



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

दिनांक: 18.04.2025

सेवा में

As per attached list of Members and Other invitees

विषय: संरक्षण उप-समिति की 59 वीं बैठक की कार्यसूची।

Subject: Agenda for 59th Protection Sub-Committee Meeting.

संरक्षण उप-समिति की 59 वीं बैठक, दिनांक 23.04.2025 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 (<http://164.100.60.165/>) 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 में उपस्थिति सुनिश्चित करें।

The 59th meeting of Protection Sub-Committee is scheduled to be held on 23.04.2025 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 NRPC website (<http://164.100.60.165/>). As per decisions of 56th PSC meeting, utilities other than NRPC member have also been invited for meeting for ensuring compliance of protection code of IEGC 2023. Kindly make it convenient to attend the same.

Signed by Dharmendra
Kumar Meena
Date: 19-04-2025 07:32:23

डी. के. मीणा
निदेशक (संरक्षण)

Agenda of 59th Protection Sub-Committee Meeting (23rd April, 2025)

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Agenda of 59th Protection Sub-Committee Meeting (23rd April, 2025)

**Agenda for
59th Meeting of Protection Sub-Committee (PSC) of
Northern Regional Power Committee**

Date and time of meeting : 23.04.2025 10.30 Hrs.
Venue : NRPC Secretariat, Katwaria Sarai,
New Delhi

Part-A: Agenda by NRPC Secretariat

A.1. Confirmation of minutes of 58th meeting of Protection Sub-Committee

A.1.1 58th PSC meeting was held on 26.03.2025. Minutes of the meeting were issued vide letter dtd. 11.04.2025. No comment has been received till date.

Decision required from Forum:

Forum may approve the minutes of the meeting.

A.2. Status of action taken on decisions of 58th Protection Sub-Committee meeting (agenda by NRPC Secretariat)

A.2.1 Status of action taken on the decisions of 58th PSC meeting is attached as **Annexure-A.I.**

Decision required from Forum

Status may be deliberated for timely action on issues.

A.3. Submission of protection performance indices along with reason and corrective action taken for indices less than unity to NRPC Secretariat for month of March-2025 (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 $D = N_c / (N_c + N_f)$

b) The **Security Index** defined as $S = N_c / (N_c + N_u)$

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c) The **Reliability Index** defined as $R = N_c / (N_c + N_i)$

where,

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

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

N_u is the number of unwanted operations,

N_i is the number of incorrect operations and is the sum of N_f and N_u

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

A.3.3 Accordingly, the status of the indices reported for the month of **March 2025** is attached as **Annexure-A.II.**

A.3.4 Further, based on 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 for March-2025	As mention in Annexure-A.II.
Utilities have submitted data for some plants but not all.	NTPC (Anta, Auriya, Dadri, Koldam, Rihand, Singrauli) NPCIL (RAPS-A,B, NAPS) THDC (Koteshwar) UJVNL (Khodri, Chibro, Vyasi) PSCPL (GGSTPS, Rupnagar) HPSEBL (Hamirpur circle) RE Plants as mentioned in Annexure-A.II
Some utilities have sent data after the cut-off	As mentioned in Annexure-A.II.

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date of 7 th	
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Decision required from Forum:

- i. Forum may discuss cases where indices are less than 1.
- ii. Forum may direct utilities to submit the performance indices of previous month by 7th day of next month element wise along with the reason for indices less than unity and corrective action taken.

A.4. Annual protection audit plan for FY 2024-25 (agenda by NRPC Secretariat)

A.4.1 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.4.2 Starting from 48th PSC and in every PSC meeting, all utilities were requested to submit the annual protection audit plan. Status of annual audit plan is enclosed as **Annexure- A.IV**.

A.4.3 Further, those who have completed the audit till 31st March 2025 may submit the audit report and compliance status.

Decision required from Forum:

Utilities may submit reports of the internal audit done in FY 2024-25. A compliance report for the audited substation may be submitted.

A.5. Annual protection audit plan for FY 2025-26 (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 above, all utilities were requested to submit the annual protection audit plan for FY-2025-26 latest by 31st October 2024 in the 53rd PSC meeting. Further, concerned utilities were requested to submit the same at the earliest in every PSC meeting since then.

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- 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 who have not submitted audit plan for FY 2025-26 as deadline of 31st October 2024 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 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**).

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 the 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**

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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 the third-party audit report. The necessary compliance to such protection audit report shall be followed up regularly in the respective RPC.

A.7.3 The following utilities have submitted the internal audit report (FY 2024-25) based on the audit done at their substations:

S.N.	Utility	Stations
1	SJVN	NJHPS, RHPS
2	RVPN	220kV Substations Bhadla, Basani, Aau, Amarsagar, Badisid, Balotra, BAP, Bhinmal, Kanasar, Phalodi, Ramgarh, Reodar, Sirohi, Hamirgarh, PPS4 Nokh, RSDCL-I, RSDCL-II, Sawa
3	RPSC	400/220kV Switchyard
4	UPRVUNL	Obra A & B
5	Others	WUPPTCL, Alaknanda Hydro Power Company Limited, Ghatampur Thermal Power Station

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

S.N.	Utility	Stations
1	Meja Urja Nigam Private Limited	400kV Switchyard of MUNPL, Prayagraj
2	PPGCL	765/400kV Substation
3	RE Plant	Ayana Renewable Power One Pvt. Ltd at Bikaner
4	Others	WUPPTCL, SEUPPTCL

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A.7.5 Compliance/ action plan on recommendation of audit has been submitted by following:

S.N.	Utility	Stations
1	UPRVUNL	BTPS, CTPS Parichha, (internal audit)
2	KWHEP (JSW)	Compliance action status of KWHEP (external audit)
3	Others	WUPPTCL (internal)

A.7.6 **The above submitted reports and action plan are available at the NRPC website:**
<http://164.100.60.165/meetings/prsub.html>

Decision required from Forum:

Forum may discuss the audit report as well as action taken by utilities on recommendations of audit team. 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. 220kV Bus Bar Protection disable for Busbar protection retrofitting work at 400/220kV Lucknow Substation (agenda by POWERGRID, NR-3)

- A.8.1 POWERGRID vide mail dated 09.04.2025 has informed that the existing 220kV B/B relay, Make RADHA retrofitting work is planned with the Decentralised CU/PU GE scheme at 400kV Substation Lucknow.
- A.8.2 220kV B/B (All zone) shall be out of service till the complete retrofitting work of LBB & B/B. (Tentative schedule:08/05/2025)
- A.8.3 As per NRPC protection guideline reverse zone is being adapted as 160ms for all distance relays at 220kV BUS.
- A.8.4 POWERGRID has submitted the above for concurrence.

Decision required from Forum:

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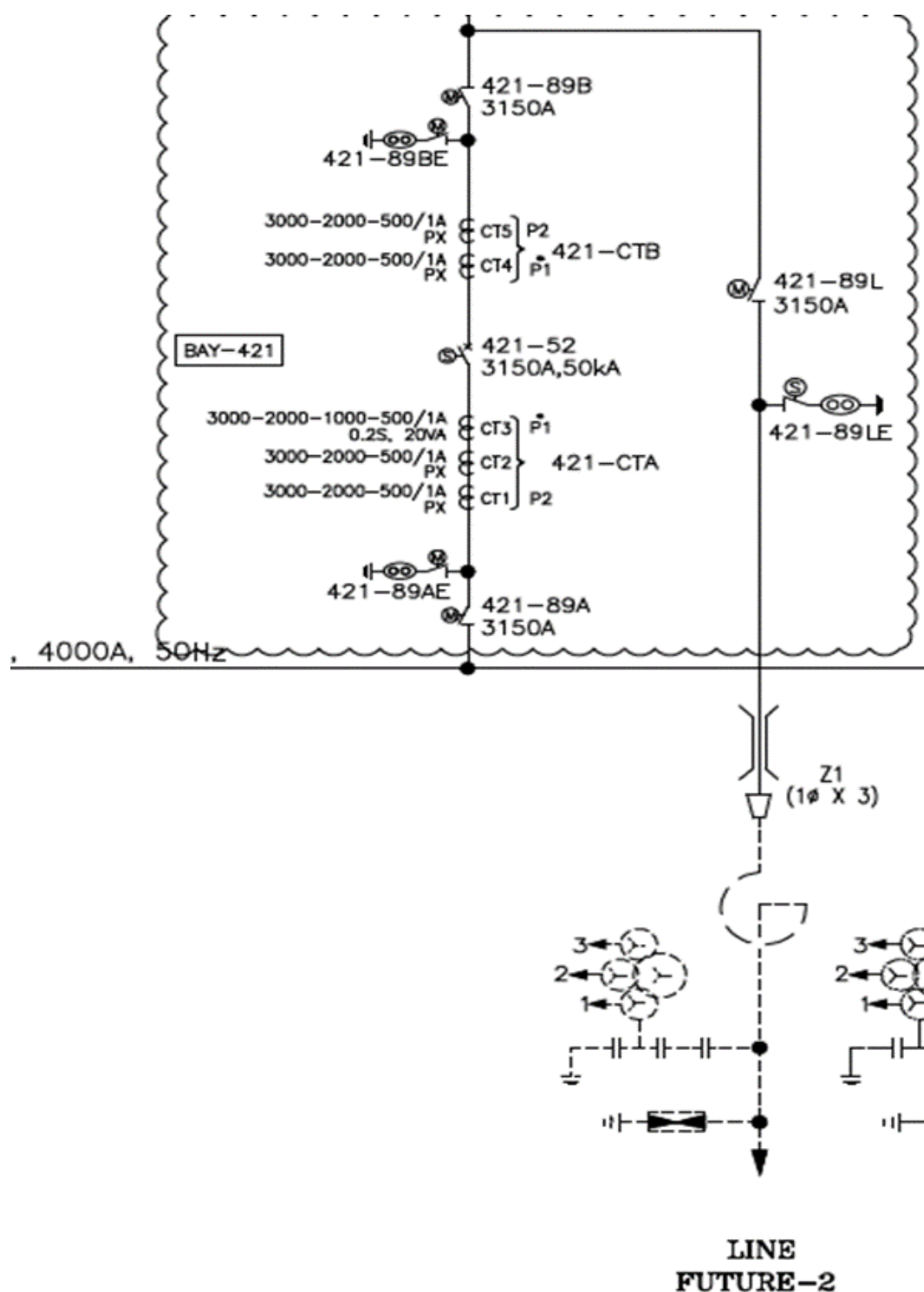
Members may deliberate and give concurrence on proposed revision of protection settings.

A.9. Review of Standard protection philosophy to be adopted in various cases (agenda by POWERGRID Nr-3)

A.9.1 POWERGRID NR-3 has submitted that the protection philosophy may be reviewed and standardised for various cases as per below-

- a. Protection setting for idle charging or Anti-theft charging of transmission line (765kV, 400kV and 220kV)
- b. Protection settings for an idle charge of future bay up to **LA** (Lightning arrestor) in case of GIS (Gas insulated S/S) or AIS
 - I. Future Bay equipped with all standard protection (Main-I, Main-II, LBB and BCU)
 - II. Future Bay equipped with LBB & BCU protection.

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- c. Protection settings of connected transmission line element, ICT and Bus Reactor in case of Bus Bar out of service due to retrofitting work

Decision required from Forum:

Members may deliberate and consider to include the above proposed cases in finalized protection philosophy.

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- 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, constituents are requested to share the status of remedial actions taken. The list of points to be discussed in the 59th 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 March 2025 (agenda by NRLDC)

- B.2.1 A total of **14** grid events occurred in the month of **March 2025** of which **08** are of GD-1 category, **04** are of GI-2 Category and **02** are of GI-1 Category. The tripping report of all the events has been issued by NRLDC. A list of all these events is attached at **Annexure-B.II**.
- B.2.2 Maximum delayed clearance of fault observed in event of multiple elements tripping at 400kV Parbati_3(NH) and 400kV Sainj HEP(HP) at 14:46 hrs on 16th March, 2025 (As per PMU at Nallagarh(PG), two consecutive R-N phase to earth fault is observed with delayed fault clearing time of 1240 ms and 1040 ms respectively).
- B.2.3 Delayed clearance of fault (more than 100ms for 400kV and 160ms for 220kV system) was observed in a total 06 events out of 14 grid events that occurred in the month. In 05 (nos.) 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

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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 the 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.

Decision required from Forum:

Members may like to discuss.

B.3 Analysis of the tripping events occurred during March-2025 and status of remedial action taken (agenda by NRLDC)

a) Frequent elements tripping during March 2025:

B.3.1 The following transmission elements were frequently tripping during the month of **March'25**:

S. NO.	Element Name	No. of forced outages	Utility/ SLDC
1	220 KV Badarpur(NT)-Alwar MIA(RS) (RS) Ckt-1	9	NTPC/Raj
2	220 KV Nara(UP)-Roorkee(UK) (UP) Ckt-1	4	UP/UK
3	220 KV RAPS_A(NP)-Sakatpura(RS) (RS) Ckt-1	4	NPCIL/Raj
4	220 KV RAPS_A(NP)-Sakatpura(RS) (RS) Ckt-2	4	NPCIL/Raj
5	220 KV RAPS_B(NP)-Sakatpura(RS) (RS) Ckt-1	4	NPCIL/Raj
6	220/33 kV 150 MVA ICT 2 at ABCRenewRJ01 SL_BHD2_PG	3	ABCRenew
7	400 KV Bareilly-Unnao (UP) Ckt-1	3	UP
8	400 KV Merta-Kankani (RS) Ckt-1	3	Raj
9	400 KV Suratgarh(RVUN)-Ratangarh(RS) (RS) Ckt-1	3	Raj
10	400/220 kV 240 MVA ICT 3 at Obra_B(UP)	3	UP
11	400/33 kV 150 MVA ICT 1 at Renew SuryaRavi SL_BKN_PG (RSRPL)	3	RSRPL

The list of tripping is attached as **Annexure-B.III**.

B.3.2 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.

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b) Protection-related issues in multiple elements tripping, detailed analysis of the events and status of remedial measures:

B.3.3 The list of major tripping events that occurred during March 2025 is attached as **Annexure-B.IV**. 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.

Decision required from Forum:

Utilities are requested to prepare a detailed analysis report and present the event details during 59th PSC meeting. Events involving more than one utility may be jointly prepared and presented in Forum.

