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

दिनांक: 14.03.2026

सेवा में
As per attached list of Members and Other invitees

विषय: संरक्षण उप-समिति की 67 वीं बैठक की कार्यसूची |
Subject: Agenda for 67th Protection Sub-Committee Meeting.

संरक्षण उप-समिति की **67 वीं बैठक, दिनांक 18.03.2026 को 10:30 बजे** से **एनआरपीसी सचिवालय, कटवारिया सराय, नई दिल्ली** में आयोजित की जाएगी | उक्त बैठक की कार्यसूची संलग्न है। यह उत्तर क्षेत्रीय विद्युत् समिति की वेबसाइट (**https://nrpc.gov.in/meetings/prsub.html**) पर भी उपलब्ध है | 56 वीं पीएससी बैठक के निर्णयों के अनुसार, आईईजीसी 2023 के सुरक्षा कोड का अनुपालन सुनिश्चित करने के लिए एनआरपीसी सदस्य के अलावा अन्य विद्युत उपयोगिताओं को भी बैठक के लिए आमंत्रित किया गया है। कृपया बैठक मे उपस्थिति सुनिश्चित करें।

The **67th meeting** of the Protection Sub-Committee is scheduled to be held on **18.03.2026** at **10:30 Hrs.** at **NRPC Secretariat, Katwaria Sarai, New Delhi**. The agenda for the meeting is attached herewith. The same is also available on the NRPC website (**https://nrpc.gov.in/meetings/prsub.html**). As per the decisions of the 56th PSC meeting, utilities other than NRPC members have also been invited to the meeting to ensure compliance with the protection code of IEGC 2023. Kindly make it convenient to attend the same.

Digitally signed by
Dharmendra Kumar Meena
Date: 15-03-2026 22:15:24

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निदेशक (संरक्षण)

Agenda of 67th Protection Sub-Committee Meeting (18th March, 2026)

Contents

Agenda for 67th Meeting of Protection Sub-Committee (PSC) of Northern Regional Power Committee

Date and time of meeting	***:***	***18.03.2026 10:30 Hrs.***
Venue	***:***	***NRPC Secretariat, Katwaria Sarai, New Delhi***

Part-A: Agenda by NRPC Secretariat

A.1. Confirmation of minutes of the 66th meeting of the Protection Sub-Committee

A.1.1 66th PSC meeting was held on 28.01.2026. Minutes of the meeting were issued vide letter dated. 25.02.2026. No comment has been received as of now.

Decision required from Forum:

The forum may approve the issued minutes.

A.2. Status of action taken on decisions of 66th Protection Sub-Committee meeting (agenda by NRPC Secretariat)

A.2.1 Status of action taken on the decisions of the 66th PSC meeting is attached as **Annexure-A.I.**

***Decision* required from the Forum**

Status may be deliberated for timely action on issues.

A.3. Submission of protection performance indices of 220 kV and above system, along with reason and corrective action taken for indices less than unity to NRPC Secretariat for month of January & February 2026 (agenda by NRPC Secretariat)

A.3.1 *As per clause 15 (6) of IEGC 2023;*

- *Users shall submit the following protection performance indices of previous month to their respective RPC and RLDC on monthly basis for 220 kV and*

above (132 kV and above in NER) system, which shall be reviewed by the RPC:

*a) The **Dependability Index** defined as* $D = Nc/Nc+Nf$

*b) The **Security Index** defined as* $S = Nc/Nc+Nu$

*c) The **Reliability Index** defined as* $R = Nc/Nc+Ni$

where,

Nc is the number of correct operations at internal power system faults,

Nf is the number of failures to operate at internal power system faults,

Nu is the number of unwanted operations,

Ni is the number of incorrect operations and is the sum of Nf and Nu

- *Each user shall also submit the reasons for performance indices less than unity of individual element wise protection system to the respective RPC and action plan for corrective measures. The action plan will be followed up regularly in the respective RPC.*

A.3.2 In the earlier PSC meeting, it was decided that each utility shall submit the performance **indices of the previous month by the 7th day of the next month.**

A.3.3 Accordingly, the status of the indices reported for the month of **January & February 2026** is attached as **Annexure-A.II.**

A.3.4 Further, based on the submitted data by the utilities as on date, the summary of events that caused indices less than unity is also attached as **Annexure-A.III.**

A.3.5 **Submitted data has the following issues:**

Some Utilities have not submitted data	As mentioned in Annexure-A.II.
Utilities have submitted data for some plants/regions but not all.	As mentioned in Annexure-A.II.
Some utilities have sent data after the cut-off date of the 7th	As mentioned in Annexure-A.II.

Decision required from Forum:

i. The forum may discuss cases where indices are less than 1 and may direct necessary action to be taken.

ii. Forum may direct utilities to submit the performance indices of the previous month by 7th day of the next month, element-wise, along with the reason for indices less than unity and corrective action taken.

A.4. Reporting of protection performance indices of SPS by SLDCs/RLDC (agenda by NRPC Secretariat)

A.4.1 As per clause 16 of IEGC 2023;

- *The users and SLDCs shall report on the operation of SPS immediately and a detailed report shall be submitted within three days of operation to the concerned RPC and RLDC in the format specified by the respective RPCs.*
- *The performance of SPS shall be assessed as per the protection performance indices specified in these Regulations. In case, the SPS fails to operate, the concerned User shall take corrective actions and submit a detailed report on the corrective actions taken to the concerned RPC within a fortnight.*

A.4.2 The agenda was discussed in previous PSC meeting and following has been decided:

i. Utilities 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.

ii. SLDCs/NRLDC may submit protection performance indices for SPS on a monthly basis by 7th date of each month. All utilities shall report their indices to concerned RLDC/SLDCs, then, after verifying SPS operation from all points, SLDC/RLDCs shall report performance indices to the NRPC Secretariat.

iii. Prescribed format (Annexure-A.IV) shall be used for submission of protection performance indices of SPSs by SLDCs/NRDLC after verifying SPS operation from all points in their control area.

A.4.3 Only UPSLDC and HPSLDC shared the same for the month of January, 2026. Further, only UPSLDC, Rajasthan SLDC, HPSLDC, and SJVN shared the same for the month of February, 2026.

A.4.4 **Delhi SLDC, Punjab SLDC, Uttarakhand SLDC, Haryana SLDC & NRLDC** have not shared the same for the SPSs coming in their control area. Though it was decided that RLDC/SLDCs after verifying SPS operation from all points, shall report performance indices to the NRPC Secretariat on a monthly basis by 7th date of each month.

A.4.5 Based on submissions by SLDCs', the status of protection performance indices of SPS for the months of January, 2026 & February, 2026 is attached as **Annexure-A.IV.**

Decision required from Forum:

Forum may direct SLDC/utilities for compliance of following:

I. Utilities and SLDCs shall report on the operation of SPS immediately and a detailed report shall be submitted within three days of operation to the concerned RPC and RLDC.

II. SLDCs/NRLDC may submit protection performance indices for SPS on a monthly basis by 7th date of each month. All utilities shall report their indices to concerned RLDC/SLDCs, then, after verifying SPS operation from all points, SLDCs/RLDC shall report performance indices to the NRPC Secretariat.

III. Prescribed format (Annexure-A.IV) shall be used for submission of protection performance indices of SPSs by SLDCs/NRLDC after verifying SPS operation from all points in their control area.

A.5. Annual protection audit plan for FY 2026-27 (agenda by NRPC Secretariat)

A.5.1 As per clause 15 of IEGC 2023;

- *Annual audit plan for the next financial year shall be submitted by the users to their respective RPC by 31st October. The users shall adhere to the annual audit plan and report compliance of the same to their respective RPC.*

A.5.2 In view of the above, all utilities were requested to submit the annual protection audit plan for FY-2026-27 latest by 31st October 2025 in 63rd, 64th, 65th, 66th PSC & in the 56th TCC & 81st NRPC meeting (held on 29-30 October, 2025).

A.5.3 Accordingly, annual audit plans submitted by utilities have been compiled (enclosed as **Annexure- A.V**).

Decision required from Forum:

Forum may direct utilities that have not submitted an audit plan to submit for FY 2026-27 as the deadline of 31st October 2025 has already passed.

A.6. Third-party protection audit plan (agenda by NRPC Secretariat)

A.6.1 As per clause 15 of IEGC 2023:

All users shall also conduct a third-party protection audit of each sub-station at 220 kV and above (132 kV and above in NER) once in five years or earlier as advised by the respective RPC.

A.6.2 In view of the above, third-party audit plans submitted by utilities have been compiled (enclosed as **Annexure-A.VI)**.

A.6.3 It is worth mentioning that two different states may do a mutual third-party audit as decided in the 58th PSC meeting.

A.6.4 Further, as per received information, a third-party protection auditor has been planned as below by utilities-

Organization where audit is to be done	**Organizations finalized for performing audit**								
	DTL	RVPN	HVPN	UPPTCL	PSTCL	HPPTCL	PTCUL	POWERGRID	External Vendor
DTL	-	-	✓	-	-	-	-	-	-
RVPN	-	-	✓	-	-	-	-	-	-
HVPN	-	✓	-	-	-	-	-	-	-
UPPTCL	-	-	-	-	-	-	-	-	ERDA
PSTCL	-	-	-	-	-	-	-	-	✓
HPPTCL	-	-	-	-	-	-	-	✓	-
PTCUL	-	-	-	-	-	-	-	-	CBIP
UT of J&K	-	-	-	-	-	-	-	✓	-
UT of Ladakh	-	-	-	-	-	-	-	✓	-
UT of Chandigarh	-	-	-	-	-	-	-	-	-
POWERGRID	-	-	-	-	-	✓	-	-	✓

Decision required from Forum:

Forum may direct utilities to update the status of 3rd party protection audit as per the submitted audit plans. Subsequently, the audit reports along with compliance status may be submitted to NRPC Secretariat regularly.

A.7. Discussion on audit reports submitted by utilities and compliance of recommendations of protection audit (agenda by NRPC Secretariat)

A.7.1 As per clause 15 (1) of IEGC 2023*;*

- *All users shall conduct internal audit of their protection systems annually,* ***and any shortcomings identified shall be rectified and informed to their respective RPC****. The audit report along with action plan for rectification of deficiencies detected, if any, shall be shared with respective RPC for users connected at 220 kV and above (132 kV and above in NER).*

A.7.2 As per clause 15 (4) of IEGC 2023*;*

The third-party protection audit report shall contain information sought in the format enclosed as Annexure–1 (IEGC). The protection audit reports, along with **action plan for rectification of deficiencies detected, if any, shall be submitted to the respective RPC and RLDC or SLDC, as the case may be, within a month of submission of third-party audit report.** The necessary compliance to such protection audit report shall be followed up regularly in the respective RPC.

A.7.3 Following utility has submitted the internal audit report based on the audit done at their substations:

S.N.	FY (Audit Date)	Utility	Stations
1	2025-26	RVPN	26 Substations (400kV – Ramgarh, Kankani, Surpura (Jodhpur), Merta) (220kV- Tinwari, Sheo, Sayala, Raodar, Pali, NPH Jodhpur, Jalore, Dhorimanna, Bhinmal, Bhawad, Basni Jodhpur, Barli, Bali, Baithwasia, Dechu, Bhopalgarh, Phalodi, Aau, Boranada, Banar, Danta, Makrana)

2	2025-26	JSW Hydro	KWHEP
3	2025-26	JSW Energy	Barmer
4	2025-26	THDC	Tehri
5	2025-26	RPSCL	Shahjahapur
6	2025-26	AGEL	2 plants (Adani Solar Energy RJ Two Private Limited Adani Green Twenty-Five Limited)
7	2025-26	ReNew	3 Plants (Renew Solar Power Pvt Ltd Renew Surya Ravi Pvt Ltd Renew Solar Energy Jharkhand 3 Pvt Ltd)
8	2025-26	Tata Power	3 Plants (TPGEL Noorsar TPREL Chhayan (300MW) TPTCL Bhanipura (300MW))

A.7.4 Following utilities have submitted reports of 3rd Party audit:

S.N.	**Utility**	**Stations**
1	NHPC	7 Plants (Uri-1, Kishanganga, Chamera-II, Chamera-III, Dhauliganga, Tanakpur, Uri-II)
2	NPL	Nabha (Rajpura)
3	THDC India Ltd	Koteshwar HEP

A.7.5 The following utilities have submitted an action plan on the recommendation of audit team for the Internal (FY25-26) audit:

S.N.	**Utility**	**Plant/Substation**

1	IPGCL	PPS-I, III

A.7.6 The following utilities have submitted action plan on the recommendation of audit team for the external audit:

S.N.	**Utility**	**Plant/Substation**
1	HVPN	Dhanonda
2	JSW Hydro	KWHEP
3	THDC India Ltd	Koteshwar HEP
4	SJVN	NJHPS

A.7.7 AGEL has submitted that 220 kV Switchyard and 33 kV SWGR of Adani Solar Energy RJ One Pvt. Ltd. (SB Energy Six Pvt. Ltd.- Bhadla) is owned by M/S ESUCRL and Solar Blocks are owned by ADANI. Various data has been requested from M/S ESUCRL for the Internal Protection Audit. The audit is yet to be done.

A.7.8 **The above submitted reports and action plan are available at NRPC website: https://nrpc.gov.in/meetings/prsub.html**

Decision required from Forum:

Forum may discuss audit report as well as action taken by utilities on recommendations of audit. Further, other utilities may be directed to submit the protection audit report (for audited S/s as per submitted plan) to NRPC Secretariat and may update the compliance status regularly.

A.8. Tripping of 400kV Rosa-Badaun #2 and Busbar Operation of Bus#1 on 16.02.2026 (agenda by Rosa Power Supply Co. Ltd.)

A.8.1 RPSCL has submitted that on 16.02.2026 there was tripping of U#3 because bus bar operation due to tripping of 400kV Rosa-Badaun Circuit #2.

A.8.2 The bus bar operated due to current being sensed by Relays and PUs of 400 KV Rosa-Badaun Circuit #1, which was under shutdown, taken by M/s OCBTL for faulty insulator replacement**.**

A.8.3 Tripping report of the event shared by RPSCL is attached as **Annexure-A.VII** having the following observation points as below-

I. 400kV Rosa-Badaun Circuit#2 was also tripped on 14/02/2026, Z2 protection. Faulted phase A-B, distance 77 KMs from our end, while 400kV Rosa-Badaun Circuit#1 was under shutdown.

II. Line patrolling was done by M/s OCBTL team. On 10th Feb, their representative also came to our end for the same.

III. 400kV Rosa-Badaun Circuit#2 trip logged twice in relay (once trip & then AR acted), same fault was sensed in the relay of 400kV Rosa-Badaun Circuit#1.

IV. All 03 different relays (Main 1, Main 2, PUs) of 400kV Rosa-Badaun Circuit#1 had sensed the same fault in C phase, whereas line was under shutdown, which triggered the differential protection of busbar#1 (87BB-Z1).

V. Time of incidence of 400kV Rosa-Badaun Circuit#2 tripping & differential protection of bus bar-1 acting is matching means the incident occurred while Circuit#2 tripping only.

VI. Enquired with M/s OCBTL for any incident at the line/tower end but they reported the cause of tripping as tree touching in the charged line. Tree touching is a transient nature fault but line AR also failed at both ends, which is not justify the reason stated by M/s OCBTL.

VII. Probable cause suspected by us that something touched/ came in the vicinity of the shutdown line-1 from the charged line-2. (Conductor broken/faulty insulator/Heavy arcing/Human error etc., since work is going on at the tower) Both lines are in single tower, double circuit system.

A.8.4 M/s OCBTL may also share its comment.

Decision required from Forum:

Members may discuss.

Part-B: Agenda by NRLDC

B.1 Status of remedial actions recommended during previous PSC meeting (agenda by NRLDC)

B.1.1 As per the discussion in previous PSC meetings, necessary remedial actions were recommended based on the analysis and discussion of the grid events. It is expected that necessary actions would have taken place. In view of the same, a mail dt 11.03.2026 has also been sent from NRLDC to constituents requesting to share the status of remedial actions taken. List of points to be discussed in 67th PSC meeting is attached as **Annexure-B.I.** Constituents can email the details via email to NRLDC and NRPC.

Decision required from Forum:

Members may like to discuss.

B.2 Multiple elements tripping events in the Northern Region in the month of January-February 2026 (agenda by NRLDC)

B.2.1 A total of **22** grid events occurred during the month of **January 2026** of which **17** are of GD-1 category, **05** are of GI-2 category and **03** are of GI-1 Category. Further, a total of **14** grid events occurred in the month of **February 2026** of which **12** are of GD-1 Category and **01** is of GI-2 Category and **01** is of GI-1 Category. The tripping report of all the events have been issued from NRLDC.

B.2.2 Maximum delayed clearance of fault observed in event of tripping event at Rajasthan RE Complex, 400/220kV RAPP_D(NP) and 400kV Tehri PSP(TH) at 11:33 hrs on 16th February 2026 (As per PMU at RAPP-C(NP), consecutive three 3-phase voltage dips were observed with voltage recovery time of 80 ms, 4360 ms and 80 ms).

B.2.3 Delayed clearance of fault (more than 100ms for 400kV and 160ms for 220kV system) was observed in a total **11** events out of **36** grid events that occurred in the months. In **08** (no.) of grid events, there was no fault in the grid.

B.2.4 Remedial actions taken by constituents to avoid such multiple elements tripping may be shared.

As per IEGC clause 37.2 (c), Disturbance Recorder (DR), station Event Logger (EL), Data Acquisition System (DAS) shall be submitted within 24 hrs of the

event and as per IEGC clause 37.2 (e), the user shall submit a detailed report in the case of grid disturbance or grid incidence within one (1) week of the occurrence of event to RLDC and RPC.

B.2.5 Members may take necessary preventive measures to avoid such grid incidents/disturbances in future and report actions taken by respective utilities in the OCC & PSC forum. Moreover, utilities may impress upon all concerned to provide the Preliminary Report, DR/EL & Detailed Report of the events to RLDC in line with the regulations.

B.2.6 The list of major tripping events that occurred during **January-February 2026** is attached as **Annexure-B.II**. Concerned constituents/utilities are requested to share the detailed analysis of the tripping elements along with the status of remedial action taken/to be taken.

B.2.7 Utilities are requested to prepare a detailed analysis report and present the event details during 67th PSC meeting. Events involving more than one utility may be jointly prepared and presented.

Decision required from Forum:

Members may like to discuss.

B.3 Frequent elements tripping during January-February 2026 (agenda by NRLDC)

B.3.1 The following transmission elements were frequently tripping during the month of **January-February 2026**:

S. NO.	Element Name	No. of forced outages	Utility/SLDC
1	220 KV Debari(RS)-RAPS_A(NP) (RS) Ckt-1	8	Rajasthan/NPCIL
2	220 KV Sitarganj(PG)-CBGanj(UP) (PG) Ckt-1	8	UP/PGCIL
3	220 KV RAPS_B(NP)-Sakatpura(RS) (RS) Ckt-1	7	Rajasthan/NPCIL
4	400 KV Anpara_B(UP)-Sarnath(UP) (UP) Ckt-2	6	UP
5	400 KV Uri_1(NH)-Amargarh(NRSS XXIX) (NRSS XXIX) Ckt-1	6	NHPC/INDIGRID
6	250 MW (PSP) TEHRI HPS - UNIT 7	6	Tehri PSP
7	220 KV RAPS_A(NP)-Sakatpura(RS) (RS) Ckt-2	5	Rajasthan/NPCIL
8	250 MW (PSP) TEHRI HPS - UNIT 6	5	Tehri PSP
9	400 KV Shree Cement(SCL)-Merta(RS) (PG) Ckt-1	5	SCL/Rajasthan/ PGCIL
10	400 KV Suratgarh(RVUN)-Bikaner(RS) (RS) Ckt-1	4	Rajasthan

B.3.2 List of tripping is attached as **Annexure-B.III**.

B.3.3 It may be noted that frequent tripping of such elements affects the reliability and security of the grid. Hence, **utilities are requested to analyse the root cause of the tripping and share the remedial measures taken/being taken in this respect.**

Decision required from Forum:

Members may like to discuss.

B.4 Details of tripping of Inter-Regional lines from Northern Region for January-February 2026 (agenda by NRLDC)

B.4.1 A total of **18** inter-regional lines tripped in the month of **January-February 2026**. The list is attached at **Annexure-B.IV**. The status of receipt of preliminary reports, DR/EL within 24hrs of the event and fault clearing time as per PMU data has also been mentioned in the table. The non-receipt of DR/EL & preliminary report within 24hrs of the event from SLDCs / ISTS licensees / ISGSs is in violation of regulation 37.2(c) of IEGC and regulation 15(3) of CEA Grid Standards. As per regulations, all the utilities shall furnish the DR/EL, flag details & preliminary report to RLDC/RPC within 24hrs of the event. They shall also furnish the detailed investigation report within 7 days of the event if the fault clearance time is higher than that mandated by CEA (Grid Standard) Regulations.

Decision required from Forum:

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

B.5 Status of Bus bar protection (agenda by NRLDC)

B.5.1 Clause - 4 in schedule - V of Central Electricity Authority (Technical Standards for Construction of Electrical Plants and Electric Lines) Regulations, 2022 reads as

"Bus bar protection and local breaker backup protection shall be provided in 220kV and higher voltage interconnecting substations as well as in all generating station switchyards".

B.5.2 During analysis of many grid incidents/disturbances, it has been found that the Busbar protection at the affected substation was not present or non-operational, which resulted in a considerable increase in both the number of affected elements and fault

clearance time. Accordingly, it becomes critical to monitor and keep Busbar protection at all the 220 kV and above voltage level substations healthy and operational.

B.5.3 Continuous follow-ups are being been done at OCC & PSC Forum to expedite the commissioning of bus bar protection at 220kV & above stations and to ensure their healthiness. On the basis of details received till date, it is observed that the status of bus bar protection has been improved; however, further improvement is desired.

B.5.4 Constituent-wise status of bus bar protection where bus bar protection is either not installed or installed but not operational, along with the present status as per details received from constituents, is attached as **Annexure-B.V** .

B.5.5 Constituents are requested to share the present status of remedial action taken/to be taken regarding commissioning and healthiness of bus bar protection at 220kV & above substations and also expedite the implementation of bus bar protection.

Decision required from Forum:

Members may discuss.

B.6 Recent SPS Operations in the Rajasthan control area during solar hours (agenda by NRLDC)

B.6.1 In the recent past, three events of SPS operations occurred in Rajasthan control area during solar hours. As reported, brief descriptions of the events are as follows:

I. On 09.03.2026 at 14:27 hrs, 400 kV Hindaun(RS)-Chhabra(RVUN) (RS) Ckt-1 tripped due to R-N phase to ground fault (Relay indication: Hindaun end-Z-2, Distance 269.7KM, Fault current 1.266kA,/CTPP END-Z-I, Distance-27.4KM, Fault current-8.6kA), which further resulted in tripping of 250 MW Chhabra Unit-4 on SPS operation, as the 400 kV Bhilwara (RS) – Chhabra (RVUN) Ckt-1 was already under planned shutdown since 11:29 hrs. However, as per SPS logic, two units at Chhabra TPS should have tripped (Why did the other unit at Chhabra TPS not trip on SPS operation?). As per SCADA, approx. 161MW of generation loss was observed.

II. On 11.03.2026 at 14:45 hrs, a fault was observed on 220 KV Ajmer- Beawar Line and the line tripped on Distance Protection. CB Tripped on Zone-I Fault,

from Beawar end only meanwhile SPS also operated at 400 KV GSS Ajmer, resulting in the tripping of the following elements: 220 KV Ajmer- Kishangarh, 220 KV Ajmer -Bherunda-I &II Ckts, 220 KV Ajmer-Ajmer I &II Ckts, 400/220KV 315 MVA ICT-I (Alstom) at Ajmer(RS). As per SCADA, approx. 559 MW load loss occurred (Why did such a large quantum of load loss occur even after SPS operation?)

III. On 11.03.2026 at 11:41 hrs, both the 315 MVA ICT's at 400/220kV Bikaner (RS) s/s tripped on overload during ramp up of solar generation. Accordingly, SPS has operated, resulting in tripping of load feeding lines, namely 220kV Bikaner- Nokhra and 220KV BKN-Sridungargarh. Moreover, the solar generation from 220KV Interconnector-I Line, 220kv Interconnector-II Line, 220KV Bikaner-Gajner Line-I, and 220KV Bikaner-Gajner Line-II could not be evacuated due to tripping of ICT's. per SCADA generation loss 590 MW and load loss 140 MW was observed (SPS tripping logic was based on "tripping" of transformer; logic need to be modified based on "loading" of transformer in place of "tripping" of transformer)

B.6.2 In view of the above, Rajasthan is requested to present a detailed tripping report of the above three events along with the remedial action taken.

Decision required from Forum:

Members may discuss.

B.7 Mock testing of System Protection Schemes (SPS) in Northern Region (agenda by NRLDC)

B.7.1 As per IEGC clause 16.2

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

B.7.2 As per IEGC clause 16.3

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

B.7.3 There are 60 numbers of System Protection Schemes (SPS) approved in the Northern Region. These SPS are implemented at major generation complexes, important evacuation transmission lines and ICTs which are N-1 non-compliant. System Protection Scheme Document of Northern Region has been revised/updated on 31st January, 2026

B.7.4 SPS is designed to detect abnormal system conditions and take predetermined, corrective action to preserve system integrity and provide acceptable system performance. Therefore, the correct operation of SPS as per the designed logic is important to serve its purpose. To ensure this, mock testing of SPS needs to be conducted at regular intervals. Clause 16.2 of IEGC 2023 also mandates the mock testing of SPS for reviewing SPS parameters & functions, at least once a year.

B.7.5 In this regard, communication has already been sent to constituents through NRLDC letter dated 01.05.2024, 21.02.2025, 05.03.2025, 04.04.2025 & 28.05.2025 and continuous follow-up is being done in OCC & PSC meetings since May 2024.

B.7.6 Status of mock testing of all the SPS in NR is attached as **Annexure-B.VI.**

B.7.7 Status of follow-up actions w.r.t. some of the SPS are as follows:

i. **SPS of HVDC Rihand-Dadri:** During mock testing of SPS of HVDC Rihand-Dadri on 20.03.2025, issues i.e., faulty SPS hardware at Singrauli TPS (NTPC) and no receipt of SPS signal at 220/132kV Ratangarh(RS) were identified. Further, during the recent operation of SPS on 21.05.2025 in the incident of outage of both poles, the desired SPS actions i.e., generation backdown at Singrauli TPS and load relief in UP, Delhi, Haryana & Punjab, were not observed. Desired load/generation relief is important to ensure the security and reliability of the grid during such a contingency. As per details received, the SPS signal was sent to all the mapped stations from the POWERGRID end; however either due to non-receipt of signal or error in

SPS system at load/generation, SPS action didn't occur. NRLDC vide letter dated 02.07.2025, requested POWERGRID and Singrauli NTPC to take necessary remedial measures and make the complete SPS system healthy.

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

Discussion during 237th OCC meeting:

a) NRLDC requested NTPC Singrauli and POWERGRID to share the details of necessary corrective actions taken/planned to be taken to ensure the healthiness of SPS system at Singrauli TPS and load stations.
b) Representative from NTPC informed that existing SPS system at Singrauli TPS is defective, and procurement work has been initiated. NRLDC requested NTPC to share the tentative timeline for completion of work and to expedite the remedial actions for early restoration of SPS system at Singrauli TPS.
c) Regarding issues at load stations, POWERGRID agreed to take necessary actions in coordination with the site stations.
d) Further, NRLDC also informed that mock testing of SPS of HVDC Rihand-Dadri has been scheduled tentatively on 19.11.2025. Concerned members were requested to ensure the readiness and share the details of coordinators.

SPS mock testing of HVDC RIhand-Dadri was conducted successfully on 19.11.2025. SPS command didn't receive at 220kV Muradnagar(UP), 220kV Merta(RS), 220kV Kota Sakatpura(RS), 220kV Dhanonda(HR) and Singrauli TPS(NTPC). SPS system at Rihand HVDC, Dadri HVDC and at the remaining load and generating stations are healthy.

During 66th PSC meeting, POWERGRID(NR-1) representative informed that action is being taken and issues will be resolved by 15.02.2026. NTPC representative informed that communication card is faulty at Singrauli end and procurement is in progress, however this issue will be resolved by Dec'26. NRLDC representative

emphasised that it is essential to make SPS healthy before peak summer season 2026.

POWERRGID, Singrauli(NTPC) and other concerned may share the details of actions taken/planned to be taken to rectify the issues in the HVDC Rihand-Dadri SPS system.

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

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

In the 236th OCC meeting, SLDC-Rajasthan confirmed that mock testing of the automatic load shedding part of the SPS has been conducted.

Discussion during 237th OCC meeting:

a) NRLDC representative requested Rajasthan to share the mock test report of the automatic load shedding part of the SPS.
b) RVPNL agreed to share the mock test report w.r.t. automatic load shedding part of the SPS at the earliest.

Details haven't been received yet. Rajasthan is requested to share the details at the earliest possible.

iii. **SPS of 765kV Agra-Gwalior D/C:** Mock testing of the SPS was conducted on 10.10.2025. During the testing, it was observed that there is communication issue at Bhiwadi(PG), Bamnauli(DTL), Kota, Debari, Chittorgarh, Ratangarh, Nun-amajra, Safidon, Ajitwal, Dandhari-II, Ablowal substations.

NRLDC requested all the concerned states to submit the mock test report of their respective control area. Details have been received from Delhi, Rajasthan and Punjab. UP, BBMB, Haryana and POWERGRID have shared the partial details.

Further, POWERGRID was requested to share the details of actions taken/ planned to be taken to resolve the issues in SPS system.

During 237th OCC meeting, POWERGRID was requested to take expeditious corrective actions to rectify the issues and make the SPS healthy and operational at all the stations.

NRLDC has also sent a letter dated 28.11.2025 to POWERGRID for expeditious corrective actions and make the complete SPS system healthy and operational.

During 66th PSC meeting, POWERGRID(NR-1) representative informed that the communication issue at Bhiwadi(PG) was already addressed. Action is being taken and issues will be resolved by 15.02.2026.

POWERRGID may share the details of actions taken / planned to be taken to rectify the issues in 765kV Agra-Gwalior D/C SPS system.

iv. **SPS of 500kV Mundra-Mahindergarh:** Mock testing of the SPS was conducted on 11.03.2026. During the testing, communication links were found to be healthy. Further, deliberation needs to be done regarding wiring of load to be tripped.

NRLDC requested all the concerned states to submit the mock test report of their respective control area. Details have been received from Delhi, Rajasthan and Punjab. UP, BBMB, Haryana and POWERGRID have shared the partial details.

B.7.8 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.

B.7.9 Further, during 60th PSC meeting, it was decided that the SPS that are not required from a constraint point of view will not be disabled to keep the assets associated with SPS healthy and will be treated as “reserve SPS”, as may be required during prolonged outages of any system element. In case of reserve SPS for transformers (where logic was based on “tripping” of the transformer), the logic need to be modified based on “loading” of the transformer in place of “tripping” of transformer.

B.7.10 During 64th PSC meeting, MS-NRPC suggested that assets of “reserve SPS” can be used in new SPS to be commissioned and hence they may be removed from existing SPS list. PSC forum suggested to remove the above mentioned 06 ”reserve SPS” schemes.

B.7.11 During 238th OCC meeting, SLDC UP informed that SPS for Transformers at 400KV Sultanpur (UPPTCL) and Gorakhpur(UPPTCL) is required as loading exceeded (N-1) limit during summer of 2025, hence SPS may be kept in service. SLDC Delhi informed that SPS for Transformers at Bamnauli (DTL) may be kept in service until 315 MVA ICT is revived, which currently is not in service.

B.7.12 During 65th & 66th PSC meeting, it was decided to disable and remove the following SPS:

i. SPS for Transformers at Ballabhgarh (PG)
ii. SPS for Transformers at 400KV Muzaffarnagar (UP)
iii. SPS for Transformers at 400KV Greater Noida (UPPTCL)

iv. SPS for Reliable Evacuation of Ropar Generation

v. SPS for contingency due to tripping of evacuating lines from Narora Atomic Power Station

B.7.13 **Implementation of SPS in POWERGRID substations in the Rajasthan control area:**

SPS stage-wise logic (received from Rajasthan) for SPS of ICTs at POWERGRID stations in Rajasthan control area was discussed in 64th PSC meeting. The time delay logic proposed by Rajasthan was found OK and POWERGRID was requested to start the implementation process of the SPS at the designated stations.

NRLDC, through mail dated 02.12.2025 requested POWERGRID to implement the SPS at designated stations i.e., 400/220kV Kankroli(PG), Bassi(PG), Neemrana(PG), Kotputli(PG), Bhiwadi(PG), Jaipur South(PG) and Sikar(PG) at the earliest possible.

During 66th PSC meeting, POWERGRID representative informed that SPS (case-1 & 2) at designated stations i.e., 400/220kV Kankroli(PG), Bassi(PG), Neemrana(PG), Kotputli(PG), Bhiwadi(PG) and Sikar(PG) will be installed by 15.02.2026. Case 3 & 4 of 400/220kV Bassi(PG), Kotputli(PG), and Sikar(PG) will need time. SPS at Jaipur South is not required.

POWERGRID may share the update regarding implementation of above SPS. Mock testing report of the SPS also needs to be shared after implementation.

Decision required from Forum:

Members may like to discuss.

B.8 Confirmation regarding implementation of proposed Overvoltage protection setting by committee (agenda by NRLDC)

B.8.1 A committee was formed by NRPC during 52nd PSC meeting held on 20th September 2024 to review the Overvoltage Protection settings of 400kV and 765kV transmission lines in the Northern Region. This committee was formed for compliance of the recommendation given by the committee formed by CEA for analysis of Grid incident that occurred on 17th June 2024. The committee reviewed the Overvoltage Protection settings of 400kV and 765kV transmission lines in the Northern Region, finalized the protection settings for overvoltage protection and proposed the revised overvoltage protection settings. The proposed Overvoltage protection settings were discussed and

approved in 58th Protection Sub-Committee (PSC) meeting held on 26th March 2025. The PSC forum requested all to implement the proposed overvoltage protection settings in 400kV and 765kV transmission lines in their respective control area.

B.8.2 Further, the agenda in this regard was again discussed in 230th OCC meeting and 60th, 61st, 62nd, 63rd, 64th, 65th & 66th PSC meetings.

B.8.3 Status of confirmation received from BBMB, Rajasthan, UP, Haryana, Punjab (Partial), Delhi, NHPC, POWERGRID, Uttarakhand, HP, NUPPL, SJVN, APCPL, NTPC & INDIGRID.

B.8.4 However, status of confirmation from **Punjab (Partial) and J&K** are yet to be received (**7 lines pending out of 683 lines**).

B.8.5 All members were requested to ensure the implementation of proposed overvoltage settings in their control area at the earliest to avoid any unwanted tripping during the upcoming high-demand scenario. In this regard, e-mail communication was also sent dated 07.05.2025 & 03.06.2025 to all members.

B.8.6 The status of implementation of proposed Overvoltage protection setting in transmission lines is attached as **Annexure-B.VII**.

B.8.7 The winter season in Northern region begins from mid-October onwards and remains till February, and the challenges faced during these months are well known to all the utilities. During winter with NR load reducing significantly, the lines become lightly loaded, leading to high voltages in Grid. Hence, vide NRLDC letter dated 17.09.2025, it was advised to ensure the timely implementation of revised approved overvoltage protection settings in all the 400 & 765kV transmission lines to avoid any unwanted tripping of transmission lines on over-voltage.

B.8.8 Therefore, all the concerned utilities are once again advised to ensure expeditious implementation of the proposed Overvoltage Protection settings in 400kV and 765kV transmission lines in their respective control area and send a confirmation regarding this to NRPC and NRLDC.

Decision required from Forum:

Members may like to discuss.

B.9 Status of connected load relief quantum of UFR and df/dt (agenda by NRLDC)

B.9.1 UFRs and df/dt are envisaged to take care of sudden contingencies arising out of the

outage of generation stations or the separation of inter-regional lines. UFRs settings are for steady state operation of the Grid at a considerably low frequency and df/dt settings are for dynamic change when frequency falls suddenly with jerks.

B.9.2 As per IEGC 2023 Clause 29.(13)(d),

"SLDC shall ensure that telemetered data of feeders (MW power flow in real time and circuit breaker status) on which UFR and df/dt relays are installed is available at its control centre. SLDC shall monitor the combined load in MW of these feeders at all times. SLDC shall share the above data with the respective RLDC in real time and submit a monthly exception report to the respective RPC…"

B.9.3 In view of the above, SLDCs are requested to share the list of feeders mapped for UFR and df/dt along with feeder-wise planned load relief quantum. SLDCs are also requested to share details of mapped/telemetered stage-wise quantum of load relief on UFR and df/dt operation against the planned quantum. Data is to be furnished in the format attached as **Annexure-B.VIII**.

B.9.4 As per IEGC 2023 Clause 30.(1),

"The National Reference Frequency shall be 50.000 Hz and the allowable band of frequency shall be 49.900-50.050 Hz. The frequency shall be measured with a resolution of +/-0.001 Hz…."

B.9.5 In view of recent events due to UFR operation, major review of UFR and df/dt settings is required to avoid unwanted tripping of feeders and load loss in states. SLDCs are requested to review UFR settings of the relays (whether frequency settings can be done upto three decimal places or not) and further take up for replacement of the relays, if necessary. SLDCs are also advised to look into any issue in transducer etc to avoid any unwanted tripping on UFR operation in future.

Decision required from Forum:

Members may like to discuss.

Part-C: Agenda for final approval of protection settings by PSC Forum for FTCs which have been provisionally allowed by NRLDC/SLDCs

C.1. First Time Charging of transmission lines/Bays/Transformer/Reactor etc. by NRLDC

C.1.1 NRLDC has submitted the FTCs allowed in month of **January 2026 & February, 2026**. The same may be found on NRPC website: **https://nrpc.gov.in/meetings/prsub.html**

C.1.2 All settings for the elements given FTCs in the months of **January 2026 & February, 2026** accessed from NRLDC portal are available at NRPC website: **https://nrpc.gov.in/meetings/prsub.html**

C.1.3 Accordingly, protection settings of the elements given FTCs in the **January 2026 & February, 2026** are put up for final approval of PSC Forum.

Decision required from Forum:

Members may refer the settings for any correction required. ***Members may also check whether charging of these elements require any change in protection setting at their end.*** *Accordingly, settings may be approved by Forum.*

C.2. First Time Charging of transmission lines/Bays/Transformer/Reactor etc. by SLDCs

C.2.1 UPSLDC has shared the list and protection settings of elements (≥220kV) for which Provisional approval was given for FTC from UPSLDC level and charged in the month of **February, 2026**. The same may be found on NRPC website: **https://nrpc.gov.in/meetings/prsub.html**

C.2.2 Similarly, HPSLDC has shared the list and protection settings of elements (≥220kV) for which Provisional approval given for FTC from HPSLDC level in the month of **January, 2026.** The same may be found on NRPC website: **https://nrpc.gov.in/meetings/prsub.html**

C.2.3 The above proposals are put up for final approval of PSC Forum.

Decision required from Forum:

Members may refer the settings for any correction required. ***Members may also check whether charging of these elements require any change in protection setting at their end.*** *Accordingly, settings may be approved by Forum.*

Part-D: Agenda for approval of protection settings of elements by PSC Forum for which revision in protection settings have been done by utilities

D.1. Approval of Revised Zone-3 Settings of 400 kV Koteshwar–Tehri Circuit-3 (Line W-3) of Tehri PSP (agenda by THDC)

D.1.1 Tehri PSP (THDC ltd.) has submitted that consequent upon charging of the 400 kV Koteshwar (PG)–Rishikesh line (38.5 km), POWERGRID requested a revision of the Zone-3 distance protection settings of 400 kV Koteshwar–Tehri Circuit-3 (Line W-3) at the THDC PSP end.

D.1.2 Accordingly, the following revised setting values of Zone-3 impedance provided by THDC EM Design department have been implemented at the site on 19.02.2026, while keeping all other setting parameters unchanged

Previous Settings	**Updated Settings**	**Relay**
Z3: 5.334 Ohm	Z3: 9.962 Ohm	Micom P444
Z3 Gnd. Reach: 5.330 Ohm	Z3 Gnd. Reach: 9.960 Ohm	Micom P443
Z3 Ph. Reach: 5.330 Ohm	Z3 Ph. Reach: 9.960 Ohm	Micom P443

D.1.3 The revised relay setting file, as downloaded from the relay after implementation at site (with the revised changes marked in yellow), is enclosed herewith as **Annexure-**

D.1. The calculation sheet shared by THDC has also been made available in the same annexure.

D.1.4 Accordingly, the same may be deliberated and put up for final approval of PSC Forum for updated settings.

Decision required from Forum:

Members may refer to the settings for any corrections required. Accordingly, settings may be approved by the Forum.

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23	Adani Hybrid Energy Jaisalmer Four Ltd.	
24	Adani Renewable Energy (RJ) limited Rawara	
25	Adani Solar Energy Jaisalmer One Pvt. Ltd._450MW (Solar)	
26	Adani Solar Enegry Four Private Limited	
27	Adani Solar Energy Jaisalmer Two Private Limited	
28	Adani Solar Energy Jaisalmer Two Private Limited Project Two	
29	SB ENERGY FOUR PRIVATE LIMTED, Bhadla	
30	SB Energy Six Private Limited, Bhadla	
31	Adani Solar Enegry Jodhpur Two Limited, Rawara	
32	Adani Solar Energy RJ Two Pvt. Ltd. (Devikot)	
33	Adani Solar Energy RJ Two Pvt. Ltd. (Phalodi)	
34	Adani Green Energy Twenty Four Limited	
35	ADANI GREEN ENERGY TWENTY FIVE LIMITED	
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48	Ayana Renewable Power Three Private Limited	Venkatraman@ayanapower.com; rajeshshukla@ayanapower.com;
49	Ayaana Renewable Power One Pvt. Ltd.	
50	Azure Power Forty One Pvt limited	sourin.nandi@azurepower.com;
51	Azure Power Forty Three Pvt. Ltd._RSS	manohar.reddy@azurepower.com;
52	Azure Power Forty Three Pvt. Ltd._PSS	manohar.reddy@azurepower.com;
53	Azure Maple Pvt. Ltd.	sourin.nandi@azurepower.com;
54	AZURE POWER INDIA Pvt. Ltd., Bhadla	yogesh.kumar@adani.com;
55	Azure Power Thirty Four Pvt. Ltd.	manohar.reddy@azurepower.com;
56	Clean Solar Power (Jodhpur) Pvt. Ltd.	simhadri.kesapragada@herofutureenergies.com;
57	Clean Solar Power (Bhadla) Pvt. Ltd	atul.tomar@herofutureenergies.com; sushant.sinha@herofutureenergies.com;
58	Eden Renewable Cite Private Limited	dejendra.sharma@eden-re.com; operation.ERCPL@eden-re.com;
59	Eden Renewable Alma Pvt. Ltd.	
60	Energizent Power Private Limited	Bhawya.chauhan@o2power.in;
61	Grian Energy private limited	mehul.sharma@amplussolar.com;
62	Juna Renewable Energy Pvt. Ltd.	rusharma@acciona.com; npalakshaiah@acciona.com
63	Juniper Green Cosmic Private Limited	ashok.sharma@junipergreenenergy.com
64	Juniper Nirjara Energy Private Limited	om.cosmic@junipergreenenergy.com
65	Karinsar Solar Plant NHPC Ltd	bikanerspp@nhpc.nic.in
66	Mega Surya Urja Pvt. Ltd. (MSUPL)	pankaj.vaidya@seit.co.in; niraj.shah@seit.co.in;
67	Megasolis Renewables Pvt Ltd(MSRPL)	dhirendra.bhati@seit.co.in
68	AURAIYA Solar	rajivgupta@ntpc.co.in;
69	DADRI SOLAR	
70	SINGRAULI SOLAR	
71	Anta Solar	
72	Unchahar Solar	
73	NTPC Devikot Solar plant_240MW	
74	NTPC Kolayat_400kV	
75	Nedan Solar NTPC	
76	NTPC Nokh Solar	
77	NTPC Nokhra_300MW	
78	One Volt energy Pvt. Ltd.	amarjeet.thakur@amplussolar.com;
79	ReNew Solar Energy (Jharkhand Three) Private Limited	purnendu.chaubey@renew.com; kailash.pandey@renew.com;
80	RENEW SOLAR POWER Pvt. Ltd. Bhadla	
81	Renew Surya jyoti Pvt. Ltd.	
82	Renew Surya Partap Pvt. Ltd.	
83	Renew Surya Ravi Pvt. Ltd.	
84	Renew Surya Roshni Pvt. Ltd.	
85	Renew Surya Vihan Pvt. Ltd.	
86	Renew Hans Urja Pvt Ltd.	
87	RENEW SOLAR POWER Pvt. Ltd. Bikaner	

88	Neemba Solar Plant Renew Surya Vihaan Pvt. Ltd.	
89	Renew Sun Bright Pvt. Ltd. (RSBPL) (sembcorp)	
90	Solzen Urja Private Limited	Neeraj.Verma@energy-sel.com
91	ReNew Solar Urja Private Limited	anilbhai.chaudhari@indigrid.com, rohit.kashav@indigrid.com,
92	Renew Surya Ayaan Pvt. Ltd.	hiteshbhai.shiyal@indigrid.com
93	Rising Sun Energy-K Pvt. Ltd.	tushar.gahlot@risingsunenergy.in;
94	Serentica Renewables India 4 Private Limited	rajendra.gupta@serenticaglobal.com, regulatory@serenticaglobal.com, Serentica_Asset_NR@sterlitepower.com, kunal.kaistha@serenticaglobal.com, atul.pachauri@serenticaglobal.com, lalit.shukla@serenticaglobal.com, ashwary.sharma@serenticaglobal.com;
95	Serentica Renewables India 5 Private Limited	
96	Khidrat Renewable energy Pvt ltd.	
97	SJVN Green Energy Limited	cso.sgel@sjvn.nic.in
98	Tata Power Green Energy Ltd. (TPGEL)	vinod.kumar@tatapower.com;
99	Tata Power Renewable Energy Ltd. (TPREL)	dhmahabale@tatapower.com; imran.khan@tatapower.com;
100	Thar Surya Pvt. Ltd.	vivek.reddy2@enel.com; mahendra.vishnoi2@enel.com
101	TP Surya Pvt. Ltd.	sivanarayana@tatapower.com; sagar.potdar@tatapower.com;
102	Banderwala Solar Plant TP Surya Ltd.	arun.sahoo@tatapower.com;
103	Adept Renewable Technologies Pvt. Ltd.	kak@evrenenergy.com;
104	Transition Cleantech Services Private Limited	
105	Transition Energy Services Private Limited	
106	Transition Green Energy Private Limited	
107	Transition Sustainable Energy Services Private Limited	
108	Transition Sustainable Energy Services One Pvt Ltd	
109	Gorbea Solar Pvt Ltd	richpal.singh@zelestra.energy; kalpesh.umaretia@zelestra.energy; varun.nadarajan@zelestra.energy; selva.kumar@zelestra.energy;
110	Prerak Greentech Private Limited	ikumpawat@evrenenergy.com

Address List of ISTS Transmission Licensees (other than NRPC members)

S. N.	TBCB/ Licensee Name	Owner Company	E-mail ID
1	Gurgaon Palwal Transmission Ltd	INDIGRID	abhishek.kukreja@indigrid.com pranav.rathore@indigrid.com
2	NRSS-XXIX Transmission Ltd		
3	Parbati Koldam Transmission Company Limited		
4	Patran Transmission Company Ltd		
5	NRSS-XXXI(B) Transmission Ltd	SEKURA	neeraj.verma@energy-sel.com
6	NRSS XXXVI Transmission Ltd	TATA POWER	rajnishmehrotra@tatapower.com rajnishm1963@yahoo.co.in
7	AD Hydro Power Limited	-	sumitgarg@lnjbhilwara.com
8	Aravali Power Company Private Limited		amit.hooda01@apcpl.co.in
9	POWERLINKS TRANSMISSION LIMITED (PTL)	-	sandeep.shukla@tatapower.com
10	Adani Transmission India Limited	ADANI	Sunil.Raval@adani.com, Sumeet.Sharma@adani.com enocaesloutage@adani.com enocenergysolutions@adani.com
11	Bikaner Khetri Transmission Limited		
12	Fatehgarh Bhadla Transmission Limited		
13	Kishtwar Transmission Limited	RESONIA	Secretarial.grid@sterlite.com

Status of action taken on decisions of 66th PSC

S.N.	Agenda No.	Agenda/ Issue	Decision of 65th PSC	Status of action Taken
1	A4	Reporting of protection performance indices of SPS by SLDCs/RLDC (agenda by NRPC Secretariat)	SLDCs/NRLDC may submit protection performance indices for SPS on monthly basis by 7th date of each month. All utilities shall report their indices to concerned NRLDC/SLDCs, then after verifying SPS operation from all points, SLDCs/NRLDC shall report performance indices to NRPC Secretariat. Prescribed format (Annexure-A.IV) shall be used for submission of protection performance indices of SPSs by SLDCs/NRDLC after verifying SPS operation from all points in their control area.	1. Only UPSLDC and HPSLDC shared the same for the month of January, 2026. 2. Only UPSLDC, Rajasthan SLDC, HPSLDC, SJVN shared the same for the month of February, 2026.
2	A12	Recognition of Protection Pioneers in Northern Region (agenda by NRPC Secretariat)	A Committee having members from NRPC Secretariat, and NRLDC may be constituted under Chairmanship of Director (Protection), NRPC for finalizing selection criteria, application format, scrutiny of applications, recommendation for recognition etc. for both categories i.e. individual as well as utility.	Nominations have been asked from the NRLDC vide email dated 09.03.2026 in order to proceed for further.

Status of action taken on decisions of 66th PSC

3	B2	Multiple elements tripping events in Northern region in the month of December 2025 (agenda by NRLDC)	***Multiple elements tripping at 220/132kV Raebareilly(PG) at 12:25 hrs on 02.12.2025-*** Forum recommended that third party protection audit need to be done at Unchahar(NTPC) for a thorough review. (Action: NTPC)	NTPC may update.
4	B2	Multiple elements tripping events in Northern region in the month of December 2025 (agenda by NRLDC)	***Multiple elements tripping at 765kV Obra_C TPS(UP) at 06:34 hrs on 16.12.2025*** Forum recommended that third party protection audit need to be done at 765kV Obra C TPS (UP) for a thorough review. (Action: UPPTCL)	UPPTCL may update.
5	B5	Frequent multiple elements tripping event at 400/220kV Kanpur (PG) (agenda by NRLDC)	A Committee may be formed under EE (P), NRPC for analysis of the event and recommendations for avoiding future trappings. Members may be taken from NRLDC, and UPPTCL. Committee may visit Kanpur s/s for understanding the issue.	Nominations have been asked from the concerned vide email dated 09.03.2026 in order to proceed for further.
6	B7	Multiple elements tripping events in Rajasthan RE complex on 14.01.2026	A committee may be formed under EE (P), NRPC for recommendation on drop off to pick up ratio for over voltage protection in general and particularly RE zone.	Nominations have been asked from the concerned vide email dated 10.03.2026 in order to proceed for further.

		(agenda by NRLDC)	Committee may look into suitability of available relay model having limitation of drop off to pick up ratio setting. Members may be taken from NRLDC, POWERGRID, and RVPN.	

