after duly factoring in the demand estimation done by STU as part of resource adequacy planning referred to in Chapter 2 of these regulations.
31.2(b)	SLDC	Each SLDC shall develop methodology for daily, weekly, monthly, yearly demand estimation in MW and MWh for operational analysis as well as resource adequacy purposes
31.2(c)	SLDC	The demand estimation by each SLDC shall be done on day ahead basis with time block wise granularity for the daily operation and scheduling . Revision in real-time demand estimate by SLDC if major change is observed and sharing with RLDC
31.2(d)	SLDC	Each SLDC shall submit node-wise morning peak, evening peak, day shoulder and night off-peak estimated demand in MW and MVA on a monthly and quarterly basis for the nodes 110 kV and above
31.2(e)	SLDC	SLDC shall also estimate peak and off-peak demand (active as well as reactive power) on a weekly and monthly basis for load -generation balance planning as well as for operational planning analysis
31.2(f)	ISTS connected bulk consumers or distribution licensees	The entities such as bulk consumers or distribution licensees that are directly connected to ISTS shall estimate and furnish such a demand estimate to the concerned RLDC
31.2(g)	RLDC/NLDC	Based on the demand estimate furnished by the SLDCs and other entities directly connected to ISTS, each RLDC shall prepare the regional demand estimate and submit it to the NLDC. NLDC, based on regional demand estimates furnished by RLDCs, shall prepare national demand estimate
31.2(h)	SLDC	Submission of demand estimate data by SLDCs or other entities directly connected to ISTS, as applicable, to the respective RLDC and RPC as per below timeline : - Daily: 10:00 hrs of previous day - Weekly: First workinh day of previus week - Monhtly: Fifth day of previous month - Yearly: 30th September of the previous year

31.2(i)	SLDC/RLDC/NLDC	Compute forecasting error for intra-day, dayahead, weekly, monthly and yearly forecasts and analyse the same in order to reduce forecasting error in the future. The computed forecasting errors shall be made available by SLDCs, RLDCs and NLDC on their respective websites.
31.3(a)	SLDC	The generation estimation by each SLDC shall be done on day ahead basis with time block wise granularity for the daily operation and scheduling . Revision in real-time generation estimate by SLDC if major change is observed and sharing with RLDC
31.3(b)	RLDC	RLDC shall forecast generation from wind, solar, ESS and Renewable Energy hybrid generating stations that are regional entities and SLDC shall forecast generation from such sources that are intra-state entities, for different time horizons as referred to in clause (1) of Regulation 31 of these regulations for the purpose of operational planning
31.4(a)	SLDC	SLDCs estimate and ensure the adequacy of resources, identify generation reserves, demand response capacity and generation flexibility requirements with due regard to the resource adequacy framework as specified under Chapter 2 of these regulations
31.4(b)	SLDC	Furnishing time block-wise information for the following day in SLDC respect of all intra-state entities to the concerned RLDC who shall validate the adequacy of resources with due regard to the following: (i) Demand forecast aggregated for the control area; (ii) Renewable energy generation forecast for the control area; (iii) Injection schedule for intra-State entity generating station; (iv) Requisition from regional entity generating stations (v) Secondary and planned procurement through Tertiary reserve requirement; (vi) Planned procurement of power through other bilateral or collective transactions, if any.
33.1	NLDC, RLDC, SLDC & (RPC: Monthly & Yearly)	Based on the operational planning analysis data, operational planning study shall be carried out by various agencies for time horizons such as Real time, Intra Day , Weekly , Monthly & Yearly
33.2	SLDC, RLDCs and NLDC	SLDCs, RLDCs and NLDC shall utilize network estimation tool integrated in their EMS and SCADA systems for the real time operational planning study.

33.3	SLDC	SLDCs shall perform day-ahead, weekly, monthly and yearly operational studies for the concerned State for: (a) assessment and declaration of total transfer capability (TTC) and available transfer capability (ATC) for the import or export of electricity by the State. TTC and ATC shall be revised from time to time based on the commissioning of new elements and other grid conditions and shall be published on SLDC website with all the assumptions and limiting constraints; (b) planned outage assessment; (c) special scenario assessment; (d) system protection scheme assessment; (e) natural disaster assessment; and (f) any other study relevant in operational scenario.
33.4	RLDCs and NLDC	RLDCs and NLDC shall perform day-ahead, weekly, monthly and yearly operational studies for: (a) assessment of TTC and ATC at inter-regional, intra-regional, and inter-state levels; (b) planned outage assessment; (c) special scenario assessment; (d) system protection scheme assessment; (e) natural disaster assessment; and (f) any other study relevant to operational scenarios
33.5	RLDCs	RLDC shall assess intra-regional and inter-state level TTC and ATC and submit them to NLDC. NLDC shall declare TTC and ATC for import or export of electricity between regions including simultaneous import or export capability for a region, and crossborder interconnections 11 (Eleven) months in advance for each month on a rolling basis.
33.6	RLDCs	Operational planning study shall be done to assess whether the planned operations shall result in deviations from any of the system operational limits defined under these regulations and applicable CEA Standards. The deviations, if any, shall be reviewed in the monthly operational meeting of RPC and significant deviations shall be monitored by RPC for early resolution.
33.7	NLDC, RLDCs, RPCs and SLDCs	NLDC, RLDCs, RPCs and SLDCs shall maintain records of the completed operational planning study, including date specific power flow study results, the operational plan and minutes of meetings on operational study.
33.8	NLDC, RLDCs, RPCs and SLDCs	NLDC, RLDCs, RPCs and SLDCs shall have operating plans to address potential deviations from system operational limit identified as a result of the operational planning study.
33.9	SLDCs	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

33.10	RLDCs	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 intrastate system on the inter-state system and share the results of the studies with NLDC
33.11	NLDC	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) intraregional system on the inter-regional system.
33.12	NLDC, RLDCs and SLDCs	NLDC, RLDCs and SLDCs shall compare the results of the studies of the impact of new elements on the system and transfer capability addition with those of the interconnection and planning studies by CTU and STUs
33.13	concerned user or SLDC or RLDC or NLDC	Defense mechanisms like system protection scheme, load-rejection scheme, generation run-back, islanding scheme or any other scheme for system security shall be proposed by the concerned user or SLDC or RLDC or NLDC and shall be deployed as finalized by the respective RPC

Grid Event summary for May 2025

S.No.	Category of Grid Incident/ Disturbance	Name of Elements (Tripped/Manually opened)	Affected Area	Owner/ Agency	Outage		Revival		Duration (hh:mm)	Event (As reported)	Energy Unserved due to Generation loss (MU)	Energy Unserved due to Load loss (MU)	Loss of generation / loss of load during the Grid Disturbance		% Loss of generation / loss of load w.r.t Antecedent Generation/Load in the Regional Grid during the Grid Disturbance		Antecedent Generation/Load in the Regional Grid		Fault Clearance time (in ms)	Compliance of Protection Protocol/Standard			
	(GI-I to GD-V)				Date	Time	Date	Time					Generation Loss(MW)	Load Loss (MW)	% Generation Loss(MW)	% Load Loss (MW)	Antecedent Generation (MW)	Antecedent Load (MW)		Flash Report Submission (Y/N)	DR/EL Submission (Y/N)	Detail Tripping Report Submission (Y/N)	
1	GI-2	i)220 KV Ludhiana(PG)-Laltokalan(PS) (PSTCL) Ckt-2 ii)400/220 kV 500 MVA ICT 4 at Ludhiana(PG) iii)400/220 kV 500 MVA ICT 1 at Ludhiana(PG) iv)220 KV Pakhowal(PS)-Ludhiana(PG) (PSTCL) Ckt-1 v)220KV Bus 2 at Ludhiana(PG)	Punjab	PGCIL &PSTCL	2-May-25	00:00	2-May-25	01:29	01:29	i)400/220KV Ludhiana has one and half breaker scheme at 400KV level and has double main transfer scheme at 220KV level. ii)As reported, at 00:00hrs, due to operation of 220KV Bus Bar 2 protection 220KV Bus 2 at Ludhiana(PG) tripped. The tripping details for the exact cause of Bus Bar protection are still awaited. iii)Due to the bus bar protection operation, 400/220 kV 500 MVA ICT 1 & 4 at Ludhiana(PG) and 220 KV feeders to Pakowal, Jagraon, Dandhari Kalan-I and Lalto kaalan-II tripped. iv)As per PMU at Malerkotla(PG), R-N phase to earth fault with delayed fault clearance time of respectively 320ms is observed. v)As per SCADA, change in demand of approx. 110MW is observed in Punjab control area.	0	0.16	0	110	0.000	0.180	47275	61029	320	N (Partial details received)	N (Partial details received)	N (Partial details received)	Not received from Punjab
2	GD-1	i)400 KV Deepalpur(JHKT)-Kabulpur(HV) (HVPNL) Ckt-1 ii)400 KV Deepalpur(JHKT)-Kabulpur(HV) (HVPNL) Ckt-2 iii)400 KV CLP Jhajjar(CLP)-Kabulpur(HV) (HVPNL) Ckt-1 iv)400 KV CLP Jhajjar(CLP)-Kabulpur(HV) (HVPNL) Ckt-2 v)400 KV Bahadurgarh(PG)- Kabulpur(HV) (PG) Ckt-1 vi)400/220 KV ICT-2 at Kabulpur(HV)	Haryana	HVPNL, CLP & PGCIL	2-May-25	04:25	2-May-25	07:32	03:07	i)400/220/132kV Kabulpur sub-station has one and half breaker arrangement at 400kV side and double main and transfer bus scheme in 220KV side . ii)During antecedent condition, 400 KV Bhiwani(PG)-Kabulpur(HV) (PG) was out of service along with 400/220 KV 315MVA ICT-1. iii)As reported, at 04:25 hrs, 400 KV CLP Jhajjar(CLP)-Kabulpur(HV) (HVPNL) Ckt-2 tripped on R-N phase to earth fault. As per DR, Z-2 distance protection operated, with fault current of 5.06 KA and the fault distance was 60.9KM from Jhajjar end. iv)At the same time, 400 KV CLP Jhajjar(CLP)-Kabulpur(HV) (HVPNL) Ckt-1 tripped on R-N phase to earth fault. As per DR, Z-2 distance protection operated, with fault current of 5.23 KA the fault distance was 58.23KM from Jhajjar end. v)During the same time, 400 KV Deepalpur(JHKT)-Kabulpur(HV) (HVPNL) Ckt-1, Ckt-2, 400 KV Bahadurgarh(PG)- Kabulpur(HV) (PG) Ckt-1 and 400/220 KV ICT-2 at Kabulpur(HV) tripped (tripping details awaited). vi)Since the fault was not cleared at 400KV, it led to subsequent complete tripping of all transmission elements at 220KV and 132KV voltage level. This led to blackout of 400/220/132KV station. (Details of protection operation and sequence of tripping not received yet from Haryana) vii)As per PMU at Gurgaon(PG), R-N phase to earth fault is observed with delayed fault clearance of 480msec. viii)As per SCADA, change in demand of approx. 167MW in Haryana controlled area are observed.	0	0.52	0	167	0.000	0.331	41911	50452	480	N (Partial details received)	N (Partial details received)	N	
3	GD-1	ii)400 KV CLP Jhajjar(CLP)-Dhanoda(HV) (HVPNL) Ckt-1 iii)400 KV CLP Jhajjar(CLP)-Dhanoda(HV) (HVPNL) Ckt-2 iv)660 MW JHAJJAR(CLP) - UNIT 2 v)660 MW JHAJJAR(CLP) - UNIT 1	Haryana	HVPNL, & CLP	2-May-25	05:22	2-May-25	08:00	02:38	i)400kV Jhajjar(APCPL) has one and half breaker arrangement at 400kV side. ii)During antecedent condition, 660MW Unit 1, 2 at Jhajjar(CLP) were generating approx. 374MW and 390MW each. Unit 3 was under shutdown and 400 KV CLP Jhajjar(CLP)-Kabulpur(HV) (HVPNL) Ckt-1 and Ckt-2 were already under tripped condition. iii)As reported, at 05:22 hrs, Jhajjar(CLP)(end)-Dhanoda(HV) (HVPNL) Ckt-1 & 2 tripped (exact reason of tripping yet to be received). As per DR of 400 KV CLP Jhajjar (CLP)(end)-Dhanoda (HV) (HVPNL) Ckt-1 & 2 submitted, there was a momentary loss of current in all the 3 phases. However, no fault was observed in the DR. iv)Following this, 660 MW JHAJJAR(CLP) - UNIT 1 and 2 also tripped due to loss of evacuation path. This led to complete blackout of 400KV Jhajjar sub-station. v)As per PMU at Gurgaon(PG), no fault in system is observed. vi)As per SCADA, generation loss of 763MW (at Jhajjar CLP) in Haryana controlled area are observed.	0	0.00	763	0	1.936	0.000	39417	45990	NA	N (Partial details received)	N (Partial details received)	N	Plant end details not received
4	GD-1	i) 400 KV Dhanoda-Daulatabad (HV) Ckt-2	Haryana	HVPNL	2-May-25	05:22	2-May-25	08:00	02:38	i)400kV Dhanoda has one and half breaker scheme in 400KV voltage level. ii)During antecedent condition, 400 KV Gurgaon(PG)-Daulatabad(HV) (HV) Ckt-1, Ckt-2, 400 KV JHAJJAR(APCL)-DAULATABAD(HV) (HV) CKT-1 and Ckt2 and 400KV Dhanoda-Daulatabad (HV) Ckt-1 were already in tripped condition. 400KV Dhanoda-Daulatabad (HV) Ckt-2 (carrying ~409MW) and 400/220kV ICT-1,2,3&4 were under running condition. iii)As reported, at 05:23 hrs, 400 KV Dhanoda-Daulatabad (HV) Ckt-2 tripped. The tripping details are yet to be received from Haryana. iv)As per PMU at Gurgaon(PG), B-N phase to earth fault with delayed fault clearance of 600msec is observed. v)As 400 KV Dhanoda-Daulatabad (HV) Ckt-2 was the only element which was catering power to the 220KV side, loss of the aforementioned line caused tripping of 400KV Bus1 along 400/220 KV ICT 1,2,3 &4. vi)Loss of all transmission elements in 400KV system, resulted in Blackout of 400KV Daulatabad Sub station. vii)As per SCADA, change in demand of approx. 288MW in Haryana controlled area are observed.	0	0.76	0	288	0.000	0.626	39417	45990	600	Y(d)	N	N (Partial details received)	
5	GD-1	i)220 KV Lalitpur –Babina (UP) CKT ii)220 KV Lalitpur –Jhansi (UP) CKT iii)220kV Bus-1 at Lalitpur iv)765/220kV 315MVA ICT-1 at Lalitpur(UP) v)220kV Lalitpur-Lalitpur220 ckt-1 vi)100MVA ST-2 at Lalitpur(UP) vii)765 KV Agra Fatehabad(UP)-Lalitpur(LPG) (UP) Ckt-1 viii)765 KV Agra Fatehabad(UP)-Lalitpur(LPG) (UP) Ckt-2 ix)660 MW Lalitpur Unit-1 x)660 MW Lalitpur Unit-2 xi)660 MW Lalitpur Unit-3 xii)220kV Lalitpur-Lalitpur220 ckt-2	Uttar pradesh	UPPTCL	3-May-25	15:32	3-May-25	16:18	00:46	i)765/220KV Lalitpur Sub-station has one and half breaker scheme at 765kV level and double main transfer bus scheme at 220kV level. ii)During antecedent condition, 765/220kV 315MVA ICT-1, 220kV feeders to Jhansi, Lalitpur220-I and 100MVA ST-2 were on 220kV Bus-1 at Lalitpur(UP). Remaining elements were on 220kV Bus-2. iii)Supply to motor driven Boiler Feed Pump(BFP) for 660 MW Unit-1 was fed from 100MVA ST-1 and BFP for Unit-2&3 were being fed from 100 MVA ST-2. Motor driven BFP are being used for speed control operation of unit during house load operation. At a time, only one unit is selected for house load operation in case of SPS operation. During the event, 660MW unit-3 was in selection for house load operation on SPS operation. iv)At 15:19:50 hrs, 220KV Lalitpur- Babina Ckt tripped on R-N fault, Fault was in Z-1 from Lalitpur end (Ir=10.7kA). Line tripped on fault in reclaim time. v)Further at 15:26:11hrs, B-N fault (Ib=2.7kA, Z-1 from Lalitpur) occurred on 220 KV Lalitpur –Jhansi (UP) Ckt and A/R started. During Auto reclosing condition, the LBB relay of Jhansi bay sensed the pickup current in B-ph and initiated tripping of 220kV Bus-1 leading to tripping of all the elements connected to 220kV Bus-1 at Lalitpur(UP) i.e., 765/220kV 315MVA ICT-1, 220kV feeders to Jhansi, Lalitpur220-I and 100MVA ST-2. vi) Further at 15:32:37 hrs, B-N fault occurred on 765 KV Agra Fatehabad(UP)-Lalitpur(LPG) (UP) Ckt-1 and A/R started. At the same instant, 765 KV Agra Fatehabad(UP)-Lalitpur(LPG) (UP) Ckt-2 tripped on operation of OV stage-2 protection. As per DR of line, voltage of R-ph of 765kV Lalitpur-Agra Fatehabad line-II increased from 441kV to ~845kV for ~140msec. vii)Further, after dead time of A/R operation, 765 KV Agra Fatehabad(UP)-Lalitpur(LPG) (UP) Ckt-1 also tripped due to permanent nature of fault. viii)As per PMU at Agra765(PG), B-N phase to earth fault with delayed clearance of ~560msec is observed. ix)Due to tripping of both the 765kV evacuating lines, case-4 for SPS for safe evacuation of Lalitpur generation operated. As per SPS case-4, in case of tripping of both the 765kV lines, one 660MW unit (in this case unit-30 shall come to house load and remaining unit shall trip. 220kV lines to Lalitpur and Jhansi shall also trip. x)However, as 100MVA ST-2 already tripped at 15:26 hrs during LBB operation of 220kV Bus-1, BFP for Unit-3 was not available and therefore, 660MW Unit-3 also tripped along with 660MW Unit-1&2. 220kV line to Lalitpur(2nd ckt) also tripped on SPS operation. xi)Due to tripping of both the units and all the 220kV feeders on loss of evacuation path and SPS operation, complete 765/220kV Lalitpur S/s got blackout. xii) As per SCADA, generation loss of 1040MW at Lalitpur TPS (UP) and change in UP demand of ~90MW is observed.	0	0.069	1040	90	1.919	0.158	54189	56830	560	Y	Y	Y	
6	GD-1	i)400 KV Gr.Noida_2(UPC)-Gr.Noida(UPC) (UP) Ckt-2 ii)400 KV Gr.Noida_2(UPC)-Gr.Noida(UPC) (UP) Ckt-1 iii)400 KV Gr.Noida(UPC)-Nawada(HV) (PG) Ckt-1 iv)400 KV Dadri(NT)-Gr.Noida(UPC) (PG) Ckt-1 v)400/220 kV 315 MVA ICT 1 at Gr.Noida(UPC) vi)400/220 kV 315 MVA ICT 2 at Gr.Noida(UPC) vii)400/220 kV 500 MVA ICT 5 at Gr.Noida(UPC) viii)400/220 kV 500 MVA ICT 6 at Gr.Noida(UPC) ix)400 KV Gr.Noida_2(UPC) - Bus 2 x)400 KV Gr.Noida_2(UPC) - Bus 1	Uttar pradesh	PGCIL &UPPTCL	3-May-25	15:47	3-May-25	16:30	00:43	i)400 and 220kV side of 400/220/132kV Gr.Noida(UP) has double main & transfer bus scheme. ii)As reported, at 15:47 hrs, 400 KV Gr.Noida_2(UPC)(end)-Gr.Noida(UPC) (UP) Ckt-1 tripped on R-N phase to earth fault. The fault distance is 54.96KM and Zone 2 from 765/400KV Greater Noida s/stn and the fault current observed was Ir= 6.2KA. iii)400 KV Gr.Noida_2(UPC)(end)-Gr.Noida(UPC) (UP) Ckt-2 also tripped at same time on R phase to ground fault. The fault distance is 53.75KM and Zone 2 from 765/400KV Greater Noida s/stn and the fault current observed was Ir= 6.1KA . iv)At the same time both 400 KV Gr.Noida_2(UPC) - Bus 1 and Bus-2 tripped due to Bus Bar Z1, Z2 operation. As a result, all the transmission elements connected to 400KV tripped. As reported by SLDC UP, fault occurred due to String fail of R Phase of 400 kV Dadri-Nawada section of 400 kV Main Bus 1. (exact sequence of tripping of element and protection operation details not received yet) v)This led to blackout of 400/220/132KV Greater Noida sub-station. vi)As per PMU at Bassi(PG), R-N fault which cleared within 100msec is observed. vii)As per SCADA, change in demand of approx. 1068MW in Uttar Pradesh controlled area are observed.	0	0.765	1068	0	1.949	0.000	54796	55690	80	Y(d)	Y(d)	N (Partial details received)	
7	GI-2	i)220KV Jaisalmer- NTPC Solar ckt ii)400/220 kV 500 MVA ICT 3 at Jaisalmer(RS) iii)400/220 kV 500 MVA ICT 4 at Jaisalmer(RS) iv)220kV Jaisalmer-ACME ckt v)220kv Jaisalmer-Green Infra ckt vi)220KV Jaisalmer-Akal Ckt 1 vii)400/220 kV 500 MVA ICT 1 at Jaisalmer(RS) viii)400 KV Akal-Jaisalmer (RS) Ckt-1	Rajasthan	RVPNL, ACME & NTPC	5-May-25	11:53	5-May-25	12:53	01:00	i)400/220KV Jaisalmer(RS) has one and half breaker bus scheme at 400kV level and double main and transfer bus scheme at 220kV level. ii)During antecedent condition, 400/220kV 500MVA ICT-3 & 4 and 220kV line to NTPC solar, ACME solar, Infra Green Solar and Akal-I were connected at 220kV Bus-2. 400/220kV ICT-1,2&5 and 220kV lines to Akal-II, Green Power solar, Renew Power solar and O2 Power solar were connected at 220kV Bus-1. iii)As reported, at 11:53 hrs, R-N fault occurred on 220KV NTPC_Solar – Jaisalmer line due to snapping of tripped at Jaisalmer end. The fault was converted into a bus fault leading to operation of bus bar of 220kV bus-2. iv)All the elements connected at 220kV bus-2 i.e., 400/220kV 500MVA ICT-3 & 4 and 220kV line to NTPC solar, ACME solar, Infra Green Solar and Akal-I were tripped on bus bar protection operation. v)At the same time, 400/220kV 500MVA ICT-1 also tripped from both HV & LV side and 400kV Akal-Jaisalmer line tripped from Akal end only. As reported, line tripped on R-Y fault in Z-2 from Akal end. vi)As per PMU at Fatehgarh3(PG), R-N phase to earth fault converted into R-Y fault with delayed clearance of ~800msec is observed. vii)As per SCADA replay of Jaisalmer S/s, power flow in all the remaining ICTs (ICT-2 & 5) and other 220kV feeders also became zero. (reason of the same yet to be received.) viii)As per SCADA, total drop in NR solar generation of ~1050MW is observed out of which ~890MW solar generation drop observed in Rajasthan solar.	0	0	1050	0	1.978	0.000	53092	52225	800	Y(d)	Y(d)	N (Partial details received)	
8	GI-2	i)400/220 KV 315 MVA ICT 1 AT OBRA_B(UP) ii)400/220 KV 315 MVA ICT 2 AT OBRA_B(UP) iii)200 MW OBRA TPS - UNIT 10 iv)400KV BUS 2 AT OBRA_B(UP) v)400 KV OBRA_B-SULTANPUR (UP) CKT-1 vi)400 KV ANPARA-OBRA_B (UP) CKT-1 vii)200 MW OBRA TPS - UNIT 11	Uttar Pradesh	UPPTCL	8-May-25	06:56	8-May-25	08:42	01:46	i)400/220kV Obra-B(UP) has double main and transfer bus scheme at both 400kV and 220kV level. ii)During antecedent condition, 200 MW Obra TPS - UNIT 10 and 11 were generating approx. 108 MW and 86 MW respectively. 400/220 kV 315 MVA ICT 1 at Obra_B(UP), 400/220 KV 315 MVA ICT 2 AT OBRA_B(UP), 200 MW OBRA TPS - UNIT 10, 400 KV OBRA_B-SULTANPUR (UP) CKT-1 and 400 KV ANPARA-OBRA_B (UP) CKT-1 were connected to 400KV Bus 2 at Obra-B(UP) and rest of the elements were connected to 400KV Bus 1 at Obra-B(UP). iii)As reported, at 06:56 hrs, transformer differential protection operated for 400/220 KV 315 MVA ICT 1 & 2 AT OBRA_B(UP) This led to tripping of both ICTs. However, at the same time 400KV Bus-Bar 2 protection also operated. iv)Due to busbar protection operation, all the elements connected to 400kV Bus-2 at Obra-B(UP) tripped and Bus-2 became dead. v)At 06:58 hrs, 200 MW OBRA TPS - UNIT 11 also tripped. Details of tripping is still awaited. vi)As per PMU at Anpara-TH(UP), no fault was observed. vii)As per SCADA, 69MW change in demand is observed in UP control area. However, generation loss of approx. 184 MW occurred at Obra-B(UP).	0	0.122	184	69	0.416	0.135	44202	51156	NA	N	N	N	
9	GI-2	i)765 KV Agra Fatehabad(UP)-Lalitpur(LPG) (UP) Ckt-2 ii)220 KV Lalitpur –Jhansi (UP) CKT iii)220kV Lalitpur-Lalitpur220 ckt-2 iv)220kV Lalitpur-Lalitpur220 ckt-1 v)660 MW Lalitpur Unit-1 vi)660 MW Lalitpur Unit-2 vii)220 KV Lalitpur –Babina (UP) CKT viii)765 KV Agra Fatehabad(UP)-Lalitpur(LPG) (UP) Ckt-1	Uttar Pradesh	UPPTCL	11-May-25	13:49	11-May-25	15:24	01:35	i)765/220KV Lalitpur Sub-station has one and half breaker scheme at 765kV level and double main transfer bus scheme at 220kV level. ii)At 13:49 hrs, 765 KV Agra Fatehabad(UP)-Lalitpur(LPG) (UP) Ckt-2 tripped on R-B phase to phase fault. Z-1 distance protection operated and the fault current was Iy = 3.98KA, Ib= 4.33KA. The fault distance is 121KM from Agra end. iii)During antecedent condition, 100MVA ST-2 was on 220kV Bus-1 and 100MVA ST1 was on 220KV Bus-2 at Lalitpur(UP). iv)Supply to motor driven Boiler Feed Pump(BFP) for 660 MW Unit-1 was fed from 100MVA ST-1 and BFP for Unit-2&3 were being fed from 100 MVA ST-2. Motor driven BFP are being used for speed control operation of unit during house load operation. At a time, only one unit is selected for house load operation in case of SPS operation. During the event, 660MW unit-3 was in selection for house load operation on SPS operation. v)At 13:56hrs, 765 KV Agra Fatehabad(UP)-Lalitpur(LPG) (UP) Ckt-1 tripped on R-N phase to earth fault. Z-1 distance protection operated and the fault current was Ir = 3.68KA. As per DR, due to consecutive R-N fault during the reclaim time, the line tripped. The fault distance is 108KM from Agra end. vi)Due to tripping of both the 765kV evacuating lines, case-4 for SPS for safe evacuation of Lalitpur generation operated. As per SPS case-4, in case of tripping of both the 765kV lines, one 660MW unit (in this case unit-30 shall come to house load and remaining unit shall trip. 220kV lines to Lalitpur and Jhansi shall also trip. vii)As a result, 660 MW Lalitpur Unit-1 & Unit-2 tripped alongwith, 220 KV Lalitpur –Jhansi (UP) CKT, 220kV Lalitpur-Lalitpur220 ckt-2, 220kV Lalitpur-Lalitpur220 ckt-1 and 220 KV Lalitpur –Babina (UP) CKT tripped on SPS. viii)As per SPS, the generation of 660MW Unit-3 reduced to 70MW for house load operation. ix)As per PMU at 765KV Agra(PG), two consecutive R-N phase to phase faults with fault clearing time of 120ms is observed. x)As per SCADA, generation loss of 1040MW at Lalitpur TPS (UP) and no change in demand in SLDC UP control area is observed.	0	0	1040	0	1.753	0.000	59315	59296	120	Y	Y	Y	
10	GD-1	i)220 KV BHADLA_2 (PG)-RSDCL(PSS2) _SL_BHD2_PG (RSDCL) CKT-1 ii)220 KV NOKHRA SL_BHD2 (NTPC)-BHADLA_2 (PG) (NTPC_NOKHRA) CKT-1 iii)400 KV BIKANER(RS)-DEEDWANA(MTS) (RS) CKT-1 iv)STATCOM NO 2(-425/+550MVAR) AT 400 KV BHADLA_2 (PG)	Rajasthan	RSDCL, PGCIL and RVPNL	11-May-25	12:31	11-May-25	13:17	00:46	i)Generation of 220kV Nokhra (IP) and 220kV RSDCL-2(IP) stations evacuate through 220 KV Nokhra SL_BHD2 (NTPC)-Bhadla_2 (PG) (NTPC_NOKHRA) Ckt and 220 KV BHADLA_2 (PG)-RSDCL(PSS2) _SL_BHD2_PG (RSDCL) CKT-1 , 220 KV RSDCL(PSS2) _SL_BHD2_PG (RSDCL) – RSDCL 1 & 220 KV RSDCL(PSS2) _SL_BHD2_PG (RSDCL)- RSDCLP3 Ckt respectively. ii)During antecedent condition, 220kV Nokhra (IP) and 220kV RSDCL-2(IP) were generating approx. 242 MW and 218 MW respectively (as per PMU). iii)As reported, at 12:31hrs, 220 KV Bhadla_2 (PG)-RSDCL (PSS4) _SL_BHD2_PG (RSDCL) Ckt tripped (Tripping Details awaited) iv)During the same time, 220 KV NOKHRA SL_BHD2 (NTPC)-BHADLA_2 (PG) (NTPC_NOKHRA) CKT-1 along with STATCOM NO 2(-425/+550MVAR) AT 400 KV BHADLA_2 (PG) also tripped. v)PowerGrid informed that Statcom No2 tripped due to the operation of cooling system protection operation. Due to huge voltage fluctuation the above protection operated and the Statcom tripped (details awaited). vi)At the same time, 400 KV BIKANER(RS)-DEEDWANA(MTS) (RS) CKT-1 also tripped. The tripping details for the said line is still awaited. vii)As per PMU at 400KV, 3 phase fault (voltage dipped upto 0.87 p.u.) is observed with fault clearing time of 80ms. viii)As per PMU, solar generation loss of approx. 143 MW at Avada, and 242 MW at Nokhra(IP) were observed. ix)As per PMU at Azure Maple, fluctuation in power generation was also observed.	0	0	2215	0	3.683	0.000	60137	59672	80	N (Partial details received)	N (Partial details received)	N (Partial details received)	RE plant end details and STATCOM trippign details from POWERGRID not received
11	GI-2	i)120 MW URI-1 HPS - UNIT 2 ii)120 MW URI-1 HPS - UNIT 3 iii)400 KV URI_1(NH)-AMARGARH(INDIGRID) (INDIGRID) CKT-2	J&K	INDIGRID, NHPC	13-May-25	16:15	13-May-25	16:46	00:31	i)400kV Uri-1 S/s have double main bus system. There are 4, 120MW Units at Uri-I HEP and the power evacuates through 400 KV URI_1(NH)-AMARGARH (INDIGRID) CKT-1 & 2. ii)During antecedent condition, 400 KV URI_1(NH)-AMARGARH (INDIGRID) CKT-1 & 2 was carrying 262 MW each and feeding 400/220KV Amargarh. Unit 2 was on 400KV Bus-1 and Unit 3 along with 400 KV URI_1(NH)-AMARGARH(INDIGRID) (INDIGRID) CKT-2 were at 400KV Bus-2. iii)As reported, at 16:15 hrs, 400 KV URI_1(NH)-AMARGARH(INDIGRID) (INDIGRID) CKT-2 tripped from both ends on B-N phase to earth fault. As per DR at Uri-1 end, B-N fault, Z-1 protection operated, fault current was ~3.6KA. The fault distance was 39.35KM from Uri end. Line tripped on fault in reclaim time after successful A/R operation (within 100msec of A/R operation). iv)At the same time, both 120MW Unit 2 and Unit 3 tripped on Y-B Generator differential protection operation. NHPC stated that during the line fault, Main 2 CT of B phase got saturated for Unit 2 and 3. The relay operated due to wrong current sensed by Generator Differential relays. vi)As per SCADA, Generation loss of 238MW in Uri-1 HEP is observed.	0	0	238	0	0.400	0.000	59537	64057	80	Y(d)	Y(d)	Y(d)	
12	GD-1	i)220 KV Phozal(HP)-Nallagarh(PG) (ADHPL) Ckt ii)220 KV AD hydro(AD)-Nallagarh(PG) (ADHPL) Ckt iii)96 MW Unit-1 at AD Hydro HEP	HP	ADHPL, HPPTCL, POWERGRID	16-May-25	15:25	18-May-25	16:01	2 days 36 mi	i)Generation of AD Hydro HEP (2*96 MW) evacuates through 220kV AD Hydro-Nallagarh line (~175km) and 220kV AD Hydro-Phozal line(~14km)--> 220kV Phozal-Nallagarh Line. Both the lines are on same tower. There is LILO portion at 220/33kV Phozal in second line. ii)During antecedent condition, 96 MW Unit-1 at AD Hydro HEP(IP) was generating approx. 87MW and Unit-2 was under shutdown. iii)As reported, at 15:25 hrs, 220 KV Phozal(HP)-Nallagarh(PG) (ADHPL) line and 220kV AD Hydro-Nallagarh line tripped on R-Y phase to phase fault. Fault occurred due to tree fell on both the lines between tower location no 174-175. Conductor of all three phase between tower location 174-175 snapped and two crossarm of tower location no 175 also damaged. (~47km from AD Hydro end). iv)As per SCADA SOE (recorded at NRLDC), voltage plot of PMU (at Nallagarh(PG)) and DR file of AD Hydro end (of 220kV AD Hydro-Nallagarh line), at 15:25:32:240 hrs, 220kV Phozal-Nallagarh Line tripped on R-Y fault followed by tripping of 220kV AD Hydro-Nallagarh line at 15:25:32:960 hrs on R-Y fault (Z-1 from AD Hydro end). Both the faults cleared within 120msec. v)At the same time, 96 MW Unit-1 at AD Hydro HEP (generating ~87MW) also tripped due to loss of evacuation path. 220kV AD Hydro-Phozal line remained charged from AD Hydro end and details of Phozal end not received. vi)As per SCADA plot of AD Hydro HEP generation, loss of ~87 MW is observed and as per SCADA plot of HP demand, no change in HP demand is observed during the event time. vii)Further at 13:30hrs, R-N phase to earth fault occurred on 220 KV AD hydro(AD)-Nallagarh(PG) (ADHPL) Ckt with fault current of ~6.07kA from Nallagarh(PG) end and ~1.164kA from AD hydro end (as per DR). As reported, there was forest fire near 400/220kV Nallagarh(PG) S/s. viii)Further, as reported, after repair and restringing work between tower location 174-175, the 220 kV AD Hydro (AD) – Nallagarh (PG) (ADHPL) line was successfully energized on May 18, 2025, at 16:01 Hrs. Restoration work for 220 KV Phozal (HP)-Nallagarh (PG) (ADHPL) line is currently in progress	0	0	87	0	0.132	0.000	65848	71439	120	Y(d)	Y(d)	N (Partial details received)	Phozal end detailed analysis not received
13	GD-1	i)120 MW URI-1 HPS - UNIT 1 ii) 120 MW URI-1 HPS - UNIT 2 iii)120 MW URI-1 HPS - UNIT 3 iv) 120 MW URI-1 HPS - UNIT 4 v)60 MW URI-2 HPS - UNIT 1 vi) 60 MW URI-2 HPS - UNIT 2 vii)60 MW URI-2 HPS - UNIT 3 viii) 60 MW URI-2 HPS - UNIT 4 ix) 400 KV URI_1(NH)-AMARGARH(INDIGRID) (INDIGRID) CKT-2	J&K	INDIGRID, NHPC	16-May-25	20:10	16-May-25	21:59	01:49	i)400kV Uri-1 & 2 S/s have double main bus system. There are 4, 120MW Units at Uri-I HEP and 4, 60 MW Units at Uri-2 HEP. Power of Uri-1&2 evacuates through 400 KV URI_1(NH)-AMARGARH (INDIGRID) CKT-1 & and 400kV Uri-2-Wagoora line. ii)During antecedent condition, 400 KV URI_1(NH)-AMARGARH (INDIGRID) CKT-2 was under tripped condition (tripped at 16:48hrs on B-N fault), 400kV Uri-2-Wagoora line. was under shutdown and 400 KV URI_1(NH)-AMARGARH (INDIGRID) CKT-1 was carrying 716 MW. Complete power of Uri-1 & Uri-2 HEP was evacuating through 400 KV URI_1(NH)-AMARGARH (INDIGRID) CKT-1. iii)As reported, at 20:10 hrs, 400 KV URI_1(NH)-AMARGARH(INDIGRID) (INDIGRID) CKT-1 tripped from both ends on B-N phase to earth fault. As per DR at Uri-1 end, B-N fault, Z-1 protection operated, fault current was ~2.3KA. iv)As per PMU at Amargarh end, B-N phase to earth fault cleared within 100msec is observed. As per phase current data of 400 KV URI_1(NH)-AMARGARH (INDIGRID) CKT-1, A/R in B-ph observed however 3-ph trip after ~1.8sec is observed. Reason of the same yet to be received. v)After tripping of 400 KV URI_1(NH)-AMARGARH (INDIGRID) CKT-1, complete generation of Uri-1&2 HEP tripped due to loss of evacuation path and Uri-1&2 S/s got blackout. vi) As per SCADA, total generation loss of ~710MW (470MW at Uri-1 HEP and 240MW at Uri-2 HEP) is observed.	0	0	710	0	1.235	0.000	57486	69317	120	Y(d)	Y(d)	Y(d)	
14	GD-1	i)400 KV URI_2(NH)-WAGOORA(PG) (PG) CKT ii)400 KV URI_2(NH)-URI_1(NH) (PG) CKT iii)60 MW URI-II HPS - UNIT 1 iv)60 MW URI-II HPS - UNIT 2 v)60 MW URI-II HPS - UNIT 3 vi)60 MW URI-II HPS - UNIT 4	J&K	INDIGRID, NHPC	18-May-25	21:35	18-May-25	22:59	01:24	i)400kV Uri-2 S/s have double main bus system. There are 4, 60MW Units at Uri-2 HEP and power evacuates through 400 KV URI_2(NH)-WAGOORA (PG) (PG) CKT and 400 KV URI_2(NH)-URI_1(NH) (PG) CKT. ii)During antecedent condition, 400 KV URI_2(NH)-WAGOORA (PG) (PG) CKT and 400 KV URI_2(NH)-URI_1(NH) (PG) CKT were carrying ~195 MW and 47 MW respectively. All the 4 units were generating 60MW each. iii)As reported, at 21:35 hrs, 400 KV URI_2(NH)-WAGOORA (PG) (PG) CKT tripped from both ends on R-N phase to earth fault. As per DR at Uri-2 end, R-N fault, Z-1 protection operated, fault current was 2.8KA. The fault distance was 26.40KM from Uri_2 end. A/R was successful from Uri_2 end. However, line tripped on SOTF on persisted fault. iv)At the same time, 400 KV URI_2(NH)-URI_1(NH) (PG) CKT also tripped on R-N phase to earth fault. As per DR at Uri-2 end, R-N fault, Z-1 protection operated, fault current was 3.1KA. /R was successful from Uri_2 end. However, line tripped on SOTF on persisted fault v)At the same time, all the 4 X 60 MW units atUri-2 HEP tripped due to loss of evacuation path. This led to complete blackout of 400KV Uri-2 sub-station. vi)As per PMU at Amargarh(PG), R-N phase to earth fault which cleared with delayed fault clearance of 400 msec is observed. vii)As per SCADA, Generation loss of 244MW at Uri-2 HEP is observed. No load loss in J&K control area observed.	0	0	244	0	0.417	0.000	58477	76787	400	Y(d)	Y(d)	Y(d)	
15	GD-1	i)220 KV Amargarh (INDIGRID)-Ziankote(JK) (PDD JK) Ckt-1 ii)220 KV Amargarh (INDIGRID)-Ziankote(JK) (PDD JK) Ckt-2	J&K	INDIGRID, PDD J&K	18-May-25	22:57	19-May-25	00:57	02:00	i)220/132kV Ziankote S/s have two bus at 220kV side i.e., main bus & reserve bus. 220kV Amargarh-Ziankote ckt-1&2 are on the same tower (D/C tower) and line length is ~21.4km. ii)During antecedent condition, 220kV Amargarh (INDIGRID) –Ziankote (JK) D/C were carrying 19 MW each and feeding Ziankote load. 220kV Wagoora-Ziankote D/C were already under tripped condition (tripped at22:44 hrs & 22:54 hrs on same day). iii)As reported, at 22:57 hrs 220 KV Amargarh (INDIGRID)-Ziankote(JK) (PDD JK) Ckt-1 and Ckt-2 tripped on R-Y fault. iv)As per DR at Amargarh end, 220 KV Amargarh (INDIGRID)-Ziankote(JK) (PDD JK) Ckt-1 tripped on R-Y phase to phase fault. The fault current Ir = 3.7KA, Ib= 3.6KA, Z1 protection operated and the fault distance was 12.13KM from Amargarh end. v)As per DR at Amargarh end, 220 KV Amargarh (INDIGRID)-Ziankote(JK) (PDD JK) Ckt-2 tripped on R-Y phase to phase fault. The fault current Ir = 1.8KA, Ib= 1.7KA, Z2 protection operated and the fault distance was 26KM from Amargarh end. vi)As per PMU at Amargarh (INDIGRID), R-Y phase to phase was observed in system. vii)As per SCADA, change in demand of approx. 85 MW is observed in J&K control area.	0	0	0	85	0.000	0.109	59370	78090	120	N (Partial details received)	N (Partial details received)	N (Partial details received)	Ziankote end details not received