B.4 Details of tripping of Inter-Regional lines from Northern Region for March'25 (agenda by NRLDC)

B.4.1 A total of 10 inter-regional lines tripping occurred in the month of March 2025. The list is attached at **Annexure-B.V**. The status of receipt of preliminary reports, DR/EL within 24 hours 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 24 hours of the event from SLDCs / ISTS licensees / ISGSs is a 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 24 hours 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.

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B.5 Mock testing of System Protection Schemes (SPS) in Northern Region (agenda by NRLDC)

B.5.1 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 to the respective RPC(s). The data for such studies shall be provided by CTU to the concerned RPC, RLDC and NLDC."

B.5.2 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.5.3 There are 56 numbers of System Protection Schemes (SPS) approved in the Northern Region. These SPS are implemented at major generation complexes, important evacuating transmission lines and ICTs which are N-1 non-compliant. The System Protection Scheme Document of Northern Region has been revised/updated on 31st March 2025. Revised version of the document is available on the NRLDC website in the Document section and can be accessed at below link: <https://newnr.nrlc.in/documents/Documents>.

B.5.4 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 a regular interval. Clause 16.2 of IEGC 2023 also mandates the mock testing of SPS for reviewing SPS parameters & functions, at least once a year.

B.5.5 In this regard, communication has already been sent to constituents through NRLDC letter dated 01.05.2024, 21.02.2025 & 05.03.2025 and continuous follow-up is being done in OCC & PSC meetings since May 2024.

B.5.6 Mock testing of most of the SPS has been conducted in FY 2024-25, however, it is

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pending at some of the stations / complexes shown in the table below:

Not conducted Mock Testing of SPS in 2024-25				
Sr. No.	Scheme Name	Control Area	Remarks	Date of Last Mock testing conducted
1	SPS for contingency due to tripping of HVDC Mundra-Mahendergarh	ADANI	Not healthy. Review is being done at OCC/PSC forum	
2	System Protection Scheme (SPS) for HVDC Balia-Bhiwadi Bipole	POWERGRID	Schedule not received. Review of SPS is needed.	
3	SPS for high capacity 400 kV Muzaffarpur-Gorakhpur D/C Inter-regional tie-line related contingency	POWERGRID	Schedule not received. Review of SPS is needed.	
4	SPS for Reliable Evacuation of Ropar Generation	Punjab	Schedule not received	
5	SPS for contingency due to tripping of evacuating lines from Narora Atomic Power Station	NAPS	Schedule not received	
6	SPS for Lahal Generation	Himachal Pradesh	Schedule not received	08-07-2020
7	SPS for evacuation of Kawai TPS, Kalisindh TPS generation complex	Rajasthan	Partially conducted on 14-03-2025. Complete exercise needs to be conducted.	
8	SPS for Transformers at Ballabgarh (PG) substation	POWERGRID	Not in service, Review is being done in OCC/PSC forum	
9	SPS for Transformers at Maharaniabagh (PG) substation	POWERGRID	Not in service, Review is being done in OCC/PSC forum	
10	SPS for Transformers at Mandola (PG) substation	POWERGRID	Not in service, Review is being done in OCC/PSC forum	
11	SPS for Transformers at Bamnauli (DTL) Substation	Delhi	Schedule not received; Review is being done at OCC/PSC forum	
12	SPS for Transformers at 400kV Deepalpur (JKTPL) Substation	Haryana	Schedule not received	
13	SPS for Transformers at 400KV Fatehgarh Solar Park (AREPRL)	ADANI	Schedule not received	
14	SPS for Transformers at 400kV Unnao (UPPTCL) Substation	Uttar Pradesh	SPS Unhealthy	19-05-2023

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- B.5.7 Concerned constituents/utility were requested to conduct the mock testing of pending SPS (mentioned in the above table) by the end of April 2025 month through an NRLDC letter dated 04.04.2025.
- B.5.8 Further, in view of changes in network connectivity, network augmentation and load flow, a review of some of the major SPS is needed. Major SPS whose review is needed are:
- a) SPS for high capacity 400 kV Muzaffarpur-Gorakhpur D/C Inter-regional tie-line related contingency
 - b) System Protection Scheme (SPS) for HVDC Balia-Bhiwadi Bipole
- B.5.9 Further, other SPS may also need review. Concerned utility may take necessary action at their end in this regard.
- B.5.10 Concerned constituents/utility are requested to conduct the mock testing of pending SPS in April 2025 month only.

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 in a year.

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.5.11 Utilities are also requested to share the tentative schedule plan for conducting mock testing of SPS in their respective control area during 2025-26 in the format attached as **Annexure-B.VI.**

Decision required from Forum:

Members may like to discuss.

B.6 Protection-related issues in J&K control area (agenda by NRLDC)

- a) Frequent tripping events in J&K(UT) control area (multiple events of load loss)**

- B.6.1 Frequent events of multiple elements tripping leading to load loss have been observed in

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J&K (UT) control area. Majorly affected substations are 220kV Ziankote, Barn, Mirbazar, Jammu(Gladini) & Pampore and 400kV Baglihar. Details of tripping events occurred at aforementioned sub stations during period of Jan'24-Mar'25 are enclosed in **Annexure-B.VII**. Such frequent grid events are very detrimental to the safety and security of the state grid as well as to that of the regional and national grid.

b) Protection non-compliance in J&K control area

B.6.2 During analysis of the grid events that occurred in J&K control area based on the available data, the following protection-related issues are observed:

- i. Non-operation of A/R during single-phase to earth fault. During 46th PSC meeting, J&K stated that "in the next financial year, work of installation of OPGW in all the transmission lines will be started. Follow-up actions are being taken regarding the same. OPGW work will be followed by the installation of PLCC". However, no further update received from J&K.
- ii. Issue related to protection settings in transmission elements. Protection systems are also not well coordinated with remote substations. Unwanted tripping of the elements are also observed. Hence, reviewing protection settings of transmission elements at J&K(UT) substations and ensuring its proper coordination with the nearby substation is needed to be ensured.

B.6.3 J&K(UT) is requested to share the details of actions taken to address the aforementioned issues. Also share status of follow-up actions taken/to be taken in this regard.

c) Non-submission of the Disturbance recorder (DR), Event logger(EL) and tripping reports of Tripping events

B.6.4 It is to be noted that as per the IEGC provision under clause 37.2 (c), tripping report along with DR/EL has to be furnished within 24 hrs of the occurrence of the event and a detail report of the event is to be submitted within a week of the event. However, no DR/EL & tripping report of any has been received from J&K control area for any of the grid event till date. Data submission status for period of Jan'24-Mar'25 is attached as **Annexure-B.VIII**. Field data is very important for the complete analysis of the grid events.

B.6.5 J&K representatives may please note and advise the concerned for the timely submission

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of the DR/EL & tripping details. It is requested that DR/EL of all the tripping shall be uploaded on Web Based Tripping Monitoring System “<https://postda.nrlcdc.in/Account/Login.aspx>” within 24 hours of the events as per IEGC clause 37.2(c) and clause 15.3 of CEA grid standard.

Decision required from Forum:

Members may like to discuss.

B.7 Maloperation of protection system at 400/220kV Jaisalmer(RS) in Rajasthan control area (agenda by NRLDC)

- B.7.1 Frequent events of multiple elements tripping at 400/220kV Jaisalmer(RS) S/s have been observed in recent past, raising concern over the stability and reliability of the system.
- B.7.2 On 02.04.2025, at 17:26 hrs, all the 400kV elements connected to 400 KV Jaisalmer(RS) - Bus 2 tripped due to B Phase CB pole of 125 MVAR Bus Reactor No 1 at 400 KV Jaisalmer(RS) damaged/ blast causing the operation of LBB relay. As Jaisalmer(RS) has one and half breaker scheme at 400kV level, elements should not have tripped due to LBB operation. However, as reported, all the tie CB also tripped along with Main CBs at Bus-II on LBB operation.
- B.7.3 On 07.04.2025, at 23:21 hrs, 400 KV Jaisalmer(RS)-M/s Renew Hans Urja Pvt Ltd (RS) (Renew Hans Urja Pvt Ltd) Circuit tripped during testing of 400kV Main Bus-I at Jaisalmer(RS).
- B.7.4 Again, on 09.04.2025, at 00:00 hrs, all the 400kV elements connected to 400 KV Jaisalmer(RS) - Bus 2 tripped during Bus stability testing of 400kV Main Bus-II at Jaisalmer(RS).
- B.7.5 Maloperation of the protection system during testing work highlights the issue of non-standard practice during testing work. In this regard, communication has already been sent to Rajasthan through NRLDC letter dated 09.04.2025 and this issue has already been highlighted many times during OCC & PSC forums and utilities have been requested to ensure that standard operating procedures are followed during any

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testing work at the site.

- B.7.6 In view of this, SLDC-RS / RVPNL are requested to share the details w.r.t. the grid event and remedial action taken to avoid such events in the future.

Decision required from Forum:

Members may like to discuss.

B.8 Healthiness of protection system and protection settings in line with the NRPC Protection Philosophy in the Rajasthan Control area (agenda by NRLDC)

- B.8.1 Frequent tripping of 400kV lines in the Rajasthan RE complex has been observed in the recent past. A list of the tripping events is mentioned in the below table:

S. No	Name of the element	Tripping Date & time	Reason of tripping
1.	400 KV Bhadla-Jodhpur (RS) Ckt-1	12:44 hrs, 02.04.2025	B-N phase to earth fault
2.	400 KV Bhadla-Ramgarh (RS) Ckt-2	14:24 hrs, 06.04.2025	B-N phase to earth fault
3.	400 KV Bikaner-Merta (RS) Ckt-1	21:00 hrs, 06.04.2025	B-N phase to earth fault
4.	400 KV Merta-Kankani (RS) Ckt-1	21:02 hrs, 06.04.2025	R-N phase to earth fault
5.	400 KV Bikaner-Merta (RS) Ckt-1	11:53 hrs, 07.04.2025	B-N phase to earth fault
6.	400 KV Bikaner-Bhadla (RS) Ckt-1	12:33 hrs, 07.04.2025	R-N phase to earth fault
7.	400 KV Bhadla-Ramgarh (RS) Ckt-2	13:48 hrs, 07.04.2025	Y-N phase to earth fault

- B.8.2 From the above tripping incidents, it is evident that most of the tripping occurred during peak solar hours. Outage of multiple elements may further affect the loading of other lines and may lead into cascade tripping in the complex. Therefore, frequent tripping of lines in RE complex during solar hours affects the security and reliability of the complex. It is also suspected that phase overcurrent protection has been kept enabled in 400kv transmission lines in Rajasthan control area which is not desired and non-compliance of NRPC protection philosophy. It may also lead to unwanted tripping of transmission lines.

- B.8.3 Therefore, SLDC-RS / RVPNL are requested to share the reason and analysis of tripping incidents and share the details of remedial action taken to avoid such tripping

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incidents specifically in RE complex. Further, it is also requested to disable the phase overcurrent protection in transmission lines if it is kept enabled.

Decision required from Forum:

Members may like to discuss.

B.9 Corrective action for healthiness of 500kV Mundra-Mahindergarh SPS (agenda by NRLDC)

- B.9.1 On 17th May 2024 on outage of both pole (carrying total ~1500MW), the SPS of 500kV HVDC Mundra-Mahindergarh inter-regional link didn't operate. This issue was discussed during the 51st PSC meeting and ADANI was requested to share the details w.r.t. SPS operation during the meeting.
- B.9.2 Further, NRLDC in coordination with NLDC, conducted an online discussion meeting with concerned stakeholders (SLDCs, ADANI, POWERGRID) on 12th August 2024, for further remedial actions required to make this SPS healthy.
- B.9.3 Following actions were decided during the meeting:
- i. POWERGRID, ADANI and concerned states were requested to identify the issue in communication links and take expeditious actions to make the all the communication link healthy. POWERGRID & ADANI shall review the healthiness of SPS system at different load centres and the communication path between them in coordination with the SLDCs.
 - ii. States were requested to go through the details of load feeders mentioned in SPS document and share the changes/modifications as per the present scenario and share the inputs w.r.t. unavailability in identified load feeders and load shedding. SLDCs shall share the revised updated feeder details (radial) along with expected average/peak load relief through respective feeders.
 - iii. SLDCs in coordination with their transmission and protection team shall share the status and healthiness of existing SPS system along with details of the availability of the communication path for incorporation of proposed revised/additional feeders.
- B.9.4 Load end details have been received from UP, Haryana, Punjab, Rajasthan & Delhi. Details and communications are attached as **Annexure-B.IX**.
- B.9.5 ADANI via mail dated 29.08.2024 has submitted the status of healthiness of the

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communication network and hardware system at different locations on the basis of preliminary inspection. As per details submitted, counter status was found OFF at Alwar, Ratangarh, Gobindgarh, Malerkotla, Bamnauli, Shamli and Dhanonda.

- B.9.6 Details of the nodal officer of different substations involved in SPS scheme has already been shared with ADANI team for coordination and further remedial actions.
- B.9.7 During 53rd PSC meeting, ADANI was requested to coordinate with the respective states to rectify the issues in the SPS system and share the status of remedial action taken / planned to be taken. Desired remedial actions need to be expedited.
- B.9.8 ADANI agreed for the same and stated that the update would be given within 01 week. However, no detail received yet from ADANI.
- B.9.9 During discussion in 55th PSC meeting, it was decided that ADANI shall take lead in rectification work as this SPS scheme was commissioned by them. Protection nodal officers from States will provide possible necessary assistance from their end. Further, states were also requested to ensure the incorporation of revised decided feeders during work at their stations. The state representative assured to provide all necessary coordination from their end.
- B.9.10 During 56th PSC meeting, ADANI was requested to apprise the forum about the present status of remedial actions. ADANI representative stated that they have raised a service order to COMTEL (OEM) for approval. After approval of this service order, COMTEL engineers will visit all the sites in coordination with nodal officers from respective stations. It is expected that identification of issues and estimate hardware requirements will be completed by the end March 2025. Thereafter, after financial approval, rectification of issues will be done. ADANI was requested to ensure the completion of whole work before summer 2025. State representatives were also requested to coordinate with the ADANI team and ensure the incorporation of identified revised feeders for load relief in SPS.
- B.9.11 Further, through mail dt 3rd March 2025, ADANI has informed that they have awarded the rectification work service to M/s COMTEL for survey and restoration of possible elements installed at the locations and engineers from M/s COMTEL shall be visiting respective stations as per the schedule.
- B.9.12 During 57th PSC meeting, ADANI representative informed that the visit by COMTEL engineers at all the sites is completed and COMTEL will submit the report within 10 days.