Status of perfomance indices reporting of January 2026 (Last date of submission 07.02.2026)							
S. No.	**Utility**		**Received Status (Yes/No)**	**Vide mail dated**	**Remarks**	**Indices less than 1 (Yes/No)**	**Reason submitted and corrective action taken**
1	PGCIL	Central Government owned Transmission Company	Y	07.02.2026	NR-1	No	NA
			Y	06.02.2026	NR-2	Yes	Yes
			Y	06.02.2026	NR-3	No	NA
2	NTPC	Central Generating Company	Y	17.02.2026	Anta	No	NA
			Y	05.02.2026	Auriya	No	NA
			Y	09.02.2026	Dadri (Gas)	No	NA
					Dadri (Thermal)		
			Y	16.02.2026	Koldam	No	NA
					Rihand		
					Singrauli		
			Y	03.02.2026	Unchahar	No	NA
			Y	04.02.2026	Tanda	No	NA
3	BBMB		Y	09.02.2026		No	NA
4	THDC		Y	04.02.2026	Tehri	No	NA
			Y	03.02.2026	Tehri PSP	No	NA
			Y	04.02.2026	Koteshwar	No	NA
5	SJVN		Y	07.02.2026	RHPS	No	NA
			Y	04.02.2026	NJHPS	No	NA
6	NHPC		Y	02.02.2026	-	Yes	Yes
7	NPCIL		Y	03.02.2026	RAPS-A	No	NA
			Y	05.02.2026	RAPS-B	No	NA
			Y	05.02.2026	RAPS-C(5&6)	No	NA
			Y	05.02.2026	RAP -D (7 & 8)	No	NA
			Y	04.02.2026	NAPS-1&2	No	NA
8	DTL	State Transmission Utility	Y	09.02.2026		No	NA
9	HVPNL		Y	17.02.2026	-	Yes	Yes
10	RRVPNL		Y	05.02.2026	-	Yes	Yes
11	UPPTCL		Y	04.02.2026	Meerut Circle	Yes	Yes
			Y	04.02.2026	Agra Circle	No	NA
			Y	04.02.2026	Jhansi Circle	No	NA
			Y	04.02.2026	Prayagraj Circle	Yes	Yes
			Y	04.02.2026	Gorakhpur Circle	Yes	Yes
			Y	04.02.2026	Lucknow Circle	No	NA
12	PTCUL		Y	07.02.2026	Kumaon	No	NA
13	PSTCL		Y	06.02.2026		Yes	Yes
14	HPPTCL		Y	04.02.2026	-	No	NA
15	JKPTCL	UT	Y	05.02.2026	Jammu	No	NA
		UT	Y	05.02.2026	Kashmir	No	NA
16	Chandigarh Power Distribution Ltd	RPSG Group	Y	09.02.2026	220 Kv Kishangarh	No	NA
17	IPGCL	State Generating Company	Y	06.02.2026	PPS-I	No	NA
			Y	06.02.2026	PPS-III, Bawana	No	NA
18	HPGCL		Y	05.02.2026	PTPS, Panipat	No	NA
			Y	05.02.2026	DCRTPP, Yamunanagar	No	NA
			Y	05.02.2026	RGTPP (Khedar)	No	NA
19	RRVUNL		Y	05.02.2026	KTPS	No	NA
			Y	05.02.2026	kATPP, Jhalawar	No	NA
			Y	05.02.2026	CSCTPP Chhabra	No	NA
			Y	05.02.2026	RGTPP, Ramgarh	No	NA
			Y	02.02.2026	Ctpp,Chhabra	No	NA
			Y	05.02.2026	DCCPP, Dholpur	No	NA
			Y	05.02.2026	STPS Suratgarh	No	NA
			Y	05.02.2026	SSCTPS Suratgarh	No	NA
18	UPRVUNL		Y	07.02.2026	Parichha B (220 kV)	No	NA
			Y	04.02.2026	Parichha C (400 kV)	No	NA
			Y	03.02.2026	DTPS Anpara	No	NA
			Y	07.02.2026	Obra A & B	No	NA
			Y	07.02.2026	Obra C	No	NA
			Y	07.02.2026	Harduaganj 220 kV	No	NA
			Y	10.02.2026	Harduaganj 400 kV	No	NA
			Y	07.02.2026	Anpara-A&B	No	NA
			Y	07.02.2026	Panki TPS	No	NA
			Y	10.02.2026	Jawaharpur	No	NA
	NUPPL		Y	06.02.2026	Ghatampur 765 kV	No	NA
19	UJVNL		Y	03.02.2026	Dharasu	No	NA
			Y	03.02.2026	Tiloth	No	NA

			Y	10.02.2026	Khodri	No	NA
			Y	10.02.2026	Chibro	No	NA
			Y	10.02.2026	Vyasi	No	NA
20	HPPCL		Y	06.03.2026	Kashang HEP	No	NA
			Y	06.03.2026	Sawara Kuddu	No	NA
			Y	06.03.2026	Sainj	No	NA
21	PSPCL	State Generating Company & State owned Distribution Company	Y	02.02.2026	RSD	No	NA
			Y	09.02.2026	GGSTPS, Rupnagar	No	NA
			Y	02.02.2026	GVK Power Goindwal Shahib Ltd.	No	NA
			Y	05.02.2026	GHSTPS, Lehra Mohabbat	No	NA
22	HPSEBL	Distribution company having Transmission	Y	06.02.2026	Hamirpur Circle	No	NA
			Y	07.02.2026	Shimla Circle	No	NA
23	Prayagraj Power Generation Co. Ltd.		Y	07.02.2026		Yes	No
24	Aravali Power Company Pvt. Ltd		Y	10.02.2026		No	NA
25	Apraava Energy Private Limited		Y	10.02.2026		No	NA
26	Talwandi Sabo Power Ltd.		Y	03.02.2026		No	NA
27	Nabha Power Limited		Y	02.02.2026		No	NA
28	MEIL Anpara Energy Ltd (Anpara-C)		Y	04.02.2026		Yes	Yes
29	Rosa Power Supply Company Ltd		Y	03.02.2026		No	NA
30	Lalitpur Power Generation Company Ltd		Y	05.02.2026		No	NA
31	MEJA Urja Nigam Ltd.						
32	Adani Power Rajasthan Limited		Y	05.02.2026		No	NA
33	JSW Energy Ltd. (KWHEP)		Y	03.02.2026		No	NA
	ISTS Transmission Utilities						
34	INDIGRID						
35	ADHPL		Y	06.02.2026		No	NA
36	Adani Transmission Limited	AESL	Y	17.02.2026		Yes	Yes
37	Bikaner Khetri Transmission Limited		Y	17.02.2026		Yes	Yes
38	Fatehgarh Bhadla Transmission Limited		Y	17.02.2026		No	NA
39	Kishtwar Transmission Limited	RESONIA					
	State Utilities						
	Uttar Pradesh						
40	Vishnuprayag Hydro Electric Plant (J.P.)		Y	02.02.2026		No	NA
41	Alaknanda Hydro Electric Plant (GVK)		Y	05.02.2026		No	NA
42	Khara Power House (Khara)		Y	03.02.2026		No	NA
43	WUPPTCL	MEIL	Y	05.02.2026		No	NA
44	SEUPPTCL	Resurgent Power	Y	07.02.2026		No	NA
45	GTL	**AESL**	Y	17.02.2026		No	NA
46	OCBTL	**AESL**				No	NA
	Rajasthan						
47	Barsingsar Plant	**NLC**	Y	06.02.2026		No	NA
48	Rajwest Plant	**JSW**	Y	06.02.2026		No	NA
49	ATSCL	**AESL**	Y	17.02.2026		No	NA
50	HPTSL	**AESL**	Y	17.02.2026		No	NA
51	STSL	**AESL**	Y	17.02.2026		Yes	Yes
52	MTSCL	**AESL**	Y	17.02.2026		No	NA
	RE Utilities						
53	ABC Renewable Pvt. Ltd	ABC R Rj01	Y	18.02.2026		No	NA
54	ACME Heeragarh powertech Pvt. Ltd	**ACME**	Y	05.02.2026		Yes	Yes
55	ACME Phalodi	**ACME**	Y	05.02.2026		No	NA
56	ACME Deogarh	**ACME**					
57	ACME Raisar	**ACME**					
58	ACME Dhaulpur	**ACME**					
59	ACME Sikar	**ACME**	Y	05.02.2026		Yes	No
60	ACME Chittorgarh Solar Energy Pvt Ltd (Ayana)	**AYANA**					
61	AHEJOL-Hybrid-1 Madhopura	ADANI GREEN	Y	05.02.2026		No	NA
62	AHEJ3L - Hybrid-2B 300MW	ADANI GREEN	Y	05.02.2026		No	NA
63	AHEJFL(AEML_250)	ADANI GREEN	Y	05.02.2026		No	NA
64	AHEJ4L(AEML-350)	ADANI GREEN	Y	05.02.2026		No	NA
65	ASEJ2PL(Hapasar 300MW) SPC11PL	ADANI GREEN	Y	05.02.2026		No	NA

66	Adani Renewable Energy (RJ) Limited Rawra 200	ADANI GREEN	Y	05.02.2026		No	NA
67	Adani Solar Energy Four Limited SECI 50	ADANI GREEN	Y	05.02.2026		No	NA
68	Adani Solar Energy Jodhpur Two Limited Merchant 50	ADANI GREEN	Y	05.02.2026		No	NA
69	ASEJ05PL (RJ200)	ADANI GREEN	Y	05.02.2026		No	NA
70	ASERJ2PL - Phalodi 150 MW	ADANI GREEN	Y	05.02.2026		No	NA
71	ASERJ01PL-Pokhran 300 MW (SB energy six)	ADANI GREEN	Y	05.02.2026		No	NA
72	AGE25L(Badi Sid)	ADANI GREEN	Y	05.02.2026		No	NA
73	Bhadla park - South block	ADANI GREEN	Y	05.02.2026		No	NA
74	AGE24L (Bhimsar)	ADANI GREEN	Y	05.02.2026		No	NA
75	AHEJ2L - Hybrid-2A 300MW	ADANI GREEN	Y	05.02.2026		No	NA
76	ASERJ2PL - Devikot 180 MW	ADANI GREEN	Y	05.02.2026		No	NA
77	ASEJOPL-Hybrid 450 MW	ADANI GREEN	Y	05.02.2026		No	NA
78	Altra Xergi Pvt. Ltd.		Y	05.02.2026		No	NA
79	AMP Energy Green Four Pvt. Ltd.	AMPIN ENERGY	Y	05.02.2026		No	NA
80	AMP Energy Green Five Pvt. Ltd.	AMPIN ENERGY					
81	AMP Energy Green Six Pvt. Ltd.	AMPIN ENERGY					
82	Amplus Ages Private Limited	GENTARI	Y	02.02.2026		No	NA
83	Avaada RJHN_240MW	AVAADA	Y	05.02.2026		No	NA
84	Avaada sunce energy Pvt limited						
85	Avaada Sustainable RJ Project Pvt. Ltd.						
86	Avaada Sunrays Pvt. Ltd.		Y	05.02.2026		No	NA
87	Ayana Renewable Power Three Private Limited		Y	02.03.2026		No	NA
88	Ayaana Renewable Power One Pvt. Ltd.		Y	02.03.2026		No	NA
89	Azure Power Forty One Pvt limited						
90	Azure Power Forty Three Pvt. Ltd._RSS						
91	Azure Maple Pvt. Ltd.						
92	AZURE POWER INDIA Pvt. Ltd., Bhadla						
93	Azure Power Thirty Four Pvt. Ltd.						
94	Clean Solar Power (Jodhpur) Pvt. Ltd.	Hero Future Energies	Y	02.02.2026		No	NA
95	Eden Renewable Cite Private Limited						
96	Grian Energy private limited	GENTARI	Y	02.02.2026		No	NA
97	Mahindra Renewable Private Limited						
98	Mega Surya Urja Pvt. Ltd. (MSUPL)		Y	13.02.2026		No	NA
99	AURAIYA Solar						
100	DADRI SOLAR						
101	SINGRAULI SOLAR						
102	Anta Solar						
103	Unchahar Solar						
104	NTPC Devikot Solar plant-1	NGEL	Y	05.02.2026		No	NA
105	NTPC Devikot Solar plant-2		Y	05.02.2026		No	NA
106	SKB NTPC -1 (250MW)	NGEL	Y	05.02.2026		No	NA
107	SKB NTPC-2 (300MW)		Y	05.02.2026		No	NA
108	NTPC Nokhra_300MW		Y	05.02.2026		No	NA
109	NTPC Fatehgarh 296MW		Y	05.02.2026		No	NA
110	One Volt energy Pvt. Ltd.	GENTARI	Y	02.02.2026		No	NA
111	ReNew Solar Urja Private Limited	IndiGrid					
112	ReNew Solar Energy (Jharkhand Three) Private Limited		Y	04.02.2026		No	NA
113	Neemba Renew Surya Vihan Pvt. Ltd.		Y	04.02.2026		No	NA
114	Renew Sun Bright Pvt. Ltd. (RSBPL)						
115	Renew Surya Partap Pvt. Ltd.		Y	04.02.2026		No	NA
116	Renew Surya jyoti Pvt. Ltd.	ReNew	Y	04.02.2026		No	NA
117	Renew Surya Ravi Pvt. Ltd.		Y	04.02.2026		No	NA
118	Renew Surya Roshni Pvt. Ltd.		Y	04.02.2026		No	NA
119	Renew Surya Vihan Pvt. Ltd.		Y	04.02.2026		No	NA
120	Renew Solar Photovoltaic Pvt Ltd		Y	04.02.2026		No	NA
121	Renew Hans Urja Pvt Ltd.		Y	04.02.2026		No	NA
122	RENEW SOLAR POWER Pvt. Ltd. Bikaner		Y	04.02.2026		No	NA

123	ReNew Dinkar Urja Pvt. Ltd.		Y	04.02.2026		No	NA
124	Renew Surya Ayaan Pvt. Ltd.	IndiGrid					
125	Rising Sun Energy-K Pvt. Ltd.						
126	Serentica Renewables India 4 & 5 Private Limited	Serentica	Y	02.02.2026		No	NA
127	Khidrat Renewable energy Pvt ltd.		Y	06.02.2026		No	NA
128	Solzen Urja Private Limited	Sekura	Y	06.02.2026		No	NA
129	Tata Power Green Energy Ltd. (TPGEL)	TATA POWER	Y	05.02.2026		No	NA
130	Tata Power Renewable Energy Ltd. (TPREL)		Y	05.02.2026		No	NA
131	Banderwala Solar Plant TP Surya Ltd.		Y	05.02.2026		Yes	Yes
132	Thar Surya Pvt. Ltd.						
133	TRANSITION ENERGY SERVICES PRIVATE LIMITED						
134	Transition Green Energy Private Limited						
135	Transition Sustainable Energy Services Private Limited						
136	GSPL_BHDL2 (Gorbea Solar Pvt Ltd)	Zelestra	Y	06.02.2026		No	NA
136	Prerak Greentech Pvt Limited		Y	12.02.2026		No	NA
137	Megasolis Renewables Pvt Ltd(MSRPL)		Y	13.02.2026		No	NA

Status of perfomance indices reporting of February 2026 (Last date of submission 07.03.2026)							
S. No.	**Utility**		**Received Status (Yes/No)**	**Vide mail dated**	**Remarks**	**Indices less than 1 (Yes/No)**	**Reason submitted and corrective action taken**
1	PGCIL	Central Government owned Transmission Company	Y	07.03.2026	NR-1	NO	NA
			Y	09.03.2026	NR-2	NO	NA
			Y	03.03.2026	NR-3	NO	NA
2	NTPC	Central Generating Company	Y	11.03.2026	Anta (Gas)	Yes	Yes
			Y	10.03.2026	Auriya	NO	NA
			Y	06.03.2026	Dadri (Gas)	NO	NA
			Y	12.03.2026	Dadri (Thermal)	NO	NA
			Y	12.03.2026	Koldam	NO	NA
			Y	12.03.2026	Rihand	NO	NA
			Y	12.03.2026	Singrauli	NO	NA
			Y	11.03.2026	Unchahar	NO	NA
			Y	12.03.2026	Tanda	NO	NA
			Y	12.03.2026	Faridabad (Gas)	NO	NA
3	BBMB		Y	12.03.2026		NO	NA
4	THDC		Y	02.03.2026	Tehri	NO	NA
			Y	06.03.2026	Tehri PSP	NO	NA
			Y	05.03.2026	Koteshwar	NO	NA
					Khurja		
5	SJVN		Y	02.03.2026	RHPS	NO	NA
			Y	03.03.2026	NJHPS	NO	NA
6	NHPC		Y	02.03.2026	-	Yes	Yes
7	NPCIL		Y	02.03.2026	RAPS-A	NO	NA
			Y	05.03.2026	RAPS-B	NO	NA
			Y	05.03.2026	RAPS-C(5&6)	NO	NA
			Y	03.03.2026	RAP -D (7 & 8)	NO	NA
			Y	07.03.2026	NAPS-1&2	NO	NA
8	DTL	State Transmission Utility	Y	06.03.2026		NO	NA
9	HVPNL		Y	10.03.2026	-	Yes	Yes
10	RRVPNL		Y	06.03.2026	-	Yes	Yes
11	UPPTCL		Y	05.03.2026	Meerut Circle	Yes	Yes
			Y	07.03.2026	Agra Circle	Yes	Yes
			Y	06.03.2026	Jhansi Circle	NO	NA
			Y	07.03.2026	Prayagraj Circle	NO	NA
			Y	07.03.2026	Gorakhpur Circle	Yes	Yes
			Y	07.03.2026	Lucknow Circle	Yes	Yes
12	PTCUL		Y	06.03.2026	Kumaon	NO	NA
13	PSTCL		Y	09.03.2026		Yes	Yes
14	HPPTCL		Y	03.03.2026	-	NO	NA
15	JKPTCL	UT	Y	05.03.2026	Jammu	NO	NA
		UT	Y	05.03.2026	Kashmir	NO	NA
16	Chandigarh Power Distribution Ltd	RPSG Group	Y	10.03.2026	220 Kv Kishangarh	NO	NA
17	IPGCL	State Generating Company	Y	06.03.2026	PPS-I	NO	NA
			Y	06.03.2026	PPS-III, Bawana	NO	NA
18	HPGCL		Y	05.03.2026	PTPS, Panipat	NO	NA
			Y	05.03.2026	DCRTPP, Yamunanagar	NO	NA
			Y	05.03.2026	RGTPP (Khedar)	NO	NA
19	RRVUNL		Y	06.03.2026	KTPS	NO	NA
			Y	06.03.2026	kATPP, Jhalawar	NO	NA
			Y	06.03.2026	CSCTPP Chhabra	NO	NA
			Y	04.03.2026	RGTPP, Ramgarh	NO	NA
			Y	04.03.2026	Ctpp,Chhabra	NO	NA
			Y	06.03.2026	DCCPP, Dholpur	NO	NA
			Y	06.03.2026	STPS Suratgarh	NO	NA
			Y	06.03.2026	SSCTPS Suratgarh	NO	NA
18	UPRVUNL				Parichha B (220 kV)		
					Parichha C (400 kV)		
			Y	06.03.2026	DTPS Anpara	NO	NA
			Y	07.03.2026	Obra A & B	NO	NA
			Y	07.03.2026	Obra C	NO	NA
			Y	10.03.2026	Harduaganj 220 kV	NO	NA
					Harduaganj 400 kV		
			Y	13.03.2026	Anpara-A&B	NO	NA

			Y	10.03.2026	Panki TPS	NO	NA
			Y	07.03.2026	Jawaharpur	NO	NA
	NUPPL				Ghatampur 765 kV		
19	UJVNL		Y	02.03.2026	Dharasu	NO	NA
			Y	02.03.2026	Tiloth	NO	NA
			Y	02.03.2026	Khodri	NO	NA
			Y	02.03.2026	Chibro	NO	NA
			Y	02.03.2026	Vyasi	NO	NA
20	HPPCL				Kashang HEP		
					Sawara Kuddu		
					Sainj		
21	PSPCL	State Generating Company & State owned Distribution Company	Y	02.03.2026	RSD	NO	NA
			Y	12.03.2026	GGSTPS, Rupnagar	Yes	Yes
			Y	02.03.2026	GVK Power Goindwal Shahib Ltd.	NO	NA
			Y	05.03.2026	GHSTPS, Lehra Mohabbat	NO	NA
22	HPSEBL	Distribution company having Transmission	Y	06.03.2026	Hamirpur Circle	NO	NA
			Y	05.03.2026	Shimla Circle	NO	NA
23	Prayagraj Power Generation Co. Ltd.		Y	05.03.2026		Yes	Yes
24	Aravali Power Company Pvt. Ltd		Y	11.03.2026		NO	NA
25	Apraava Energy Private Limited						
26	Talwandi Sabo Power Ltd.		Y	02.03.2026		NO	NA
27	Nabha Power Limited		Y	01.03.2026		NO	NA
28	MEIL Anpara Energy Ltd (Anpara-C)		Y	10.03.2026		NO	NA
29	Rosa Power Supply Company Ltd		Y	07.03.2026		NO	NA
30	Lalitpur Power Generation Company Ltd		Y	09.03.2026		NO	NA
31	MEJA Urja Nigam Ltd.		Y	12.03.2026		NO	NA
32	Adani Power Rajasthan Limited		Y	05.03.2026		NO	NA
33	JSW Energy Ltd. (KWHEP)		Y	10.03.2026		NO	NA
	ISTS Transmission Utilities						
34	INDIGRID		Y	12.03.2026		NO	NA
35	ADHPL		Y	07.03.2026		NO	NA
36	Adani Transmission Limited	AESL	Y	09.03.2026		Yes	Yes
37	Bikaner Khetri Transmission Limited		Y	09.03.2026		Yes	Yes
38	Fatehgarh Bhadla Transmission Limited		Y	09.03.2026		NO	NA
39	Kishtwar Transmission Limited	RESONIA					
	State Utilities						
	Uttar Pradesh						
40	Vishnuprayag Hydro Electric Plant (J.P.)		Y	06.03.2026		NO	NA
41	Alaknanda Hydro Electric Plant (GVK)		Y	03.03.2026		NO	NA
42	Khara Power House (Khara)		Y	07.03.2026		NO	NA
43	WUPPTCL	MEIL	Y	06.03.2026		NO	NA
44	SEUPPTCL	Resurgent Power					
45	GTL	**AESL**	Y	09.03.2026		NO	NA
46	OCBTL	**AESL**	Y	09.03.2026		NO	NA
	Rajasthan						
47	Barsingsar Plant	**NLC**	Y	07.03.2026		NO	NA
48	Rajwest Plant	**JSW**	Y	07.03.2026		NO	NA
49	ATSCL	**AESL**	Y	09.03.2026		NO	NA
50	HPTSL	**AESL**	Y	09.03.2026		NO	NA
51	STSL	**AESL**	Y	09.03.2026		NO	NA
52	MTSCL	**AESL**	Y	09.03.2026		NO	NA
	RE Utilities						
53	ABC Renewable Pvt. Ltd	ABC R Rj01	Y	11.03.2026		NO	NA
54	ABC Renewable Energy (RJ-02) Pvt. Ltd.						
55	ACME Heeragarh powertech Pvt. Ltd	**ACME**	Y	05.03.2026		Yes	No
56	ACME Phalodi	**ACME**	Y	05.03.2026		NO	NA
57	ACME Deogarh	**ACME**					
58	ACME Raisar	**ACME**					

59	ACME Dhaulpur	**ACME**					
60	ACME Sikar	**ACME**	Y	05.03.2026		Yes	No
61	ACME Chittorgarh Solar Energy Pvt Ltd (Ayana)	**AYANA**					
62	AHEJOL-Hybrid-1 Madhopura	ADANI GREEN	Y	09.03.2026		NO	NA
63	AHEJ3L - Hybrid-2B 300MW	ADANI GREEN	Y	09.03.2026		NO	NA
64	AHEJFL(AEML_250)	ADANI GREEN	Y	09.03.2026		NO	NA
65	AHEJ4L(AEML-350)	ADANI GREEN	Y	09.03.2026		NO	NA
66	ASEJ2PL(Hapasar 300MW) SPC11PL	ADANI GREEN	Y	09.03.2026		NO	NA
67	Adani Renewable Energy (RJ) Limited Rawra 200	ADANI GREEN	Y	09.03.2026		NO	NA
68	Adani Solar Energy Four Limited SECI 50	ADANI GREEN	Y	09.03.2026		NO	NA
69	Adani Solar Energy Jodhpur Two Limited Merchant 50	ADANI GREEN	Y	09.03.2026		NO	NA
70	ASEJ05PL (RJ200)	ADANI GREEN	Y	09.03.2026		NO	NA
71	ASERJ2PL - Phalodi 150 MW	ADANI GREEN	Y	09.03.2026		NO	NA
72	ASERJ01PL-Pokhran 300 MW (SB energy six)	ADANI GREEN	Y	09.03.2026		NO	NA
73	AGE25L(Badi Sid)	ADANI GREEN	Y	09.03.2026		NO	NA
74	Bhadla park - South block	ADANI GREEN	Y	09.03.2026		NO	NA
75	AGE24L (Bhimsar)	ADANI GREEN	Y	09.03.2026		NO	NA
76	AHEJ2L - Hybrid-2A 300MW	ADANI GREEN	Y	09.03.2026		NO	NA
77	ASERJ2PL - Devikot 180 MW	ADANI GREEN	Y	09.03.2026		NO	NA
78	ASEJOPL-Hybrid 450 MW	ADANI GREEN	Y	09.03.2026		NO	NA
79	Ambuja Cements Limited_300MW	ADANI GREEN					
80	Altra Xergi Pvt. Ltd.		Y	06.03.2026		NO	NA
81	XL Xergi Power Pvt. Ltd.						
82	AMP Energy Green Four Pvt. Ltd.	AMPIN ENERGY					
83	AMP Energy Green Five Pvt. Ltd.	AMPIN ENERGY					
84	AMP Energy Green Six Pvt. Ltd.	AMPIN ENERGY					
85	Amplus Ages Private Limited	GENTARI	Y	06.03.2026		NO	NA
86	Avaada RJHN_240MW	AVAADA	Y	11.03.2026		NO	NA
87	Avaada sunce energy Pvt limited						
88	Avaada Sustainable RJ Project Pvt. Ltd.						
89	Avaada Sunrays Pvt. Ltd.		Y	11.03.2026		NO	NA
90	Ayana Renewable Power Three Private Limited		Y	02.03.2026		NO	NA
91	Ayaana Renewable Power One Pvt. Ltd.		Y	02.03.2026		NO	NA
92	Azure Power Forty One Pvt limited		Y	13.03.2026		NO	NA
93	Azure Power Forty Three Pvt. Ltd._RSS						
94	Azure Power Forty Three Pvt. Ltd._PSS						
95	Azure Maple Pvt. Ltd.						
96	AZURE POWER INDIA Pvt. Ltd., Bhadla						
97	Azure Power Thirty Four Pvt. Ltd.						
98	Clean Solar Power (Jodhpur) Pvt. Ltd.	Hero Future Energies	Y	02.03.2026		NO	NA
99	Eden Renewable Cite Private Limited						
100	Eden Renewable Alma Pvt. Ltd.						
101	Energizent Power Private Limited						
102	Grian Energy private limited	GENTARI	Y	06.03.2026		NO	NA
103	Juna Renewable Energy Pvt. Ltd.						
104	Juniper Green Cosmic Private Limited						
105	Juniper Nirjara Energy Private Limited						
106	Karinsar Solar Plant NHPC Ltd						
107	Megasolis Renewables Pvt Ltd(MSRPL)						
108	Mega Surya Urja Pvt. Ltd. (MSUPL)		Y	02.03.2026		NO	NA
109	AURAIYA Solar						
110	DADRI SOLAR						
111	SINGRAULI SOLAR						

112	Anta Solar						
113	Unchahar Solar						
114	NTPC Devikot Solar plant-1	NGEL	Y	06.03.2026		NO	NA
115	NTPC Devikot Solar plant-2		Y	06.03.2026		NO	NA
116	SKB NTPC -1 (250MW)	NGEL	Y	06.03.2026		NO	NA
117	SKB NTPC-2 (300MW)		Y	06.03.2026		NO	NA
118	NTPC Nokhra_300MW		Y	06.03.2026		NO	NA
119	NTPC Fatehgarh 296MW		Y	06.03.2026		NO	NA
120	One Volt energy Pvt. Ltd.	GENTARI	Y	06.03.2026		NO	NA
121	ReNew Solar Urja Private Limited	IndiGrid					
122	ReNew Solar Energy (Jharkhand Three) Private Limited	ReNew	Y	05.03.2026		NO	NA
123	Neemba Renew Surya Vihan Pvt. Ltd.		Y	05.03.2026		NO	NA
124	Renew Surya Partap Pvt. Ltd.		Y	05.03.2026		NO	NA
125	Renew Surya jyoti Pvt. Ltd.		Y	05.03.2026		NO	NA
126	Renew Surya Ravi Pvt. Ltd.		Y	05.03.2026		NO	NA
127	Renew Surya Roshni Pvt. Ltd.		Y	05.03.2026		NO	NA
128	Renew Surya Vihan Pvt. Ltd.		Y	05.03.2026		NO	NA
129	Renew Solar Photovoltaic Pvt Ltd		Y	05.03.2026		NO	NA
130	Renew Hans Urja Pvt Ltd.		Y	05.03.2026		NO	NA
131	RENEW SOLAR POWER Pvt. Ltd. Bikaner		Y	05.03.2026		NO	NA
132	ReNew Dinkar Urja Pvt. Ltd.		Y	05.03.2026		NO	NA
133	Renew Sun Bright Pvt. Ltd. (RSBPL)	Sembcorp					
134	Renew Surya Ayaan Pvt. Ltd.	IndiGrid					
135	Rising Sun Energy-K Pvt. Ltd.						
136	Serentica Renewables India 4 & 5 Private Limited	Serentica	Y	03.03.2026		NO	NA
137	Khidrat Renewable energy Pvt ltd.		Y	07.03.2026		NO	NA
138	SJVN Green Energy Limited						
139	Solzen Urja Private Limited	Sekura	Y	09.03.2026		NO	NA
140	Tata Power Green Energy Ltd. (TPGEL)	TATA POWER	Y	03.03.2026		NO	NA
141	Tata Power Renewable Energy Ltd. (TPREL)		Y	03.03.2026		NO	NA
142	Banderwala Solar Plant TP Surya Ltd.		Y	03.03.2026		NO	NA
143	Thar Surya Pvt. Ltd.						
144	Adept Renewable Technologies Pvt. Ltd.						
145	Transition Cleantech Services Private Limited						
146	Transition Energy Services Private Limited						
147	Transition Green Energy Private Limited						
148	Transition Sustainable Energy Services Private Limited						
149	Transition Sustainable Energy Services One Pvt Ltd						
150	GSPL_BHDL2 (Gorbea Solar Pvt Ltd)	Zelestra	Y	05.03.2026		NO	NA
151	Prerak Greentech Pvt Limited						

Reporting of performance indices for protection System
(for element connected at 220kV and above)
Name of Utility : ACME Heergarh- MSEDCL2 Badisidd - 300 MW
Month : January-26

S.N.	Sub-station	Unit (SPS/Line/ICT/GT/etc)	Nc	Nf	Nu	Ni	Dependability Index (D}	Security Index (S)	Reliability Index (R)	Remark
1	300 MW MSEDCL2 Badisidd	220 kV Badisidd -Bhadla-2	1	0	2	1	1	0.3	0.5	89T isolator of ICT02 (B-Phase) busbar melted, jumper malted from clamp, therefore we connect 89 C isolator of ICT02 after that we start the ICT 02, system taken False signel in malfunction at PGCIL End(Bhadla-02) so 220 kV Acme Line breaker trip in DT fault after checking found nothing.
		150 MVA PTR-1	0	0	0	0	0	0.0	0	
		150 MVA PTR-2	1	0	1	1	1	0.5	0.5	89T isolator of ICT02 (B-Phase) busbar melted due to overheat therefore isolator arching horn also melted so the total length of isolator shorted & start the burning of 89T isolator in B Phase after that jumper malted from clamp so manually trip the ICT02
		Bus coupler Bay	0	0	0	0	0	0.0	0	
		220 kV Main BUS -1	0	0	0	0	0	0.0	0	
		220 kV Main BUS -2	0	0	0	0	0	0.0	0	

Reporting of performance indices for protection System
(for element connected at 220kV and above)
Name of Utility : ACME Sikar Solar Pvt Ltd-300 MW
Month : Jan-26

S.N.	Sub-station	Unit (SPS/Line/ICT/GT/etc)	Nc	Nf	Nu	Ni	Dependability Index (D}	Security Index (S)	Reliability Index (R)	Remark
1	300 MW Sikar Nokha	220 kV Sikar -Bikaner-2	0	0	0	0	0	0	0	
		150 MVA PTR-1	1	0	1	1	1	0.5	0.5	PTR-1 trip due to LV side cable failure
		150 MVA PTR-2	1	0	1	1	1	0.5	0.5	PTR-2 trip due to LV side cable failure
		Bus coupler Bay	0	0	0	0	0	0	0	
		220 kV Main BUS -1	0	0	0	0	0	0	0	
		220 kV Main BUS -2	0	0	0	0	0	0	0	

S.No.	Substation	Element name	Date of tripping	Time of tripping	Categorization (F/U) F = Failures to operate at internal power system faults U = Unwanted operations	Reason for failures/Unwanted operation	Corrective action taken/ to be taken
1	500KV Mahindragarh HVDC SS	500kV Mundra - Mohindergarh HVDC Pole-2	15-Jan-26	5:05:00	U	Bucchholz relay operated due to low oil level in the converter transformer conservator & wrong MOG indication	Oil topup done & faulty MOG indicator replaced, system is now healthy
2	765KV Bikaner (PGCIL) SS	765kV, 240MVAR Line Reactor-1 at Bikaner (PGCIL)	20-Jan-26	6:59:00	U	Line reactor tripped on earth fault during auto reclosure operation, due to incorrect timing of reactor earth fault protection	Earth fault protection of reactor (derived) revised to 1.2 sec for allowing AR
3	400/220/132KV Sangod SS	500 MVA ICT-1	23-Jan-26	12:30:00	U	ICT-1 got tripped due to incorrect BCU logic of bay transfer	OEM (GE) is called for correction in logic during planned S/D in Mar-26

Annexure-X

Format No.-PI-01

Reporting of performance indices for protection system

(for elements connected at 220 kV and above)

Name of Utility: HVPNL

Month: January, 2026

S.N.	Substation	Name of Line	Nc	Nf	Nu	Ni	Dependability Index (D=Nc/Nc+Nf)	Security Index (S=Nc/Nc+Nu)	Reliability Index (R=Nc/Nc+Ni)
M&P Division Gurugram									
1	400KV Daultabad	400KV Daultabad-Sec-72_PG Ckt-1	**1**	**0**	**0**	**0**	**1**	**1**	**1**
2	220KV Sec-65 GGN	220KV Sec-65 to Kadarpur Ckt-2	**1**	**0**	**0**	**0**	**1**	**1**	**1**
3	220KV Palli	220KV Palli-Kadarpur Ckt-1	**1**	**0**	**0**	**0**	**1**	**1**	**1**
4	400KV Dhanonda	220/132KV 100MVA T-2	**1**	**0**	**0**	**0**	**1**	**1**	**1**
5	220KV Sec-72 Gurugram	220KV Sec-72 to Sec-72_PG GGN Ckt-1	**0**	**0**	**1**	**1**	**0**	**0**	**0**
6	220KV Sec-72 Gurugram	220KV Sec-72 to Sec-72_PG GGN Ckt-2	**0**	**0**	**1**	**1**	**0**	**0**	**0**
7	220KV Sec-72 Gurugram	220KV Sec-72 to Sec-72_PG GGN Ckt-3	**0**	**0**	**1**	**1**	**0**	**0**	**0**
8	220KV Sec-72 Gurugram	220KV Sec-72 to Sec-69 GGN Ckt-1	**1**	**0**	**0**	**0**	**1**	**1**	**1**
9	220KV Sec-69 Gurugram	220KV Sec-69 Gurugram to Sohna Road Ckt-1	**0**	**0**	**1**	**1**	**0**	**0**	**0**
10	220KV Sec-65 Gurugram	220KV Sec-65 Gurugram to Kadarpur Ckt-2	**1**	**0**	**0**	**0**	**1**	**1**	**1**
11	220KV LulaAhir	220KV BBMB Dadri-LulaAhir line	**1**	**0**	**0**	**0**	**1**	**1**	**1**

M&P Division Dhulkote									
1	220 KV Tepla	220 kV Abdullapur- Tepla Ckt-2 (05.01.2026)	**1**	**0**	**0**	**0**	**1**	**1**	**1**
2	220 KV Jorian	220 kV Abdullapur- Jorian Ckt-2 (17.01.2026)	**1**	**0**	**0**	**0**	**1**	**1**	**1**
3	220 KV Raiwali	220KV Panchkula-PG-Raiwali Ckt.-2(23.01.2026)	**1**	**0**	**0**	**0**	**1**	**1**	**1**
4	220 KV Pinjore	220KV Panchkula-PG-Pinjore Ckt.-2(27.01.2026)	**1**	**0**	**0**	**0**	**1**	**1**	**1**
M&P Division Rohtak									
1	220 kV Mohana	220kV Sonipat_PG - Mohana Ckt.-1	**1**	**0**	**0**	**0**	**1**	**1**	**1**
2	220 kV Chajjpur	220kV BBMB Sewah Panipat -Chajjpur CKT-2	**1**	**0**	**0**	**0**	**1**	**1**	**1**
3	220 kV Chajjpur	220kV Chajjpur - BBMB Sewah Panipat Ckt.-1	**1**	**0**	**0**	**0**	**1**	**1**	**1**
4	220 kV Sampla	220kV Sampla - Kabulpur line	**1**	**0**	**0**	**0**	**1**	**1**	**1**
5	220 kV PTPS	220kV BBMB Sewah - PTPS Ckt.-1	**1**	**0**	**0**	**0**	**1**	**1**	**1**

Note: Justification for less than one index may be attached separately.

Nc is the number of correct operations at internal power system faults
Nf is the number of failures to operate at internal power system faults
Nu is the number of unwanted operations
Ni is the number of incorrect operations and is the sum of Nf and Nu.

Reason for Performance Indices less than Unity- January 2026 (HVPN)

Case-1 220KV Sec-69 Gurugram to Sohna Road Ckt-1 on 11.01.2026

No. of Unwanted operation –1

Reason of unwanted operation – The fault occurred in the B-Ph of line due to electrocution of peacock. Logic of carrier send signal was not as per the Wiring done on the panel at Sohna road (Indigrid) end due to which it took 356 msec to clear the fault in the Zone II from Sec 69 end.

Corrective Action to be taken – Indigrid has been requested to correct wiring of Carrier signals at 400 kV Sohna Road (Indigrid) end for 220 kV Sohna Road-Sec 69 Ckts.

Case-2 220KV Sec-72 to Sec-72_PG GGN Ckt-1, 220KV Sec-72 to Sec-72_PG GGN Ckt-2 & 220KV Sec-72 to Sec-72_PG GGN Ckt-3 on 11.01.2026

No. of Unwanted operation –3

Reason of unwanted operation – Fault occurred due to low time setting on Sec-72 (PGCIL) Gurugram end.

Corrective Action taken – PGCIL has been requested to increase TMS setting as per time grading of lines

S.No.	Substation	Element name	Total number of tripping	Nc	Nf	Nu	Ni	Dependability Index (D)	Security Index(S)	Reliability Index(R)
1	765kV/400 kV Anpara C	765 kV Anpara C - Unnao Line	1	1	0	0	0	1	1	1
2	765kV/400 kV Anpara C	1000 MVA ICT#2 (765 kV/400 kV)	After routine testing of ICT#2 when it was charged on 26.11.2025 it got tripped on HV REF protection. Once DGA test conducted for the same, R Phase Acetylene C2H2 was 25 ppm. The same has been refered to OEM and its inspection has been planned on 30th Jan'26.Internal inspection carried out but nothing find out. Since at Anpara C TPP has 2 nos ICT 0f 1000 MVA & 2 Nos 765 KV Line, therefore no power evacuation issue. Now we are planning to charge it with close monitoring of C2H2 through frequent DGA.							

Reporting of Performance Indices for NHPC Power Stations In NR-Region
Month-JANUARY '2026

Sl No	Name of Utility	Name of PS	Elements (Line/ Unit)	From		To		Total Outage	Outage Reason	Nc	Nf	Nu	Ni	Dependability Index (D=Nc/(Nc+Nf))	Security Index (S=Nc/(Nc+Nu))	Reliability Index (R=Nc/(Nc+Ni))	Reason for wrong operation	Action Taken
1	NHPC Ltd	Dulhasti	400 KV Dulhasti-Kishtwar Line#1	3-Jan-26	16:34:00	3-Jan-26	17:32:00	0:58	LBB protection operated due to initiation from Unit#2	1	0	1	1	1	0.5	0.5	Auxiliary contact of Unit#2 master trip relay was stuck	Master Trip relay of Unit#2 replaced with spare one.
2	NHPC Ltd	Tanakpur	132 KV Tanakpur-Mahendranagar Line#3	13-Jan-26	12:28:00	13-Jan-26	13:51:00	1:23	Over Current Protection Operated	1	0	0	0	1	1	1	NA	NA
3	NHPC Ltd	Parbati-II	400 KV Parabati-II-Banala Line#1	14-Jan-26	12:47:00	14-Jan-26	15:27:00	2:40	DT receive from remote end	1	0	0	0	1	1	1	NA	NA
4	NHPC Ltd	Parbati-II	400 KV Parabati-II-Sainj Line#2	14-Jan-26	12:47:00	14-Jan-26	17:33:00	4:46	Line CB remained in closed condition	1	0	0	0	1	1	1	NA	NA
5	NHPC Ltd	Tanakpur	220 KV Tanakpur-CB Ganj Line#1	15-Jan-26	19:49:00	15-Jan-26	21:29:00	1:40	Z4 protection operated	1	0	1	1	1	0.5	0.5	Malfunction of REL 650 Relay	Matter is taking up with Relay OEM
6	NHPC Ltd	Bairasuil	220 KV Bairasuil-Pong Line#1	15-Jan-26	17:30:00	15-Jan-26	21:16:00	3:46	Line CB remained in closed condition	1	0	0	0	1	1	1	NA	NA
7	NHPC Ltd	Uri	400 KV Uri-Amargarh Line#1	21-Jan-26	12:19:00	21-Jan-26	14:56:00	2:37	DPR operated in Z1 at Y-N phase fault and sucessfully reclosed from Uri End.However due to persistent of fault, SOTF/ TOR protection operated	1	0	0	0	1	1	1	NA	NA
8	NHPC Ltd	Bairasuil	220 KV Bairasuil-Pong Line#1	22-Jan-26	22:49:00	23-Jan-26	6:59:00	8:10	Over Voltage Stage-1 Protection operated	1	0	0	0	1	1	1	NA	NA
9	NHPC Ltd	Bairasuil	220 KV Bairasuil-Jessure Line#2	22-Jan-26	22:49:00	23-Jan-26	7:05:00	8:16	Over Voltage Stage-1 Protection operated	1	0	0	0	1	1	1	NA	NA
10	NHPC Ltd	Salal	220 KV Salal-Jammu Line#1	22-Jan-26	22:50:00	23-Jan-26	1:10:00	2:20	Over Voltage Stage-1 Protection operated	1	0	0	0	1	1	1	NA	NA
11	NHPC Ltd	Sewa-II	132 KV Sewa-II-Hiranagar Line#3	22-Jan-26	23:02:00	23-Jan-26	12:31:00	13:29	Over Coltage Stage-1 protection operated	1	0	0	0	1	1	1	NA	NA
12	NHPC Ltd	Sewa-II	132 KV Sewa-II-Hiranagar Line#4	22-Jan-26	23:02:00	23-Jan-26	13:19:00	14:17	Over Coltage Stage-1 protection operated	1	0	0	0	1	1	1	NA	NA
13	NHPC Ltd	Uri	400 KV Uri-Amargarh Line#2	22-Jan-26	22:20:00	23-Jan-26	6:08:00	7:48	Over Voltage Stage-1 Protection operated	1	0	0	0	1	1	1	NA	NA
14	NHPC Ltd	Uri	400 KV Uri-Amargarh Line#1	22-Jan-26	23:02:00	23-Jan-26	1:19:00	2:17	Direct Trip (DT) received from remote end	1	0	0	0	1	1	1	NA	NA

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15	NHPC Ltd	Uri	400 KV Uri-Amargarh Line#1	23-Jan-26	6:53:00	23-Jan-26	9:21:00	2:28	DPR operated in Z1 at R-N phase fault and sucessfully reclosed from Uri End.However within reclaim time again Z1 operated.	1	0	0	0	1	1	1	NA	NA
16	NHPC Ltd	Uri	400 KV Uri-Amargarh Line#2	23-Jan-26	7:17:00	26-Jan-26	16:36:00	81:19	DPR operated in Z1 at B-N phase fault and sucessfully reclosed from Uri End.However due to persistent of fault, SOTF/ TOR protection operated	1	0	0	0	1	1	1	NA	NA
17	NHPC Ltd	Uri	400 KV Uri-Amargarh Line#1	23-Jan-26	12:43:00	23-Jan-26	17:55:00	5:12	DPR operated in Z1 at R-N phase fault and sucessfully reclosed from Uri End.However within reclaim time again Z1 operated.	1	0	0	0	1	1	1	NA	NA
18	NHPC Ltd	Uri-II	400 KV Uri-II-Woogora Line#1	23-Jan-26	10:04:00	25-Jan-26	12:18:00	50:14	DPR operated in Z1 at B-N phase fault and sucessfully reclosed from Uri End.However due to persistent of fault, SOTF/ TOR protection operated	1	0	0	0	1	1	1	NA	NA
19	NHPC Ltd	Salal	220 KV Salal-Jammu Line#1	23-Jan-26	4:53:00	23-Jan-26	6:58:00	2:05	Over Voltage Stage-1 Protection operated	1	0	0	0	1	1	1	NA	NA
20	NHPC Ltd	Tanakpur	220 KV Tanakpur-Sitaraganj Line#2	27-Jan-26	23:59:07	28-Jan-26	3:00:00	3:00	Over Voltage Stage-1 Protection operated	1	0	0	0	1	1	1	NA	NA
No Line tripping has been observed from other Power Stations of NHPC of NR region for Month of January'2026																				

Sr No	0	Outage date	Restoration date	Outage category	category	Details	Remarks	
NR240118	601547	400KV PARBATI2-BANALA LILO PORTION	1/14/2026 12:46	1/14/2026 15:27	OMSU	Line tripped on B-N fault due to fault in Indigrid portion of the Line. Fault data Banala: 5.4kM whereas POWERGRID portion is only 0.8kM from Banala (PG). Therefore, transient fault is only in INDIGRID portion of the Line. For reference, following documents attached: 1. Banala (PG) end DR and Event 2. Relay snap showing transient fault distance as 5.4km from Banala (PG)	NC	
NR222002	601591	220KV BAIRASIUL-PONG	1/15/2026 17:30	1/15/2026 21:16	SBBU	Line tripped from Pong(BBMB) end only on operation of 220KV Busbar protection at Pong(BBMB) resulting in outage of all Lines connected to Bus . Line remain charged from Bairasuil(NHPC). DR Pong showing Busbar opration and Email from BBMB regarding Busbar tripping is attached for reference.	NC	
NR222011	601592	220KV JESSORE-PONG	1/15/2026 17:30	1/15/2026 20:40	SBBU	Line tripped from Pong(BBMB) end only on operation of 220KV Busbar protection at Pong(BBMB) resulting in outage of all Lines connected to Bus . Line remain charged from Bairasuil(NHPC). DR Pong showing Busbar opration and Email from BBMB regarding Busbar tripping is attached for reference.	NC	
NR240125	601791	400KV URI 1 - AMARGARH - I	1/21/2026 12:19	1/21/2026 14:56	OMSU	Line tripped on Y-G fault due to forest fire at LOC No 49-50. Fault Data Amargarh end: 45.5 kM, 3.5 kA. Following documents has been attached for reference 1.GPS tagged tower Name plate photo 2.GPS tagged photo showing line tripping due to fire. 3.Amargarh end Relay fault location 4.Tower schedule and KMZ file.	NC	
NR240074	601793	400KV WAGOORA-NEW WANPOH-II	1/21/2026 13:17	1/22/2026 14:10	LPPT	Line tripped Y-B ph fault due to snapping of Y ph Conductor snapping at LOC No 302-303. Fault Data Wagoora end -50.91 kM, 3.194 kA and New wanpoh end -6.66 kM, 7 kA.	NC	
NR240125	601839	400KV URI 1 - AMARGARH - I	1/22/2026 23:02	1/23/2026 1:19	GOVC	System voltage was very high due to sudden load through-off in the area due to heavy snowfall caused by western disturbances in the area resulting in high system voltage. Line tripped on operation of Over voltage protection. 1. Mail from Indigrid regaing tripping on OV has been attached.	NC	
NR240127	601840	400KV URI 1 - AMARGARH - II	1/22/2026 22:26	1/23/2026 6:08	GOVC	System voltage was very high due to sudden load through-off in the area due to heavy snowfall caused by western disturbances in the area resulting in high system voltage Line tripped on Over voltage protection at URI and DT received at Amargarh DR shoiwng OV operated at URI has been attached. Mail from Indigrid of DT receive has been attached.	NC	
NR240126	601841	400KV AMARGARH - WAGOORA- I	1/22/2026 22:26	1/23/2026 0:16	GOVC	System voltage was very high due to sudden load through-off in the area due to heavy snowfall caused by western disturbances in the area resulting in high system voltage Line tripped on operation of Over voltage protection at Wagoora. DR showing Over voltage opereted at Wagoora has been attached.	NC	
NR240128	601843	400KV AMARGARH - WAGOORA - II	1/22/2026 23:02	1/23/2026 0:17	SRMU	Line tripped on Direct trip receive due to malopertion at Amargarh SS(Indigrid). Event & DR showing Direct trip receive are attached for reference.	NC	
NR222002	601845	220KV BAIRASIUL-PONG	1/22/2026 22:49	1/23/2026 6:59	SRMU	Line remains charged from Pong but tripped from NHPC Bairasuil only due to mal-operation of Over voltage protection at NHPC Bairasuil. 1.DR from Bairasul showing Over voltage has been attached for reference.	NC	
NR240137	601847	400KV KISHENPUR-KISHTWAR-1	1/22/2026 23:02	1/23/2026 1:35	LNCC	Line passes through avalanche Zone in Hilly terrain of Ramban and Doda area of J&K. Line tripped on B-N fault due to Heavy snow accompanied by freezing rain accumulated on Optical Ground Wire (OPGW) resulting in snapping of OPGW in span No 220-221 due to heavy ice loading of OPGW. followed by significant sagging and galloping. Fault data Kishtwar :78km,2.16kA. Following documents has been attached for refrence. 1.GPS tagged Tower Name plate photo 2.GPS tagged Snapped OPGW photo due to heavy snowfall. 3.Relay fault location Kishtwar matching the location 4.Tower Schedule and KMZ file. Copy of DRDO report indicating highly unsafe condition in the area is attached for reference.	NC	
NR240138	601849	400KV KISHENPUR-KISHTWAR-2	1/22/2026 23:02	1/23/2026 1:13	GOVC	System voltage was very high due to sudden load through-off in the area due to heavy snowfall caused by western disturbances in the area resulting in high system voltage Line tripped on Over voltage protection. Following annexure has been attached for reference: 1.DR Kishtwar shoiwng OV operated and Mail from Kishtwar (Resonia) regardng OV operated. 2.DR Kishenpur(PG) showing DT receive.	NC	
NR222046	601850	220KV JAMMU-CHOWADI	1/22/2026 22:50	1/23/2026 0:13	SRMU	Line remains charged from Jammu but tripped from Chowadi (JKPTCL due to maloperation of Over voltage protection at Chowadi	NC	
NR222016	601851	220KV SALAL-JAMMU-I	1/22/2026 22:50	1/23/2026 1:10	SRMU	Line remains charged from Jammu but tripped from Salal(NHPC) due to maloperation of Over voltage protection at Salal NHPC. Copy of email from Salal has been attached for reference.	NC	
NR222019	601853	220KV SALAL-KISHENPUR-II	1/22/2026 22:50	1/23/2026 1:50	SRMU	Line remains charged from Kishenpur but tripped from Salal(NHPC) due to maloperation of Over voltage protection at Salal NHPC. Copy of email from Salal has been attached for reference.	NC	
NR240132	601855	400 KV BAGLIHAR-NEW WANPOH-1	1/23/2026 0:56	1/23/2026 1:56	LNCC	Line passes through avalanche Zone in Hilly terrain of Ramban and Doda area of J&K. Line tripped on B-N fault due to Heavy snow accompanied by freezing rain accumulated on Optical Ground Wire (OPGW) resulting in snapping of OPGW in span No 260-261 due to heavy ice loading of OPGW followed by significant sagging and galloping. Fault details New Wanpoh: 14.622km, 5.621 kA.Line charging was delayed by JKPTCL baglihar due to no communication from Baglihar. Following documents has been attached for refrence. 1.GPS tagged Tower Name plate photo 2.GPS tagged Snapped OPGW photo due to heavy snowfall. 3.Relay fault location 4.Tower Schedule and KMZ file. 5.Mail to JKPTCLin correspondence to NRLDC has been attached for reference	NC	
NR240131	601857	400 KV KISHENPUR-BAGLIHAR-III	1/23/2026 0:56	1/23/2026 1:56	SRMU	There was Fault in 400KV Baglihar Wanpoh Line but protection at Baglihar failed to operate resulting in tripping of 400KV Kishenpur baglihar 3 in Z3. Line cleared for charging at 01:56 Hrs of 23.01.2026 but there was no response from JKPTCL as no official was avaialble in JKSPDC control Room. Following docments has been attached for refrence: 1.DR kishenpur shoiwng fault in Z-3 which is outsisde the line. 2. Kishenpur relay Fault Location. 2.Copy of email sent to JKSPDC with copy to NRLDC is attached for reference has been attached for reference:	NC	
NR2ICT80	601859	AMRITSAR 500 MVA ICT-IV	1/23/2026 4:23	1/23/2026 6:46	GOFC	ICT tripped on operation of over flux protection (LV Site as system voltage was beyond set value	NC	
NR213203	601860	132KV SEWA2 - HIRANAGAR -I	1/22/2026 23:02	1/23/2026 12:31	SRMU	Line remains charged from Hiranagar but tripped on Over voltage protection at Sew2 NHPC due to maloperation of over voltage protection at SEWA NHPC Documents attcahed for reference:- 1. DR from Sewa2(NHPC) showing Over voltage opeartion. 2. Sewa 2(NHPC) report	NC	
NR213201	601861	132KV SEWA2 - HIRANAGAR -II	1/22/2026 23:02	1/23/2026 13:19	GOVC	Line remains charged from Hiranagar but tripped from NHPC SEWA due to maloperation of Over voltage protection at Sewa2 end. Documents attcahed for reference:- 1. DR from Sewa2(NHPC) showing Over voltage opeartion. 2. Sewa 2(NHPC) report	NC	
NR240080	601862	400KV RAMPUR-NALAGARH-I	1/23/2026 5:55	1/24/2026 20:55	LNCC	Line passes through Hilly terrain of Kinnore in HP. Line tripped on R-Y Fault due Heavy snow accompanied by freezing rain accumulated on Optical Ground Wire/Conductors resulting in heavy ice loading of OPGW & conductors thereby leading to significant sagging, galloping and hence Ph to Ph clearance violation in span No 230-231 folowed by snapping of conductor. Fault data Nalagarh: 52.62kM, 7.5KA whereas actual fault found at 54.3km, matching the fault location Following documents has been attached for reference: 1.GPS tagged Tower Name plate photo. 2.GPS tagged photo of snapped conductor. 3.Realy fault location Nalagarh end matching the fault location. 4.Tower Schedule and kMZ file Copy of DRDO report indicating highly unsafe condition in the area is attached for reference.	NC	
NR222016	601875	220KV SALAL-JAMMU-I	1/23/2026 4:53	1/23/2026 6:58	SRMU	Line remains charged from Jammu but tripped from Salal(NHPC) due to maloperation of Over voltage protection at Salal NHPC. Copy of email from Salal has been attached for reference.	NC	
NR240125	601876	400KV URI 1 - AMARGARH - I	1/23/2026 6:53	1/23/2026 9:21	LNCC	Line passes through avalanche Zone in Hilly terrain of Ganderbal area of Kashmir.Line tripped on R-N fault due to Heavy snow accompanied by freezing rain accumulated on Optical Ground Wire (OPGW) resulting in heavy ice loading of OPGW thereby leading to significant sagging, galloping and hence clearance violation with Top conductor in span No 143-144. Fault data amargarh 12.3km, 4.38kA Following document has been attached for refrence. 1.GPS tagged Tower Name plate photo. 2.GPS tagged photos of OPGW heavily ice loading of OPGW. 3.Tower Schedule and kMZ file	NC	

NR240127	601878	400KV URI 1 - AMARGARH - II	1/23/2026 7:17	1/25/2026 18:18	LNCC	Line passes through avalanche Zone in Hilly terrain of Ganderbal area of Kashmir. Line tripped on B-N fault due to Heavy snow accompanied by freezing rain accumulated on Optical Ground Wire (OPGW) resulting in snapping of OPGW in span No 107-108 -109 due to heavy ice loading of OPGW followed by significant sagging and galloping. Fault data amargarh: 20.9km, 4.1kA. Following document has been attached for refrence. 1.1.GPS tagged Tower Name plate photo. 2.GPS tagged photo of snapped OPGW 3.Realy snap Amargarh 4.Tower Schedule and kMZ file	NC	
NR240051	601883	400KV URI 2- WAGOORA	1/23/2026 10:04	1/24/2026 20:32	LNCC	Line passes through avalanche Zone in Hilly terrain of Ganderbal area of Kashmir. Line tripped due OPGW snapped due to failure of Tower peak at LOC No 72 & 73 caused by snow avalanches especially from steep terrain. Copy of DRDO report indicating highly unsafe condition in Gandarwal hilly terrain is attached for reference. Fault data Wagoora: M-1: 2.7 kA,75.24 km. Following documents has been attached for reference. 1.Copy of DRDO report indicating Highly critical Snaow avalanche in the area 2.GPS tagged Tower Name plate photo. 3.GPS tagged photo of affected tower location. 4.Geo tagged video indicating 5.Realy fault location Wagoora(PG) end. 6.Tower Schedule and kMZ file Copy of DRDO report indicating highly unsafe condition in the area is attached for reference.	NC	
NR240121	601888	400KV KISHENPUR-NEW WANPOH-IV	1/23/2026 8:36	1/26/2026 20:10	LNCC	Line passes through avalanche Zone in Hilly terrain of Ramban area of Kashmir. During charging of the Line at 08:36hrs of 23.01.2026 (Line was open on LVRD), it tripped on SOTF. During patrolling, it was found that a large tree has fallen from outside line corridor from uphill and resting on Span No 266-267 resulting in Line tripping. Snapping of OPGW also reported due to heavy ice loading of OPGW in span 364-365 leading to significant sagging and Galloping followed by galloping resulting in OPGW snapping. Thereafter line taken under emergency shutdown above rectification. Charging delayed as approach road including NH remains closed due to heavy snowfall at multiple locations. Line cleared for charging at 20:10 Hrs of 26.01.2026 but line charging was not allowed by NRLDC due to system conmstraints. Following document has been attached for refrence (02 Set for tree/ OPGW) 1.1.GPS tagged Tower Name plate photo. 2.GPS tagged photo of affected fallen on Span 266-267 3.Relay snap Wanpoh 4.Tower Schedule and kMZ file	NC	
NR240054	601889	400KV NALAGARH-KOLDAM-II	1/23/2026 11:18	1/23/2026 16:39	LNCC	Line tripped on B-N Fault due to heavy rain,wind and thunderstorm with lightning at loc 11. Fault details Nalagarh: 6.34KA, 42.89KM.Actual fault found at 43.91km which is matching the fault location Following documents has been attached for reference: 1.GPS tagged Tower Name plate photo. 2.GPS tagged photo of affected tower location. 3.Realy fault location Nalagarh end matching the fault location. 4.Tower Schedule and kMZ file	NC	
NR240112	601893	400KV DEHAR (BBMB) - RAJPURA (PSTCL) LILO PORTION	1/23/2026 10:56	1/24/2026 17:56	OMSU	Line tripped on Y-N fault due to fault in the BBMB portion of the Line. Fault data Rajpura: 55.03km whereas POWERGRID portion is only 14.4KM from Rajpura. Therefore, fault is in BBMB portion of the Line. Following documents attached for reference: 1.Relay fault location (Rajpura end) 2. Mail from BBMB.	NC	
NR240075	601895	400KV KISHENPUR-NEW WANPOH-I	1/23/2026 12:37	1/25/2026 18:18	LNCC	Line passes through avalanche Zone in Hilly terrain of Ramban area of Kashmir.Line tripped on R-N fault due to Heavy snow accompanied by freezing rain accumulated on Optical Ground Wire (OPGW) resulting in snapping of OPGW in span No L30-261 followed by Bending of Tower peak at LOC No L30. Heavy ice loading of Earthwire sulted in significant sagging in Earthwire and hence high pressure during galloping . Line cleared for charging at 18:18 Hrs of 25.01.2026 but line charging not allowed by NRLDC at that time due to system constraints. Following document has been attached for refrence. 1.1.GPS tagged Tower Name plate photo. 2.GPS tagged photo of affected Snapped Earthwire. 3.Offline fault locator snaps Kishnepur end 4.Tower Schedule and kMZ file Copy of DRDO report indicating highly unsafe condition in the area is attached for reference.	NC	
NR240132	601897	400 KV BAGLIHAR-NEW WANPOH-1	1/23/2026 12:53	1/25/2026 18:40	LNCC	Line passes through avalanche Zone in Hilly terrain of Ramban and Doda area of J&K. Line tripped on B-N fault due to Heavy snow accompanied by freezing rain accumulated on Optical Ground Wire (OPGW) resulting in snapping of OPGW in span No 166-167 due to heavy ice loading of OPGW followed by significant sagging and galloping. Fault data New Wanpoh 48.2 km, 3.74 kA. Following documents has been attached for reference. 1.GPS tagged Tower Name plate photo 2.GPS tagged Snapped OPGW photo due to heavy snowfall. 3.Relay fault location 4.Tower Schedule and KMZ file. Copy of DRDO report indicating highly unsafe condition in the area is attached for reference.	NC	
NR240125	601901	400KV URI 1 - AMARGARH - I	1/23/2026 12:43	1/23/2026 17:55	LNCC	Line passes through avalanche Zone in Hilly terrain of Ganderbal area of Kashmir. Line tripped on R-N fault due to Heavy snow accompanied by freezing rain accumulated on Optical Ground Wire (OPGW) resulting in heavy ice loading of OPGW thereby leading to significant sagging, galloping and hence clearance violation with Top conductor in span No 143-144. Fault data amargarh: 12.5km, 4.2kA Following document has been attached for refrence. 1.1.GPS tagged Tower Name plate photo. 2.GPS tagged photos of OPGW heavily ice loading of OPGW. 3.Tower Schedule and kMZ file	NC	
NR222035	601903	220KV KISHANGANGA (NHPC) - DELINA (JKPDD) - II	1/23/2026 10:51	1/23/2026 18:17	LNCC	Line passes through avalanche Zone in Hilly terrain of Ganderbal area of Kashmir. Line tripped on R-B fault in span No 122-123 due to Heavy snow accompanied by freezing rain accumulated on E/W and conductors resulting in heavy ice loading leading to significant sagging, galloping and hence clearance violation. Copy of DRDO report indicating highly unsafe condition in the area is attached for reference. Fault data Kishenganga: 35km, 2.0kA Following Documents has been attached for refrence. 1.GPS tagged Tower Name Plate photo 2.GPS tagged conductor photo shwoing flashover marks due to Galloping. 3.Tower Schedule and KMZ file. Copy of DRDO report indicating highly unsafe condition in the area is attached for reference.	NC	
NR240120	601906	400KV KISHENPUR-NEW WANPOH-III	1/23/2026 14:07	1/24/2026 18:45	LNCC	Line passes through avalanche Zone in Hilly terrain of Ramban area of Kashmir.Line tripped on R-N fault due to Heavy snow accompanied by freezing rain accumulated on Optical Ground Wire (OPGW) resulting in heavy ice loading of OPGW thereby leading to significant sagging, galloping and hence clearance violation with Top conductor in span No 275-276. Fault data New Wanpoh:- 33.64km, 1.4kA. Following document has been attached for refrence. 1.1.GPS tagged Tower Name plate photo. 2.GPS tagged photo of affected Earthwire 3.Relay snap Kishnepur end 4.Tower Schedule and kMZ file Copy of DRDO report indicating highly unsafe condition in the area is attached for reference.	NC	
NR240131	601908	400 KV KISHENPUR-BAGLIHAR-III	1/23/2026 14:20	1/24/2026 21:27	LNCC	Line passes through avalanche Zone in Hilly terrain of Ramban and Doda area of J&K. Line tripped on B-N fault due to Heavy snow accompanied by freezing rain accumulated on Optical Ground Wire (OPGW) resulting in snapping of OPGW in span No 109-110 due to heavy ice loading of OPGW followed by significant sagging and galloping Fault data Kishenpur : 5.36kA, 42.4kM. Following document has been attached for refrence. 1.1.GPS tagged Tower Name plate photo. 2.GPS tagged photo of snapped OPGW 3.Realy fault snaps Kishenpur 4.Tower Schedule and kMZ file	NC	
NR240084	601910	400KV RAMPUR-NALAGARH-II	1/23/2026 15:06	1/24/2026 20:41	LNCC	Line passes through Hilly terrain of Kinnore in HP. Line tripped on Y-N Fault due Heavy snow accompanied by freezing rain accumulated on Optical Ground Wire/Conductors resulting in heavy ice loading of OPGW & conductors thereby leading to significant sagging, galloping and hence clearance violation in span No 230-231 followed by snapping of OPGW. Fault data Nalagarh: 47.9km & 57.9KM (Offline fault locator) Following documents has been attached for reference: 1.GPS tagged Tower Name plate photo. 2.GPS tagged photo of snapped conductor. 3.Offline from Nalagarh . 4.Tower Schedule and kMZ file	NC	