S.No.	Category of Grid Incident/ Disturbance	Name of Elements (Tripped/Manually opened)	Affected Area	Owner/ Agency	Outage		Revival		Duration (hh:mm)	Event (As reported)	Energy Unserved due to Generation loss (MU)	Energy Unserved due to Load loss (MU)	Loss of generation / loss of load during the Grid Disturbance		% Loss of generation / loss of load w.r.t Antecedent Generation/Load in the Regional Grid during the Grid Disturbance		Antecedent Generation/Load in the Regional Grid		Fault Clearance time (in ms)	Compliance of Protection Protocol/Standard		
	(GI-I to GD-V)				Date	Time	Date	Time					Generation Loss(MW)	Load Loss (MW)	% Generation Loss(MW)	% Load Loss (MW)	Antecedent Generation (MW)	Antecedent Load (MW)		Flash Report Submission (Y/N)	DR/EL Submission (Y/N)	Detail Tripping Report Submission (Y/N)
16	GD-1	i)400 KV Dadri(NT)-Loni Harsh Vihar(DV) (NT) Ckt-1 ii)210 MW Unit-1 at Dadri-I TPS iii)210 MW Unit-2 at Dadri-I TPS iv)210 MW Unit-3 at Dadri-I TPS v)210 MW Unit-4 at Dadri-I TPS vi)400 KV Mandola(PG)- Dadri (PG) (DTL) Ckt-2 vii)490 MW Unit-1 at Dadri-II TPS viii)500 kV HVDC Rihand- Dadri (PG) Ckt-1 ix)500 kV HVDC Rihand- Dadri (PG) Ckt-2	UP	NTPC & PGCIL	21-May-25	20:00	21-May-25	22:43	02:43	i)400/220KV Dadri Stage I has one and half breaker scheme in 400KV and Double main transfer system in 220KV system. 400KV Dadri stage 2 has one and half breaker scheme. Stage 1 has 4 X 210 Generating units while Stage 2 has 2 X 490 MW Generating units. ii)During antecedent condition, Unit 1,2,3 and 4 of Stage 1 Dadri was generating 131MW, 121 MW, 117MW and 109MW respectively. While Unit 1 of Dadri Stage 2 was generating 264MW while Unit 2 already tripped at 20:17 hrs. iii)The lines 400KV Dadri – Muradnagar, 400KV Dadri – Panipat Ckt -1 & 2 were already tripped during to inclement weather conditions. Whole power of Dadri Stage-1 (~475 MW was evacuating through 400kV Dadri-Harshvihar ckt-1. The Dadri Stage 1 and Stage 2 were running in split bus arrangement. iv)As reported, at 20:00 hrs, 400 KV Dadri(NT)-Loni Harsh Vihar(DV) (NT) Ckt-1 tripped on R-N phase to earth fault. Z-1 distance protection operated; fault distance was 15.3 KM from Harsh Vihar end. During patrolling the tower at location no. 24 found collapsed. v)As per PMU at Dadri TPS, R-N phase to earth fault cleared within 100msec is observed. vi)Following the tripping of 400 KV Dadri(NT)-Loni Harsh Vihar(DV) (NT) Ckt-1, all the 4 generating units and 3X 210MW ICT 1,2 & 5 tripped due to loss of evacuation path. vii)Again at 20:20 hrs, only 490 MW Unit-1 at Dadri-II TPS was running and 400KV Dadri – Mandaula Ckt-2 was the only operational ckt in Dadri Stage 2. 400KV Dadri- Kaithal Ckt, 400KV Dadri – Gr. Noida, 400KV Dadri – Harsh Vihar Ckt-2, 400KV Dadri – Mandaula Ckt-1 were already under tripped condition on line faults during inclement weather conditions. viii)As reported at 20:21 hrs, 400 KV Mandola(PG)- Dadri (PG)(DTL) Ckt-2 tripped during power swing. ix)At the same time, 490 MW Unit-1 at Dadri-II TPS along with 2X500 MVA ICT 3 and 4 tripped due to loss of evacuation path. This led to complete blackout of 400KV Dadri Substation. x)As per PMU at Dadri TPS, R-N phase to earth fault cleared within 100msec followed by fluctuation in voltage is observed. xi)At the same time, 500 kV HVDC Rihand-Dadri (PG) Ckt-1 and Ckt-2 tripped due to commutation failure. At the time of tripping 500 kV HVDC Rihand-Dadri (PG) Ckt-1 and Ckt-2 were carrying total ~1150 MW. As a result of tripping of both the ckt, SPS condition 2 operated. xii)As per details received from POWERGRID, as per logic if commutation failure persists for more than 2600 ms then the Protection shall issue a Y Trip to the converters. Since starting from 20:20:58:2785 Hrs. 12 successive commutation failures were detected at a gap of less than 500ms, at 20:21:00:8782 both Poles of the Rihand Dadri HVDC Link tripped on Commutation failure protection from HVDC Dadri S/s. i)As per SPS case-2 operation, there should load shed in load group-A, B, C & D and generation back down of total ~500 MW at Rihand & Singrauli TPS.	0	0	975	0	2.056	0.000	47427	56188	80	Y(d)	Y(d)	N
17	GD-1	i)765 KV Koteshwar-Meerut (PG) Ckt-2 ii)765 KV Bhiwani- Meerut (PG) Ckt iii)765 KV Meerut -Gr Noida (PG) Ckt iv)765/400kV 1500 MVA ICT-1 at Meerut(PG) v)765/400kV 1500 MVA ICT-2 at Meerut(PG) vi)765/400kV 1500 MVA ICT-3 at Meerut(PG) vii)765 KV Koteshwar- Meerut (PG) Ckt-1 viii)400 KV Tehri(THDC)- Koteshwar(PG) (PG) Ckt-1 ix)400 KV Tehri(THDC)- Koteshwar(PG) (PG) Ckt-2 x)400 KV Tehri(THDC)- Koteshwar(PG) (PG) Ckt-3 xi)100 MW Unit-1 at Koteshwar HPS xii)100 MW Unit-2 at Koteshwar HPS xiii)100 MW Unit-3 at Koteshwar HPS xiv)250 MW Unit-1 at TEHRI HPS xv)250 MW Unit-3 at TEHRI HPS xvi)250 MW Unit-4 at TEHRI HPS xvii)765/400 kV 800 MVA ICT 1 at Koteshwar(PG) xviii)7765/400 kV 800 MVA ICT 2 at Koteshwar(PG) xix)765/400 kV 800 MVA ICT 3 at Koteshwar(PG) xx)765/400 kV 800 MVA ICT 4 at Koteshwar(PG)	UP & UK	PGCIL	21-May-25	19:55	22-May-25	06:35	10:40	i)400KV Tehri has double main, 400KV Koteshwar (THDC) has double main and transfer, 765/400KV Koteshwar(PG) has one & half breaker scheme in 765KV and double main bus scheme in 400KV and 765/400/220KV Meerut substation has one and half breaker scheme in 765KV and 400KV system. ii)During antecedent condition, at 400KV Tehri HEP, 250 MW Unit 1, 3 & 4 were in service generating 124MW, 119MW and 118MW (total ~360MW). At 400KV Koteshwar HEP (THDC), 100 MW Unit 1, 2 & 3 were in service generating 95MW each (total ~285 MW). 765 KV Moga-Meerut (PG) Ckt-1 was under tripped condition (tripped at 18:11:47 hrs on permanent R-N fault). There was inclement weather condition (heavy windstorm, rain and thunderstorm). iii)As reported, at 19:55:12 hrs, R-N fault occurred on 765 KV Koteshwar- Meerut (PG) Ckt-2 due to earth wire broken during inclement weather condition at ~1km from Meerut end. Line tripped from Koteshwar end in Z-2 but didn't trip from Meerut end due to non-operation of Distance Protection. During investigation it was found that R-ph jumper of CVT at Meerut end of 765 KV Koteshwar- Meerut (PG) Ckt-2 snapped ~10sec before the fault incident leading to VT fuse fail and loss of R-ph voltage. Due to this, distance protection at Meerut end didn't operate. iv)As fault was still persisting, 765KV Meerut-Bhiwani ckt and 765KV Meerut-Gr. Noida ckt tripped from remote end in Z-2. At ~19:55:22:000 hrs, all three 1500 MVA ICT at Meerut tripped on operation of back up impedance protection operation (Z-2). v)Further at 19:55:22:600 hrs, 400kV Tehri-Koteshwar ckt-1, 2 & 3 along with 765kV Meerut-Koteshwar (PG) ckt-1 tripped from Tehri and Koteshwar(PG) end respectively on O/C E/F protection (67N relay). vi)With the tripping of above mentioned elements, supply to 765kV part of Meerut(PG), 765/400kV Koteshwar(PG), 400kV Tehri HEP & Koteshwar HEP lost and these stations got blackout. vii)At the same time, 250MW Unit-1, 3 & 4 at Tehri HEP and 100 MW Unit 1, 2 & 3 at Koteshwar HEP tripped due to loss of evacuation path leading to generation loss of ~360MW at Tehri HEP and ~285MW at Koteshwar HEP. viii)Further within further few seconds, 400kV Meerut-Bareilly D/C, 400kV Meerut-Baghpat D/C, 400kV Meerut-Muzaffarnagar dc and 400kV Meerut-Mandola ckt-1 also tripped on line faults during inclement weather condition. Muzaffarnagar and Mandola line tripped from remote end only (exact reason yet to be received). ix)At the same time, power flow of 220KV lines Gajrala, Shatabdinagar, Simbholi, Charla and Partappur from Meerut became NIL. x)As per PMU at Meerut(PG), R-N fault at 19:55:19 hrs (cleared within 100msec) and R-N fault with delayed clearance of ~1640msec is observed. xi)As per SCADA, generation loss of ~360MW at Tehri HEP, ~285MW at Koteshwar and change in demand of ~150 MW in UP control area is observed. xii)Remaining elements at Koteshwar(PG) and 765kV part of Meerut(PG) were hand tripped due to loss of voltage. xiii)Further at 06:35 hrs, 765kV Meerut-Koteshwar ckt-1 was charger and subsequently supply to Tehri HEP, Koteshwar HEP was restored.	0	0.13	645	150	1.281	0.241	50335	62295	1640	Y(d)	Y(d)	N
18	GI-2	i)800 kV HVDC Kurukshetra (PG) Pole-02 i)800 kV HVDC Kurukshetra (PG) Pole-04	Haryana	PGCIL	21-May-25	22:50	22-May-25	01:42	02:52	i)During antecedent condition, 800kV HVDC Champa-Kurukshetra was carrying total 3000MW power from Champa to Kurukshetra (Pole-1=958MW, Pole-2=613MW, Pole-3=603MW & Pole-4= 283MW). The weather condition at the time of incident was very worse accompanying thunderstorms & very heavy lightning along with wind was prevailing at Kurukshetra. ii)As reported, at 22:50 hrs, 800 kV HVDC Kurukshetra (PG) Pole-02 and Pole 4 tripped due to transient earth fault. The fault distance was 438.1KM from Kurukshetra end and 849.21KM from Champa end. iii)As per details received from POWERGRID sequence of event was as follows: a.At 22:50:20:517 hrs, DC line fault sequence started in Pole-2 and Pole-4. Again, at 22:50:25:130 hrs another DC line fault sequence started in Pole-2 and Pole-4. b.Following this at 22:50:25:169 hrs, an attempt was made to run Pole-2 and Pole-4 in reduced voltage mode. c.At 22:50:25:229 hrs, Pole 2 was blocked from Champa end due to subsequent DC line fault. d.At 22:50:26:055 hrs, Pole-4 was blocked due to CAT-B protection operation in Pole-2. iv)The power order reduced from 2457MW to 1317MW. Pole-1 = 657MW and Pole-3=660MW. v)As per PMU at Kurukshetra(PG), fluctuation in voltage was observed. vi)As per SCADA, no change in demand is observed in Haryana control area.	0	0	0	0	0.000	0.000	55334	57854	NA	Y(d)	Y(d)	Y(d)
19	GD-1	i)400 KV Parbati_2(NH)- Parbati Pooling Banala(PG) (PKTCL) Ckt-1 ii)400 KV Parbati_2(NH)- Sainj(HP) (PKTCL) Ckt-1 iii)200 MW Unit-1 at Parbati II HEP iv)200 MW Unit-2 at Parbati II HEP v)200 MW Unit-3 at Parbati II HEP vi)200 MW Unit-4 at Parbati II HEP	Himachal Pradesh	PGCIL & NHPC	21-May-25	21:05	21-May-25	22:41	01:36	i)Total generated power of Sainj HEP(HP) and Parbati_2(NH) and evacuates through 400 kV Parbati_2(NH)- Banala(PG) (PKTCL) Ckt and 400 kV Parbati_2(NH)-Sainj(HP) (PKTCL) Ckt, 400 KV Parbati_3(NH)-Sainj(HP) (PKTCL) Ckt and 400 KV Parbati_2(NH)-Parbati Pooling Banala (PG) (PKTCL) Ckt-1. ii)During antecedent condition, 50MW Unit-1 and Unit-2 at Sainj HEP(HP) were running and generating 49MW each respectively, all four units (4*250MW) at Parbati_2(NH) in service (SCADA data unavailable before tripping). 400kV Bus 2 at Parbati_2 was under shutdown condition. iii)As reported, at 21:05 hrs, 400 KV Parbati_2 (NH)- Parbati Pooling Banala (PG) (PKTCL) Ckt-1 tripped due to 400kV Bus-bar 1 protection operation. iv)As per DR of 400 KV Parbati_2 (NH)(end)- Parbati Pooling Banala (PG) (PKTCL) Ckt-1, tripped on 400KV Bus-Bar 1 protection operation due to external fault. The Bus-Bar protection operated due to triggering of LBB protection relay of Unit-3 at Parbati_2. v)At the same time, 400 KV Parbati_2(NH)- Sainj(HP) (PKTCL) Ckt-1 along with all 4X200 MW Units at Parbati_2 HEP also tripped on 400kV Bus-Bar 1 protection operaiton. The Bus-Bar protection operation was due to triggering of LBB protection relay of Unit-3 at Parbati_2 vi)Parbati_2 informed that the reason for triggering LBB protection was on account of improper implementation of AND function logic for non-electric faults in Unit-3. vii)This led to complete blackout of Parbati_2 HEP. viii)As per PMU at Banala(PG), no fault signature was observed. ~~As per SCADA, Generation loss of 192MW in Parbati_2, Change in demand of 26MW in HP control area observed.	0	0.04	192	26	0.414	0.048	46432	53991	NA	Y(d)	Y(d)	Y(d)
20	GD-1	i)400 KV Parbati_2(NH)- Parbati Pooling Banala(PG) (PKTCL) Ckt-1 ii)400 KV Parbati_2(NH)- Sainj(HP) (PKTCL) Ckt-1 iii)200 MW Unit-1 at Parbati II HEP iv)200 MW Unit-2 at Parbati II HEP v)200 MW Unit-3 at Parbati II HEP vi)200 MW Unit-4 at Parbati II HEP	Himachal Pradesh	PGCIL & NHPC	23-May-25	10:37	23-May-25	12:04	01:27	i)Total generated power of Sainj HEP(HP) and Parbati_2(NH) and evacuates through 400 kV Parbati_2(NH)- Banala(PG) (PKTCL) Ckt and 400 kV Parbati_2(NH)-Sainj(HP) (PKTCL) Ckt, 400 KV Parbati_3(NH)-Sainj(HP) (PKTCL) Ckt. ii)During antecedent condition, 50MW Unit-1 and Unit-2 at Sainj HEP(HP) were running and generating 49MW each respectively, three units (4*250MW) at Parbati_2(NH) in service generating 189MW(Unit-1), 187MW(Unit-2), 129MW(Unit-4). 400kV Bus 2 and Unit-3 at Parbati_2 were under shutdown. iii)As reported, at 10:37 hrs, 400 KV Parbati_2 (NH)- Parbati Pooling Banala (PG) (PKTCL) Ckt-1 tripped due to 400kV Bus-Bar 1 protection operation. The Bus-Bar protection operated due to triggering of LBB protection relay of Unit-4 at Parbati_2. iv)At the same time, 400 KV Parbati_2(NH)- Sainj(HP) (PKTCL) Ckt-1 along with all 3X200 MW Units at Parbati_2 HEP also tripped on 400kV Bus-Bar 1 protection operation. The Bus-Bar protection operation was due to triggering of LBB protection relay of Unit-4 at Parbati_2 v)Parbati_2 informed that the reason for triggering LBB protection was on account of improper implementation of AND function logic for non-electric faults in Unit-4. vi)This led to complete blackout of Parbati_2 HEP. vii)As per PMU at Banala(PG), no fault signature was observed. viii)As per SCADA, Generation loss of 505MW in Parbati_2. No Change in demand in HP control area observed.	0	0	505	0	0.802	0.000	63001	65531	NA	Y(d)	Y(d)	Y(d)
21	GD-1	i)400/220 kV 315 MVA ICT 3 at Bareilly (UP) ii)400/220 kV 315 MVA ICT 1 at Bareilly (UP) iii)31.42 MW Tanakpur HPS - UNIT 1 iv)31.42 MW Tanakpur HPS - UNIT 2 v)220KV Bareilly(UP) – Pant Nagar vi)220KV Bareilly(UP) – Pilibhit Ckt-1 vii)220KV Bareilly(UP) – Pilibhit Ckt-2 viii)220KV Bareilly(UP) – Dohna Ckt-2 ix)220KV Bus-1 at Bareilly (UP) x)220KV Bareilly – Faridpur Ckt xi)400/220 kV 315 MVA ICT 1 at Bareilly (UP) xii)220 KV Bus-2 at Bareilly(UP) xiii)220KV Bareilly(UP) – Dohna Ckt-1 xiv)220KV Bareilly(UP) – CB Ganj Ckt-1 xv)132 KV Mahendra Nagar (PG)-Tanakpur(NH) (PG) Cks-1 xvi)220 KV Tanakpur (NH)-CB Ganj(UP) (PG) Ckt-1 xvi)220 KV Tanakpur(NH)-Sitarganj(PG) (PG) Ckt-1 xviii)31.42 MW Tanakpur HPS - UNIT 3	UP and Uttarakhand	PGCIL, UPPCL & NHPC	31-May-25	20:24	31-May-25	20:42	00:18	i)Total generated power of Tanakpur evacuates through 220 kV Tanakpur (NH)-Bareilly(UP) (PG) Ckt-1, 220 kV Tanakpur(NH)-Sitarganj(PG) (PG) Ckt-1 and 132 kV Mahendra Nagar (PG)-Tanakpur(NH) (PG) Ckt-1 during the antecedent condition, 3X40 MW Tanakpur was generating 46MW. ii)400/220KV Bareilly(UP) has double main and transfer bus-scheme in both 400KV and 220KV system. 315MVA, 400/220KV ICT 2 was in shutdown condition. The 315MVA, 400/220KV ICT 1 and 3, were loaded 311MW and 315 MW respectively. iii)As reported, at 20:24 hrs, an attempt was made to charge 315MVA, 400/220KV ICT 2. After ~15 sec of ICT charging, 220KV Bus-Bar Zone 2 (Y-ph differential) protection operated. As per PMU, there was no fault in system during bus bar operation. Exact reason of bus bar protection yet to be received. iv)Subsequently 220KV lines to Pantnagar, CB Ganj-II, Dohna-II, Pilibhit-II and ICT-3 tripped due to 220KV Bus-Bar II protection operation at Bareilly. At the same time, 315MVA, 400/220KV ICT 1 was hand-tripped for equipment safety. v)As per PMU at Bareilly(PG), R-Y phase to phase fault observed was observed with delayed fault clearance of 440msec. As reported, 220kV Bareilly-Faridpur line tripped on fault occurred due to snapping of line side jumper (after CT). vi)After tripping of ICTs at 400/220 kV Bareilly (UP), line loading of 220KV CB Ganj-Sitarganj ckt reached up to the level of 270MW, it leads to voltage oscillation/ fluctuation in the Tanakpur-Sitarganj-Cbganj complex. Voltage fluctuation was in the range of 125kV to 218kV on 220KV bus voltage and at the same time, two units at Tanakpur HEP (Unit-1 and Unit-2) also tripped. As a result, 533 MW load loss was observed in UP and approx. 38 MW of generation loss was observed in Tanakpur HEP. vii)At 20:42 hrs, 315MVA, 400/220KV ICT 1 was revived. viii)As reported at 20:51 hrs, 315MVA, 400/220KV ICT 1 loading increase to 347MW. As a result, the ICT tripped on Overcurrent protection. This again led to voltage fluctuations in the Tanakpur-Sitarganj-CBH Ganj complex as a result 220 KV Tanakpur (NH)-CBGanj(UP) (PG) Ckt-1, 220 KV Tanakpur(NH)-Sitarganj(PG) (PG) Ckt-1 and 132 KV Mahendra Nagar (PG)-Tanakpur(NH) (PG) Ckt-1 (Affected the power supply to Nepal) tripped simultaneously, which further led to 138 MW load loss in UP and approx. 31 MW of generation loss in Tanakpur HEP (Unit-3 tripped, Unit-1 and Unit-2 were already out). ix)As per PMU at Bareilly(PG), R-Y phase to phase fault was observed at 20:24hrs with delayed fault clearance of 440msec. x)This led to complete blackout of Tanakpur HEP xi)As per SCADA, at 20:24 Hrs, as per SCADA approx. 533MW load loss was observed in UP and approx. 38 MW of generation loss was observed at Tanakpur HEP. ~~At 20:51 Hrs, as per SCADA approx. 538MW load loss was observed in UP and approx. 31 MW of generation loss was observed at Tanakpur HEP.	0	0.16	38	533	0.080	0.818	47565	65173	440	Y(d)	N	N (Partial details received)