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- B.9.13 ADANI was requested to share the report at the earliest and make an Action Plan accordingly to ensure completion of the whole work before summer 2025.
- B.9.14 ADANI agreed to take expeditious actions and to share the action plan at the earliest.
- B.9.15 During 58th PSC meeting, ADANI representative shared the observations made by COMTEL engineers and informed that it would at least require 6 months to complete the work.
- B.9.16 NRLDC CGM (SO) highlighted that in view of the envisaged growth in demand in next summer season, it is important to ensure rectification of issues and healthiness of SPS.
- B.9.17 ADANI representative further informed that the cost implication in this case is estimated as approx. Rs. 1.5 Cr. Till now they have conducted a technical assessment and made cost estimation. They will look into the regulatory aspect of the same for finalising the action plan.
- B.9.18 PSC Forum emphasized the importance of 500kV Mundra-Mahindergarh SPS and its healthiness is important to ensure rectification of issues in SPS system before summer 2025. State representatives were also requested to coordinate with the ADANI team and also ensure incorporation of identified revised feeders for load relief in SPS. Desired remedial actions need to be expedited.
- B.9.19 ADANI is requested to apprise the forum about identified issues at various stations, the action plan and progress in rectification work.

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

A. March 2025

- C.1.1 NRLDC has submitted the FTCs allowed in month of March-2025. The same may be found on the NRPC website: <http://164.100.60.165/meetings/prsub.html>

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C.1.2 As per the approved procedure of NRPC, utilities have to put up agenda in PSC forum for final approval of settings.

C.1.3 The following utilities have submitted an agenda for approval of settings:

- i. POWERGRID
- ii. PBTSL
- iii. PRTL
- iv. UPSLDC
- v. RVPNL
- vi. PTCUL

C.1.4 However, none of the settings have been put up by following utilities:

- i. HVPN
- ii. Gorbea_SPL
- iii. SJVNGEL_BKN2
- iv. NHPC
- v. Renew Surya Jyoti Private Limited
- vi. Neemba_SPRVPL
- vii. NPCIL
- viii. Nokh Solar Power Plant NTPC Limited
- ix. POWERGRID (settings for 2 elements not submitted)
- x. RVPNL (settings of 1 element not submitted)
- xi. UPSLDC (settings of 1 element not submitted)

C.1.5 Further, UPSLDC has submitted settings for FTC allowed at UPSLDC level in March, 2025 for final approval of settings.

B. February 2025 & January 2025.

C.1.6 UPSLDC has submitted the settings of FTCs allowed by NRLDC and UPSLDC in month of February-2025 & January -2025 for final approval of settings.

C. August 2024 & November 2024

C.1.7 THDC has submitted the settings of FTCs allowed by NRLDC for Tehri Pumped

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Storage Project (PSP) vide mail dated 15.04.2025 for final approval of settings.

C.1.8 These all submitted settings are available at NRPC website:
<http://164.100.60.165/meetings/prsub.html>.

C.1.9 It is to highlight that as per decisions of 54th PSC meeting:

Quote

NRLDC shall give provisional protection clearance during FTC on conditional basis subject to submission of agenda in next Protection Sub-Committee meetings (not later than 2nd next PSC meeting). If utility does not put up the agenda within time, further FTC clearance would not be granted to the concerned.

Unquote

Decision required from Forum:

Members may refer settings put up by utilities for any corrections required. Accordingly, settings may be approved by the forum. Concerned members may be directed to submit the agenda for final approval of protection settings.

Members of Protection Sub-Committee (FY 25-26)

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60	Avaada Energy Private Limited*	CEO	kishor.nair@avaada.com
61	Adani Green Energy Limited	AVP	sanjay.bhatt@adani.com

* Organizations from where nominations are not received for PSC, members of NRPC have been mentioned. Nomination for PSC forum may be sent at the earliest.

List of Members of Renewable Energy Sub-committee

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15	Adani Hybrid Energy Jaisalmer Two Ltd.	
16	Adani Hybrid Energy Jaisalmer Three Ltd.	
17	Adani Hybrid Energy Jaisalmer Four Ltd.	
18	Adani Renewable Energy (RJ) limited Rawara	
19	Adani Solar Energy Jaisalmer One Pvt. Ltd. _450MW (Solar)	
20	Adani Solar Energy Four Private Limited	
21	Adani Solar Energy Jaisalmer Two Private Limited	
22	Adani Solar Energy Jaisalmer Two Private Limited Project Two	
23	SB ENERGY FOUR PRIVATE LIMITED, Bhadla	
24	SB Energy Six Private Limited, Bhadla	
25	Adani Solar Energy Jodhpur Two Limited, Rawara	
26	Adept Renewable Technologies Pvt. Ltd.	
27	Adani Solar Energy RJ Two Pvt. Ltd. (Devikot)	
28	Adani Solar Energy RJ Two Pvt. Ltd. (Phalodi)	
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36	Avaada Sunrays Pvt. Ltd.	
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54	Anta Solar	
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58	Nedan Solar NTPC	
59	NTPC Nokhra_300MW	
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62	RENEW SOLAR POWER Pvt. Ltd. Bhadla	
63	ReNew Solar Urja Private Limited	
64	Renew Sun Bright Pvt. Ltd. (RSBPL)	
65	Renew Sun Waves Private Limited (RSEJ4L)	
66	Renew Surya Partap Pvt. Ltd.	
67	Renew Surya Ravi Pvt. Ltd.	
68	Renew Surya Roshni Pvt. Ltd.	
69	Renew Surya Vihan Pvt. Ltd.	
70	Renew Surya Ayaan Pvt. Ltd.	
71	RENEW SOLAR POWER Pvt. Ltd. Bikaner	

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80	Transition Green Energy Private Limited	
81	Transition Sustainable Energy Services Private Limited	

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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
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
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11	Bikaner Khetri Transmission Limited		

Status of action taken on decisions of 58th PSC

S.N.	Agenda No.	Agenda	Decision of 58 th PSC	Status of action Taken
1	A.2	ATR A.11 Review of Distance Protection Requirement Philosophy for Renewable plants having one evacuation line (agenda by Adani Green Energy Limited)	Forum recommended for constitution of Committee under Chairmanship of SE (Protection), NRPC having members from NRLDC, NLDC, POWERGRID, Large RE Developers, RE rich states (Rajasthan & Uttar Pradesh) to prepare a draft protection philosophy for RE.	Under Process
		A.15 Training on Electrical Protection of Power System for officials of NRPC Constituents (agenda by NRPC Secretariat)	A letter may be sent to POWERGRID to share the schedule for training.	Under Process
2	A.3	Submission of protection performance indices along with reason and corrective action taken for indices less than unity to NRPC Secretariat on monthly basis (agenda by NRPC Secretariat)	i. Non-compliant utilities were asked to submit the Protection performance indices timely by 7 th day of month element wise along with corrective action taken for indices less than unity.	i. Status of reporting of indices has been taken as an agenda. ii. HPPCL representative ensured to submit the reason and corrective action taken for indices less than unity after the meeting. HPPCL may

Status of action taken on decisions of 58th PSC

				update.
3	A.5	Annual protection audit plan for FY 2025-26 (agenda by NRPC Secretariat)	Non-compliant utilities were asked to submit annual audit plan 2025-26 without any further delay. Other utilities were asked to submit report and compliance status within one month of completion of audit.	Some utilities have submitted audit report. Same has been taken as agenda.
4	A.6	Third-party protection audit plan (agenda by NRPC Secretariat)	Forum directed utilities to submit the third-party protection audit plan. Subsequently, the audit reports along with compliance status may be submitted to NRPC Secretariat within one month of completion of audit. Letter may be sent by NRPC Secretariat to NPC Division, CEA for taking up matter of protection auditor certification with NPTI.	Some utilities have submitted audit report. Same has been taken as agenda. Regarding protection auditor certification, agenda has been submitted for discussion in upcoming NPC meeting.
5	B.7	Corrective action for healthiness of 500kV Mundra-Mahindergarh SPS (agenda	Forum emphasized the importance of 500kV Mundra-Mahindergarh SPS and its	Adani may update.

Status of action taken on decisions of 58th PSC

		by NRLDC)	healthiness is important to ensure rectification of issues in SPS system before summer 2025. State representatives were also requested to coordinate with the ADANI team and also ensure incorporation of identified revised feeders for load relief in SPS. Desired remedial actions need to be expedited.	
6	C.1	First Time Charging of transmission lines/Bays/Transformer/Reactor etc. by NRLDC in month of February-2025	MS, NRPC stated that mail may be sent to all concerned members who have not sent the agenda for final approval of protection settings	A mail dated 15.04.2025 was sent to concerned for submitting agenda timely for final approval of protection settings of the element after its FTC.

Status of performance indices report of March 2025 (Last date of submission 07.04.2025)							
S. No.	Member 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	Yes	04.04.2025	NR-1	No	NA
			Yes	15.04.2025	NR-2	Yes	No
			Yes	07.04.2025	NR-3	No	NA
2	NTPC	Central Generating Company			Anta		
					Auriya		
					Dadri		
					Koldam		
					Rihand		
					Singrauli		
			Yes	05.04.2025	Unchahar	No	NA
			Yes	02.04.2025	Tanda	No	NA
3	BBMB						
4	THDC		Yes	03.04.2025	Tehri	No	NA
					Koteshwar		
5	SJVN	State Transmission Utility	Yes	07.04.2025	RHPS	No	NA
			Yes	08.04.2025	NJHPS	No	NA
6	NHPC		Yes	07.04.2025		Yes	Yes
7	NPCIL				RAPS-A		
					RAPS-B		
			Yes	05.04.2025	RAPS-C(5&6)	Yes	
					NAPS-1&2		
8	DTL		Yes	08.04.2025		NO	NA
9	HVPNL		Yes	03.04.2025		No	NA
10	RRVNL		Yes	16.04.2025		Yes	Yes
11	UPPTCL	State Generating Company	Yes	03.04.2025	Meerut Circle	No	NA
			Yes	07.04.2025	Agra Circle	Yes	No
			Yes	03.04.2025	Jhansi Circle	No	NA
			Yes	07.04.2025	Prayagraj Circle	No	NA
			Yes	07.04.2025	Gorakhpur Circle	No	NA
			Yes	07.04.2025	Lucknow Circle	No	NA
			Yes	05.04.2025		No	NA
12	PTCUL						
13	PSTCL		Yes	05.04.2025		No	NA
14	HPPTCL		Yes	05.04.2025	PPS-I	No	NA
15	IPGCL	State Generating Company	Yes	05.04.2025	PPS-III, Bawana	Yes	Yes
			Yes	07.04.2025	RGTPP (Khedar)	No	NA
16	HPGCL		Yes	07.04.2025	KTPS	No	NA
17	RRVUNL		Yes	07.04.2025	CSCTPP Chhabra	No	NA
			Yes	02.04.2025	RGTPP, Ramgarh	No	NA
			Yes	07.04.2025	Ctpp,Chhabra	No	NA
			Yes	07.04.2025	DCCPP, Dholpur	No	NA
			Yes	07.04.2025	kATPP, Jhalawar	No	NA
			Yes	07.04.2025	STPS Suratgarh	No	NA
			Yes	07.04.2025	SSCTPS Suratgarh	No	NA
18	UPRVUNL	State Generating Company	Yes	07.04.2025	Parichha B (220 kV)	No	NA
			Yes	02.04.2025	Parichha C (400 kV)	No	NA
			Yes	10.04.2025	DTPS Anpara	No	NA
			Yes	07.04.2025	Obra A & B	No	NA
			Yes	07.04.2025	Obra C	Yes	Yes
			Yes	07.04.2025	Harduaganj 400 kV	No	NA
			Yes	08.04.2025	Ghatampur 765 kV	No	NA
			Yes	07.04.2025	Anpara-A&B	Yes	Yes
			Yes	07.04.2025	Panki TPS	No	NA
			Yes	07.04.2025	Jawaharpur	Yes	Yes
19	UJVNL	State Generating Company	Yes	02.04.2025	Dharasu	No	NA
			Yes	02.04.2025	Tiloth	No	NA
					Khodri		
					Chibro		
					Vyasi		
20	HPPCL		Yes	07.04.2025	Kashang HEP	No	NA
			Yes	07.04.2025	Sawara Kuddu	No	NA
			Yes	07.04.2025	Sainj	No	NA
21	PSPCL	State Generating Company & State owned Distribution Company	Yes	01.04.2025	RSD	No	NA
					GGSTPS, Rupnagar		
			Yes	07.04.2025	GVK Power Goindwal Shahib Ltd.	No	NA