NR213201	601912	132KV SEWA2 - HIRANAGAR -II	1/23/2026 14:16	1/23/2026 20:00	SBBU	Line tripped from Sewa2(NHPC) end only on operation of LBB protection at SEWA(NHPC) during synchronization of Unit #1. Line remain charged from Hiranagar SS. Bay and protection at Sewa2 is owned and maintained by NHPC. Sewa 2 report has been attached for reference.	NC	
NR213203	601913	132KV SEWA2 - HIRANAGAR -I	1/23/2026 14:16	1/23/2026 18:56	SBBU	Line tripped from Sewa2(NHPC) end only on operation of LBB protection at SEWA(NHPC) during synchronization of Unit #1. Line remain charged from Hiranagar SS. Bay and protection at Sewa2 is owned and maintained by NHPC. Sewa 2 report has been attached for reference.	NC	
NR213205	601914	132KV SEWA2 - KATHUA	1/23/2026 14:16	1/23/2026 16:44	SBBU	Line tripped from Sewa2(NHPC) end only on operation of LBB protection at SEWA(NHPC) during synchronization of Unit #1. Line remain charged from Kathua SS. Bay and protection at Sewa2 is owned and maintained by NHPC. Sewa 2 report has been attached for reference.	NC	
NR240130	601925	400KV GUMMA-NATHPA JHAKRI - II	1/23/2026 18:30	1/24/2026 22:29	LNCC	Line passes through Hilly terrain of Kinnore in HP. Line tripped on B-N fault due to Heavy snow accompanied by freezing rain accumulated on Optical Ground Wire (OPGW) resulting in snapping of OPGW in span No 127-128 due to heavy ice loading of OPGW followed by significant sagging and galloping. Fault Data Gumma:- 2.1km, 8.8kA Following document has been attached for refrence. 1.1.GPS tagged Tower Name plate photo. 2.GPS tagged photo of snapped OPGW 3.Relay snaps Gumma 4.Tower Schedule and kMZ file	NC	
NR240133	601927	400KV GUMMA-NATHPA JHAKRI - I	1/23/2026 18:52	1/23/2026 21:36	LNCC	Line tripped on RB-N fault due to Heavy snow accompanied by freezing rain accumulated on earthwire resulting in clearance violation between earthwire and conductors in span No 88-89 due to heavy ice loading of earthwire and conductors followed by significant sagging and galloping. Excessive accumulation of Snow on Conductors in span section 88-89 casuing Ph -ph fault Fault Data Gumma:- 16.9km, Ir-7.03kA, Ib-5.5kA Following doucments has been attached for refrence: 1.GPS tagged Tower Name plate 2.Tower and Conductor photos showing Snow 3.Gumma end Relay fault location 4.Tower Schedule and KMZ file.	NC	
NR240137	601930	400KV KISHENPUR-KISHTWAR-1	1/23/2026 21:38	1/24/2026 2:04	SRMT	Line tripped due to maloperation of over voltage Stage protection	NU	Maloperation at Kishenpur
NR222047	601932	220KV CHOWADI-SAMBA	1/23/2026 21:50	1/23/2026 23:18	SRMU	Line Auto reclosed successfully from Samba(PG) but tripped from Chowadi JKPTCL due to maloperation of A/R scheme at JKPTCL S/S Chowadi. Following Documents has been attached for reference: 1.Samba end DR Showing successfull Autoreclosure 2.Voltage Graph Samba showing Line in charged condition from Samba.	NC	
NR240074	601938	400KV WAGOORA-NEW WANPOH-II	1/24/2026 2:52	1/24/2026 13:09	LNCC	Line passes through avalanche Zone in Hilly terrain of Ramban area of Kashmir.Line tripped on R-N fault due to Heavy snow accompanied by freezing rain accumulated on Optical Ground Wire (OPGW) resulting in heavy ice loading of OPGW thereby leading to significant sagging, galloping and hence clearance violation with Top conductor in span No 371-372. Fault data Wagoora:23.5km,3.64kA. Following documents has been attached for reference. 1.GPS tagged Tower Name plate photo. 2.GPS tagged photo of affected OPGW damaged and galopping 371-372 3.Realy fault location Wagoora(PG) end. 4.Tower Schedule and kMZ file Copy of DRDO report indicating highly unsafe condition in the area is attached for reference.	NC	
NR240137	601940	400KV KISHENPUR-KISHTWAR-1	1/24/2026 5:05	1/24/2026 6:37	LNCC	Line passes through avalanche Zone in Hilly terrain of Ramban and Doda area of J&K.. Line tripped on B-N fault due to Heavy snow accompanied by freezing rain accumulated on Optical Ground Wire (OPGW) resulting in snapping of OPGW in span No 220-221 due to heavy ice loading of OPGW followed by significant sagging and galloping. Fault details Kishenpur: 41.7km, 7.1 kA. Following documents has been attached for refrence. 1.GPS tagged Tower Name plate photo 2.GPS tagged Snapped OPGW photo due to heavy snowfall. 3.Relay fault location Kishenpur matching the location 4.Tower Schedule and KMZ file. Copy of DRDO report indicating highly unsafe condition in the area is attached for reference.	NC	
NR240132	601995	400 KV BAGLIHAR-NEW WANPOH-1	1/25/2026 20:53	1/26/2026 18:06	LNCC	Line passes through avalanche Zone in Hilly terrain of Ramban and Doda area of J&K. Line tripped on B-N fault due to Heavy snow accompanied by freezing rain accumulated on Optical Ground Wire (OPGW) resulting in snapping of OPGW in span No 240-241 due to heavy ice loading of OPGW followed by significant sagging and galloping. Fault data New Wanpoh: 26.89 km, 4.6 kA. Following documents has been attached for refrence. 1.GPS tagged Tower Name plate photo 2.GPS tagged Snapped OPGW photo due to heavy snowfall. 3.Relay fault location 4.Tower Schedule and KMZ file. Copy of DRDO report indicating highly unsafe condition in the area is attached for reference.	NC	
NR240131	601997	400 KV KISHENPUR-BAGLIHAR-III	1/25/2026 20:53	1/26/2026 11:08	SRMU	There was fault in 400KV Baglihar Wanpoh Line but protection at Baglihar failed to operate resulting in outage of line on operation of distance protectionn in Z2. Line was cleared for charging at 01:56 Hrs of 23.01.2026 but Charging not allowed by NRLDC due to system constraints. Following docments has been attached for refrence: 1.DR kishenpur shoiwng fault in Z-3 which is outsisde the line. 2. Kishenpur relay Fault Location. 2.Copy of email sent to JKSPDC with copy to NRLDC is attached for reference has been attached for reference: Copy of Email indicating request for charging is attached.	NC	Maloperation at Baglihar
NR240075	602041	400KV KISHENPUR-NEW WANPOH-I	1/27/2026 4:06	1/27/2026 13:53	LNCC	Line passes through avalanche Zone in Hilly terrain of Ramban area of Kashmir.Line tripped on Y-N fault due to Heavy snow accompanied by freezing rain accumulated on Ground Wire resulting in its snapping in span No L26-27 followed by Bending of Tower peak at LOC No L26. Heavy ice loading of OPGW resulted in significant sagging in OPGW and hence high pressure during galloping . Fault data New Wanpoh: 11.81 km, 7.3kA. Following document has been attached for refrence. 1.1.GPS tagged Tower Name plate photo. 2.GPS tagged photo of affected Snapped Earthwire 3.Relay snaps Kishnepur end 4.Tower Schedule and kMZ file Copy of DRDO report indicating highly unsafe condition in the area is attached for reference.	NC	
NR240027	602055	400KV Nalagarh Patiala - II	1/27/2026 11:03	1/27/2026 11:13	LWHT	Line tripped from Patiala end on B-N Fault due to snapping of jumper at LOC No 33. Fault data Patiala: 27KA, 0.9KM .	NC	
NR240085	602123	400KV PANIPAT (BBMB) - PANCHKULA (PGCIL) LILO PORTION	1/29/2026 9:32	1/29/2026 12:45	SRMU	Line remain charged from Panchkula end but tripped from Panipat end only due to relay maloperation at Panipat(BBMB). Bay at Panipat is owned and maintained by BBMB. Panipat (BBMB) tripping report is attached for reference. Panchkula end Voltage graph showing persistant voltage is attached for reference	NC	

	Total tripping including LNCC & successful autoreclosures	49
NC	Nc is the number of correct operations at internal power system faults	48
NF	Nf is the number of failures to operate at internal power system faults,	0
NU	Nu is the number of unwanted operations,	1
NI	Ni is the number of incorrect operations and is the sum of Nf and Nu	0
	The Dependability Index defined as $D = Nc/(Nc+Nf)$	100.00%
	The Security Index defined as $S = Ncl/(Nc+Nu)$	97.96%
	The Reliability Index defined as $R = Ncl/(Nc+Ni)$	100.00%

S.No.	Substation	Element name	Date & Time of the tripping	Categorization (F/U) F = Failures to operate at internal power system faults U = Unwanted operations	Reason for failures/Unwanted operation	Corrective action taken/ to be taken
1	BARA	765 KV Line 1 Bara - Mainpuri	28.01.2026 & 23:59 Hrs	Unwanted operation	AR operation was unsuccessful	The DR and event files have been shared with the OEM for analysis and corrective action in the AR.

Tripping Details						Reason of tripping & remedial action							
Punjab State Transmission Corporation Limited													
January-2026													
S.N.	**Sub-Station**	**Unit (SPS/Line/ICT/GT/etc.)**	**Date on which Power System Fault occurred**	**Local End Indications**	**Remote End Indications**		**Nc**	**Nf**	**Nu**	**Ni**	**Dependability Index (D)**	**Security Index (S)**	**Reliabilty Index (R)**
1	400 kV S/S Dhanansu	500 MVA, 400/220 kV ICT-2	23-01-2026 at 10.35 Hrs	OLTC PRD, Master Relay		Moisture ingress in OLTC Y-ph PRD, Now relay has been properly covered to avoid such condition in future.	0	0	1	1	#DIV/0!	0	0
2	400 kV S/S Makhu	100 MVA, 220/66 kV P.T/F T-3	10-01-2026 at 07.38 Hrs	Bucchholz Relay (Trip Stage-I), Master Relay		Due to no oil in conservator tank, Now oil has been topped up in conserevator and ICT is in operation	0	0	1	1	#DIV/0!	0	0
		400 kV Makhu-Amritsar ckt.I	07-01-2026 at 07.46 Hrs	Zone-I, R-ph, Fault distance-39.02 km	R-ph, Fault distance-26.3 km	R-ph insulator disc strings flashed on Tower No.101	1	0	0	0	1	1	1
		400 kV Makhu-Muktsar ckt.I	10-01-2026 at 05.40 Hrs	Zone-I, B-ph, Fault Distance-36.09 km	Zone-I, B-ph, Fault Distance-51.4 km	B-ph insulator Disc strings flashed on Tower No.151	1	0	0	0	1	1	1
3	400 kV S/S Nakodar	400 kV Nakodar-Rajpura ckt.II	23-01-2026 at	Zone-I, R-ph, Fault Distance-8.5 km	R-ph, Fault Distance-130 km	Due to bad weather (rain)	1	0	0	0	1	1	1
4	400 kV S/S Muktsar	400 kV Muktsar-Makhu ckt.I	10-01-2026 at 05.40 Hrs	Zone-I, B-ph, Fault Distance-51.4 km	Zone-I, B-ph, Fault Distance-36.09 km	B-ph insulator Disc strings flashed on Tower No.151	1	0	0	0	1	1	1
		400 kV Muktsar-Talwandi ckt.I	10-01-2026 at 05.40 Hrs	Tie ckt. CB tripped due to fault in 400 kV Muktsar-Makhu ckt.I	Not tripped	Main CB of the line is not operational, due to which line tripped when Tie CB tripped	0	0	1	1	#DIV/0!	0	0
5	400 kV S/S Rajpura	400 kV Rajpura-Dehar ckt.	23-01-2026 at 10.56 Hrs	Zone-I, B-ph, Fault Distance-108.2 km	Zone-I, Y-ph, Fault Distance-24.30 km	Due to bad weather	1	0	0	0	1	1	1
		400 kV Rajpura-Dehar ckt.	23-01-2026 at 16.43 Hrs	Zone-I, R-ph, Fault Distance-55.03 km	No indications as line tripped while charging from Rajpura end	Earth wire break between tower no. 204 & 205	1	0	0	0	1	1	1
		400 kV Rajpura-Bhiwani ckt.	27-01-2026 at 16.16 Hrs(A/R optd.)	Zone-I, R-ph, Fault Distance-39.66 km(A/R optd.)	B-ph, Fault Distance-154.1 km(A/R optd.)	A/R Operated	1	0	0	0	1	1	1
		220 kV Rajpura(400)-MGG ckt.I	27-01-2026 at 16.42 Hrs(A/R optd.)	Zone-I, R-ph, Fault Distance-6.139 km(A/R optd.)	Zone-I(A/R optd.)	A/R Operated	1	0	0	0	1	1	1

Reason for Performance Indices less than Unity- January 2026 (RVPN)

Case-1 **400 KV AKAL- JODHPUR LINE at 400KV GSS AKAL on 21.01.2026**

No. of Unwanted operation – 1

Reason of unwanted operation –

Line tripped due to ongoing relay testing on the associated 400 kV 50 MVAR Line Reactor at 400 KV Akal end.

Corrective Action taken – YES

Testing personnel were asked to work carefully.

Case-2 **80 MVAR STPS - BABAI CKT- I Line Reactor at 400 KV GSS BABAI, 400 KV 50 MVAR Kankani Line Reactor & 400 KV 50 MVAR Kankani Line Reactor at 400KV GSS AKAL on 04.01.2026**

No. of Unwanted operation – 3

Reason of unwanted operation –

Due to low oil level.

Corrective Action taken – YES

Oil top up done and level maintained. GSS incharge was asked to get the MOG repaired.

Case-3 **400/220KV, 315 MVA, ICT-III at 400KV GSS BABAI on 15.01.2026**

No. of Unwanted operation – 1

Reason of unwanted operation –

May be a temporary DC fault.

Corrective Action taken – Partial

Complete DC circuit checked and nothing abnormal observed.

Case-4 **220KV Badisid-Aau-I Line & 220KV Badisid-Aau-II Line at 220 KV GSS BADISID on 14.01.02026**

No. of Unwanted operation – 1

No. of Failures to operate -1

Reason of unwanted operation –

220KV Badisid-Aau-I Line tripped due to cable damaged by reptiles, load shifted to 220KV Badisid-Aau-II Line & its jumper from BUS snapped. Relay operated in Z4 but CB stuck. .

Corrective Action taken – YES

Damaged cable repaired and CB attended.

Case-5 **220 KV Bhopalgarh-Khinvsar Line & 220 KV Barsingsar-Khinvsar Line at 220 KV GSS KHINVSAR on 17.01.2026**

No. of incorrect operation – 2

Reason of unwanted operation –

Over current setting was enabled.

Corrective Action taken – YES

Over current setting disabled.

Case-6 **220 KV GSS VATIKA-KTPS LINE at 220KV GSS VATIKA on 27.01.2026**

No. of Failures to operate – 1

Reason of unwanted operation –

CB at VATIKA end failed to operate

Corrective Action taken – YES

CB attended.

Case-7 **220 KV GSS MANDAWAR- HINDAUN LINE at 400 kV GSS HINDAUN on 30.01.2026**

No. of Unwanted operation – 1

Reason of unwanted operation –

DC fault due to defective cable.

Corrective Action taken – Partial

Cable to be replaced during next shutdown.

Case-8 **220/132KV TR-II 160 MVA EMCO Make at 220 KV MANSAROVAR on 28.01.2026**

No. of Unwanted operation – 1

Reason of unwanted operation –

HS-OC-NOD relay optd which was enable in NDR relay.

Corrective Action taken –YES

High Set O/C Non directional element disabled.

RE: Submission of protection performance indices to NRPC Secretariat on monthly basis- reg. for Dec.-2025

< mohammad.irfan@tatapower.com >

Thu, 05 Feb 2026 3:57:52 PM +0530

To "LokeshAgrawal"<lokesh.cea@gov.in>,"NRLDC SO 2"<nrldcso2@grid-india.in>

Cc "Kalaria Binoy"<binoy.kalaria@tatapower.com>,"Pareek Anil" <anil.pareek@tatapower.com>,"Pallikuth Devanand" <p.devanand@tatapower.com>,"Sabale Mahadeo" <mahadeo.sabale@tatapower.com>,"TPREL FNS" <tprel.fns@tatapower.com>,"George Vineet" <vineet.george@tatapower.com>,"Verma Rakesh" <rverma@tatapower.com>,"Kusurkar Gunesh" <gunesh.kusurkar@tatapower.com>,"Birala Sudarshan" <sudarshan.birala@tatapower.com>,"Gavadhakatla S V" <sivanarayana@tatapower.com>

Tags Not in Contacts

1 Attachment(s)

attachment1.eml
91.7 KB

Dear Sir,
The protection performance indices for the 300 MW BTPSL Banderwala(220kV BTPSL_SL_BIK2_PG_BIKANER-2) unit were observed to be below 1, primarily due to the mal-operation of ICT-1 SPRR. We are currently coordinating with the OEM to carry out a detailed Root Cause Analysis (RCA). The RCA report will be shared with you at the earliest upon completion.
Thank You

Regards,
Mohammad Irfan
Lead - Testing
PLOT NO 72, VINAYAK ENCLAVE, BIKANER, 334001
Tel: 7014565030 Mobile: 9610301433

From: Irfan Mohammad
Sent: 06 December 2025 18:46
To: LokeshAgrawal <lokesh.cea@gov.in>; NRLDC SO 2 <nrldcso2@grid-india.in>
Cc: Kalaria Binoy <binoy.kalaria@tatapower.com>; Pareek Anil <anil.pareek@tatapower.com>; Pallikuth Devanand <p.devanand@tatapower.com>; Sabale Mahadeo <mahadeo.sabale@tatapower.com>; TPREL FNS <tprel.fns@tatapower.com>; Birala Sudarshan <sudarshan.birala@tatapower.com>; Potdar Sagar <sagar.potdar@tatapower.com>; Gavadhakatla S V <sivanarayana@tatapower.com>; Kumar Shubham2 <shubham2.kumar@tatapower.com>; George Vineet <vineet.george@tatapower.com>; Kumar Vinod <vinod.kumar@tatapower.com>; Verma Rakesh <rverma@tatapower.com>
Subject: Submission of protection performance indices to NRPC Secretariat on monthly basis- reg. for Dec.-2025

Dear Sir,

Greetings from Tata Power Renewable Energy Ltd.

Kindly find attached Protection performance indices November -2025 for Tata Power Renewable energy ltd. Plant details are given below.

Sr. No.	Plant details	Line details
1	150MW TPREL MSEDCL Chayyan-I	220KV Chayyan -PGCIL Bhadla-1
2	150MW TPREL TPC-D Chayyan-II	
3	225MW TPGEL Noorser	220KV Noorser -PGCIL Bikaner-1
4	110MW KSEB Noorser	
5	300MW BTPSL BANDERWALA	220KV BTPSL_SL_BIK2_PG-BIKANER_2(PBTSL)BANDERWALA_TPSL

Thank You,

Regards,
Mohammad Irfan
Lead - Testing
PLOT NO 72, VINAYAK ENCLAVE, BIKANER, 334001
Tel: 7014565030 Mobile: 9610301433

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मुख्य अभियन्ता (सं0)
निदेशक (आपरेशन)

U.P. Power Transmission Corporation Ltd.
Shakti Bhawan Extn.
14 Ashok Marg, Lucknow– 226001
Tel/Fax: 0522–2287833/2286476
Email: director_op@upptcl.org

No: 549 **/Dir (Op)/ NRPC** **Date:** 03/02/2026

Subject: **Protection performance indices of protection system for the month of 01/2026.**

SEO
NRPC
New Delhi.

Through E- Mail

Mail ID – seo-nrpc@nic.in

Kindly find enclosed herewith copy of compiled Protection performance indices along with the reports obtained from all 06 Zonal offices of UPPTCL for the month of January, 2026.

3/2/26

(Md. Reza Ahmad)
Chief Engineer (A)

No: **/Dir (Op)/** **Date:**

Copy to :-

1 Director (Operation) UPPTCL, Lucknow for information.
2 Chief Engineer, TC/TW/TSW/TSC/TSE/TNE, UPPTCL, Lucknow/Meerut/ Agra/Jhansi/ Prayagraj/Gorakhpur.
3 Superintending Engineer (RA), UPSLDC, Lucknow.

(Md. Reza Ahmad)
Chief Engineer (A)

Protection Perfomance Indices

January, 2026

S.No.	Transmission Zone	Dependability index	Security index	Reliability index	Remark
1	TC, Lucknow	1	1	1	---
2	TSC, Jhansi	1	1	1	---
3	TW, Meerut	0.98	0.95	0.94	1. **At 400 kV-II, Muradnagar S/S :** On dated 31.01.2026 400 kV Mathura line trip at 11:56 hrs but unfortunately the Y-phase pole of Tie breaker stuck due to this Y-phase pole damage and Simbhaoli ckt-I tripped on o/v-stage-2 and ICT-II and ICT-III tripped on E/F. 2. **At 220 kV Mawana (GIS) :** Tripping due to relay auxilary card damaged which is replace and T/F is charged.
4	TNE, Gorakhpur	1	0.58	0.58	**At 220 kV S/S Maharajganj (Gopala) :** 1. Due to maloperation of 220 kV PGCIL line Distance Relay (main-1 Siemens Siprotec 7SA611) LBB protection initiated/operated on date 29.01.2026 at 06:00 hrs. 2. Again PGCIL Line tripped at 09:05 hrs on dated 29.01.2026 due to maloperation of 220 kV PGCIL line Distance Relay (main-1) (Bus bar protection panel supply off at this time) **Corrective action :** LBB Protection has been disabled in 220 kV PGCIL line Main-1 Distance Relay, LBB Protection of Main-2 Distance Relay in healthy and operative.
5	TSW, Agra	1	1	1	---
6	TSE, Prayagraj	1	0.9375	1	**1. At 400 kV S/S Sarnath :** 400 kV Sarnath-Azamgarh Line tripped due to malfunctioning DT (Direct Trip) received from Azamgarh end. **Remedy Action :** During petroling of line nothing has been found. DT Received issue has been Troubleshooted by 400 kV Azamgarh End.
Total indices value		**0.997**	**0.911**	**0.920**	---

Reporting of performance indices for protection System
(for element connected at 220kV and above)
Name of Utility : ACME Heergarh- MSEDCL2 Badisidd - 300 MW
Month : February-26

S.N.	Sub-station	Unit (SPS/Line/ICT/GT/etc)	Nc	Nf	Nu	Ni	Dependability Index (D}	Security Index (S)	Reliability Index (R)	Remark
1	300 MW MSEDCL2 Badisidd	220 kV Badisidd -Bhadla-2	0	0	0	0	0	0.0	0	
		150 MVA PTR-1	1	0	1	1	1	0.5	0.5	Tripped on Differential due BESS trial on date of 28.02.26
		150 MVA PTR-2	0	0	0	0	0	0.0	0	
		Bus coupler Bay	0	0	0	0	0	0.0	0	
		220 kV Main BUS -1	0	0	0	0	0	0.0	0	
		220 kV Main BUS -2	0	0	0	0	0	0.0	0	

PERFORMANCES INDICES FORM ACME Heergarh- MSEDCL2 Badisidd - 300 MW	**Dependability Index (D) D=(Nc/(Nc+Nf))**	0
	Security Index (S) S=(Nc/(Nc+Nu))	0
	Reliability Index (R) R=(Nc/(Nc+Ni))	0

NOTE:- Reason for performance indices less than unity is mentioned in respective element remark.

Nc - Number of correct operations at internal power system Faults.

Nf - Number of Failures to operations at internal power system Faults.

Nu - Number of unwanted operations.

Ni - Number of incorrect operations, (Ni= Nf+Nu)

Reporting of performance indices for protection System
(for element connected at 220kV and above)
Name of Utility : ACME Sikar Solar Pvt Ltd-300 MW
Month : Feb-26

S.N.	Sub-station	Unit (SPS/Line/ICT/GT/etc)	Nc	Nf	Nu	Ni	Dependability Index (D}	Security Index (S)	Reliability Index (R)	Remark
1	300 MW Sikar Nokha	220 kV Sikar -Bikaner-2	2	0	2	2	1	0.5	0.5	Grid fail due to Voltage fluctuation
		150 MVA PTR-1	1	0	1	1	1	0.5	0.5	PTR-1 trip due to HV Box abnormal sound
		150 MVA PTR-2	0	0	0	0	0	0	0	
		Bus coupler Bay	0	0	0	0	0	0	0	
		220 kV Main BUS -1	0	0	0	0	0	0	0	
		220 kV Main BUS -2	0	0	0	0	0	0	0	

PERFORMANCES INDICES FORM ACME Sikar Solar Pvt Ltd-300 MW	**Dependability Index (D) D=(Nc/(Nc+Nf))**	0
	Security Index (S) S=(Nc/(Nc+Nu))	0
	Reliability Index (R) R=(Nc/(Nc+Ni))	0

NOTE:- Reason for performance indices less than unity is mentioned in respective element remark.

Nc - Number of correct operations at internal power system Faults.

Nf - Number of Failures to operations at internal power system Faults.

Nu - Number of unwanted operations.

Ni - Number of incorrect operations, (Ni= Nf+Nu)

S.No.	Substation	Element name	Date of tripping	Time of tripping	Categorization (F/U) F = Failures to operate at internal power system faults U = Unwanted operations	Reason for failures/Unwanted operation	Corrective action taken/ to be taken
1	500KV HVDC Mohindergarh	500kV Mundra - Mohindergarh HVDC Pole-1	22-Feb-26	14:29	U	Pole-1 tripped from Mahindragarh on External protection trip operated	Issue escalated to OEM (M/s Siemens) along with TFR record for identifying of root caused & CA for future
2	765KV Khetri SS (PGCIL)	765kV Bikaner (PGCIL) - Khetri New (PGCIL) Ckt-1	28-Feb-26	11:45	U	The line tripped due to a Mal-operation of the 86 relay caused by DC mixing or an earth fault in the main DC supply. At the time of the incident, maintenance work was being carried out by PGCIL on the charger	DC voltage source mixing & fault is notified to PGCIL Khetri team for further correction, Action status is awaited from PGCIL

Performance Indices of Anta Gas Power Station for Feb 2026

Index. No.	Number of correct operations at internal power system faults(Nc)	Number of failures to operate at internal power system faults(Nf)	The Dependability Index(D=Nc/(Nc+Nf)
1	1	0	1

Index. No.	Number of correct operations at internal power system faults(Nc)	Number of unwanted operations (Nu)	The Security Index(S=Nc/(Nc+Nu)
2	1	1	0.5

Index. No.	Number of correct operations at internal power system faults(Nc)	Number of incorrect operations (Ni=Nf+Nu)	The Reliability Index (R=Nc/(Nc+Ni)
3	1	1	0.5

Remark : On 17 February 2026, the Main #1 relay of the Sawai Madhopur line maloperated. After analyzing the incident, the relay was checked online and was found to be faulty, showing a significant variation in current and voltage readings.

An emergency shutdown was taken to facilitate detailed inspection. The relay was thoroughly checked and tested, confirming that it was defective.

A new relay was then configured, tested, and subsequently installed in place of the faulty Main #1 relay. The system was restored to normal operation after successful testing.

Fwd: Performance indices for the month of March.

D K Meena < seo-nrpc@nic.in >
Fri, 13 Mar 2026 9:40:30 AM +0530

To "Reeturaj Pandey"<pandeyr.cea@gov.in>,"Lokesh Agrawal"<lokesh.cea@gov.in>

महोदय / महोदया,

भवदीय,
डी.के. मीना
निदेशक (प्रचालन एवं संरक्षण),
उत्तर क्षेत्रीय विद्युत समिति
विद्युत् मंत्रालय
१८-शहीद जीत सिंह मार्ग, कटवरिया सराय
नई दिल्ली - १६

========== Forwarded message ==========
From: ggsstp ropar <ggsstp220kv@gmail.com>
To: <seo-nrpc@nic.in>
Date: Thu, 12 Mar 2026 15:05:34 +0530
Subject: Performance indices for the month of March.
========== Forwarded message ==========

Reporting of performance indices for protection system

(for elements connected at 220 kV and above)

Name of Utility: PSPCL, GGSSTP Rupnagar

Month : February 2026

S.N.	Sub-station	Dependability Index (D)	Security Index (S)	Reliability Index (R)
1	220 kV S/S PSPCL, GGSSTP Rupnagar	1.000	0.5	0.5

Remarks : Security & Reliability index less than unity because there was tripping due to malfunctioning of Bus Bar differential relay during testing by an Engineer of GE firm.

Thanks and Regards
AE/ EM-4
GGSSTP, Rupnagar
PSPCL

Sr. No.	Dated	Divn.	Name of sub/ station	Tripping /Breakdown element	Length of line	Duration of Tripping /Break down			Relays Operated along with Relay Data		Reasons of Tripping /break-down	Area Affected if any	Analysis of Tripping/Break down by designated committee.	Remarks if any.
						From (Hrs.)	To (Hrs.)	Total (Hrs.)	This end (Reporting Substation)	Other end (in case of line)				
1	21.02.26	XEN TS Gurugram	220KV Palli	220KV Palli-Kadarpur Ckt-2	19.19Km	19:28	02:29 22.02.26		E/F & MR-86	DPR, Z-1, Y-Ph& D=5.2Km	Transient Fault	NIL	The 220kV Pali-Kaderpur Ckt-II tripped from both ends. At 400kV S/Stn. Kaderpur end: DPS Main1 Y - Phase, Location 3.088KM, Zone 1, Fault Current 6.925kA. DPS Main 2 Y-phase, Zone 1, Location 5.2KM, Fault Current 6.188kA. At 220kV S/Stn. Pali: E/F relay and Master relay trip with carrier received channel 1 & 2 Relay. The DPS relay of 220kV Pali kaderpur Ckt-II was checked by M&P team and found that even though the DPS Main-I relay sensed that fault , it did not trip which lead to the operation of E/F relay at 220kV Pali end. The line was patrolled by SDO TL Gurugram and no visible fault was	The DPS relay of 220kV Pali – kaderpur Ckt-II is havng PT supply issue due to which the relay even though sensed the fault but did not trip. PT supply issue to be resolved urgently by taking shutdown on the 220kV Bus under intimation to the M&P team.

													detected. The line was successfully charged on dated 22.02.2026 at 02.29Hrs	

Reporting of Performance Indices for NHPC Power Stations In NR-Region
Month-FEBRUARY '2026

Sl No	Name of Utility	Name of PS	Elements (Line/ Unit)	From		To		Total Outage	Outage Reason	Nc	Nf	Nu	Ni	Dependability Index (D=Nc/(Nc+Nf))	Security Index (S=Nc/(Nc+Nu))	Reliability Index (R=Nc/(Nc+Ni))	Reason for wrong operation	Action Taken
1	NHPC Ltd	Kishanganga	220 KV Kishanganga-Delina Line#1	3-Feb-26	15:09:00	3-Feb-26	15:49:00	0:40	Direct Trip received from Delina end.	1	0	0	0	1	1	1	NA	NA
2	NHPC Ltd	Kishanganga	220 KV Kishanganga-Delina Line#2	3-Feb-26	15:09:00	3-Feb-26	15:49:00	0:40	Direct Trip received from Delina end.	1	0	0	0	1	1	1	NA	NA
3	NHPC Ltd	Chamera-I	400 KV Chamera-I-Chamera-II Line#3	23-Feb-26	14:21:00	23-Feb-26	16:06:00	1:45	Directional Earth Fault Protection operated	1	0	1	1	1	0.5	0.5	Loose connection observed in measurement card of P443 relay	Tightness of the CT card was checked and ensured.
4	NHPC Ltd	Chamera-II	400 KV Chamera-II-Chamera-I Line#2	23-Feb-26	14:21:00	23-Feb-26	16:06:00	1:45	Direct Trip received from Chamera-I end.	1	0	0	0	1	1	1	NA	NA
5	NHPC Ltd	Uri	400 KV Uri-Amargarh Line#1	27-Feb-26	17:27:00	28-Feb-26	12:41:00	19:14	DPR operated in Z1 at R-N Phase fault and successfully reclosed from Uri end. However within reclaim time again Z1 protection operated and three phase tripping occurred	1	0	0	0	1	1	1	NA	NA
No Line tripping has been observed from other Power Stations of NHPC of NR region for Month of February'2026																		

(J. Pani)
SM(E)
02.03.26

S.No.	Substation	Element name	Date & Time of the tripping	Categorization (F/U) F = Failures to operate at internal power system faults U = Unwanted operations	Reason for failures/Unwanted operation	Corrective action taken/ to be taken
1	BARA	765 KV Line 1 Bara - Mainpuri	26.02.2026	Unwanted operation	DT sent remote end	During checking it is found , there is no alarm in SCADA or relay , and no increment in DT Send counter of FOTE, however in PLCC DT send counter has advanced. We suspect a fault in DT circuit cable of 710 CB(out of service) and same has been isolated. We have checked all the circuit and confirmed healthiness. Line charged from remote end.

Tripping Details of Feb-2026

Punjab State Transmission Corporation Limited

S.N.	*Sub-Station*	*Unit (SPS/Line/ICT/GT/etc.)*	*Date on which Power System Fault occurred*	*Local End Indications*	*Remote End Indications*	*Reason & Corrective Action*	*Nc*	*Nf*	*Nu*	*Ni = Nf + Nu*	**Dependability**	**Security**	**Reliability**
											Index (D)	**Index (S)**	**Index (R)**
1	220 kV G-1	220/66 KV, 160 MVA T/F T-5	02.02.2026	HV Side -REF RYB phase LV Side -O/C - HSU RYB phase, Backup O/C operated		Due to fault of 66 KV Aman Alloy feeder	1	0	0	0	1	1	1
2	220 kV G-1	220/66 KV, 100 MVA T/F T-6	02.02.2026	HV Side -REF, OLTC, PRV LV Side -O/C RYB phase, REF, Master		Due to fault of 66 KV Aman Alloy feeder	1	0	0	0	1	1	1
3	220 kV G-1	220KV G1-G2	03.02.2026	Main 1, Started B N phase Trip phase A B C Zone-2 Fault Location - 8.087 KM Ia- 902.9 A, Ib- 10.45 kA, Ic- 544.6 A, Master, DEF operated	Directional E/F, LH, RH	Faulty 220 KV G1-G2 circuit has been patrolled from tower no. 219 to 243, Tower no.220,224, 225,227,228,230,231,232,233,235,237,238,239,240 and 241 top patrolled, No visible fault found.	0	0	1	1	0	0	0
4	220kv s/s G2	G2-Bhari line	3-2-2026	O/C ,E/F ,No ZONE,Relay type VAJ operated,Ir-0 A,Iy=5.387 Ma,Ib=0 A	DPR Zone-1,Ir-0.27 KA,Iy=0.3 KA,Ib=0.7 kA	line charged with the concent of PC Patiala	1	0	0	0	1	1	1
5	220kv s/s G2	G2-G3 line	3-2-2026	DPR relay operated, Zone-1,Ir=29.66 A,Iy=29.85 A,Ib=23.66 A	Br. ON at G3 end	line charged with the concent of PC Patiala	0	0	1	1	0	0	0
6	220 KV S/S Ghulal	220kv Ghulal(PST)-GGSSTP(PSP) ckt 1	05.02.2026	R-372 A Y-233 A B 2274 A	R-387 A Y-246 A B- 29.99 kA Zone 1 Distance : 584.8 Mtr	Due to Disc String Flashed	1	0	0	0	1	1	1
7	220 KV S/S Bassi Pathana	220 KV RTP - Bassi	07.02.2026	Breaker Off, DPR Zone-1 B Phase= 1800.03A, Distance= 50.670km	Breaker Off, DPR Zone-1 B Phase= 20.35kA, Distance= 4.429km	Damage wave trap of B- Phase of 220 KV RTP to Bassi circuit has been removed and as per DPR indication line patrolled from tower no.1 to 22, nothing found	1	0	0	0	1	1	1
8	220 KV S/S Ghulal	220kv Ghulal(PST)-GGSSTP(PSP) ckt 1	20.02.2026	R-4056 A Y- 231 A B- 361 A Dist- 13.6 KM Zone-1	R-3.3 kA Y-206 A B-356 A Dist- 41.97 KM	Line TRipped Due to Transient Fault	1	0	0	0	1	1	1
9	220KV S/S G2,MGG	220/66kV T/F T5 MGG G2	21/02/2026	O/C RYB-phase E/F REF relay		due to Blast in 66kv Capacitor Bank	1	0	0	0	1	1	1
10	220 kV G-1	220kv G-1 - RTP Ckt. No.2	27.02.2026	P442 Any Trip-C , Zone-1, F.L- 47.38 KM, Ic- 2.142 kA	P442 F.L- 9.42 KM, Zone-1, Ic- 26.67 kA	ckt. checked with Fault Locating Machine with PTW no.58, result found ok	1	0	0	0	1	1	1

Name of the office: 220/132kV Protection Division, PSTCL, Ludhiana

Tripping Details of February 2026

Punjab State Transmission Corporation Limited

Sr.No.	Sub-Station	Unit (SPS/Line/ICT/GT/etc.)	Date and time when Power System Fault occurred	Local End Indications		Remote End Indications		Corrective action	Nc	Nf	Nu	Ni = Nf + Nu	Dependability Index (D)	Security Index (S)	Reliabilty Index (R)
				Indications	Tripping Justification/Reason/ Detail	Indications	Tripping Justification/Reason/ Detail								
1	220kV Sahnewal	220kV Sahnewal - Kohara Ckt.	21/2/2026 AT 18:57	Zone - 1, Fault Location - 5.095 Km, RY-Phase, Auto Reclose Blocked	Due to transient fault	Zone - 1, Fault Location - 8.446 Km, RY-Phase, Auto Reclose Blocked	Due to transient fault		1	0	0	0	1.00	1.00	1.00
2		220kV Sahnewal - Ghulal Ckt.	20/2/2026 AT 9:02	Zone - 2, Fault Location - 32.81 Km, R-Phase, Auto Reclose Blocked		CB ON		Relay will be checked at Ghulal end	0	0	1	1	0.00	0.00	0.00
3		220kV Sahnewal - PGCIL Ckt. 1	21/2/2026 AT 18:57	Zone - 4, Fault Location - (- 678.5 m), RY-Phase, Auto Reclose Blocked, SOTF operated	SOTF trip was set to ALL ZONES	CB ON		SOTF settings revised	0	0	1	1	0.00	0.00	0.00
4	220kV Doraha	220kV Doraha - Sahnewal Ckt. 2	21/2/2026 AT 18:57	E/F		CB ON		Earth fault relay was in default mode and hence settings of the relay has been rectified	0	0	1	1	0.00	0.00	0.00
5	220kV Dhandari 2	220kV Dhandari 2 - Jamalpur	7/2/2026 AT 13:07	Zone - 1, Fault Location - 2.032 Km, YB-Phase, Auto Reclose Blocked	Due to transient fault	Zone - 1, Fault Location - 1.212 Km, YB-Phase, Auto Reclose Blocked	Due to transient fault		1	0	0	0	1.00	1.00	1.00
6		220kV Dhandari 2 - PGCIL Ckt. 2	14/2/2026 AT 14:56	Zone - 1, Fault Location - 6.995 Km, B-Phase, Auto Reclose Blocked	Some unknown vehicle came in range between tower No. 25 and tower No. 26	Zone - 1, Fault Location - 7.00 Km, B-Phase, Auto Reclose Blocked	Some unknown vehicle came in range between tower No. 25 and tower No. 26		1	0	0	0	1.00	1.00	1.00
7	220kV Kohara	220kV Kohara - Sahnewal ckt.	21/2/2026 AT 18:57	Zone - 1, Fault Location - 8.446 Km, RY-Phase, Auto Reclose Blocked	Due to transient fault	Zone - 1, Fault Location - 5.095 Km, RY-Phase, Auto Reclose Blocked	Due to transient fault		1	0	0	0	1.00	1.00	1.00
8	220kV Himmatpura	220kV Himmatpura - Badhni Kalan	16/2/2026 AT 4:25	Zone - 1, Fault Location - 1.481 Km, R-Phase, Auto Reclose Operated	Due to single phase E/F DPR has given single pole tripping and auto reclosed afterwards from Himmatpura end	Zone - 2, Fault Location - 20.78 Km, R-Phase, Auto Reclose Blocked	Due to non provision of Carrier aided protection it is not possible to provide tripping justification from Badhni end		1	0	0	0	1.00	1.00	1.00
9		220kV Himmatpura - GHTP Ckt. 2	16/2/2026 AT 4:25	E/F		CB ON		E/F settings will be revised	0	0	1	1	0.00	0.00	0.00
11	220kV Badhni Kalan	220kV Badhni Kalan - Himmatpura	16/2/2026 AT 4:25	Zone - 2, Fault Location - 20.78 Km, R-Phase, Auto Reclose Blocked	Due to non provision of Carrier aided protection it is not possible to provide tripping justification from Badhni end	Zone - 1, Fault Location - 1.481 Km, R-Phase, Auto Reclose Operated	Due to single phase E/F DPR has given single pole tripping and auto reclosed afterwards from Himmatpura end		1	0	0	0	1.00	1.00	1.00

Tripping Details						Remarks							
Punjab State Transmission Corporation Limited													
February-2026							Nc	Nf	Nu	Ni	Dependability Index (D)	Security Index (S)	Reliabilty Index (R)
S.N.	Sub-Station	Unit (SPS/Line/ICT/GT/etc.)	Date on which Power System Fault occurred	Local End Indications	Remote End Indications								
1	400 kV S/S Behman Jassa Singh	400 kV Bus Bar No.2	24-02-2026 at 20.41 Hrs	Bus Bar Protection Optd.		Wrongly CFC logic made by Relay engg. During comissioning work of 2 No. ICTs(Tripping with DC fail of PU), Now same has set right	0	1	0	1	0	0	0
2	400 kV S/S Behman Jassa Singh	400 kV Bus Bar No.2	25-02-2026 at 14.29 Hrs	Bus Bar Protection Optd.		Wrongly CFC logic made by Relay engg. During comissioning work of 2 No. ICTs(Tripping with DC fail of PU), Now same has set right	0	1	0	1	0	#DIV/0!	0
3	400 kV S/S Dhuri	220 kV Dhuri(400)-Dhuri ckt.I	16-02-2026 at 03.10 Hrs	Zone-I, R-ph, Fault distance-6.0 km	Zone-I, R-ph, Fault distance-15.79 km	Flashed insulator found at T.No 53/23.R phase	1	0	0	0	1	1	1
4	400 kV S/S Muktsar	220 kV Muktsar(400)-Abohar ckt.I	24-02-2026 at 18.52 Hrs	Zone-I, B-ph, Fault Distance-16.0 km(A/R optd.)	Zone-I, B-ph, Fault Distance-21.58 km		1	0	0	0	1	1	1
5	400 kV S/S Rajpura	220 kV Rajpura(400)-MGG ckt.II	16-02-2026 at 04.36 Hrs	Zone-I, B-ph, Fault Distance-19.3 km(A/R optd.)	Zone-I, B-ph, Fault Distance-8.16 km(A/R optd.)		1	0	0	0	1	1	1
6	400 kV S/S Ropar	500 MVA, 400/220 kV ICT-2	12-02-2026 at 10.26 Hrs	SPR optd.		Due to mal-functioning of SPR relay	0	1	0	1	0	0	0
7	400 kV S/S Ropar	500 MVA, 400/220 kV ICT-2	12-02-2026 at 10.26 Hrs	SPR optd.		Due to mal-functioning of SPR relay, Now put out of ckt. by CGL engineer & CGL will replace it.	0	1	0	1	0	1	0

Reason for Performance Indices less than Unity- February 2026 (RVPN)

Case-1 **765KV Phagi –Gwaliar-2 LINE at 765KV GSS PHAGI on 13.02.2026**

No. of Unwanted operation – 1

Reason of unwanted operation –

Line tripped due to wrong CT selection of spare reactor, REF Operated

Corrective Action taken – YES

CT selection corrected.

Case-2 **220 KV D/C SAWA-NIMBAHERA LINE at 220 KV GSS SAWA & 220 KV Chittorgarh - Nimbahera Line at 400KV GSS CHITTORGARH on 10.02.2026**

No. of Unwanted operation – 2

Reason of unwanted operation –

Over current setting found enabled.

Corrective Action taken – YES

Over current setting disabled.

Case-3 **220 KV Chittorgarh- Pratapgarh Line at 400KV GSS CHITTORGARH on 10.02.2026**

No. of Unwanted operation – 1

Reason of unwanted operation –

Relay coordination (grading) of 220/132KV transformer problem.

Corrective Action taken – YES

Backup relay grading recalculated and implemented.

Case-4 **220 KV STPS-BHADRA Line at 220 KV GSS BHADRA on 27.02.02026**

No. of Unwanted operation – 1

Reason of unwanted operation –

O/C current relay defective, its tripping contact make.

Corrective Action taken – YES

Defective Relay removed.

Case-5 **220/132 KV, 160 MVA Trf-I, BBL Make at 220KV GSS BANSUR on 06.02.2026**

No. of incorrect operation – 1

Reason of unwanted operation –

Tripping occurred during DC earth fault detection.

Corrective Action taken – YES

Workmen asked to work carefully.

Case-6 **220/132 KV, 100 MVA TRF No. 2 at 220 KV GSS MODAK on 14.02.2026**

No. of Failures to operate – 1

Reason of unwanted operation –

External LBB relay operated. The relay is defective.

Corrective Action taken – YES

Defective LBB relay removed from system. LBB feature enabled in BUS BAR protection.

Case-7 **220/132KV, 100MVA, TRF-II at 220 KV GSS RATANGARH on 15.02.2026**

No. of Unwanted operation – 1

Reason of unwanted operation –

Temperature meter fell down and tripping contact make.

Corrective Action taken – YES

Temperature refixed.

मुख्य अभियन्ता (सं0)
निदेशक (आपरेशन)

U.P. Power Transmission Corporation Ltd.
Shakti Bhawan Extn.
14 Ashok Marg, Lucknow– 226001
Tel/Fax: 0522–2287833/2286476
Email: director_op@upptcl.org

No: 997 **/Dir (Op)/ NRPC** **Date:** 07/03/2026

Subject: Protection performance indices of protection system for the month of 02/2026.

SEO
NRPC
New Delhi.

Through E- Mail

Mail ID – seo-nrpc@nic.in

Kindly find enclosed herewith copy of compiled Protection performance indices along with the reports obtained from all 06 Zonal offices of UPPTCL for the month of February, 2026.

7/3/26

(Md. Reza Ahmad)
Chief Engineer (A)

No: **/Dir (Op)/** **Date:**

Copy to :-

1 Director (Operation) UPPTCL, Lucknow for information.
2 Chief Engineer, TC/TW/TSW/TSC/TSE/TNE, UPPTCL, Lucknow/Meerut/ Agra/Jhansi/ Prayagraj/Gorakhpur.
3 Superintending Engineer (RA), UPSLDC, Lucknow.

(Md. Reza Ahmad)
Chief Engineer (A)

Protection Perfomance Indices

February, 2026

S.No.	Transmission Zone	Dependability index	Security index	Reliability index	Remark
1	TC, Lucknow	1	0.88	1	**At 400 kV Bareilly** : SOTF Protection malfunctioning in Main 1 distance protection relay & will be resolved soon after taking shhutdown.
2	TSC, Jhansi	1	1	1	---
3	TW, Meerut	1	0.96	0.96	**At 400 kV S/S-II, Muradnagar :** Fault in Test Terminal block (TTB), later rectified.
4	TNE, Gorakhpur	1	0.83	0.83	**1. At 400 kV S/S Gorakhpur :** 400 kV Bus Bar protection operated on dated 23.02.2026 time 12:51:00 hrs due to damage of R-ph disc string of 400 kV Main Bus-II and according to DR, 400 kV Main Bus-I also optd due to per sistent Bus coupler current after Bus coupler/Bus-II CB-operation. Connected Elements On Main Bus-I : 400 kV Gorakhpur-PGCIL Ckt-I, 400 kV Gorakhpur- Azamgarh Ckt, 500 MVA ICT-I On Main Bus-II : 400 kV Gorakhpur- PGCIL Ckt-II, 500 MVA ICT-II, 315 MVA ICT-III 2. **At 400 kV S/S Gorakhpur :** 400 kV Bus Bar protection operated on dated 28.02.2026 time 15:30:00 hrs due to damage of B-ph disc string of 400 kV Main Bus-I. According to Disturbance recorder In Pre fault Condition-I diff current if more than set value in Zone-I but relay respond delayed that's caused main Bus-II also tripped. Connected Elements On Main Bus-I : 400 kV Gorakhpur-PGCIL Ckt-I, 400 kV Gorakhpur- Azamgarh Ckt, 500 MVA ICT-I On Main Bus-II : 400 kV Gorakhpur- PGCIL Ckt-II, 500 MVA ICT-II, 315 MVA ICT-III **Corrective action :** CB52D01 Coupler 1 Status Dropout delay (cyc) in Bus Bar Protection relay (SEL 487B) setting has been changed from 1 cycle to 3 cycle on dated 28.02.2026. 2. To overrule any other issue matter also referred to M/S SEL.

5	TSW, Agra	1	0.90	0.90	**At 220 kV S/S Tundla** : While taking approved shutdown of 220 kV Tundla-Firozabad (PJFTL) line at 10:37 hrs 220 kV Tundla-Agra (PG) line tripped from Agra (PG) end due to DT send, which led to blackout of 220 kV Tundla. Charging attempt of the 220 kV Tundla-Agra (PG) line was made at 11:24 hrs but line did not hold and tripped again on DT received. Load was restored after charging 220 kV Firozabad (PJFTL)- Tundla line at 11:58 hrs. The tripping of 220 kV Tundla-Agra (PG) line was due to erroneous DT command sent from 220 kV S/S Tundla to 220 kV S/S Agra (PG) due to following reasons : 1)- 48 V DC source looping of PLCC cabinets was cut by rodents. 2) The NO contact of TNC switch was found shorted. **Corrective action taken :** The 48V DC source have been made independent of both 220 kV Tundla-Firozabad (PJFTL) line and 220 kV Tundla-Agra (PG) line. The TNC switch of 220 kV Tundla-Agra (PG) line has been replaced at 220 kV S/S Tundla end. Control eable from relay panel to PLCC panel of 220 kV Tundla-Agra (PG) line was found earthed and has been replaced.
6	TSE, Prayagraj	1	1	1	---
Total indices value		**1.000**	**0.928**	**0.948**	---

Status of perfomance indices reporting of SPS

Month-January 2026

Sr. No.	Scheme Name	Owner / Agency	Controlling SLDC/ NRLDC	Reporting by Owner / Agency to Concerned SLDC/NRLDC (Latest by 07.02.2026)									Verification by NRLDC/SLDC			
				Nc	Nu	Nf	Ni	Dependability Index	Security Index	Reliability Index	Reason for indices less than 1	Corrective action taken	Date of Receiving date from owner/agency (DD:MM:YYYY)	Verification of indices as per actual grid condition (Yes/No)	Remarks	NRLDC/SLDC reporting date
1	SPS for WR-NR corridor - 765kV Agra-Gwalior D/C	POWERGRID	**NRLDC**													
2	SPS for contingency due to tripping of HVDC Mundra-Mahendergarh	ADANI	NRLDC													
3	SPS for high capacity 400 kV Muzaffarpur-Gorakhpur D/C Inter-regional tie-line related contingency	POWERGRID	NRLDC													
4	SPS for 1500 MW HVDC Rihand-Dadri Bipole related contingency	POWERGRID	NRLDC													
5	System Protection Scheme (SPS) for HVDC Balia-Bhiwadi Bipole	POWERGRID	NRLDC													
6	SPS for reliable evacuation of power from NJPS, Rampur, Sawra Kuddu, Baspa Sorang and Karcham Wangtoo HEP	SJVN	NRLDC													
		HPPTCL		0	0	0	0	NA	NA	NA	NA	NA				
		JSW														
		POWERGRID														
		SORANG														
7	SPS for Transformers at Maharanibagh (PG) substation	POWERGRID	NRLDC													
8	SPS for Transformers at Mandola (PG) substation	POWERGRID	NRLDC													
9	SPS for Transformers at 400KV Fatehgarh Solar Park (AREPRL)	ADANI	NRLDC													
10	SPS to relive transmission congestion in RE complex (Bhadla2)	POWERGRID	NRLDC													
11	SPS for Transformers at 765kV Jhatikara(PG) Substation (Bamnauli section)	POWERGRID	NRLDC													
	SPS for Transformers at 765kV Jhatikara(PG) Substation (Mundka section)		NRLDC													
12	SPS for Transformers at 765kV Bhiwani(PG) Substation	POWERGRID	NRLDC													
13	SPS for Transformers at 400kV Agra(PG) Substation	POWERGRID	NRLDC													
		UPPTCL														
14	SPS for Transformers at Bamnauli (DTL) substation	DTL	**Delhi SLDC**													
15	SPS for Transformers at 400kV Mundka (DTL) Substation	DTL	Delhi SLDC													
16	SPS for Transformers at 400kV Bawana (DTL) Substation	DTL	Delhi SLDC													
17	SPS for Reliable Evacuation of Rosa Generation	UPPTCL	**UPSLDC**	0	0	0	0	NA	NA	NA	NA	NA	03.02.2026	YES	No SPS Operation	07.02.2026
18	SPS for evacuation of Anpara Generation Complex	UPPTCL	UPSLDC	0	0	0	0	NA	NA	NA	NA	NA	03.02.2026	YES	No SPS Operation	07.02.2026
19	SPS for evacuation of Lalitpur TPS Generation	UPPTCL	UPSLDC	0	0	0	0	NA	NA	NA	NA	NA	03.02.2026	YES	No SPS Operation	07.02.2026
20	SPS for Reliable Evacuation of Bara TPS Generation	UPPTCL	UPSLDC	0	0	0	0	NA	NA	NA	NA	NA	06.02.2026	YES	No SPS Operation	07.02.2026
21	SPS for Transformers at Moradabad (UPPTCL) Substation	UPPTCL	UPSLDC	0	0	0	0	NA	NA	NA	NA	NA	04.02.2026	YES	No SPS Operation	07.02.2026
22	SPS for Transformers at Muradnagar (UPPTCL) Substation	UPPTCL	UPSLDC	0	0	0	0	NA	NA	NA	NA	NA	04.02.2026	YES	No SPS Operation	07.02.2026
23	SPS for Transformers at Agra (UPPTCL) Substation	UPPTCL	UPSLDC	0	0	0	0	NA	NA	NA	NA	NA	07.02.2026	YES	No SPS Operation	07.02.2026
24	SPS for Transformers at 400kV Sarojininagar (UPPTCL) Substation	UPPTCL	UPSLDC	0	0	0	0	NA	NA	NA	NA	NA	04.02.2026	YES	No SPS Operation	07.02.2026
25	SPS for Transformers at 220kV Sarojininagar (UPPTCL) Substation	UPPTCL	UPSLDC	0	0	0	0	NA	NA	NA	NA	NA	04.02.2026	YES	No SPS Operation	07.02.2026
26	SPS for Transformers at 400kV Unnao (UPPTCL) Substation	UPPTCL	UPSLDC	0	0	0	0	NA	NA	NA	NA	NA	04.02.2026	YES	No SPS Operation	07.02.2026
27	SPS for Transformers at 400kV Sultanpur (UPPTCL) Substation	UPPTCL	UPSLDC	0	0	0	0	NA	NA	NA	NA	NA	04.02.2026	YES	No SPS Operation	07.02.2026
28	SPS for Transformers at 400kV Bareilly (UPPTCL) Substation	UPPTCL	UPSLDC	SPS not commissioned yet												07.02.2026
29	SPS for Transformers at 400kV Azamgarh (UPPTCL) Substation	UPPTCL	UPSLDC	0	0	0	0	NA	NA	NA	NA	NA	04.02.2026	YES	No SPS Operation	07.02.2026
30	SPS for Transformers at 400kV Mau (UPPTCL) Substation	UPPTCL	UPSLDC	0	0	0	0	NA	NA	NA	NA	NA	04.02.2026	YES	No SPS Operation	07.02.2026
31	SPS for Transformers at 400kV Gorakhpur (UPPTCL) Substation	UPPTCL	UPSLDC	0	0	0	0	NA	NA	NA	NA	NA	04.02.2026	YES	No SPS Operation	07.02.2026
32	SPS for Transformers at 400kV Sarnath (UPPTCL) Substation	UPPTCL	UPSLDC	0	0	0	0	NA	NA	NA	NA	NA	04.02.2026	YES	No SPS Operation	07.02.2026
33	SPS for Transformers at 400kV Nehtaur(WUPPTCL) Substation	UPPTCL	UPSLDC	0	0	0	0	NA	NA	NA	NA	NA	06.02.2026	YES	No SPS Operation	07.02.2026
34	SPS for Transformers at Obra TPS	UPPTCL	UPSLDC	0	0	0	0	NA	NA	NA	NA	NA	04.02.2026	YES	No SPS Operation	07.02.2026
35	SPS for Transformers at 400kV Allahabad(PG) Substation	UPPTCL	UPSLDC	To be submitted by PGCIL												07.02.2026
36	SPS for Transformers at 400kV Jaunpur(UP) Substation	UPPTCL	UPSLDC	0	0	0	0	NA	NA	NA	NA	NA	04.02.2026	YES	No SPS Operation	07.02.2026
37	SPS for Transformers at 400kV Panki (UPPTCL) Substation	UPPTCL	UPSLDC	SPS not commissioned yet												07.02.2026
38	SPS for Transformer at 400kV Rajpura (PSTCL) Substation	PSTCL	**Punjab SLDC**													
39	SPS for Transformers at 400kV Deepalpur (JKTPL) Substation	HVPNL	**Haryana SLDC**													
40	SPS for Transformers at 400KV Kashipur (PTCUL) substation	PTCUL	**Uttrakhand SLDC**													
41	SPS for Transformers at 400kV Ajmer (RVPN) Substation	RVPNL	**Rajasthan SLDC**													
42	SPS for Transformers at 400kV Merta (RVPN) Substation	RVPNL	Rajasthan SLDC													
43	SPS for Transformers at 400kV Chittorgarh (RVPN) Substation	RVPNL	Rajasthan SLDC													
44	SPS for Transformers at 400kV Jodhpur (RVPN) Substation	RVPNL	Rajasthan SLDC													
45	SPS for Transformers at 400kV Bhadla (RVPN) Substation	RVPNL	Rajasthan SLDC													
46	SPS for Transformers at 400kV Ratangarh (RVPN) Substation	RVPNL	Rajasthan SLDC													
47	SPS for evacuation of Kawai TPS, Kalisindh TPS generation complex	RVPNL	Rajasthan SLDC													
48	SPS for Transformers at 400kV Bikaner (RVPN) Substation	RVPNL	Rajasthan SLDC													
49	SPS for Transformers at 400kV Bhilwara (RVPN) Substation	RVPNL	Rajasthan SLDC													
50	SPS for Transformers at 400kV Hinduan (RVPN) Substation	RVPNL	Rajasthan SLDC													
51	SPS for Transformers at 400kV Suratgarh (RVPN) Substation	RVPNL	Rajasthan SLDC													
52	SPS for Transformers at 400kV Babai(RS) Substation	RVPNL	Rajasthan SLDC													