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

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

S. No.	Utility	Total No. of tripping	First Information Report (Not Received)		Disturbance Recorder (Not Received)	Disturbance Recorder (NA) as informed by utility	Disturbance Recorder (Not Received)	Event Logger (Not Received)	Event Logger (NA) as informed by utility	Event Logger (Not Received)	Tripping Report (Not Received)	Tripping Report (NA) as informed by utility	Tripping Report (Not Received)	Remark
			Value	%	Value		%	Value		%	Value		%	
1	ACME SOLAR HOLDINGS LIMITED	1	1	100	1	0	100	1	0	100	1	0	100	DR, EL & Tripping report not submitted
2	AD HYDRO	3	0	0	0	2	0	0	2	0	0	2	0	Details received
3	AHEJ2L	1	1	100	1	0	100	1	0	100	1	0	100	DR, EL & Tripping report not submitted
4	AHEJ3L	3	3	100	3	0	100	3	0	100	3	0	100	
5	AHEJ4L	3	0	0	0	0	0	0	0	0	0	0	0	Details received
6	AHEJOL	1	1	100	1	0	100	1	0	100	1	0	100	
7	AMP Energy Green Private Limited	1	1	100	1	0	100	1	0	100	1	0	100	
8	ANTA-NT	7	7	100	7	0	100	7	0	100	7	0	100	
9	AREPRL	3	3	100	3	0	100	3	0	100	3	0	100	
10	AURAIYA-NT	2	2	100	2	0	100	2	0	100	2	0	100	
11	BAIRASUIL-NH	5	5	100	5	0	100	5	0	100	5	0	100	DR, EL & Tripping report not submitted
12	BBMB	123	54	44	61	15	56	61	5	52	55	6	47	
13	CPCC1	179	82	46	96	13	58	99	16	61	125	2	71	
14	CPCC2	103	30	29	29	1	28	29	0	28	34	0	33	
15	CPCC3	50	1	2	0	7	0	0	6	0	2	5	4	
16	DADRI-NT	20	11	55	10	0	50	10	0	50	20	0	100	
17	DULHASTI-NH	2	0	0	0	0	0	0	0	0	0	0	0	Details received
18	FARIDABAD-NT	5	5	100	5	0	100	5	0	100	5	0	100	
19	FBTL	2	1	50	1	0	50	1	0	50	1	0	50	
20	INDIGRID	5	4	80	5	0	100	5	0	100	5	0	100	DR, EL & Tripping report not submitted
21	JHAJJAR	8	8	100	8	0	100	8	0	100	8	0	100	

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

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

S. No.	Utility	Total No. of tripping	First Information Report (Not Received)		Disturbance Recorder (Not Received)	Disturbance Recorder (NA) as informed by utility	Disturbance Recorder (Not Received)	Event Logger (Not Received)	Event Logger (NA) as informed by utility	Event Logger (Not Received)	Tripping Report (Not Received)	Tripping Report (NA) as informed by utility	Tripping Report (Not Received)	Remark
			Value	%	Value		%	Value		%	Value		%	
22	KARCHAM	2	1	50	1	0	50	1	0	50	1	0	50	
23	KHURJA STPP	1	0	0	0	0	0	0	0	0	0	0	0	Details received
24	KISHENGANGA-NH	3	3	100	3	0	100	3	0	100	3	0	100	DR, EL & Tripping report not submitted
25	KOTESHWAR	5	5	100	5	0	100	5	0	100	5	0	100	DR, EL & Tripping report not submitted
26	NAPP	2	0	0	1	0	50	1	0	50	0	0	0	Details received
27	NJPC	2	0	0	0	0	0	0	0	0	0	0	0	
28	PARBATI-II-NH	16	6	38	6	5	55	5	0	31	5	0	31	
29	PKTSL	1	0	0	1	0	100	1	0	100	0	0	0	Details received
30	RAILWAYS	1	1	100	1	0	100	1	0	100	1	0	100	DR, EL & Tripping report not submitted
31	RAPPA	10	10	100	10	0	100	10	0	100	5	0	50	
32	RAPPB	2	0	0	2	0	100	2	0	100	2	0	100	
33	RAPPC	1	1	100	1	0	100	1	0	100	1	0	100	
34	RENEW	1	1	100	1	0	100	1	0	100	1	0	100	
35	RENEW SURYA JYOTI PRIVATE LIMITED(R	5	5	100	5	0	100	5	0	100	5	0	100	
36	RENEW SURYA VIHAAN PRIVATE LIMITED	1	1	100	1	0	100	1	0	100	1	0	100	
37	RSDCL	1	1	100	1	0	100	1	0	100	1	0	100	
38	RSEJ3PL	3	3	100	3	0	100	3	0	100	3	0	100	
39	SALAL-NH	3	0	0	0	1	0	0	1	0	0	0	0	Details received

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

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

S. No.	Utility	Total No. of tripping	First Information Report (Not Received)		Disturbance Recorder (Not Received)	Disturbance Recorder (NA) as informed by utility	Disturbance Recorder (Not Received)	Event Logger (Not Received)	Event Logger (NA) as informed by utility	Event Logger (Not Received)	Tripping Report (Not Received)	Tripping Report (NA) as informed by utility	Tripping Report (Not Received)	Remark
			Value	%	Value		%	Value		%	Value		%	
40	SEWA-2-NH	8	6	**75**	6	0	**75**	6	0	**75**	6	0	**75**	
41	SINGOLI	4	2	**50**	2	0	**50**	2	0	**50**	4	0	**100**	
42	SINGRAULI-NT	2	2	**100**	2	0	**100**	2	0	**100**	2	0	**100**	DR, EL & Tripping report not submitted
43	SJVN GREEN ENERGY LIMITED	1	1	**100**	1	0	**100**	1	0	**100**	1	0	**100**	
44	SLDC-DV	41	15	**37**	6	7	**18**	6	7	**18**	5	4	**14**	
45	SLDC-HP	20	0	**0**	14	4	**88**	15	4	**94**	0	2	**0**	Details received
46	SLDC-HR	104	32	**31**	39	16	**44**	37	16	**42**	42	5	**42**	
47	SLDC-JK	19	0	**0**	19	0	**100**	19	0	**100**	11	0	**58**	
48	SLDC-PS	75	23	**31**	60	6	**87**	61	5	**87**	71	0	**95**	
49	SLDC-RS	172	3	**2**	62	14	**39**	61	14	**39**	91	0	**53**	DR, EL & Tripping report not submitted
50	SLDC-UK	23	2	**9**	3	10	**23**	3	10	**23**	8	0	**35**	
51	SLDC-UP	239	49	**21**	56	15	**25**	56	25	**26**	51	5	**22**	
52	STERLITE	18	4	**22**	4	0	**22**	5	0	**28**	7	6	**58**	
53	TANAKPUR-NH	6	0	**0**	0	0	**0**	0	0	**0**	0	0	**0**	Details received
54	TANDA-NT	4	3	**75**	3	1	**100**	3	0	**75**	3	0	**75**	DR, EL & Tripping report not submitted
55	TATAPOWER	1	1	**100**	1	0	**100**	1	0	**100**	1	0	**100**	
56	TEHRI	6	0	**0**	0	0	**0**	0	0	**0**	0	4	**0**	Details received
57	UNCHAHAR-NT	4	4	**100**	4	0	**100**	4	0	**100**	4	0	**100**	DR, EL & Tripping report not submitted
58	URI-II-NH	11	0	**0**	0	8	**0**	0	8	**0**	0	0	**0**	Details received
59	URI-I-NH	9	0	**0**	0	2	**0**	0	2	**0**	0	0	**0**	
Total in NR Region		**1354**	**405**	**30**	**563**	**127**	**46**	**565**	**121**	**46**	**620**	**41**	**47**	

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

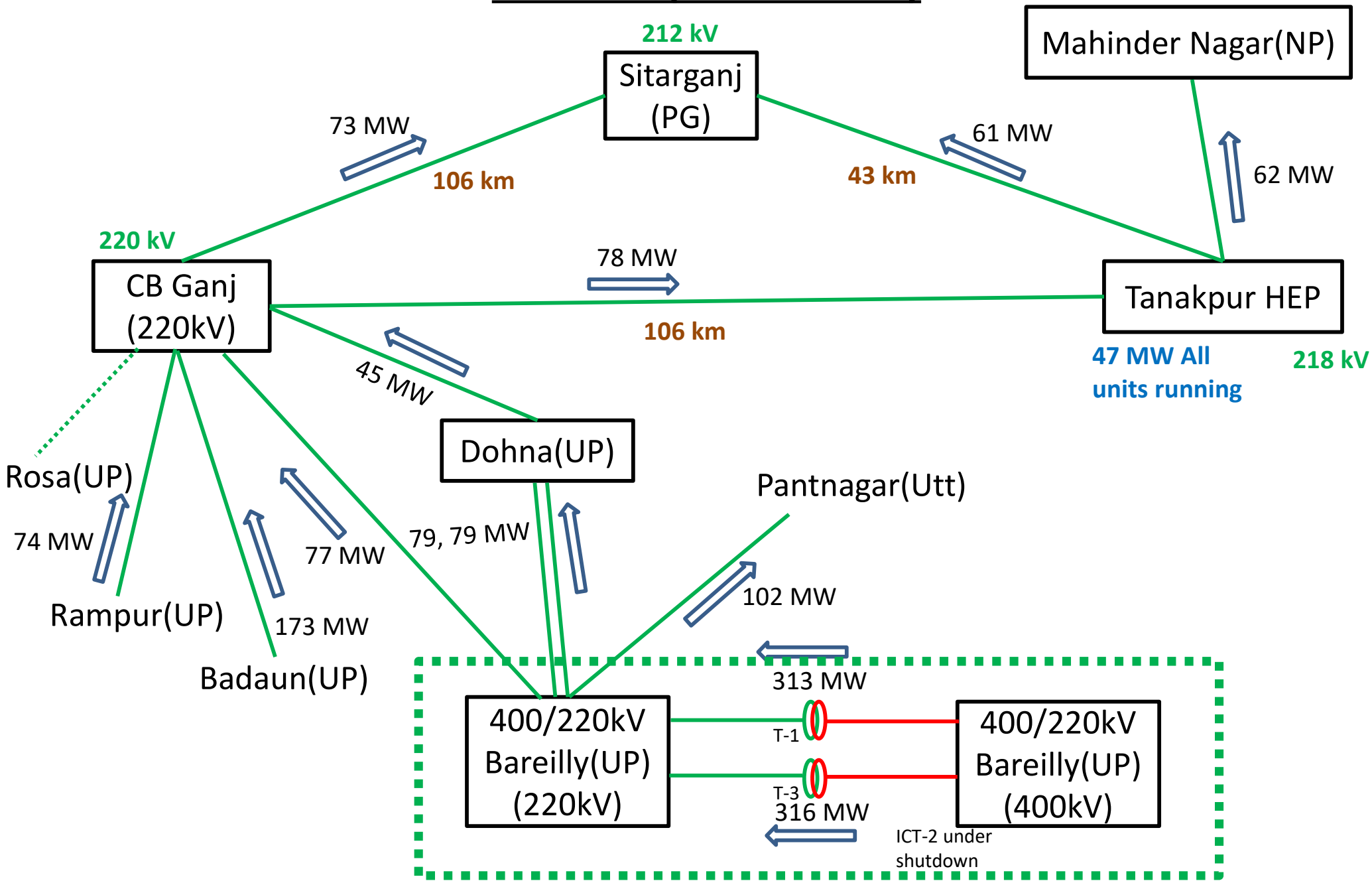
Status of Mock Test of SPS in NR during 2025-26