			Yes	07.04.2025	GHSTPS, Lehra Mohabbat	No	NA
22	HPSEBL	Distribution company having Transmission connectivity ownership			Hamirpur Circle		
			Yes	05.04.2025	Shimla Circle	No	NA
23	Prayagraj Power Generation Co. Ltd.	IPP having more than 1000 MW installed capacity	Yes	02.04.2025		No	NA
24	Aravali Power Company Pvt. Ltd		Yes	10.04.2025		No	NA
25	Apraava Energy Private Limited		Yes	07.04.2025		No	NA
26	Talwandi Sabo Power Ltd.						
27	Nabha Power Limited		Yes	01.04.2025		No	NA
28	MEIL Anpara Energy Ltd (Anpara-C)		Yes	03.04.2025		No	NA
29	Rosa Power Supply Company Ltd		Yes	01.04.2025		No	NA
30	Lalitpur Power Generation Company Ltd		Yes	04.04.2025		No	NA
31	MEJA Urja Nigam Ltd.		Yes	01.04.2025		No	NA
32	Adani Power Rajasthan Limited		Yes	04.04.2025		No	NA
33	JSW Energy Ltd. (KWHEP)		Yes	01.04.2025		No	NA
34	RENEW Power Pvt Ltd	RE Generating Company having more than 1000 MW installed capacity	Yes	08.04.2025		No	NA
35	NTPC Green Energy Limited						
36	Azure Power India Pvt. Ltd.						
37	Avaada Energy Private Limited		Yes	07.04.2025			
38	Adani Green Energy Limited						
39	Tata Power Renewable Energy Ltd.	IPP having less than 1000 MW installed capacity (alphabetical rotational basis)	Yes	02.04.2025		No	NA
40	UT of J&K	UT of Northern Region					
41	UT of Ladakh						
42	UT of Chandigarh						
	ISTS Transmission Utilities						
43	INDIGRID						
44	POWERLINK						
45	ADHPL		Yes	07.04.2025		No	NA
46	NRSSXXXVI's Northern Region Transmission System	Tata Power					
47	Adani Transmission Limited	AESL	Yes	15.04.2025		No	NA
48	Bikaner Khetri Transmission Limited		Yes	15.04.2025		No	NA
49	Fatehgarh Bhadla Transmission Limited		Yes	15.04.2025		No	NA
50	Powergrid Sikar Transmission Limited	POWERGRID, NR-1	Yes	04.04.2025		No	NA
51	Powergrid Aligarh Sikar Transmission Limited		Yes	04.04.2025		No	NA
52	Powergrid Ajmer Phagi Transmission Limited		Yes	04.04.2025		No	NA
53	Powergrid Bikaner Transmission System Limited		Yes	04.04.2025		No	NA
54	Powergrid Khetri Transmission System Limited		Yes	04.04.2025		No	NA
55	Powergrid Ramgarh Transmission Limited		Yes	04.04.2025		No	NA
56	Powergrid Fatehgarh Transmission Limited		Yes	04.04.2025		No	NA
57	Powergrid Bhadla Transmission Limited		Yes	04.04.2025		No	NA
58	Powergrid Meerut Simbhavli Transmission Limited		Yes	04.04.2025		No	NA
59	Powergrid Kala Amb Transmission Limited	POWERGRID, NR-2	Yes	15.04.2025		No	NA
	State Utilities						
	Uttar Pradesh						
60	Vishnuprayag Hydro Electric Plant (J.P.)		Yes	01.04.2025		No	NA
61	Alaknanda Hydro Electric Plant (GVK)		Yes	07.04.2025		No	NA
62	Khara Power House (Khara)		Yes	15.04.2025		No	NA
63	WUPPTCL		Yes	01.04.2025		No	NA
64	SEUPPTCL					No	NA
65	ATSCL	ADANI	Yes	15.04.2025		No	NA
66	GTL	ADANI	Yes	15.04.2025		No	NA
67	HPTSL	ADANI	Yes	15.04.2025		No	NA
68	MTSCL	ADANI	Yes	15.04.2025		No	NA
69	OCBTL	ADANI	Yes	15.04.2025		No	NA
	Rajasthan						
70	220 KV Dhorimanna-Rajwest Line	JSW	Yes	15.04.2025		No	NA
71	400 KV ANTA - CHABRA II	ADANI					
72	Barsingsar Plant	NLC	Yes	15.04.2025		No	NA
	RE Utilities						
73	ABC Renewable Pvt. Ltd						
74	ACME Heeragarh powertech Pvt. Ltd						
75	ACME Chittorgarh Solar Energy Pvt Ltd						
76	Adani Hybrid Energy Jaisalmer One Ltd.						
77	Adani Hybrid Energy Jaisalmer Two Ltd.						

78	Adani Hybrid Energy Jaisalmer Three Ltd.						
79	Adani Hybrid Energy Jaisalmer Four Ltd.						
80	Adani Renewable Energy (RJ) limited Rawara						
81	Adani Solar Energy Jaisalmer One Pvt. Ltd._450MW (Solar)						
82	Adani Solar Enegry Four Private Limited						
83	Adani Solar Energy Jaisalmer Two Private Limited						
84	Project Two						
85	SB ENERGY FOUR PRIVATE LIMITED, Bhadla						
86	SB Energy Six Private Limited, Bhadla						
87	Adani Solar Enegry Jodhpur Two Limited, Rawara						
88	Adept Renewable Technologies Pvt. Ltd.						
89	Adani Solar Energy RJ Two Pvt. Ltd. (Devikot)						
90	Adani Solar Energy RJ Two Pvt. Ltd. (Phalodi)						
91	Adani Green Energy 19 Limited						
92	Altra Xergi Pvt. Ltd.						
93	AMP Energy Green Five Pvt. Ltd.						
94	AMP Energy Green Six Pvt. Ltd.						
95	Amplus Ages Private Limited						
96	Avaada RJHN_240MW	Avaada	Yes	07.04.2025		No	NA
97	Avaada sunce energy Pvt limited		Yes	07.04.2025		No	NA
98	Avaada Sunrays Pvt. Ltd.		Yes	07.04.2025		No	NA
99	Avaada Sustainable RJ Pvt. Ltd.		Yes	07.04.2025		No	NA
100	Ayana Renewable Power Three Private Limited						
101	Ayaana Renewable Power One Pvt. Ltd.						
102	Azure Power Forty One Pvt limited						
103	Azure Power Forty Three Pvt. Ltd._RSS						
104	Azure Maple Pvt. Ltd.						
105	AZURE POWER INDIA Pvt. Ltd., Bhadla						
106	Azure Power Thirty Four Pvt. Ltd.						
107	Clean Solar Power (Jodhpur) Pvt. Ltd.						
108	Clean Solar Power (Bhadla) Pvt. Ltd						
109	Eden Renewable Cite Private Limited						
110	Grian Energy private limited						
111	Mahindra Renewable Private Limited						
112	Mega Surya Urja Pvt. Ltd. (MSUPL)						
113	AURAIYA Solar						
114	DADRI SOLAR						
115	SINGRAULI SOLAR						
116	Anta Solar						
117	Unchahar Solar						
118	NTPC Devikot Solar plant_240MW						
119	NTPC Kolayat_400kV						
120	Nedan Solar NTPC						
121	NTPC Nokhra_300MW						
122	One Volt energy Pvt. Ltd.						
123	ReNew Solar Energy (Jharkhand Three) Private Limited	RENEW	Yes	08.04.2025		No	NA
124	RENEW SOLAR POWER Pvt. Ltd. Bhadla		Yes	08.04.2025		No	NA
125	ReNew Solar Urja Private Limited						
126	Renew Sun Bright Pvt. Ltd. (RSBPL)		Yes	08.04.2025		No	NA
127	Renew Sun Waves Private Limited (RSEJ4L)						
128	Renew Surya Partap Pvt. Ltd.		Yes	08.04.2025		No	NA
129	Renew Surya Ravi Pvt. Ltd.		Yes	08.04.2025		Yes	yes
130	Renew Surya Roshni Pvt. Ltd.		Yes	08.04.2025		No	NA
131	Renew Surya Vihan Pvt. Ltd.		Yes	08.04.2025		No	NA
132	Renew Surya Ayaan Pvt. Ltd.		Yes	08.04.2025		No	NA
133	Renew Solar Photovoltaic Pvt Ltd		Yes	08.04.2025		No	NA
134	RENEW SOLAR POWER Pvt. Ltd. Bikaner						
135	Rising Sun Energy-K Pvt. Ltd.						
136	Serentica Renewables India 4 Private Limited						
137	Tata Power Green Energy Ltd. (TPGEL)						
138	Tata Power Renewable Energy Ltd. (TPREL)						
139	Thar Surya Pvt. Ltd.						
140	TP Surya Pvt. Ltd.						
141	Banderwala Solar Plant TP Surya Ltd.						
142	TRANSITION ENERGY SERVICES PRIVATE LIMITED						
143	Transition Green Energy Private Limited						
144	Transition Sustainable Energy Services Private Limited						

PERFORMANCE INDICES										Annexure-A.III
Name of utility: Electricity Test & Commissioning Circle - Agra (TSW-AGRA)										
Month: MARCH-2025										
S.N	Sub-station	Unit/equipment	Nc	Nf	Nu	Ni	Dependability index(D)	Security index(S)	Reliability index (R)	Remarks
1	220 KV Phoolbagh	60 MVA-I	1	0	0	0	1	1	1	
2	220 KV Sikandara	132 KV Sikandra Umari line-I	1	0	0	0	1	1	1	
3	220 KV Bithoor	220 kv Unnao line	1	0	0	0	1	1	1	
4	220 KV S/S Chhata	160 MVA TF -II	1	0	0	0	1	1	1	
5	400 KV S/ Mant Mathura	400 KV MURADNAGAR LINE	2	0	0	0	1	1	1	
		400 KV FATEHABAD-II LINE	1	0	0	0	1	1	1	
6	400 KV S/S Aligarh	400KV/220KV 500MVA ICT -3	2	0	0	0	1	1	1	
		400 KV Harduaganj Line	1	0	0	0	1	1	1	
		400 KV Muradnagar Line	0	0	1	1		0	0	BCU:- As per Event analyses of BCU Relay A/R command was issued at 400KV s/s Aligarh, but pole was not closed in given time. Due Pole discrepancy(PD) Brakers (Main & Tie) Were Tripped. (Trip & Close Date,time 19.03.2025, 01:00Hrs to 19.03.2025, 02:14Hrs)
		400KV/220KV 315MVA ICT -2	1	0	0	0	1	1	1	
7	220 KV S/S Kasganj	220 KV JTPS Line	1	0	0	0	1	1	1	
8	220 KV S/S Sikandra	60 MVA T/F - I	1	0	0	0	1	1	1	
9	400 KV S/S Agra	400 KV Fatehabad Ckt - II	0	0	1	1	0	0	0	PLCC Malfunctioning (Trip & Close Date,time 21.03.2025, 17:07Hrs to 21.03.2025, 19:22Hrs)
		TOTAL	13	0	2	2				
Dependability index (D) $D=(Nc/(Nc+Nf))$			1							
Security Index (S) $S=(Nc/(Nc+Nu))$			0.87							
Reliability Index (R) $R=(Nc/(Nc+Ni))$			0.87							

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.

Arvind Kumar
Superintending Engineer

Protection performance indices Anpara A and B TPS for MARCH 2025

S.No.	Substation	Element name	Total number of tripping	Nc	Nf	Nu	Ni	Dependability Index (D)	Security Index(S)	Reliability Index(R)
1	400 KV ANPARA BTPS	Anpara Sarnath ckt2	2	2	0	1	1	1	0.666667	0.66666667
		Anpara-B-ANPARA D CKT-1	1	1	0	0	0	1	1	1

The Dependability Index defined as $(D) = Nc/(Nc+Nf)$
The Security Index defined as $(S) = Nc/(Nc+Nu)$
The Reliability Index defined as $(R) = Nc/(Nc+Ni)$
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 the sum of Nf and Nu.
* PPI (Protection Performance indices) should be submitted only for tripped elements of any sub station (Example 1,2 & 3)
* In case of no tripping of any element in a sub station it is should be submitted as "Nil" (Example 4)
* In case of single tripping which is Nf or Nu, PPI will be "Zero" (Example 1)
* In case of PPI less than one, details for that tripping should be submitted seperately (Example "Remarks for less than one sheet")

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	Anpara BTPS	Anpara-Sarnath ckt-2	06.03.2025 13:12:10 HR	U	DT received from sarnath end as per events report of PLCC	UPPTCL has planned to check Carrier communication in shut down proposed from 09.04.2025

1500 MW Pragati Power Station – III (CCGT, Bawana)

REPORT FOR PERFORMANCE INDEX LESS THAN UNITY – MARCH 2025

Case: - Tripping of Generator Transformer GTGT # 4

(Dates of Incidence – 28.03.2025)

Nc (number of correct operations at internal power system fault) = 1

Nf (number of failures to operate at internal power system fault) = 0

Nu (number of unwanted operations) = 1

Ni (number of incorrect operations) = 1

Dependability Index (D) = 1

Security Index (S) = 0.5

Reliability Index (R) = 0.5

Reasons of Unwanted Operation:

- Tripping of GTGT # 4 due to operation of PRV Protection.
- TB of the PRV relay found shorted in the terminal box.

Corrective Action:

- The shorted TB set has been replaced with a new TB set.