Note- Any other SPS details (if implemented and not mentioned above) may be added in this format by Concerned Utility/SLDC/NRLDC

Status of perfomance indices reporting of SPS

Month-February 2026

Sr. No.	Scheme Name	Owner / Agency	Controlling SLDC/ NRLDC	Reporting by Owner / Agency to Concerned SLDC/NRLDC (Latest by 07.03.2026)									Verification by NRLDC/SLDC			NRLDC/SLDC reporting date
				Nc	Nu	Nf	Ni	Dependability Index	Security Index	Reliability Index	Reason for indices less than 1	Corrective action taken	Date of Receiving data from owner/agency (DD:MM:YYYY)	Verification of indices as per actual grid condition (Yes/No)	Remarks	
1	SPS for WR-NR corridor - 765kV Agra-Gwalior D/C	POWERGRID	**NRLDC**													
2	SPS for contingency due to tripping of HVDC Mundra-Mahendergarh	ADANI	NRLDC													
3	SPS for high capacity 400 kV Muzaffarpur-Gorakhpur D/C Inter-regional tie-line related contingency	POWERGRID	NRLDC													
4	SPS for 1500 MW HVDC Rihand-Dadri Bipole related contingency	POWERGRID	NRLDC													
5	System Protection Scheme (SPS) for HVDC Balia-Bhiwadi Bipole	POWERGRID	NRLDC													
6	SPS for reliable evacuation of power from NJPS, Rampur, Sawra Kuddu, Baspa Sorang and Karcham Wangtoo HEP	SJVN	NRLDC	0	0	0	0	NA	NA	NA	NA	NA	05.03.2026			
		HPPTCL		0	0	0	0	NA	NA	NA	NA	NA	05.03.2026			
		JSW														
		POWERGRID														
		SORANG														
7	SPS for Transformers at Maharanibagh (PG) substation	POWERGRID	NRLDC													
8	SPS for Transformers at Mandola (PG) substation	POWERGRID	NRLDC													
9	SPS for Transformers at 400KV Fatehgarh Solar Park (AREPRL)	ADANI	NRLDC													
10	SPS to relive transmission congestion in RE complex (Bhadla2)	POWERGRID	NRLDC													
11	SPS for Transformers at 765kV Jhatikara(PG) Substation (Bamnauli section)	POWERGRID	NRLDC													
	SPS for Transformers at 765kV Jhatikara(PG) Substation (Mundka section)		NRLDC													
12	SPS for Transformers at 765kV Bhiwani(PG) Substation	POWERGRID	NRLDC													
13	SPS for Transformers at 400kV Agra(PG) Substation	POWERGRID	NRLDC													
		UPPTCL														
14	SPS for Transformers at Bamnauli (DTL) substation	DTL	**Delhi SLDC**													
15	SPS for Transformers at 400kV Mundka (DTL) Substation	DTL	Delhi SLDC													
16	SPS for Transformers at 400kV Bawana (DTL) Substation	DTL	Delhi SLDC													
17	SPS for Reliable Evacuation of Rosa Generation	UPPTCL	**UPSLDC**	0	0	0	0	NA	NA	NA	NA	NA	07.03.2026	YES	No SPS Operation	07.03.2026
18	SPS for evacuation of Anpara Generation Complex	UPPTCL	UPSLDC	0	0	0	0	NA	NA	NA	NA	NA	06.03.2026	YES	No SPS Operation	07.03.2026
19	SPS for evacuation of Lalitpur TPS Generation	UPPTCL	UPSLDC	1	0	0	0	1	1	1	NA	NA	09.03.2026	YES	SPS operated on 08.02.2026 and 27.02.2026 under the condition that the loading of any 400 kV line emanating from Fatehabad Substation exceeded 800 MW	10.03.2026
20	SPS for Reliable Evacuation of Bara TPS Generation	UPPTCL	UPSLDC	0	0	0	0	NA	NA	NA	NA	NA	05.03.2026	YES	No SPS Operation	07.03.2026
21	SPS for Transformers at Moradabad (UPPTCL) Substation	UPPTCL	UPSLDC	0	0	0	0	NA	NA	NA	NA	NA	05.03.2026	YES	No SPS Operation	07.03.2026
22	SPS for Transformers at Muradnagar (UPPTCL) Substation	UPPTCL	UPSLDC	0	0	0	0	NA	NA	NA	NA	NA	05.03.2026	YES	No SPS Operation	07.03.2026
23	SPS for Transformers at Agra (UPPTCL) Substation	UPPTCL	UPSLDC	0	0	0	0	NA	NA	NA	NA	NA	01.03.2026	YES	No SPS Operation	07.03.2026
24	SPS for Transformers at 400kV Sarojininagar (UPPTCL) Substation	UPPTCL	UPSLDC	0	0	0	0	NA	NA	NA	NA	NA	06.03.2026	YES	No SPS Operation	07.03.2026
25	SPS for Transformers at 220kV Sarojininagar (UPPTCL) Substation	UPPTCL	UPSLDC	0	0	0	0	NA	NA	NA	NA	NA	06.03.2026	YES	No SPS Operation	07.03.2026
26	SPS for Transformers at 400kV Unnao (UPPTCL) Substation	UPPTCL	UPSLDC	0	0	0	0	NA	NA	NA	NA	NA	06.03.2026	YES	No SPS Operation	07.03.2026
27	SPS for Transformers at 400kV Sultanpur (UPPTCL) Substation	UPPTCL	UPSLDC	0	0	0	0	NA	NA	NA	NA	NA	06.03.2026	YES	No SPS Operation	07.03.2026
28	SPS for Transformers at 400kV Bareilly (UPPTCL) Substation	UPPTCL	UPSLDC	SPS not commissioned yet												07.03.2026
29	SPS for Transformers at 400kV Azamgarh (UPPTCL) Substation	UPPTCL	UPSLDC	0	0	0	0	NA	NA	NA	NA	NA	06.03.2026	YES	No SPS Operation	07.03.2026
30	SPS for Transformers at 400kV Mau (UPPTCL) Substation	UPPTCL	UPSLDC	0	0	0	0	NA	NA	NA	NA	NA	06.03.2026	YES	No SPS Operation	07.03.2026
31	SPS for Transformers at 400kV Gorakhpur (UPPTCL) Substation	UPPTCL	UPSLDC	0	0	0	0	NA	NA	NA	NA	NA	06.03.2026	YES	No SPS Operation	07.03.2026
32	SPS for Transformers at 400kV Sarnath (UPPTCL) Substation	UPPTCL	UPSLDC	0	0	0	0	NA	NA	NA	NA	NA	02.03.2026	YES	No SPS Operation	07.03.2026
33	SPS for Transformers at 400kV Nehtaur(WUPPTCL) Substation	UPPTCL	UPSLDC	0	0	0	0	NA	NA	NA	NA	NA	06.03.2026	YES	No SPS Operation	07.03.2026
34	SPS for Transformers at Obra TPS	UPPTCL	UPSLDC	0	0	0	0	NA	NA	NA	NA	NA	02.03.2026	YES	No SPS Operation	07.03.2026
35	SPS for Transformers at 400kV Allahabad(PG) Substation	UPPTCL	UPSLDC	To be submitted by PGCIL												
36	SPS for Transformers at 400kV Jaunpur(UP) Substation	UPPTCL	UPSLDC	0	0	0	0	NA	NA	NA	NA	NA	02.03.2026	YES	No SPS Operation	07.03.2026
37	SPS for Transformers at 400kV Panki (UPPTCL) Substation	UPPTCL	UPSLDC	SPS not commissioned yet												07.03.2026
38	SPS for Transformer at 400kV Rajpura (PSTCL) Substation	PSTCL	**Punjab SLDC**													
39	SPS for Transformers at 400kV Deepalpur (JKTPL) Substation	HVPNL	**Haryana SLDC**													
40	SPS for Transformers at 400KV Kashipur (PTCUL) substation	PTCUL	**Uttrakhand SLDC**													
41	SPS for Transformers at 400kV Ajmer (RVPN) Substation	RVPNL	**Rajasthan SLDC**	3	0	0	0	1	1	1	NIL	NA	To be provided by Rajasthan SLDC			09.03.2026
42	SPS for Transformers at 400kV Merta (RVPN) Substation	RVPNL	Rajasthan SLDC	0	0	0	0	0	0	0						09.03.2026
43	SPS for Transformers at 400kV Chittorgarh (RVPN) Substation	RVPNL	Rajasthan SLDC	0	0	0	0	0	0	0						09.03.2026
44	SPS for Transformers at 400kV Jodhpur (RVPN) Substation	RVPNL	Rajasthan SLDC	0	0	0	0	0	0	0						09.03.2026
45	SPS for Transformers at 400kV Bhadla (RVPN) Substation	RVPNL	Rajasthan SLDC	0	0	0	0	0	0	0						09.03.2026
46	SPS for Transformers at 400kV Ratangarh (RVPN) Substation	RVPNL	Rajasthan SLDC	1	0	0	0	1	1	1	NIL	NA				09.03.2026
47	SPS for evacuation of Kawai TPS, Kalisindh TPS generation complex	RVPNL	Rajasthan SLDC	0	0	0	0	0	0	0						09.03.2026
48	SPS for Transformers at 400kV Bikaner (RVPN) Substation	RVPNL	Rajasthan SLDC	0	0	0	0	0	0	0						09.03.2026
49	SPS for Transformers at 400kV Bhilwara (RVPN) Substation	RVPNL	Rajasthan SLDC	0	0	0	0	0	0	0						09.03.2026
50	SPS for Transformers at 400kV Hinduan (RVPN) Substation	RVPNL	Rajasthan SLDC	0	0	0	0	0	0	0						09.03.2026
51	SPS for Transformers at 400kV Suratgarh (RVPN) Substation	RVPNL	Rajasthan SLDC	0	0	0	0	0	0	0						09.03.2026
52	SPS for Transformers at 400kV Babai(RS) Substation	RVPNL	Rajasthan SLDC	0	0	0	0	0	0	0						09.03.2026

Note- Any other SPS details (if implemented and not mentioned above) may be added in this format by Concerned Utility/SLDC/NRLDC

Annexure-A.V

Status of Internal Protection Audit Plan for FY 2026 -27				
S. No.	**NRPC Member**	**Category**	**Status**	**Schedule submitted as per utililty**
1	PGCIL	Central Government owned Transmission Company	Received (NR-2) (24 Substations), Received (NR-1) (20+16 Substations)	
2	NTPC	Central Generating Company		
3	BBMB		Received	
4	THDC		Received (Tehri HPP)	Feb-27
			Received (Koteshwar)	Dec-26
			Received (Tehri PSP)	Feb-27
5	SJVN		Received (NJHPS)	December 2026- March 2027
			Received (RHPS)	October 2026- December 2026
6	NHPC		Received (13 stations)	
7	NPCIL			
8	Delhi SLDC	SLDC		
9	Haryana SLDC			
10	Rajasthan SLDC			
11	Uttar Pradesh SLDC			
12	Uttarakhand SLDC			
13	Punjab SLDC			
14	Himachal Pradesh SLDC			
15	DTL	State Transmission Utility	Received (47 Substations)	
16	HVPNL		Received (91 Substations)	
17	RRVPNL		Received	31.03.2027
18	UPPTCL		Meerut Zone	10/1/2027 -15/3/2027
			Agra Zone	10/1/2027 -30/3/2027
			Lucknow Zone	1/1/2027-10/3/2027
			Jhansi Zone	5/1/2027 -30/3/2027
			Prayagraj Zone	1/1/2027- 10/3/2027
			Gorakhpur Zone	10/1/2027-30/3/2027
19	PTCUL		Received	
20	PSTCL		Received	
21	HPPTCL		Received (12 Substations)	
22	IPGCL	State Generating Company	Received (PPS-I)	15.11.2026
			Received (PPS-III)	30.10.2026
23	HPGCL		Received	Apr-26
24	RRVUNL			
25	UPRVUNL		Anpara B	October 2026
			Obra A & B	October 2026
			Panki	October 2026
			Anpara D	May 2026
			Harduaganj	May 2026
			Harduaganj D	May 2026
			Harduaganj E	May 2026
			Parichha	August 2026
			Parichha Ext	August 2026
			Obra C	October 2026
			Jawaharpur	October 2026
26	UJVNL		Dharashu	December, 2026
			Tiloth	December, 2026
			Khodri	Nov-26
			Chibro	Oct-26
27	HPPCL		Vyasi	Dec-26
28	PSPCL	State Generating Company & State owned Distribution Company	RSD	
			GGSTPS, Rupnagar	
			GVK Power Goindwal Shahib Ltd.	
			GHSTPS, Lehra Mohabbat	Nov-26
29	HPSEBL	Distribution company having Transmission connectivity ownership		
30	Prayagraj Power Generation Co. Ltd.	IPP having more than 1000 MW installed capacity	Received	Sep-26
31	Aravali Power Company Pvt. Ltd		Received	Mar-27
32	Apraava Energy Private Limited		Received	May-26
33	Talwandi Sabo Power Ltd.			
34	Nabha Power Limited			
35	MEIL Anpara Energy Ltd		Received	Aug-26
36	Rosa Power Supply Company Ltd		Received	Jan-27
37	Lalitpur Power Generation Company Ltd		Received	Sep-26
38	MEJA Urja Nigam Ltd.			
39	Adani Power Rajasthan Limited			
40	JSW Energy Ltd. (KWHEP)			
41	UT of J&K	UT of Northern Region	Received (Jammu)	
			Received (Kashmir)	
42	UT of Chandigarh (CPDL)			
	ISTS Transmission Utilities			
43	INDIGRID			

44	ADHPL			
45	Adani Transmission Limited		Received	Oct-26
46	Bikaner Khetri Transmission Limited		Received	Oct-26
47	Fatehgarh Bhadla Transmission Limited		Received	Sep-26
48	Kishtwar Transmission Limited	RESONIA		
	State Utilities			
	Uttar Pradesh			
49	Vishnuprayag Hydro Electric Plant (J.P.)		Received	March, 2027
50	Alaknanda Hydro Electric Plant (GVK)		Received	Nov-26
51	Ghatampur TPS		Received	Feb-27
52	Khara Power House (Khara)		Received	Dec-26
53	WUPPTCL		Received	Oct-26
54	SEUPPTCL		Received	Dec-26
55	ATSCL	**AESL**	Received	Sep-26
56	GTL (765 kV Hapur extension bays)	**AESL**	Received	Nov-26
57	GTL (765 kV Agra and Gr. Noida extension bays)	**AESL**	Received	Nov-26
58	HPTSL	**AESL**	Received	Aug-26
59	MTSCL	**AESL**	Received	Aug-26
60	OBTL	**AESL**	Received	Dec-26
60	STSL	**AESL**		
	Rajasthan			
61	Barsingsar Plant	**NLC**	Received	31-03-2027
62	Rajwest Plant	**JSW**	Received	Aug-26
	RE Utilities			
63	ABC Renewable Pvt. Ltd		Received	20-09-2026
64	ABC Renewable Energy (RJ-02) Pvt. Ltd.			
65	ACME Heeragarh powertech Pvt. Ltd	ACME	Received	Jan-27
66	ACME Pholidi	ACME	Received	Jan-27
67	ACME Deagarh	ACME		
68	ACME Raisar	ACME		
69	ACME Dhoulpar	ACME		
70	ACME Sikar	ACME	Received	Jan-27
71	ACME Chittorgarh Solar Energy Pvt Ltd	AYANA		
72	Adani Hybrid Energy Jaisalmer One Ltd.	AGEL	Received	7/16/2026
73	Adani Hybrid Energy Jaisalmer Two Ltd.	AGEL	Received	7/25/2026
74	Adani Hybrid Energy Jaisalmer Three Ltd.	AGEL	Received	8/8/2026
75	Adani Hybrid Energy Jaisalmer Four Ltd. (AEML 1 -350)	AGEL	Received	8/15/2026
76	Adani Hybrid Energy Jaisalmer Four Ltd. (AEML 2 -250)	AGEL	Received	9/11/2026
77	Adani Renewable Energy (RJ) limited Rawara	AGEL	Received	9/26/2026
78	Adani Solar Enegry Four Private Limited	AGEL	Received	9/26/2026
79	Adani Solar Energy Jaisalmer Two Private Limited Project Two	AGEL	Received	10/17/2026
80	SB Energy Six Private Limited, Bhadla	AGEL	Received	10/28/2026
81	Adani Solar Enegry Jodhpur Two Limited, Rawara	AGEL	Received	9/26/2026
82	Adani Solar Energy Jaisalmer One Ltd. (Hybrid450)	AGEL	Received	10/3/2026
83	Adani Solar Energy RJ Two Pvt. Ltd. (Devikot)	AGEL	Received	11/7/2026
84	Adani Solar Energy RJ Two Pvt. Ltd. (Phalodi)	AGEL	Received	11/14/2026
85	Adani Green Energy 24 Limited (Bhimsar)	AGEL	Received	11/26/2026
86	Adani Green Twenty-Five Limited (Badisid)	AGEL	Received	12/4/2026
87	Bhadla park - South block	AGEL	Received	12/16/2026
88	AEML-250 WIND (Hybrid-2A)	AGEL	Received	9/16/2026
89	AEML-260 WIND (Hybrid-2B)	AGEL	Received	9/20/2026
90	Hybrid450-WIND (SBE Hybrid 450)	AGEL	Received	10/7/2026
91	Ambuja Cements Limited_300MW	AGEL		
92	Altra Xergi Pvt. Ltd.			
93	XL Xergi Power Pvt. Ltd.			
94	AMP Energy Green Four Pvt. Ltd.			

95	AMP Energy Green Five Pvt. Ltd.			
96	AMP Energy Green Six Pvt. Ltd.			
97	Amplus Ages Private Limited		Received	31-12-2026
98	Avaada RJHN_240MW		Received	Aug-26
99	Avaada sunce energy Pvt limited		Received	Aug-26
100	Avaada Sunrays Pvt. Ltd.		Received	Aug-26
101	Avaada Sustainable RJ Pvt. Ltd.		Received	Aug-26
102	Ayana Renewable Power Three Private Limited			
103	Ayaana Renewable Power One Pvt. Ltd.			
104	Azure Power Forty One Pvt limited			
105	Azure Power Forty Three Pvt. Ltd. RSS			
106	Azure Power Forty Three Pvt. Ltd. PSS			
107	Azure Maple Pvt. Ltd.			
108	AZURE POWER INDIA Pvt. Ltd., Bhadla			
109	Azure Power Thirty Four Pvt. Ltd.			
110	Clean Solar Power (Jodhpur) Pvt. Ltd.	Hero Future Energies	Received	May, 2026
111	Eden Renewable Cite Private Limited			
112	Eden Renewable Alma Pvt. Ltd.			
113	Energizent Power Private Limited			
114	Grian Energy private limited		Received	31-12-2026
115	Juna Renewable Energy Pvt. Ltd.			
116	Juniper Green Cosmic Private Limited			
117	Juniper Nirjara Energy Private Limited			
118	Karinsar Solar Plant NHPC Ltd	NHPC		
119	Megasolis Renewables Pvt Ltd(MSRPL)			
120	Mega Surya Urja Pvt. Ltd. (MSUPL)			
121	AURAIYA Solar			
122	DADRI SOLAR			
123	SINGRAULI SOLAR			
124	Anta Solar			
125	Unchahar Solar			
126	NTPC Devikot Solar plant_240MW	NGEL	Received	15-05-2026
127	NTPC Kolayat (SKB -1)	NGEL	Received	31-05-2026
128	NTPC Kolayat (SKB-2)	NGEL	Received	30-11-2026
129	Nedan Solar NTPC	NGEL	Received	15-05-2026
130	NTPC Nokhra_300MW	NGEL	Received	31-08-2026
131	One Volt energy Pvt. Ltd.		Received	31-12-2026
132	ReNew Solar Urja Private Limited (IndiGrid)	IndiGrid		
133	Renew Surya Ayaan Pvt. Ltd. (IndiGrid)	IndiGrid		
134	ReNew Solar Energy (Jharkhand Three) Private Limited	ReNew	Received	24/11/2026
135	RENEW SOLAR POWER Pvt. Ltd. Bikaner	ReNew	Received	17/11/2026
136	Renew Surya Partap Pvt. Ltd.	ReNew	Received	21/11/2026
137	Renew Surya Ravi Pvt. Ltd.	ReNew	Received	18/11/2026
138	Renew Surya Roshni Pvt. Ltd.	ReNew	Received	24/11/2026
139	Renew Surya Vihan Pvt. Ltd.	ReNew		
140	Renew Solar Photovoltaic Pvt Ltd	ReNew		
141	Renew Hans Urja Pvt Ltd	ReNew		
142	Renew Surya Jyoti Pvt Ltd	ReNew	Received	15/10/2026
143	Neemba Renew Surya Vihan Pvt Ltd	ReNew	Received	15/10/2026
144	ReNew Dinkar Urja Pvt. Ltd.	ReNew		
145	Renew Sun Bright Pvt. Ltd. (RSBPL)	Sembcorp	Received (submitted by ReNew)	19/11/2026
146	Rising Sun Energy-K Pvt. Ltd.			
147	Serentica Renewables India 4 Private Limited	Serentica	Received	Sep-26
148	Serentica Renewables India 5 Private Limited	Serentica	Received	Sep-26
149	Khidrat Renewable energy Pvt ltd.	Serentica	Received	Jun-26
150	SJVN Green Energy Limited	SJVN		
151	Solzen Urja Private Limited	Sekura	Received	November, 2026
152	Tata Power Green Energy Ltd. (TPGEL) (225MW)	Tata Power	Received	31-03-2027
153	Tata Power Renewable Energy Ltd. (TPREL) (300MW)	Tata Power	Received	31-03-2027
154	Thar Surya Pvt. Ltd.			
155	TP Surya Ltd., Noorsar (110MW)	Tata Power	Received	31-03-2027
156	Banderwala Solar Plant TP Surya Ltd. (300MW)	Tata Power	Received	31-03-2027
157	Adept Renewable Technologies Pvt. Ltd.			
158	Transition Cleantech Services Private Limited			
159	Transition Energy Services Private Limited			
160	Transition Green Energy Private Limited			
161	Transition Sustainable Energy Services Private Limited			
162	Transition Sustainable Energy Services One Pvt Ltd			
163	Gorbea Solar Pvt Ltd (GSPL)		Received	Oct-26
164	Prerak Greentech Private Limited (PGPL)			

Status of 3rd Party Protection Audit Plan								
S. No.	NRPC Member	Category	Status	Schedule submitted as per utililty	Present Status Comlpleted (yes/no)	Report Submission Date by audit party	Discussion held in PSC meeting number	Compliance status
1	PGCIL	Central Government owned Transmission Company	Received (26 S/s of NR-1, 24 S/s of NR-2)	NR-1 - 2026, NR-2 - 2026-2027				
2	NTPC	Central Generating Company	Received (Singrauli, Rihand, Unchahar, Dadri, Dadri Gas, Auraiya Gas, Faridabad Gas, Anta Gas Power Station)	By Oct 2028				
			Received (Tanda)	By 17.07.2025				
3	BBMB		Received	Feb-27				
4	THDC		Received	March 2026-Tehri, F.Y. 2025-26- Koteshwar, December 2029 - Tehri PSP	Completed (Koteshwar)		67	
5	SJVN		Received (RHPS)	Nov-Dec 2025	Completed	4/11/2025	66	
			Received (NJHPS)	Nov 24- March 25	Completed	26-05-2025	65	67
6	NHPC		Received	FY-2025-26	Completed (Dulhasti)	Sep-25	64	
					Completed (Salal)	Jul-25	64	
					Completed (Bairasul)	Aug-25	64	
					Completed (Chamera-I)	Oct-25	64	
					Completed (Parbati-III)	Sep-25	64	
					Completed (Uri-1)	Jan-26	67	
					Completed (Kishanganga)	Feb-26	67	
					Completed (Chamera-II)	Nov-25	67	
					Completed (Chamera-III)	Nov-25	67	
					Completed (Dhauliganga)	Nov-25	67	
					Completed (Tanakpur)	Nov-25	67	
					Completed (Uri-II)	Nov-25	67	
7	NPCIL		Completed (220kV) (NAPS)	Jan'25	Completed	18.01.2025	57	
			RAP A		Completed	24.06.2025	64	
			RAP B		Completed		64	
			RAPS-C (6&S)	-	Completed	05.12.2024	64	
8	Delhi SLDC	SLDC						
9	Haryana SLDC							
10	Rajasthan SLDC							
11	Uttar Pradesh SLDC		Received (Tanda extension)	17.07.2025				
			Received (Tanda)	17.07.2025				
12	Uttarakhand SLDC							
13	Punjab SLDC							
14	Himachal Pradesh SLDC							
15	DTL	State Transmission Utility						
16	HVPNL		Received (5 Substations)	June-Oct 2025	Conducted (Dhanoda)	22.08.2025	62	67
17	RRVPNL		Received (40 Substations)	Mar-26				
18	UPPTCL		Received	2025;	going on			
19	PTCUL		Received	By Dec 2025	Completed (10 Substations)		55	
20	PSTCL							
21	HPPTCL		Received	FY 25-26				
22	IPGCL		Received (PPS-I)	November-December 2025	Completed		audi report to be submitted	
			Received (PPS-III)	FY 25-26	Completed		audi report to be submitted	
23	HPGCL		PTPS, Panipat	Nov-25	completed		audi report to be submitted	
			DCRTPP, Yamunanagar	Aug-25	Completed	22.08.2025	64	
			RGTPP (Khedar)	Oct'25	completed		audi report to be submitted	
24	RRVUNL		CTPP, Chhabra	2029	CTPP-Completed	Feb-24	51	
			CSCTPP, Chhabra	2027-28				
			STPS, suratgarh	Sep-27				
			SSCTPP, suratgarh	2028-29	SSCTPS-completed		55	
			KTPS, Kota	2025-2026	KSTPS -Completed	Aug-25	63	
			KaTPP, Jhalawar	2027				
			RGTPP, Ramgarh	Jun-26				
			DCCPP, Dholpur	Jun-26				
25	UPRVUNL		Obra-B	2026-27				
			Obra-C	Feb-26				
			Anpara D	2025	Under tendering			
			Anpara B	2025	Under tendering			
			Harduaganj	2025	Under tendering			
			Harduaganj D	2025	Under tendering			
			Harduaganj E	2025	Under tendering			
			Parichha	2025	Under tendering			
			Parichha Ext	2025	Under tendering			
			Jawaharpur	2025	Under tendering			
			Panki	2025				
26	UJVNL		Dharasu		Completed in Nov, 2024		56	submitted
			Tiloth	Dec-28				
			Vyasi					
			Chibro		Completed	Nov-23	55	
			Khodri		Completed	Nov-23	55	
27	HPPCL		Swara Kuddu	2026				
			Sainj					
			Kashang HEP	FY 2025-26				
28	PSPCL	State Generating Company & State owned Distribution Company	Reeceived (GHTP)	Dec. 2025				
			Received (GATP)	May 2025				
			GGSSTP	2026				
			RSD/ Sahapur Kandi	Mar'26				
29	HPSEBL	Distribution company having Transmission connectivity ownership	Kunihar	Conducted	19.10.2024	20.11.2024	55	
			Upper Nangal	Conducted	13.02.2025		61	
			Kango	Conducted	Report not submitted			
			Mattansidh	Conducted	Report not submitted			
			Nehrain	Conducted	Report not submitted			
			Baddi	Conducted	04.03.2025		61	
30	Prayagraj Power Generation Co. Ltd.	IPP having more than 1000 MW installed capacity	Received	Dec-24	Januray 2025	08.01.2025	59	
31	Aravali Power Company Pvt. Ltd		Received	Sep-26				
32	Apraava Energy Private Limited		Received	By May, 2025	Completed	Jun-25	63	
33	Talwandi Sabo Power Ltd.							
34	Nabha Power Limited		Received	By December, 2025	Completed	9/1/2026	67	
35	MEIL Anpara Energy Ltd		Received	* May 2025				
36	Rosa Power Supply Company Ltd		Conducted	By 30.09.2024	08.08.2024	13.01.2025	57	
37	Lalitpur Power Generation Company Ltd		Conducted		26.03.2024	June, 2024	54	
38	MEJA Uria Nigam Ltd.		Conducted		Completed in Oct, 2024	Nov-24	59	
39	Adani Power Rajasthan Limited		Conducted	November, 2024	Kawai	04.12.2024	56	Pending
40	JSW Energy Ltd. (KWHEP)		Received	December 2024 to March 2025	Completed	29.01.2025	57	67
41	UT of J&K (JKPTCL)	UT of Northern Region						
42	UT of Chandigarh (CDPL)							
	ISTS Transmission Utilities							
43	INDIGRID		Received (PTCL)	FY 25-26				
			FBTL					
			PrKTCL					
			Received (NRSS 29)	FY 24-25				
44	ADHPL		Received	* September 2026				
45	Adani Transmission Limited		Received (400kV Mohindergarh SS)	October, 2025				
46	Bikaner Khetri Transmission Limited		Received (765 kV Bikaner and Khetri extension bays)	September, 2025				
47	Fatehgarh Bhadla Transmission Limited		Received (400 kV Fatehgarh SS)	September, 2025				
48	Kishtwar Transmission Limited	RESONIA						
	State Utilities							
	Uttar Pradesh							
49	Vishnuprayag Hydro Electric Plant (J.P.)		Received	December, 2028				
50	Alaknanda Hydro Electric Plant (GVK)		Received	Mar-25				
51	Ghatampur TPS		Received	FY 27-28				
52	Khara Power House (Khara)		Received	Dec-25				
53	WUPPTCL		Conducted		Completed	20.03.2025	59	
54	SEUPPTCL		Completed		Completed	October, 2024	59	
55	ATSCL	AESL	Received (400/220KV Alwar SS)	September, 2025				
56	GTL	AESL	Received (765 kV Hapur extension bays)	September, 2025				
57	GTL	AESL	Received (765 kV Agra and Gr. Noida extension bays)	September, 2025				
58	HPTSL	AESL	Received (220KV Ranpur SS)	August, 2025				
59	MTSCL	AESL	Received (400/220/132KV Deedwana SS)	August, 2025				
60	OCBTL	AESL	Received (400/220/132KV Badaun SS)	Jan-25	Completed (report not shared)			
60	STSL	AESL						
	Rajasthan							
61	Barsingsar Plant	NLC	Received	by 31-03-2027				

62	Rajwest Plant	JSW	Received	Aug-26				
	RE Utilities							
63	ABC Renewable Pvt. Ltd							
64	ABC Renewable Energy (RJ-02) Pvt. Ltd.							
65	ACME Heeragarh powertech Pvt. Ltd	ACME	Received	2027				
66	ACME Pholidi	ACME	Received	2028				
67	ACME Deagarh	ACME						
68	ACME Raisar	ACME						
69	ACME Dhoulpar	ACME						
70	ACME Sikar	ACME	Received	2028				
71	ACME Chittorgarh Solar Energy Pvt Ltd	Ayana						
72	Adani Hybrid Energy Jaisalmer One Ltd.		5 years have not completed since commissiong					
73	Adani Hybrid Energy Jaisalmer Two Ltd.		5 years have not completed since commissiong					
74	Adani Hybrid Energy Jaisalmer Three Ltd.		5 years have not completed since commissiong					
75	Adani Hybrid Energy Jaisalmer Four Ltd. (AEML 1 - 350)		5 years have not completed since commissiong					
76	Adani Hybrid Energy Jaisalmer Four Ltd. (AEML 2 - 250)		5 years have not completed since commissiong					
77	Adani Renewable Energy (RJ) limited Rawara		Received	1/15/2026				
78	Adani Solar Energy Four Private Limited		5 years have not completed since commissiong					
79	Adani Solar Energy Jaisalmer Two Private Limited Project Two		5 years have not completed since commissiong					
80	SB Energy Six Private Limited, Bhadla		5 years have not completed since commissiong					
81	Adani Solar Energy Jodhpur Two Limited, Rawara	AGEL	5 years have not completed since commissiong					
82	Adani Solar Energy Jaisalmer One Ltd. (Hybrid450)		5 years have not completed since commissiong					
83	Adani Solar Energy RJ Two Pvt. Ltd. (Devikot)		5 years have not completed since commissiong					
84	Adani Solar Energy RJ Two Pvt. Ltd. (Phalodi)		5 years have not completed since commissiong					
85	Adani Green Energy 24 Limited (Bhimsar)		5 years have not completed since commissiong					
86	Adani Green Twenty-Five Limited (Badisid)		5 years have not completed since commissiong					
87	Bhadla park - South block		Received	1/28/2026				
88	AEML-250 WIND (Hybrid-2A)		5 years have not completed since commissiong					
89	AEML-260 WIND (Hybrid-2B)		5 years have not completed since commissiong					
90	Hybrid450-WIND (SBE Hybrid 450)		5 years have not completed since commissiong					
91	Ambuja Cements Limited 300MW							
92	Altra Xergi Pvt. Ltd.		Conducted		Completed	04.02.2025	60	
93	XL Xergi Power Pvt. Ltd.							
94	AMP Energy Green Four Pvt. Ltd.				Completed for common substation			
95	AMP Energy Green Five Pvt. Ltd.		Received	Nov-27				
96	AMP Energy Green Six Pvt. Ltd.		Received	Nov-27		02.09.2025	63	
97	Amplus Ages Private Limited		Received	31-12-2028				
98	Avaada RJHN 240MW		Received	Aug-26				
99	Avaada sunce energy Pvt limited		Received	Aug-26				
100	Avaada Sunrays Pvt. Ltd.		Received	Aug-27				
101	Avaada Sustainable RJ Pvt. Ltd.		Received	Aug-26				
102	Ayana Renewable Power Three Private Limited		Conducted		24.05.2025		61	
103	Ayaana Renewable Power One Pvt. Ltd.		Conducted				59	
104	Azure Power Forty One Pvt limited							
105	Azure Power Forty Three Pvt. Ltd. RSS							
106	Azure Power Forty Three Pvt. Ltd. PSS							
107	Azure Maple Pvt. Ltd.							
108	AZURE POWER INDIA Pvt. Ltd., Bhadla							
109	Azure Power Thirty Four Pvt. Ltd.							
110	Clean Solar Power (Jodhpur) Pvt. Ltd.	Hero Future Energies	Received	Dec-26				
111	Eden Renewable Cite Private Limited							
112	Eden Renewable Alma Pvt. Ltd.							
113	Energizent Power Private Limited							
114	Grian Energy private limited		Received	31-12-2028				
115	Juna Renewable Energy Pvt. Ltd.							
116	Juniper Green Cosmic Private Limited							
117	Juniper Nirjara Energy Private Limited							
118	Karinsar Solar Plant NHPC Ltd	NHPC						
119	Megasolis Renewables Pvt Ltd(MSRPL)							
120	Mega Surya Urja Pvt. Ltd. (MSUPL)							
121	AURAIYA Solar							
122	DADRI SOLAR							
123	SINGRAULI SOLAR							
124	Anta Solar							
125	Unchahar Solar							
126	NTPC Devikot Solar plant_240MW		Received	Aug-26				
127	NTPC Kolayat 400kV		Received	May-26				
128	Nedan Solar NTPC		Received	Jul-26				
129	NTPC Nokhra 300MW		Received	Jun-26				
130	One Volt energy Pvt. Ltd.		Received	31-12-2028				
131	ReNew Solar Urja Private Limited	IndiGrid						
132	Renew Surya Ayaan Pvt. Ltd.	IndiGrid						
133	ReNew Solar Energy (Jharkhand Three) Private Limited	ReNew	Received	29-01-2027				
134	RENEW SOLAR POWER Pvt. Ltd. Bhadla	ReNew	Not Applicable as Plant running on 33kV					
135	Renew Surya Partap Pvt. Ltd.	ReNew	Received	22-07-2029				
136	Renew Surya Ravi Pvt. Ltd.	ReNew	Received	24-07-2027				
137	Renew Surya Roshni Pvt. Ltd.	ReNew	Received	4/9/2029				
138	Renew Surya Vihan Pvt. Ltd.	ReNew	Received	27-08-2029				
139	Neemba Renew Surya Vihan Pvt Ltd	ReNew	Received	30-09-2030				
140	ReNew Surya Jyoti Pvt. Ltd	ReNew	Received	11/10/2030				
141	Renew Solar Photovoltaic Pvt Ltd	ReNew	STU-connected projects					
142	ReNew Hans Urja Pvt Ltd.	ReNew	STU-connected projects					
143	RENEW SOLAR POWER Pvt. Ltd. Bikaner	ReNew	awarded the PO					
144	ReNew Dinkar Urja Pvt. Ltd.	ReNew						
145	Renew Sun Bright Pvt. Ltd. (RSBPL)	Sembcorp	Received (submitted by ReNew)	16-04-2027				
146	Rising Sun Energy-K Pvt. Ltd.							
147	Serentica Renewables India 4 Private Limited		Received	Mar-29				
148	Serentica Renewables India 5 Private Limited		Received	Mar-29				
149	Khidrat Renewable energy Pvt ltd.		Received	Jun-30				
150	SJVN Green Energy Limited	SJVN						
151	Solzen Urja Private Limited		Received	Oct-26				
152	Tata Power Green Energy Ltd. (TPGEL) (225MW)		Received	31-03-2027				
153	Tata Power Renewable Energy Ltd. (TPREL) (300MW)		Received	31-03-2027				
154	Thar Surya Pvt. Ltd.							
155	TP Surya Ltd., Noorsar (110MW)		Received	31-03-2027				
156	Banderwala Solar Plant TP Surya Ltd. (300MW)		Received	31-03-2027				
157	Adept Renewable Technologies Pvt. Ltd.							
158	Transition Cleantech Services Private Limited							
159	Transition Energy Services Private Limited							
160	Transition Green Energy Private Limited							
161	Transition Sustainable Energy Services Private Limited							
162	Transition Sustainable Energy Services One Pvt Ltd							
163	Gorbea Solar Pvt Ltd (GSPL)							
164	Prerak Greentech Private Limited (PGPL)							

Rosa Power Supply Co. Ltd.

Trip Report

Date of tripping: 16.02.2026, 13.52.54 Hrs and 13.52.56 Hrs

Tripping of 400kV Rosa-Badaun #2 and Busbar Operation of Bus#1(Tripping of U#3,ST#3,ICT#1,Bus Coupler and PG#1)

Pre incident Conditions: 400kV Rosa-Badaun Circuit#1 was under shut down for insulator replacement work. The shutdown was take by M/s OCBTL team.
400kV Rosa-Badaun Circuit#2 was in charged condition and connected to 400kV Bus#2. Both lines are in single tower, double circuit. Following bays were connected with 400kV Bus#1. SLD for same is as shown:

1. GT#3
2. ST#3
3. ICT#1
4. Bus Coupler
5. PG#1

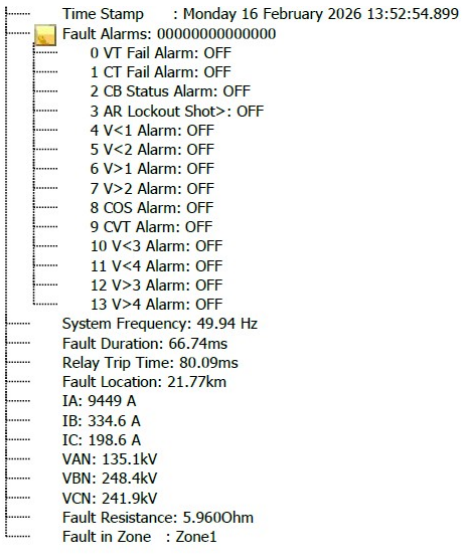
Incident: 400kV Rosa Badaun Ckt#2 tripped at 13.52Hrs, at the same time U#3,ST#3,ICT#1,Buscoupler and 400kV PG#1 also got tripped.

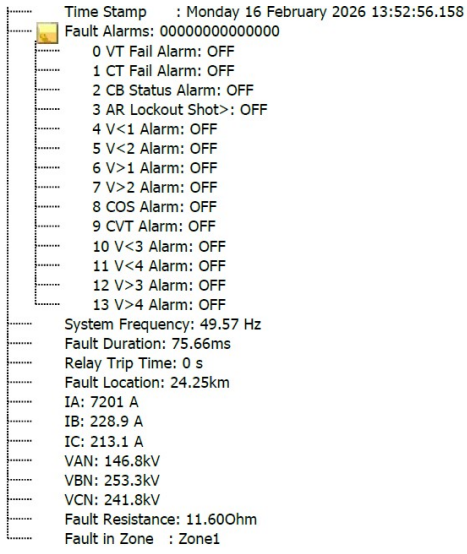
Following were the initial observations:

1. 400kV Rosa Badaun ckt#2 tripped in Z1 fault at 13.52.54.899 Hrs. The fault was in A-phase at a distance of about 22KMs from our end. The line auto reclosed and tripped again at 13.52.56.158 Hrs and AR Lockout occurred.
2. All the bays connected to Bus#1 got tripped and 400kV Bus#1 got dead.
3. 87BB Bus-bar differential protection operated leading to tripping of all the bays in Bus#1.

Reason for tripping of 400kV Rosa Badaun Ckt#2:

As per the relay records, there was fault in Phase-A of 400kV Rosa Badaun Ckt #2. The line was auto reclosed by the system but the fault was permanent in nature, so it tripped again and AR lockout occurred.
As per the information received from M/s OCBTL team, the fault occurred due to touching of tree.





Reason of 87 BB Operation in Bus#1 (Why Bus # 1 tripped while the faulty line was in Bus#2?):

400kV Rosa-Badaun Circuit#1 was under shut down for insulator replacement work. The shutdown was take by M/s OCBTL team and was isolated at our end too.

While checking it was observed that the Main 1 and Main 2 relays of 400kV Rosa-Badaun ckt#1 also had the trip indications (Picture attached).There were Z1 trip and SOTF trip indications.

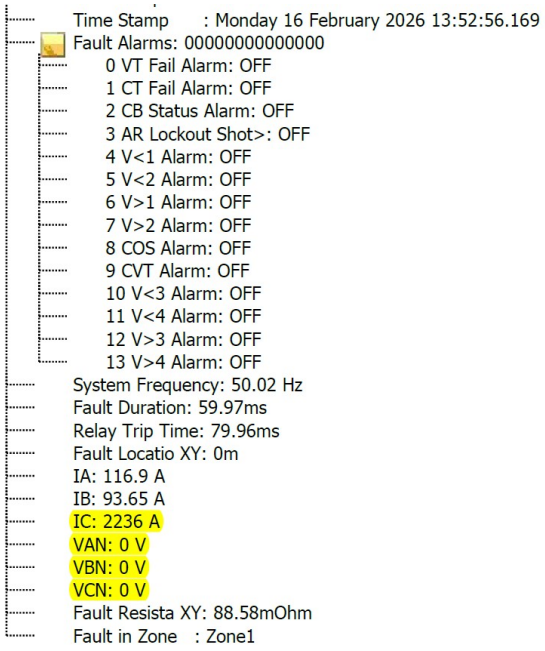
This line was under shut-down and the breakers were opened at both ends. Line isolator was also in open condition and line side earth switch was connected (closed) at both ends. M/s OCBTL team has taken up the job of insulator replacement in this line and were working using the local earthing also.

The fault records of these relays (400kv Rosa-Badaun Ckt#1) were checked and following are observations:

1. It was found that the relay has read the current in C-phase. As visible from the screenshot of fault record from Main #1 relay , Micom P442, the current in phase C is Ic=2738 A (2.7kA) and the voltages in A,B and C phase are also highlighted. As the line was under shutdown, “Zero” voltage in Phase A&B and very less voltage in C phase. The time stamp of this is same as the time stamp of first tripping event of 400kv Rosa-Badaun Ckt#2.

Time Stamp : Monday 16 February 2026 13:52:54.903
Fault Alarms: 00000000000000
System Frequency: 50.02 Hz
Fault Duration: 64.97ms
Relay Trip Time: 79.96ms
Fault Locatio XY: 0m
IA: 243.3 A
IB: 24.49 A
IC: 2738 A
VAN: 0 V
VBN: 0 V
VCN: 432.9 V
Fault Resista XY: 96.74mOhm
Fault in Zone : Zone1

2. There was another fault record in Main #1 relay , Micom P442. Screenshot of same is attached. This fault recording is similar to above and the time stamp is very close to the second tripping of 400kv Rosa-Badaun Ckt#2



3. Fault was also sensed by Main2 REL670 relay of 400kV Rosa Badaun Ckt#1.
Screenshots of fault records, Main #2 Relay REL 670. There is silimar observations here too.

No.	Name	RMS	Angle	No.	Name	RMS	Angle
1	LINE_A_IL1	126.385(A)	57.5°	1	LINE_UL1	191.079(V)	349.1°
2	LINE_A_IL2	6.096(A)	324.2°	2	LINE_UL2	134.785(V)	314.6°
3	LINE_A_IL3	1368.393(A)	53.0°	3	LINE_UL3	533.672(V)	326.9°
4	LINE_A_IN	1498.988(A)	53.0°				

Events List

Channel Number	Name	Status	Time
1	TRIP	On	16-02-2026 13:52:18.458
2	TRIP-R	On	16-02-2026 13:52:18.458
3	TRIP-Y	On	16-02-2026 13:52:18.458
4	TRIP-B	On	16-02-2026 13:52:18.458
17	SOTF-TRIP	On	16-02-2026 13:52:18.458
17	SOTF-TRIP	Off	16-02-2026 13:52:18.527
1	TRIP	Off	16-02-2026 13:52:18.611
2	TRIP-R	Off	16-02-2026 13:52:18.611
3	TRIP-Y	Off	16-02-2026 13:52:18.611
4	TRIP-B	Off	16-02-2026 13:52:18.611

Recording File Name:C:\ProgramData\ABB\PCMDataBasesABB\DisturbanceRecordings\400KV BDN-1 17.02.2026\Substation_AA1\Voltage Level_J1\Bay_Q01\REL670_A2\A220260216e4

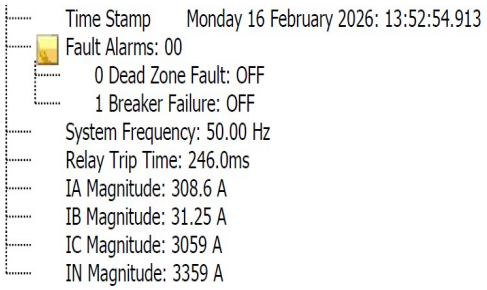
No.	Name	RMS	Angle	No.	Name	RMS	Angle
1	LINE_A_IL1	63.947(A)	147.8°	1	LINE_UL1	174.885(V)	85.8°
2	LINE_A_IL2	38.04(A)	331.9°	2	LINE_UL2	143.985(V)	5.7°
3	LINE_A_IL3	1141.912(A)	140.9°	3	LINE_UL3	423.424(V)	50.7°
4	LINE_A_IN	1170.728(A)	141.0°				

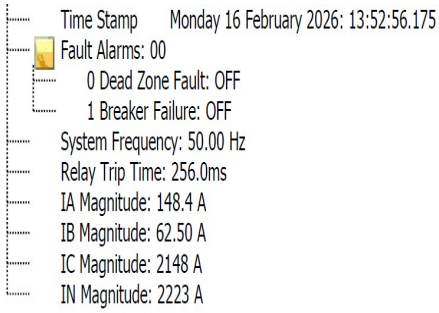
Events List

Channel Number	Name	Status	Time
1	TRIP	On	16-02-2026 13:52:19.724
2	TRIP-R	On	16-02-2026 13:52:19.724
3	TRIP-Y	On	16-02-2026 13:52:19.724
4	TRIP-B	On	16-02-2026 13:52:19.724
17	SOTF-TRIP	On	16-02-2026 13:52:19.724
17	SOTF-TRIP	Off	16-02-2026 13:52:19.790
1	TRIP	Off	16-02-2026 13:52:19.874
2	TRIP-R	Off	16-02-2026 13:52:19.874
3	TRIP-Y	Off	16-02-2026 13:52:19.874
4	TRIP-B	Off	16-02-2026 13:52:19.874

Recording File Name:C:\ProgramData\ABB\PCMDataBasesABB\DisturbanceRecordings\400KV BDN-1 17.02.2026\Substation_AA1\Voltage Level_J1\Bay_Q01\REL670_A2\A220260216e5

4. Data of peripheral unit PU B- Micom P743 of 400kV Rosa Badaun Ckt#1 was downloaded and there also the current in C-phase was visible. Also the time stamps and no. of incidents were matching to the tripping times and the no. of incidents of tripping in 400kV Rosa Badaun Ckt#2.





5. **DR summary** of PU A and PU B of 400kV Rosa Badaun Ckt 1 is attached below which is also records/shows the current in C-phase.

File: C:\Program Files (x86)\Schneider Electric\MiCOM S1 Studio\WaveWin\WAVESUMM.DTB Page: 1

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* File Information::
* ------------------
            Station: MAIN-1 PUA
             Device: 14
          File Name: C:\USERS\ELM\DOCUMENTS\SE S1 STUDIO\400KV ROSA PU 16FEB26_SESTUDIO\P743 BDN1 PU A\1\DR\Monday 16 Febru
          File Size: 98497 Bytes
     Prefault Time: 16/02/2026 13:52:54.442000
        Fault Time: 16/02/2026 13:52:54.927000
         Save Time: 02-17-1980 17:37:30
      Process Time: 02-17-2026 15:27:20
Start Date && Time: 16/02/2026 13:52:54.442000
  End Date && Time: 16/02/2026 13:52:55.960637
     File Duration: 1  Sec(s) - 518 Mils(s) - 637 Mics(s)
Sampling Frequency: 599.880024, 1667.000  Microsecond Rate
    Line Frequency: 50.000000

* Maximum/Minimum Analog Summary:
* -------------------------------
>  Max-Inst      Min-Inst       Max-RMS      Min-RMS     One-Bit    Inst-Diff     RMS-Diff   pUnits     Description
    425.425      -436.475       304.097        8.736      5.5250       11.050      295.361    A          1-IA
     49.725       -38.675        28.664        4.220      5.5250       11.050       24.445    A          2-IB
   4171.375     -4331.600      3020.306        9.702      5.5250      160.225     3010.604    A          3-IC
   4563.650     -4745.975      3309.047       11.050      5.5250      182.325     3297.997    A          4-IN

* Events/Sensors Activity Summary:
* ---------------------------------
>Fst  Lst  Fst-Change        Lst-Change       Changes    Description
  N    N    13:52:54.927097  13:52:55.083795  002          3-L3-LBB INIT R-PH
  N    N    13:52:54.927097  13:52:55.085462  002          4-L4-LBB INIT Y-PH
  N    N    13:52:54.927097  13:52:55.082128  002          5-L5-LBB INIT B-PH
  A    A    xx:xx:xx.xxxxxx  xx:xx:xx.xxxxxx  000          6-L6-LBB INIT 3-PH
  A    A    xx:xx:xx.xxxxxx  xx:xx:xx.xxxxxx  000         15-Ext. 3 ph Trip

* Events/Sensors Activity Log:
* -----------------------------
> State   Trigger-Time                Description
    A     16/02/2026 13:52:54.927097    3-L3-LBB INIT R-PH
    A     16/02/2026 13:52:54.927097    4-L4-LBB INIT Y-PH
    A     16/02/2026 13:52:54.927097    5-L5-LBB INIT B-PH
N         16/02/2026 13:52:55.082128    5-L5-LBB INIT B-PH
N         16/02/2026 13:52:55.083795    3-L3-LBB INIT R-PH
N         16/02/2026 13:52:55.085462    4-L4-LBB INIT Y-PH
```

```
* File Information::
* ------------------
           Station: BDN-1  PU B
            Device: 14
         File Name: C:\USERS\ELM\DOCUMENTS\SE S1 STUDIO\400KV ROSA PU 16FEB26_SESTUDIO\P743 BDN1 PU B\1\DR\Monday 16 Febru
         File Size: 99793 Bytes
     Prefault Time: 16/02/2026 13:52:54.422000
        Fault Time: 16/02/2026 13:52:54.917000
        Save Time: 02-17-1980 17:46:12
     Process Time: 02-17-2026 15:06:15
Start Date && Time: 16/02/2026 13:52:54.422000
  End Date && Time: 16/02/2026 13:52:55.960641
    File Duration: 1  Sec(s) - 538 Mils(s) - 641 Mics(s)
Sampling Frequency: 599.880024, 1667.000  Microsecond Rate
    Line Frequency: 50.000000

* Maximum/Minimum Analog Summary:
* -------------------------------
>  Max-Inst     Min-Inst      Max-RMS     Min-RMS    One-Bit   Inst-Diff    RMS-Diff   pUnits    Description
    419.900     -430.950      303.142       6.177     5.5250      11.050     296.965    A         1-IA
     44.200      -44.200       28.709       0.000     5.5250       0.000      28.709    A         2-IB
   4187.950    -4320.550     3023.281       8.440     5.5250     132.600    3014.842    A         3-IC
   4563.650    -4745.975     3310.207      11.050     5.5250     182.325    3299.157    A         4-IN

* Events/Sensors Activity Summary:
* ---------------------------------
>Fst  Lst  Fst-Change       Lst-Change       Changes    Description
  N    N    13:52:54.917099  13:52:55.162148  002         2-Any Trip
  N    N    13:52:54.928768  13:52:55.085466  002         3-L3-LBB INIT R-PH
  N    N    13:52:54.928768  13:52:55.085466  002         4-L3-LBB INIT R-PH
  N    N    13:52:54.928768  13:52:55.087133  002         5-L4-LBB INIT Y-PH
  N    N    13:52:54.928768  13:52:55.087133  002         6-L5-LBB INIT B-PH
  N    N    13:52:54.917099  13:52:55.160481  002         7-R5-BB/LBB 96A OP
  N    N    13:52:54.917099  13:52:55.160481  002         8-Relay condit 06
  N    N    13:52:54.917099  13:52:55.160481  002         9-R7-BB/LBB 96B OP
  N    N    13:52:54.917099  13:52:55.160481  002        10-R8- BBD/TSEND-2
  N    N    13:52:54.917099  13:52:55.160481  002        11-R10-BB/LBB 96BOP
  N    N    13:52:54.917099  13:52:55.160481  002        12-R11-BBD/T SEND-2
  N    N    13:52:54.917099  13:52:55.160481  002        14-R13-BBD/T SEND-1
  N    N    13:52:54.917099  13:52:55.160481  002        15-R16-BBD/T SEND-1
  N    N    13:52:54.917099  13:52:55.160481  002        16-Trip 87BB
  A    A    жж:жж:жж.жжжжж  жж:жж:жж.жжжжж  000        18-Ext. 3 ph Trip

* Events/Sensors Activity Log:
* -----------------------------
> State   Trigger-Time                Description
    A     16/02/2026 13:52:54.917099   2-Any Trip
    A     16/02/2026 13:52:54.917099   7-R5-BB/LBB 96A OP
    A     16/02/2026 13:52:54.917099   8-Relay condit 06
    A     16/02/2026 13:52:54.917099   9-R7-BB/LBB 96B OP
    A     16/02/2026 13:52:54.917099  10-R8- BBD/TSEND-2
    A     16/02/2026 13:52:54.917099  11-R10-BB/LBB 96BOP
    A     16/02/2026 13:52:54.917099  12-R11-BBD/T SEND-2
    A     16/02/2026 13:52:54.917099  14-R13-BBD/T SEND-1
    A     16/02/2026 13:52:54.917099  15-R16-BBD/T SEND-1
    A     16/02/2026 13:52:54.917099  16-Trip 87BB
    A     16/02/2026 13:52:54.928768   3-L3-LBB INIT R-PH
    A     16/02/2026 13:52:54.928768   4-L3-LBB INIT R-PH
    A     16/02/2026 13:52:54.928768   5-L4-LBB INIT Y-PH
    A     16/02/2026 13:52:54.928768   6-L5-LBB INIT B-PH
N         16/02/2026 13:52:55.085466   3-L3-LBB INIT R-PH
N         16/02/2026 13:52:55.085466   4-L3-LBB INIT R-PH
N         16/02/2026 13:52:55.087133   5-L4-LBB INIT Y-PH
N         16/02/2026 13:52:55.087133   6-L5-LBB INIT B-PH
N         16/02/2026 13:52:55.160481   7-R5-BB/LBB 96A OP
N         16/02/2026 13:52:55.160481   8-Relay condit 06
N         16/02/2026 13:52:55.160481   9-R7-BB/LBB 96B OP
N         16/02/2026 13:52:55.160481  10-R8- BBD/TSEND-2
N         16/02/2026 13:52:55.160481  11-R10-BB/LBB 96BOP
N         16/02/2026 13:52:55.160481  12-R11-BBD/T SEND-2
N         16/02/2026 13:52:55.160481  14-R13-BBD/T SEND-1
N         16/02/2026 13:52:55.160481  15-R16-BBD/T SEND-1
N         16/02/2026 13:52:55.160481  16-Trip 87BB
N         16/02/2026 13:52:55.162148   2-Any Trip
```

```
* File Information::
* ------------------
           Station: BDN-1  PU B
            Device: 14
         File Name: C:\USERS\ELM\DOCUMENTS\SE S1 STUDIO\400KV ROSA PU 16FEB26_SESTUDIO\P743 BDN1 PU B\1\DR\Monday 16 Febru
         File Size: 98497 Bytes
     Prefault Time: 16/02/2026 13:52:55.966000
        Fault Time: 16/02/2026 13:52:56.178000
        Save Time: 02-17-1980 17:45:50
      Process Time: 02-17-2026 15:10:35
 Start Date && Time: 16/02/2026 13:52:55.966000
   End Date && Time: 16/02/2026 13:52:57.484637
      File Duration: 1  Sec(s) - 518 Mils(s) - 637 Mics(s)
 Sampling Frequency: 599.880024, 1667.000  Microsecond Rate
     Line Frequency: 50.000000