Sr. No.	Scheme Name	Owner / Utility	Mock testing conducted before 2025-26	Tentative Schedule of SPS Mock testing to be conducted during 2025-26	Date of SPS Mock testing conducted during 2025-26	Remarks
1	SPS for WR-NR corridor - 765kV Agra-Gwalior D/C	POWERGRID	27-03-2025	Feb-26		
2	SPS for contingency due to tripping of HVDC Mundra-Mahendergarh	ADANI		SPS Unhealthy		As reported by ADANI, Tentative timeline for revival of SPS by August 2025
3	SPS for high capacity 400 kV Muzaffarpur-Gorakhpur D/C Inter-regional tie-line related contingency	POWERGRID		Schedule awaited		Not conducted in 2024-25 also. SPS Under review
4	SPS for 1500 MW HVDC Rihand-Dadri Bipole related contingency	POWERGRID	19-03-2025 and 20-03-2025	Jan-26		
5	System Protection Scheme (SPS) for HVDC Balia-Bhiwadi Bipole	POWERGRID		Schedule awaited		Not conducted in 2024-25 also
6	SPS for contingency due to tripping of multiple lines at Dadri(NTPC)	NTPC		SPS to be disabled (approved in OCC)		
7	SPS for reliable evacuation of power from NJPS, Rampur, Sawra Kuddu, Baspa Sorang and Karcham Wangtoo HEP	SJVN/HPPTCL/JSW	19-12-2024	Dec-25		
8	SPS for Reliable Evacuation of Ropar Generation	Punjab		Schedule awaited		Not conducted in 2024-25 also. SPS Under review. SLDC-PS may share the status
9	SPS for Reliable Evacuation of Rosa Generation	Uttar Pradesh	20-04-2024	conducted	12-04-2025	
10	SPS for contingency due to tripping of evacuating lines from Narora Atomic Power Station	NAPS		Schedule awaited		Not conducted in 2024-25 also. SPS Under review. Needs review due to changes in network conenctivity. SLDC-UP to share the netwrok details and base case
11	SPS for evacuation of Kawai TPS, Kalisindh TPS generation complex	Rajasthan	14-03-2025 (Partial)	conducted	26-04-2025	
12	SPS for evacuation of Anpara Generation Complex	Uttar Pradesh	08-10-2024 (unit-7) and 19-10-2024 (unit-6)	Schedule awaited		
13	SPS for evacuation of Lalitpur TPS Generation	Uttar Pradesh	21-05-2024	conducted	09-04-2025	
14	SPS for Reliable Evacuation of Bara TPS Generation	Uttar Pradesh	20-11-2024	Schedule awaited		Not conducted in 2024-25 also. SPS. Under review
15	SPS for Lahal Generation	Himachal Pradesh	08-07-2020	Schedule awaited		POWERGRID and HP may share their inputs
16	SPS for Transformers at Ballabhgarh (PG) substation	POWERGRID		Schedule awaited		Not conducted in 2024-25 also. SPS. SPS may be kept with revised logic (logic based on the loading)
17	SPS for Transformers at Maharanibagh (PG) substation	POWERGRID		Mock test report pending		Revised SPS implemented, mock test report is pending
18	SPS for Transformers at Mandola (PG) substation	POWERGRID		Mock test report pending		Revised SPS implemented, mock test report is pending
19	SPS for Transformers at Bamnauli (DTL) Substation	Delhi		Schedule awaited		Not conducted in 2024-25 also. SPS. SPS may be kept with revised logic (logic based on the loading)
20	SPS for Transformers at Moradabad (UPPTCL) Substation	Uttar Pradesh	20-04-2024	conducted	02-04-2025	
21	SPS for Transformers at Muradnagar (UPPTCL) Substation	Uttar Pradesh	27-03-2025	Schedule awaited		
22	SPS for Transformers at Muzaffarnagar(UPPTCL) Substation	Uttar Pradesh	27-03-2025	Schedule awaited		
23	SPS for Transformers at Greater Noida(UPPTCL) Substation	Uttar Pradesh		SPS Unhealthy		SPS Unhealthy; SPS may be kept with revised logic (logic based on the loading)
24	SPS for Transformers at Agra (UPPTCL) Substation	Uttar Pradesh	21-03-2025	Schedule awaited		
25	SPS for Transformers at 400kV Sarojininagar (UPPTCL) Substation	Uttar Pradesh	15-05-2024	Schedule awaited		
26	SPS for Transformers at 220kV Sarojininagar (UPPTCL) Substation	Uttar Pradesh	06-06-2024	Schedule awaited		
27	SPS for Transformers at 400kV Unnao (UPPTCL) Substation	Uttar Pradesh	19-05-2023	SPS Unhealthy		SPS Unhealthy; SPS need to be made healthy;
28	SPS for Transformers at 400kV Sultanpur (UPPTCL) Substation	Uttar Pradesh		SPS Unhealthy		SPS Unhealthy; SPS may be kept with revised logic (logic based on the loading)
29	SPS for Transformers at 400kV Bareilly (UPPTCL) Substation	Uttar Pradesh		SPS disabled without approval		Not conducted in 2024-25 also. SPS. SPS need to be enabled at the earliest.
30	SPS for Transformers at 400kV Azamgarh (UPPTCL) Substation	Uttar Pradesh	06-05-2024	Schedule awaited		
31	SPS for Transformers at 400kV Mau (UPPTCL) Substation	Uttar Pradesh	27-04-2024	Schedule awaited		
32	SPS for Transformers at 400kV Gorakhpur (UPPTCL) Substation	Uttar Pradesh	27-04-2024	Schedule awaited		
33	SPS for Transformers at 400kV Sarnath (UPPTCL) Substation	Uttar Pradesh	23-05-2024	Schedule awaited		
34	SPS for Transformer at 400kV Rajpura (PSTCL) Substation	Punjab	31-01-2025	Schedule awaited		
35	SPS for Transformers at 400kV Mundka (DTL) Substation	Delhi	03-02-2025	Schedule awaited		
36	SPS for Transformers at 400kV Deepalpur (JKTPL) Substation	Haryana		conducted	08-05-2025	
37	SPS for Transformers at 400kV Ajmer (RVPN) Substation	Rajasthan	10-09-2024	10-09-2025		
38	SPS for Transformers at 400kV Merta (RVPN) Substation	Rajasthan	12-09-2024	12-09-2025		
39	SPS for Transformers at 400kV Chittorgarh (RVPN) Substation	Rajasthan	31-08-2024 and 05-09-2024	05-09-2025		
40	SPS for Transformers at 400kV Jodhpur (RVPN) Substation	Rajasthan	24-09-2024	24-09-2025		
41	SPS for Transformers at 400kV Bhadla (RVPN) Substation	Rajasthan	27-09-2024	27-09-2025		
42	SPS for Transformers at 400kV Ratangarh (RVPN) Substation	Rajasthan	20-09-2024	20-09-2025		
43	SPS for Transformers at 400kV Nehtaur(WUPPTCL) Substation	Uttar Pradesh	11-01-2025	Schedule awaited		
44	SPS for Transformers at Obra TPS	Uttar Pradesh	20-05-2024	Schedule awaited		
45	SPS for Transformers at 400KV Kashipur (PTCUL) substation	Uttarakhand	Septemeber 2024	Schedule awaited		
46	SPS for Transformers at 400KV Fatehgarh Solar Park (AREPRL)	ADANI		conducted	19-04-2025	
47	SPS to relive transmission congestion in RE complex (Bhadla2)	POWERGRID		Schedule awaited		Not conducted in 2024-25 also
48	SPS for Transformers at 400kV Bikaner (RVPN) Substation	Rajasthan	26-09-2024	26-09-2025		
49	SPS for Transformers at 400kV Bawana (DTL) Substation	Delhi	04-01-2025	Schedule awaited		
50	SPS for Transformers at 400kV Bhilwara (RVPN) Substation	Rajasthan	09-07-2024 and 10-07-2024	10-07-2025		
51	SPS for Transformers at 400kV Hinduan (RVPN) Substation	Rajasthan	26-09-2024	26-09-2025		
52	SPS for Transformers at 400kV Suratgarh (RVPN) Substation	Rajasthan	20-10-2024	20-10-2025		
53	SPS for Transformers at 400kV Babai(RS) Substation	Rajasthan	20-10-2024	20-10-2025		
54	SPS for Transformers at 400kV Allahabad(PG) Substation	Uttar Pradesh		Schedule awaited		Not conducted in 2024-25 also
55	SPS for Transformers at 400kV Jaunpur(UP) Substation	Uttar Pradesh				Yet to be implemented
56	SPS for Transformers at 765kV Jhatikara(PG) Substation	POWERGRID				Under implementation stage. POWERGRID may share the status

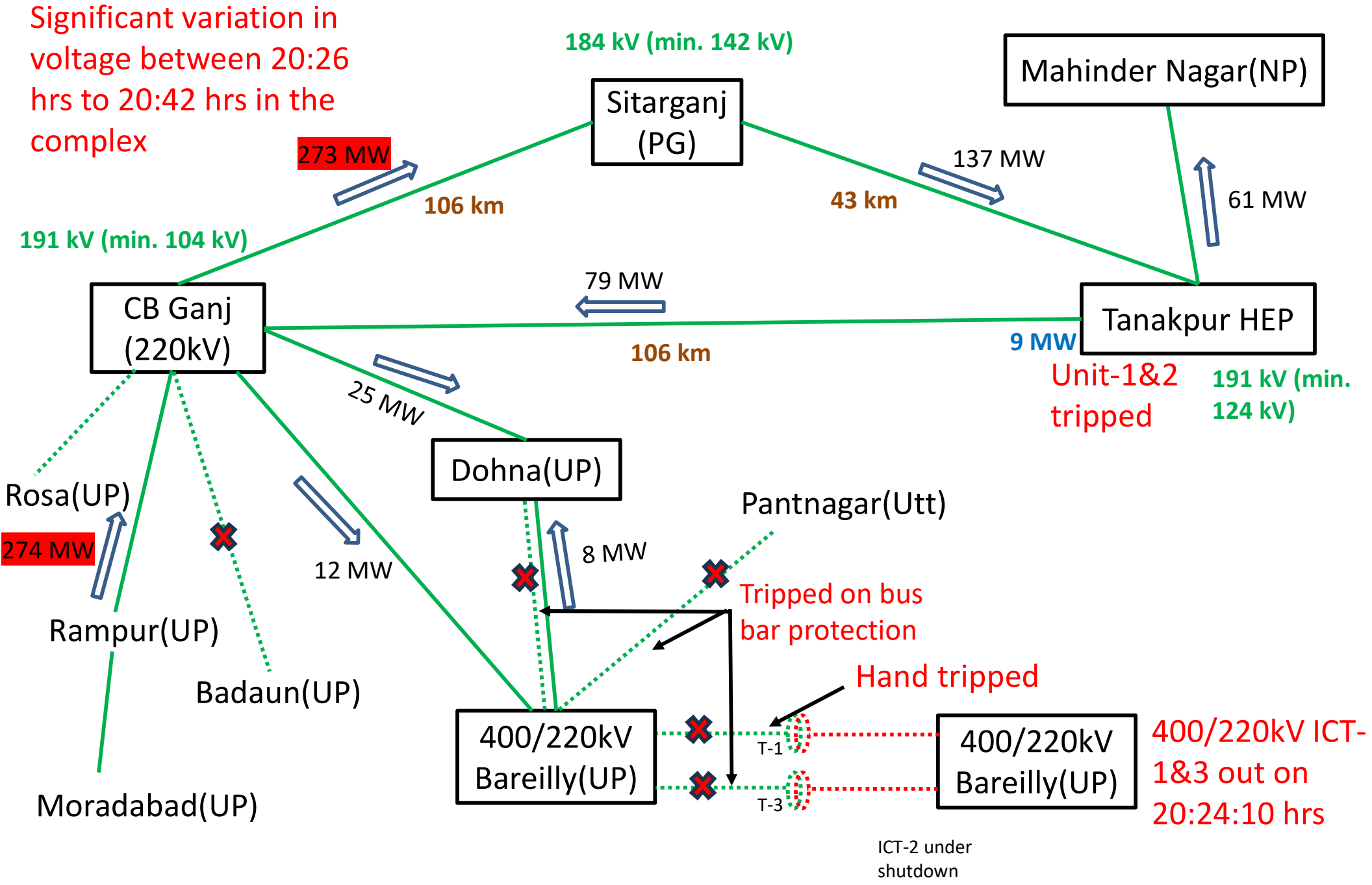
Multiple elements tripping in CB Ganj, Tanakpur HEP complex

On 31.05.2025

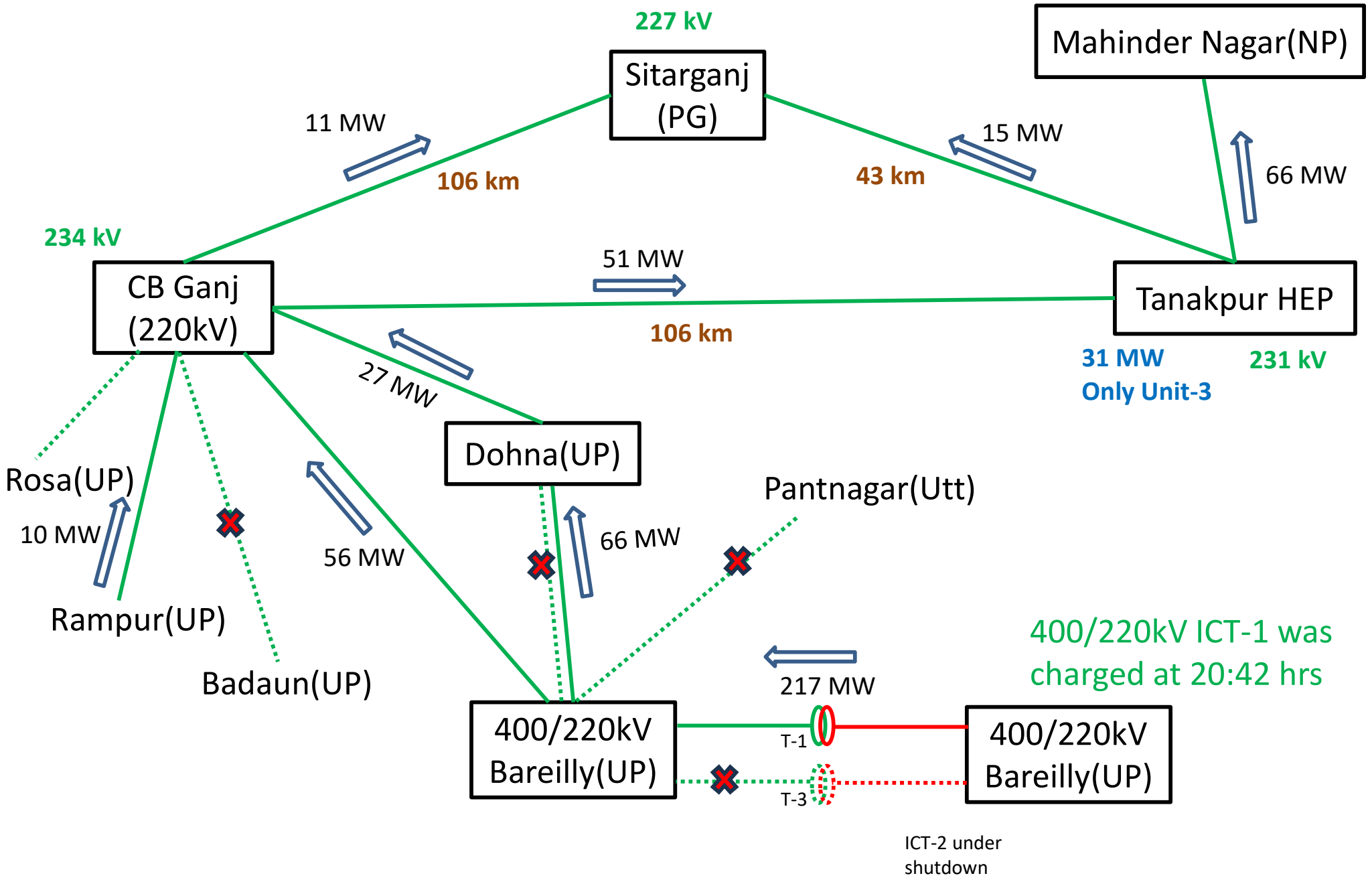
Tanakpur HEP, CB Ganj Complex loading profile during antecedent scenario (at 20:24 hrs)



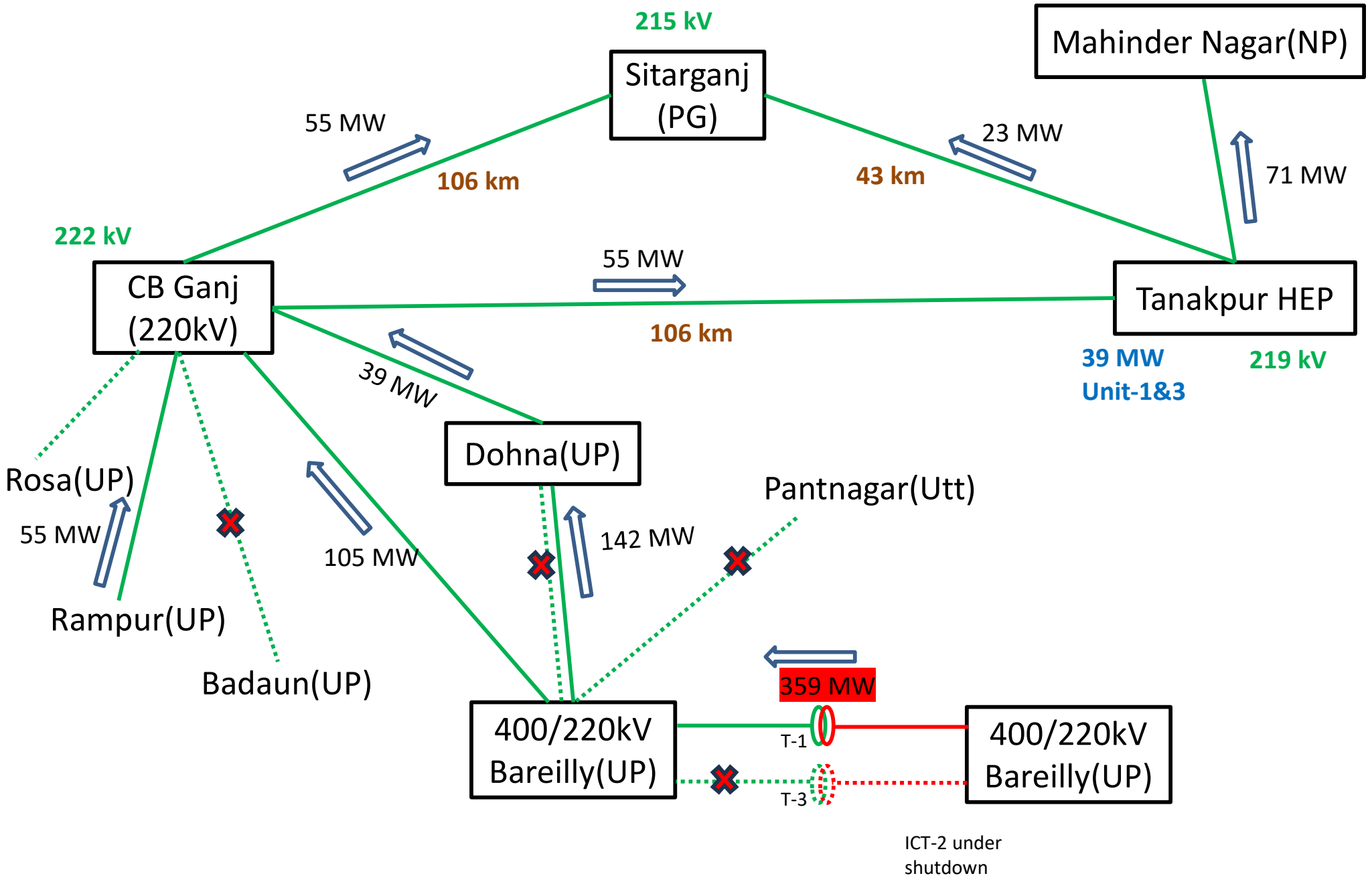
Tanakpur HEP, CB Ganj Complex loading profile at 20:26:20 hrs



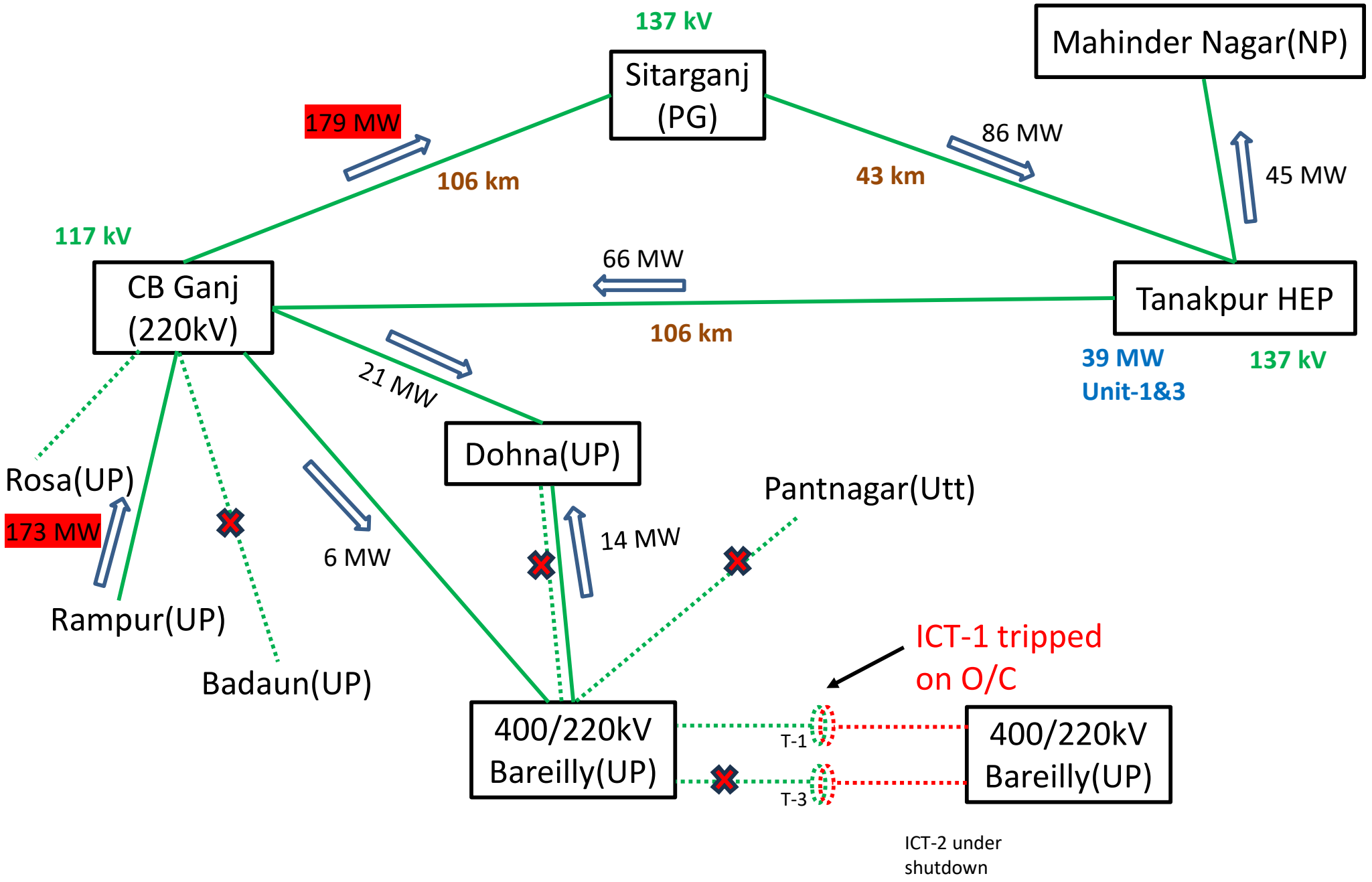
Tanakpur HEP, CB Ganj Complex loading profile at 20:42:20 hrs