Taken: YES



Arif Rahman
DGM (Protection)
PPS - III, Bawana

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	765/400/220kV jawaharpur	220kV Jawaharpur-kasganj line	01.03.2025, 8:38	U	During a single-phase transient fault, no Auto reclose operation recorded as carrier receive from remot end	An issue with the Kasganj end no autoreclose operation working properly inform to kasganj end to solve this problem

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	765 KV Obra CTPS	765kV Obra C - Unnao line	3/14/2025 14:54	U	During Single Phase to GND transient fault Auto Reclose did not operated	Shutdown has been planned and applied to identify the reason for non operation of AR from BCU
		765KV Obra C - Unnao line	3/20/2025 18:33	U	During Single Phase to GND transient fault Auto Reclose did not operated	Shutdown has been planned and applied to identify the reason for non operation of AR from BCU
2	400 KV Obra CTPS	nil	nil	nil	nil	nil

PROTECTION PERFORMANCES INDICES POWERGRID NR2_Mar'2025

ELEMENT CODE	EVENT NO.	ELEMENT NAME	OUTAGE	RESTORATION	category code	Fault details	Type of tripping	Maloperation another agencies
NR222045	6030530	220KV KHALSTI-PHYANG	3/26/2025 4:44	3/26/2025 6:26	SBBT	Line tripped due to 220kV Busbar-1 protection operation caused by GIS flashover in Bus Coupler bay at LEH	NC	
NR2ICT81	6030531	LEH 50 MVA ICT-1	3/26/2025 4:44	3/26/2025 6:34	SBBT	Line tripped due to 220kV Busbar-1 protection operation caused by GIS flashover in Bus Coupler bay at LEH	NC	
NR213201	6030463	132KV SEWA2 - HIRANAGAR -II	3/22/2025 19:13	3/23/2025 3:00	SBBU	Lines tripped due to Bus fault in 132KV bus at JKPTCL Station Hiranagar caused by failure of R-Ph CT 132kV ICT bay at Hiranagar(18K). Due to above bus fault at Hiranagar, voltage in 132KV Sewa2.	NC	
NR213203	6030464	132KV SEWA2 - HIRANAGAR -I	3/22/2025 19:13	3/23/2025 2:46	SBBU	Lines tripped due to Bus fault in 132KV bus at JKPTCL Station Hiranagar caused by failure of R-Ph CT 132kV ICT bay at Hiranagar(18K). Due to above bus fault at Hiranagar, voltage in 132KV Sewa2.	NC	
NR222006	6030215	220KV JALANDHAR-DASUYA-I	3/10/2025 14:31	3/10/2025 19:51	SBBU	Line tripped on B-N fault due to 220KV Bus fault in 220KV Bus 2 at PSTCL Substation Dasuya . resulting in outage of all feeders connected to Bus 2 at dasuya as per details : 1. Line tripped on B-N fault due to 220KV Bus fault in 220KV Bus 2 at PSTCL Substation Dasuya . resulting in outage of all feeders connected to Bus 2 at dasuya as per details : 1. Tripping of 220KV Bus Sectionalizer on operation of O/C protection. 2. Tripping of 220KV Jalandhar Dasuya ckt 1 at Dasuya End on operation of distance protection in Z4	NC	NF
NR222022	6030216	220KV SARNA-DASUYA-I	3/10/2025 14:31	3/10/2025 20:15	SBBU	Line tripped on B-N fault due to 220KV Bus fault in 220KV Bus 2 at PSTCL Substation Dasuya . resulting in outage of all feeders connected to Bus 2 at dasuya as per details : 1. Tripping of 220KV Bus Sectionalizer on operation of O/C protection. 2. Tripping of 220KV Jalandhar Dasuya ckt 1 at Dasuya End on operation of distance protection in Z4	NC	NF
NR240009	6030250	400KV CHAMERA2-KISHENPUR	3/12/2025 12:21	3/12/2025 14:13	SEFU	As reported by NHPC, Line remained charged from Kishenpur(PG) but tripped from Chamera2 (NHPC) due to malfunction of SF6 gas Control Circuit in their bay at NHPC Chamera . Bay at	NC	NU
NR2ICT88	6030085	CHANDIGARH 160 MVA ICT-I	3/5/2025 14:44	3/5/2025 16:58	SICT	ICT tripped on operation of differential protection due to external flashover on tertiary side caused by animal (Cat).	NU	
NR240008	6030441	400KV CHAMERA1-CHAMERA2	3/21/2025 20:33	3/21/2025 21:36	SRMU	Line tripped on B-N fault from Chamera1 (NHPC) only and remain charged from Chamera2(NHPC) due to operation of distance protection in Zone-2 from Chamera1(NHPC). FLR Chamera1= B- N Fault, Ib=1.9kA, FL=123.4kM. Fault was beyond line length, whereas Total Line Length= 36.16kM. The	NC	NU
NR240119	6030293	400KV PARBATI 3 (NHPC) - SAINJ (HPSEB) LILO PORTION	3/15/2025 5:38	3/15/2025 10:04	SRMU	Line tripped from Parbati 3 NHPC end on over voltage mal-operation and remained charged from Sainj (HP) end. Line was charged by NHPC Parbati 3 after checking the maloperation of over-voltage protection at Parbati3 (NHPC) end. The following Annexure has been attached for reference: 1.Parbati3(NHPC) end DR showing volages in line and tripping from Parbati 3 NHPC end only due to OV relay maloperation.	NC	NU

	Total tripping including LNCC & successful autoreclosures	10
NC	Nc is the number of correct operations at internal power system faults	9
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 $S = Ni / (Nc + Nu)$	90.00%
	The Reliability Index defined as $R = Nc / (Nc + Ni)$	100.00%



न्यूक्लियर पॉवर कॉर्पोरेशन ऑफ इण्डिया लिमिटेड
(भारत सरकार का उद्यम)
राजस्थान परमाणु बिजलीघर-5 व 6
Nuclear Power Corporation of India Ltd.
(A Government of India Enterprise)
Rajasthan Atomic Power Station-5&6



डाक: अणुशक्ति, बाया: कोटा (राज.) PO: Anushakti-323303 Via: Kota (Raj.)
E-mail address: csgupta@npcil.co.in Mob: +919414185101, Phone (O): 01475-242244

No.रा.रा.सा RRS / इकाई Unit-5व6 / व.त.अ.(वि.&उ.व.क्ष.अभि.)STE(E&I and FE) / 2025 / S / 65

दिनांक: 05.04.2025

Sub: - Reporting of Protection Performance Indices of 220KV & 400KV transmission lines emanating from RAPS-C(RAPS-5&6) for the month of March-2025.

1. RAPS-C to ANTA 220KV LINE: -

Dependability Index (D)	Security Index (S)	Reliability Index (R)	Remark
Nc = 0	Nc = 0	Nc = 0	No outage reported.
Nf = 0	Nu = 0	Ni = 0	
D= Nc/Nc+Nf	S= Nc/Nc+Nu	R= Nc/Nc+Ni	
D= Not Applicable	S= Not Applicable	R= Not Applicable	

2. RAPS-C TO RAPS-B 220 KV LINE-1: -

Dependability Index (D)	Security Index (S)	Reliability Index (R)	Remark
Nc = 1	Nc = 1	Nc = 1	Line CB of both end got opened due to fault in inter trip control cable.
Nf = 0	Nu = 1	Ni = 1	
D= Nc/Nc+Nf	S= Nc/Nc+Nu	R= Nc/Nc+Ni	
D= 1	S= 0.5	R= 0.5	

3. RAPS-C TO RAPS-B 220 KV LINE-2: -

Dependability Index (D)	Security Index (S)	Reliability Index (R)	Remark
Nc = 0	Nc = 0	Nc = 0	No outage reported.
Nf = 0	Nu = 0	Ni = 0	
D= Nc/Nc+Nf	S= Nc/Nc+Nu	R= Nc/Nc+Ni	
D= Not Applicable	S= Not Applicable	R= Not Applicable	

4. CHITTORGARH 400KV LINE: -

Dependability Index (D)	Security Index (S)	Reliability Index (R)	Remark
Nc = 0	Nc = 0	Nc = 0	No outage reported.
Nf = 0	Nu = 0	Ni = 0	
D= Nc/Nc+Nf	S= Nc/Nc+Nu	R= Nc/Nc+Ni	
D=Not Applicable	S= Not Applicable	R= Not Applicable	

5. KANKROLI 400KV LINE: -

Dependability Index (D)	Security Index (S)	Reliability Index (R)	Remark
Nc = 0	Nc = 0	Nc = 0	No outage reported.
Nf = 0	Nu = 0	Ni = 0	
D= Nc/Nc+Nf	S= Nc/Nc+Nu	R= Nc/Nc+Ni	
D=Not Applicable	S= Not Applicable	R= Not Applicable	

6. KOTA-1 400KV LINE: -

Dependability Index (D)	Security Index (S)	Reliability Index (R)	Remark
Nc = 0	Nc = 0	Nc = 0	No outage reported.
Nf = 0	Nu = 0	Ni = 0	
D= Nc/Nc+Nf	S= Nc/Nc+Nu	R= Nc/Nc+Ni	
D= Not Applicable	S= Not Applicable	R= Not Applicable	

Del
05.04.25
(डी.के श्रृंगी)
व.अ. (ई व आई)
TE (E&I) RAPS-5&6

5/4/25
चंद्र शेखर गुप्ता (C.S. Gupta)
व. त. अ. (वि. एवं उप.)
STE (E&I) RAPS-5&6

To,

SE (O), NRPC, New Delhi
seo-nrpc@nic.in

CC:

SD/CS for kind information please.
TSS/OS/MS
Sh. Ruchir v oza, ACE, HQ, NPCIL (rvoza@npcil.co.in)
STE (E&I)
FILE

Subhajit Roy

From: Subhajit Roy
Sent: 26 March 2025 10:36
To: NRLDC SO
Cc: NRLDC SO 2; nrldcoutage@grid-india.in; nrldc_hods_tech; mkagarwal@grid-india.in; 'Somara Lakra (सोमारा लाकरा)'; 'Mahavir Prasad Singh (महावीर प्रसाद सिंह)'; Navratan R; Aashish Bissa; Anindya Saha; Vivek Pandey; Brajesh Kumar - Asset Management; Kailash Chandra Pandey; Birendra Pandey; Nilesh Apte; Gagan Arora - Asset Management; Bharat Bahl
Subject: FW: Regarding Tripping details of ICTs at 400 kV Renew Surya Ravi Bikaner
Attachments: DR.rar

Dear Sir,

Greetings of the day.

We sincerely apologize the delay in reply.

This has reference to the tripping of 400/33kV 150MVA ICTs, occurred in **M/s Renew Surya Ravi Pvt Ltd** on 3rd, 8th & 11th of Mar'25. In view of the same, we have carried out in-depth analysis of the DR & EL fetched from relay during the incidents and accordingly corrective action has been implemented on 11th Mar'25. Pertaining details are as follows for your needful reference:

Analysis & RCA:

Past setting configuration for Earth-Fault (EF1 Derived) was based on measurement at HV Side Main CB CT (T1) terminal current (Ref: Fig.1).

Fig.1 Earth fault Setting : EF1 Derived choosing T1.

GROUP 1 EARTH FAULT				
	Earth Fault 1	Enabled		38.01
	EF 1 Input	Derived		38.02
	EF 1 Derived	T1		38.03
	IN>1 Status	Enabled		38.05
	IN>1 Function	IEC 5 Inverse		38.06
	IN>1 Direction	Non-Directional		38.07
	IN>1 Current	90.00 mA		38.08
	IN>1 TMS	400.0e-3		38.09
	IN>1 tRESET	0 s		38.10

Due to the above configuration, while analysing DR we have observed increase in B-Phase current of HV Side Main CT (T1) as soon as the Bus-Tie B-Phase has current zero as a result of which **In** current exceeds above pickup setting of 90mA. Once the derived **In** exceeds the 90mA, 'IN>1 function (E/F)' operates after time delay of TMS setting leading to trip of ICT. Similar phenomenon has been observed in each instances of tripping.

However, as we are having one and half busbar scheme, the above setting should have configuration of measurement in Vector Summation Current (Main+TIE CT) for earth-fault protection to avoid such unwanted tripping.

Corrective Action:

Presently, the configuration of Earth-Fault (EF1 Derived) has been changed to “HV Winding” instead of T1 (Ref: Fig 2) and based on the same measurement shall be derived from HV summation current (Main+TIE CT).

GROUP 1 EARTH FAULT		
Earth Fault 1	Enabled	38.01
EF 1 Input	Derived	38.02
EF 1 Derived	HV Winding	38.03
IN>1 Status	Enabled	38.05
IN>1 Function	IEC S Inverse	38.06
IN>1 Direction	Non-Directional	38.07
IN>1 Current	90.00 mA	38.08
IN>1 TMS	400.0e-3	38.0B
IN>1 tRESET	0 s	38.10

Presently, we have kept the plant under observation and presume that there shall be no such tripping in future.

DR & EL for the three instance of tripping has been enclosed for your needful reference.

Regards,

Subhajit Roy | Senior Manager, SAM

T: +91 6291474316 / 7888243903

W: www.renew.com



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FORTUNE
TOP 10 COMPANIES
CHANGING THE WORLD
2021

From: NRLDC SO <nrldcso@grid-india.in>

Sent: 12 March 2025 14:05

To: Navratan R <navratan.r@renew.com>

Cc: NRLDC SO 2 <nrldcso2@grid-india.in>; NRLDC Outage <nrldcoutage@grid-india.in>; nrldc_hods_tech <nrldc_hods_tech@grid-india.in>; Manoj Kumar Agarwal (मनोज कुमार अग्रवाल) <mkagarwal@grid-india.in>; Somara Lakra (सोमारा लाकरा) <somara.lakra@grid-india.in>; Mahavir Prasad Singh (महावीर प्रसाद सिंह) <mahavir@grid-india.in>

Subject: Regarding Tripping details of ICTs at 400 kV Renew Surya Ravi Bikaner

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Sir,

It is reported that 400/33 KV 150 MVA ICT 1 & 2 AT RENEW SURYARAVI SL_BKN_PG (RSRPL) tripped at 14:51 hrs on 11.03.2025 due to Relay mal operation. Detailed reason for relay maloperation is still awaited.

With reference to our telephonic conversation, kindly provide the reason of relay maloperation as early as possible.

Thanks & Regards,

Control Room
Northern Regional Load Despatch Center (NRLDC)
Grid Controller of India Ltd. (Grid-India)

18-A, Saheed Jeet Singh Marg, Katwaria Sarai, New Delhi-110016
Ph. : 011-26519406, Hot Line: 20112151/52, M. - 08448167373

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Reason for Performance Indices less than Unity- March 2025 (RVPN)

Case-1 400KV Jaisalmer 2-Kakani line, 400KV Jaisalmer 2-Barmer Ckt. I line, 400KV Jaisalmer 2-Renew I line at 400KV GSS Jodhpur on 29.03.2025

No. of Unwanted operation – 3

Reason of unwanted operation –

Interruption occurred during testing of Bus Bar Protection scheme.

Corrective Action taken – YES

Employees were asked to work carefully.

Case-2 400/220 kV 500 MVA ICT-5 AT 400 KV GSS JAISALMER-II at 400 KV GSS Jaisalmer on 21.03.2025

No. of Unwanted operation – 1

Reason of unwanted operation –

Interruption due to incorrect voltage setting of Overflux relay (ICT has been recently commissioned)

Corrective Action taken – YES

Voltage setting corrected.

Case-3 220 KV Suratgarh-STPS Circuit- I, 220 KV Suratgarh-STPS Circuit- II, 220 KV Suratgarh-Bikaner Line, 220/132 KV 100 MVA AREVA, 220/132 KV 50 MVA TELK transformer at 220 KV GSS SURATGARH on 03.03.2025

No. of Unwanted operation – 5

Reason of unwanted operation –

BUS Bar protection operated during the wiring work of new 220/132 KV 160 MVA Transformer

Corrective Action taken – YES

Employees were asked to work carefully.

Case-4 220 KV Bhawad- Baithwasia Ckt-I at 220KV BHAWAD on 10.03.2025

No. of Unwanted operation – 1

Reason of unwanted operation –

Tripping occurred with Z2 and Z3 start due to wrong PSL.

Corrective Action taken – YES

PSL corrected.