* Maximum/Minimum Analog Summary:
* -------------------------------
>  Max-Inst     Min-Inst      Max-RMS     Min-RMS    One-Bit   Inst-Diff    RMS-Diff   pUnits    Description
    226.525     -795.600      418.033       3.568     5.5250     569.075     414.465     A        1-IA
     82.875     -784.550      409.556       3.566     5.5250     701.675     405.989     A        2-IB
   3315.000    -3105.050     2294.873       3.809     5.5250     209.950    2291.063     A        3-IC
   3375.775    -3187.925     2352.692       4.526     5.5250     187.850    2348.166     A        4-IN

* Events/Sensors Activity Summary:
* ---------------------------------
>Fst  Lst  Fst-Change       Lst-Change       Changes    Description
  N    N    13:52:56.177709  13:52:56.432760  002          2-Any Trip
  N    N    13:52:56.194379  13:52:56.347743  002          3-L3-LBB INIT R-PH
  N    N    13:52:56.194379  13:52:56.347743  002          4-L3-LBB INIT R-PH
  N    N    13:52:56.194379  13:52:56.349410  002          5-L4-LBB INIT Y-PH
  N    N    13:52:56.194379  13:52:56.349410  002          6-L5-LBB INIT B-PH
  N    N    13:52:56.177709  13:52:56.431093  002          7-R5-BB/LBB 96A OP
  N    N    13:52:56.177709  13:52:56.431093  002          8-Relay condit 06
  N    N    13:52:56.177709  13:52:56.431093  002          9-R7-BB/LBB 96B OP
  N    N    13:52:56.177709  13:52:56.431093  002         10-R8- BBD/TSEND-2
  N    N    13:52:56.177709  13:52:56.431093  002         11-R10-BB/LBB 96BOP
  N    N    13:52:56.177709  13:52:56.431093  002         12-R11-BBD/T SEND-2
  N    N    13:52:56.177709  13:52:56.431093  002         14-R13-BBD/T SEND-1
  N    N    13:52:56.177709  13:52:56.431093  002         15-R16-BBD/T SEND-1
  N    N    13:52:56.177709  13:52:56.431093  002         16-Trip 87BB
  A    A    xx:xx:xx.xxxxxx  xx:xx:xx.xxxxxx  000         18-Ext. 3 ph Trip

* Events/Sensors Activity Log:
* -----------------------------
> State   Trigger-Time                Description
    A     16/02/2026 13:52:56.177709    2-Any Trip
    A     16/02/2026 13:52:56.177709    7-R5-BB/LBB 96A OP
    A     16/02/2026 13:52:56.177709    8-Relay condit 06
    A     16/02/2026 13:52:56.177709    9-R7-BB/LBB 96B OP
    A     16/02/2026 13:52:56.177709   10-R8- BBD/TSEND-2
    A     16/02/2026 13:52:56.177709   11-R10-BB/LBB 96BOP
    A     16/02/2026 13:52:56.177709   12-R11-BBD/T SEND-2
    A     16/02/2026 13:52:56.177709   14-R13-BBD/T SEND-1
    A     16/02/2026 13:52:56.177709   15-R16-BBD/T SEND-1
    A     16/02/2026 13:52:56.177709   16-Trip 87BB
    A     16/02/2026 13:52:56.194379    3-L3-LBB INIT R-PH
    A     16/02/2026 13:52:56.194379    4-L3-LBB INIT R-PH
    A     16/02/2026 13:52:56.194379    5-L4-LBB INIT Y-PH
    A     16/02/2026 13:52:56.194379    6-L5-LBB INIT B-PH
N         16/02/2026 13:52:56.347743    3-L3-LBB INIT R-PH
N         16/02/2026 13:52:56.347743    4-L3-LBB INIT R-PH
N         16/02/2026 13:52:56.349410    5-L4-LBB INIT Y-PH
N         16/02/2026 13:52:56.349410    6-L5-LBB INIT B-PH
N         16/02/2026 13:52:56.431093    7-R5-BB/LBB 96A OP
N         16/02/2026 13:52:56.431093    8-Relay condit 06
N         16/02/2026 13:52:56.431093    9-R7-BB/LBB 96B OP
N         16/02/2026 13:52:56.431093   10-R8- BBD/TSEND-2
N         16/02/2026 13:52:56.431093   11-R10-BB/LBB 96BOP
N         16/02/2026 13:52:56.431093   12-R11-BBD/T SEND-2
N         16/02/2026 13:52:56.431093   14-R13-BBD/T SEND-1
N         16/02/2026 13:52:56.431093   15-R16-BBD/T SEND-1
N         16/02/2026 13:52:56.431093   16-Trip 87BB
N         16/02/2026 13:52:56.432760    2-Any Trip
```

File: C:\Program Files (x86)\Schneider Electric\MiCOM S1 Studio\WaveWin\WAVESUMM.DTB Page: 1

```
* File Information::
* ------------------
            Station: MAIN-1 PUA
             Device: 14
          File Name: C:\USERS\ELM\DOCUMENTS\SE S1 STUDIO\400KV ROSA PU 16FEB26_SESTUDIO\P743 BDN1 PU A\1\DR\Monday 16 Febru
          File Size: 98497 Bytes
     Prefault Time: 16/02/2026 13:52:55.966000
        Fault Time: 16/02/2026 13:52:56.193000
         Save Time: 02-17-1980 17:37:10
      Process Time: 02-17-2026 15:28:10
 Start Date && Time: 16/02/2026 13:52:55.966000
   End Date && Time: 16/02/2026 13:52:57.484637
      File Duration: 1  Sec(s) - 518 Mils(s) - 637 Mics(s)
 Sampling Frequency: 599.880024, 1667.000  Microsecond Rate
     Line Frequency: 50.000000

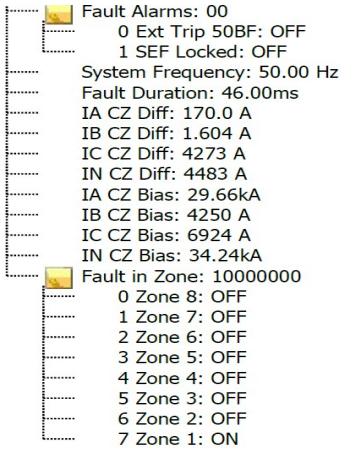
* Maximum/Minimum Analog Summary:
* -------------------------------
>  Max-Inst      Min-Inst       Max-RMS      Min-RMS     One-Bit    Inst-Diff     RMS-Diff   pUnits     Description
    215.475      -795.600       414.446        5.291      5.5250      580.125      409.154    A          1-IA
     88.400      -790.075       407.604        3.189      5.5250      701.675      404.415    A          2-IB
   3303.950     -3110.575      2290.810        2.887      5.5250      193.375     2287.923    A          3-IC
   3392.350     -3187.925      2353.044        3.694      5.5250      204.425     2349.349    A          4-IN

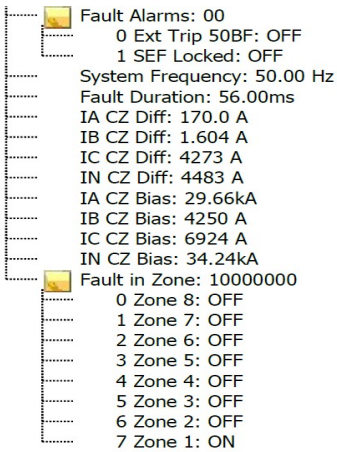
* Events/Sensors Activity Summary:
* ---------------------------------
>Fst  Lst  Fst-Change        Lst-Change       Changes    Description
  N    N    13:52:56.192712  13:52:56.347743   002          3-L3-LBB INIT R-PH
  N    N    13:52:56.192712  13:52:56.344409   002          4-L4-LBB INIT Y-PH
  N    N    13:52:56.192712  13:52:56.346076   002          5-L5-LBB INIT B-PH
  A    A    xx:xx:xx.xxxxxx  xx:xx:xx.xxxxxx   000          6-L6-LBB INIT 3-PH
  A    A    xx:xx:xx.xxxxxx  xx:xx:xx.xxxxxx   000         15-Ext. 3 ph Trip