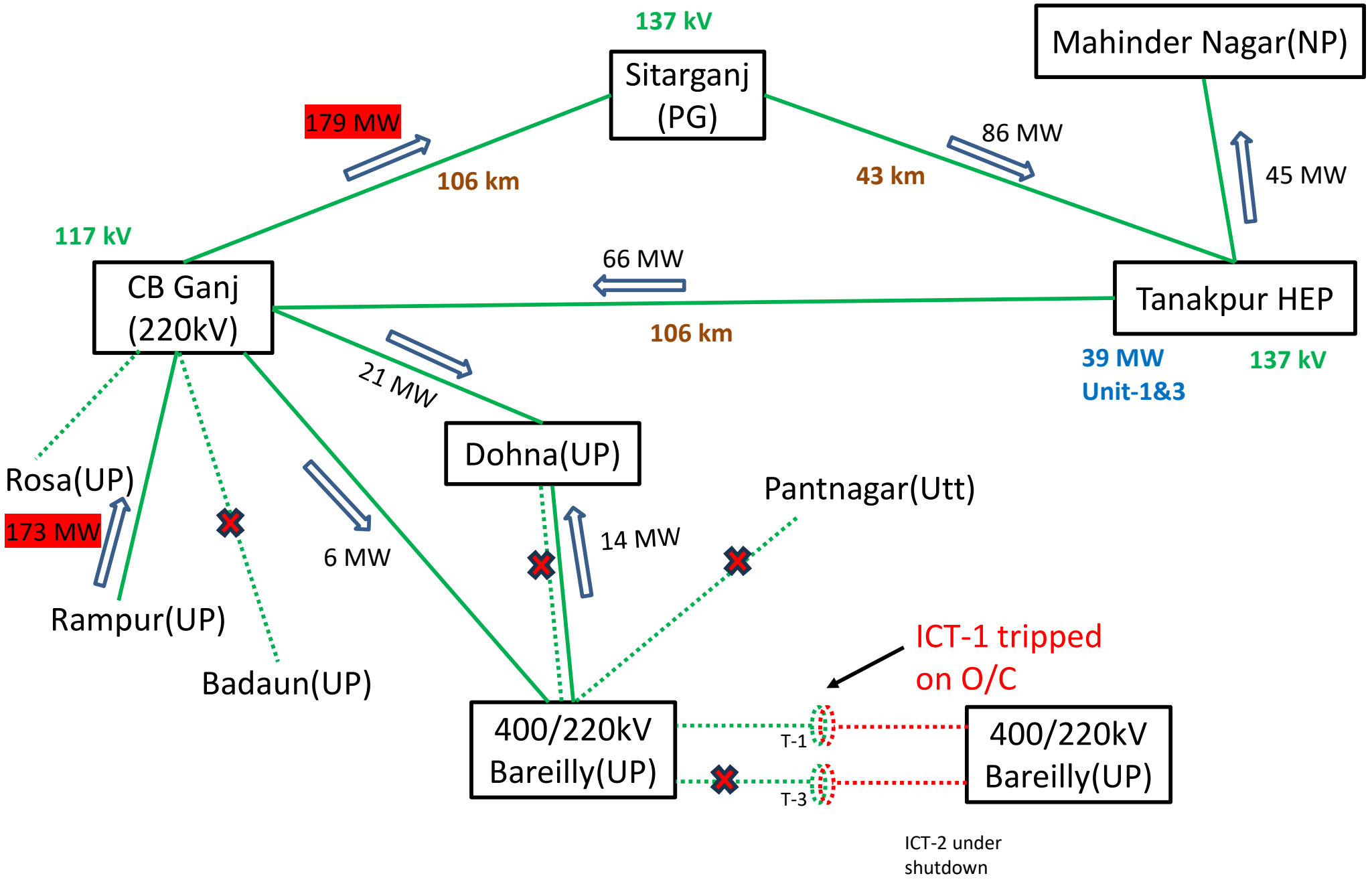
Tanakpur HEP, CB Ganj Complex loading profile at 20:51:50 hrs

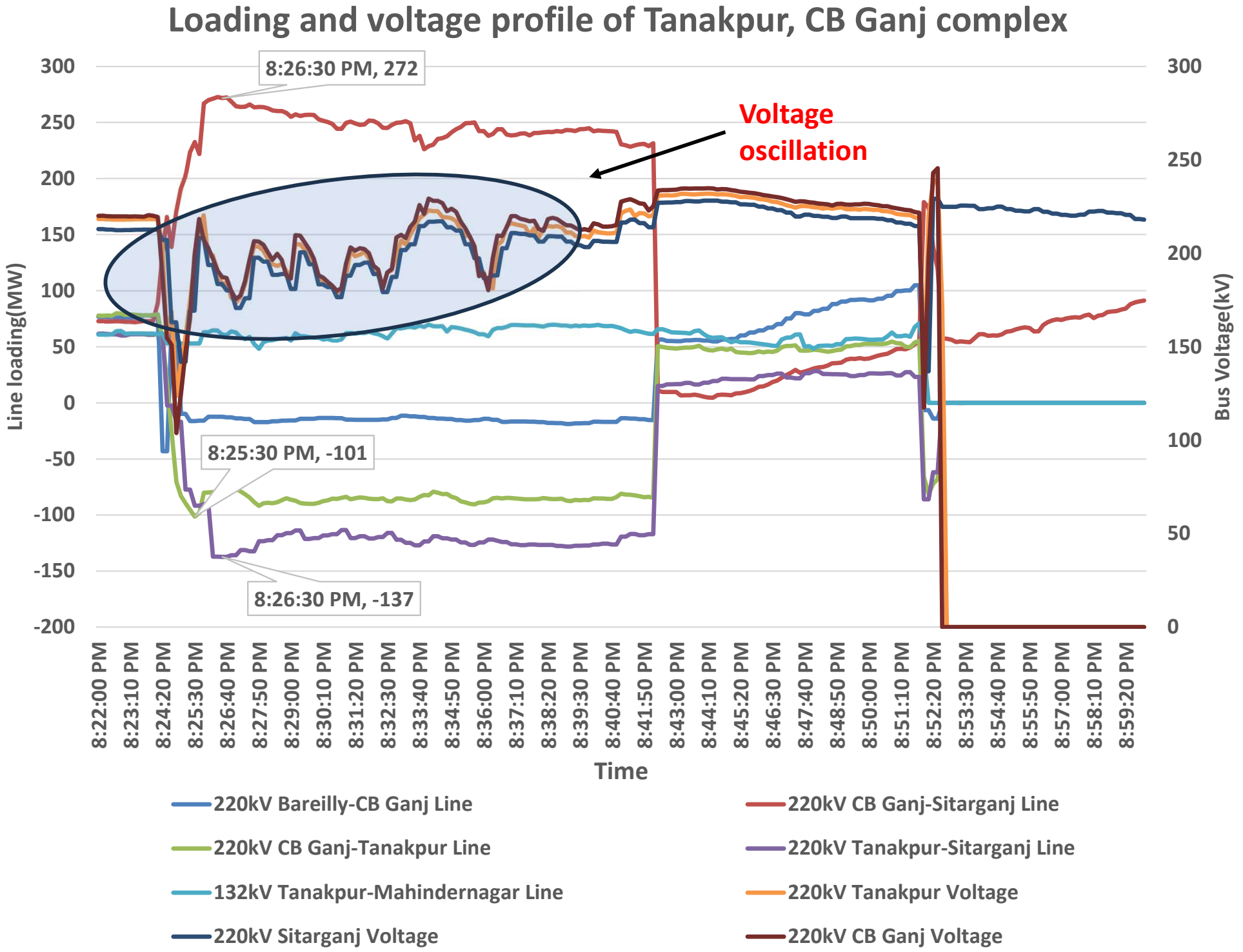


Tanakpur HEP, CB Ganj Complex loading profile at 20:52:00 hrs



Tanakpur HEP, CB Ganj Complex loading profile at 20:52:10 hrs

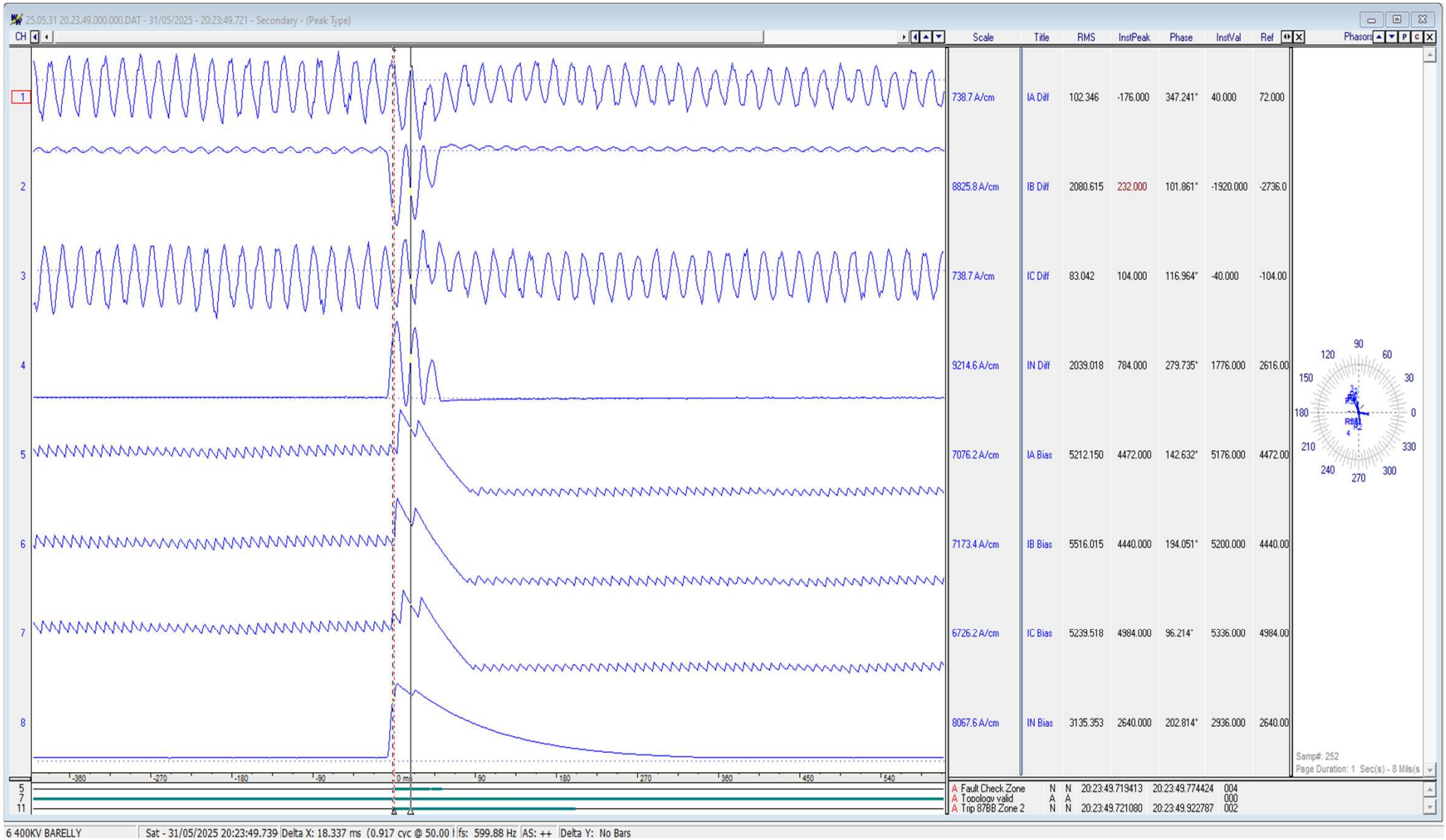



Loading and voltage profile of Tanakpur, CB Ganj complex
8:26:30 PM, 272
Voltage oscillation
8:25:30 PM, -101
8:26:30 PM, -137
Line loading(MW)
Bus Voltage(kV)
Time
300
250
200
150
100
50
0
-50
-100
-150
-200
8:22:00 PM
8:23:10 PM
8:24:20 PM
8:25:30 PM
8:26:40 PM
8:27:50 PM
8:29:00 PM
8:30:10 PM
8:31:20 PM
8:32:30 PM
8:33:40 PM
8:34:50 PM
8:36:00 PM
8:37:10 PM
8:38:20 PM
8:39:30 PM
8:40:40 PM
8:41:50 PM
8:43:00 PM
8:44:10 PM
8:45:20 PM
8:46:30 PM
8:47:40 PM
8:48:50 PM
8:50:00 PM
8:51:10 PM
8:52:20 PM
8:53:30 PM
8:54:40 PM
8:55:50 PM
8:57:00 PM
8:58:10 PM
8:59:20 PM
220kV Bareilly-CB Ganj Line
220kV CB Ganj-Sitarganj Line
220kV CB Ganj-Tanakpur Line
220kV Tanakpur-Sitarganj Line
132kV Tanakpur-Mahindernagar Line
220kV Tanakpur Voltage
220kV Sitarganj Voltage
220kV CB Ganj Voltage

SCADA SOE

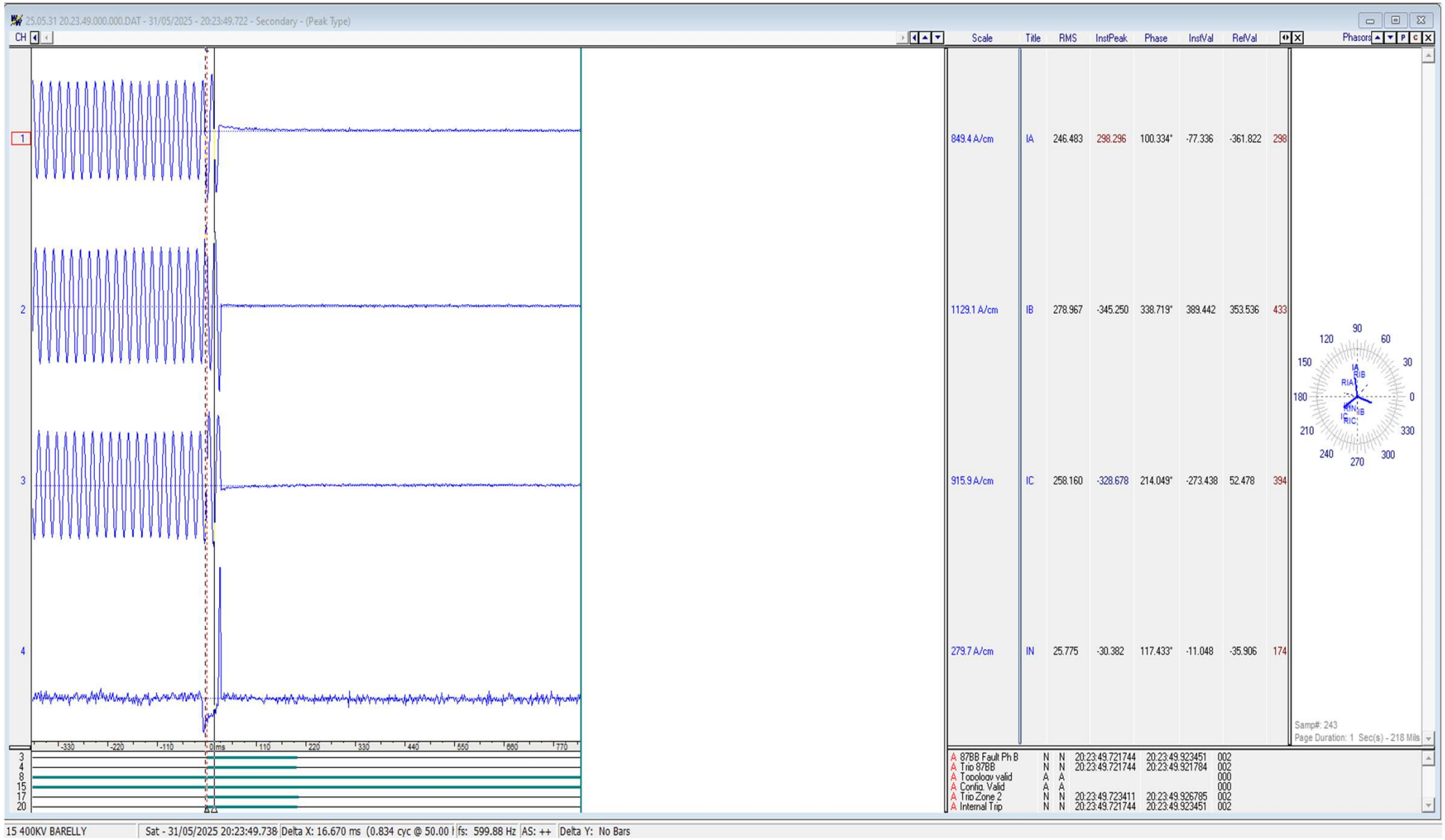
Time	Station Name	Voltage	Element Name	Element Type	Element Status	Remarks
20:23:45,371	CBGA1_UP	400kV	04T2	Circuit Breaker	Close	400/220kV ICT-2 at Bareilly(UP) was charged
20:24:00,087	CBGA1_UP	220kV	07PNTNG	Circuit Breaker	disturbe	Elements i.e., 220kV line to Pantnagar, CB Ganj-II, Dohna-II, Pilibhit-II and ICT-3 tripped on bus bar protection operation of 220kV Bus-2 at Bareilly(UP)
20:24:00,091	CBGA1_UP	220kV	15CBGA22	Circuit Breaker	disturbe	
20:24:00,099	CBGA1_UP	220kV	14DOHNA2	Circuit Breaker	Open	
20:24:00,114	CBGA1_UP	220kV	13PLBT22	Circuit Breaker	Open	
20:24:00,123	CBGA1_UP	220kV	83T3	Circuit Breaker	Open	
20:24:09,214	CBGA1_UP	400kV	01T1	Circuit Breaker	disturbe	400/220kV ICT-1 at Bareilly(UP) was hand tripped
20:24:09,216	CBGA1_UP	220kV	03T1	Circuit Breaker	disturbe	
20:24:20,512	DOHNA_UP	220kV	06ROSA	Circuit Breaker	Open	
20:24:35,480	CBGA1_UP	220kV	08SHJHA1	Circuit Breaker	Open	220kV CB Ganj-Faridpur line tripped
20:24:42,895	CBGA1_UP	400kV	04T2	Circuit Breaker	Open	
20:25:05,918	CBGA1_UP	400kV	83T3	Circuit Breaker	Open	
20:30:25	TANAKPUR	220kV	01G1	Circuit Breaker	disturbe	
20:30:25	TANAKPUR	220kV	02G2	Circuit Breaker	Open	
20:41:23,112	CBGA1_UP	400kV	01T1	Circuit Breaker	Close	400/220kV ICT-1 at Bareilly(UP) was charged
20:42:04,137	CBGA1_UP	220kV	03T1	Circuit Breaker	Close	
20:44:01,680	CBGA1_UP	400kV	04T2	Circuit Breaker	Close	
20:51:49,064	CBGA1_UP	400kV	01T1	Circuit Breaker	disturbe	400/220kV ICT-1 at Bareilly(UP) tripped
20:51:49,067	CBGA1_UP	220kV	03T1	Circuit Breaker	disturbe	
20:53:24,248	DOHNA_UP	132kV	14T2	Circuit Breaker	Open	
20:53:27,008	DOHNA_UP	132kV	13T1	Circuit Breaker	Open	
20:53:29,443	DOHNA_UP	220kV	04T1	Circuit Breaker	Open	
20:53:30,203	DOHNA_UP	220kV	05T2	Circuit Breaker	Close	
20:53:31,217	DOHNA_UP	220kV	05T2	Circuit Breaker	Open	
20:55:46,230	CBGA1_UP	220kV	05DOHNA	Circuit Breaker	Open	
20:55:56,893	CBGA1_UP	220kV	06CBGA21	Circuit Breaker	Open	
20:56:22,898	CBGA2_UP	132kV	07T2	Circuit Breaker	Open	

DR of 220KV Bus-Bar 2 at 400/220KV Bareilly (20:23:49 hrs)



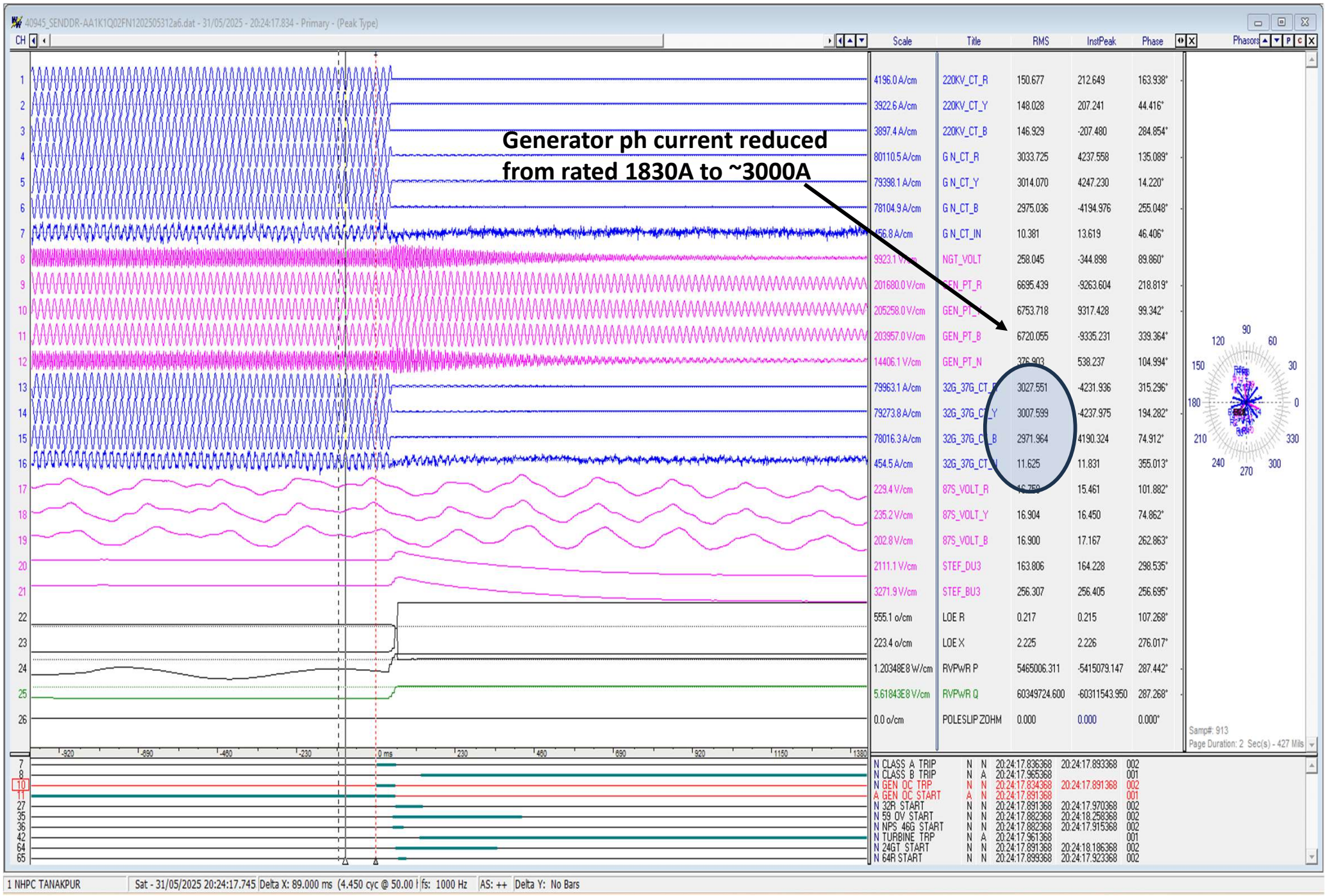
✓ 220KV, Zone-2 Y-phase Bus-Bar protection operated

DR of 220KV Dohna Line (Bus-Bar Relay) at Bareilly (20:23:49 hrs)

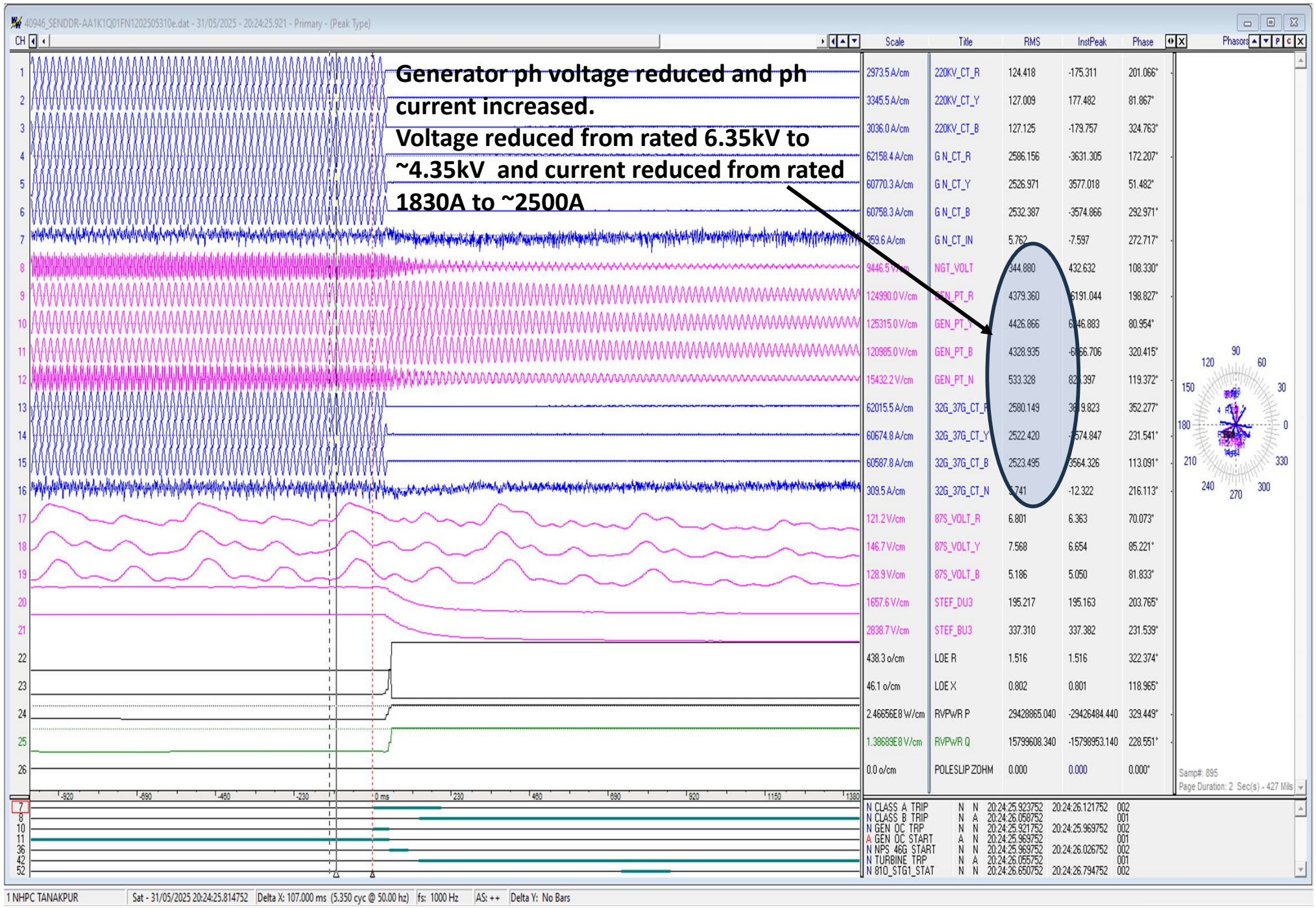


✓ No fault was observed during bus bar protection operation.