Case-5 220 KV Khetri- Ratangarh II Line, 220KV Khetri- Chirawa Line, 220 KV B Bus Sectionalizer at 220 KV GSS KHETRI NAGAR on 15.03.2025

No. of Unwanted operation – 3

Reason of unwanted operation –

Due to wrong phase association since commissioning of Bus Bar Protection scheme in one feeder, which does not have source to feed the fault.

Corrective Action taken – YES

Phase association corrected.

Case-6 220 KV Pali- Bhilwara Line, 220 KV Pali- KANKANI Line, 220/132KV, 100mva T/F 1 & 2 at 220 KV GSS PALI on 25.03.2025

No. of Unwanted operation – 4

Reason of unwanted operation –

Due to wrong phase association since commissioning of Bus Bar Protection scheme in DFCC feeder, which does not have source to feed the fault.

Corrective Action taken – YES

Phase association corrected.

Case-7 220/132 KV 160 MVA TRF No. 2 at 220 KV GSS NIWANA on 18.03.2025 and 30.03.2025

No. of Unwanted operation – 2

Reason of unwanted operation –

4 nos. OSR relay (01main + 03 phase) defective.

Corrective Action taken – PARTIAL

Main OSR relay replaced and phase OSR relays put out of circuit and shall be replaced soon.

Case-8 220/132 KV,160 MVA TRF at 220KV GSS I G NAGAR on 21.03.2025

No. of Unwanted operation – 1

Reason of unwanted operation –

Valve remained closed due to wrong 'CLOSE' 'OPEN' marking, and PRV operated.

Corrective Action taken –YES

Valve opened and problem rectified.

Status of Internal Protection Audit Plan for FY 2024 -25									
S. No.	NRPC Member	Category	Status	Schedule submitted as per utility	Present Status Completed (yes/no)	Audit Completed Date	Report Submission Date by audit party	Discussion held in PSC meeting number	Compliance status
1	PGCIL	Central Government owned Transmission Company	Received						
2	NTPC	Central Generating Company	Received						
3	BBMB		Received						
4	THDC		Received	Tehri		Feb-25	28.02.2025	58	
5	SJVN		Received	RNPS, NHPS		Mar-25	25.03.2025	59	
6	NHPC		Received						
7	NPCIL	SLDC							
8	Delhi SLDC								
9	Haryana SLDC								
10	Rajasthan SLDC								
11	Uttar Pradesh SLDC		Ghatampur Thermal Power Station	Yes			25.02.2025	59	
			ALAKNANDA	Yes			Feb. 2025	59	
			Vishnuprayag	Yes			27.7.2024	52	
			WUPPTCL						
			Greater Noida, Sikandrabad, Dasna, Indrapuram, Nahaur, etaur, hapur)				(25.03.2025)	59	
12	Uttarakhand SLDC								
13	Punjab SLDC								
14	Himachal Pradesh SLDC								
15	DTL	State Transmission Utility	Received						
16	HVPNL		Received	Mohana		Jan-25	17.1.2025	58	complied
17	RRVPNL		Received	220kV Substations Bhadra, Barani, Aau,Amarsagar, Badioid, Balotra, BAP, Bhinmal, Kanisar, Phalodi, Ramgarh, Reodar, Sirahi, Hamirgarh, PPS4 Nokh, RSDCL-I, RSDCL-II, Sawa				59	
			Ratangarh, Badnu, Bikaner, Chhatargarh, Gajner, Halasar, Goner, NPH, Sangraer, SEZ, VKIA, Shri Dungargarh, Sujargarh, Tehendesar, Akal, Chittorgarh					58	Pending
			BARLI, NPH, TINWARI, ALWAR, BANSUR, BEHROR, BHARATPUR, BHIWADI, CHOKKARWADA, DHOLPUR, KG BAS, KHUSKHERA, KOTPUTALI, MANDAWAR, MANOHARPUR, NADBAI, NEEMRANA, PHAGI, AJMER, DOONI, GGC, SIKRAI, HINDAUNI, SWM, BHENSARA, ANTA, BHLWARA, RAMGARH, RATANGARH, LALSOT					57	Pending
			220 kv Chakau 220 kv Mansarovar 765 kv Anta 220 kv Mandalgarh 220 kv Pratapgargh					56	Pending
18	UPPTCL	State Generating Company	Received for Jhansi, Lucknow, Meerut, Gorakhpur, Prayagraj, Agra zone)						
19	PTCUL		Received						
20	PSTCL		Received						
21	HPPTCL		Received	Gumma, Lahal, Phozal				56	Pending
22	IPGCL		Received (PPCL-I,II)						
23	HPGCL	State Generating Company	Received	RGTPP (Khetar)		Jan-25	07.02.2025	58	Pending
24	RRVUNL		Received	CSCPP, Chhabra		Dec-24	19.02.2025	58	
			Received	DCCPP, Dholpur		Nov-24	19.02.2025	58	
			Received	STPS, Suratgarh		Jan-25	06.02.2025	58	
			Received	Ramgarh Gas Suratgarh Supercritical				56	Pending
25	UPRVUNL	State Generating Company	Received (obra -B, Anpara-B,D switch yard, Harduaganj-C,D,E)	Parichha BTPS	Jan-25	06.03.2025		58	
				Parichha CTPS	Feb-25	07.03.2025		58	
				Harduaganj, Anpara-B, C, D				57	Pending
				Obra A & B	Jan-Feb 2025	18.02.2025		59	
26	UJVNL		Received (Khodri, Chibro, Vyasi, Dharasu, Tiloth)	Dharasu				58	
27	HPPCL	State Generating Company & State owned Distribution Company	Received (Ranjer sagar dam, GHTP, GGSSTP, GATP)						
28	PSPCL		Received						
29	HPSEBL		Received						
30	Pravagraj Power Generation Co. Ltd.		Received	Yes		24.07.2024	12.09.2024	56	Pending
31	Aravali Power Company Pvt. Ltd		Received						
32	Apraava Energy Private Limited	IPP having more than 1000 MW installed capacity	Received						
33	Talwandi Sabo Power Ltd.		Completed	Nov24			Pending		
34	Nabha Power Limited		Received	400 kv NPL Sub-station				56	Pending
35	MEIL Anpara Energy Ltd		Received						
36	Rosa Power Supply Company Ltd		Received			Jan-25	11.02.2025	59	
37	Lalitpur Power Generation Company Ltd		Received	Yes		Oct-Nov 2024	30.11.2024	57	Pending
38	MEJA Urja Nigam Ltd.	Other transmission licensee	Received						
39	Adani Power Rajasthan Limited		Received						
40	JSW Energy Ltd. (KWHEP)		Received (ATIL -400kv Mohindergarh S/s, OBTL, FBTL, MTSL, ATSL, HPTSL, BKTL, GTL)						
41	AESL		Received (TPGEL, BTPLS)	300MW TPREL Chhayan		28.02.2025	11.03.2025	58	
				300MW TP Saurya Banderwala Solar Plant		01.03.2025	11.03.2025	58	
42	Tata Power Renewable Energy Ltd.	UT of Northern Region	Received	225MW TPGEL and 110MW KSEB Solar Plant		28.02.2025	11.03.2025	58	
43	UT of J&K								
44	UT of Ladakh								
45	UT of Chandigarh								
46	INDIGRID		Received						
47	ADHPL		Received	Completed		Mar-25	08.03.2025	58	Issue taken up with HPPTCL

Status of Internal Protection Audit Plan for FY 2025 -26								
S. No.	NRPC Member	Category	Status	Schedule submitted as per utility	Present Status Completed (yes/no)	Report Submission Date by audit party	Discussion held in PSC meeting number	Compliance status
1	PGCIL	Central Government owned Transmission Company	Received (NR-1, 2)					
2	NTPC		Received					
3	BBMB		Received					
4	THDC		Received	Fehri- March, 2026 Soteishwar- December, 2025				
5	SVVN	Central Generating Company	Received (NJHPS, RHPS)					
6	NHPC		Received					
7	NPCIL							
8	Delhi SLDC							
9	Haryana SLDC	SLDC						
10	Rajasthan SLDC							
11	Uttar Pradesh SLDC		Received (Jaypee Vishnuprayag, WUPPTCL, SEUPPTCL, Alaknanda)	Vishnuprayag - June 2025 WUPPTCL- Oct 2025 SEUPPTCL- Jan-2026 Alaknanda - Dec'25 -Mar'26				
12	Uttarakhand SLDC							
13	Punjab SLDC	State Transmission Utility						
14	Himachal Pradesh SLDC							
15	DTL		Received					
16	HVPSNL		Received					
17	RRVPSNL	State Generating Company	Received (All zones)	Jan-March 2026				
18	UPPTCL							
19	PTCUL							
20	PSTCL							
21	HPPTCL	State Generating Company	Received					
22	IPGCL		Received (PPS-III, I)					
23	HPGCL							
24	RRVUNL							
25	UPRVUNL	State Generating Company	Received					
26	UJVNL		Received (Anpara B)	Jun-25				
27	HPPCL		Received (Obra A & B)	Jan - March 2026				
28	PSPCL		Received (Anpara D)	May-25				
29	HPSEBL	Distribution company having Transmission connectivity ownership	Received (Harduaqani)	April -May 2025				
30	Prayagraj Power Generation Co. Ltd.		Received (Harduaqani D)	April -May 2025				
31	Aravali Power Company Pvt. Ltd		Received (Harduaqani E)	April -May 2025				
32	Apraava Energy Private Limited		Received (Parichha)	May-25				
33	Talwandi Sabo Power Ltd.	IPP having more than 1000 MW installed capacity	Received (Parichha Ext)	Feb-26				
34	Nabha Power Limited		Received (Obra C)	Mar-26				
35	MEIL Anpara Energy Ltd		Received (Jawaharpur)	Jul-25				
36	Rosa Power Supply Company Ltd		Received (Dharashu, Tiloth)	Nov-25-Mar'26				
37	Lalitpur Power Generation Company Ltd	UT of Northern Region	Received (Kasheng HEP, Sawara Kuddu, Saini)					
38	MEJA Urja Nigam Ltd.							
39	Adani Power Rajasthan Limited							
40	JSW Energy Ltd. (KWHEP)							
41	Tata Power Renewable Energy Ltd.	UT of Northern Region	Received (GHTP, GGSSTP, GATP, RSD)					
42	UT of J&K							
43	UT of Ladakh							
44	UT of Chandigarh							
	ISTS Transmission Utilities							
45	INDIGRID		Received	Aug-25 to March-26				
46	POWERLINK							
47	ADHPL							
48	NRSXXXXVI's Northern Region Transmission System							
49	Adani Transmission Limited							
50	Bikaner Khetri Transmission Limited							
51	Fatehgarh Bhadla Transmission Limited							
52	Powergrid Sikar Transmission Limited							
53	Powergrid Aligarh Sikar Transmission Limited							
54	Powergrid Ajmer Phagi Transmission Limited							
55	Powergrid Bikaner Transmission System Limited							
56	Powergrid Khetri Transmission System Limited							
57	Powergrid Ramgarh Transmission Limited							
58	Powergrid Fatehgarh Transmission Limited							
59	Powergrid Bhadla Transmission Limited							
60	Powergrid Meerut Simbhavli Transmission Limited							
61	Powergrid Kala Amb Transmission Limited							
	State Utilities							
	Uttar Pradesh							
62	Vishnuprayag Hydro Electric Plant (J.P.)							
63	Alaknanda Hydro Electric Plant (GVK)							
64	Khara Power House (Khara)							
65	WUPPTCL							
66	SEUPPTCL							
67	ATSCL							
68	GTL							
69	HPTSL							
70	MTSCL							
71	OCBTL		Received	Jan 2026				
	Rajasthan							
72	220 KV Dhorimanna-Rajwest Line							
73	400 KV ANTA - CHABRA II							
74	Barsingar Plant							
	RE Utilities							
75	ABC Renewable Pvt. Ltd							
76	ACME Heeragarh powertech Pvt. Ltd		Received	Jun-25				
77	ACME Pholodi		Received	Jun-25				
78	ACME Deagarh		Received	Jun-25				
79	ACME Raisar		Received	Jun-25				
80	ACME Dhoulpar		Received	Jun-25				
81	ACME Chittorgarh Solar Energy Pvt Ltd							
82	Adani Hybrid Energy Jaisalmer One Ltd.							
83	Adani Hybrid Energy Jaisalmer Two Ltd.							
84	Adani Hybrid Energy Jaisalmer Three Ltd.							
85	Adani Hybrid Energy Jaisalmer Four Ltd.							
86	Adani Renewable Energy (RJ) limited Rawara							
87	Adani Solar Energy Jaisalmer One Pvt. Ltd. 450MW (Solar)							
88	Adani Solar Energy Four Private Limited							
89	Adani Solar Energy Jaisalmer Two Private Limited							
90	Adani Solar Energy Jaisalmer Two Private Limited Project Two							