* Events/Sensors Activity Log:
* -----------------------------
> State   Trigger-Time               Description
    A     16/02/2026 13:52:56.192712   3-L3-LBB INIT R-PH
    A     16/02/2026 13:52:56.192712   4-L4-LBB INIT Y-PH
    A     16/02/2026 13:52:56.192712   5-L5-LBB INIT B-PH
N         16/02/2026 13:52:56.344409   4-L4-LBB INIT Y-PH
N         16/02/2026 13:52:56.346076   5-L5-LBB INIT B-PH
N         16/02/2026 13:52:56.347743   3-L3-LBB INIT R-PH
```

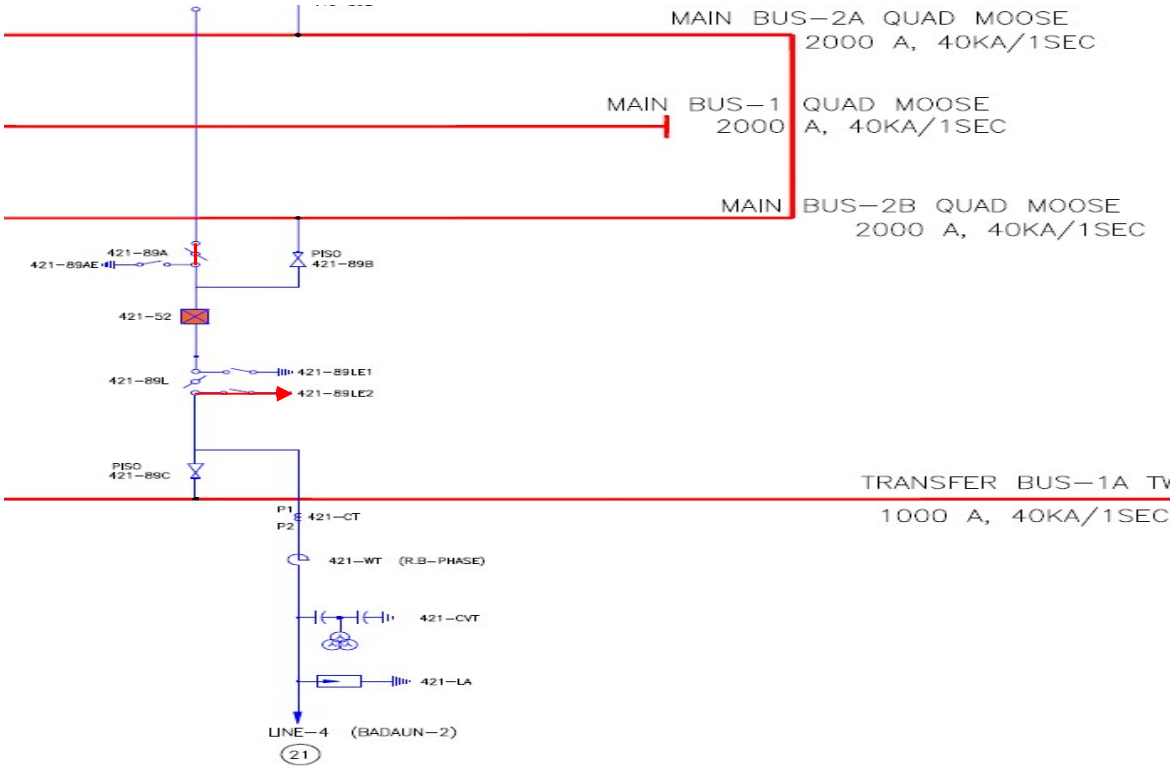
All these observations indicate that during the fault in 400kV Rosa Badaun Ckt#2, actual current has somehow flown in C-phase primary to ground in 400kV Rosa-Badaun Ckt#1(which was under SD). This current was refelcted in CT secondary cores of 400kV Rosa Badaun Ckt#1. The current read by relays of Ckt#1 caused the tripping indications in relays (M1 and M2 relay).
The current read by PU (P743) of Ckt#1 reported the differential current to Central unit (CU)(P741), which gave the busbar tripping command in zone 1.All the bays connected to bus#1 got tripped.

Screenshot of Fault record of CU is attached below.





SLD Showing the Location of CT in Line:



Observations-

1. 400kV Rosa-Badaun Circuit#2 was also tripped on 14/02/2026, Z2 protection. Faulted phase A-B, distance 77 KMs from our end while 400kV Rosa-Badaun Circuit#1 was under shutdown.
2. Line patrolling was done by M/s OCBTL team. On 10th Feb, their representative also came to our end for same.
3. 400kV Rosa-Badaun Circuit#2 trip logged twice in relay (once trip & then AR acted) ,same fault was sensed in relay of 400kV Rosa-Badaun Circuit#1.
4. All 03 different relays (Main 1, main2 ,PUs) of 400kV Rosa-Badaun Circuit#1 had sensed the same fault in C phase whereas line was under shutdown which triggered the differential protection of bus bar#1 (87BB-Z1).
5. Time of incidence of 400kV Rosa-Badaun Circuit#2 tripping & differential protection of bus bar-1 acting is matching means incident occurred while Circuit#2 tripping only.
6. Enquired with M/s OCBTL for any incident at the line/tower end but they reported cause of tripping as tree touching in the charged line. Tree touching is the transient nature fault but line AR also failed at both ends which is not justifying the reason stated by M/s OCBTL.
7. Probable cause suspected by us that something touched/ came in vicinity of the shutdown line-1 from charged line-2.(conductor broken/faulty insulator/Heavy arcing/Human error etc since work is going on at the tower) Both lines are in single tower, double circuit system.

Status of actions points recommended during previous PSC meetings

S. No	Agenda	Remdial actions recommended during PSC meeting	Status of remdial action taken	
			66th PSC (28.01.2026)	67th PSC (18.03.2026)
1	Frequent multiple elements tripping at 220kV Kunihar, Baddi, Upperla Nangal complex and load loss event in HP control area	**51 PSC:** PSC Forum requested HP to complete the protection audit as per mentioned timelines (protection audit of 220kV Kunihar has been awarded and it would be completed within next 15-20 days. In next phase, by 15th September, protection audit of substations in downstream and upstream of 220kV Kunihar S/s would be completed.) and resolve the protection related issues. HP was also requested to share the reports of protection audit to NRPC & NRLDC after completion of audits.	No repsonse received from HPSEBL in this regard during this discussion in the meeting. *PSC forum suggested to resolve protection related issues at the earliest and requested HPSEBL to submit the compliance report mentioning details of action taken and planned to be taken with tentative temiline. Further, these stations to be kept under observation and necessary actions need to be taken to minimise the tripping incidents.*	
2	Multiple elements tripping at 220kV Hissar(BBMB) 07th May 2024, 11:16 hrs	**51 PSC:** a) Expedite the implementation of differential protection in short lines to avoid undesired operation of distance protection.	No representative from HVPNL was present during this discussion in the meeting.	
3	Multiple elements tripping at 400kV Sainj (HP), 400kV Parbati2 & Parbti3 (NHPC) Stations on 07th May 2024, 16:17 hrs	**51 PSC:** a) NHPC shall follow up with the relay engineer and taken necessary remedial actions to ensure proper operation of A/R scheme at Parbati2 end. b) NHPC and HPPTCL shall review the healthiness of PLCC at Parbati3 and Sainj end and take necessary actions to ensure their proper operation. c) Expedite the implementation of differential protection in 400kV Parbati2-Sainj line. d) Standardisation of recording instruments (DR/EL) need to be ensured.	NHPC representative stated that OPGW laying has not yet been completed. NHPC has taken up the issue in 239th OCC meeting, however, no update/confirmation on completion of OPGW was given due to absence of INDIGRID representative. Due to the non-availability of OPGW, the AGC system is also awaiting commissioning, although the material has already reached the site. INDIGRID representative stated that work is delayed due to non-availability of vendors. Now, contract has been placed and work is expected to be completed by March'26. HPPCL representative stated that there was issue in PLCC card received and same will be installed by Feb'26. *PSC forum recommended NHPC, INDIGRID & HPPCL to take expeditious action at their end and ensure healthiness of protection system.*	
4	Multiple elements tripping at 400kV Koteshwar(PG) on 17th May 2024, 17:21 hrs	**51 PSC:** a) In view of short line length of 400KV Koteshwar(PG)-Tehri D/C, POWERGRID shall plan for the differential protection in the line on priority in near future to avoid overreach of distance protection.	POWERGRID(NR-1) representative stated that PO was already placed on 10th Jan'26. Work is expected to get completed within 6 months. *PSC forum requested POWERGRID(NR-1) to expedite the process of implementation of differential protection at Koteshwar HEP.*	
5	Multiple elements tripping at 220kV Sarna (PS) on 04th May 2024, 07:10 hrs	**51 PSC:** a) Punjab shall expedite the commissioning of new bus scheme. B) POWERGRID shall revise the Z-4 time delay setting of Kishenpur lines at Sarna (PS) end as 160msec till bus bar get operational.	PSTCL representative informed that budget is approved and new panel for busbar scheme (Hitachi make) was already drawn from store. The same will be installed by Mar'26. *PSC forum requested PSTCL to expedite the work related to implementation of bus bar protection at Sarna S/s.*	
6	Multiple elements tripping at 220kV KTPS (RVUN) on 21st June 2024, 11:37 hrs	**51 PSC:** a) Commissioning of bus coupler between 220kV Bus-3 & 5 need to be expedited.	No representative from RVUNL was present during the meeting.	
7	Frequent tripping of 220 KV Anta(NT)-Sakatpura(RS) (RS) Ckt-1	**52 & 53 PSC:** RVPN was requested to expedite the process of relay replacement and rectification of issues related to A/R operation.	RVPNL representative informed that work started and is expected to be completed by Apr'26. *PSC forum requested RVPNL to expedite the actions at their end.*	
8	Frequent tripping of 220 KV Khara(UP)-Saharanpur(PG) (UP) Ckt-1	**52 & 53 PSC:** UP was requested to expedite the process of relay replacement at Khara end. POWERGRID shall review and ensure the A/R operation at their end.	SLDC UP informed that status is same and Unit -3 relay replacement work will be completed by Feb'26. *PSC forum requested UPPTCL to expedite the replacement of relays at Khara(UP) end.*	
9	Multiple elements tripping at 220kV Khodri HEP & Chibro HEP on 5th, 11th & 19th September 2024; 15th & 20th July 2025, 17th August 2025 and 02nd &18th October 2025	**53 & 62 PSC:** a)Timely submission of disturbance recorder (DR) and event logger (EL) files need to be ensured. b)HPPTCL shall taken necessary actions to rectify the protection related issue in 220kV Khdori-Majri ckt-2. c)OV protection needs to be disabled in 220kV lines at the earliest. d)Over frequency and over current protection operation in units at Khodri HEP need to be reviewed. e)A/R should be made operational in Sarsawan line at the earliest. f)UJVNL shall share the CPRI audit report and details of remedial action taken within one week. g)Replacement of Units breakers need to be expedited. **63 PSC:** a) UJVNL shall review and share the complete protection settings of Khodri HEP to NRLDC/NRPC within a week. b) HPSEBL in coordination with UJVNL shall review the protection setting of 220kV Khodri-Majri line-II and Majri S/s **64 PSC:** a) Zone-2 settings of 220 KV Saharanpur(UP)- Saharanpur(PG) Ckt need to be reviewed	HPSEB stated that relay replacement work will be done by Feb'26 and UJVUNL will support in case of any panel issues during work. *PSC forum requested HPSEBL and UJVUNL to expedite the relay replacement work in co-ordination.*	
10	Multiple elements tripping at 400/220kV Obra_A(UP) on 9th October 2024	**54 PSC Recommendations:** a)UPPTCL & Obra_A(UP) shall ensure the implementation of LBB protection at the earliest at 220kV side. b)GPS scheme shall be implemented at Obra_B(UP) by the **end of January 2025** and time sync of recording devices will be ensured.	UPPTCL representative informed that status is same; time sync work will be completed by Mar'26 and approval of LBB relay work is pending from headquarters. *PSC forum requested UPPTCL to follow up with headquarters for expedited corrective actions.*	
11	Frequent tripping of 220 KV RAPS_A(NP)-Sakatpura (RS) (RS) Ckt-1 &2	**55 PSC Recommendations: E**xpeditious corrective actions to minimise frequent faults in line.	NPCIL representative stated that A/R is not installed at RAPS end of 220 KV RAPS_A(NP)-Sakatpura (RS) (RS) Ckt-1 &2 as OEM has denied to install A/R as torsional stress on turbine may lead to blade failure. *PSC forum requested NPCIL to take up this issue with OEM and explore any other possibility to avoid frequent unwanted tripping of line.*	
12	Frequent tripping of 400 KV Amritsar(PG)-Makhu(PS) (PSTCL) Ckt-1 & 400 KV Talwandi Saboo(PSG)-Nakodar (PSG) (PS) Ckt-1	**55 PSC Recommendations:** PSTCL was requested to plan replacement of porcelain insulators with polymer type.	PSTCL representative informed that status is same and work will be done before next winter season. NRLDC representative emphasized that frequent tripping of 400 KV Amritsar(PG)-Makhu(PS) (PSTCL) Ckt-1 is observed recently due to string failures, hence PSTCL was requested to complete insulator replacement work at the earliest. *PSC forum requested PSTCL for expeditious actions to avoid frequent trippings of lines due to string failures/during fog.*	
13	Multiple element tripping event at 400kV Aligarh(UP) on 02nd November, 2024	**55 PSC Recommendations:** UPPTCL shall ensure the healthiness of carrier communication and A/R operation at Muradnagar_1(UP) end.	UPPTCL representative informed that status is same and work will be completed by Jan'26. *PSC forum requested UPPTCL to expedite the corrective actions.*	
14	Frequent tripping of 220 KV Debari(RS)-RAPS_A(NP) (RS) Ckt-1	**58 PSC Recommendations: E**xpeditious corrective actions to minimise frequent faults in line.	RVPNL representative informed that inspection work is going on. *PSC forum requested NPCIL and RVPNL to resolve the issue of A/R at RAPS end and to take expeditious corrective action to minimise frequent faults in line.*	
15	Multiple elements tripping at 400 kV Uri-II HEP (NHPC) at 21:35 hrs on 18th May, 202	**61 PSC Recommendation:** NHPC in coordination with the POWERGRID(NR-2) shall review the healthiness of carrier protection in 400kV Uri_2-Wagoora line	NHPC representaitve stated that the shutdown of the 400 kV Uri-II-Wagoora line has been approved in the 239th OCC meeting for 19/02/2026 for diagnostic testing and maintenance of the GIS. During this shutdown period, the healthiness of the PLCC system at the Uri-IIend will also be checked. *PSC forum requested to complete the work within the stipulated time.*	

16	Multiple elements tripping at 220/132kV Pampore(J&K) at 23:25 hrs on 20.06.2025	**62 PSC Recommendation:** a) DR/EL along with detailed tripping report along with remedial action taken details need to be shared within one week. b) Healthiness of protection system and other auxiliary equipments need to be ensured at 220/132kV Pampore(J&K). c) Line protection settings at 220/132kV Pampore(J&K) need to be reviewed in line with NRPC Protection philosophy.	J&K representative stated that numerical relays were already installed, but they face problem in extarcting the DR from relay. *PSC forum suggested to appoint nodal officer for DR/EL extraction work after each event and also proposed that training may be organised by POWERGRID NR-2 if needed.*	
17	Multiple elements tripping at 220/132kV Moga(PS), 220 kV /66kV Badhni kalan(PS) & 220/66 kV Himmatpura(PS) at 11:06 hrs on 01.07.2025	**62 PSC Recommendation:** a) Healthiness of bus bar protection need to be ensured at Baghapurana and Ajitwal S/s. b) New busbar protection need to be installed at Moga PSTCL at the earliest. c) Line protection settings at 220/132kV Moga(PS), 220 kV /66kV Badhni kalan(PS) & 220/66 kV Himmatpura(PS) need to be reviewed in line with NRPC Protection philosophy. d) CT mismatch issue at both the ends of 220 kV Moga PSTCL – Moga ckt-2 need to be addressed and differential protection need to be installed at the earliest by PSTCL in co-ordination with PGCIL.	PSTCL representative stated that status is same and budget approval is in process. *PSC forum requested PSTCL to complete the bus bar protection installation work within the stipulated time.*	
18	Multiple elements tripping at 220/132kV Ziankote(J&K) at 10:18 hrs on 24.07.2025	**62 PSC Recommendation:** a) DR/EL along with detailed tripping report along with remedial action taken details need to be shared within one week. b) Zone-2 settings need to be revised to 160ms at Amargarh end of 220kV Amargarh-Ziankote D/C. c) Healthiness of protection system and other auxiliary equipments need to be ensured at 220/132kV Ziankote(J&K). d) Line protection settings at 220/132kV Ziankote(J&K) need to be reviewed in line with NRPC Protection philosophy.	J&K representative stated that internal audit was completed at Ziankote(JK). *PSC forum requested JKPTCL to address other protection related issues at Ziankote(JK) and share internal audit report at the earliest.*	
19	Multiple elements tripping at 765/400kV Bara TPS(UP) at 21:33 hrs on 08.08.2025	**63 PSC Recommendation:** a) UPPTCL shall review and correct the DEF protection setting at Mainpuri end of 765kV Bara-Mainpuri line-2 to avoid unwanted tripping of the line. b) UPPTCL and Bara TPS shall review the logic of SPS operation (breaker status of both ends may be taken for desired decision) to ensure its proper operation in future events.	UPPTCL representative stated that SPS needs to be revised due to new 765kV Bara- Mainpuri circuit-I commissioned on 17.01.2026. *PSC forum requested UPPTCL to expedite the corrective actions.*	
20	Multiple elements tripping at 220/66kV Laltokalan(PS) at 04:35 hrs on 30.08.2025	**63 PSC Recommendation:** a) PSTCL shall ensure the bus bar protection at 220/66kV Laltokalan(PS) at the earliest possible. b) Timely submission of DR/EL & tripping report need to be ensured.	PSTCL representative informed that no response received from OEM regarding relay is repairable or not. *PSC forum requested PSTCL to ensure healthiness of busbar protection at the earliest.*	
21	Multiple elements tripping at 400kV Kishenpur(PG) & Baglihar stage-I HEP at 21:58 hrs on 05.09.2025	**64 PSC Recommendation:** a) DT was not sent to remote end on TEED protection operation at Kishenpur end. PLCC/DTPC system needs to be reviewed and DT scheme needs to be configured if not available. b) Overreach of distance protection in 400kV Kishenpur-New Wanpoh line-IV needs to be reviewed. c) Protection settings of units at Baglihar need to be reviewed.	POWERGRID(NR-2) representative informed that status is same and PLCC will be made healthy by Mar'26. *PSC forum requested JKPTCL and POWERGRID to expedite the corrective actions.*	
22	Multiple elements tripping at 400/220kV at Daulatabad(HR) at 06:02 hrs on 31.10.2025	**64 PSC Recommendation:** a) Bus bar protection need to be restored at the earliest.	HVPNL representative informed that as no response was received from OEM so far regarding internal fault of busbar relay (Sifang), third party option is being explored. *PSC forum requested HVPNL to restore bus bar protection at 220kV Daulatabad(HR) at the earliest.*	
23	Multiple element tripping event at 220/33kV Chowadhi(JK) at 19:44 hrs on 22.11.2025	**65 PSC Recommendation:** a) Carrier communication issue at Chowadhi(JK) end need to be resolved at the earliest.	No update received from J&K regarding carrier communication issue at Chowadhi(JK) end. *PSC forum requested J&K to resolve carrier communication issue at Chowadhi(JK) end at the earliest.*	

Annexure-B.II

Grid Event summary for January-February 2026

S.No.	Category of Grid Incident/ Disturbance (GI-I to GD-V)	Name of Elements (Tripped/Manually opened)	Affected Area	Owner/ Agency	Outage		Revival		Duration (hh:mm)	Event (As reported)	Loss of generation / loss of load during the Grid Disturbance		Fault Clearance time (in ms)	Points of Discussion
					Date	Time	Date	Time			Generation Loss(MW)	Load Loss (MW)		
1	GI-2	1) 132KV Anpara-Rihand (UP) Ckt-1 2) 132KV Anpara-Rihand (UP) Ckt-2 3) 132KV Anpara(UP)-Bina Ckt 4) 210 MW Anpara TPS - UNIT 1 5) 210 MW Anpara TPS - UNIT 2 6) 210 MW Anpara TPS - UNIT 3 7) 500 MW Anpara TPS - UNIT 4 8) 500 MW Anpara TPS - UNIT 5	Uttar Pradesh	UPPTCL	8-Jan-26	08:01	8-Jan-26	09:19	01:18	i)400/132kV Anpara(UP) S/s have double main and transfer bus arrangement at 400kV level and double main bus arrangement at 132kV level. ii)During antecedent condition, 132kV Anpara-Morwa Ckt was under shutdown and 132kV Bus coupler was in ON position. 210 MW UNIT 1, 2 & 3 and 500 MW UNIT 4 & 5 at Anpara TPS were in running condition and were generating approx. 187 MW, 176 MW, 153 MW, 392 MW and 466 MW respectively (as per SCADA). iii)As informed by SLDC UP, 132kV CWTF11 and CWTF22 were supplying power to Cooling water pumps for 210 MW Anpara TPS - UNIT 1, 2 & 3 and 132kV CWTF33 was supplying power to Cooling water pumps for 500 MW Anpara TPS - UNIT 4 & 5. Similarly, 132kV STNX11 and STNX22 were supplying auxiliary power to 210 MW Anpara TPS - UNIT 1, 2 & 3 and 132kV STNX33 and STNX44 were supplying auxiliary power to 500 MW Anpara TPS - UNIT 4 & 5. iv)As reported, at 08:01 hrs, Y-ph LA of 132kV Bus-A at Anpara TPS blasted causing fault in 132kV Bus-A at Anpara TPS. Bus bar protection of 132kV did not operated on this fault due to non-operation of check zone relay. v)Due to this, 132KV Anpara-Rihand (UP) Ckt-1 & 2, 132KV Anpara(UP)-Bina Ckt and all other 132 kV elements (station transformes supplying auxiliaries and CWTF supplying cooling water pumps) connected to Bus-A and B tripped on over-current earth fault protection operation and both the 132kV buses at Anpara TPS became dead. vi)Due to tripping of auxiliary supply to units, 210 MW UNIT 1, 2 & 3 and 500 MW UNIT 4 & 5 at Anpara TPS tripped. vii)At the same time, 220 KV Zainkote – Alusteng (JKPDD) Ckt-2 also tripped due to over-loading from Zainkote end. viii)As per PMU at Varanasi(PG), R-Y phase to phase fault is observed with delayed fault clearing time of 1120ms. ix)As per SCADA, generation loss of approx. 1375 MW occured at Anpara TPS(UP). x)As reported by SLDC UP, no load loss was observed in UP control area. xi)As reported by Anpara TPS, new numerical busbar protection scheme at 132kV level of Anpara TPS will be commissioned within six months.	1375	0	1120	i)Reason of delayed fault clearance need to be shared. ii)Healthiness of busbar protection at 132kV level of Anpara TPS need to be ensured at the earliest. iii)SCADA data of 400/132kV Anpara TPS(UP) and Alusteng(JK) S/s were freezed during the event. Availability and healthiness of SCADA data need to be ensured. iv)Remedial action taken report to be shared.
2	GD-1	1) 400 KV Amargarh (INDIGRID)-Samba(PG) (INDIGRID) Ckt-1 2) 400 KV Amargarh (INDIGRID)-Samba(PG) (INDIGRID) Ckt-2 3) 120 MW Unit-1 at Uri-I HEP(NHPC) 4) 120 MW Unit-3 at Uri-I HEP(NHPC) 5) 60 MW Unit-3 at Uri-II HEP(NHPC)	Jammu and Kashmir	INDIGRID, PGCIL, NHPC	24-Jan-26	15:22	24-Jan-26	16:12	00:50	i)During antecedent condition, Kashmir valley and Leh network (220kV Zainkote, Alusteng, Pampore, Delina, Kishenganga, Drass, Kargil, khalasti and 220kV Leh) were being fed from 400kV Uri-I HEP, 400kV Uri-II HEP through 400kV Uri-I-Amargarh ckt-1 and 400kV Samba-Amargarh D/C. 400 kV Uri-2 (NH) – Wagoora (PG) (PG) Ckt-1, 400kV Uri-I-Amargarh ckt-2, 400 kV Kishenpur – New Wanpoh (PG) Ckt-1, 3 & 4, 400 kV Baglihar (JK) – Kishenpur (PG) Ckt-3 and 400 kV New Wanpoh (PG) – Baglihar (JK) Ckt-1 were already under tripped condition. The aforementioned lines tripped on faults during heavy snowfall. ii)As reported, at 15:22 hrs, charging attempt of 400kV Uri-I-Amargarh ckt-2 was taken from Amargarh end. At the same time, B-N fault occurred on the line. During patrolling, it was found that OPGW fell on B-ph conductor. On this fault, SOTF protection at Amargarh end didn't operate. iii)As fault didn't clear from Amargarh end, 400kV Samba-Amargarh D/C tripped from Samba(PG) end. As per DR of Samba(PG) end, B-N fault in Z-2 with fault current of ~1.37kA is observed in each circuit. iv)As per PMU at Kishenpur(PG) and DR files of Samba(PG), B-N fault with delayed clearance of ~560 msec is observed. v)As per SCADA, change in demand of ~1180 MW is observed in J&K control area out of which ~1135 MW change in load is observed in Kashmir Valley Region. vi)400 kV Samba–Amargarh D/C were restored by 16:22 hrs and 200 MW load was picked up to manage the load of the Srinagar. Further, 400 kV Amargarh-Wagoora D/C, 400 kV Wagoora–New Wanpoh D/C and ICTs at Wagoora(PG) charged. Subsequently load of Kashmir Valley and Leh was restored by charging 220 kV Zainkote-Alustang-Drass-Kargil-Khalsti- Leh.	297	1180	560	i)Why did 400kV Uri-I-Amargarh ckt-2 not trip from Amargarh end on B-N fault. SOTF protection at Amargarh end should have operated. INDIGRID may review the protection settings at Amargarh end and take necessary corrective actions to avoid such protection non-operation in future. ii)Remedial action taken report to be shared.
3	GD-1	1)220kV Bawana-Rohini-I line-I 2)220kV Bawana-Rohini-I line-II 3)400/220kV 315 MVA ICT-1 at Bawana(DTL) 4)400/220kV 315 MVA ICT-2 at Bawana(DTL) 5)400/220kV 315 MVA ICT-4 at Bawana(DTL) 6)400/220kV 315 MVA ICT-6 at Bawana(DTL) 7)220kV Bawana-Rohini-II line-II 8)220kV Bawana-Shalimarbagh line-I 9)220kV Bawana-Shalimarbagh line-II 10)220/33kV 100 MVA ICT-1 at Shalimarbagh(DTL) 11)220/66kV 160 MVA ICT-1 at Rohini-II(DTL) 12)220/66kV 160 MVA ICT-2 at Rohini-II(DTL)	Delhi	DTL	27-Jan-26	10:13	27-Jan-26	10:40	00:27	i)400kV Bawana(DTL) S/s has one and half breaker bus scheme at 400kV level and double main & transfer bus scheme at 220kV level. ii)During antecedent condition, loading on 400/220kV 315 MVA ICT-1, 2, 3, 4, 5 & 6 at Bawana(DTL) were 154 MW, 155 MW, 147 MW, 150 MW, 130 MW & 130 MW respectively. iii)As reported, at 10:13 hrs, R-N fault occurred on 220kV Bawana-Rohini-I line-I & II due to snapping of OPGW. On this fault distance protection at both the ends operated and line tripped however R-ph pole at Bawana end of Rohini-I line-I (connected at 220kV bus-1) got stuck. This further led to LBB operation however due to error in isolator status of Rohini-I line-I feeder, desired operation of LBB protection didn't occur. iv)As the fault was persisting, oil leakage in R-ph CT of 220kV Bawana-Rohini-I line-I also started and created bus fault. This led to operation of 220kV bus bar protection resulted into tripping of 220kV Bawana-Shalimarbagh line-I & II and 220kV Bawana-Rohini-II line-II. v)At the same time, 400/220kV 315 MVA ICT-1, 2, 4 & 6 at Bawana(DTL) also tripped on overcurrent protection operation. 220/33kV 100 MVA ICT-1 at Shalimarbagh(DTL) and 220/66kV 160 MVA ICT-1 & 2 at Rohini-II(DTL) also tripped due to overcurrent earth fault protection. vi)As per PMU at Bawana(DTL), R-N phase to earth fault with delayed clearance of ~1480 msec is observed. vii)As per SCADA, change in demand of ~560MW is observed in Delhi control area and as reported by SLDC-Delhi, load of ~846 MW affected in Delhi control area during the event.	0	846	1480	i)Why did isolators status were not correct due to which LBB protection couldn't operate. ii)Exact sequence of tripping of all the elements needs to be shared. iii)How did fault get clear as only ICT-1, 2, 4 & 6 tripped on back up protection? iv)DR/EL(.dat/.cfg) file of all the tripped elements along with the tripping report need to be shared. v)Remedial action taken to avoid such event in future need to be shared.
4	GD-1	1) 400 kV Bareilly-Unnao (UP) Ckt-1 2) 400 kV Bareilly-Unnao (UP) Ckt-2 3) 400 kV Bareilly(UP)-Bareilly(PG) (PG) Ckt-1 4) 400 kV Bareilly(UP)-Bareilly(PG) (PG) Ckt-2 5) 400/220kV 315 MVA ICT-3 at Bareilly(UP) 6) 220kV Bareilly(UP)-Dohna Ckt-1 7) 220kV Bareilly(UP) -Dohna Ckt-2 8) 220kV Bareilly(UP) -CB Ganj Ckt-1 9) 220kV Bareilly(UP)-Pilbhit Ckt-1 10) 220kV Bareilly(UP)-Pantnagar Ckt-1 11) 220kV Bareilly(UP)-Faridpur Ckt-1	Uttar Pradesh	UPPTCL, PGCIL, PTCUL	4-Feb-26	13:07	4-Feb-26	13:47	00:40	i)400/220kV Bareilly(UP) has double main and transfer bus scheme at both 400kV level and 220kV level. ii)During antecedent condition, 400/220KV 315 MVA ICT-1 at Bareilly(UP) was already under planned shutdown. iii)As reported, at 13:07 hrs, fault occurred on 400kV Y-ph of Bus-2 at Bareilly(UP) due to a metallic kite thread. On this fault, 400kV static bus bar protection at Bareilly(UP) did not operate. iv)This led to tripping of all 400kV lines connected to both the buses on zone-2 protection operation from remote end (as confirmed from DR). v)On this fault, 400/220kV 315 MVA ICT-3 at Bareilly(UP) tripped on LV side backup directional earth fault relay operation. However, 400/220kV 315 MVA ICT-2 at Bareilly(UP) didn't trip as backup relay did not operate. vi)Due to this, all 220kV lines connected to Bareilly(UP) tripped on zone-3 or directional E/F protection operation from remote end except 220kV Bareilly(UP) -CB Ganj Ckt-2 and 220kV Bareilly(UP)-Pilbhit Ckt-2 and complete blackout occurred at 400/220kV Bareilly(UP). vii)As per SCADA SOE, 220/132kV 160 MVA ICT-1 & 2 at Dohna also tripped during the same time. As confirmed by SLDC UP, 220/132kV 160 MVA ICT-1 & 2 at Dohna tripped due to directional E/F protection operation. viii)As per DR and PMU at Bareilly(PG), Y-N phase to earth fault was observed with delayed fault clearing time of 400 ms. ix)As per SCADA, no change in demand is observed in UP control area. x)As informed by SLDC UP, healthiness of LV backup relay of 400/220kV 315 MVA ICT-2 at Bareilly(UP) and 400kV bus bar protection relay will be checked during shutdown proposed on 10.02.2026 and 11.02.2026 respectively.	0	180	400	i)Healthiness of of LV backup relay of 400/220kV 315 MVA ICT-2 at Bareilly(UP) and 400kV bus bar protection relay need to be ensured at the earliest. ii)Healthiness of protection system along with auxiliaries and protection co-ordination at Bareilly(UP) need to be ensured. iii)Remedial action taken report to be shared.
5	GI-2	1) 700MW RAPS-D - UNIT 1 2) 250 MW (PSP) TEHRI HPS - UNIT 6	Rajasthan	RAPP-D, Tehri PSP	16-Feb-26	11:33	16-Feb-26	11:57	00:24	i)During antecedent condition, 700MW RAPS-D - UNIT 1 was generating approx. 650 MW and 250 MW (PSP) TEHRI HPS - UNIT 5 & 7 were pumping approx. 265 MW each. 250 MW (PSP) TEHRI HPS - UNIT 6 started pumping at around 11:30 hours and was gradually increasing pumping. Just before tripping, it was pumping approx. 221 MW. NR total solar generation was approx. 28642 MW among which Rajasthan solar generation was approx. 6544 MW. ii)As reported, at 11:33 hrs, 250 MW (PSP) TEHRI HPS - UNIT 6 tripped on QSD (Quick Shut down) due to deadband timeout (exact reason yet to be shared). iii)During the same time, 700MW RAPS-D - UNIT 1 also tripped due to Turbine-Generator (TG) trip on reverse power during MW hunting (exact reason yet to be shared). iv)As per SCADA, Line CB at A43RS(IP) end of 400 KV AzurePS43 SL_BKN_PG-AzureR543 SL_BKN_PG (Azure) Ckt opened at 11:34:11.929 hrs and again closed at 11:34:50.173 hrs. However, Azure43 verbally reported that there was data issue at A43RS(IP) during that time, no tripping or auto-reclosing occurred during that time (written confirmation yet to be received from Azure43). v)As per SCADA SOE, 33kV Feeder and Block tripping was detected at A43RS_IP, ASPS2_IP and AVDAS_IP. vi)As per PMU at RAPP-C(NP), consecutive three 3-phase voltage dips were observed with voltage recovery time of 80 ms, 4360 ms and 80 ms. vii)As per SCADA, dip of approx. 2062 MW occurred in NR total solar generation among which approx. 1093 MW recovered within 1 minute (dip of approx. 686 MW in Rajasthan solar generation among which approx. 381 MW recovered within 1 minute). viii)As per SCADA, generation loss of approx. 650 MW at RAPP-D and pumping loss of approx. 221 MW at Tehri PSP was observed.	2491	0	4360	i)Exact reason of tripping of 700MW RAPS-D - UNIT 1 and 250 MW (PSP) TEHRI HPS - UNIT 6 need to be analysed and RCA report need to be shared from NPCIL and THDC respectively. ii)SCADA data issue at A43RS(IP) need to be addressed at the earliest. iii)DR along with tripping report need to be shared for 700MW RAPS-D - UNIT 1 and 250 MW (PSP) TEHRI HPS - UNIT 6 by NPCIL and THDC respectively. iv)Remedial action taken report to be shared.
6	GD-1	1) 220 KV Bikaner_2 (PBTSL)-JGCPL_SL_BIK2_PG (Juniper_NEPL) Ckt 2) 220 KV Bikaner_2 (PBTSL)-KSP_NHPC_BKN2 (KSP_NHPC_LTD) Ckt 3) 500 KV HVDC Balia-Bhiwadi (PG) Ckt-1 & 2 4) 400 KV Bikaner_2 (PBTSL)-Khetri (PKTSL) (PBTSL) Ckt-1, 2, 3 & 4 5) 400 KV Bikaner_2 (PBTSL)-SJVN_GEL_BKN2 (SJVNGEL_BKN2) Ckt 6) 220 KV ASSPL_SL_BKN2-Bikaner_2 (PBTSL) (ASSPL_BKN2) Ckt 7) 220 KV Renew_Dinkar_SL_Bik2-Bikaner_2 (PBTSL) (Renew Dinkar_UPL) Ckt 8) 220 KV SRI4PL_SL_BIK2_PG-Bikaner_2 (PBTSL) (SERENTICA_RI4PL_Bik2) Ckt 9) 220 KV Bikaner_2 (PBTSL)-KHIDRAT_REPL_SL_BKN2 (KHIDRAT_REPL) Ckt 10) 220KV Grian_BIK2_(AMPLUS)-Bikaner_2 (PBTSL) (GRIAN ENERGY PRIVATE LIMITED) Ckt 11) 220 KV Bikaner_2 (PBTSL)-Juna_REPL_SL_BKN2 (Juna_REPL) Ckt 12) 220 KV BTPSL_SL_BIK2_PG-Bikaner_2 (PBTSL) (BANDERWALA_TPSL) Ckt 13) 220 KV PGPL_SL_BIK2_PG-Bikaner_2 (PBTSL) (PRERAK GREENTECH PVT LTD) Ckt	Rajasthan	PGCIL, SGEL, JGCPL, KSP_NHPC, ASSPL, RDUPL, SRI4PL, KREPL, GEPL, JREPL, BTPSL & PGPL	22-Feb-26	17:08	22-Feb-26	19:07	01:59	i)Generation of 400kV SGEL(SJVN) and 220kV JGCPL(IP), KSP(NHPC), ASSPL(IP), RDUPL(IP), SRI4PL(IP), KREPL(IP), GEPL(IP), JREPL(IP), BTPSL(IP) & PGPL(IP) stations evacuate through individual single circuit lines from plants to Bikaner2(PG). ii)400 kV Bikaner_2 (PBTSL) – Bikaner (PG) Ckt-1 & 2 were taken under planned outage from 16:00 hrs on 22.02.2026 to 05.03.2026 for LILO of the 400 kV Bikaner_2 (PBTSL) – Bikaner (PG) D/C lines at 400 kV Bikaner-III substation. The outage code was issued by NRLDC at 16:21 hrs. Subsequently, the lines were opened at 16:40 hrs. ISTS solar generation at that time was ~11,600 MW and Bikaner 2 generation at that time was ~1800 MW. After opening of these lines, oscillations observed in the System Frequency from 16:44 hrs onward as per PMU frequency plots. However, no corresponding fluctuation was observed in the PMU voltage plots. Immediately after opening of 400 kV Bikaner_2 (PBTSL) – Bikaner (PG) D/C lines at 16:41 hrs, huge fluctuation in active power started in 300MW Karnisar NHPC and 200MW Renew Dinkar at 16:44 hrs. iii)With triggering of active power fluctuation in 300MW Karinsar NHPC and 200MW Renew Dinkar at 16:44 hrs, other RE plants also exhibited the continuous active power fluctuation but magnitude in other plants were comparatively lesser. iv)As reported, at 16:24 hrs, 220 KV Bikaner_2 (PBTSL)-JGCPL_SL_BIK2_PG (Juniper_NEPL) Ckt tripped from Bikaner2 end only (exact reason yet to be shared by PG). v)Further, at 16:58 hrs, 220 KV Bikaner_2 (PBTSL)-KSP_NHPC_LTD_SL_BKN2 (KSP_NHPC_LTD) Ckt tripped on over-voltage (over-voltage protection in 220kV lines need to be disabled as per NRPC protection philosophy). vi)Followed by this, huge active power fluctuation started at 17:00 hrs almost in all plants connected at Bikaner2(PG). vii)As reported, at 17:08 hrs, 500 KV HVDC Balia-Bhiwadi (PG) Ckt-1 & 2 tripped on sub-synchronous resonance 81 SSR block operation (as per EL) followed by tripping of 400 KV Bikaner_2 (PBTSL)-Khetri (PKTSL) (PBTSL) Ckt-1, 2, 3 & 4 (over-voltage stage-1) and 400 KV Bikaner_2 (PBTSL)-SJVN_GEL_SL_BKN2 (SJVNGEL_BKN2) Ckt (over-voltage stage-2). viii)Due to tripping of all four 400 KV Bikaner_2 (PBTSL)-Khetri (PKTSL) (PBTSL) Ckt-1, 2, 3 & 4 (with 400 kV Bikaner_2 (PBTSL) – Bikaner (PG) Ckt-1 & 2 under outage), all 220kV RE plants connected at Bikaner2(PG), i.e., JGCPL(IP), KSP(NHPC), ASSPL(IP), RDUPL(IP), SRI4PL(IP), KREPL(IP), GEPL(IP), JREPL(IP), BTPSL(IP) & PGPL(IP) also tripped due to loss of evacuation path which led to complete blackout of 400/220kV Bikaner2(PG) along with all RE plants connected at 400kV and 220kV level of Bikaner2(PG). ix)As per PMU, no fault was observed in the system. As per SCADA, reduction in NR total Solar Generation of approx. 525 MW was observed at around 17:08 hrs.	525	0	NA	i) Exact reason of tripping of 220 KV Bikaner_2 (PBTSL)-JGCPL_SL_BIK2_PG (Juniper_NEPL) Ckt need to be shared by PG. ii)Over-voltage protection in all 220kV lines need to be disabled as per NRPC protection philosophy. iii)KSP(NHPC) and RDUPL(IP) need to check the exact reason of huge MW fluctuation exhibited by their inverters (SINENG and SUNGROW make respectively). RCA of the same need to be shared at the earliest.

Sr No	Element Name	Outage Date	Outage Time	Reason
1	220 KV Debari(RS)-RAPS_A(NP) (RS) Ckt-1	03-Jan-26	02:15	Phase to earth fault Y-N
		03-Jan-26	03:20	Phase to earth fault Y-N
		04-Jan-26	06:04	Phase to earth fault Y-N
		06-Jan-26	00:15	Phase to earth fault Y-N
		18-Jan-26	04:58	Transient fault
		20-Jan-26	06:06	Transient fault
		02-Feb-26	06:29	Transient fault
		11-Feb-26	05:04	Transient fault
2	220 KV Sitarganj(PG)-CBGanj(UP) (PG) Ckt-1	03-Jan-26	13:05	Phase to Phase Fault R-Y
		10-Jan-26	20:09	Phase to Phase Fault R-Y
		21-Jan-26	12:42	Phase to Phase Fault Y-B
		04-Feb-26	18:08	Phase to Phase Fault Y-B
		18-Feb-26	14:23	Phase to Phase Fault R-Y
		18-Feb-26	18:06	Phase to Phase Fault Y-B
		25-Feb-26	16:08	Phase to Phase Fault Y-B
		27-Feb-26	12:32	Phase to Phase Fault R-Y
3	220 KV RAPS_B(NP)-Sakatpura(RS) (RS) Ckt-1	03-Jan-26	05:19	Phase to earth fault B-N
		04-Jan-26	06:01	Phase to earth fault Y-N
		05-Jan-26	06:01	Phase to earth fault B-N
		09-Jan-26	12:05	Transient fault
		12-Jan-26	07:34	Transient fault
		21-Jan-26	06:05	Transient fault
		23-Feb-26	02:30	Transient fault
4	400 KV Anpara_B(UPUN)-Sarnath(UP) (UP) Ckt-2	10-Jan-26	19:31	Phase to Ground Fault R-N
		13-Jan-26	11:46	Phase to Phase Fault R-Y
		24-Jan-26	13:30	PLCC maloperation
		03-Feb-26	14:27	Phase to Phase Fault Y-B
		04-Feb-26	16:12	Phase to Phase Fault R-Y
		05-Feb-26	12:21	Phase to Phase Fault R-Y
5	400 KV Uri_1(NH)-Amargarh(NRSS XXIX) (NRSS XXIX) Ckt-1	21-Jan-26	12:19	Phase to Ground Fault Y-N
		22-Jan-26	23:02	Over Voltage
		23-Jan-26	06:53	Phase to Ground Fault R-N
		23-Jan-26	12:43	Phase to Ground Fault R-N
		27-Feb-26	17:27	Phase to Ground Fault R-N
		27-Feb-26	17:27	Phase to Ground Fault R-N
6	TEHRI HPS - UNIT 7	06-Jan-26	22:21	VSI MC side communication failure between PIBE
		12-Jan-26	22:30	Generator Fault
		29-Jan-26	23:30	Generator Fault
		02-Feb-26	09:30	Partial Outage
		09-Feb-26	19:44	Generator Fault
		15-Feb-26	00:30	Partial Outage
7	220 KV RAPS_A(NP)-Sakatpura(RS) (RS) Ckt-2	05-Jan-26	03:45	Phase to earth fault R-N
		31-Jan-26	20:45	Transient fault
		05-Feb-26	18:01	Transient fault
		22-Feb-26	20:16	Transient fault
		23-Feb-26	00:11	Transient fault
8	250 MW (PSP) TEHRI HPS - UNIT 6	11-Jan-26	11:34	Generator Fault
		08-Jan-26	01:08	Generator Fault
		08-Jan-26	02:43	Generator Fault
		16-Feb-26	11:33	Partial Outage
		25-Feb-26	21:03	Partial Outage
9	400 KV Shree Cement(SCL)-Merta(RS) (PG) Ckt-1	04-Jan-26	01:17	Phase to earth fault R-N
		05-Jan-26	06:40	Phase to Phase Fault Y-B
		07-Jan-26	03:04	Phase to Phase Fault R-Y
		04-Feb-26	14:15	Transient fault
		06-Feb-26	11:16	Transient fault
10	400 KV Suratgarh(RVUN)-Bikaner(RS) (RS) Ckt-1	05-Jan-26	04:52	Phase to earth fault Y-N
		12-Jan-26	23:15	Transient fault
		14-Jan-26	22:45	Phase to Ground Fault R-N
		22-Jan-26	04:13	Transient fault

S. No.	Name of Transmission Element Tripped	Owner/ Utility	Outage		Load Loss/ Gen. Loss	Brief Reason (As reported)	Category as per CEA Grid standards	# Fault Clearance Time (>100 ms for 400 kV and 160 ms for 220 kV)	*FIR Furnished (YES/NO)	DR/EL provided in 24 hrs (YES/NO)	Other Protection Issues and Non Compliance (inference from PMU, utility details)	Remarks
			Date	Time								
1	220 KV Ranpur(RS)-Bhanpura(MP) (RS) Ckt-1	RRVPNL	03-Jan-26	04:19	Nil	Phase to earth fault R-N , Dist. 35.0km from Ranpur(RS) & Zone-1, Dist. 5.8km, Fault current 2.42kA from Bhanpura(MP).	NA	NA	Yes	No	DR/EL not received	As per PMU, no fault was observed in the system.
2	220 KV Modak(RS)-Bhanpura(MP) (MPSEB) Ckt-1	MPSEB	03-Jan-26	04:38	Nil	Line tripped due to 220kV Bus-Bar protection operated at Bhanpura(MP). No tripping at Modak end.	NA	80 ms	Yes	NA	-	As per PMU, two consecutive Y-N faults followed by R-N fault were observed with fault clearing time of 80 ms each.
3	800 KV HVDC Kurukshetra(PG) Pole-4	POWERGRID	03-Jan-26	08:23	Nil	Pole-4 got tripped on DMR over current protection.	NA	NA	No	No	FIR/DR/EL not received	As per PMU, no fault was observed in the system; however, fluctuation in voltage was present.
4	800 KV HVDC Kurukshetra(PG) Pole-2	POWERGRID	04-Jan-26	09:33	Nil	Tripped due to CAT A1 alarm Pole DC Differential generated at Champa end.	NA	NA	No	No	FIR/DR/EL not received	As per PMU, no fault was observed in the system; however, fluctuation in voltage was present.
5	70 KV Vindhyachal(PG) Pole-1	POWERGRID	09-Jan-26	04:21	Nil	HVDC Block#1 tripped due to loss of 400KV Voltage of west bus#1B due to operation of LBB of 400KV Bus#1 at NTPC end along with tripping of Unit#3 & 5(210 MW each), 400 KV Vindhyachal(PG)-Vindhyachal(NT) (PG) Ckt-1 (AWL#1).	NA	NA	Yes	Yes		As per PMU, no fault was observed in the system; however, fluctuation in voltage was present. As per EL, HVDC Block#1 tripped due to loss of 400KV Voltage of west bus#1B due to operation of LBB of 400KV Bus#1 at NTPC end along with tripping of Unit#3 & 5(210 MW each), 400 KV Vindhyachal(PG)-Vindhyachal(NT) (PG) Ckt-1 (AWL#1).
6	70 KV Vindhyachal(PG) Pole-2	POWERGRID	09-Jan-26	04:21	Nil	HVDC Block#2 tripped due Voltage of 6.6KV feeder B2LA & B2LB feeding to Block#2 become zero for 3 Seconds due to triping of Unit#3 & 5 feeding auxiliary power to HVDC Block#1 & 2 and resulted in tripping of HVDC Block#2 CWC System Main.	NA	NA	Yes	Yes		As per PMU, no fault was observed in the system; however, fluctuation in voltage was present. As per EL, HVDC Block#2 tripped due Voltage of 6.6KV feeder B2LA & B2LB feeding to Block#2 become zero for 3 Seconds due to triping of Unit#3 & 5 feeding auxiliary power to HVDC Block#1 & 2 and resulted in tripping of HVDC Block#2 CWC System Main.
7	400 KV Vindhyachal(PG)-Vindhyachal(NT) (PG) Ckt-1	POWERGRID	09-Jan-26	04:21	Nil	HVDC Block#1 tripped due to loss of 400KV Voltage of west bus#1B due to operation of LBB of 400KV Bus#1 at NTPC end along with tripping of Unit#3 & 5(210 MW each), 400 KV Vindhyachal(PG)-Vindhyachal(NT) (PG) Ckt-1 (AWL#1).	NA	NA	Yes	Yes		As per PMU, no fault was observed in the system; however, fluctuation in voltage was present. As per EL, HVDC Block#1 tripped due to loss of 400KV Voltage of west bus#1B due to operation of LBB of 400KV Bus#1 at NTPC end along with tripping of Unit#3 & 5(210 MW each), 400 KV Vindhyachal(PG)-Vindhyachal(NT) (PG) Ckt-1 (AWL#1).
8	400 KV Gorakhpur(PG)-Muzaffarpur(PG) (POWERLINK) Ckt-1	POWERLINK	15-Jan-26	13:51	Nil	Phase to earth fault B-N. 400 KV Gorakhpur - Muzaffarpur tripped only from Gorakhpur end . M1 details-86.1 KM Ib-6.7 KA	NA	80 ms	Yes	Yes	A/R non-operation at Gorakhpur end	As per PMU & DR, B-N fault (zone-1 operated at Gorakhpur) was observed with fault clearing time of 80 ms and fault current of 7.458 kA from Gorakhpur end; no A/R observed at Gorakhpur end.
9	800 KV HVDC Kurukshetra(PG)-Champa(PG) (PG) Ckt-4	POWERGRID	18-Jan-26	07:43	Nil	Tripped due to Pole DC differential protection	NA	NA	No	No	FIR/DR/EL not received	As per PMU, no fault was observed in the system; however fluctuation in voltage was present.
10	800 KV HVDC Kurukshetra(PG) Pole-2	POWERGRID	23-Jan-26	10:03	Nil	Pole -2 tripped due to latched in Converter Differential & Pole DC Differential protection	NA	NA	No	No	FIR/DR/EL not received	As per PMU, no fault was observed in the system; however fluctuation in voltage was present.
11	800 KV HVDC Kurukshetra(PG) Pole-4	POWERGRID	23-Jan-26	10:03		Blocked from Champa end	NA	NA	No	No	FIR/DR/EL not received	As per PMU, no fault was observed in the system; however fluctuation in voltage was present.
12	800 KV HVDC Kurukshetra(PG) Pole-3	POWERGRID	23-Jan-26	10:57		Pole 3 tripped due to latched in Pole DC Differential & HV Bus differential protection	NA	80 ms	No	No	FIR/DR/EL not received	As per PMU, R-N fault (with no A/R) was observed with fault clearing time of 80 ms.
13	800 KV HVDC Kurukshetra(PG) Pole-3	POWERGRID	24-Jan-26	16:59		Relay maloperation. Blocked due to filter unbalanced protection operated	NA	NA	No	No	FIR/DR/EL not received	As per PMU, no fault was observed in the system; however fluctuation in voltage was present.
14	800 KV HVDC Kurukshetra(PG) Pole-4	POWERGRID	24-Jan-26	16:59		Relay maloperation. Blocked due to filter unbalanced protection operated	NA	NA	No	No	FIR/DR/EL not received	As per PMU, no fault was observed in the system; however fluctuation in voltage was present.
15	220 KV Auraiya(NT)-Malanpur(MP) (PG) Ckt-1	POWERGRID	27-Jan-26	21:39	Nil	Phase to Ground Fault R-N. Auraiya End: Z-1, Dist.-91.62 km, Fault current-1.57 kA	NA	80 ms	No	No	FIR/DR/EL not received	As per PMU, R-N fault (with no A/R) was observed with fault clearing time of 80 ms.
16	500 KV HVDC Mahindergarh(APL)-Adani Mundra(APL) (ATIL) Ckt-1	APL	23-Feb-26	15:17	Nil	VBE1 and VBE2 Communication fault at Mundra End.	NA	NA	Yes	Yes		As per PMU, no fault was observed in the system. As reported, on investigation leakage was found in valve reactor at B1R
17	800 KV HVDC Kurukshetra(PG)-Champa(PG) (PG) Ckt-2	POWERGRID	28-Feb-26	22:26	Nil	Persistent Lower Bridge Commutation Failure	NA	NA	Yes	Yes		As per PMU, no fault was observed in the system. As reported, Pole-2 detects Commutation failure (CF) due to control card failure in M1 of active Lane. DC Undercurrent latched in L1M1, L1M2, L2M1 & L2M2. This generate CAT A2 alarm and eventually blocked pole-4.
18	800 KV HVDC Kurukshetra(PG)-Champa(PG) (PG) Ckt-4	POWERGRID			Nil	DC undercurrent protection operated at Kurukshetra end	NA	NA	Yes	Yes		

# Fault Clearance time has been computed using PMU Data from nearest node available and/or DR provided by respective utilities (Annexure-II)		
****Yes, if written Preliminary report furnished by constituent(s)***		
R-Y-B phase sequencing (Red, Yellow, Blue) is used in the list content.All information is as per Northern Region unless specified.		
^^ tripping seems to be in order as per PMU data, reported information. However, further details may be awaited.		
Reporting of Violation of Regulation for various issues for above tripping		
1	Fault Clearance time(>100ms for 400kV and >160ms for 220kV)	1. CEA Grid Standard-3.e 2. CEA Transmission Planning Criteria
2	DR/EL Not provided in 24hrs	1. IEGC 37.2(c) 2. CEA Grid Standard 15.3
3	FIR Not Furnished	1. IEGC 37.2(b) 2. CEA Grid Standard 12.2 (Applicable for SLDC, ALDC only)
4	Protection System Mal/Non Operation	1. CEA Technical Standard of Electrical Plants and Electric Lines: 43.4.A 2. CEA (Technical Standards for connectivity to the Grid) Regulation, 2007: Schedule Part 1. (6.1, 6.2, 6.3)
5	A/R non operation	1. CEA Technical Standard of Electrical Plants and Electric Lines: 43.4.C 2. CEA Technical Planning Criteria

Status of Bus bar protection				
Constituent Name	**Name of Station**	**Status of Bus bar protection(as reported)**	**Expected date of implementation (as reported in 51st PSC meeting)**	**Remarks**
Uttarakhand	220 KV Substation, Ramnagar, Roorkee	Blocked due to more elements added at 220 KV Voltage level.		
	220 KV Sub Station, SIDCUL, Haridwar			
	220kV Jhajhra, Dehradun	Not commissioned yet		
	400KV Kashipur (220kV side)	Available but Non operational	Revised date not received	Work is under process.
	220kv Haldwani	Not Available	31 December 2024	Budget for FY 2023-24.
	220kv Pantnagar	Available but Non operational	Revised date not received	Work is under process.
	220kV Rishikesh	Available but Non operational	31 December 2024	It has been Taken in Budget for FY 2023-24.
	220kV Chamba	Not commissioned yet	31 December 2024	It has been Taken in Budget for FY 2023-24.
Haryana	**220kV S/Stn Badshahpur**	**Installed and Operational**		**Commissioned on 20.02.2023**
	220kV S/Stn Sec-52A, Gurgaon	Not Installed	31.12.2024	Panel has been installed. Commissioning pending due to non- availability of shutdown.
	220kV S/Stn Sec-1 Manesar	**Installed and Operational**		**Commissioned on 26.02.2023**
	220kV S/Stn Panchgaon	**Installed and Operational**		**Commissioned on 05.01.2024**
	220kV S/Stn Rewari	Not Installed	31.03.2025	Material is not allocated so far. Installation will be carried out after allocation of material.
	220kV S/Stn Narnaul	Not Installed	31.12.2024	Panel has been installed. Work in progress on turnkey basis. Isolators of 220 kV TFs have to be replaced thereafter the work shall be completed.
	220kV S/Stn Mohinder Garh	**Installed and Operational**		**Commissioned on 28.10.2023**
	220 KV S/Stn Palwal	Not Installed	31.12.2024	Panel has been installed. Commissioning is pending.
	220 KV S/Stn Rangala Rajpur	**Installed and Operational**		**Commissioned on 22.06.2023**
	220 kV Unispur	Installed but Non-Operational	31.10.2024	5 Nos. Peripheral relay of bus bar protection are defective. The same shall be made operational by 31.03.2024.
	220 kV Nissing	Installed but Non-Operational	31.10.2024	Existing Bus bar panel is of old and obsolete design. New Bus Bar protection scheme panel has been drawn from the store & Commissioning& installation are pending. The same shall be made operational by 31.03.2024.
	220KV Pehowa	Installed but Non-Operational	31.03.2025	Old & Obsolete, Allocation of New BBP and allied material awaited.
	220kV Kaithal	Not Installed	31.03.2025	Control Cable for Bus-Bar Protection Scheme has been drawn from DD Stores, 220kV Bus-Bar Protection panel is awaited.
	220 KV Sonepat	Not Installed	31.10.2024	220 KV Bus Bar Protection Scheme will be installed / commissioned within 45 days after the availability of the necessary material i.e 220kV Duplex, Directional, Bus Bar Cum Bus Coupler C and R Panel, Auxiliary Voltage 220V DC (without SAS) required for commissioning. It has been gathered from the P&M wing that the material is likely to be available in DD stores by April 2024.
	220 KV REGC, Sonepat	Not Installed	30.09.2024	The 220KV C&R Panel for Bus Bar Protection has been drawn from DD Store on dated 20.04.2023 and the work for installation of Bus Bar protection scheme is under progress. Erection work & wiring work completed with all respect. Testing of relays is pending at the end of Firm M/s Shifang and Bus Bar protection scheme will be commissioned dt 15.03.2024.
	220KV Jind	**Installed and Operational**		**Commissioned on dated 27.06.23.**
	220 KV Fatehabad	**Installed and Operational**		**Commissioned on dated 22.07.23**
	220 KV Hukmawali	Installed but Non-Operational	30.10.2023	Bus-coupler CB defective & new panel withdrawn from DD store. Errection work under progress & the same will be completed 31.08.23.
	220 KV Bhuna	Installed but Non-Operational	31.12.2024	The Siemens make Bus Bar protection Scheme installed at the time of commissioning of the substation went out of order. The higher authority decided to replace with new one. M/s Schneider make new Scheme was then allocated and drawn from DDS Ballabgarh and installed at site, but while testing of same, three out of four relays of the Bus Bar Panel found faulty for which matter is under pursuance with firm.
	220 KV Sirsa	Not Installed		Not required being single source of supply
	220 KV Rania	Not Installed	31.03.2025	Estimate for Bus Bar Protection is sanctioned but C&R panel is not available in store.
	220 KV Bhiwani	Not Installed	31.03.2025	Bus Bar Protection scheme has been proposed in integrated planning meeting and requirement of material have been generated in PR.
	220kV Madanpur	Not Installed	30.11.2024	Material is not allocated so far. Installation will be carried out after allocation of material.
	220kV Tepla	Installed but Non-Operational	30.11.2024	material allocation is awaited.
	220kV Rajokheri	**Installed and Operational**		**Made operational on dated 30.05.2024.**
BBMB	**220kV Charkhi Dadri**	**Installed and Operational**		**commissioned on 31.01.2023**
	220kV Samaypur	**Installed and Operational**		**made operational on 23.12.2023**
	220kV Dhulkote	Not Installed		Not feasible
	220kV Jagadhari	Not Installed		
	220kV Barnala	Not Installed		
	220kV Parichha	Installed but Non-Operational	Revised date not received	
	220kV Partapur	**Installed and Operational**		**made operational on 06.01.2023**
	220kV Bareilly (400/220kV Bareilly)	Installed but Non-Operational	Revised date not received	Old panel capacity exhausted. New relay panel supplied & need to be
	220kV Pilibhit	**Installed and Operational**		**commissioned on 28.10.2023**
	220kV Amariya	**Installed and Operational**		**commissioned on 15th July 2023**
	220kV Sultanpur	**Installed and Operational**		**commissioned on 02.03.2024**

	220kV New Tanda	Installed and Operational		commissioned on 20.04.2024
	220kV Shahjhanpur	Installed but Non-Operational	Revised date not received	Cable partially received, work will start soon
	220kV Ajijpur	Installed but Non-Operational		1. HV side 220kV CT of 160MVA T/F-I & II has bot proper ratio for bus bar
	220kV Nirpura	Installed but Non-Operational	Revised date not received	
	220kV IITGNL	Installed and Operational		made operational on 19.02.2023
	220kV Rampur	Installed but Non-Operational	Revised date not received	
	220kV Barahua	Installed and Operational		made operational on 28.01.2024
	220kV Bansi	Installed and Operational		commissioned on 10th August 2023
	220 KV S/S Azamgarh-2(Bargahan)	Installed and Operational		made operational on 28.01.2024
	220kV Chandausi	Installed and Operational		made operational on 13.10.2023
	220kV Rasara	Not Installed		
	220kV Rampur	Installed but Non-Operational	31.10.2024	Central unit of bus bar protection faulty. Expected to revive by November-24.
	220kV Sec. - 148, Noida	Installed and Operational		made operational on 27.01.2024
	220kV sec. 38A, Botanicla Garden	Not Installed	31.11.2024	Bus Bar protection panel awaited
	220kV sec.-62, Noida	Installed and Operational		made operational on 12.10.2023
	220kV Dadri	Installed and Operational		made operational on 23.04.2024
	400kV S/S Agra	Installed and Operational		commissioned on 13th September 2023
	220kV S/S Bah	Not Installed		Requirement sent to design circle, awaited fro allotment.
UP	220kV Sirsaganj	Not Installed		Requirement sent to design circle, awaited fro allotment.
	220kV S/S Farrukhabad (New)	Installed and Operational		commissioned on 25th August 2023
	220kV Boner	Installed and Operational		commissioned on 19.03.2024
	220kV Kasganj (Soron)	Installed and Operational		
	220kV Khair	Installed but Non-Operational	Revised date not received	New 160MVA transformer-3 is not configured with bus bar
	220kV Kidwainagar	Installed but Non-Operational		
	220kV Chhata	Installed but Non-Operational	Revised date not received	New 160MVA transformer-3 is not configured with bus bar
	220kV Harduaganj	Installed but Non-Operational	Revised date not received	
	220kV Lalitpur	Installed and Operational		commissioned on 09.02.2024
	220kV Mahoba	Installed but Non-Operational		Relay is faulty since 29.01.2024
	220kV Sarnath	Installed but Non-Operational	Revised date not received	
	220kV Sirathu, Kaushambi	Not Installed	Revised date not received	
	220kV substation Fatehpur	Installed and Operational		Operational
	220kV S/S Bhelupur	Not Installed		Radial feeder
	220kV Hardoi Road, Lucknow	Installed and Operational		commissioned on 08th October 2023
	220kV CG City, Lucknow	Installed but Non-Operational	31.05.2024	Agency M/s. Electro Power is decided.
	220kV Barabanki	Installed but Non-Operational	31.05.2024	Agency M/s. Electro Power is decided. 02 no. Peripheral unit found defective.
	220kV Kursi Road, Lucknow	Installed but Non-Operational	31.05.2024	Retrofitting work of auxilliary relay completed. Dut to non-functioning of new
	220kV BKT, Lucknow	Installed but Non-Operational	31.05.2024	LOI issued on Dt. 28.02.24
	220kV Gomti Nagar, Lucknow	Installed but Non-Operational	31.05.2024	Agency M/s. Electro Power is decided.
	400 KV Substation Sarnath	Installed and Operational		Now operational
	220kV S/S Raja Talab	Installed but Non-Operational	Revised date not received	Relay Defective, concern firm service engineer is awaited
	20kV S/S Harahua	Installed but Non-Operational	Revised date not received	NOT COMMISSIONED
	220kv Rewa Road	Installed but Non-Operational	Revised date not received	Due to Isolator & CB status not Proper. Informed to Transmission wing but
	220kV S/S Sahupuri	Installed but Non-Operational	Revised date not received	Defective, Requirement for New panel has been raised, not received from
	220kv Robertganj	partillay operational	Revised date not received	Line and bus coupler and T/F-I under cover but T/F-II not cover