DR of Unit-2 at Tanakpur HEP (20:24:17hrs)



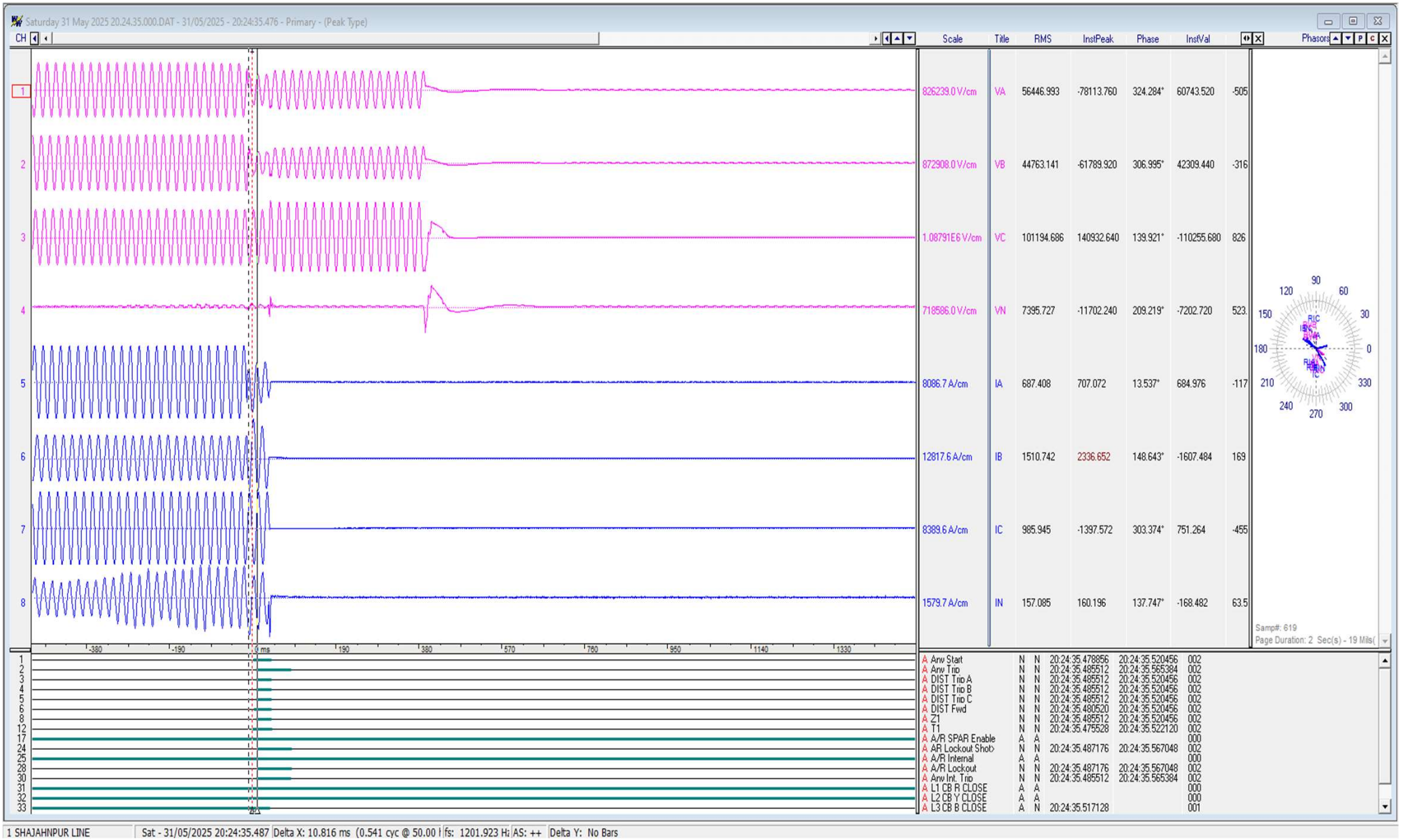
DR of Unit-1 at Tanakpur HEP (20:24:25 hrs)



Event logger of Unit-1 at Tanakpur HEP (20:24:25 hrs)

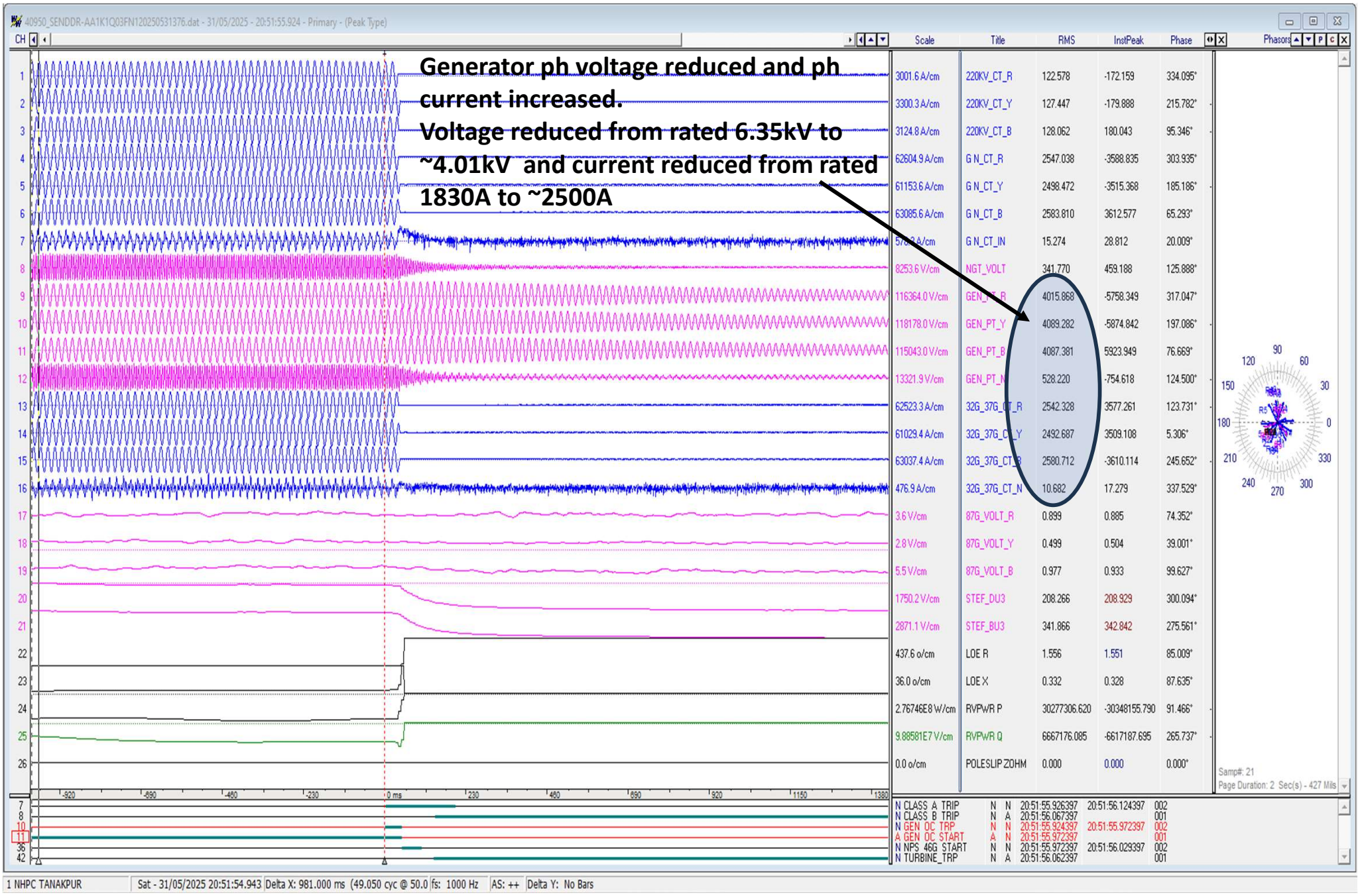
Type	Date & Time	Signal name	Status
P	31-05-2025 20:24:26	TURBINE_TRP	On
P	31-05-2025 20:24:26	NPS_46G_START	Off
P	31-05-2025 20:24:25	NPS_46G_START	On
P	31-05-2025 20:24:25	GEN_OC_TRP	Off
P	31-05-2025 20:24:25	GEN_OC_START	Off
P	31-05-2025 20:24:25	CLASS_A_TRIP	On
P	31-05-2025 20:24:25	GEN_OC_TRP	On
P	31-05-2025 20:24:20	GEN_OC_START	On
P	31-05-2025 20:24:20	NPS_46G_START	Off
P	31-05-2025 20:24:20	GEN_OC_START	Off
P	31-05-2025 20:24:20	GEN_OC_START	On
P	31-05-2025 20:24:20	NPS_46G_START	On
P	31-05-2025 20:24:16	GEN_OC_START	Off
P	31-05-2025 20:24:11	GEN_OC_START	On
P	31-05-2025 14:02:55	NPS_46G_START	Off

DR of 220KV Bareilly(UP)(end) –Faridpur Ckt (20:24:35 hrs)

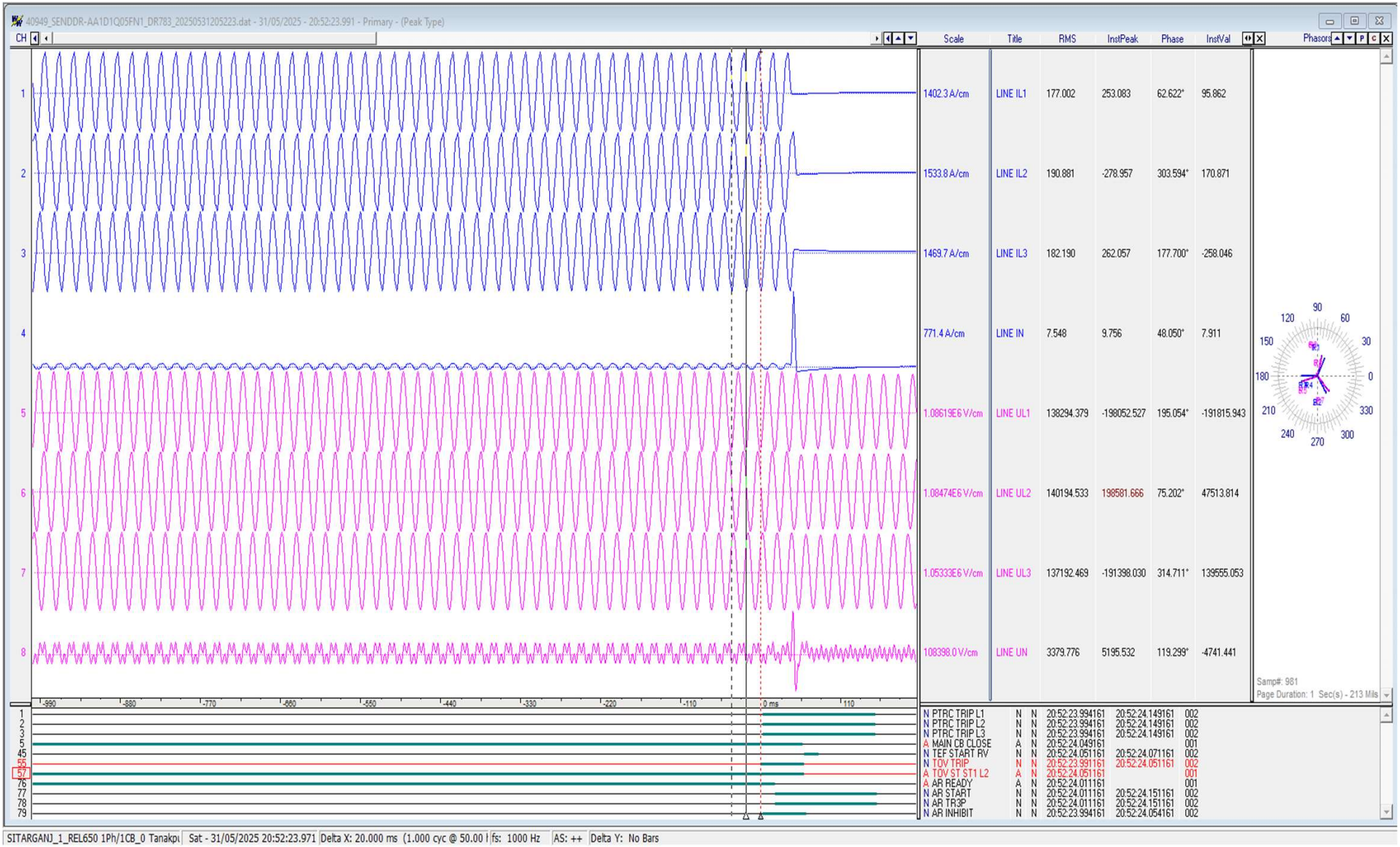


✓ R-Y phase to phase fault observed in Z-1.

DR of Unit-3 at Tanakpur HEP (20:51:55hrs)



DR of 220kV Tanakpur(end)-Sitarganj ckt (20:52:23hrs)

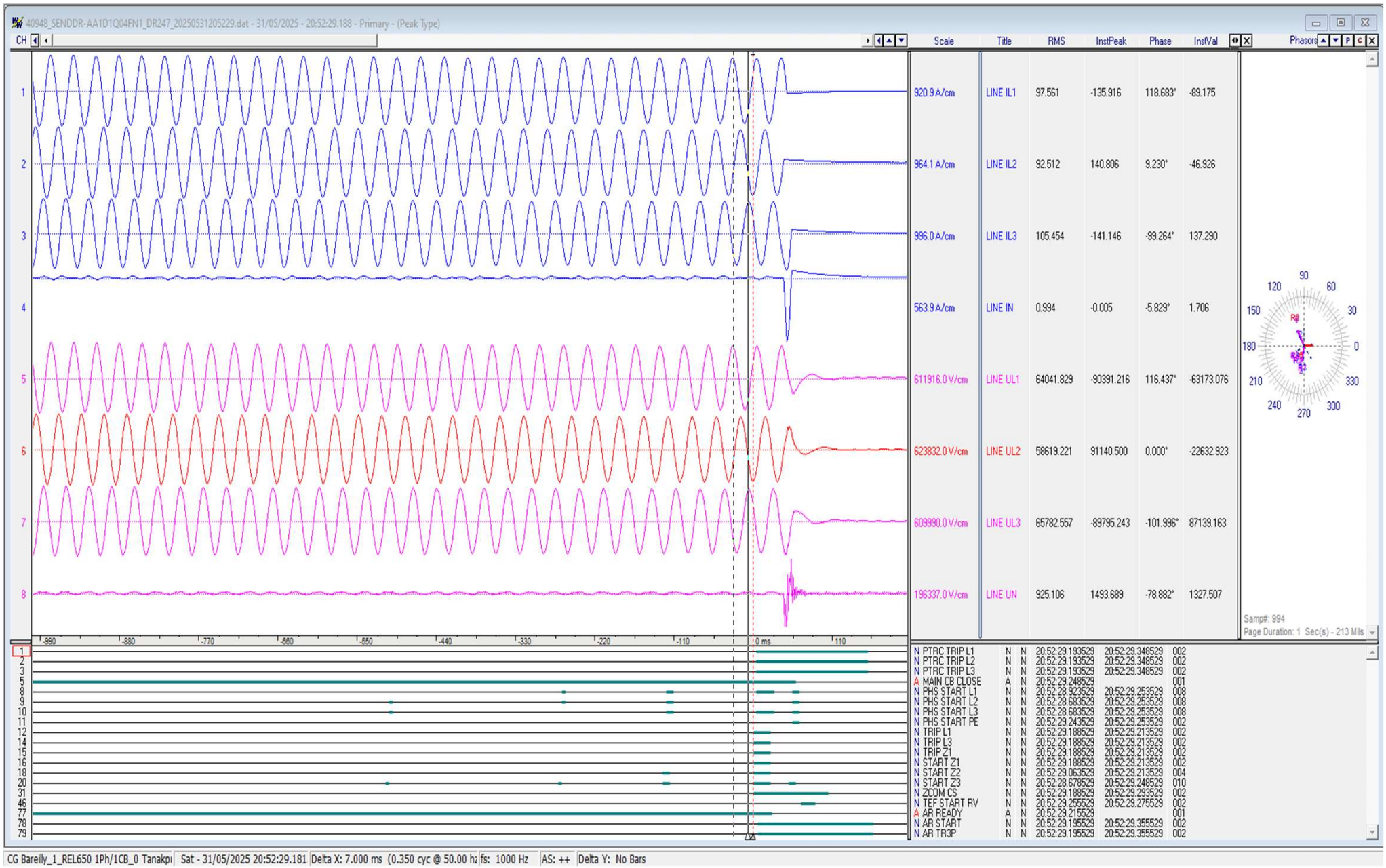


Overvoltage stage-1 protection operated. Phase voltage at Tanakpur ~1.1pu

EL of 220kV Tanakpur(end)-Sitarganj ckt (20:52:23hrs)

31-05-2025 20:52:24	TEF START RV	On
31-05-2025 20:52:24	MAIN CB CLOSE	Off
31-05-2025 20:52:24	AR READY	Off
31-05-2025 20:52:24	AR START	On
31-05-2025 20:52:24	AR TR3P	On
31-05-2025 20:52:23	PTRC TRIP L2	On
31-05-2025 20:52:23	AR INHIBIT	On
31-05-2025 20:52:23	PTRC TRIP L3	On
31-05-2025 20:52:23	PTRC TRIP L1	On
31-05-2025 20:52:23	TOV TRIP	On
31-05-2025 20:52:18	TOV ST ST1 L2	On

DR of 220kV Tanakpur(end)-CB Ganj ckt (20:52:29hrs)

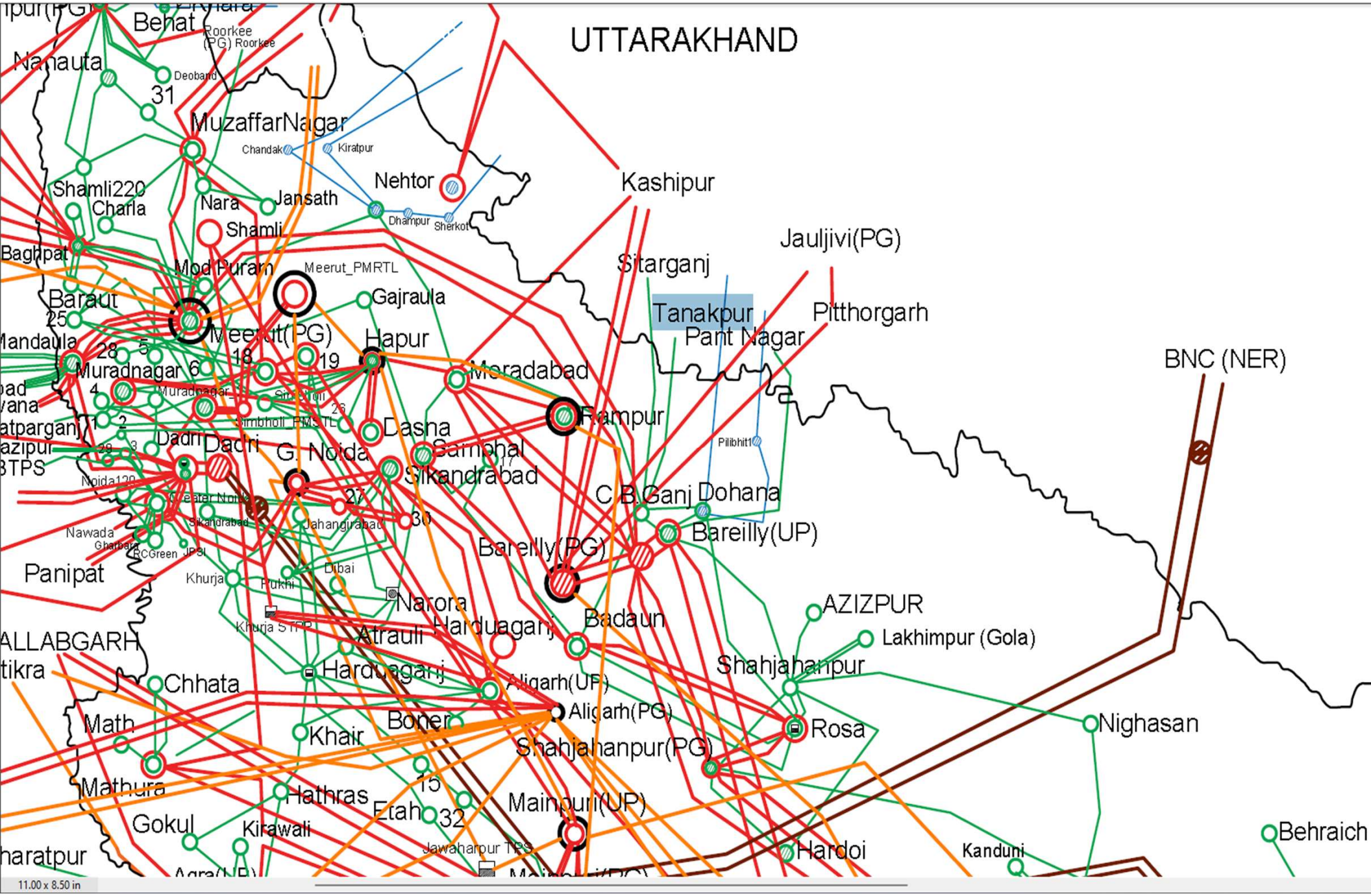


Z-1 distance protection operated. Phase voltage at Tanakpur reduced to ~0.5pu

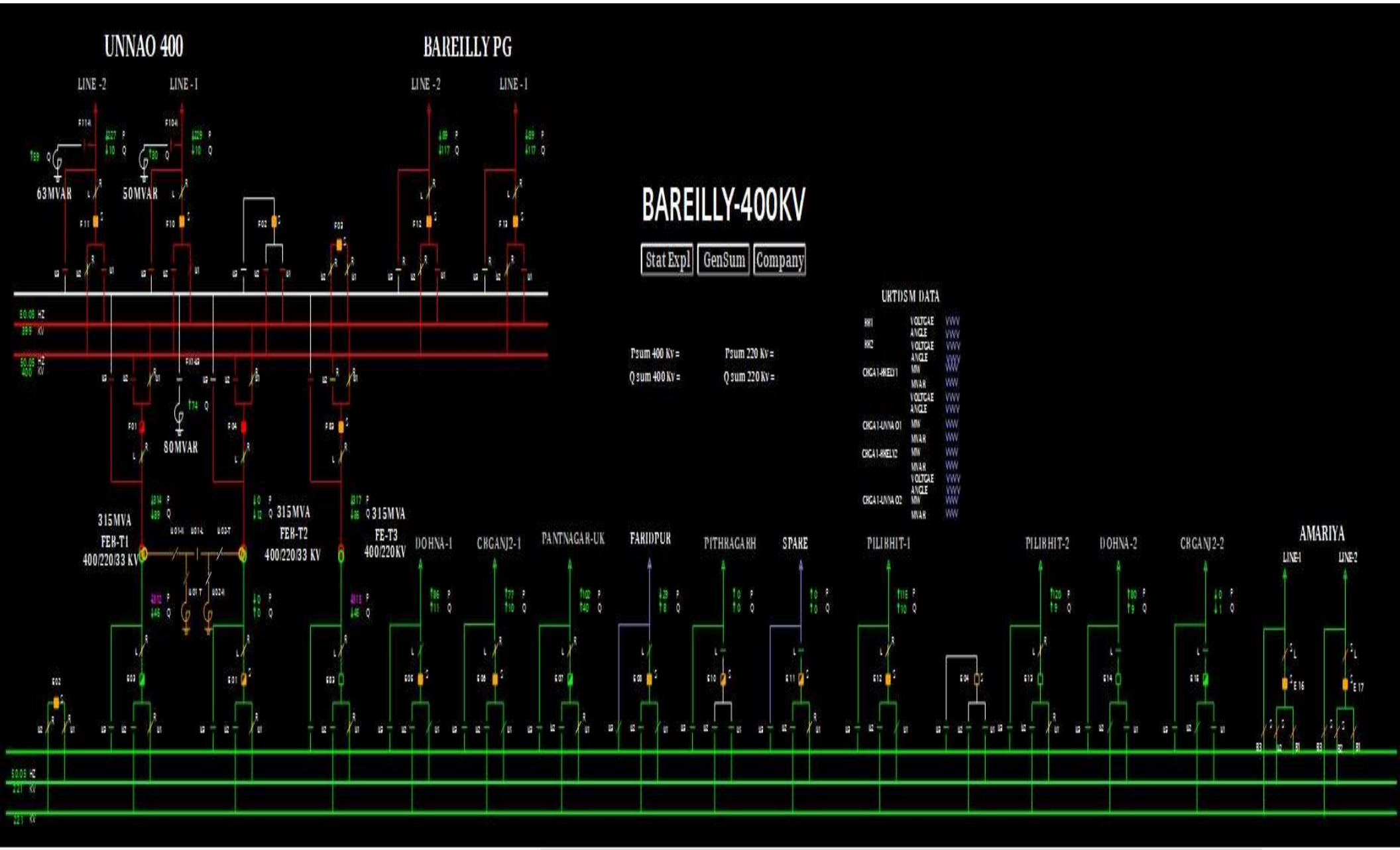
EL of 220kV Tanakpur(end)-CB Ganj ckt (20:52:29hrs)