91	SB ENERGY FOUR PRIVATE LIMITED, Bhadia							
92	SB Energy Six Private Limited, Bhadia							
93	Adani Solar Enegry Jodhpur Two Limited, Rawara							
94	Adept Renewable Technologies Pvt. Ltd.							
95	Adani Solar Energy RJ Two Pvt. Ltd. (Devikot)							
96	Adani Solar Energy RJ Two Pvt. Ltd. (Phalodi)							
97	Adani Green Energy 19 Limited							
98	Altra Xergi Pvt. Ltd.							
99	AMP Energy Green Five Pvt. Ltd.							
100	AMP Energy Green Six Pvt. Ltd.							
101	Amplus Ages Private Limited							
102	Avaada RJHN 240MW							
103	Avaada sunce energy Pvt limited							
104	Avaada Sunrays Pvt. Ltd.							
105	Avaada Sustainable RJ Pvt. Ltd.							
106	Ayana Renewable Power Three Private Limited							
107	Ayaana Renewable Power One Pvt. Ltd.							
108	Azure Power Forty One Pvt limited							
109	Azure Power Forty Three Pvt. Ltd. RSS							
110	Azure Maple Pvt. Ltd.							
111	AZURE POWER INDIA Pvt. Ltd., Bhadia							
112	Azure Power Thirty Four Pvt. Ltd.							
113	Clean Solar Power (Jodhpur) Pvt. Ltd.							
114	Clean Solar Power (Bhadia) Pvt. Ltd							
115	Eden Renewable Cite Private Limited							
116	Grian Energy private limited							
117	Mahindra Renewable Private Limited							
118	Meja Surya Urja Pvt. Ltd. (MSUPL)							
119	AURAIYA Solar							
120	DADRI SOLAR							
121	SINGRAULI SOLAR							
122	Anta Solar							
123	Unchahar Solar							
124	NTPC Devikot Solar plant 240MW							
125	NTPC Kolayat 400kV							
126	Nedan Solar NTPC							
127	NTPC Nokhra 300MW							
128	One Volt energy Pvt. Ltd.							
129	ReNew Solar Energy (Jharkhand Three) Private Limited							
130	RENEW SOLAR POWER Pvt. Ltd. Bhadia							
131	ReNew Solar Urja Private Limited							
132	Renew Sun Bright Pvt. Ltd. (RSBPL)							
133	Renew Sun Waves Private Limited (RSEJ4L)							
134	Renew Surya Partap Pvt. Ltd.							
135	Renew Surya Ravi Pvt. Ltd.							
136	Renew Surya Roshni Pvt. Ltd.							
137	Renew Surya Vihan Pvt. Ltd.							
138	Renew Surya Ayaan Pvt. Ltd.							
139	Renew Solar Photovoltaic Pvt Ltd							
140	RENEW SOLAR POWER Pvt. Ltd. Bikaner							
141	Rising Sun Energy-K Pvt. Ltd.							
142	Serentica Renewables India 4 Private Limited							
143	Tata Power Green Energy Ltd. (TPGEL)							
144	Tata Power Renewable Energy Ltd. (TPREL)							
145	Thar Surya Pvt. Ltd.							
146	TP Surya Pvt. Ltd.							
147	Bandarwala Solar Plant TP Surya Ltd.							
148	TRANSITION ENERGY SERVICES PRIVATE LIMITED							
149	Transition Green Energy Private Limited							
150	Transition Sustainable Energy Services Private Limited							

91	SB ENERGY FOUR PRIVATE LIMITED, Bhadla				
92	SB Energy Six Private Limited, Bhadla				
93	Adani Solar Energy Jodhpur Two Limited, Rawara				
94	Adept Renewable Technologies Pvt. Ltd.				
95	Adani Solar Energy RJ Two Pvt. Ltd. (Devkot)				
96	Adani Solar Energy RJ Two Pvt. Ltd. (Phalodi)				
97	Adani Green Energy 19 Limited				
98	Altra Xera Pvt. Ltd.				
99	AMP Energy Green Five Pvt. Ltd.				
100	AMP Energy Green Six Pvt. Ltd.				
101	Amplus Ages Private Limited				
102	Avaada RJHN 240MW				
103	Avaada surge energy Pvt limited				
104	Avaada Sunrays Pvt. Ltd.				
105	Avaada Sustainable RJ Pvt. Ltd.				
106	Ayana Renewable Power Three Private Limited				
107	Ayana Renewable Power One Pvt. Ltd.	09.03.2025		59	
108	Azure Power Forty One Pvt limited				
109	Azure Power Forty Three Pvt. Ltd. RSS				
110	Azure Maple Pvt. Ltd.				
111	AZURE POWER INDIA Pvt. Ltd. , Bhadla				
112	Azure Power Thirty Four Pvt. Ltd.				
113	Clean Solar Power (Jodhpur) Pvt. Ltd.				
114	Clean Solar Power (Bhadla) Pvt. Ltd.				
115	Eden Renewable Cite Private Limited				
116	Grian Energy private limited				
117	Mahindra Renewable Private Limited				
118	Mega Surya Uria Pvt. Ltd. (MSUPL)				
119	AURAYA Solar				
120	DADRI SOLAR				
121	SINGRAULI SOLAR				
122	Anta Solar				
123	Unchahar Solar				
124	NTPC Devkot Solar plant 240MW				
125	NTPC Kollayat 400KV				
126	Nedao Solar NTPC				
127	NTPC Nokhra 300MW				
128	One Volt energy Pvt. Ltd.				
129	ReNew Solar Energy (Jharkhand Three) Private Limited				
130	RENEW SOLAR POWER Pvt. Ltd. Bhadla				
131	ReNew Solar Uria Private Limited				
132	Renew Sun Bright Pvt. Ltd. (RSBPL)				
133	Renew Sun Waves Private Limited (RSEJ4L)				
134	Renew Surya Partap Pvt. Ltd.				
135	Renew Surya Ravi Pvt. Ltd.				
136	Renew Surya Roshni Pvt. Ltd.				
137	Renew Surya Vihari Pvt. Ltd.				
138	Renew Surya Ayaan Pvt. Ltd.				
139	Renew Solar Photovoltaic Pvt Ltd				
140	RENEW SOLAR POWER Pvt. Ltd. Bikaner				
141	Rising Sun Energy-K Pvt. Ltd.				
142	Serentica Renewables India 4 Private Limited				
143	Tata Power Green Energy Ltd. (TPGEL)				
144	Tata Power Renewable Energy Ltd. (TPREL)				
145	Thar Surya Pvt. Ltd.				
146	TP Surya Pvt. Ltd.				
147	Bandarwala Solar Plant TP Surya Ltd.				
148	TRANSITION ENERGY SERVICES PRIVATE LIMITED				
149	Transition Green Energy Private Limited				
150	Transition Sustainable Energy Services Private Limited				
151					
* Revised Schedule					

Status of actions points recommended during previous PSC meetings (to be discussed in 59th PSC meeting)

S. No	Agenda	Remdial actions recommended during PSC meeting	Status of remdial action taken	
			58th PSC (26.03.2025)	59th PSC (23.04.2025)
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.	HPSEBL representative stated that protection audit at Baddi and Upperla Nangal is completed on 20th March 2025 by POWERGRID . Audit reports are awaited. NRLDC representative highlighted that it is necessary to complete the work before summer in view of increase in tripping. HPSEBL replied that as major work is of relay replacement they will need PSDF fund for rectification of issues . <i>PSC forum requested HPSEBL to take expeditious actions at their end and ensure the healthiness of protection system in this complex.</i>	
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.	HVPNL representative informed that no further update is there in this regard and matter is pending at Head Office level . NRLDC representative requested HVPNL to expedite the process at their end. <i>PSC forum recommended HVPNL to expedite the implementation of differential protection in short lines and also share the expected timeline.</i>	
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 representatives were not present due to ongoing commissioning activity in Parbati-II Project, as communicated. However, vide mail dt. 26.03.2025, NHPC informed that as per LOA, OPGW work shall be completed by Dec'2025 . GE engineer visited Parbati-II site, however it is observed during commissioning that there is communication issue with the supplied line differential relay . The relay has been sent to OEM's premisses for rectification. After rectification of the same, the relay can be installed. The same is expected to be completed by May'2025 . <i>PSC forum recommended NHPC & HPPCL to take expeditious action at their end and ensure healthiness of protection system.</i>	
4	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 status is same and materials are under inspection . NRLDC representative requested PSTCL for expeditious remedial actions and ensure implementation of bus bar protection as per mentioned timeline. <i>PSC forum requested PSTCL to expedite the work related to implementation of bus bar protection at Sarna S/s.</i>	
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.	RVUNL representative stated that status is same and work is at stage of tender processing (administrative process delay). NRLDC representative requested RVPNL to expedite the tender and other followed action. <i>PSC forum requested RVUNL for expeditious actions at their end.</i>	
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 is delayed due to unavailability of shutdown on 27th and 28th February 2025, next shutdown is planned during May 2025. NRLDC representative requested RVPNL to take necessary follow-up actions to ensure expeditious completion of work. <i>PSC forum requested RVPNL to expedite the actions at their end.</i>	
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.	UPPTCL representative informed that relay replacement in unit-1 will get completed on 30th March 2025 followed by unit-2 & 3 within next 6 months . NRLDC representative requested UPPTCL for expeditious completion of work. <i>PSC forum requested UPPTCL to expedite the replacement of relay at Khara(UP) end.</i>	
9	Multiple elements tripping event at Patiala(PG)	52 & 53 PSC: POWERGRID was requested to expedite the process of commissioning of new bus bar scheme.	POWERGRID(NR-2) representatives were not present.	

10	Multiple elements tripping at 220kV Khodri HEP & Chibro HEP on 5th, 11th & 19th September 2024	53 PSC: a) Timely submission of disturbance recorder (DR) and event logger (EL) files need to be ensured. 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. b) HPPTCL shall taken necessary actions to rectify the protection related issue in 220kV Khodri-Majri ckt-2. c) JOV 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.	UJVNL representative informed that GE team has denied the scope of work. Hence open tender will be issued to resolve the A/R issue in relay. <i>PSC forum requested UJVNL & HPSEBL to take necessary remedial action at their end and ensure proper operation of protection system. UJVNL shall expedite the action plan and HPSEBL shall review the protection setting of 220kV Khodri-Majri line-II.</i>	
11	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 time sync issue and bus bar relay replacement both the works will be addressed by ABB engineers and work is further delayed due to delay in visit. NRLDC representative requested UPPTCL to take necessary follow up actions for expeditious completion of work. <i>PSC forum requested UPPTCL for expedited corrective actions.</i>	
12	Multiple elements tripping at 220/132kV Obra_A(UP) on 9th October 2024	54 PSC Recommendations: Commissioning and Implementation of numerical relays in 132kV ICT-1&2 at Obra_A(UP) need to be expedited. Timely commissioning of the same need to be ensured.	UPPTCL representative informed that Commissioning and Implementation of numerical relays in 132kV ICT-1&2 at Obra_A(UP) will be addressed by ABB engineers and work is further delayed due to delay in visit. NRLDC representative requested UPPTCL to take necessary follow up actions for expeditious completion of work. <i>PSC forum requested UPPTCL for expedited corrective actions.</i>	
14	Multiple elements tripping at 220kV Dausa(RS) on 21st October 2024 and on 29th December, 2024	54 & 56 PSC Recommendations: a) RVPNL will expedite the replacement of all the static relays at 220kV Dausa S/s with numerical relays. b) Time synchronization of all the recording instruments need to be ensured. c) Healthiness of protection system and their proper operation need to be ensured. d) Timely submission of disturbance recorder (DR) and event logger (EL) files need to be ensured.	RVPNL representative informed that one relay is already replaced on 27th February 2025. One relay will be replaced on 28th March 2025 and other one will be replaced during shutdown in April 2025. Rest 2 relays are under procurement stage. NRLDC representative requested RVPNL to take necessary follow up actions for expeditious completion of work. <i>PSC forum requested RVPNL for expedited corrective actions.</i>	
15	Frequent tripping of 220 KV RAPS_A(NP)- Sakatpura (RS) (RS) Ckt-1 & 2	55 PSC Recommendations: Expeditious corrective actions to minimise frequent faults in line.	RVPNL representative informed that 6 bird-guards need to be installed and some broken earth wires need to be attended further in 220kV RAPS_A(NP)- Sakatpura (RS) (RS) Ckt-1. Work is almost completed in 220kV RAPS_A(NP)- Sakatpura (RS) (RS) Ckt-2, however, some newly installed insulators failed due to manufacturing defect which are being replaced. Work in 220kV RAPS_B(NP)- Sakatpura (RS) (RS) Ckt will also be completed soon depending on shutdown availability. <i>PSC forum requested RVPNL for expedited corrective actions.</i>	
16	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 insulator replacement will be completed before next winter season 2025. NRLDC representative requested PSTCL for expedite the replacement of insulators in these lines (by October 2025) to minimise the tripping events due to fog during next winter season. PSTCL agreed for the same. <i>PSC forum requested PSTCL to for expeditious actions for insulators replacement.</i>	
17	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 allotment order is yet to get issued. Work will get completed after allotment is done. NRLDC representative requested UPPTCL to take necessary follow up actions for expeditious rectification of carrier communication issue at Aligarh(UP) and Muradnagar_1(UP) end. <i>PSC forum requested UPPTCL for expedited corrective actions.</i>	
21	Frequent tripping of 220 KV Agra(PG)-Bharatpur(RS) (PG) Ckt-1	57 PSC Recommendations: Impedance measurement and distance relay settings of the line need to be reviewed before summer (high demand period).	RVPNL informed that anti-fog disc and bird-guard installation is in progress. POWERGRID (NR-3) informed that impedance measurement and distance relay settings review will be done in the next available shutdown. <i>PSC forum requested RVPNL and POWERGRID(NR-3) for expedited corrective actions.</i>	
22	Frequent tripping of 400 KV Anpara_B(UPUN)-Sarnath(UP) (UP) Ckt-2	57 PSC Recommendations: Healthiness of carrier communication need to be reviewed.	UPPTCL informed that only one carrier cabinet is in working condition among the two MAIN-I and MAIN-II carrier cabinet, hence cross-wiring could not be done. Another carrier cabinet will be made healthy for redundancy. <i>PSC forum requested UPPTCL for expedited corrective actions.</i>	
23	Frequent tripping of 400 KV Noida Sec 148-Noida Sec 123 (UP) Ckt-1	57 PSC Recommendations: a) Timely submission of disturbance recorder (DR) and event logger (EL) files need to be ensured. b) Time sync issue need to be addressed. c) Issue in A/R non-operation need to be resolved.	UPPTCL representative informed time sync issue is attended. A/R non-operation issue is resolved at Noida Sec 148 end and it will be resolved at Noida Sec 123 end within 1.5 months. <i>PSC forum requested UPPTCL to take necessary follow up actions for expeditious completion of work.</i>	

25	Frequent tripping of 400 KV Merta-Ratangarh (RS) Ckt-1	57 PSC Recommendations: a) DR standardization need to be checked (DR time window of ~800ms is not as per standard). b) Phase sequence issue need to be resolved. c) Status of A/R operation at Ratangarh end need to be reviewed.	RVPNL informed that DR time window is made as per standard. Status of A/R operation at Ratangarh end couldn't be reviewed due to shutdown unavailability and will be attended in next available shutdown. <i>PSC forum requested RVPNL for expedited corrective actions.</i>	
27	Multiple elements tripping at 220/132kV Ropar(PS) on 06th January, 2025	57 PSC Recommendations: PSTCL need to share the DR/EL & tripping details within one week	PSTCL representative informed that DR/EL could not be extracted due to software issue. <i>PSC forum requested PSTCL to share detailed report along with observations and remedial action taken.</i>	
28	Multiple elements tripping at 400/220KV Heerapura(RS) on 10th January, 2025	57 PSC Recommendations: a) Instantaneous OC relay (High set) settings of ICTs at Heerapura(RS) may be reviewed. b) Replacement of remaining electromechanical/ static relays & schemes with numerical relay need to be expedited at Heerapura(RS).	RVPNL representative informed that already 8 static/ electromechanical relays are replaced with numerical relays. Remaining relays are also being replaced in phased manner, but it will take time as relays of whole substation including busbar relay need to be replaced. <i>PSC forum requested RVPNL to share the timeline of replacement of relays and take expedited corrective actions at their end.</i>	
29	Frequent tripping of 220 KV Debari(RS)-RAPS_A(NP) (RS) Ckt-1	58 PSC Recommendations: Expeditious corrective actions to minimise frequent faults in line.	RVPNL representative informed that this line is almost 200km long and total no. of location is 450. There is issue in almost 1300 string insulators and it will take at least 3-4 months to complete the whole work subject to shutdown availability. Some work has already been done during February 2025 and tripping has also reduced since then.	