	220kV S/S Mirzapur	Not Installed	Revised date not received	Bubar Protection Panel has been Recived, construction of Transfer bus is on progress
	220kV Chamba	Installed and Operational		commissioned in Jan-2024
	220kV MattaSidh	Installed but Non-Operational		
HP	220kV kangoo	Installed but Non-Operational	31.12.2024	Work in under progress, issues are being taken up with ABB
	220kV Nangal	Installed but Non-Operational		
	220kV Katha Baddi	Installed but Non-Operational		
	220 KV S/S Kotlisurat Malhi	Not Installed		
	220 KV S/S Maur	Not Installed		
	220 KV S/S Science city	Not Installed		
	220 KV S/S Banga	Not Installed	Dec-24	Commissioning is in process. Material has arrived, commissioning shall be done as per shutdown availability.
Punjab	220 KV S/S Hoshiarpur	Not Installed		
	220 KV S/S Goraya	Not Installed		
	220 KV S/S Bhawanigarh	Not Installed		
	220 KV S/S Badhni kalan	Installed and Operational		Commissioned
	220 KV S/S Bhari	Installed and Operational		Commissioned
	765 KV GSS Phagi	Installed but non operational		CU of Alstom make Bus-Bar is defective. Purchas case will be taken up
	220 kV GSS Vatika	Not installed		As M/s ER did not finished the project, so it was awarded to M/s Kaycee infra on risk-cost basis , however the bus bar scheme has not been commissioned yet. Matter has been taken up with firm
	220 kV GSS Niwana	Not installed	Sep-24	Commissioning work started, to be commissioned shortly
	220 kV GSS Alwar	Not installed		Commissioning work started, to be commissioned shortly
	220 kV GSS Bansur	Not installed		Commissioning work started, to be commissioned shortly
	220 kV GSS Behror	Not installed		Commissioning work started, to be commissioned shortly
	220KV GSS Hindaun	Not installed		Commissioning work started, to be commissioned shortly
	220KV GSS Dooni	Installed and Operational		commissioned
	220KV GSS Bhawanimandi	Installed and Operational		commissioned
	220 KV GSS Sakatpura, Kota	Installed and Operational		commissioned on 09.07.2024
	400 KV GSS Ajmer (220 KV BUS)	Installed but non operational	Revised date not received	One number of PU is defective. Isolator status is OK.
	220 kV GSS, Beawar	Installed and Operational		commissioned
	220 KV GSS Jethana	Installed and Operational		commissioned
	220 KV GSS Kuchaman City	Installed but non operational	Revised date not received	CU is defective. Purchase has been taken up with the firm
	220 KV GSS Bherunda	Installed and Operational		commissioned
	220 KV GSS Kuchera	Installed and Operational		commissioned
	220 KV GSS Reengus	Installed and Operational		commissioned
	220 KV GSS Laxmangarh	Installed and Operational		Commissioned
	220KV GSS Khetri Nagar	Installed and Operational		commissioned
Rajasthan	400 KV GSS, Babai	Installed and Operational		commissioned
	220 KV GSS Chittorgarh	Installed and Operational		commissioned
	400 KV GSS BHILWARA(220 KV BUS)	Installed and Operational		commissioned
	220 KV GSS MANDALGARH	Installed and Operational		commissioned
	220KV GSS Debari	Installed and Operational		commissioned
	220KV GSS Amberi	Installed and Operational		commissioned
	220KV GSS Madri	Installed and Operational		commissioned
	400 KV GSS Surpura (Jodhpur) 220 KV	Installed but non operational	30.09.2024	Commissioning work started, to be commissioned shortly

400 KV GSS Akal (Jaisalmer) 220 KV	Installed but non operational	Revised date not received	One PU defective. Case has been taken up with firm
220 KV GSS Jodhpur	Installed but non operational	Revised date not received	A&FS and TS issued. Case has been send for approval
220 KV GSS NPH Jodhpur	Not installed	Revised date not received	Case file moved
220 KV GSS Badisid	**Installed and Operational**		**commissioned**
220 KV GSS Bhadla	Not installed	25.09.2024	Commissioning work started, to be commissioned shortly
220 KV GSS Pali	**Installed and Operational**		**commissioned**
220 KV GSS Ramgarh	Not installed	05.09.2024	Commissioning work started, to be commissioned shortly
220 KV GSS Balotra	**Installed and Operational**		**commissioned**
220 KV GSS Sayla	**Installed and Operational**		**commissioned**
400 KV GSS Bikaner 400 KV BUS	Installed but non operational	Revised date not received	to be done with transformer work
220 KV GSS Ratangarh	**Installed and Operational**		**commissioned**
220 KV GSS Sujangarh	**Installed and Operational**		**commissioned**
220 KV GSS Halasar	**Installed and Operational**		**commissioned**
220 KV GSS Tehandesar	Not installed	15.09.2024	Commissioning work started, to be commissioned shortly
220 KV GSS Rawatsar	**Installed and Operational**		**commissioned**

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

Sr. No.	Scheme Name	Owner / Agency	Commission Year	Last Review	Mock testing conducted before 2025-26	Tentative Schedule of SPS Mock testing to be conducted during 2025-26	Date of SPS Mock testing conducted during 2025-26	Remarks
1	SPS for WR-NR corridor - 765kV Agra-Gwalior D/C	POWERGRID			27-03-2025	conducted	10.10.2025	Communication issue at Bhiwadi(PG), Bamnauli(DTL), Kota, Debari, Chittorgarh, Ratangarh, Nunamajra, Safidon, Ajitwal, Dandhari-II, Ablowal.
2	SPS for contingency due to tripping of HVDC Mundra-Mahendergarh	ADANI				conducted	11.03.2026	As reported by ADANI, scheme has been made ready to be taken into service. During the testing, communication links were found to be healthy.
3	SPS for high capacity 400 kV Muzaffarpur-Gorakhpur D/C Inter-regional tie-line related contingency	POWERGRID				SPS Under Review		Not conducted in 2024-25 also. NRLDC Studies team advised to disable the same. NLDC input awaited.
4	SPS for 1500 MW HVDC Rihand-Dadri Bipole related contingency	POWERGRID			19-03-2025 and 20-03-2025	conducted	19.11.2025	SPS command didn't receive at 220kV Muradnagar(UP), 220kV Merta(RS), 220kV Kota Sakatpura(RS), 220kV Dhanonda(HR) and Singrauli TPS(NTPC)
5	System Protection Scheme (SPS) for HVDC Balia-Bhiwadi Bipole	POWERGRID				SPS Under Review		Not conducted in 2024-25 also
6	SPS for reliable evacuation of power from NJPS, Rampur, Sawra Kuddu, Baspa Sorang and Karcham Wangtoo HEP	SJVN/HPPTCL/JSW/POWERGRID/SORANG			19-12-2024	Dec-25	04-09-2025 (Partial: Case-1, 3 & 5 conducted)	Case-6(i) & (ii) has been implemented (as confimed by Karcham(JSW) via mail dated 08.12.2025). Communication card issue at Wangtoo(HP)
7	SPS for Reliable Evacuation of Rosa Generation	UPPTCL			20-04-2024	conducted	12-04-2025	Mock test report received (Review to be done in view of commissioning of 400kV Rosa-Badaun D/C in April 2021.)
8	SPS for evacuation of Kawai TPS, Kalisindh TPS generation complex	RVPNL			14-03-2025 (Partial)	conducted	26-04-2025	As informed by RVPNL, automatic load shedding part of the SPS has been implemented and mock tested. Mock test report is yet to be received.
9	SPS for evacuation of Anpara Generation Complex	UPPTCL			08-10-2024 (unit-7) and 19-10-2024 (unit-6)	conducted	21-07-2025	
10	SPS for evacuation of Lalitpur TPS Generation	UPPTCL			21-05-2024	conducted	09-04-2025	Mock test report received
11	SPS for Reliable Evacuation of Bara TPS Generation	UPPTCL			20-11-2024	conducted	23-05-2025	Mock test report received
12	SPS for Lahal Generation	HPPTCL			08-07-2020	SPS Under Review		As reported by HPPTCL, SPS at Lahal not required now.
13	SPS for Transformers at Maharanibagh (PG) substation	POWERGRID				conducted	Apr-25	Mock test report received
14	SPS for Transformers at Mandola (PG) substation	POWERGRID				conducted	Apr-25	Mock test report received
15	SPS for Transformers at Bamnauli (DTL) Substation	DTL				conducted	19-01-2026	N-1 compliant (To be removed). As reported by SLDC Delhi, scheme may be kept in service until 315 MVA ICT is revived which currently is not in service
16	SPS for Transformers at Moradabad (UPPTCL) Substation	UPPTCL			20-04-2024	conducted	02-04-2025	Mock test report received
17	SPS for Transformers at Muradnagar (UPPTCL) Substation	UPPTCL			27-03-2025	Mar-26		
18	SPS for Transformers at Agra (UPPTCL) Substation	UPPTCL			21-03-2025	Mar-26		
19	SPS for Transformers at 400kV Sarojininagar (UPPTCL) Substation	UPPTCL			15-05-2024	conducted	23-07-2025	Mock test report received
20	SPS for Transformers at 220kV Sarojininagar (UPPTCL) Substation	UPPTCL			06-06-2024	conducted	23-07-2025	Mock test report received
21	SPS for Transformers at 400kV Unnao (UPPTCL) Substation	UPPTCL			19-05-2023	SPS made healthy on 27.05.2025	27.05.2025	Mock test report received

22	**SPS for Transformers at 400kV Sultanpur (UPPTCL) Substation**	**UPPTCL**				**SPS made healthy on 05.05.2025**		**As reported by SLDC UP, scheme is required as loading exceeded (N-1) limit during summer of 2025**
23	SPS for Transformers at 400kV Bareilly (UPPTCL) Substation	UPPTCL				**Revised SPS approved in 234 OCC**		**SPS yet to be implemented**
24	**SPS for Transformers at 400kV Azamgarh (UPPTCL) Substation**	**UPPTCL**			**06-05-2024**	**conducted**	**19-04-2025**	**Mock test report received**
25	**SPS for Transformers at 400kV Mau (UPPTCL) Substation**	**UPPTCL**			**27-04-2024**	**conducted**	**21-04-2025**	**Mock test report received**
26	**SPS for Transformers at 400kV Gorakhpur (UPPTCL) Substation**	**UPPTCL**			**27-04-2024**	**conducted**	**21-04-2025**	**As reported by SLDC UP, scheme is required as loading exceeded (N-1) limit during summer of 2025**
27	**SPS for Transformers at 400kV Sarnath (UPPTCL) Substation**	**UPPTCL**			**23-05-2024**	**conducted**	**01-04-2025**	**Mock test report received**
28	SPS for Transformer at 400kV Rajpura (PSTCL) Substation	PSTCL			31-01-2025	Feb-26		
29	SPS for Transformers at 400kV Mundka (DTL) Substation	DTL			03-02-2025	Feb-26		
30	**SPS for Transformers at 400kV Deepalpur (JKTPL) Substation**	**HVPNL**				**conducted**	**08-05-2025**	**Mock test report pending**
31	**SPS for Transformers at 400kV Ajmer (RVPN) Substation**	**RVPNL**			**10-09-2024**	**conducted**	**20-08-2025**	**Mock test report received.**
32	**SPS for Transformers at 400kV Merta (RVPN) Substation**	**RVPNL**			**12-09-2024**	**conducted**	**09-09-2025**	**Mock test report received.**
33	**SPS for Transformers at 400kV Chittorgarh (RVPN) Substation**	**RVPNL**			**31-08-2024 and 05-09-2024**	**conducted**	**11-09-2025 & 12-09-2025**	**Mock test report received.**
34	SPS for Transformers at 400kV Jodhpur (RVPN) Substation	RVPNL			24-09-2024	Dec-25		
35	**SPS for Transformers at 400kV Bhadla (RVPN) Substation**	**RVPNL**			**27-09-2024**	**conducted**	**27-09-2025**	
36	**SPS for Transformers at 400kV Ratangarh (RVPN) Substation**	**RVPNL**			**20-09-2024**	**conducted**	**25-09-2025**	
37	SPS for Transformers at 400kV Nehtaur(WUPPTCL) Substation	UPPTCL			11-01-2025	Dec-25		**SPS implemented in BCU. Shutdown required for mock testing.**
38	SPS for Transformers at Obra TPS	UPPTCL			20-05-2024	**Mock test will be conducted after revival of ICT**		**ICTs failed during fire incident**
39	SPS for Transformers at 400KV Kashipur (PTCUL) substation	PTCUL			Septemeber 2024	**conducted**	**05-10-2025**	
40	**SPS for Transformers at 400KV Fatehgarh Solar Park (AREPRL)**	**ADANI**				**conducted**	**19-04-2025**	**Mock test report received.**
41	**SPS to relive transmission congestion in RE complex (Bhadla2)**	**POWERGRID**				**conducted**	**26-08-2025**	**Mock test report pending**
42	**SPS for Transformers at 400kV Bikaner (RVPN) Substation**	**RVPNL**			**26-09-2024**	**conducted**	**13-09-2025 & 17-09-2025**	
43	SPS for Transformers at 400kV Bawana (DTL) Substation	DTL			04-01-2025	Feb-26		
44	**SPS for Transformers at 400kV Bhilwara (RVPN) Substation**	**RVPNL**			**09-07-2024 and 10-07-2024**	**conducted**	**19-09-2025 & 23-09-2025**	**Mock test report received.**
45	**SPS for Transformers at 400kV Hindaun (RVPN) Substation**	**RVPNL**			**26-09-2024**	**conducted**	**11-09-2025**	**Mock test report received.**
46	SPS for Transformers at 400kV Suratgarh (RVPN) Substation	RVPNL			20-10-2024	Dec-25		
47	**SPS for Transformers at 400kV Babai(RS) Substation**	**RVPNL**			**20-10-2024**	**conducted**	**07-08-2025**	**Mock test report received.**
48	**SPS for Transformers at 400kV Allahabad(PG) Substation**	**UPPTCL**			**25.07.2024**	**conducted**	**29-12-2025**	**SPS operated during real time (only one case is there in scheme)**
49	SPS for Transformers at 400kV Jaunpur(UP) Substation	UPPTCL				**Schedule awaited**		**Implemented on 08.10.2025**
50	**SPS for Transformers at 765kV Jhatikara(PG) Substation (Bamnauli section)**	**POWERGRID**				**conducted**	**Jun-25**	**Mock test report received.**
	SPS for Transformers at 765kV Jhatikara(PG) Substation (Mundka section)					**conducted**	**Jun-25**	
51	**SPS for Transformers at 765kV Bhiwani(PG) Substation**	**POWERGRID**				**SPS implemented**		**Mock test report received.**
52	SPS for Transformers at 400kV Panki (UPPTCL) Substation	UPPTCL				**Approved in 234 OCC**		**Expected to be implemented by Mar-26**
53	SPS for Transformers at 400kV Agra(PG) Substation	POWERGRID/UPPTCL				**Approved in 234 OCC**		**Expected to be implemented by 15th Feb'26**

54	**SPS for Transformers at 400kV Jaipur South(PG) Substation**	**POWERGRID/RVPNL**				**Approved in 237 OCC**		**Yet to be implemented (During 66th PSC, POWERGRID informed that SPS is not required, SLDC Rajasthan to review the same)**
55	SPS for Transformers at 400kV Bassi(PG) Substation	POWERGRID/RVPNL				**Approved in 237 OCC**		**Yet to be implemented**
56	SPS for Transformers at 400kV Kankroli(PG) Substation	POWERGRID/RVPNL				**Approved in 237 OCC**		**Yet to be implemented**
57	SPS for Transformers at 400kV Kotputli(PG) Substation	POWERGRID/RVPNL				**Approved in 237 OCC**		**Yet to be implemented**
58	SPS for Transformers at 400kV Neemrana(PG) Substation	POWERGRID/RVPNL				**Approved in 237 OCC**		**Yet to be implemented**
59	SPS for Transformers at 400kV Bhiwadi(PG) Substation	POWERGRID/RVPNL				**Approved in 237 OCC**		**Yet to be implemented**
60	SPS for Transformers at 400kV Sikar(PG) Substation	POWERGRID/RVPNL				**Approved in 237 OCC**		**Yet to be implemented**

S. No	Name of the Line	Circuit ID	Proposed Over Voltage protection setting by Committee								Status of Implementation (Yes / NO)	Modified Over Voltage protection setting(if any)							
			End I				End II					End I				End II			
			stage I pick up(%)	time (s)	stage II pick up(%)	time (s)	stage I pick up(%)	time (s)	stage II pick up(%)	time (s)		stage I pick up(%)	time (s)	stage II pick up(%)	time (s)	stage I pick up(%)	time (s)	stage II pick up(%)	time (s)
1. 765kV Transmission Line																			
A. POWERGRID											Confirmation received from POWERGRID								
1	Agra-Aligarh	1	108	5	150	0.1	108	5	150	0.1	Y								
2	Agra-Fatehpur	1	107	5	150	0.1	107	5	150	0.1	Y								
3	Agra-Fatehpur	2	108	9	150	0.1	108	9	150	0.1	Y								
4	Agra-Gwalior IR	1	108	5	150	0.1	108	5	150	0.1	Y								
5	Agra-Gwalior IR	2	109	9	150	0.1	109	9	150	0.1	Y								
6	Agra-Jhatikara	1	106	5	140	0.1	106	5	140	0.1	Y	108	6	140	0.1	106	5	140	0.1
7	Ajmer(PG)-Bhadla_2(PG)	1	109	8	140	0.1	109	8	140	0.1	Y								
8	Ajmer(PG)-Bhadla_2(PG)	2	110	15	140	0.1	110	15	140	0.1	Y								
9	Ajmer(PG)-Chittorgarh(PG)	1	110	9	140	0.1	110	9	140	0.1	Y								
10	Ajmer(PG)-Chittorgarh(PG)	2	110	15	140	0.1	110	15	140	0.1	Y								
11	Ajmer(PG)-Phagi(RS)	1	108	7	140	0.1	108	7	140	0	Y								
12	Ajmer(PG)-Phagi(RS)	2	110	12	140	0.1	110	12	140	0	Y								
13	Aligarh(PG) -Sikar_2(PSTL)	1	108	5	150	0.1	108	5	140	0.1	Y								
14	Aligarh(PG) -Sikar_2(PSTL)	2	108	9	150	0.1	108	9	140	0.1	Y								
15	Aligarh-Gr.Noida	1	109	7	150	0.1	109	7	140	0.1	Y								
16	Balia-Gaya IR	1	108	7	150	0.1	108	7	150	0.1	Y								
17	Balia-Lucknow_2(PG)	1	108	9	150	0.1	108	9	150	0.1	Y								
18	Bhadla_II(PG)-Sikar_2(PG)	1	109	6	150	0.1	109	6	150	0.1	Y								
19	Bhadla_II(PG)-Sikar_2(PG)	2	110	15	150	0.1	110	15	150	0.1	Y								
20	Bhiwani-Jhatikara	1	109	10	140	0.1	109	10	140	0.1	Y								
21	Bhiwani-Meerut	1	109	7	140	0.1	109	7	140	0.1	Y								
22	Bhiwani-Phagi	1	109	5	140	0.1	109	5	140	0	Y								
23	Bhiwani-Phagi	2	109	7	140	0.1	109	7	140	0	Y								
24	Bikaner(PG) - Bhadla(PG)	1	109	8	140	0.1	109	8	140	0.1	Y								
25	Bikaner(PG) - Bhadla(PG)	2	110	15	140	0.1	110	15	140	0.1	Y								
26	Bikaner(PG)-Bhadla_2(PG)	1	108	7	140	0.1	108	7	140	0.1	Y								
27	Bikaner(PG)-Bhadla_2(PG)	2	110	15	140	0.1	110	15	140	0.1	Y								
28	Bikaner(PG)-Moga	1	108	5	140	0.1	108	5	140	0.1	Y								
29	Bikaner(PG)-Moga	2	110	13	140	0.1	110	13	140	0.1	Y								
30	Chittorgarh(PG)-Banaskantha IR	1	110	9	140	0.1	110	9	140	0.1	Y								
31	Chittorgarh(PG)-Banaskantha IR	2	110	15	140	0.1	110	15	140	0.1	Y								
32	Fatehpur- Sasaram IR	1	108	5	150	0.1	108	5	150	0.1	Y								
33	Fatehgarh_2(PG)-Bhadla_2(PG)	1	109	9	140	0.1	109	9	140	0.1	Y								
34	Fatehgarh_2(PG)-Bhadla_2(PG)	2	110	15	140	0.1	110	15	140	0.1	Y								
35	Fatehgarh_2(PG)-Bhadla_2(PG)	3	107	5	140	0.1	107	5	140	0.1	Y								
36	Fatehgarh_2(PG)-Bhadla_2(PG)	4	108	8	140	0.1	108	8	140	0.1	Y								
37	Jhatikara-Aligarh	1	107	7	140	0.1	107	7	150	0.1	Y								
38	Jhatikara(PG)-Khetri(PKTSL)	1	108	5	140	0.1	108	5	140	0.1	Y								
39	Jhatikara(PG)-Khetri(PKTSL)	2	109	6	140	0.1	109	6	140	0.1	Y								
40	Kanpur(GIS)-Aligarh	1	109	9	150	0.1	109	9	150	0.1	Y								
41	Lucknow_2(PG)-Bareilly_2(PG)	1	109	5	150	0.1	109	5	150	0.1	Y								
42	Meerut-G. Noida	1	109	7	140	0.1	109	7	140	0.1	Y								
43	Meerut-Koteshwar(PG)	1	107	7	140	0.1	107	7	140	0.1	Y								
44	Meerut-Koteshwar(PG)	2	109	9	140	0.1	109	9	140	0.1	Y								
45	Moga-Bhiwani(PG)	1	109	5	140	0.1	109	5	140	0.1	Y								
46	Moga-Meerut	1	108	5	140	0.1	108	5	140	0.1	Y								
47	Orai-Aligarh	1	107	5	150	0.1	107	5	150	0.1	Y								
48	Orai-Aligarh	2	108	7	150	0.1	108	7	150	0.1	Y								
49	Orai-Jabalpur IR	1	107	5	150	0.1	107	5	150	0.1	Y								
50	Orai-Jabalpur IR	2	109	5	150	0.1	109	5	150	0.1	Y								
51	Orai-Satna IR	1	108	5	150	0.1	108	5	150	0.1	Y								
52	Orai-Gwalior IR	1	108	6	150	0.1	108	6	150	0.1	Y								
53	Phagi-Gwalior IR	1	110	5	140	0.1	110	5	140	0.1	Y	109	5	140	0.1	109	5	140	0.1
54	Phagi-Gwalior IR	2	110	7	140	0.1	110	7	140	0.1	Y	110	12	140	0.1	110	12	140	0.1
55	Varanasi-Balia	1	109	5	150	0.1	109	5	150	0.1	Y								
56	Varanasi-Fatehpur	1	109	5	150	0.1	109	5	150	0.1	Y								
57	Varanasi-Gaya IR	1	108	5	150	0.1	108	5	150	0.1	Y								
58	Varanasi-Gaya IR	2	109	9	150	0.1	109	9	150	0.1	Y								
59	Varanasi-Kanpur	1	108	5	150	0.1	108	5	150	0.1	Y								
60	Varanasi-Kanpur	2	110	5	150	0.1	110	5	150	0.1	Y								
61	Varanasi-Vindhyachal Pooling	1	108	5	150	0.1	108	5	150	0.1	Y								
62	Varanasi-Vindhyachal Pooling	2	109	9	150	0.1	109	9	150	0.1	Y								
B. Adani Transmission India Ltd. (ATIL) (BKTL, FBTL)																			
1	Bikaner(PG)-Khetri(PKTSL)	1	109	9	140	0.1	109	9	140	0.1	Y								
2	Bikaner(PG)-Khetri(PKTSL)	2	110	15	140	0.1	110	15	140	0.1	Y								
3	Fatehgarh_II(PG)-Bhadla(PG)	1	108	6	140	0.1	108	6	140	0.1	Y								
4	Fatehgarh_II(PG)-Bhadla(PG)	2	110	12	140	0.1	110	12	140	0.1	Y								
C. UPPTCL																			
1	Agra Fatehabad-Ghatampur	1	108	7	140	0.1	108	7	140	0.1	Y								
2	Agra Fatehabad-Gr. Noida	1	109	5	140	0.1	109	5	140	0.1	Y								
3	Anpara C-Anpara D	1	108	5	140	0.1	108	5	140	0.1	Y								
4	Anpara C-Unnao	1	109	5	140	0.1	110	7	140	0.1	Y								
5	Anpara D-Obra_C	1	110	7	140	0.1	110	7	140	0.1	Y								
6	Bara-Mainpuri	2	108	7	140	0.1	108	7	140	0.1	Y								
7	Ghatampur-Rampur_PRSTL	1	109	5	140	0.1	109	5	140	0.1	Y								
8	Hapur(UP)-Meerut_PMSTL	1	110	7	140	0.1	110	7	140	0.1	Y								
9	Hapur(UP)-Rampur_PRSTL	1	108	5	140	0.1	108	5	140	0.1	Y								
10	Hapur-Mainpuri	1	109	7	140	0.1	109	7	140	0.1	Y								
11	Jawaharpur-Gr.NOIDA	1	110	5	140	0.1	110	5	140	0.1	Y								
12	Lalitpur - Agra Fatehabad	1	108	5	140	0.1	108	5	150	0.1	Y								
13	Lalitpur - Agra Fatehabad	2	110	9	140	0.1	110	9	140	0.1	Y								
14	Meerut_PMSTL-G.Noida	1	110	5	140	0.1	110	5	140	0.1	Y								
15	Mainpuri(UP)-Jawaharpur	1	110	9	140	0.1	110	9	140	0	Y								
16	Obra_C-Unnao	1	110	5	140	0.1	110	5	140	0.1	Y								
D. Rajasthan																			
1	Anta-Phagi	1	110	5	140	0.1	110	5	140	0.1	Y	108	10	140	0.1	108	10	140	0.1
2	Anta-Phagi	2	110	7	140	0.1	112	6	140	0.1	Y	110	7	140	0.1	112	6	140	0.1
2. 765kV Transmission Line charged at 400kV																			
A. POWERGRID											Confirmation received from POWERGRID								
1	Kishenpur-Moga	1	110	5	150	0.1	110	5	150	0.1	Y								
2	Kishenpur-Moga	2	112	6	150	0.1	112	6	150	0.1	Y								
3	Tehri(TH)-Koteshwar(PG)	1	110	5	140	0.1	110	5	150	0.1	Y								
4	Tehri(TH)-Koteshwar(PG)	2	112	6	140	0.1	111	6	150	0.1	Y								
B. Adani Transmission India Ltd. (ATIL) (FBTL)																			
1	Fatehgarh Pooling-Fatehgarh_II	1	110	5	150	0.1	110	5	150	0.1	Y								
2	Fatehgarh Pooling-Fatehgarh_II	2	112	6	150	0.1	111	5	150	0.1	Y								
3. 400kV HVAC Transmission Line																			

A. POWERGRID											Confirmation received from POWERGRID								
2	Abdullapur(PG)- Deepalpur(JHKT)	1	112	6	150	0.1	112	6	150	0.1	Y								
1	Abdullapur(PG)- Bawana(DV)	1	110	5	150	0.1	110	5	150	0.1	Y								
3	Abdullapur- Kala Amb	1	110	5	150	0.1	110	5	150	0.1	Y								
4	Abdullapur- Kala Amb	2	112	6	150	0.1	112	6	150	0.1	Y								
5	Abdullapur-Kurukshetra	1	110	5	150	0.1	110	5	150	0.1	Y								
6	Abdullapur-Kurukshetra	2	112	6	150	0.1	112	6	150	0.1	Y								
7	Agra(PG)-Agra(UP)	1	110	5	150	0.1	111	6	150	0.1	Y								
8	Agra-Ballabgarh	1	110	5	150	0.1	110	5	150	0.1	Y								
9	Agra-Bassi	1	110	5	150	0.1	110	5	150	0.1	Y								
10	Agra-Bhiwadi	1	110	5	150	0.1	110	5	150	0.1	Y								
11	Agra-Bhiwadi	2	112	6	150	0.1	112	6	150	0.1	Y								
12	Agra PG-Fatehabad (765kV Agra UP)	1	112	6	150	0.1	110	5	150	0.1	Y								
13	Agra-Jaipur South	1	110	5	150	0.1	110	5	150	0.1	Y								
14	Agra-Jaipur South	2	112	6	150	0.1	112	6	150	0.1	Y								
15	Agra-Sikar	1	110	5	150	0.1	110	5	150	0.1	Y								
16	Agra-Sikar	2	112	6	150	0.1	112	6	150	0.1	Y								
17	Ajmer(RS)-Ajmer(PG)	1	110	5	150	0.1	110	5	150	0.1	Y								
18	Ajmer(RS)-Ajmer(PG)	2	112	6	150	0.1	112	6	150	0.1	Y								
19	Allahabad-Fatehpur	3	110	5	150	0.1	110	5	150	0.1	Y								
20	Allahabad-Fatehpur	1	111	6	150	0.1	111	6	150	0.1	Y								
21	Allahabad-Fatehpur	2	112	7	150	0.1	112	7	150	0.1	Y								
22	Allahabad-Kanpur	1	110	5	150	0.1	110	5	150	0.1	Y								
23	Allahabad-Kanpur_GIS(765/400kV)	1	112	6	150	0.1	111	6	150	0.1	Y								
24	Allahabad-Kanpur_GIS(765/400kV)	2	110	5	150	0.1	111	7	150	0.1	Y								
25	Allahabad(PG)-Meja(NT)	1	110	5	150	0.1	110	5	140	0.1	Y								
26	Allahabad(PG)-Meja(NT)	2	112	6	150	0.1	110	5	140	0.1	Y								
27	Allahabad-Sasaram IR	1	110	5	150	0.1	110				Y								
28	Allahabad-Varanasi	1	110	6	150	0.1	110	5	150	0.1	Y								
29	Amritsar-Jalandhar	1	110	5	150	0.1	110	5	150	0.1	Y								
30	Amritsar-Jalandhar	2	112	6	150	0.1	112	6	150	0.1	Y								
31	Amritsar-Parbati Pool Banala	1	110	5	150	0.1	110	5	150	0.1	Y								
32	Auraiya(NT)-Agra(PG)	1	110	5	140	0.1	110	5	150	0.1	Y								
33	Auraiya(NT)-Agra(PG)	2	112	5	140	0.1	112	6	150	0.1	Y								
34	Baghpat-Kaithal	1	110	5	150	0.1	110	5	150	0.1	Y								
35	Baghpat-Kaithal	2	112	6	150	0.1	112	6	150	0.1	Y								
36	Baghpat-Saharanpur	1	110	6	150	0.1	110	5	150	0.1	Y								
37	Bahadurgarh(PG)-Kabulpur(HV)	1	110	6	150	0.1	110	5	150	0.1	Y								
38	Bahadurgarh-Sonepat	1	110	5	150	0.1	110	5	150	0.1	Y								
39	Bahadurgarh-Sonepat	2	112	6	150	0.1	112	6	150	0.1	Y								
40	Balia-Biharshariff IR	1	110	5	150	0.1	110	5	150	0.1	Y								
41	Balia-Biharshariff IR	2	112	6	150	0.1	112	6	150	0.1	Y								
42	Balia(PG)-Mau(UP)	1	110	5	150	0.1	110	5	150	0.1	Y								
43	Balia-Naubatpur IR	1	111	6	150	0.1	111	6	150	0.1	Y								
44	Balia-Patna IR	1	110	5	150	0.1	110	5	150	0.1	Y								
45	Balia-Patna IR	2	112	6	150	0.1	112	6	150	0.1	Y								
46	Balia-Patna IR	3	110	6	150	0.1	110	6	150	0.1	Y								
47	Balia-Rasra	1	112	6	150	0.1	110	5	140	0.1	Y								
48	Balia-Sohawal	1	110	5	150	0.1	110	5	150	0.1	Y								
49	Balia-Sohawal	2	112	6	150	0.1	112	6	150	0.1	Y								
50	Ballabgarh-Gurgaon	1	110	5	150	0.1	110	5	150	0.1	Y								
51	Ballabgarh(PG)-Nawada(HV)	1	110	6	150	0.1	110	6	150	0.1	Y								
52	Bamnoli(DV)-Dwarka(PG)	1	110	5	150	0.1	110	5	150	0.1	Y								
53	Bareilly PG-Lucknow (UP)	1	111	6	150	0.1	110	5	150	0.1	Y								
54	Bareilly(PG)-Meerut	1	110	5	150	0.1	110	5	150	0.1	Y								
55	Bareilly(PG)-Meerut	2	112	6	150	0.1	112	6	150	0.1	Y								
56	Bareilly(PG)-Moradabad(UP)	1	110	5	150	0.1	110	5	150	0.1	Y								
57	Bareilly(PG)-Rampur_PRSTL	1	111	6	150	0.1	111	6	150	0.1	Y								
58	Bareilly(UP)-Bareilly(PG)	1	110	5	150	0.1	110	5	150	0.1	Y								
59	Bareilly(UP)-Bareilly(PG)	2	112	6	150	0.1	112	6	150	0.1	Y								
60	Bareilly_2(765/400)(PG)-Bareilly(PG)	1	110	5	150	0.1	110	5	150	0.1	Y								
61	Bareilly_2(765/400)(PG)-Bareilly(PG)	2	112	6	150	0.1	112	6	150	0.1	Y								
62	Bareilly_2(765/400)(PG)-Jauljivi(PG)	1	110	5	150	0.1	110	5	150	0.1	Y								
63	Bareilly_2(765/400)(PG)-Jauljivi(PG)	2	112	6	150	0.1	112	6	150	0.1	Y								
64	Bareilly_2(765/400)(PG)-Kashipur(UK)	1	110	5	150	0.1	110	5	150	0.1	Y								
65	Bareilly_2(765/400)(PG)-Kashipur(UK)	2	112	6	150	0.1	112	6	150	0.1	Y								
66	Baspa-Karcham Wangtoo	1	110	5	140	0.1	110	5	140	0.1	Y								
67	Baspa-Karcham Wangtoo	2	112	6	140	0.1	112	6	140	0.1	Y								
68	Bassi-Bhiwadi	1	110	6	150	0.1	110	5	150	0.1	Y								
69	Bassi(PG)-Heerapura(RS)	1	110	5	150	0.1	110	5	150	0.1	Y								
70	Bassi(PG)-Heerapura(RS)	2	112	6	150	0.1	112	6	150	0.1	Y								
71	Bassi-Kotputli	1	110	6	150	0.1	110	5	150	0.1	Y								
72	Bassi(PG)-Phagi(RS)	1	110	5	150	0.1	110	5	140	0.1	Y								
73	Bassi(PG)-Phagi(RS)	2	112	6	150	0.1	112	6	140	0.1	Y								
74	Bassi-Sikar	1	110	5	150	0.1	110	5	150	0.1	Y								
75	Bassi-Sikar	2	112	6	150	0.1	112	6	150	0.1	Y								
76	Basti (UP)-Lucknow(PG)	1	110	5	150	0.1	110	5	150	0.1	Y								
77	Basti (UP)-Lucknow(PG)	2	112	6	150	0.1	112	6	150	0.1	Y								
78	Bawana(CCGTB)(DTL)-Bahadurgarh(PG)	1	110	5	150	0.1	110	5	150	0.1	Y								
79	Bawana(CCGTB)(DTL)-Bhiwani(PG)	1	112	6	150	0.1	112	6	150	0.1	Y								
80	Bhadla(PG)-Bhadla(RS)	1	110	5	150	0.1	110	5	150	0.1	Y								
81	Bhadla(PG)-Bhadla(RS)	2	112	6	150	0.1	112	6	150	0.1	Y								
82	Bhensra (Jaisalmer2)(RS)-Fatehgarh_III(PG)	1	110	5	150	0.1	110	5	150	0.1	Y								
83	Bhensra (Jaisalmer2)(RS)-Fatehgarh_III(PG)	2	112	6	150	0.1	112	6	150	0.1	Y								
86	Bhiwadi-Gurgaon	1	110	6	150	0.1	110	5	150	0.1	Y								
87	Bhiwadi-Hissar	1	110	5	150	0.1	110	5	150	0.1	Y								
88	Bhiwadi-Hissar	2	111	6	150	0.1	111	6	150	0.1	Y								
89	Bhiwadi-Hissar	3	112	7	150	0.1	112	7	150	0.1	Y								
90	Bhiwadi-Neemrana(PG)	1	110	5	150	0.1	110	5	150	0.1	Y								
91	Bhiwadi-Neemrana(PG)	2	112	6	150	0.1	112	6	150	0.1	Y								
92	Bhiwani(PG)-Bhiwani(BB)	1	110	5	150	0.1	110	5	150	0.1	Y								
93	Bhiwani(BB)-Hissar(PG)	1	112	7	150	0.1	112	7	150	0.1	Y								
94	Bhiwani(PG)-Jind	1	110	5	150	0.1	110	5	150	0.1	Y								
95	Bhiwani(PG)-Jind	2	112	7	150	0.1	112	7	150	0.1	Y								
96	Bhiwani(PG)-Kabulpur(HV)	1	111	6	150	0.1	111	6	150	0.1	Y								
97	Bhiwani(PG)-Hissar-Moga(PG)	1	110	5	150	0.1	110	5	150	0.1	Y								
98	Bikaner_2-Bikaner(PG)	1	110	5	150	0.1	110	5	150	0.1	Y								
99	Bikaner_2-Bikaner(PG)	2	112	6	150	0.1	112	6	150	0.1	Y								
100	Bikaner_2(PG)-Khetri(PG)	1	110	5	150	0.1	110	5	150	0.1	Y								
101	Bikaner_2(PG)-Khetri(PG)	2	111	6	150	0.1	111	6	150	0.1	Y								
102	Bikaner_2(PG)-Khetri(PG)	3	112	6	150	0.1	112	6	150	0.1	Y								
103	Bikaner_2(PG)-Khetri(PG)	4	112	7	150	0.1	112	7	150	0.1	Y								
104	Chamera-II - Chamba(GIS)	1	110	5	150	0.1	110	5	150	0.1	Y								
105	Chamera-II-Chamera-I	1	111	6	150	0.1	111	6	150	0.1	Y								
106	Chamera-II-Kishenpur	1	112	7	150	0.1	112	7	150	0.1	Y								

107	Chamera-I-Jalandhar	1	110	5	150	0.1	110	5	150	0.1	Y									
108	Chamera-I-Jalandhar	2	112	6	150	0.1	112	6	150	0.1	Y									
109	Chittorgarh(RS)-Kankroli	2	110	6	150	0.1	110	6	150	0.1	Y									
110	Chittorgarh(PG)-Chittorgarh(RS)	1	110	5	150	0.1	110	5	150	0.1	Y									
111	Chittorgarh(PG)-Chittorgarh(RS)	2	112	6	150	0.1	112	6	150	0.1	Y									
112	Dadri NCTPP-G. Noida	1	110	5	140	0.1	110	5	150	0.1	Y									
113	Dadri(NT)-Maharanibagh(PG)-Ballabhgahr(PG)	1	111	6	140	0.1	111	6	150	0.1	Y									
114	Dadri(NT)-Mandola	1	110	5	140	0.1	110	5	150	0.1	Y									
115	Dadri(NT)-Mandola	2	112	6	140	0.1	112	6	150	0.1	Y									
116	Dadri(NT)-Muradnagar_2(UP)	1	110	5	140	0.1	110	5	140	0.1	Y									
117	Dadri(NT)-Panipat(BB)	1	110	5	140	0.1	110	5	150	0.1	Y									
118	Dadri(NT)-Panipat(BB)	2	112	7	140	0.1	112	7	150	0.1	Y									
119	Dadri(NT)-Kaithal	1	111	6	140	0.1	111	6	150	0.1	Y									
120	Deepalpur(JHKT)-Bawana(DV)	1	112	6	150	0.1	112	6	150	0.1	Y									
121	Dehradun(PG)-Abdullapur	1	110	5	150	0.1	110	5	150	0.1	Y									
122	Dehradun(PG)-Abdullapur	2	112	6	150	0.1	112	6	150	0.1	Y									
123	Dehradun-Baghpat	1	110	5	150	0.1	110	5	150	0.1	Y									
124	Dehradun(PG)-Roorkee(PG)	1	110	6	150	0.1	110	5	150	0.1	Y									
125	Dulhasti-Kishenpur	1	110	5	150	0.1	110	5	150	0.1	Y									
126	Dulhasti-Kishenpur	2	111	6	150	0.1	111	6	150	0.1	Y									
127	Dwarka-Jhatikra	1	110	5	150	0.1	110	5	150	0.1	Y									
128	Fatehabad-Hissar-Bhiwani	1	110	5	150	0.1	110	5	150	0.1	Y									
129	Fatehgarh_II(PG)-Fatehgarh_III(PG)	1	110	5	150	0.1	110	5	150	0.1	Y									
130	Fatehgarh_II(PG)-Fatehgarh_III(PG)	2	112	6	150	0.1	112	6	150	0.1	Y									
131	Fatehpur-Kanpur-Panki	1	112	6	150	0.1	112	6	150	0.1	Y									
132	Fatehpur-Kanpur-Panki	2	110	5	150	0.1	110	5	150	0.1	Y									
133	Fatehpur-Mainpuri (PG)	1	110	5	150	0.1	110	5	150	0.1	Y									
134	Fatehpur-Mainpuri (PG)	2	112	6	150	0.1	112	6	150	0.1	Y									
135	Fatehpur - Unchahar	1	110	5	150	0.1	110	5	140	0.1	Y									
136	Fatehpur - Unchahar	2	112	6	150	0.1	112	6	140	0.1	Y									
137	G.Noida-Nawada	1	110	5	140	0.1	110	5	140	0.1	Y									
138	Gorakhpur(PG)-Gorakhpur(UP)	1	110	5	150	0.1	110	5	150	0.1	Y									
139	Gorakhpur(PG)-Gorakhpur(UP)	2	112	6	150	0.1	112	6	150	0.1	Y									
140	Gorakhpur PG-Lucknow(PG)	1	110	5	150	0.1	110	5	150	0.1	Y									
141	Gorakhpur PG-Lucknow(PG)	2	112	6	150	0.1	112	6	150	0.1	Y									
142	Gorakhpur PG-LUCKNOW7 PG	1	110	5	150	0.1	110	5	150	0.1	Y									
143	Gorakhpur PG-LUCKNOW7 PG	2	112	6	150	0.1	112	6	150	0.1	Y									
144	Gorakhpur-Motihari IR	1	110	5	150	0.1	110	5	150	0.1	Y									
145	Gorakhpur-Motihari IR	2	112	6	150	0.1	112	6	150	0.1	Y									
146	Gorakhpur-Muzaffarpur IR	1	110	5	150	0.1	110	5	150	0.1	Y									
147	Gorakhpur-Muzaffarpur IR	2	112	6	150	0.1	112	6	150	0.1	Y									
148	Gorakhpur(PG)-Basti(UP)	1	110	5	150	0.1	110	5	150	0.1	Y									
149	Gorakhpur(PG)-Basti(UP)	2	112	6	150	0.1	112	6	150	0.1	Y									
150	Gumma(HP)-Panchkula(PG)	1	110	5	150	0.1	110	5	150	0.1	Y									
151	Gumma(HP)-Panchkula(PG)	2	112	6	150	0.1	112	6	150	0.1	Y									
152	Gurgaon-Sohna Road	1	110	5	150	0.1	110	5	140	0.1	Y									
153	Gurgaon-Sohna Road	2	112	6	150	0.1	112	6	140	0.1	Y									
154	Hamirpur-Parbati Pool Banala	1	112	6	150	0.1	112	6	150	0.1	Y									
155	Hamirpur-Jalandhar	1	112	6	150	0.1	112	6	150	0.1	Y									
156	Jaipur South-Bassi	1	110	5	150	0.1	110	5	150	0.1	Y									
157	Jaipur South-Bassi	2	112	6	150	0.1	112	6	150	0.1	Y									
158	Jaipur South(PG)-RAPP D(NP)	1	110	5	150	0.1	110	5	150	0.1	Y									
159	Jalandhar-Chamba(GIS)	1	110	5	150	0.1	110	5	150	0.1	Y									
160	Jalandhar-Chamba(GIS)	2	112	6	150	0.1	112	6	150	0.1	Y									
161	Jalandhar-Dhanansu(PS)	1	110	5	150	0.1	110	5	150	0.1	Y									
162	Jalandhar-Nakodar	1	112	6	150	0.1	112	6	150	0.1	Y									
163	Kaithal-Hissar	1	110	5	150	0.1	110	5	150	0.1	Y									
164	Kaithal-Hissar	2	112	6	150	0.1	112	6	150	0.1	Y									
165	Kankroli-Jodhpur	1	110	5	150	0.1	110	5	140	0.1	Y									
166	Kankroli-Zerda IR	1	110	5	150	0.1	110	5	150	0.1	Y									
166	Kankroli-Zerda IR	2	112	6	150	0.1	112	6	150	0.1	Y									
167	Kanpur - Kanpur GIS(765/400)	1	110	5	150	0.1	110	5	150	0.1	Y									
168	Kanpur - Kanpur GIS(765/400)	2	112	7	150	0.1	112	6	150	0.1	Y									
169	Kanpur-Agra	1	111	6	150	0.1	110	5	150	0.1	Y									
170	Kanpur-Auraiya(NT)	1	110	5	150	0.1	110	5	140	0.1	Y									
171	Kanpur-Auraiya(NT)	2	112	6	150	0.1	112	6	140	0.1	Y									
172	Kanpur-Ballabgarh	1	110	5	150	0.1	110	5	150	0.1	Y									
173	Kanpur-Ballabgarh	2	111	6	150	0.1	111	6	150	0.1	Y									
174	Kanpur-Ballabgarh	3	112	7	150	0.1	112	7	150	0.1	Y									
175	Karcham Wangtoo-Nathpa Jhaki	1	110	5	140	0.1	110	5	150	0.1	Y									
176	Karcham Wangtoo-Nathpa Jhaki	2	112	6	140	0.1	112	6	150	0.1	Y									
177	Karcham Wangtoo-Wangtoo(HP)	1	110	5	140	0.1	110	5	140	0.1	Y									
178	Karcham Wangtoo-Wangtoo(HP)	2	112	6	150	0.1	112	6	140	0.1	Y									
179	Khetri- Bhiwadi	1	110	5	150	0.1	110	5	150	0.1	Y									
180	Khetri- Bhiwadi	2	112	6	150	0.1	112	6	150	0.1	Y									
181	Kishenpur-New Wanpoh	1	110	5	150	0.1	110	5	150	0.1	Y									
182	Kishenpur-New Wanpoh	3	110	5	150	0.1	110	5	150	0.1	Y									
183	Kishenpur-New Wanpoh	4	111	6	150	0.1	111	6	150	0.1	Y									
184	Kishenpur-Samba	1	110	5	150	0.1	110	5	150	0.1	Y									
185	Kishenpur-Samba	2	111	6	150	0.1	111	6	150	0.1	Y									
186	Koldam-Nallagarh	1	112	6	150	0.1	112	6	150	0.1	Y									
187	Kota-Jaipur South	1	111	6	150	0.1	111	6	150	0.1	Y									
188	Kota-Merta(RS)	1	110	5	150	0.1	110	5	150	0.1	Y									
189	Koteshwar(PG)-Koteswar(TH)	1	110	5	150	0.1	110	5	140	0.1	Y									
190	Koteshwar(PG)-Koteswar(TH)	2	112	6	150	0.1	112	6	140	0.1	Y									
191	Kotputli-Bhiwadi	1	110	5	150	0.1	110	5	150	0.1	Y									
192	Kurukshetra-Dhanansu(PS)	1	110	5	150	0.1	110	5	140	0.1	Y									
193	Kurukshetra-Jind	1	110	5	150	0.1	110	5	150	0.1	Y									
194	Kurukshetra-Jind	2	112	6	150	0.1	112	6	150	0.1	Y									
195	Kurukshetra-Nakodar(PS)	1	110	6	150	0.1	110	6	140	0.1	Y									
196	Kurukshetra-Sonipat	1	110	5	150	0.1	110	5	150	0.1	Y									
197	Kurukshetra-Sonipat	2	112	6	150	0.1	112	6	150	0.1	Y									
198	Lucknow(PG)-Lucknow UP	1	111	6	150	0.1	111	6	150	0.1	Y									
199	Lucknow(PG)-Jehta	1	110	5	150	0.1	110	5	140	0.1	Y									
200	Lucknow(PG)-Jehta	2	112	6	150	0.1	112	6	140	0.1	Y									
201	Jehta-Unnao	1	110	5	140	0.1	110	5	150	0.1	Y									
202	Jehta-Unnao	2	112	6	140	0.1	112	6	150	0.1	Y									
203	Lucknow_2(765/400)(PG) - Lucknow(PG)	1	110	5	150	0.1	110	5	150	0.1	Y									
204	Lucknow_2(765/400)(PG) - Lucknow(PG)	2	112	6	150	0.1	112	6	150	0.1	Y									
205	Lucknow_2(765/400) - Kanpur GIS(765/400)	1	110	5	150	0.1	110	5	150	0.1	Y									
206	Lucknow_2(765/400) - Kanpur GIS(765/400)	2	112	6	150	0.1	112	6	150	0.1	Y									
207	Ludhiana-Jalandhar	1	110	5	150	0.1	110	5	150	0.1	Y									
208	Ludhiana-Malerkotla	1	112	6	150	0.1	112	6	150	0.1	Y									
209	Ludhiana-Patiala	1	110	5	150	0.1	110	5	150	0.1	Y									

210	Ludhiana-Patiala	2	112	6	150	0.1	112	6	150	0.1	Y									
211	Mahendergarh-Bhiwani(PG)-Hissar	3	111	5	150	0.1	111	5	150	0.1	Y									
212	Mahendergarh-Bhiwani(PG)-Hissar	4	112	6	150	0.1	112	6	150	0.1	Y									
213	Mainpuri-Ballabgarh	1	110	5	150	0.1	110	5	150	0.1	Y									
214	Mainpuri-Ballabgarh	2	112	6	150	0.1	112	6	150	0.1	Y									
215	Malerkotla-Kaithal	1	110	5	150	0.1	110	5	150	0.1	Y									
216	Malerkotla-Patiala	1	112	6	150	0.1	112	6	150	0.1	Y									
217	Manesar-Sohna Road	1	110	5	150	0.1	110	5	140	0.1	Y									
218	Manesar-Sohna Road	2	112	6	150	0.1	112	7	140	0.1	Y									
219	Meerut-Baghpat	1	110	5	150	0.1	110	5	150	0.1	Y									
220	Meerut-Baghpat	2	112	6	150	0.1	112	6	150	0.1	Y									
221	Meerut-Mandola	1	112	5	150	0.1	112	5	150	0.1	Y									
222	Meerut-Mandola	2	112	6	150	0.1	112	6	150	0.1	Y									
223	Meerut-Mandola	3	110	5	150	0.1	110	5	150	0.1	Y									
224	Meerut-Mandola	4	111	6	150	0.1	111	6	150	0.1	Y									
225	Meerut(PG)-Muzzafarnagar(UP)	1	110	5	150	0.1	110	5	150	0.1	Y									
226	Moga-Fatehabad	1	110	5	150	0.1	110	5	150	0.1	Y									
227	Moga-Hissar	2	110	5	150	0.1	110	5	150	0.1	Y									
228	Moga-Hissar	3	112	6	150	0.1	112	6	150	0.1	Y									
229	Moga-Jalandhar	1	110	5	150	0.1	110	5	150	0.1	Y									
230	Moga-Jalandhar	2	112	6	150	0.1	112	6	150	0.1	Y									
231	Moradabad(UP)-Hapur(UP)	1	110	5	150	0.1	110	5	140	0.1	Y									
232	Muradnagar(UP)-Hapur(UP)	1	110	5	150	0.1	112	6	150	0.1	Y									
233	Nallagarh-Patiala	1	110	5	150	0.1	110	5	150	0.1	Y									
234	Nallagarh-Patiala	2	112	6	150	0.1	112	6	150	0.1	Y									
235	Nathpa Jhakri(SJ)-Rampur(SJ)	1	110	5	150	0.1	110	5	140	0.1	Y									
236	Nathpa Jhakri(SJ)-Rampur(SJ)	2	112	6	150	0.1	112	6	140	0.1	Y									
237	Nathpa Jhakri(SJ)-Gumma(HP)	1	110	5	140	0.1	110	5	140	0.1	Y									
238	Nathpa Jhakri(SJ)-Gumma(HP)	2	112	6	140	0.1	112	6	140	0.1	Y									
239	Neemrana(PG)-Manesar	1	110	5	150	0.1	110	5	150	0.1	Y									
240	Neemrana(PG)-Manesar	2	112	6	150	0.1	112	6	150	0.1	Y									
241	Neemrana(PG)-Dhanonda(HV)-Mohindergarh(APL)	1	110	5	150	0.1	110	5	150	0.1	Y									
242	Neemrana(PG)-Dhanonda(HV)-Mohindergarh(APL)	2	112	6	150	0.1	112	6	150	0.1	Y									
243	Neemrana(PG)-Sikar	2	111	6	150	0.1	111	6	150	0.1	Y									
244	New Wanpoh-Wagoora	1	110	5	150	0.1	110	5	150	0.1	Y									
245	New Wanpoh-Wagoora	2	111	6	150	0.1	111	6	150	0.1	Y									
246	Orai(PG)-Orai (UP)	1	110	5	150	0.1	110	5	150	0.1	Y									
247	Orai(PG)-Orai (UP)	2	112	7	150	0.1	112	7	150	0.1	Y									
248	Panchkula -Abdullapur	1	110	5	150	0.1	110	5	150	0.1	Y									
249	Panchkula -Abdullapur	2	112	6	150	0.1	112	6	150	0.1	Y									
250	Patiala-Panchkula	1	110	5	150	0.1	110	5	150	0.1	Y									
251	Patiala-Panchkula	2	112	6	150	0.1	112	6	150	0.1	Y									
252	Patiala-Patran	1	110	5	150	0.1	110	5	150	0.1	Y									
253	Patiala-Patran	2	112	6	150	0.1	112	6	150	0.1	Y									
254	Patran-Kaithal	1	110	5	150	0.1	110	5	150	0.1	Y									
255	Patran-Kaithal	2	112	6	150	0.1	112	6	150	0.1	Y									
256	Rampur(SJ)-Nallagarh(PG)	1	110	5	150	0.1	110	5	150	0.1	Y									
257	Rampur(SJ)-Nallagarh(PG)	2	112	6	150	0.1	112	6	150	0.1	Y									
258	Rampur_PRSTL-Moradabad(UP)	1	111	6	150	0.1	111	6	150	0.1	Y									
259	RAPP-D(NP)-Kota(PG)	1	110	5	150	0.1	110	5	150	0.1	Y									
260	RAPS-C(NP)-Chittorgarh(RS)	2	110	5	150	0.1	110	5	150	0.1	Y									
261	RAPS-C(NP)-Kankroli(PG)	1	111	6	150	0.1	111	6	150	0.1	Y									
262	RAPS-C(NP)-Kota(PG)	1	110	6	150	0.1	110	6	150	0.1	Y									
263	Rihand(NT)-Allahabad(PG)	1	110	5	140	0.1	110	5	150	0.1	Y									
264	Rihand(NT)-Allahabad(PG)	2	112	6	140	0.1	112	6	150	0.1	Y									
265	Rihand3-Vindhyachal IR	1	110	5	150	0.1	110	5	150	0.1	Y									
266	Rihand3-Vindhyachal IR	2	112	6	150	0.1	112	6	150	0.1	Y									
267	Roorkee(PG)-Kashipur(UK)	1	110	5	150	0.1	110	5	150	0.1	Y									
268	Roorkee(PG)-Kashipur(UK)	2	112	6	150	0.1	112	6	150	0.1	Y									
269	Roorkee-Saharanpur	1	111	6	150	0.1	111	6	150	0.1	Y									
270	Sambhal(UP)-Rampur(PRSTL)	1	110	5	150	0.1	110	5	140	0.1	Y									
271	Sambhal(UP)-Rampur(PRSTL)	2	112	6	150	0.1	112	7	140	0.1	Y									
272	Sarnath(UP)-Varanasi(PG)	1	110	5	150	0.1	110	5	150	0.1	Y									
273	Sarnath(UP)-Varanasi(PG)	2	112	6	150	0.1	112	6	150	0.1	Y									
274	Shahjahanpur(PG)-Bareilly(PG)	1	110	5	150	0.1	110	5	150	0.1	Y									
275	Shahjahanpur(PG)-Bareilly(PG)	2	112	6	150	0.1	112	6	150	0.1	Y									
276	Shahjahanpur(PG)-Lucknow(PG)	1	110	5	150	0.1	110	5	150	0.1	Y									
277	Shahjahanpur(PG)-Lucknow(PG)	2	112	6	150	0.1	112	6	150	0.1	Y									
278	Shahjahanpur PG-Rosa	1	110	5	150	0.1	110	5	140	0.1	Y									
279	Shahjahanpur PG-Rosa	2	112	6	150	0.1	112	6	140	0.1	Y									
280	Shree Cement(SCL)-Kota(PG)	1	110	5	150	0.1	110	5	150	0.1	Y									
281	Shree Cement-Merta	2	111	6	150	0.1	111	6	150	0.1	Y									
282	Sikar-Khetri	1	110	5	150	0.1	110	5	150	0.1	Y									
283	Sikar-Khetri	2	112	6	150	0.1	112	6	150	0.1	Y									
284	Sikar(PG)-Ratangarh(RS)	1	110	5	150	0.1	110	5	150	0.1	Y									
285	Sikar(PG)-Ratangarh(RS)	2	112	6	150	0.1	112	6	150	0.1	Y									
286	Sikar_2(PSTL)-Neemrana(PG)	1	110	5	150	0.1	110	5	150	0.1	Y									
287	Sikar_2(PSTL)-Neemrana(PG)	2	112	6	150	0.1	112	6	150	0.1	Y									
288	Singrauli(NT)-Allahabad(PG)	1	110	5	140	0.1	110	5	150	0.1	Y									
289	Singrauli(NT)-Allahabad(PG)	2	111	6	140	0.1	111	6	150	0.1	Y									
290	Singrauli(NT)-Allahabad(PG)	3	112	7	150	0.1	112	7	150	0.1	Y									
291	Singrauli(NT)-Anpara(UP)	1	110	6	140	0.1	110	6	140	0.1	Y									
292	Singrauli(NT)-Fatehpur(PG)	1	110	5	140	0.1	110	5	150	0.1	Y									
293	Singrauli(NT)-Lucknow(UP)	1	111	6	140	0.1	111	6	150	0.1	Y									
294	Singrauli(NT)-Rihand(NT)	1	110	5	140	0.1	110	5	140	0.1	Y									
295	Singrauli(NT)-Rihand(NT)	2	112	6	140	0.1	112	6	140	0.1	Y									
296	Singrauli(NT)-Vindhyachal(PG)	1	110	5	140	0.1	110	5	150	0.1	Y									
297	Singrauli(NT)-Vindhyachal(PG)	2	112	6	140	0.1	112	6	150	0.1	Y									
298	Sohawal-Lucknow(PG)	1	110	5	150	0.1	110	5	150	0.1	Y									
299	Sohawal-Lucknow(PG)	2	112	6	150	0.1	112	6	150	0.1	Y									
300	Sorang(Greenko)-Kala Amb	1	112	6	150	0.1	112	6	150	0.1	Y									
301	Tehri(THDC)-Koteshwar(PG)	3	112	7	150	0.1	112	7	150	0.1	Y									
302	Uri-II(NH) - Uri-I(NH)	1	111	6	140	0.1	111	6	140	0.1	Y									
303	Uri-II(NH) - Wagoora(PG)	1	110	5	150	0.1	110	5	150	0.1	Y									
304	Uri-I(NH) - Amargarh(INDIGRID)	1	110	5	150	0.1	110	5	150	0.1	Y									
305	Uri-I(NH) - Amargarh(INDIGRID)	2	111	6	150	0.1	111	6	150	0.1	Y									
306	Varanasi(PG)-Sahupuri(UP)	1	110	5	150	0.1	110	5	140	0.1	Y									
307	Varanasi(PG)-Sahupuri(UP)	2	112	6	150	0.1	112	6	150	0.1	Y									
308	varanasi-Sasaram IR	1	111	6	150	0.1	111	6	150	0.1	Y									
309	varanasi-Biharshariff IR	1	110	5	150	0.1	110	5	150	0.1	Y									
310	varanasi-Biharshariff IR	2	112	6	150	0.1	112	6	150	0.1	Y									
311	Wagoora-Amargarh	1	110	5	150	0.1	110	5	150	0.1	Y									
312	Wagoora-Amargarh	2	111	6	150	0.1	111	6	150	0.1	Y									
313	Wangtoo(HP)-Kala Amb	1	110	5	150	0.1	110	5	150	0.1	Y									
314	Wangtoo(HP)-Sorang(Greenko)	1	112	6	150	0.1	112	6	150	0.1	Y									
B. Adani Transmission India Ltd. (ATIL) (FBTL)																				
1	Alwar(ATIL)-Hindaun(RS)	1	110	5	150	0.1	110	5	150	0.1	Y									

2	Bhiwani(PG) -Mohindergarh(APL)	1	110	5	150	0.1	110	5	150	0.1	Y									
3	Bhiwani(PG) -Mohindergarh(APL)	2	112	6	150	0.1	112	6	150	0.1	Y									
4	Bhadla(PG)-Bhadla_II	1	110	5	150	0.1	110	5	150	0.1	Y									
5	Bhadla(PG)-Bhadla_II	2	112	6	150	0.1	112	6	150	0.1	Y									
C. UPPTCL (Uttar Pradesh)																				
1	Agra UP-Fatehabad (765kV Agra UP)	1	110	5	140	0.1	110	5	140	0.1	Y									
2	Agra UP-Fatehabad (765kV Agra UP)	2	112	6	150	0.1	112	6	150	0.1	Y									
3	Agra Fatehabad(UP)-Firozabad	1	110	6	150	0.1	110	6	140	0.1	Y									
4	Agra UP-Unnao	1	110	5	140	0.1	110	5	140	0.1	Y									
5	Alakhnanda-Vishnuprayag	1	110	5	140	0.1	110	5	140	0.1	Y									
6	Aligarh-Mainpuri765 (UP)	1	110	5	150	0.1	110	5	140	0.1	Y									
7	Aligarh-Mainpuri765 (UP)	2	112	6	150	0.1	112	6	140	0.1	Y									
8	Aligarh-Muradnagar	1	110	6	150	0.1	110	6	150	0.1	Y									
9	Aligarh-Panki	1	110	6	140	0.1	110	6	140	0.1	Y									
10	Aligarh(UP)-Khurja(THDC)	1	110	5	150	0.1	110	5	140	0.1	Y									
11	Khurja(THDC)-Shamli(UP)	1	111	6	150	0.1	111	6	140	0.1	Y									
12	Aligarh(UP)-Shamli(UP)	2	112	7	150	0.1	112	7	140	0.1	Y									
13	Aligarh-Sikandrabad	1	111	6	140	0.1	111	6	140	0.1	Y									
14	Aligarh-Harduaganj	1	111	6	150	0.1	111	6	150	0.1	Y									
15	AnparaB-AnparaC	1	Only an Extension of Bus therefore overvoltage protection is not enable								Y									
16	AnparaB-AnparaC	2									Y									
17	AnparaB-AnparaD	1	110	5	140	0.1	110	5	140	0.1	Y									
18	AnparaB-AnparaD	2	112	6	140	0.1	112	6	140	0.1	Y									
19	AnparaB-Mau	1	110	6	140	0.1	110	6	140	0.1	Y									
20	AnparaB-Obra	1	111	6	140	0.1	111	6	140	0.1	Y									
21	AnparaB-Sarnath	1	110	5	140	0.1	110	5	140	0.1	Y									
22	AnparaB-Sarnath	2	112	6	140	0.1	112	6	140	0.1	Y									
23	Ataur-Indirapuram	1	112	6	140	0.1	112	6	140	0.1	Y									
24	Ataur-Noida sec123	1	110	5	140	0.1	110	5	140	0.1	Y									
25	Azamgarh-Mau	1	110	5	150	0.1	110	5	140	0.1	Y									
26	Azamgarh-Tanda Stage-II	1	112	6	140	0.1	112	6	140	0.1	Y									
27	Badaun-Sambhal	1	110	6	140	0.1	110	5	150	0.1	Y									
28	Badaun-Sambhal	2	112	6	140	0.1	112	6	150	0.1	Y									
29	Banda-Orai	1	110	5	150	0.1	110	5	150	0.1	Y									
30	Banda-Orai	2	112	6	150	0.1	112	6	150	0.1	Y									
31	Banda-Rewa Road	1	110	5	140	0.1	110	5	140	0.1	Y									
32	Banda-Rewa Road	2	112	6	140	0.1	112	6	140	0.1	Y									
33	Bareilly(UP)-Unnao	1	112	6	145	0.1	112	6	140	0.1	Y									
34	Bareilly(UP)-Unnao	2	110	5	145	0.1	110	5	140	0.1	Y									
35	Fatehabad(UP)-Agra(South)-I	1	110	5	140	0.1	110	5	140	0.1	Y									
36	Fatehabad(UP)-Mathura	1	110	5	150	0.1	110	5	150	0.1	Y									
37	Fatehabad(UP)-Mathura	2	112	6	150	0.1	112	6	150	0.1	Y									
38	Firozabad-Agra(South)	1	111	6	140	0.1	112	6	150	0.1	Y									
39	Firozabad-Jawaharpur	1	110	5	150	0.1	110	5	150	0.1	Y									
40	Firozabad-Jawaharpur	2	112	6	150	0.1	112	6	150	0.1	Y									
41	Gorakhpur UP-Azamgarh	1	111	6	140	0.1	111	6	140	0.1	Y									
42	Gr.Noida4-Gr.Noida7	1	110	5	150	0.1	110	5	140	0.1	Y									
43	Gr.Noida4-Gr.Noida7	2	112	6	150	0.1	112	6	140	0.1	Y									
44	Gr.Noida7-Sikandrabad	1	110	5	140	0.1	110	5	140	0.1	Y									
45	Gr.Noida7-Sikandrabad	2	112	6	140	0.1	112	6	140	0.1	Y									
46	Gr.Noida(765kV)-Noida Sec 148	1	110	5	140	0.1	110	5	140	0.1	Y									
47	Gr.Noida(765kV)-Noida Sec 148	2	112	6	140	0.1	112	6	140	0.1	Y									
48	Hapur-Ataur	1	110	5	140	0.1	110	5	140	0.1	Y									
49	Hapur-Ataur	2	112	6	140	0.1	112	6	140	0.1	Y									
50	Hapur-Dasna	1	110	5	140	0.1	110	5	140	0.1	Y									
51	Hapur-Dasna	2	112	6	140	0.1	112	6	140	0.1	Y									
52	Harduaganj-Sikandrabad	1	110	5	150	0.1	110	5	150	0.1	Y									
53	Jaunpur- Obra C	1	110	5	140	0.1	110	5	140	0.1	Y									
54	Kanpur765-Ghatampur	1	110	5	150	0.1	110	5	150	0.1	Y									
55	Kanpur765-Ghatampur	2	112	6	150	0.1	112	6	150	0.1	Y									
56	Lucknow(PG)-Mohanlalganj(PGYTL)	1	110	5	150	0.1	110	5	150	0.1	Y									
57	Lucknow(UP)-Mohanlalganj(PGYTL)	1	110	5	150	0.1	112	6	150	0.1	Y									
58	Mainpuri(UP)-Mainpuri(PG)	1	110	5	140	0.1	110	5	150	0.1	Y									
59	Mainpuri(UP)-Mainpuri(PG)	2	112	6	140	0.1	112	6	150	0.1	Y									
60	Mainpuri(UP)-Orai-I	1	110	5	140	0.1	110	5	140	0.1	Y									
61	Mainpuri(UP)-Orai-2	2	112	6	140	0.1	112	6	140	0.1	Y									
62	Meja(NTPC)-Bara	1	110	5	140	0.1	110	5	140	0.1	Y									
63	Meja(NTPC)-Bara	2	112	6	140	0.1	112	6	140	0.1	Y									
64	Meja-Masauli	1	110	5	140	0.1	110	5	140	0.1	Y									
65	Meja(NTPC)-Rewa Road	1	111	6	140	0.1	111	6	140	0.1	Y									
66	Muradnagar-Ataur	1	110	5	150	0.1	110	5	140	0.1	Y									
67	Muradnagar New-Mathura	1	110	5	150	0.1	110	5	140	0.1	Y									
68	Muzaffarnagar-Ataur	1	111	6	150	0.1	111	6	140	0.1	Y									
69	Muzaffarnagar-Vishnuprayag	1	110	5	150	0.1	110	5	140	0.1	Y									
70	Muzaffarnagar-Alakhnanda	1	112	6	150	0.1	112	6	140	0.1	Y									
71	Noida sec123-Indirapuram	1	110	5	140	0.1	110	5	140	0.1	Y									
72	Noida Sec 148-Noida Sec 123	1	110	5	140	0.1	110	5	140	0.1	Y									
73	Noida Sec 148-Noida Sec 123	2	112	6	140	0.1	112	6	140	0.1	Y									
74	Obra-B-Sultanpur	1	110	5	140	0.1	110	5	140	0.1	Y									
75	Obra-B - Jaunpur	1	112	6	140	0.1	112	6	140	0.1	Y									
76	Orai-Paricha	1	110	5	140	0.1	110	5	140	0.1	Y									
77	Orai-Paricha	2	112	6	140	0.1	112	6	140	0.1	Y									
78	Panki- Panki TPS	1	110	5	140	0.1	110	5	140	0.1	Y									
79	Panki- Panki TPS	2	112	6	140	0.1	112	6	140	0.1	Y									
80	Rasra-Mau	1	112	6	150	0.1	112	6	150	0.1	Y									
81	Rewa Road-Masauli	1	110	5	140	0.1	110	5	140	0.1	Y									
82	Rewa road-Obra	1	110	6	140	0.1	110	6	140	0.1	Y									
83	Rewa road-Panki	1	111	6	140	0.1	111	6	140	0.1	Y									
84	Roorkee-Muzaffarnagar	1	111	6	150	0.1	111	6	150	0.1	Y									
85	Rosa-Badaun	1	110	5	140	0.1	110	5	140	0.1	Y									
86	Rosa-Badaun	2	112	6	140	0.1	112	6	140	0.1	Y									
87	Sarnath-Azamgarh	1	110	5	140	0.1	110	5	140	0.1	Y									
88	Simbholi-Muradnagar II	1	110	5	150	0.1	110	5	150	0.1	Y									
89	Simbholi-Muradnagar II	2	112	6	150	0.1	112	6	150	0.1	Y									
90	Simbholi-Meerut	1	110	5	150	0.1	110	5	150	0.1	Y									
91	Simbholi-Meerut	2	112	6	150	0.1	112	6	150	0.1	Y									
92	Sultanpur(UP)-Mohanlalganj(PGYTL)	1	110	5	140	0.1	110	5	150	0.1	Y									
93	Sultanpur-Tanda Stage II	1	111	6	150	0.1	111	6	150	0.1	Y									
94	Tanda-Basti	1	110	5	140	0.1	110	5	150	0.1	Y									
95	Tanda-Basti	2	112	6	140	0.1	112	6	150	0.1	Y									
96	Unnao(UP)-Mohanlalganj(PGYTL)	1	110	5	140	0.1	110	5	150	0.1	Y									
97	Unnao-Panki	1	111	6	140	0.1	111	6	140	0.1	Y									
98	Varanasi(PG)-Jaunpur	1	110	5	140	0.1	110	5	140	0.1	Y									
99	Varanasi(PG)-Jaunpur	2	112	6	140	0.1	112	6	141.8	0.1	Y									
D. THDCIL																				
1	Aligarh(PG)-Khurja STPP(TH)	1	110	5	150	0.1	110	5	140	0.1	Y									
2	Aligarh(PG)-Khurja STPP(TH)	2	112	6	150	0.1	112	6	140	0.1	Y									
E. Rajasthan																				
1	Ajmer-Bhilwara-I	1	110	5	140	0.1	110	5	140	0.1	Y									

2	Ajmer-Bhilwara-II	2	112	6	140	0.1	112	6	140	0.1	Y									
3	Ajmer-Deedwana	1	110	5	140	0.1	110	5	150	0.1	Y									
4	Akal-Barmer	1	110	5	150	0.1	110	5	150	0.1	Y									
5	Akal-Bhensra (Jaisalmer2)	1	111	6	150	0.1	111	6	150	0.1	Y									
6	Akal-Jodhpur	1	111	6	150	0.1	110	6	150	0.1	Y									
7	Akal-Kankani (Jodhpur New)	1	112	6	150	0.1	112	6	150	0.1	Y									
8	Akal-Ramgarh	1	110	5	148	0.1	110	5	148	0.1	Y									
9	Akal-Ramgarh	2	112	6	150	0.1	112	6	150	0.1	Y									
10	Anta-Chhabra SCTPS	1	110	5	140	0.1	110	5	140	0.1	Y									
11	Anta-Chhabra SCTPS	2	112	6	140	0.1	112	6	140	0.1	Y									
12	Anta-Kalisindh	1	110	5	140	0.1	110	5	140	0.1	Y									
13	Anta-Sangod	1	112	6	140	0.1	112	6	140	0.1	Y									
14	Sangod-Kalisindh	1	112	6	140	0.1	112	6	140	0.1	Y									
15	Anta-Kawai SCTPS	1	110	5	140	0.1	110	5	140	0.1	Y									
16	Anta-Kawai SCTPS	2	112	6	140	0.1	112	6	140	0.1	Y									
17	Babai - Suratgarh SCTPS	1	106	3	150	0.1	Both lines i.e. 400 KV Babai-SCTPS CKT-I &II CHARGED UP-TO 77 KM ON ANTI-THEFT BASIS FROM 400 KV GSS BABAI END ,SINCE DT. 06.01.2024.				Y									
18	Babai - Suratgarh SCTPS	2	106	4	150	0.1					Y									
19	Barmer-Bhinmal (PG)	1	110	5	150	0.1	110	5	150	0.1	Y									
20	Barmer-Bhinmal (PG)	2	112	6	150	0.1	112	6	150	0.1	Y									
21	Barmer-Rajwest	1	111	6	150	0.1	111	6	150	0.1	Y									
22	Barmer-Bhensra (Jaisalmer2)	1	110	5	150	0.1	110	5	150	0.1	Y									
23	Barmer-Bhensra (Jaisalmer2)	2	112	6	150	0.1	112	6	150	0.1	Y									
24	Bhadla(RS)-Jodhpur	1	110	5	140	0.1	110	5	140	0.1	Y									
25	Bikaner(RS)-Bhadla(RS)	1	110	5	150	0.1	110	5	140	0.1	Y									
26	Bikaner(RS)-Bhadla(RS)	2	112	6	150	0.1	112	6	140	0.1	Y									
27	Bikaner(RS)-Sikar(PG)	1	110	5	150	0.1	110	5	150	0.1	Y									
28	Bikaner(RS)-Deedwana	1	111	6	150	0.1	111	6	140	0.1	Y									
29	Bikaner(RS)-Sikar(PG)	2	112	6	150	0.1	112	6	150	0.1	Y									
30	Bikaner(RS)-Suratgarh SCTPP	1	110	5	150	0.1	110	5	150	0.1	Y									
31	Bikaner(RS)-Suratgarh SCTPP	2	112	6	150	0.1	112	6	150	0.1	Y									
32	Bhilwara-Chhabra	1	111	6	150	0.1	111	6	150	0.1	Y									
33	Bhilwara-Chittorgarh(RS)	1	110	5	150	0.1	110	5	150	0.1	Y									
34	Bhilwara-Chittorgarh(RS)	2	112	6	150	0.1	112	6	150	0.1	Y									
35	Chhabra-Chhabra SCTPS	1	Only an Extension of Bus therefore overvoltage protection is not enabled								Y									
36	Chhabra-Chhabra SCTPS	2									Y									
37	Chhabra-Kawai	1	110	5	140	0.1	110	5	140	0.1	Y									
38	Chhabra-Anta (RS) -Kota (PG)	1	112	6	140	0.1	112	6	150	0.1	Y									
39	Heerapura-Hindaun	1	110	5	150	0.1	110	5	150	0.1	Y									
40	Hindaun-Chabra TPS	1	112	7	150	0.1	112	7	150	0.1	Y									
41	Jaisalmer(RS)-Renew hans Urja Pvt Ltd	1	110	5	150	0.1	110	5	150	0.1	Y									
42	Jaisalmer(RS)-Corneight Parks Pvt. Ltd	1	111	6	150	0.1	111	6	150	0.1	Y									
43	Kankani (Jodhpur New)- Bhensra (Jaisalmer2)	1	111	5	148	0.1	111	5	148	0.1	Y									
44	Kankani (Jodhpur New)-Merta	1	110	5	150	0.1	110	5	150	0.1	Y									
45	Kankani (Jodhpur New)-Jodhpur	1	110	5	140	0.1	110	5	140	0.1	Y	110	6	140	0.1					
46	Kankani (Jodhpur New)-Jodhpur	2	112	6	140	0.1	110	5	140	0.1	Y					112	6	140	0.1	
47	Kankani (Jodhpur New)-Pachpadra	1	111	6	150	0.1	111	6	150	0.1	Y									
48	Rajwest-Pachpadra	1	111	5	150	0.1	110	5	150	0.1	Y									
49	Merta-Bikaner(RS)	1	110	5	150	0.1	110	5	150	0.1	Y									
50	Merta-Heerapura	1	111	6	150	0.1	111	6	150	0.1	Y									
51	Merta-Bhadla(RS)	1	112	5	150	0.1	112	6	150	0.1	Y									
52	Merta-Ratangarh	1	112	6	150	0.1	112	6	150	0.1	Y									
53	Phagi-Ajmer(RS)	1	110	5	140	0.1	110	5	140	0.1	Y									
54	Phagi-Ajmer(RS)	2	112	6	140	0.1	112	6	140	0.1	Y									
55	Phagi-Heerapura	1	110	5	140	0.1	110	5	150	0.1	Y									
56	Phagi-Heerapura	2	112	6	140	0.1	112	6	150	0.1	Y									
57	Rajwest-Jodhpur	1	110	5	150	0.1	110	5	140	0.1	Y									
58	Ramgarh-Bhadla(RS)	1	110	5	150	0.1	110	5	150	0.1	Y									
59	Ramgarh-Bhadla(RS)	2	112	6	150	0.1	112	6	150	0.1	Y									
60	Suratgarh-Bikaner(RS)	1	111	6	150	0.1	111	6	150	0.1	Y									
61	Suratgarh-Ratangarh	1	110	5	150	0.1	110	5	150	0.1	Y									
62	Suratgarh-Ratangarh	2	112	6	150	0.1	112	6	150	0.1	Y									
63	Suratgarh-Suratgarh SSCTPP	1	Only an Extension of Bus therefore overvoltage protection is not enabled								Y									
64	Suratgarh-Suratgarh SSCTPP	2									Y									
F. HVPNL (Haryana)																				
1	CLP Jhajjar (MGSTPS) -Dhanonda	1	110	5	150	0.1	110	5	140	0.1	Y									
2	CLP Jhajjar (MGSTPS) -Dhanonda	2	112	6	150	0.1	112	6	140	0.1	Y									
3	CLP Jhajjar(MGSTPS)- Kabulpur	1	110	5	150	0.1	110	5	150	0.1	Y									
4	CLP Jhajjar(MGSTPS)- Kabulpur	2	112	6	150	0.1	112	6	150	0.1	Y									
5	Deepalpur-Kabulpur	1	110	5	150	0.1	110	5	150	0.1	Y									
6	Deepalpur-Kabulpur	2	112	6	150	0.1	112	6	150	0.1	Y									
7	Dhanonda-Daulatabad	1	110	5	140	0.1	110	5	150	0.1	Y									
8	Dhanonda-Daulatabad	2	112	6	140	0.1	112	6	150	0.1	Y									
9	Gurgaon-Daulatabad	1	110	5	150	0.1	110	5	150	0.1	Y									
10	Gurgaon-Daulatabad	2	112	6	150	0.1	112	6	150	0.1	Y									
11	Jhajjar(IGSTPS)-Daulatabad	1	110	5	150	0.1	110	5	150	0.1	Y									
12	Jhajjar(IGSTPS)-Daulatabad	2	112	6	150	0.1	112	6	150	0.1	Y									
13	Jind-Kirori	1	110	5	150	0.1	110	5	150	0.1	Y									
14	Jind-Kirori	2	112	6	150	0.1	112	6	150	0.1	Y									
15	Khedar-Fathehabad	1	111	6	150	0.1	111	6	150	0.1	Y									
16	Khedar-Kirori	1	110	5	150	0.1	110	5	150	0.1	Y									
17	Khedar-Kirori	2	112	6	150	0.1	112	6	150	0.1	Y									