31-05-2025 20:52:29	TRIP L3	Off
31-05-2025 20:52:29	TRIP Z1	Off
31-05-2025 20:52:29	AR START	On
31-05-2025 20:52:29	AR TR3P	On
31-05-2025 20:52:29	PHS START L1	On
31-05-2025 20:52:29	PHS START L3	On
31-05-2025 20:52:29	PTRC TRIP L1	On
31-05-2025 20:52:29	PTRC TRIP L2	On
31-05-2025 20:52:29	PTRC TRIP L3	On
31-05-2025 20:52:29	START Z1	On
31-05-2025 20:52:29	START Z2	On
31-05-2025 20:52:29	START Z3	On
31-05-2025 20:52:29	TRIP L1	On
31-05-2025 20:52:29	TRIP L3	On
31-05-2025 20:52:29	TRIP Z1	On
31-05-2025 20:52:29	ZCOM CS	On
31-05-2025 20:52:29	PHS START L1	Off
31-05-2025 20:52:29	PHS START L2	Off
31-05-2025 20:52:29	PHS START L3	Off
31-05-2025 20:52:29	START Z2	Off
31-05-2025 20:52:29	START Z3	Off
31-05-2025 20:52:29	PHS START L1	On
31-05-2025 20:52:29	PHS START L2	On
31-05-2025 20:52:29	PHS START L3	On
31-05-2025 20:52:29	START Z2	On
31-05-2025 20:52:29	START Z3	On

Network Diagram

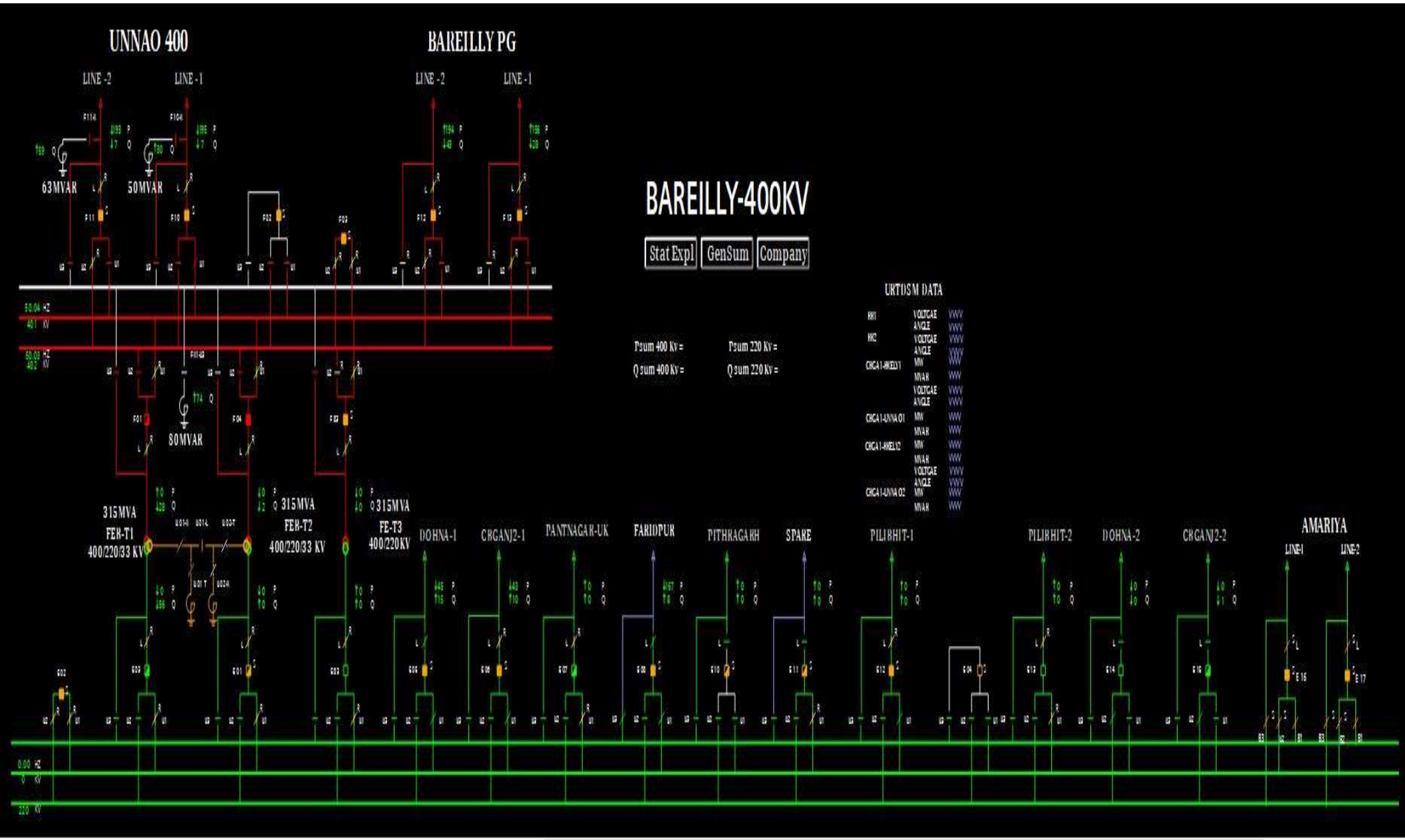


SLD of 400/220KV Bareilly S/s before the event @20:24



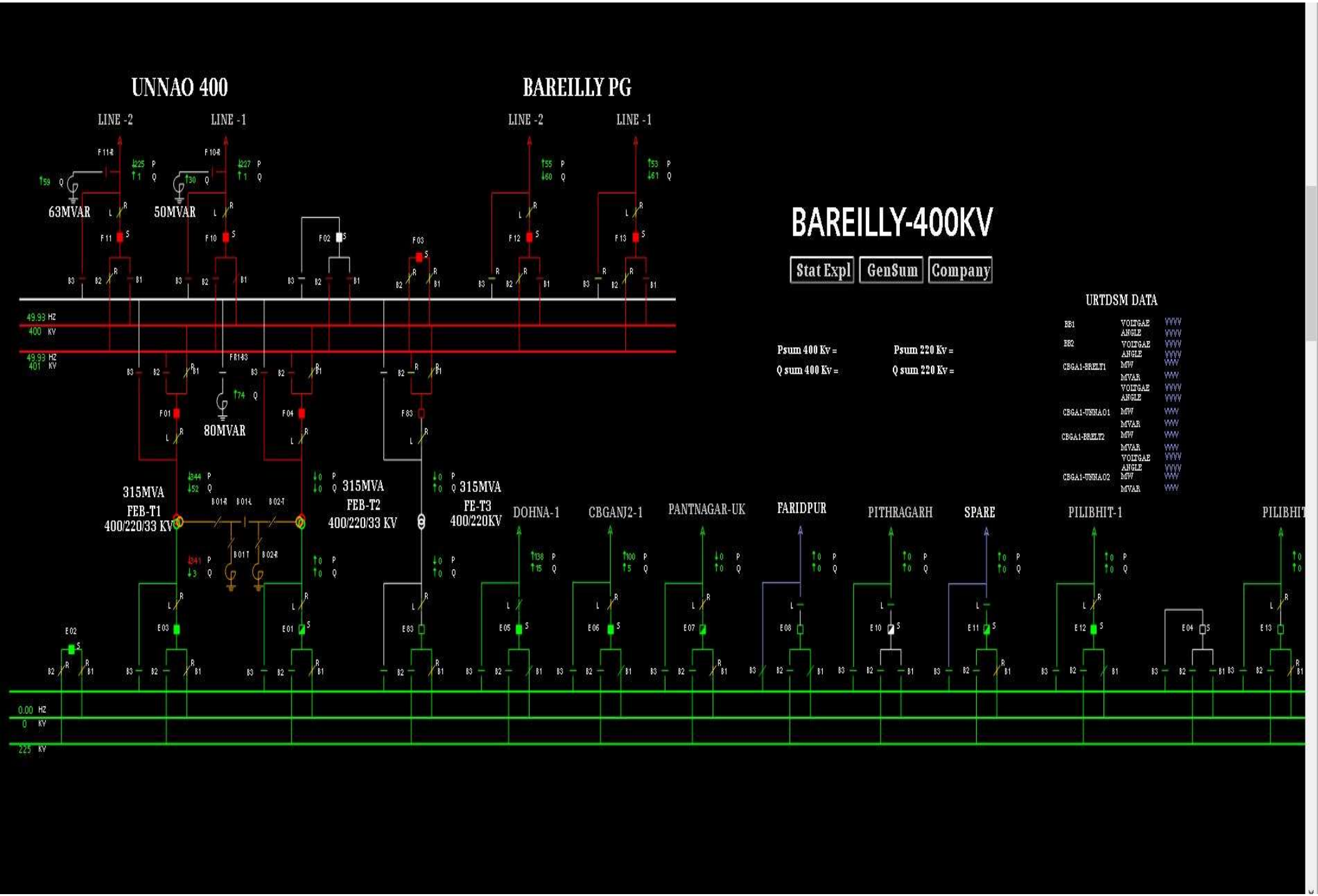
Sat May 31 2025 20:24:15

SLD of 400/220KV Bareilly S/s after the event @20:24

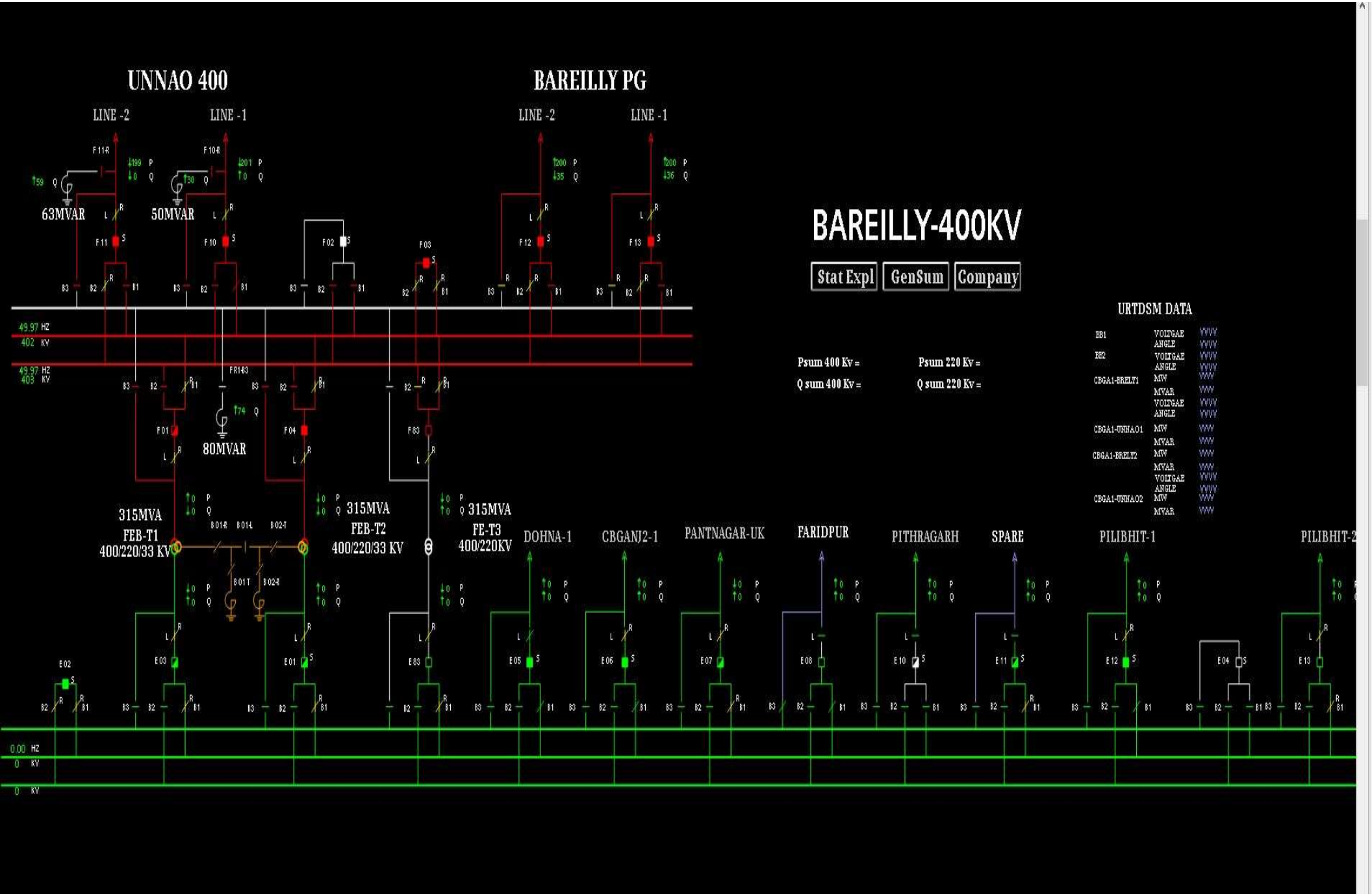


Sat May 31 2025 20:24:30

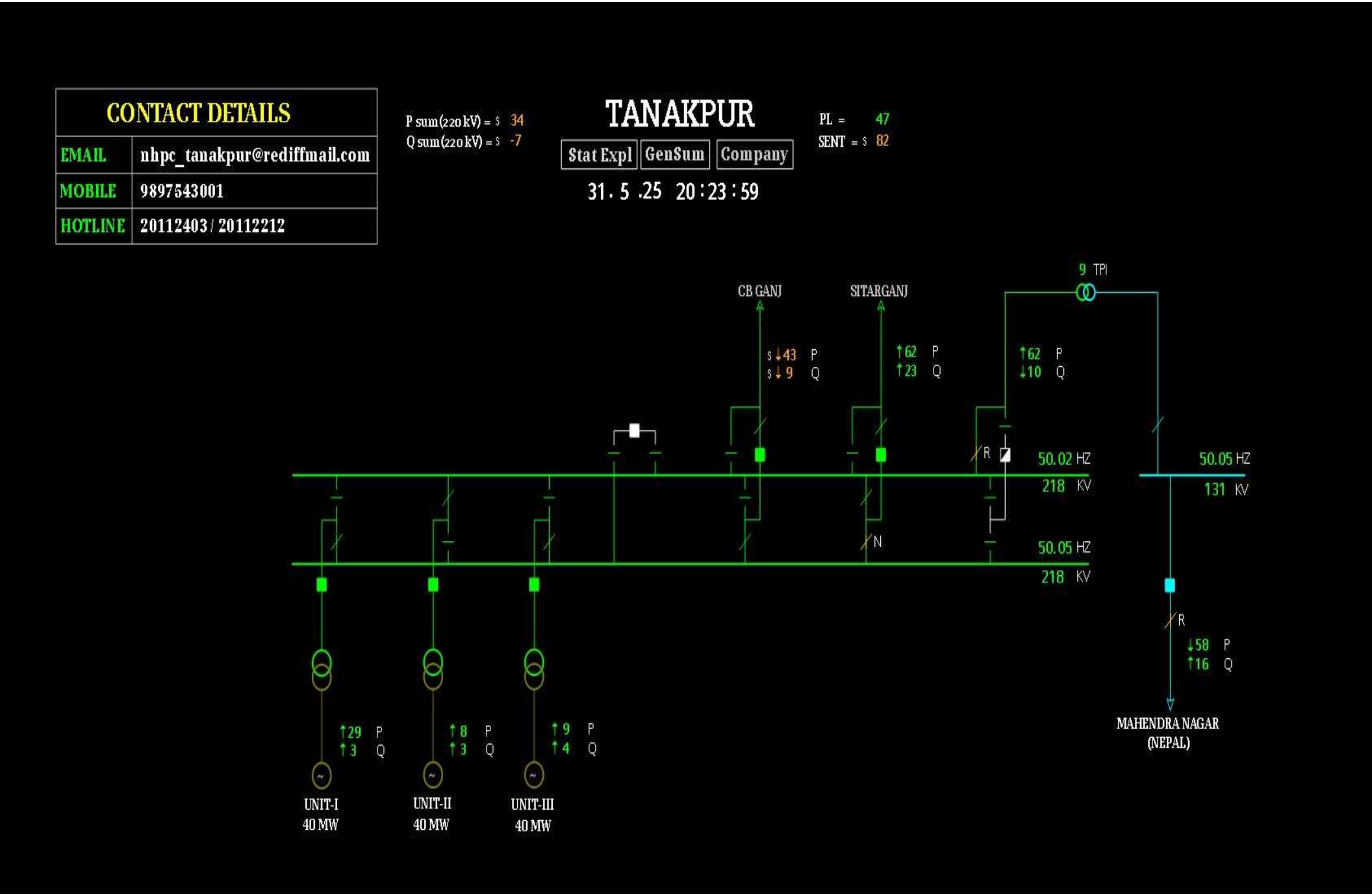
SLD of 400/220KV Bareilly S/s before the event @20:50



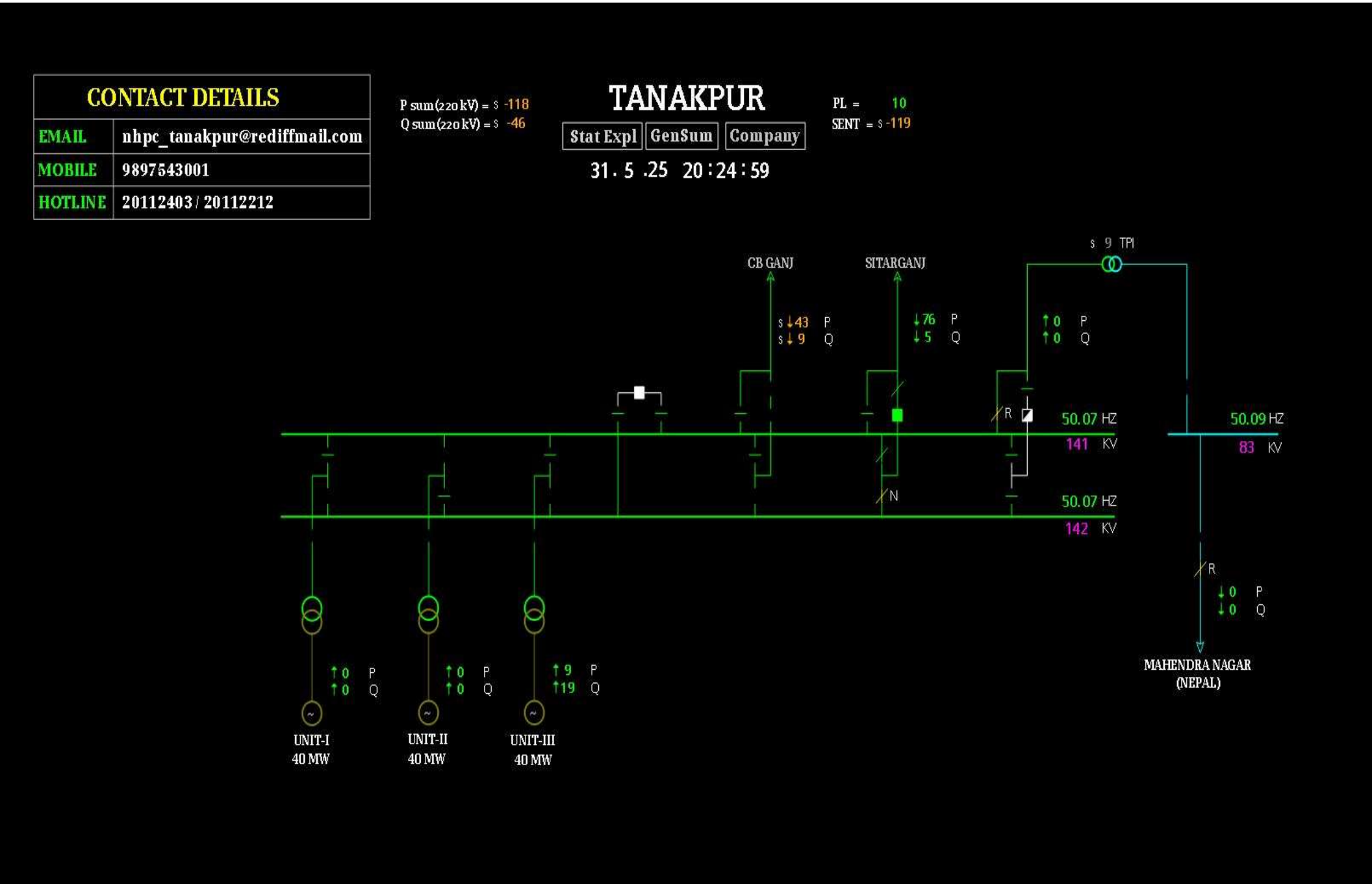
SLD of 400/220KV Bareilly S/s before the event @20:50



SLD of 220KV Tanakpur S/s before the event @20:24

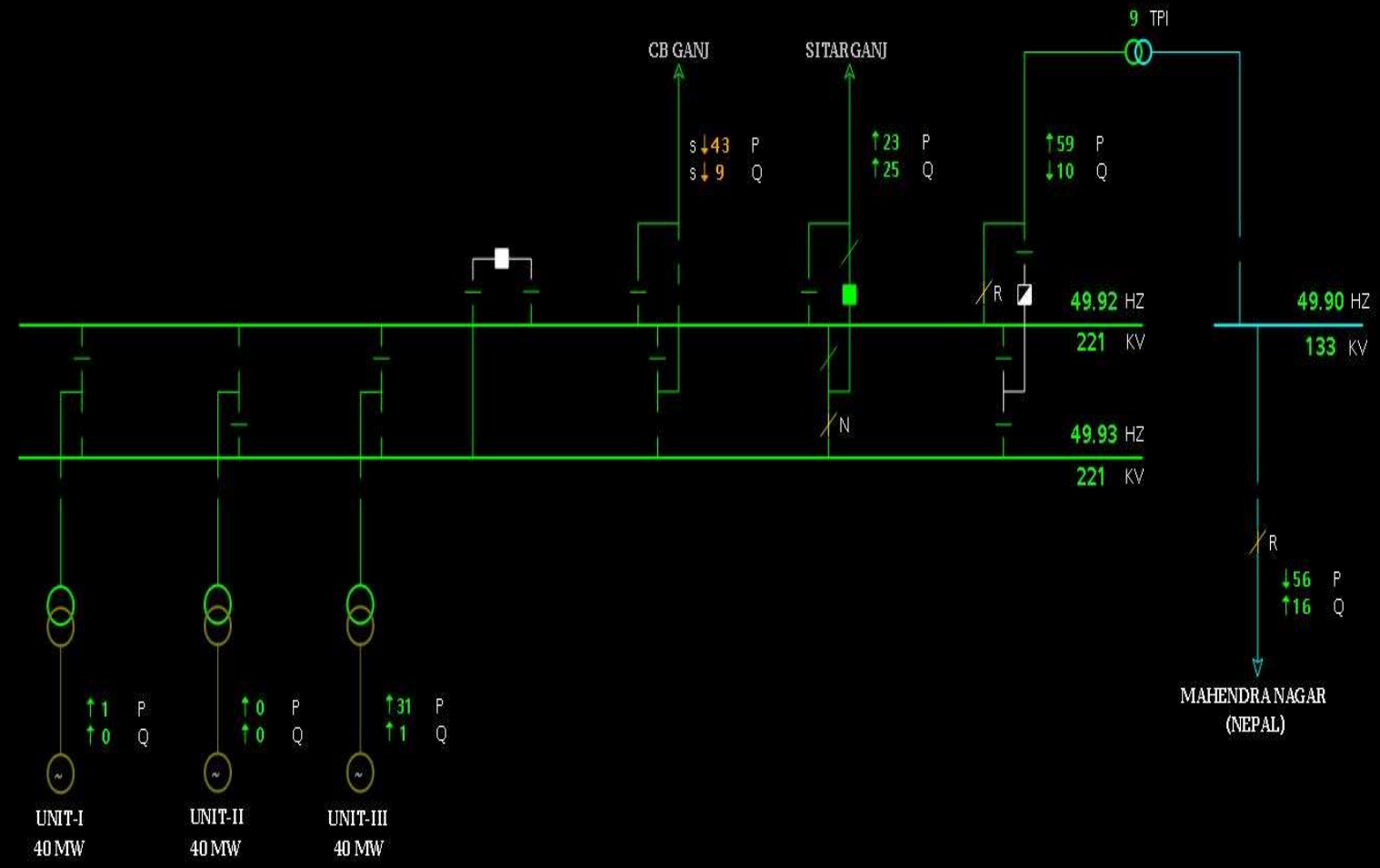


SLD of 220KV Tanakpur S/s after the event @20:24

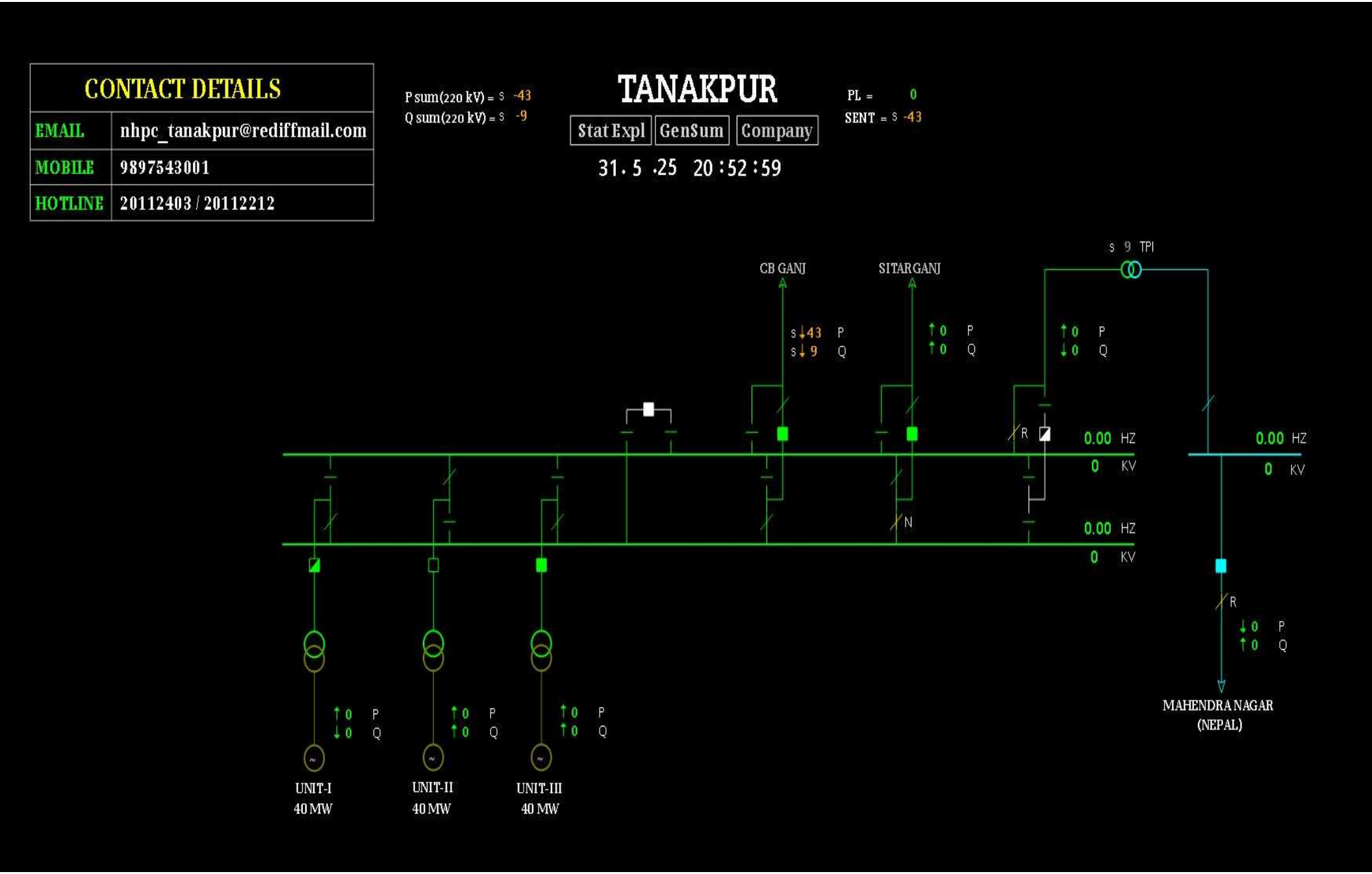


SLD of 220KV Tanakpur S/s before the event @20:50

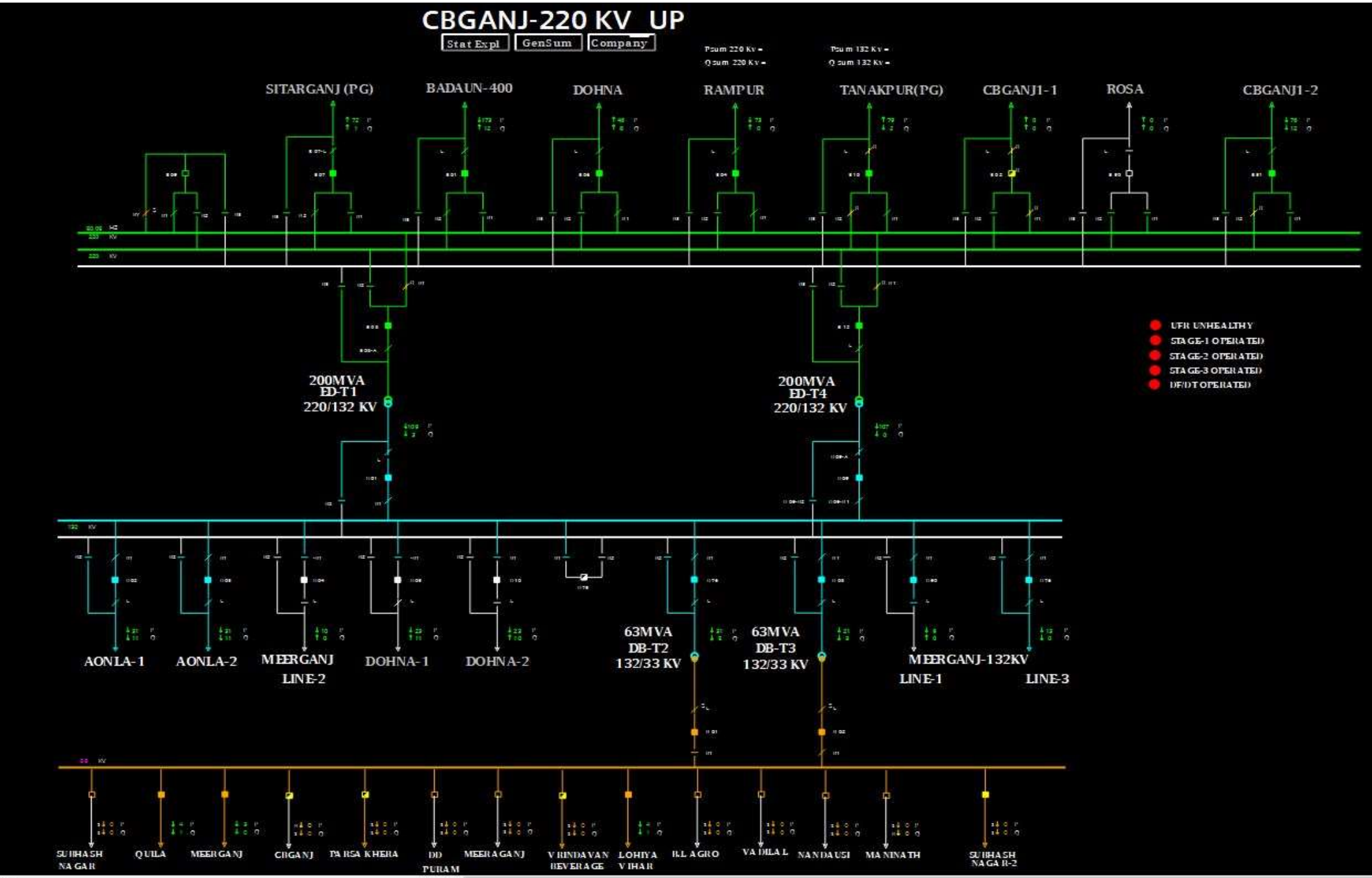
CONTACT DETAILS	
EMAIL	nhpc_tanakpur@rediffmail.com
MOBILE	9897543001
HOTLINE	20112403 / 20112212



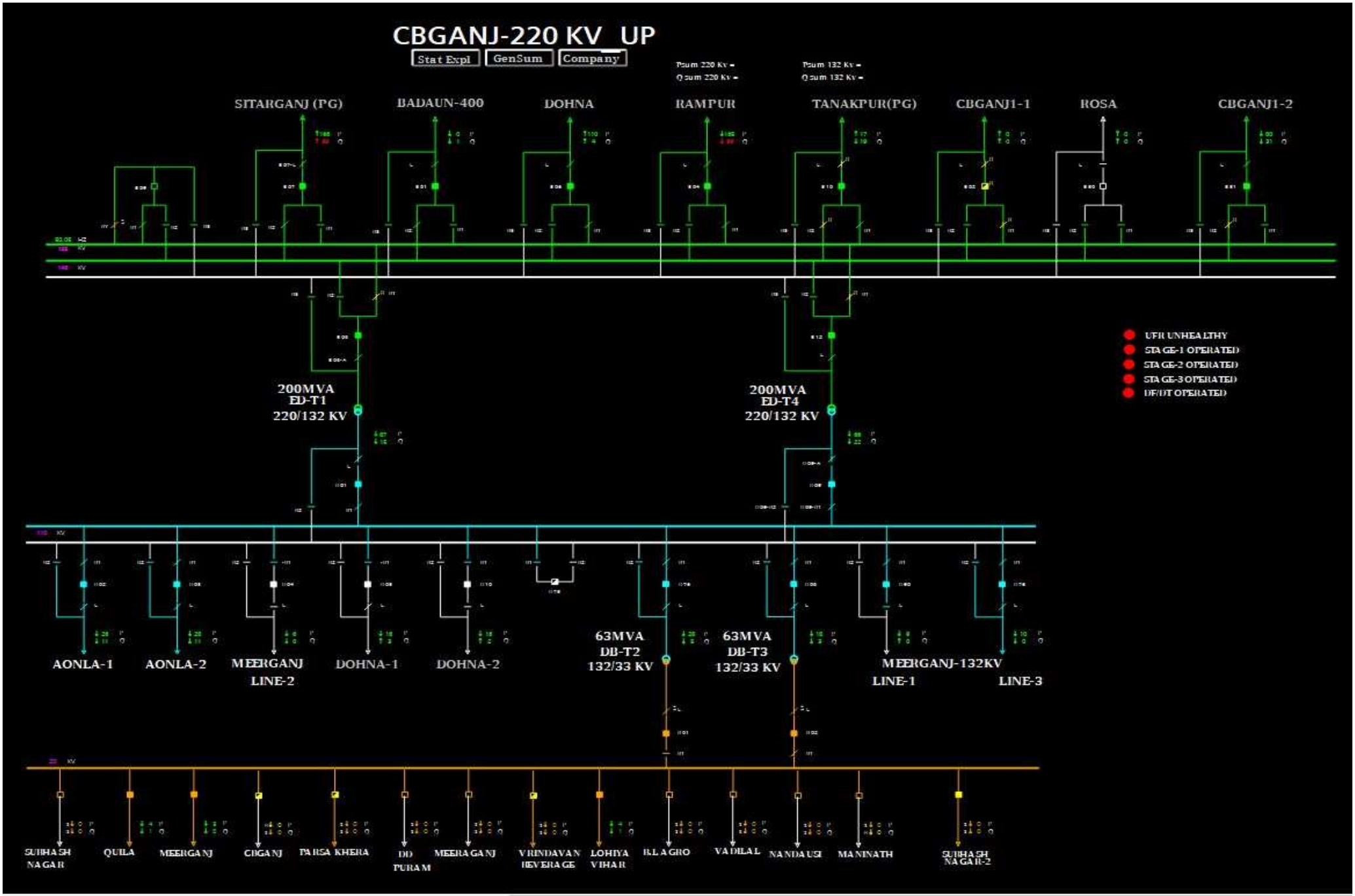
SLD of 220KV Tanakpur S/s after the event @20:50



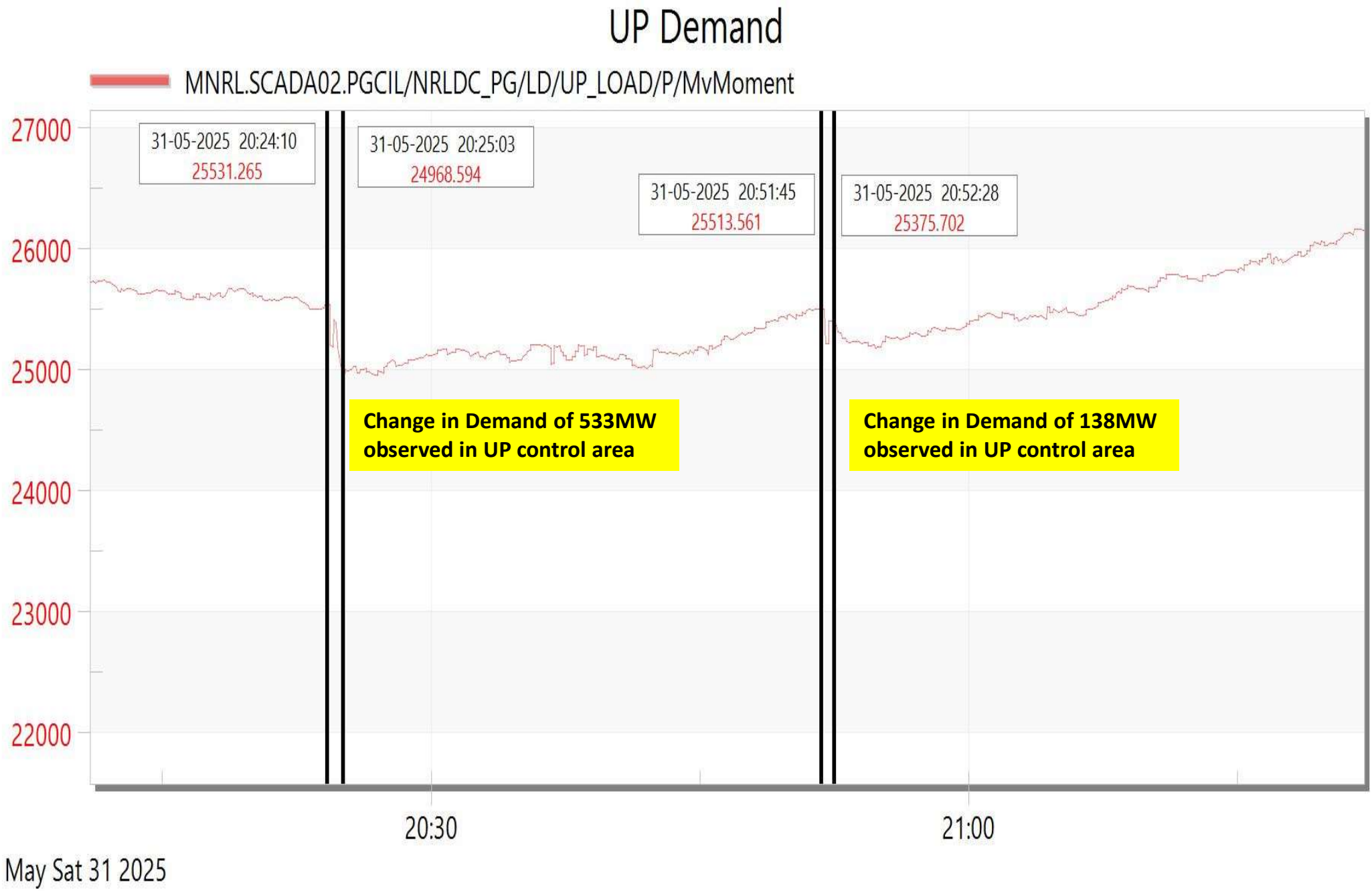
SLD of 220KV C.B Ganj S/s before the event @20:24



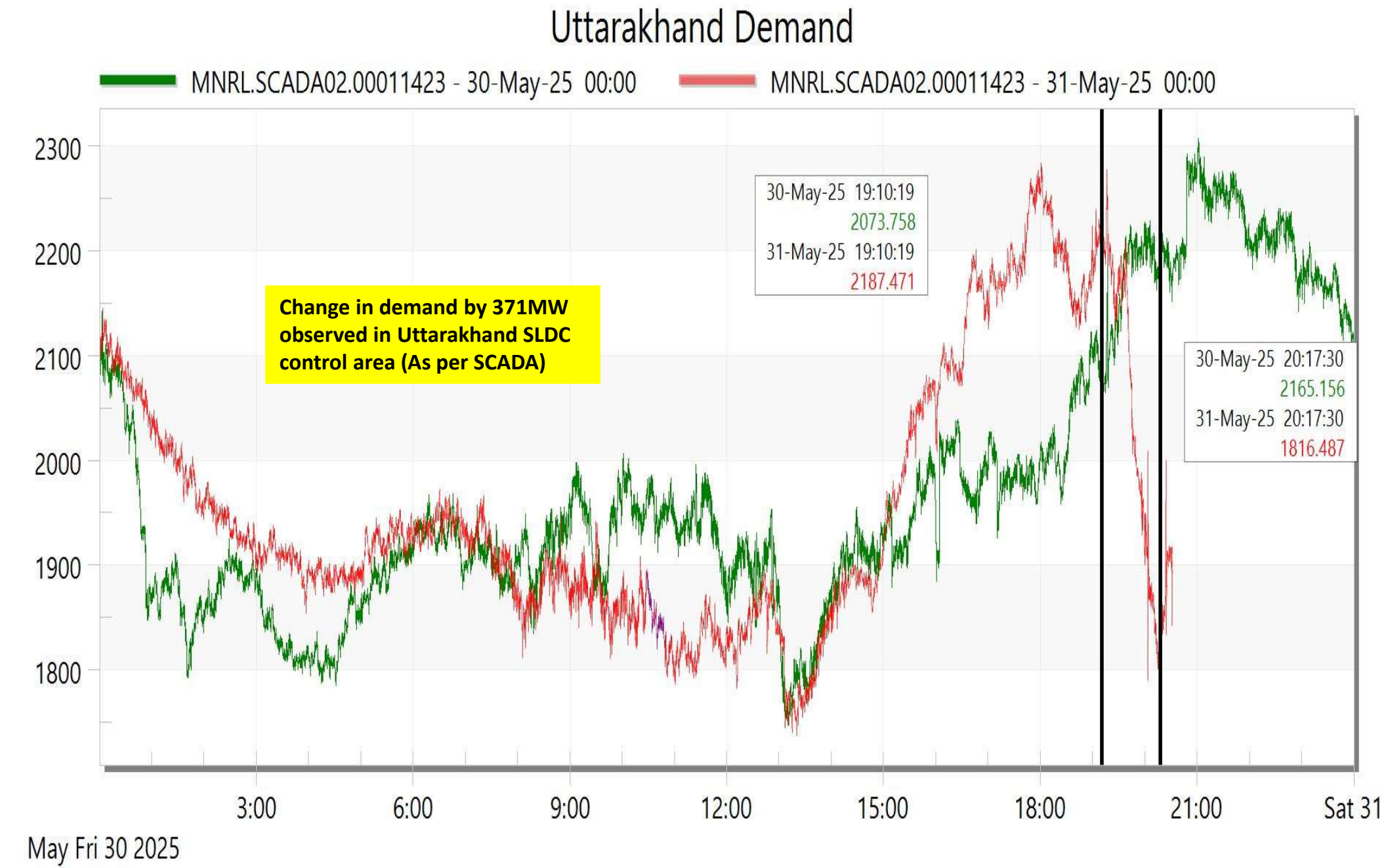
SLD of 220KV C.B Ganj S/s after the event @20:24



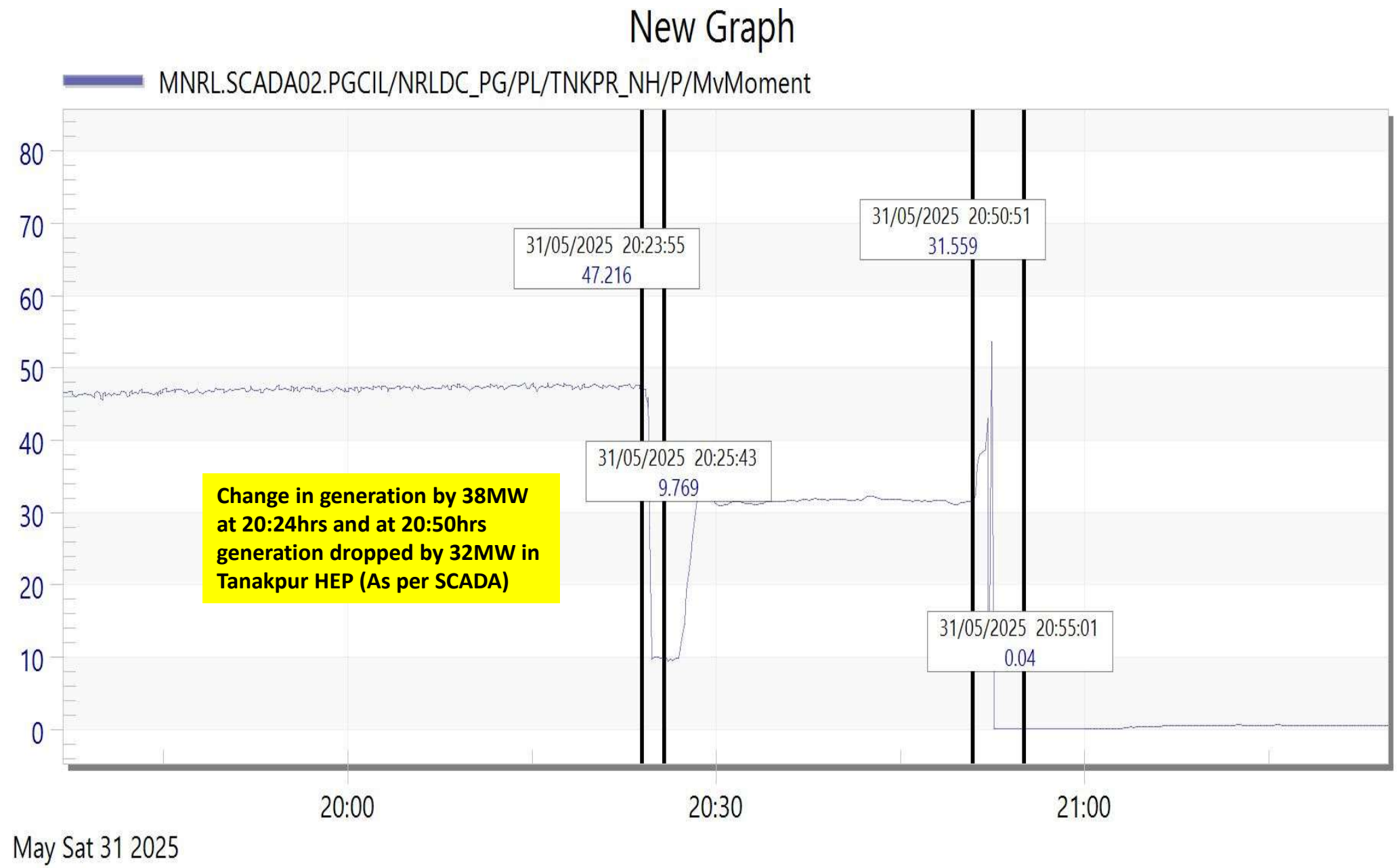
Uttar Pradesh demand during the event



Uttarakhand demand during the event



Tanakpur Generation during the event



PMU Plot of frequency at CBGA(UP)

20:50hrs/31-May-25

PMU Plot of phase voltage magnitude at Bareilly(PG)