18	Khedar-Nuhiyawali	1	111	6	150	0.1	111	6	150	0.1	Y									
19	Nuhiawali-Fathehabad	1	110	5	150	0.1	110	5	150	0.1	Y									
G.APCPL																				
1	Jhajjar (IGSTPS)-Mundka	1	110	5	140	0.1	110	5	150	0.1	Y									
2	Jhajjar (IGSTPS)-Mundka	2	112	6	140	0.1	112	6	150	0.1	Y									
H. DTL (Delhi)																				
1	Ballabgarh(PG)-Tughlakabad(PG)	1	110	5	150	0.1	110	5	150	0.1	Y									
2	Ballabgarh(PG)-Tughlakabad(PG)	2	112	6	150	0.1	112	6	150	0.1	Y									
3	Bamnoli-Jhatikra	2	111	6	150	0.1	111	6	150	0.1	Y									
4	Bamnauli(PG)-Tughlakabad(PG)	1	110	5	150	0.1	110	5	150	0.1	Y									
5	Bamnauli(PG)-Tughlakabad(PG)	2	112	6	150	0.1	112	6	150	0.1	Y									
6	Bawana(DV)-Maharanibagh(PG)	1	110	5	150	0.1	110	5	150	0.1	Y									
7	Bawana(DV)-Maharanibagh(PG)	2	112	6	150	0.1	112	6	150	0.1	Y									
8	Jhatikra(PG)-Mundka(DV)	1	110	5	150	0.1	110	5	150	0.1	Y									
9	Jhatikra(PG)-Mundka(DV)	2	112	6	150	0.1	112	6	150	0.1	Y									
10	Mandola(PG)-Maharanibagh(PG)	1	110	5	150	0.1	110	5	150	0.1	Y									
11	Mandola(PG)-Maharanibagh(PG)	2	112	6	150	0.1	112	6	150	0.1	Y									
12	Bawana-Mundka	1	110	5	150	0.1	110	5	150	0.1	Y									
13	Bawana-Mundka	2	112	6	150	0.1	112	6	150	0.1	Y									
I. PDD (J&K)																				
1	Baglihar-Kishenpur	1	110	5	150	0.1	110	5	150	0.1	N									
2	Baglihar-Kishenpur	2	111	6	150	0.1	111	6	150	0.1	N									

3	Baglihar-Kishenpur	3	112	7	150	0.1	112	7	150	0.1	N									
4	New Wanpoh-Baglihar(JK)	1	111	6	150	0.1	111	6	150	0.1	N									
J. PSTCL (Punjab)																				
1	Behman Jassa Singh-HMEL	1	110	5	150	0.1	110	5	150	0.1	Y									
2	Behman Jassa Singh-HMEL	2	112	6	150	0.1	112	6	150	0.1	Y									
3	Behman Jassa Singh-Moga	1	112	6	150	0.1	112	6	150	0.1	Yes(Behman Jass)									
4	Makhu-Amritsar	1	110	5	150	0.1	110	5	150	0.1	Yes(Makhu)									
5	Makhu-Amritsar	2	112	6	150	0.1	112	6	150	0.1	Yes(Makhu)									
6	Makhu-Mukatsar	1	110	5	150	0.1	110	5	150	0.1	Y									
7	Makhu-Mukatsar	2	112	6	150	0.1	112	6	150	0.1	Yes(Makhu)									
8	Nakodar-Makhu	1	110	5	150	0.1	110	5	150	0.1	Y									
9	Nakodar-Makhu	2	112	6	150	0.1	112	6	150	0.1	Yes(Makhu)									
10	Nakodar-Moga	1	110	5	150	0.1	110	5	150	0.1	Yes(Nakodar)									
11	Rajpura-Rajpura TPS	1	110	5	150	0.1	110	5	150	0.1	Y									
12	Rajpura-Dhuri	1	110	5	150	0.1	110	5	150	0.1	Y									
13	Rajpura-Rajpura TPS	2	112	6	150	0.1	112	6	150	0.1	Need to be reviewed	115	5	150	0.1	115	5	150	0.1	
14	Rajpura-Dhuri	2	112	6	150	0.1	112	6	150	0.1	Yes(Rajpura)									
15	Rajpura TPS-Nakodar	1	110	5	140	0.1	110	5	150	0.1	Need to be reviewed	112	6	140	0.1	112	6	150	0.1	
16	Rajpura TPS-Nakodar	2	112	6	140	0.1	112	6	150	0.1	Need to be reviewed	110	3	140	0.1	110	3	150	0.1	
17	Talwandi Sabo-Dhuri	1	110	5	140	0.1	110	5	150	0.1	Yes(Dhuri)									
18	Talwandi Sabo-Dhuri	2	112	6	140	0.1	112	6	150	0.1	N									
19	Talwandi Sabo-Behman-Jassa	1	111	6	140	0.1	111	6	150	0.1	Yes(Behman Jass)									
21	Talwandi Sabo-Nakodar	1	112	6	140	0.1	112	6	150	0.1	N									
22	Talwandi Sabo-Mukatsar	1	110	5	140	0.1	110	5	150	0.1	Yes(Muktsar)									
23	Talwandi Sabo-Mukatsar	2	112	6	140	0.1	112	6	150	0.1	N									
K. PTCUL (Uttrakhand)																				
1	Muradabad-Kashipur	1	110	5	150	0.1	110	5	150	0.1	Y									
2	Rishikesh-Nehtaur	1	110	5	140	0.1	110	5	140	0.1	Y									
3	Kashipur-Nehtaur	1	110	5	140	0.1	112	6	140	0.1	Y									
4	Roorkee-Muzaffarnagar	1	110	5	150	0.1	110	5	150	0.1	Y									
5	Roorkee-Rishikesh	1	112	6	150	0.1	112	6	140	0.1	Y									
6	Srinagar-Alakhnanda (GVK)	1	110	5	150	0.1	110	5	140	0.1	Y									
7	Srinagar-Alakhnanda (GVK)	2	112	6	150	0.1	112	6	140	0.1	Y									
L. HPPTCL																				
1	Chamba(PG)-Kuther(JSW)	1	110	5	150	0.1	110	5	150	0.1	Y									
2	Kuther(JSW)-Lahal(HP)	2	112	6	150	0.1	112	6	150	0.1	Y					111	6	150	0.1	
2	Chamba(PG)-Lahal(HP)	2	112	6	150	0.1	112	6	150	0.1	Y					112	7	150	0.1	
M. BBMB																				
1	Bhiwani-Rajpura	1	111	6	150	0.1	111	6	150	0.1	Y									
2	Dehar-Rajpura	1	112	6	150	0.1	112	6	140	0.1	Y									
3	Dehar-Panchkula	1	110	5	150	0.1	110	5	150	0.1	Y									
4	Panchkula-Panipat	1	111	6	150	0.1	111	6	150	0.1	Y									
N. INDIGRID																				
1	Amargarh-Samba	1	110	5	150	0.1	110	5	150	0.1	Y									
2	Amargarh-Samba	2	111	6	150	0.1	111	6	150	0.1	Y									
3	Jalandhar-Samba	1	110	5	150	0.1	110	5	150	0.1	Y									
4	Jalandhar-Samba	2	112	6	150	0.1	112	6	150	0.1	Y									
5	Koldam-Parbati Pooling Banala	2	112	6	150	0.1	112	6	150	0.1	Y									
6	Ludhiana-Koldam	1	110	5	150	0.1	110	5	150	0.1	Y									
7	Koldam-Ropar	1	112	6	140	0.1	112	6	140	0.1	Y									
8	Parbati Pool Banala-Nallagarh	1	110	5	150	0.1	110	5	150	0.1	Y									
9	Parbati-II- Parbati Pooling Banala	2	112	5	150	0.1	112	6	150	0.1	Y									
10	Parbati-III- Parbati Pooling Banala	2	112	6	150	0.1	112	6	150	0.1	Y									
11	Prithala(GPTL)-Kadarpur	1	110	5	150	0.1	110	5	140	0.1	Y									
12	Prithala(GPTL)-Kadarpur	2	112	6	150	0.1	112	6	140	0.1	Y									
13	Prithala(GPTL)-Aligarh(PG)	1	110	5	150	0.1	110	5	150	0.1	Y									
14	Prithala(GPTL)-Aligarh(PG)	2	112	6	150	0.1	112	6	150	0.1	Y									
15	RAPPC-Shujalpur IR	1	110	5	150	0.1	110	5	140	0.1	Y									
16	RAPPC-Shujalpur IR	2	112	6	150	0.1	112	6	140	0.1	Y									
17	Ropar(PS)-Ludhiana(PG)	1	112	6	150	0.1	112	6	150	0.1	Y									
18	Sainj(HP)-Parbati II	1	110	5	140	0.1	110	5	140	0.1	Y									
19	Sainj(HP)-Parbati III	1	110	5	140	0.1	110	5	140	0.1	Y									
20	Sohna Road(GPTL)-Kadarpur	1	110	5	150	0.1	110	5	140	0.1	Y									
21	Sohna Road(GPTL)-Kadarpur	2	112	6	150	0.1	112	6	140	0.1	Y									
O. NTPC																				
1	Dadri(NT)-Loni Road/ Harsh Vihar	1	110	5	140	0.1	110	5	140	0.1	Y									
2	Dadri(NT)-Loni Road/ Harsh Vihar	2	112	6	140	0.1	112	6	140	0.1	Y									
P. NRSS36																				
1	Babai(RS)-Bhiwani(PG)	1	110	5	150	0.1	110	5	150	0.1	Y									
2	Babai(RS)-Bhiwani(PG)	2	112	6	150	0.1	112	6	150	0.1	Y									
3	Babai(RS)-Neemrana(PG)	1	110	5	150	0.1	110	5	150	0.1	Y									
4	Babai(RS)-Sikar(PG)	1	112	6	150	0.1	112	6	150	0.1	No, Presently end 1 set on 110% instead of 112% and directed to implemented as per NRPC	111	6	150	0.1					
Q. NRSSXXXI(B) (Sekura Energy)																				
1	Amritsar-Malerkotla	1	110	5	150	0.1	110	5	150	0.1	Y									
2	Amritsar-Malerkotla	2	112	6	150	0.1	112	6	150	0.1	Y									
3	Kurukshetra-Malerkotla	1	110	5	150	0.1	110	5	150	0.1	Y									
4	Kurukshetra-Malerkotla	2	112	6	150	0.1	112	6	150	0.1	Y									
R. RENEW Power Limited																				
1	Bikaner(PG) - Bikaner (ReNew)	1	110	5	150	0.1	110	5	150	0.1										
1	Renew SuryaRavi SL_BKN_PG-Bikaner RENEW Solar	1	110	5	150	0.1	110	5	150	0.1										
S. Azure																				
1	Bikaner(PG)-Azure43 PSS	1	110	5	150	0.1	110	5	150	0.1										
2	Azure43 PSS-Azure43 RSS	1	110	5	150	0.1	110	5	150	0.1										
T. AEPL																				
1	Bikaner(PG)-Avada	1	110	5	150	0.1	110	5	150	0.1										
U. AYANA																				
1	Ayana-ARP3PL	1	110	5	150	0.1	110	5	150	0.1										
2	Bikaner(PG)-Ayana	1	110	5	150	0.1	110	5	150	0.1										
V. ADANI GREEN																				
1	AGE25L-Bhadla2(PG)	1	110	5	150	0.1	110	5	150	0.1										
2	AREPRL-Fatehgarh Pooling	1	110	5	150	0.1	110	5	150	0.1										
3	AREPRL-Fatehgarh Pooling	2	112	6	150	0.1	112	6	150	0.1										
W. NTPC GREEN																				
1	Bhadla_2 (PG)-Kolayat Solar NTPC_1	1	110	5	150	0.1	110	5	150	0.1										
2	Kolayat Solar NTPC_1 Kolayat Solar NTPC_2	1	110	5	150	0.1	110	5	150	0.1										
X. ACME																				
1	Fatehgarh Pooling(FBTL)-ACME Deoghar	1	110	5	150	0.1	110	5	150	0.1										
Y. SJVNGEL																				
1	400kV SJVN_GEL_SL_BKN2-Bikaner_2 (PBTSL)	1	110	5	150	0.1	110	5	150	0.1										

State Name	Defense Scheme	Planned Relief (MW)	Mapped Relief (MW)	No. of Main feeders Planned	No. of Main feeders Telemetered	No. of Alternate feeders Telemetered
UP	UFR	5958.843				
	df/dt	2561.92				
Rajasthan	UFR	4055.282				
	df/dt	776				
Punjab	UFR	3008.19				
	df/dt	1410				
Haryana	UFR	2631.661				
	df/dt	900				
Delhi	UFR	1496.69				
	df/dt	809.36				
HP	UFR	486.231				
	df/dt	190				

S.N.	Name of S/stn (including voltage level)	Name of feeder/transformer (including voltage level)	UFR Stage-wise Estimated Load relief (MW)			
			49.4 Hz	49.2 Hz	49.0 Hz	48.8 Hz

S.N.	Name of S/stn (including voltage level)	Name of feeder/transformer (including voltage level)	df/dt Stage-wise Estimated Load relief (MW)		
			49.9 Hz; 0.1Hz/s	49.9 Hz; 0.2Hz/s	49.9 Hz; 0.3Hz/s

Zone 3 Setting Revision for Line W3 of TPSP (Due to New KPS-Rishikesh Line)

Parameter	Value	Unit	Remarks
TPSP Line 3 length	13.5	km	
TPSP Line 3 Impedance	2	ohm	On Secondary Side (Based on Previous Inputs from Site and present line setting document received)
New Line (KPS to Rishikesh) Length	38.5	Km	
New Line (KPS to Rishikesh) Impedance	0.3125	ohm/km/phase	
CTR	2000/1		
PTR	420/110		
New Line Total Impedance (Primary) ZN	12.03125		
New Line Total Impedance (Secondary)	6.302083333	Ohm	ZN X CTR/PTR
Zone 3 Impedance Setting	9.9625	ohm	120% of (Protected Line+ Adjacent Longest Line)

Zone 3 Setting for Line W3 of TPSP (Old)

Parameter	Value	Unit	Remarks
CTR	2000/1		
PTR	420 kV/110 V		
TPSP Line 3 length	13.5	km	
Line W3 Positive Phase Sequence resistance	0.013469	Ohm/km	
Line W3 Positive Phase Sequence reactance	0.2827	Ohm/km	
Tehri-KPS Line W2 Length	16.49	Km	Resistance/reactance of Line W3 & W2 were same as per inputs received from TPSP project sites.
TPSP Line W3 Impedance	13.5*(0.013469+j0.2827) = 3.821 Angle 87.3^0	ohm	
TPSP Line W3 Impedance on secondary side	2	Ohm	
Zone 3 Setting (Primary)	1.2*(0.013469+j0.2827)*(13.5+16.49) = 10.18	Ohm	
Zone 3 Setting (Secondary)	10.18 X CTR/PTR= 5.33	Ohm	

Settings File Report
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File: 000.set
Model Number: P443916B6M0790M

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SYSTEM DATA
- 00.01: Language: English
- 00.02: Password: ********
- 00.03: Sys Fn Links: 0
- 00.04: Description: TEHRI (THDC)
- 00.05: Plant Reference: LINE3 TEHRI-KOT.
- 00.06: Model Number: P443916B6M0790M
- 00.08: Serial Number: 167463Y
- 00.09: Frequency: 50 Hz
- 00.0A: Comms Level: 2
- 00.0B: Relay Address: 2
- 00.0C: Plant Status: 0000000000000010
- 00.0D: Control Status: 0000000000000000
- 00.0E: Active Group: 2
- 00.10: CB Trip/Close: No Operation
- 00.11: Software Ref. 1: P443____6A_790_F
- 00.20: Opto I/P Status: 10000000000011110000100
- 00.21: Relay O/P Status: 00000000000000000000000000000000
- 00.22: Alarm Status 1: 00000000000000000000000000000000
- 00.50: Alarm Status 1: 00000000000000000000000000000000
- 00.51: Alarm Status 2: 00000000000000000000000000000000
- 00.52: Alarm Status 3: 00000000000000000000000000000000
- 00.D0: Access Level: 3
- 00.D2: Password Level 1: ********
- 00.D3: Password Level 2: ********
- 00.D4: Password Level 3: ********
- 00.DF: Security Feature: 1

CB CONTROL
- 07.01: CB Control by: Disabled
- 07.02: Close Pulse Time: 500.0 ms
- 07.03: Trip Pulse Time: 500.0 ms
- 07.08: CB mon LO reset: No
- 07.09: Rst CB mon LO by: User Interface
- 07.0B: Autoreclose Mode: No Operation
- 07.0E: AR Status: Out of Service
- 07.11: CB Status Input: 52A 1 pole
- 07.7F: CB Status Time: 5.000 s
- 07.82: Reset AROK Ind: No
- 07.83: Reset CB LO: No
- 07.85: CB Total Shots: 55
- 07.86: CB SUCC SPAR: 27
- 07.87: CB SUCC3PARShot1: 2
- 07.88: CB SUCC3PARShot2: 0
- 07.89: CB SUCC3PARShot3: 0
- 07.8A: CB SUCC3PARShot4: 0
- 07.8B: CB Failed Shots: 25
- 07.8C: Reset CB Shots: No
- 07.96: Res AROK by UI: Enabled
- 07.97: Res AROK by NoAR: Disabled
- 07.98: Res AROK by Ext: Disabled
- 07.99: Res AROK by TDly: Disabled
- 07.9B: Res LO by CB IS: Enabled
- 07.9C: Res LO by UI: Enabled
- 07.9D: Res LO by NoAR: Disabled
- 07.9E: Res LO by ExtDDB: Disabled
- 07.9F: Res LO by TDelay: Disabled

DATE AND TIME
- 08.01: Date/Time: 2026-02-20 16:24:31.812
- 08.06: Battery Status: Healthy
- 08.07: Battery Alarm: Enabled
- 08.20: LocalTime Enable: Fixed

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- 08.21: LocalTime Offset: 330.0 min
- 08.22: DST Enable: Disabled

CONFIGURATION

- 09.01: Restore Defaults: No Operation
- 09.02: Setting Group: Select via Menu
- 09.03: Active Settings: Group 2
- 09.04: Save Changes: No Operation
- 09.05: Copy From: Group 1
- 09.06: Copy To: No Operation
- 09.07: Setting Group 1: Disabled
- 09.08: Setting Group 2: Enabled
- 09.09: Setting Group 3: Disabled
- 09.0A: Setting Group 4: Disabled
- 09.0B: Distance: Enabled
- 09.0C: Directional E/F: Disabled
- 09.10: Overcurrent: Disabled
- 09.11: Neg Sequence O/C: Disabled
- 09.12: Broken Conductor: Enabled
- 09.13: Earth Fault: Enabled
- 09.15: SEF/REF Prot'n: Disabled
- 09.16: Residual O/V NVD: Disabled
- 09.17: Thermal Overload: Disabled
- 09.18: PowerSwing Block: Enabled
- 09.1D: Volt Protection: Enabled
- 09.1E: Freq Protection: Disabled
- 09.1F: df/dt Protection: Disabled
- 09.20: CB Fail: Disabled
- 09.21: Supervision: Enabled
- 09.23: System Checks: Enabled
- 09.24: Auto-Reclose: Enabled
- 09.25: Input Labels: Visible
- 09.26: Output Labels: Visible
- 09.28: CT & VT Ratios: Visible
- 09.29: Record Control: Invisible
- 09.2A: Disturb Recorder: Visible
- 09.2B: Measure't Setup: Invisible
- 09.2C: Comms Settings: Visible
- 09.2D: Commission Tests: Visible
- 09.2E: Setting Values: Secondary
- 09.2F: Control Inputs: Invisible
- 09.35: Ctrl I/P Config: Invisible
- 09.36: Ctrl I/P Labels: Invisible
- 09.39: Direct Access: Enabled
- 09.50: Function Key: Invisible
- 09.FB: RP1 Read Only: Disabled
- 09.FD: NIC Read Only: Disabled
- 09.FF: LCD Contrast: 11

CT AND VT RATIOS

- 0A.01: Main VT Primary: 420.0 kV
- 0A.02: Main VT Sec'y: 110.0 V
- 0A.03: CS VT Primary: 420.0 kV
- 0A.04: CS VT Secondary: 110.0 V
- 0A.07: Phase CT Primary: 2000 A
- 0A.08: Phase CT Sec'y: 1.000 A
- 0A.0B: SEF CT Primary: 2000 A
- 0A.0C: SEF CT Secondary: 1.000 A
- 0A.0D: MComp CT Primary: 2000 A
- 0A.0E: MComp CT Sec'y: 1.000 A
- 0A.0F: CS Input: AB
- 0A.10: Main VT Location: Line
- 0A.11: CT Polarity: Standard

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- 0A.13: SEF CT Polarity: Standard
- 0A.14: M CT Polarity: Standard
- 0A.21: CS VT Ph Shift: 0 deg
- 0A.22: CS VT Mag: 1.000

DISTURB RECORDER

- 0C.01: Duration: 1.500 s
- 0C.02: Trigger Position: 33.30 %
- 0C.03: Trigger Mode: Single
- 0C.04: Analog Channel 1: VA
- 0C.05: Analog Channel 2: VB
- 0C.06: Analog Channel 3: VC
- 0C.07: Analog Channel 4: IA
- 0C.08: Analog Channel 5: IB
- 0C.09: Analog Channel 6: IC
- 0C.0A: Analog Channel 7: IN
- 0C.0B: Analog Channel 8: IN Sensitive
- 0C.0C: Digital Input 1: Any Dist Start
- 0C.0D: Input 1 Trigger: Trigger L/H
- 0C.0E: Digital Input 2: Any Trip
- 0C.0F: Input 2 Trigger: Trigger L/H
- 0C.10: Digital Input 3: Trip Output A
- 0C.11: Input 3 Trigger: Trigger L/H
- 0C.12: Digital Input 4: Trip Output B
- 0C.13: Input 4 Trigger: Trigger L/H
- 0C.14: Digital Input 5: Trip Output C
- 0C.15: Input 5 Trigger: Trigger L/H
- 0C.16: Digital Input 6: Zone 1 Trip
- 0C.17: Input 6 Trigger: Trigger L/H
- 0C.18: Digital Input 7: Zone 2 Trip
- 0C.19: Input 7 Trigger: Trigger L/H
- 0C.1A: Digital Input 8: Zone 3 Trip
- 0C.1B: Input 8 Trigger: Trigger L/H
- 0C.1C: Digital Input 9: Zone P Trip
- 0C.1D: Input 9 Trigger: Trigger L/H
- 0C.1E: Digital Input 10: Zone 4 Trip
- 0C.1F: Input 10 Trigger: Trigger L/H
- 0C.20: Digital Input 11: Power Swing
- 0C.21: Input 11 Trigger: Trigger L/H
- 0C.22: Digital Input 12: SOTF Trip Zone 1
- 0C.23: Input 12 Trigger: Trigger L/H
- 0C.24: Digital Input 13: SOTF Trip Zone 2
- 0C.25: Input 13 Trigger: Trigger L/H
- 0C.26: Digital Input 14: TOR Trip Zone 1
- 0C.27: Input 14 Trigger: Trigger L/H
- 0C.28: Digital Input 15: Aid 1 Dist Trip
- 0C.29: Input 15 Trigger: Trigger L/H
- 0C.2A: Digital Input 16: AR 1pole in prog
- 0C.2B: Input 16 Trigger: Trigger L/H
- 0C.2C: Digital Input 17: Trip 3ph
- 0C.2D: Input 17 Trigger: Trigger L/H
- 0C.2E: Digital Input 18: AR Initiation
- 0C.2F: Input 18 Trigger: Trigger L/H
- 0C.30: Digital Input 19: V>1 Trip
- 0C.31: Input 19 Trigger: Trigger L/H
- 0C.32: Digital Input 20: V>2 Trip
- 0C.33: Input 20 Trigger: Trigger L/H
- 0C.34: Digital Input 21: Broken Line Trip
- 0C.35: Input 21 Trigger: Trigger L/H
- 0C.36: Digital Input 22: IN>1 Trip
- 0C.37: Input 22 Trigger: Trigger L/H
- 0C.38: Digital Input 23: IN>2 Trip

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- 0C.39: Input 23 Trigger: Trigger L/H
- 0C.3A: Digital Input 24: I>1 Trip
- 0C.3B: Input 24 Trigger: Trigger L/H
- 0C.3C: Digital Input 25: CB Succ 1P AR
- 0C.3D: Input 25 Trigger: Trigger L/H
- 0C.3E: Digital Input 26: Relay 32
- 0C.3F: Input 26 Trigger: Trigger L/H
- 0C.40: Digital Input 27: Opto 8
- 0C.41: Input 27 Trigger: Trigger L/H
- 0C.42: Digital Input 28: Opto 9
- 0C.43: Input 28 Trigger: Trigger L/H
- 0C.44: Digital Input 29: Opto 10
- 0C.45: Input 29 Trigger: Trigger L/H
- 0C.46: Digital Input 30: Opto 11
- 0C.47: Input 30 Trigger: Trigger L/H
- 0C.48: Digital Input 31: Opto 12
- 0C.49: Input 31 Trigger: Trigger L/H
- 0C.4A: Digital Input 32: Opto 13
- 0C.4B: Input 32 Trigger: Trigger L/H
- 0C.50: Analog Channel 9: V Checksync
- 0C.51: Analog Channel10: IM
- 0C.52: Analog Channel11: Max Ih(2)
- 0C.70: Digital Input 33: Opto 14
- 0C.71: Digital Input 34: Opto 15
- 0C.72: Digital Input 35: Opto 16
- 0C.73: Digital Input 36: Opto 17
- 0C.74: Digital Input 37: Opto 18
- 0C.75: Digital Input 38: Opto 19
- 0C.76: Digital Input 39: Opto 20
- 0C.77: Digital Input 40: Opto 21
- 0C.78: Digital Input 41: Opto 22
- 0C.79: Digital Input 42: Opto 23
- 0C.7A: Digital Input 43: Opto 23
- 0C.7B: Digital Input 44: Relay 1
- 0C.7C: Digital Input 45: Relay 2
- 0C.7D: Digital Input 46: Relay 3
- 0C.7E: Digital Input 47: Relay 4
- 0C.7F: Digital Input 48: Relay 5
- 0C.80: Digital Input 49: Relay 9
- 0C.81: Digital Input 50: Relay 10
- 0C.82: Digital Input 51: Relay 11
- 0C.83: Digital Input 52: Relay 18
- 0C.84: Digital Input 53: Relay 8
- 0C.85: Digital Input 54: Relay 23
- 0C.86: Digital Input 55: Relay 29
- 0C.87: Digital Input 56: Unused
- 0C.88: Digital Input 57: Unused
- 0C.89: Digital Input 58: Unused
- 0C.8A: Digital Input 59: Unused
- 0C.8B: Digital Input 60: Unused
- 0C.8C: Digital Input 61: Unused
- 0C.8D: Digital Input 62: Unused
- 0C.8E: Digital Input 63: Unused
- 0C.8F: Digital Input 64: Unused

COMMISSION TESTS

- 0F.01: Opto I/P Status: 100000000000011110000100
- 0F.02: Relay O/P Status: 00000000000000000000000000000000
- 0F.03: Test Port Status: 00000000
- 0F.05: Monitor Bit 1: 1060
- 0F.06: Monitor Bit 2: 1062
- 0F.07: Monitor Bit 3: 1064

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0F.08: Monitor Bit 4: 1066
0F.09: Monitor Bit 5: 1068
0F.0A: Monitor Bit 6: 1070
0F.0B: Monitor Bit 7: 1072
0F.0C: Monitor Bit 8: 1074
0F.0D: Test Mode: Disabled
0F.0E: Test Pattern: 00000000000000000000000000000000
0F.0F: Contact Test: No Operation
0F.10: Test LEDs: No Operation
0F.11: Test Autoreclose: No Operation
0F.12: Static Test: Disabled
0F.13: Test Loopback: Disabled
0F.18: IM64CH1 TestPATN: 00000000000000000000000000
0F.19: IM64CH2 TestPATN: 00000000000000000000000000
0F.1A: Red LED Status: 000000000000000000
0F.1B: Green LED Status: 000000011100000000
0F.20: DDB 31 - 0: 00000000000000000000000000000000
0F.21: DDB 63 - 32: 00000000100000000000011110000100
0F.22: DDB 95 - 64: 00000000000000000000000000000000
0F.23: DDB 127 - 96: 00000000000000000000000000000000
0F.24: DDB 159 - 128: 00000000000000000000000000000000
0F.25: DDB 191 - 160: 00000000000000000000000000000000
0F.26: DDB 223 - 192: 00000000000000000000000000000000
0F.27: DDB 255 - 224: 00000000000000000000000000000000
0F.28: DDB 287 - 256: 00000000000000000000000000000000
0F.29: DDB 319 - 288: 00000000000000000000000000000000
0F.2A: DDB 351 - 320: 00000000000000000000000000000000
0F.2B: DDB 383 - 352: 00000000000000000000000000000000
0F.2C: DDB 415 - 384: 00000000000000000000000000000000
0F.2D: DDB 447 - 416: 00000000000100000000000011100000
0F.2E: DDB 479 - 448: 00000000000000000000000000000000
0F.2F: DDB 511 - 480: 00000000000000000000000000000000
0F.30: DDB 543 - 512: 00000000000000000000000000000000
0F.31: DDB 575 - 544: 00000000000000111000000000000000
0F.32: DDB 607 - 576: 00000000000000000000000000000000
0F.33: DDB 639 - 608: 00000000000000000000000000000000
0F.34: DDB 671 - 640: 00000000000000000000000000000000
0F.35: DDB 703 - 672: 00000000000000000000000000000000
0F.36: DDB 735 - 704: 00000000000000000000000000000000
0F.37: DDB 767 - 736: 00000000000000000000000000000000
0F.38: DDB 799 - 768: 00000000000000000000000000000000
0F.39: DDB 831 - 800: 00000000000000000000000000000000
0F.3A: DDB 863 - 832: 00001000000000000100000000000000
0F.3B: DDB 895 - 864: 00000001100001100000001000000000
0F.3C: DDB 927 - 896: 00000000000000000111100000010100
0F.3D: DDB 959 - 928: 00000000000000000000000000000000
0F.3E: DDB 991 - 960: 00000000000000000000000000000000
0F.3F: DDB 1023 - 992: 00000000000000000000000000000000
0F.40: DDB 1055 - 1024: 00000000001010100000000000000000
0F.41: DDB 1087 - 1056: 00000010101000000000000000000000
0F.42: DDB 1119 - 1088: 00000000000000000000000000000000
0F.43: DDB 1151 - 1120: 00000000000000000000000000000000
0F.44: DDB 1183 - 1152: 11010101000000000000000000000000
0F.45: DDB 1215 - 1184: 00000000000000000000000100000000
0F.46: DDB 1247 - 1216: 00000000000000000000000000000000
0F.47: DDB 1279 - 1248: 00000000000000000000000000000000
0F.48: DDB 1311 - 1280: 00000000000011100000000000000000
0F.49: DDB 1343 - 1312: 00000000000000000000000000000000
0F.4A: DDB 1375 - 1344: 00000000000000000000010000000000
0F.4B: DDB 1407 - 1376: 00000000000000000000000000000000
0F.4C: DDB 1439 - 1408: 00000000000000000000000000000000

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- 0F.4D: DDB 1471 - 1440: 00000000000000000000000000000000
- 0F.4E: DDB 1503 - 1472: 00000000000000000000000000000000
- 0F.4F: DDB 1535 - 1504: 00000001010000000000000000000000
- 0F.50: DDB 1567 - 1536: 00000000000000001000000000000000
- 0F.51: DDB 1599 - 1568: 00000000000001000110000001100000
- 0F.52: DDB 1631 - 1600: 00000000000000000000000000000000
- 0F.53: DDB 1663 - 1632: 00000000000000000000000000000000
- 0F.54: DDB 1695 - 1664: 00000000000000000000000000000000
- 0F.55: DDB 1727 - 1696: 00000000000000000000000000000000
- 0F.56: DDB 1759 - 1728: 00000000000000000000000000000000
- 0F.57: DDB 1791 - 1760: 00000000000000000000000000000000
- 0F.58: DDB 1823 - 1792: 00000000000000000000000000000000
- 0F.59: DDB 1855 - 1824: 00000000000000000000000000000000
- 0F.5A: DDB 1887 - 1856: 00000000000000000000000000000000
- 0F.5B: DDB 1919 - 1888: 00000000000000000000000000000000
- 0F.5C: DDB 1951 - 1920: 00000000000000000000000000000000
- 0F.5D: DDB 1983 - 1952: 00000000000000000000000000000000
- 0F.5E: DDB 2015 - 1984: 10000000000000000000000000000000
- 0F.5F: DDB 2047 - 2016: 00000000000000000000000000000000

CB MONITOR SETUP

- 10.01: Broken I^: 2.000
- 10.02: I^ Maintenance: Alarm Disabled
- 10.04: I^ Lockout: Alarm Disabled
- 10.06: No. CB Ops Maint: Alarm Disabled
- 10.08: No. CB Ops Lock: Alarm Disabled
- 10.0A: CB Time Maint: Alarm Disabled
- 10.0C: CB Time Lockout: Alarm Disabled
- 10.0E: Fault Freq Lock: Alarm Disabled

OPTO CONFIG

- 11.01: Global Nominal V: 220/250V
- 11.60: Opto Filter Cntl: 111111111011011111111011
- 11.80: Characteristic: Standard 60%-80%

CONTROL INPUTS

- 12.01: Ctrl I/P Status: 00000000000000000000000000000000
- 12.02: Control Input 1: No Operation
- 12.03: Control Input 2: No Operation
- 12.04: Control Input 3: No Operation
- 12.05: Control Input 4: No Operation
- 12.06: Control Input 5: No Operation
- 12.07: Control Input 6: No Operation
- 12.08: Control Input 7: No Operation
- 12.09: Control Input 8: No Operation
- 12.0A: Control Input 9: No Operation
- 12.0B: Control Input 10: No Operation
- 12.0C: Control Input 11: No Operation
- 12.0D: Control Input 12: No Operation
- 12.0E: Control Input 13: No Operation
- 12.0F: Control Input 14: No Operation
- 12.10: Control Input 15: No Operation
- 12.11: Control Input 16: No Operation
- 12.12: Control Input 17: No Operation
- 12.13: Control Input 18: No Operation
- 12.14: Control Input 19: No Operation
- 12.15: Control Input 20: No Operation
- 12.16: Control Input 21: No Operation
- 12.17: Control Input 22: No Operation
- 12.18: Control Input 23: No Operation
- 12.19: Control Input 24: No Operation
- 12.1A: Control Input 25: No Operation
- 12.1B: Control Input 26: No Operation
- 12.1C: Control Input 27: No Operation

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- 12.1D: Control Input 28: No Operation
- 12.1E: Control Input 29: No Operation
- 12.1F: Control Input 30: No Operation
- 12.20: Control Input 31: No Operation
- 12.21: Control Input 32: No Operation

IED CONFIGURATOR

- 19.05: Switch Conf.Bank: No action
- 19.0A: Restore MCL: No action
- 19.10: Active Conf.Name: Not Available
- 19.11: Active Conf.Rev: Not Available
- 19.20: Inact.Conf.Name: Not Available
- 19.21: Inact.Conf.Rev: Not Available
- 19.30: IP PARAMETERS:
- 19.31: IP address: Not Available
- 19.32: Subnet mask: Not Available
- 19.33: Gateway: Not Available
- 19.40: SNTP PARAMETERS:
- 19.41: SNTP Server 1: Not Available
- 19.42: SNTP Server 2: Not Available
- 19.50: IEC 61850 SCL:
- 19.51: IED Name: Not Available
- 19.60: IEC 61850 GOOSE:
- 19.70: GoEna: 00000000
- 19.71: Test Mode: 00000000
- 19.73: Ignore Test Flag: No

SECURITY CONFIG

- 25.01: User Banner: ACCESS ONLY FOR AUTHORISED USERS
- 25.02: Attempts Limit: 3
- 25.03: Attempts Timer: 2
- 25.04: Blocking Timer: 5
- 25.11: Attempts Remain: 3
- 25.12: Blk Time Remain: 0
- 25.20: Fallbck PW level: 1

USER CURVES DATA

- B8.01: Curve 1 Name: Default Curve 1
- B8.02: Date/Time: 2001-01-01 22:10:10.545
- B8.03: Curve 1 ID: 00003238
- B8.04: UserCurve 1 Type: Operate 1.0
- B8.11: Curve 2 Name: Default Curve 2
- B8.12: Date/Time: 2001-01-01 22:10:10.565
- B8.13: Curve 2 ID: 00002C32
- B8.14: UserCurve 2 Type: Operate 1.0
- B8.21: Curve 3 Name: Default Curve 3
- B8.22: Date/Time: 2001-01-01 22:10:10.585
- B8.23: Curve 3 ID: 0000D17E
- B8.24: UserCurve 3 Type: Reset 1.1
- B8.31: Curve 4 Name: Default Curve 4
- B8.32: Date/Time: 2001-01-01 22:10:10.605
- B8.33: Curve 4 ID: 00008A2D
- B8.34: UserCurve 4 Type: Reset 1.1

Group 2

GROUP 2 LINE PARAMETERS

- 50.01: Line Length: 13.50 km
- 50.03: Line Impedance: 2.000 Ohm
- 50.04: Line Angle: 87.00 deg
- 50.05: kZN Res Comp: 840.0e-3
- 50.06: kZN Res Angle: -17.00 deg
- 50.07: Mutual Comp: Disabled
- 50.0B: Phase Sequence: Standard ABC
- 50.0C: Tripping Mode: 1 and 3 Pole
- 50.10: Line Charging Y: 2.000 mS

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- GROUP 2 DISTANCE SETUP
  - 51.0C: Setting Mode: Advanced
  - 51.10: PHASE DISTANCE:
  - 51.11: Phase Chars.: Quad
  - 51.20: Zone 1 Ph Status: Enabled
  - 51.30: Zone 2 Ph Status: Enabled
  - 51.40: Zone 3 Ph Status: Enabled
  - 51.42: Zone 3 Ph Dir.: Forward
  - 51.50: Zone P Ph Status: Enabled
  - 51.51: Zone P Ph Dir.: Forward
  - 51.60: Zone 4 Ph Status: Enabled
  - 51.70: GROUND DISTANCE:
  - 51.71: Ground Chars.: Quad
  - 51.80: Zone 1 Gnd Stat.: Enabled
  - 51.90: Zone 2 Gnd Stat.: Enabled
  - 51.A0: Zone 3 Gnd Stat.: Enabled
  - 51.A2: Zone 3 Gnd Dir.: Forward
  - 51.B0: Zone P Gnd Stat.: Enabled
  - 51.B1: Zone P Gnd Dir.: Forward
  - 51.C0: Zone 4 Gnd Stat.: Enabled
  - 51.D0: Digital Filter: Standard
  - 51.D1: CVT Filters: Passive
  - 51.D2: SIR Setting: 60
  - 51.D3: Load Blinders: Disabled
  - 51.D7: Dist. Polarizing: 1.000
  - 51.E0: DELTADIRECTIONAL:
  - 51.E1: Dir. Status: Disabled
  - 51.F0: DIST STUB BUS:
  - 51.F1: Dist Stub Bus: Disabled
- GROUP 2 DIST. ELEMENTS
  - 52.01: PHASE DISTANCE:
  - 52.02: Z1 Ph. Reach: 1.600 Ohm
  - 52.03: Z1 Ph. Angle: 87.00 deg
  - 52.07: R1 Ph. Resistive: 15.00 Ohm
  - 52.08: Z1 Tilt Top Line: 0 deg
  - 52.09: Z1 Sensit. Iph>1: 750.0 mA
  - 52.10: Z2 Ph. Reach: 2.400 Ohm
  - 52.11: Z2 Ph. Angle: 87.00 deg
  - 52.15: R2 Ph. Resistive: 15.00 Ohm
  - 52.16: Z2 Tilt Top Line: 0 deg
  - 52.17: Z2 Sensit. Iph>2: 750.0 mA
  - 52.20: Z3 Ph. Reach: 9.960 Ohm
  - 52.21: Z3 Ph. Angle: 87.00 deg
  - 52.25: R3 Ph. Resistive: 15.00 Ohm
  - 52.27: Z3 Tilt Top Line: 0 deg
  - 52.28: Z3 Sensit. Iph>3: 50.00 mA
  - 52.30: ZP Ph. Reach: 2.400 Ohm
  - 52.31: ZP Ph. Angle: 87.00 deg
  - 52.35: RP Ph Resistive: 15.00 Ohm
  - 52.36: ZP Tilt Top Line: 0 deg
  - 52.37: ZP Sensit. Iph>P: 50.00 mA
  - 52.40: Z4 Ph. Reach: 500.0 mOhm
  - 52.41: Z4 Ph. Angle: 87.00 deg
  - 52.42: R4 Ph. Resistive: 15.00 Ohm
  - 52.45: Z4 Tilt Top Line: 0 deg
  - 52.46: Z4 Sensit. Iph>4: 500.0 mA
  - 52.50: GROUND DISTANCE:
  - 52.51: Z1 Gnd. Reach: 1.600 Ohm
  - 52.52: Z1 Gnd. Angle: 87.00 deg
  - 52.53: Z1 Dynamic Tilt: Disabled
  - 52.54: Z1 Tilt Top Line: 0 deg

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- 52.55: kZN1 Res. Comp.: 840.0e-3
- 52.56: kZN1 Res. Angle: -17.00 deg
- 52.59: R1 Gnd Resistive: 15.00 Ohm
- 52.5B: Z1 Sensit Ignd>1: 750.0 mA
- 52.60: Z2 Gnd. Reach: 2.400 Ohm
- 52.61: Z2 Gnd. Angle: 87.00 deg
- 52.63: Z2 Dynamic Tilt: Disabled
- 52.64: Z2 Tilt Top Line: 0 deg
- 52.65: kZN2 Res. Comp.: 840.0e-3
- 52.66: kZN2 Res. Angle: -17.00 deg
- 52.69: R2 Gnd Resistive: 15.00 Ohm
- 52.6B: Z2 Sensit Ignd>2: 750.0 mA
- 52.70: Z3 Gnd. Reach: 9.960 Ohm
- 52.71: Z3 Gnd. Angle: 87.00 deg
- 52.73: Z3 Dynamic Tilt: Disabled
- 52.74: Z3 Tilt Top Line: 0 deg
- 52.75: kZN3 Res. Comp.: 840.0e-3
- 52.76: kZN3 Res. Angle: -17.00 deg
- 52.79: R3 Gnd Resistive: 15.00 Ohm
- 52.7C: Z3 Sensit Ignd>3: 50.00 mA
- 52.80: ZP Gnd. Reach: 5.330 Ohm
- 52.81: ZP Gnd. Angle: 87.00 deg
- 52.83: ZP Dynamic Tilt: Disabled
- 52.84: ZP Tilt Top Line: 0 deg
- 52.85: kZNP Res. Comp.: 840.0e-3
- 52.86: kZNP Res. Angle: -17.00 deg
- 52.89: RP Gnd Resistive: 15.00 Ohm
- 52.8B: ZP Sensit Ignd>P: 50.00 mA
- 52.90: Z4 Gnd. Reach: 500.0 mOhm
- 52.91: Z4 Gnd. Angle: 87.00 deg
- 52.93: Z4 Dynamic Tilt: Disabled
- 52.94: Z4 Tilt Top Line: 0 deg
- 52.95: kZN4 Res. Comp.: 840.0e-3
- 52.96: kZN4 Res. Angle: -17.00 deg
- 52.99: R4 Gnd Resistive: 15.00 Ohm
- 52.9B: Z4 Sensit Ignd>4: 500.0 mA
- 52.B0: Mem Volt Dura: 16

GROUP 2 SCHEME LOGIC

- 54.01: BASIC SCHEME:
- 54.02: BasicScheme Mode: Standard
- 54.08: Zone1 Tripping: Phase And Ground
- 54.09: tZ1 Ph. Delay: 0 s
- 54.0A: tZ1 Gnd. Delay: 0 s
- 54.10: Zone2 Tripping: Phase And Ground
- 54.11: tZ2 Ph. Delay: 500.0 ms
- 54.12: tZ2 Gnd. Delay: 500.0 ms
- 54.18: Zone3 Tripping: Phase And Ground
- 54.19: tZ3 Ph. Delay: 1.000 s
- 54.1A: tZ3 Gnd. Delay: 1.000 s
- 54.20: ZoneP Tripping: Phase And Ground
- 54.21: tZP Ph. Delay: 800.0 ms
- 54.22: tZP Gnd. Delay: 800.0 ms
- 54.28: Zone4 Tripping: Phase And Ground
- 54.29: tZ4 Ph. Delay: 500.0 ms
- 54.2A: tZ4 Gnd. Delay: 500.0 ms
- 54.40: AIDED SCHEME 1:
- 54.41: Aid. 1 Selection: PUR
- 54.42: Aid 1 Distance: Phase And Ground
- 54.43: Aid.1 Dist. Dly: 0 s
- 54.60: AIDED SCHEME 2:
- 54.61: Aid. 2 Selection: Disabled

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- 54.80: TRIP ON CLOSE:
  - 54.81: SOTF Status: Enabled PoleDead
  - 54.82: SOTF Delay: 110.0 s
  - 54.83: SOTF Tripping: 000011
  - 54.84: TOR Status: Enabled
  - 54.85: TOR Tripping: 000001
  - 54.86: TOC Reset Delay: 500.0 ms
  - 54.88: TOC Delay: 200.0 ms
  - 54.B0: Z1 EXTENSION:
  - 54.B1: Z1 Ext Scheme: Disabled
  - 54.C0: LOSS OF LOAD:
  - 54.C1: LOL Scheme: Disabled
- GROUP 2 BROKEN CONDUCTOR
  - 57.01: Broken Conductor: Enabled
  - 57.02: I2/I1 Setting: 200.0e-3
  - 57.03: I2/I1 Time Delay: 5.000 s
- GROUP 2 EARTH FAULT
  - 58.01: IN>1 Status: Enabled
  - 58.25: IN>1 Function: DT
  - 58.26: IN>1 Directional: Directional Fwd
  - 58.29: IN>1 Current Set: 450.0 mA
  - 58.2C: IN>1 Time Delay: 1.300 s
  - 58.33: IN>1 tRESET: 0 s
  - 58.35: IN>2 Status: Disabled
  - 58.46: IN>3 Status: Disabled
  - 58.4D: IN>4 Status: Disabled
  - 58.54: IN> Blocking: 000001
  - 58.55: IN> DIRECTIONAL:
  - 58.56: IN> Char Angle: -60.00 deg
  - 58.57: IN> Polarisation: Zero Sequence
  - 58.59: IN> VNpol Set: 2.000 V
- GROUP 2 POWER SWING BLK.
  - 5D.01: PSB Status: Blocking
  - 5D.03: Zone 1 Ph. PSB: Delayed Unblock
  - 5D.05: Zone 2 Ph. PSB: Blocking
  - 5D.07: Zone 3 Ph. PSB: Blocking
  - 5D.09: Zone P Ph. PSB: Blocking
  - 5D.0B: Zone 4 Ph. PSB: Blocking
  - 5D.0D: Zone 1 Gnd. PSB: Allow Trip
  - 5D.0F: Zone 2 Gnd. PSB: Allow Trip
  - 5D.11: Zone 3 Gnd. PSB: Allow Trip
  - 5D.13: Zone P Gnd. PSB: Allow Trip
  - 5D.15: Zone 4 Gnd. PSB: Allow Trip
  - 5D.16: WI Trip PSB: Inhibit Trip
  - 5D.20: PSB Unblocking: Enabled
  - 5D.21: PSB Unblock dly: 2.000 s
  - 5D.22: PSB Reset Delay: 200.0 ms
  - 5D.23: OST Mode: OST Disabled
  - 5D.40: Slow Swing: Enabled
  - 5D.41: PSB Z7: 96.00 Ohm
  - 5D.42: PSB Z8: 106.0 Ohm
  - 5D.43: PSB Z7': -96.00 Ohm
  - 5D.44: PSB Z8': -106.0 Ohm
  - 5D.45: PSB R7: 32.00 Ohm
  - 5D.46: PSB R8: 36.00 Ohm
  - 5D.47: PSB R7': -32.00 Ohm
  - 5D.48: PSB R8': -36.00 Ohm
  - 5D.49: Alpha: 87.00 deg
  - 5D.4A: PSB Timer: 30.00 ms
- GROUP 2 VOLT PROTECTION
  - 62.30: OVERVOLTAGE:

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- 62.31: V> Measur't Mode: V>1 & V>2 Ph-Ph
- 62.32: V> Hysteresis: 2.000 %
- 62.33: V> Operate Mode: V>1 & V>2 Any Ph
- 62.34: V>1 Function: DT
- 62.35: V>1 Voltage Set: 115.0 V
- 62.36: V>1 Time Delay: 7.000 s
- 62.38: V>2 Status: Enabled
- 62.39: V>2 Voltage Set: 147.0 V
- 62.3A: V>2 Time Delay: 100.0 ms
- 62.50: COMP OVERVOLTAGE:
- 62.51: Cp V Hysteresis: 2.000 %
- 62.52: V1>1 Cmp Funct: Disabled
- 62.56: V1>2 Cmp Status: Disabled
- 62.60: UNDER VOLTAGE:
- 62.61: V< Measur't Mode: V<1 & V<2 Ph-Ph
- 62.62: V< Operate Mode: V<1 & V<2 Any Ph
- 62.63: V< Hysteresis: 2.000 %
- 62.65: V<1 Function: Disabled
- 62.70: V<2 Status: Disabled
- 62.72: V<2 Time Delay: 5.000 s
- 62.73: V<2 Poledead Inh: Enabled

GROUP 2 CB FAIL & P.DEAD

- 65.0A: UNDER CURRENT:
- 65.0B: I< Current Set: 50.00 mA
- 65.0D: ISEF< Current: 20.00 mA
- 65.0E: POLEDEAD VOLTAGE:
- 65.10: V<: 38.10 V

GROUP 2 SUPERVISION

- 66.01: VTS Mode: Measured + MCB
- 66.02: VTS Status: Blocking
- 66.03: VTS Reset Mode: Auto
- 66.04: VTS Time Delay: 5.000 s
- 66.05: VTS I> Inhibit: 2.000 A
- 66.06: VTS I2> Inhibit: 200.0 mA
- 66.0A: VTS V>: 30.00 V
- 66.0E: Inrush Detection: Disabled
- 66.10: WEAK INFEED BLK:
- 66.11: WI Inhibit: Disabled
- 66.20: ISEF HARM. BLOCK:
- 66.21: ISEF>2nd Detect.: Disabled
- 66.30: CT SUPERVISION:
- 66.31: CTS Mode: Disabled

GROUP 2 SYSTEM CHECKS

- 68.14: VOLTAGE MONITORS:
- 68.85: Live Line: 51.00 V
- 68.86: Dead Line: 13.00 V
- 68.87: Live Bus: 51.00 V
- 68.88: Dead Bus: 13.00 V
- 68.8B: CS UV: 51.00 V
- 68.8C: CS OV: 73.00 V
- 68.8D: System Checks: Enabled
- 68.8E: CS Voltage Block: Vdiff>
- 68.8F: CS1 Status: Enabled
- 68.90: CS1 Angle: 10.00 deg
- 68.91: CS1 VDiff: 6.500 V
- 68.92: CS1 Slip Ctrl: Enabled
- 68.93: CS1 SlipFreq: 100.0 mHz
- 68.94: CS2 Status: Disabled

GROUP 2 AUTORECLOSE

- 69.51: AR Mode: AR 1P
- 69.5D: Discrim Time: 1.300 s

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- 69.60: CB IS Time: 5.000 s
- 69.61: CB IS MemoryTime: 500.0 ms
- 69.62: DT Start by Prot: Protection Reset
- 69.64: DTStart by CB Op: Enabled
- 69.67: SP AR Dead Time: 1.000 s
- 69.6D: SPAR ReclaimTime: 25.00 s
- 69.6F: AR CBHealthyTime: 5.000 s
- 69.70: AR CheckSyncTime: 5.000 s
- 69.72: Z1 AR: Initiate AR
- 69.74: Dist Aided AR: Block AR
- 69.75: Z2T AR: No Action
- 69.76: Z3T AR: No Action
- 69.77: ZPT AR: No Action
- 69.78: Z4T AR: No Action
- 69.7B: TOR AR: Block AR
- 69.80: IN>1 AR: No Action
- 69.A5: AR SYS CHECKS:
- 69.A6: CB SC all: Disabled

GROUP 2 INPUT LABELS

- 6A.01: Opto Input 1: L1 SET GRP SEL
- 6A.02: Opto Input 2: L2 SET GRP SEL
- 6A.03: Opto Input 3: L3 LN VTS CLOSE
- 6A.04: Opto Input 4: L4BUS122 VTS CLS
- 6A.05: Opto Input 5: L5 GS101 CB A OP
- 6A.06: Opto Input 6: L6 GS101 CB B OP
- 6A.07: Opto Input 7: L7 GS101 CB C OP
- 6A.08: Opto Input 8: L8 GS101 CB A CL
- 6A.09: Opto Input 9: L9 GS101 CB B CL
- 6A.0A: Opto Input 10: L10GS101 CB A CL
- 6A.0B: Opto Input 11: L11 CB READY
- 6A.0C: Opto Input 12: L12 SF6 PRS STG2
- 6A.0D: Opto Input 13: L13 50BF STG1 OP
- 6A.0E: Opto Input 14: L14 50BF STG2 OP
- 6A.0F: Opto Input 15: L15 CARRFAIL CH2
- 6A.10: Opto Input 16: L16 DT T RECV
- 6A.11: Opto Input 17: L17 DT RECV2
- 6A.12: Opto Input 18: L18 CAR RECV
- 6A.13: Opto Input 19: L19 AR BLOCK
- 6A.14: Opto Input 20: L20 AR IN
- 6A.15: Opto Input 21: L21 AR INI R-PH
- 6A.16: Opto Input 22: L22 AR INI Y-PH
- 6A.17: Opto Input 23: L23 AR INI B-PH
- 6A.18: Opto Input 24: L24 86LE-2 SUVPN

GROUP 2 OUTPUT LABELS

- 6B.01: Relay 1: R1 CB TC1_R-PH
- 6B.02: Relay 2: R2 CB TC1_Y-PH
- 6B.03: Relay 3: R3 CB TC1_B-PH
- 6B.04: Relay 4: R4 TO 86LE-2 TRP
- 6B.05: Relay 5: R5 DT SND
- 6B.06: Relay 6: R6 DIST PERM SND
- 6B.07: Relay 7: R7 FUTURE USE
- 6B.08: Relay 8: R8 21M1 AR R INI
- 6B.09: Relay 9: R9 CB TC2_R-PH
- 6B.0A: Relay 10: R10 CB TC2_Y-PH
- 6B.0B: Relay 11: R11 CB TC2_B-PH
- 6B.0C: Relay 12: R12 50 STG1 OPTD
- 6B.0D: Relay 13: R13 59STG-2 OPTD
- 6B.0E: Relay 14: R14 67N OPTD
- 6B.0F: Relay 15: R15 78 TRIP
- 6B.10: Relay 16: R16 AR IN
- 6B.11: Relay 17: R17 M-2TCS_UNHLY

Settings File Report
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- 6B.12: Relay 18: R18 AR BLCK
- 6B.13: Relay 19: R19 21 OPTD
- 6B.14: Relay 20: R20 TRP POLE A
- 6B.15: Relay 21: R21 TRP POLE B
- 6B.16: Relay 22: R22 TRP POLE C
- 6B.17: Relay 23: R23 AR INI Y
- 6B.18: Relay 24: R24 DT RECV
- 6B.19: Relay 25: R25 SF6 STG-2
- 6B.1A: Relay 26: R26 50BF INI RPH
- 6B.1B: Relay 27: R27 50BF INI YPH
- 6B.1C: Relay 28: R28 50BF INI BPH
- 6B.1D: Relay 29: R29 AR INI BPH
- 6B.1E: Relay 30: R30 SPARE
- 6B.1F: Relay 31: R31 SPARE
- 6B.20: Relay 32: R32 AR CLS CMD

Settings File Report
Substation: LINE-3
File: 000.set
Model Number: P444916B6M0720M

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- SYSTEM DATA
  - 00.01: Language: English
  - 00.02: Password: ********
  - 00.04: Description: TEHRI (THDC)
  - 00.05: Plant Reference: LINE3 TEHRI-KOT.
  - 00.06: Model Number: P444916B6M0720M
  - 00.08: Serial Number: 167472Y
  - 00.09: Frequency: 50 Hz
  - 00.0A: Comms Level: 2
  - 00.0B: Relay Address: 1
  - 00.0C: Plant Status: 0000000000000000
  - 00.0D: Control Status: 0000000000000000
  - 00.0E: Active Group: 2
  - 00.10: CB Trip/Close: No Operation
  - 00.11: Software Ref. 1: P444____6A_720_E
  - 00.20: Opto I/P Status: 10001000000011110000100
  - 00.21: Relay Status 1: 00000000000000001000000000000000
  - 00.22: Alarm Status 1: 00000000000000000000000000000000
  - 00.40: Relay Status 1: 00000000000000001000000000000000
  - 00.50: Alarm Status 1: 00000000000000000000000000000000
  - 00.51: Alarm Status 2: 00000000000000000000000000000000
  - 00.52: Alarm Status 3: 00000000000000000000000000000000
  - 00.D0: Access Level: 3
  - 00.D2: Password Level 1: ********
  - 00.D3: Password Level 2: ********
  - 00.D4: Password Level 3: ********
  - 00.DF: Security Feature: 1
- CB CONTROL
  - 07.01: CB Control by: Disabled
  - 07.07: A/R Single Pole: Enabled
  - 07.08: A/R Three Pole: Disabled
- DATE AND TIME
  - 08.01: Date/Time: 2026-02-20 16:27:10.25
  - 08.06: Battery Status: Healthy
  - 08.07: Battery Alarm: Enabled
  - 08.20: LocalTime Enable: Fixed
  - 08.21: LocalTime Offset: 330.0 min
  - 08.22: DST Enable: Disabled
- CONFIGURATION
  - 09.01: Restore Defaults: No Operation
  - 09.02: Setting Group: Select via Menu
  - 09.03: Active Settings: Group 2
  - 09.04: Save Changes: No Operation
  - 09.05: Copy From: Group 1
  - 09.06: Copy To: No Operation
  - 09.07: Setting Group 1: Disabled
  - 09.08: Setting Group 2: Enabled
  - 09.09: Setting Group 3: Disabled
  - 09.0A: Setting Group 4: Disabled
  - 09.0D: Dist. Protection: Enabled
  - 09.10: Power-Swing: Enabled
  - 09.11: Back-up I>: Disabled
  - 09.12: Neg Sequence O/C: Disabled
  - 09.13: Broken Conductor: Enabled
  - 09.14: Earth Fault PROT: Earth Fault O/C
  - 09.15: Aided D.E.F: Disabled
  - 09.16: Volt Protection: Enabled
  - 09.17: CB Fail & I<: Disabled
  - 09.18: Supervision: Enabled
  - 09.19: System Checks: Enabled
  - 09.1A: Thermal Overload: Disabled

Settings File Report
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- 09.1C: I< Protection: Disabled
- 09.1D: Residual O/V NVD: Disabled
- 09.1E: Freq Protection: Disabled
- 09.24: Internal A/R: Enabled
- 09.25: Input Labels: Visible
- 09.26: Output Labels: Visible
- 09.28: CT & VT Ratios: Visible
- 09.29: Record Control: Invisible
- 09.2A: Disturb Recorder: Visible
- 09.2B: Measure't Setup: Invisible
- 09.2C: Comms Settings: Visible
- 09.2D: Commission Tests: Visible
- 09.2E: Setting Values: Secondary
- 09.2F: Control Inputs: Invisible
- 09.35: Ctrl I/P Config: Invisible
- 09.36: Ctrl I/P Labels: Invisible
- 09.39: Direct Access: Enabled
- 09.50: Function Key: Invisible
- 09.54: PSL Timers: Invisible

CT AND VT RATIOS

- 0A.01: Main VT Primary: 420.0 kV
- 0A.02: Main VT Sec'y: 110.0 V
- 0A.03: 4th VT Primary: 420.0 kV
- 0A.04: 4th VT Secondary: 110.0 V
- 0A.07: Phase CT Primary: 2000 A
- 0A.08: Phase CT Sec'y: 1.000 A
- 0A.0D: MComp CT Primary: 2000 A
- 0A.0E: MComp CT Sec'y: 1.000 A
- 0A.0F: C/S Input:A-B
- 0A.10: Main VT Location: Line
- 0A.11: CT Polarity: Standard
- 0A.12: Measured VN: Disabled
- 0A.13: Measured IN: Disabled

DISTURB RECORDER

- 0C.01: Duration: 1.500 s
- 0C.02: TriggerPosition: 33.30 %
- 0C.03: TriggerMode: Single
- 0C.04: AnalogChannel1: VA
- 0C.05: AnalogChannel2: VB
- 0C.06: AnalogChannel3: VC
- 0C.07: AnalogChannel4: VN
- 0C.08: AnalogChannel5: IA
- 0C.09: AnalogChannel6: IB
- 0C.0A: AnalogChannel7: IC
- 0C.0B: AnalogChannel8: IN
- 0C.0C: DigitalInput1: Any Start
- 0C.0D: Input1Trigger: Trigger L/H
- 0C.0E: DigitalInput2: Any Trip
- 0C.0F: Input2Trigger: Trigger L/H
- 0C.10: DigitalInput3: Any Trip A
- 0C.11: Input3Trigger: Trigger L/H
- 0C.12: DigitalInput4: Any Trip B
- 0C.13: Input4Trigger: Trigger L/H
- 0C.14: DigitalInput5: Any Trip C
- 0C.15: Input5Trigger: Trigger L/H
- 0C.16: DigitalInput6: Z1
- 0C.17: Input6Trigger: Trigger L/H
- 0C.18: DigitalInput7: Z2
- 0C.19: Input7Trigger: Trigger L/H
- 0C.1A: DigitalInput8: Z3
- 0C.1B: Input8Trigger: Trigger L/H

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0C.1C: DigitalInput9:	Z4
0C.1D: Input9Trigger:	Trigger L/H
0C.1E: DigitalInput10:	Power Swing
0C.1F: Input10Trigger:	Trigger L/H
0C.20: DigitalInput11:	SOTF/TOR Trip
0C.21: Input11Trigger:	Trigger L/H
0C.22: DigitalInput12:	DIST. Chan Recv
0C.23: Input12Trigger:	Trigger L/H
0C.24: DigitalInput13:	I A/R Close
0C.25: Input13Trigger:	Trigger L/H
0C.26: DigitalInput14:	1P Trip
0C.27: Input14Trigger:	Trigger L/H
0C.28: DigitalInput15:	3P Trip
0C.29: Input15Trigger:	Trigger L/H
0C.2A: DigitalInput16:	A/R 1P In Prog
0C.2B: Input16Trigger:	Trigger L/H
0C.2C: DigitalInput17:	3ph Fault
0C.2D: Input17Trigger:	Trigger L/H
0C.2E: DigitalInput18:	V>2 Trip
0C.2F: Input18Trigger:	Trigger L/H
0C.30: DigitalInput19:	V>3 Trip
0C.31: Input19Trigger:	Trigger L/H
0C.32: DigitalInput20:	Brok.Cond. Alarm
0C.33: Input20Trigger:	Trigger L/H
0C.34: DigitalInput21:	IN>1 Trip
0C.35: Input21Trigger:	Trigger L/H
0C.36: DigitalInput22:	IN>2 Trip
0C.37: Input22Trigger:	Trigger L/H
0C.38: DigitalInput23:	I>1 Trip
0C.39: Input23Trigger:	Trigger L/H
0C.3A: DigitalInput24:	DEF. Chan Recv
0C.3B: Input24Trigger:	Trigger L/H
0C.3C: DigitalInput25:	DEF Rev
0C.3D: Input25Trigger:	Trigger L/H
0C.3E: DigitalInput26:	DEF Fwd
0C.3F: Input26Trigger:	Trigger L/H
0C.40: DigitalInput27:	DEF Trip A
0C.41: Input27Trigger:	Trigger L/H
0C.42: DigitalInput28:	DEF Trip B
0C.43: Input28Trigger:	Trigger L/H
0C.44: DigitalInput29:	DEF Trip C
0C.45: Input29Trigger:	Trigger L/H
0C.46: DigitalInput30:	Relay Label 32
0C.47: Input30Trigger:	Trigger L/H
0C.48: DigitalInput31:	Opto Label 08
0C.49: Input31Trigger:	Trigger L/H
0C.4A: DigitalInput32:	Opto Label 09
0C.4B: Input32Trigger:	Trigger L/H
0C.60: DigitalInput33:	Opto Label 10
0C.61: DigitalInput34:	Opto Label 11
0C.62: DigitalInput35:	Opto Label 13
0C.63: DigitalInput36:	Opto Label 14
0C.64: DigitalInput37:	Opto Label 15
0C.65: DigitalInput38:	Opto Label 16
0C.66: DigitalInput39:	Opto Label 17
0C.67: DigitalInput40:	Opto Label 18
0C.68: DigitalInput41:	Opto Label 19
0C.69: DigitalInput42:	Opto Label 20
0C.6A: DigitalInput43:	Opto Label 21
0C.6B: DigitalInput44:	Opto Label 22
0C.6C: DigitalInput45:	Opto Label 23

Settings File Report
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- 0C.6D: DigitalInput46: Opto Label 24
- 0C.6E: DigitalInput47: Relay Label 01
- 0C.6F: DigitalInput48: Relay Label 02
- 0C.70: DigitalInput49: Relay Label 03
- 0C.71: DigitalInput50: Relay Label 04
- 0C.72: DigitalInput51: Relay Label 05
- 0C.73: DigitalInput52: Relay Label 09
- 0C.74: DigitalInput53: Relay Label 10
- 0C.75: DigitalInput54: Relay Label 11
- 0C.76: DigitalInput55: Relay Label 18
- 0C.77: DigitalInput56: Relay Label 08
- 0C.78: DigitalInput57: Relay Label 23
- 0C.79: DigitalInput58: Relay Label 29
- 0C.7A: DigitalInput59: VTS Fast
- 0C.7B: DigitalInput60: Unused
- 0C.7C: DigitalInput61: Unused
- 0C.7D: DigitalInput62: Unused
- 0C.7E: DigitalInput63: Unused
- 0C.7F: DigitalInput64: Unused

COMMUNICATIONS

- 0E.01: RP1 Protocol: Courier
- 0E.02: RP1 Address: 1
- 0E.03: RP1 InactivTimer: 15.00 min
- 0E.0B: RP1 Card Status: K-Bus OK
- 0E.0C: RP1 Port Config: K-Bus
- 0E.0D: RP1 Comms Mode: IEC60870 FT1.2
- 0E.0E: RP1 Baud Rate: 19200
- 0E.1F: NIC Protocol: IEC61850
- 0E.22: NIC MAC Address: 80-B3-2A-0C-80-4F
- 0E.64: NIC Tunl Timeout: 5.000 min
- 0E.6A: NIC Link Report: None

COMMISSION TESTS

- 0F.01: Opto I/P Status: 10001000000011110000100
- 0F.02: Relay Status 1: 00000000000000001000000000000000
- 0F.04: Test Port Status: 00000000
- 0F.06: Monitor Bit 1: Relay Label 01
- 0F.07: Monitor Bit 2: Relay Label 02
- 0F.08: Monitor Bit 3: Relay Label 03
- 0F.09: Monitor Bit 4: Relay Label 04
- 0F.0A: Monitor Bit 5: Relay Label 05
- 0F.0B: Monitor Bit 6: Relay Label 06
- 0F.0C: Monitor Bit 7: Relay Label 07
- 0F.0D: Monitor Bit 8: Relay Label 08
- 0F.0E: Test Mode: Disable
- 0F.0F: Test Pattern 1: 00000000000000000000000000001000
- 0F.11: Contact Test: No operation
- 0F.12: Test LEDs: No operation
- 0F.13: Autoreclose Test: No Operation
- 0F.16: Red LED Status: 000000000000000000
- 0F.17: Green LED Status: 000000011100000000

CB MONITOR SETUP

- 10.01: Broken I^: 2.000
- 10.02: I^ Maintenance: Alarms Disabled
- 10.04: I^ Lockout: Alarms Disabled
- 10.06: No CB Ops Maint: Alarms Disabled
- 10.08: No CB Ops Lock: Alarms Disabled
- 10.0A: CB Time Maint: Alarms Disabled
- 10.0C: CB Time Lockout: Alarms Disabled
- 10.0E: Fault Freq Lock: Alarms Disabled
- 10.11: Lockout Reset: No
- 10.12: Reset Lockout By: CB Close

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- OPTO CONFIG
  - 11.01: Global Nominal V: 220/250V
  - 11.50: Opto Filter Cntl: 11111111111111111111111
  - 11.80: Characteristic: Standard 60%-80%
- IED CONFIGURATOR
  - 19.70: GoEna: 11111111
- SECURITY CONFIG
  - 25.01: User Banner: ACCESS ONLY FOR AUTHORISED USERS
  - 25.02: Attempts Limit: 2
  - 25.03: Attempts Timer: 2
  - 25.04: Blocking Timer: 5
  - 25.11: Attempts Remain: 2
  - 25.12: Blk Time Remain: 0
  - 25.20: Fallbck PW level: 1
- Group 2
  - GROUP 2 DISTANCE ELEMENT
    - 50.01: GROUP 2 Line Setting:
    - 50.02: Line Length: 13.50 km
    - 50.04: Line Impedance: 2.000 Ohm (94.21mOhm)
    - 50.05: Line Angle: 87.30 deg (j 1.998 Ohm)
    - 50.06: GROUP 2 Zone Setting:
    - 50.07: Zone Status: 110110
    - 50.08: kZ1 Res Comp: 840.0e-3
    - 50.09: kZ1 Angle: -16.80 deg
    - 50.0A: Z1: 1.630 Ohm
    - 50.0C: R1G: 15.00 Ohm
    - 50.0D: R1Ph: 15.00 Ohm
    - 50.0E: tZ1: 0 s
    - 50.0F: kZ2 Res Comp: 840.0e-3
    - 50.10: kZ2 Angle: -16.80 deg
    - 50.11: Z2: 2.400 Ohm
    - 50.12: R2G: 15.00 Ohm
    - 50.13: R2Ph: 15.00 Ohm
    - 50.14: tZ2: 500.0 ms
    - 50.15: kZ3/4 Res Comp: 847.0e-3
    - 50.16: kZ3/4 Angle: -16.80 deg
    - 50.17: Z3: 9.962 Ohm
    - 50.18: R3G-R4G: 15.00 Ohm
    - 50.19: R3Ph-R4Ph: 15.00 Ohm
    - 50.1A: tZ3: 1.000 s
    - 50.1B: Z4: 500.0 mOhm
    - 50.1C: tZ4: 500.0 ms
    - 50.1D: ZoneP - Direct: Directional FWD
    - 50.1E: kZp Res Comp: 840.0e-3
    - 50.1F: kZp Angle: -16.90 deg
    - 50.20: Zp: 2.400 Ohm
    - 50.21: RpG: 15.00 Ohm
    - 50.22: RpPh: 15.00 Ohm
    - 50.23: tZp: 600.0 ms
    - 50.2B: GROUP 2 Other Parameters:
    - 50.2C: Series Cmp. Line: Disabled
    - 50.2D: Overlap Z Mode: Disabled
    - 50.2E: Z1m Tilt Angle: 0 deg
    - 50.2F: Z1p Tilt Angle: 0 deg
    - 50.30: Z2/p/q Tilt Angl: 0 deg
    - 50.31: Fwd Z Chg. Delay: 0 s
    - 50.32: V Mem Validity: 10.00 s
    - 50.33: Earth I Detect.: 50.00 mA
    - 50.34: GROUP 2 Fault Locator:
    - 50.35: kZm Mutual Comp: 0
    - 50.36: kZm Angle: 0 deg

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- 50.40: GROUP 2 Load Blinder:
- 50.41: Load Blinder En: Disabled

GROUP 2 DISTANCE SCHEMES
- 51.01: Program Mode: Standard Scheme
- 51.02: Standard Mode: P.U.P Z2
- 51.03: Fault Type: Both enabled
- 51.04: Trip Mode: 1P. Z1 & CR
- 51.07: Aid Dist Dly: 0 s
- 51.08: tReversal Guard: 0 s
- 51.09: Unblocking Logic: None
- 51.0A: SOTF/TOR Mode: 000000110000001
- 51.0B: SOTF Delay: 110.0 s
- 51.0C: Z1Ext Fail: Disabled
- 51.0D: GROUP 2 Weak Infeed:
- 51.0E: WI:Mode Status: Disabled
- 51.20: LoL:Window: 40.00 ms

GROUP 2 POWER-SWING
- 52.01: Delta R: 4.000 Ohm
- 52.02: Delta X: 4.000 Ohm
- 52.03: IN> status: Enabled
- 52.04: IN> (%Imax): 30.00 %
- 52.05: I2> status: Enabled
- 52.06: I2> (%Imax): 20.00 %
- 52.07: ImaxLine> Status: Enabled
- 52.08: ImaxLine >: 2.000 A
- 52.09: Delta I Status: Enabled
- 52.0A: Unblocking delay: 2.000 s
- 52.0B: Blocking Zones: 111111
- 52.0C: Out of Step: 255
- 52.0D: Stable Swing: 1

GROUP 2 BROKEN CONDUCTOR
- 57.01: Broken conductor: Enabled
- 57.02: I2/I1 Setting: 200.0e-3
- 57.03: I2/I1 Time delay: 5.000 s
- 57.04: I2/I1 Trip:Disabled

GROUP 2 EARTH FAULT O/C
- 58.01: IN>1 Function: DT
- 58.02: IN>1 Directional: Directional FWD
- 58.03: IN>1 VTS Block: Non Directional
- 58.04: IN>1 Current Set: 450.0 mA
- 58.05: IN>1 Time delay: 1.300 s
- 58.06: IN>1 Time VTS: 5.000 s
- 58.0A: IN>1 tReset: 0 s
- 58.0B: IN>2 Function: Disabled
- 58.15: IN>3 Status: Disabled
- 58.1B: IN>4 Status: Disabled
- 58.21: GROUP 2 IN> DIRECTIONAL:
- 58.22: IN Char Angle: -60.00 deg
- 58.23: Polarisation: Zero sequence
- 58.24: GROUP 2 IN> BLOCKING:
- 58.25: Block Pole Dead: Enabled

GROUP 2 VOLT PROTECTION
- 62.01: V< & V> MODE: 00001110000
- 62.02: GROUP 2 UNDERVOLTAGE:
- 62.03: V< Measur't Mode: Phase_Phase
- 62.04: V<1 Function: Disabled
- 62.08: V<2 Status: Disabled
- 62.0B: V<3 Status: Disabled
- 62.0E: V<4 Status: Disabled
- 62.11: GROUP 2 OVERVOLTAGE:
- 62.12: V> Measur't Mode: Phase_Phase

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- 62.13: V> Hysteresis: 2.000 %
- 62.14: V>1 Function: Disabled
- 62.18: V>2 Status: Enabled
- 62.19: V>2 Voltage Set: 115.0 V
- 62.1A: V>2 Time Delay: 7.000 s
- 62.1B: V>3 Status: Enabled
- 62.1C: V>3 Voltage Set: 147.0 V
- 62.1D: V>3 Time Delay: 100.0 ms
- 62.1E: V>4 Status: Disabled

GROUP 2 SUPERVISION

- 66.01: GROUP 2 VT SUPERVISION:
- 66.02: VTS Time Delay: 5.000 s
- 66.03: VTS I2 & I0 Inh: 50.00 mA
- 66.04: Detect 3P: Enabled
- 66.05: Threshold 3P: 30.00 V
- 66.06: Delta I>: 100.0 mA
- 66.07: GROUP 2 CT SUPERVISION:
- 66.08: CTS Status: Disabled
- 66.0C: GROUP 2 CVT SUPERVISION:
- 66.0D: CVTS Status: Enabled
- 66.0E: CVTS VN>: 11.00 V
- 66.0F: CVTS Time Delay: 60.00 s
- 66.10: CVTS V2 Status: Disabled

GROUP 2 SYSTEM CHECKS

- 68.01: Chk scheme A/R: 111
- 68.02: Chk scheme ManCB: 111
- 68.03: V< Dead Line: 13.00 V
- 68.04: V> Live Line: 51.00 V
- 68.05: V< Dead Bus: 13.00 V
- 68.06: V> Live Bus: 51.00 V
- 68.07: Diff Voltage: 6.400 V
- 68.08: Diff Frequency: 100.0 mHz
- 68.09: Diff Phase: 10.00 deg
- 68.0A: Bus-Line Delay: 600.0 ms

GROUP 2 AUTORECLOSE

- 69.01: GROUP 2 AUTORECLOSE MODE:
- 69.02: 1P Trip Mode: 1
- 69.04: 1P Dead Time 1: 1.000 s
- 69.09: Reclaim Time: 25.00 s
- 69.0A: Close Pulse Time: 300.0 ms
- 69.0B: Discrim. Time: 1.300 s
- 69.0C: A/R Inhibit Wind: 5.000 s
- 69.0E: GROUP 2 AUTORCLE LOCKOUT:
- 69.0F: Block A/R:11111111111111111111111111111111
- 69.10: Block A/R 2: 111111

GROUP 2 INPUT LABELS

- 6A.01: Opto Input 1: L1 SET GRP SEL
- 6A.02: Opto Input 2: L2 SET GRP SEL
- 6A.03: Opto Input 3: L3 LN VTS CLOSE
- 6A.04: Opto Input 4: L4 BUS12 VTS CLS
- 6A.05: Opto Input 5: L5GSD101 CB A OP
- 6A.06: Opto Input 6: L6GSD101 CB B OP
- 6A.07: Opto Input 7: L7GSD101 CB C OP
- 6A.08: Opto Input 8: L8GSD101 CB A CL
- 6A.09: Opto Input 9: L9GSD101 CB B CL
- 6A.0A: Opto Input 10: L10GSD101CB C CL
- 6A.0B: Opto Input 11: L11 CB READY
- 6A.0C: Opto Input 12: L12 SF6 PSR STG2
- 6A.0D: Opto Input 13: L13 BF STG1 OPTD
- 6A.0E: Opto Input 14: L14 BF STG2 OPTD
- 6A.0F: Opto Input 15: L15 CARRFAIL CH1

Settings File Report
Substation: LINE-3
File: 000.set
Model Number: P444916B6M0720M

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- 6A.10: Opto Input 16: L16 DT HEALTHY
- 6A.11: Opto Input 17: L17 DT RECV
- 6A.12: Opto Input 18: L18 CARR RECV
- 6A.13: Opto Input 19: L19 AR BLOCK
- 6A.14: Opto Input 20: L20 ARS IN
- 6A.15: Opto Input 21: L21 ARS INI R-PH
- 6A.16: Opto Input 22: L22 ARS INI Y-PH
- 6A.17: Opto Input 23: L23 ARS INI B-PH
- 6A.18: Opto Input 24: L24 86LE3-1 SUVP

GROUP 2 OUTPUT LABELS

- 6B.01: Relay 1: R1 CB TC1_R-PH
- 6B.02: Relay 2: R2 CB TC1_Y-PH
- 6B.03: Relay 3: R3 CB TC1_B-PH
- 6B.04: Relay 4: R4 86L3-1 TRIP
- 6B.05: Relay 5: R5 DT SEND
- 6B.06: Relay 6: R6 DIST CARR SND
- 6B.07: Relay 7: R7 SPARE
- 6B.08: Relay 8: R8 21M2 AR RPH
- 6B.09: Relay 9: R9 CB TC2_R-PH
- 6B.0A: Relay 10: R10 CB TC2_Y-PH
- 6B.0B: Relay 11: R11 CB TC2_B-PH
- 6B.0C: Relay 12: R12 50 OPTD
- 6B.0D: Relay 13: R13 59 OPTD
- 6B.0E: Relay 14: R14 67N OPTD
- 6B.0F: Relay 15: R15 78 OPTD
- 6B.10: Relay 16: R16 AR IN SERVIC
- 6B.11: Relay 17: R17 M1 TCS UHLY
- 6B.12: Relay 18: R18 AR BLK
- 6B.13: Relay 19: R19 21 OPTD
- 6B.14: Relay 20: R20 TRIP POLE A
- 6B.15: Relay 21: R21 TRIP POLE B
- 6B.16: Relay 22: R22 TRIP POLE C
- 6B.17: Relay 23: R23 21M2 AR Y-PH
- 6B.18: Relay 24: R24 DT RECV
- 6B.19: Relay 25: R25 CB SF6 STG2
- 6B.1A: Relay 26: R26 50BF INI RPH
- 6B.1B: Relay 27: R27 50BF INI YPH
- 6B.1C: Relay 28: R28 50BF INI BPH
- 6B.1D: Relay 29: R29 21M2 AR B-PH
- 6B.1E: Relay 30: R30 SPARE
- 6B.1F: Relay 31: R31 SPARE
- 6B.20: Relay 32: R32 AR CLS CMD