Grid Event summary for March 2025

S.No.	Category of Grid Incident/ Disturbance (GL-1 to GD-V)	Name of Elements (Tripped/Manually opened)	Affected Area	Owner/ Agency	Outage		Event (As reported)	Loss of generation / loss of load during the Grid Disturbance		Fault Clearance time (in ms)	Compliance of Protection Protocol/Standard		
					Date	Time		Generation Loss(MW)	Load Loss (MW)		Flash Report Submission (Y/N)	DR/RL Submission (Y/N)	Detail Tripping Report Submission (Y/N)
1	GI-1	1) 220 KV Dasuya(PS)-Jalandhar(BB) (BBMB) Ckt-2 2) 220 KV Dasuya(PS)-Jalandhar(PG) Ckt-1 3) 220 KV Sarma(PS)-Dasuya(PS) (PG) Ckt-2 4) 220 KV Pong(BB)-Dasuya(PS) (BBMB) Ckt-2	Punjab	PSTCL, BBMB, PGCL	10-Mar-25	14:32	i)220KV Dasuya(PS) has double main bus scheme. ii)As reported at 14:32hrs, B-ph conductor of 220 KV Dasuya(PS)-Jalandhar(BB) Ckt-2 broken due to damage of insulator string and fell on 220KV bus-2. iii)As per PMU at Jalandhar(PG), R-N fault with delayed clearance of ~560msec is observed. iv)Fault was not cleared in time from Dasuya end. (Exact details w.r.t. bus bar protection at Dasuya end yet to be received.) v)Line connected to 220KV Bus-2 i.e., 220 KV Dasuya(PS)-Jalandhar(PG) (PG) Ckt-1, 220 KV Sarma(PS)-Dasuya(PS) (PG) Ckt-2 and 220 KV Pong(BB)-Dasuya(PS) (BBMB) Ckt-2 tripped from remotest end. As reported, 220KV bus coupler at Dasuya(PS) also tripped. vi)As per SCADA, change in demand of approx. 100 MW is observed in Punjab control area.	0	100	560	Y(d)	N (Partial detail received)	N (Partial detail received)
2	GI-2	1) 220KV Bikaner-Nokha (RS) Ckt 2) 400/220 KV 315 MVA ICT 1 at Merta(RS) 3) 400/220 KV 315 MVA ICT 1 at Merta(RS) 4) 220KV Merta-Kuchera Ckt	Rajasthan	RVPNL	10-Mar-25	07:14	i)400/220KV Merta and Bikaner(RS) are connected to each other. Network diagram showing connectivity between Merta, Bikaner and VSLP plant is shown in attached in Annexure. ii)During antecedent condition, 220KV Merta-Makrana line was under open condition (as per instruction of SLDC-RS) and 220KV Merta-Jethana line was under tripped condition (line tripped on fault). 400/220KV 315 MVA ICT-1&2 at Bikaner(RS) and Merta(RS) were running at loading of 300MVA & 292MVA each respectively. 220/132KV Bikaner S/s was drawing power from VSLP generating station and 400/220KV Bikaner S/s (through D/C interconnector). iii)At 07:14 hrs, 135MW Unit-1 at VSLP tripped due to problem in PA fan. Due to this, the complete load of 220/132KV Bikaner S/s shifted on 220KV Bikaner(220KV)-Bikaner(400/220KV) interconnectors. Loading of interconnector-1&2 increased from 75MW & 31MW to 151MW & 68MW respectively. Eventually, 400/220KV 315MVA ICT-1&2 loading also increased (increased from 300MVA to 355MVA). iv)Due to increases in the loading of ICTs at Bikaner, SPS of ICTs at Bikaner operated and initiated tripping to 220KV Bikaner-Nokha which was carrying ~185MW. v)Further, load of Nokha shifted to 220KV Merta-Kuchera-Nokha after tripping of 220KV Bikaner-Nokha. This further led to overloading of 400/220KV 315MVA ICTs at Merta(RS). Loading of ICTs at Merta increased from 300MVA to 350MVA. vi)Further, 400/220KV 315MVA ICTs at Merta(RS) tripped due to ICT overcurrent protection operation due to overloading. At the same time, SPS of ICTs at Merta also operated and 220KV Merta-Kuchera line tripped. vii)As per PMU at Merta(RS), no fault in system is observed. viii)As per SCADA data change in Rajasthan demand of ~430MW is observed. However, as reported by SLDC-Rajasthan, load loss of ~480MW occurred in Rajasthan control area	0	480	NA	N (Partial detail received)	N (Partial detail received)	N (Partial detail received)
3	GI-2	1) 400/33 KV 150 MVA ICT 1 at Renew SuryaRavi SL_BKN_PG (RSRPL) 2) 400/33 KV 150 MVA ICT 2 at Renew SuryaRavi SL_BKN_PG (RSRPL)	Rajasthan	RSRPL (Renew)	11-Mar-25	14:51	i)Generation of 400KV Renew Surya Ravi (RSRPL) (IP) RE station evacuates through 400 KV Renew Surya Ravi SL_BKN_PG(RSRPL)-Bikaner(PG) Ckt via 400/33 KV 150 MVA ICT 1 and 2 at Renew Surya Ravi SL_BKN_PG (RSRPL). During antecedent condition, 400KV Renew Surya Ravi (RSRPL) (IP) RE station was generating approx. 275 MW (as per PMU). ii)As reported, at 14:51hrs, 400/33 KV 150 MVA ICT 1 at Renew Surya Ravi SL_BKN_PG (RSRPL) tripped due to maloperation of E/F relay (vector summation of current setting issue). As per DR/EL, E/F relay at ICT-1 operated. iii)During the same time, 400/33 KV 150 MVA ICT 2 at Renew Surya Ravi SL_BKN_PG (RSRPL) also tripped (exact reason and nature of protection operated yet to be shared). iv)Due to tripping of both 400/33 KV 150 MVA ICT 1 and 2 at Renew Surya Ravi SL_BKN_PG (RSRPL), 400KV Renew Surya Ravi (RSRPL) (IP) generation becomes zero due to loss of evacuation path. v)As per PMU, no fault is observed in the system. vi)As per PMU, solar generation loss of approx. 275 MW is observed at RSRPL(IP).	275	0	NA	N	N	N
4	GD-1	1) 220 KV Baghat(PG)-Baraut(UP) (UP) Ckt-1 2) 220 KV Baghat(PG)-Baraut(UP) (UP) Ckt-2 3) 220 KV Nirpura-Baraut(UP) Ckt 4) 220 KV Muradnagar_new-Baraut(UP) Ckt 5) 220/132KV 200MVA ICT-1 at Baraut(UP) 6) 220/132KV 200MVA ICT-2 at Baraut(UP) 7) 220/132KV 200MVA ICT-3 at Baraut(UP)	Uttar Pradesh	UPPTCL, PGCL	12-Mar-25	01:06	i)220/132/33KV Baraut(UP) S/s has single main and transfer bus scheme in all voltage levels. ii)As reported at 01:06 hrs, R-ph CT of 220 KV Baghat(PG)-Baraut(UP) (UP) Ckt-1 got damaged which further led to bus bar protection operation at 220KV Baraut(UP). As a result, all the elements connected to 220KV Bus tripped and complete blackout occurred at 220/132/33KV Baraut(UP) S/s. iii)However, as per DR at Baghat(PG) end of 220 KV Baghat(PG)-Baraut(UP) (UP) Ckt-1, R-N fault (I _r =7.71kA) converted to R-Y-N fault (I _r =14.48kA, I _y =15.87kA) was observed in 220 KV Baghat(PG)-Baraut(UP) (UP) Ckt-1 and fault was cleared in zone-2 from Baghat(PG) end with fault clearing time of ~440ms. iv)As per DR at Baghat(PG) end of 220 KV Baghat(PG)-Baraut(UP) (UP) Ckt-2, R-N fault (I _r =8.53kA) was observed in 220 KV Baghat(PG)-Baraut(UP) (UP) Ckt-2 and fault was sensed in zone-2 at Baghat(PG) end with fault clearing time of ~240ms. v)As per SCADA SOE, 220 KV Baghat(PG)-Shamli(UP) (UP) Ckt also tripped during the same time (exact reason of tripping yet to be shared). vi)As per PMU at Meerut(PG), R-N phase to ground fault converted to R-Y-N double phase to ground fault with delayed fault clearing time of 440ms was observed. vii)As per SCADA, change in demand of approx. 400MW is observed in Uttar Pradesh control area. i)220/66/33KV Delhi Rohtak Road(BB) S/s has double main bus arrangement at 220KV level. ii)During antecedent condition, incoming power at Delhi Rohtak Road(BB) through 220 KV Delhi RR(BB)-Narela(DV) (BBMB) D/C was approx. 17 MW each (as per SCADA) which was supplying load of Delhi Rohtak Road(BB) S/s. iii)As reported, at 18:34hrs, 220 KV Delhi RR(BB)-Narela(DV) (BBMB) Ckt-1 tripped on R-B phase to phase fault with following relay indications: fault distance of 1.185km and fault current of I _r =2.587kA and I _b =2.523kA from Delhi RR(BB) end and fault distance of 17.59 km and fault current of I _r =3.841kA and I _b =3.878kA from Narela(DV) end. During patrolling, a kite string was found tangled between R and B phases at tower loc. no. 1069A, which was later removed. iv)During the same time, 220 KV Delhi RR(BB)-Narela(DV) (BBMB) Ckt-2 also tripped from Narela end only with following relay indications : fault distance of 17.59 km and fault current of I _r =3.841kA and I _b =3.878kA from Narela(DV) end (exact reason of fault yet not shared). During patrolling, nothing abnormal was found. v)Due to tripping of 220 KV Delhi RR(BB)-Narela(DV) (BBMB) D/C, complete blackout occurred at 220/66/33KV Delhi Rohtak Road(BB) S/s. vi)As per PMU at Mandaula(PG), R-B phase to phase fault with fault clearing time of 80 ms is observed. vii)As per SCADA, change in demand of approx. 30 MW is observed in Delhi control area.	0	40	440	Y(d)	N (Partial detail received)	N (Partial detail received)
5	GD-1	1) 220 KV Delhi RR(BB)-Narela(DV) (BBMB) Ckt-1 2) 220 KV Delhi RR(BB)-Narela(DV) (BBMB) Ckt-2	Delhi	DTL, BBMB	14-Mar-25	18:34	i)During antecedent condition, incoming power at Delhi Rohtak Road(BB) through 220 KV Delhi RR(BB)-Narela(DV) (BBMB) D/C was approx. 17 MW each (as per SCADA) which was supplying load of Delhi Rohtak Road(BB) S/s. ii)As reported, at 18:34hrs, 220 KV Delhi RR(BB)-Narela(DV) (BBMB) Ckt-1 tripped on R-B phase to phase fault with following relay indications: fault distance of 1.185km and fault current of I _r =2.587kA and I _b =2.523kA from Delhi RR(BB) end and fault distance of 17.59 km and fault current of I _r =3.841kA and I _b =3.878kA from Narela(DV) end. During patrolling, a kite string was found tangled between R and B phases at tower loc. no. 1069A, which was later removed. iv)During the same time, 220 KV Delhi RR(BB)-Narela(DV) (BBMB) Ckt-2 also tripped from Narela end only with following relay indications : fault distance of 17.59 km and fault current of I _r =3.841kA and I _b =3.878kA from Narela(DV) end (exact reason of fault yet not shared). During patrolling, nothing abnormal was found. v)Due to tripping of 220 KV Delhi RR(BB)-Narela(DV) (BBMB) D/C, complete blackout occurred at 220/66/33KV Delhi Rohtak Road(BB) S/s. vi)As per PMU at Mandaula(PG), R-B phase to phase fault with fault clearing time of 80 ms is observed. vii)As per SCADA, change in demand of approx. 30 MW is observed in Delhi control area.	0	30	80	Y(d)	N	N (Partial detail received)
6	GI-2	1) 800 KV HVDC Kurukshetra(PG) Pole-02 2) 800 KV HVDC Kurukshetra(PG) Pole-04	Haryana	PGCL	15-Mar-25	17:19	i)During antecedent condition, 800 KV HVDC Kurukshetra(PG) Pole-1, 2, 3 & 4 were carrying approx. 250 MW each and hence total 1000 MW power was flowing from Champa to Kurukshetra. ii)As reported at 17:19 hrs, 800 KV HVDC Kurukshetra (PG) Pole-2 & 4 blocked due to commutation failure in Pole-2. (Exact reason of tripping need to be analysed). iii)As per PMU at Kurukshetra(PG) Pole-2 and Pole-4 blocked, power flow of Pole-1 and Pole-2 shifted on Pole-3 and Pole-4. Hence, there was no reduction in power order. iv)As per PMU at Kurukshetra(PG), no fault was observed in the system. However, fluctuation in voltage was observed. v)As per SCADA, no change in demand of Haryana control area.	0	0	NA	Y(d)	Y(d)	Y(d)
7	GD-1	1) 400 KV Parbat_2(NH)-Saini(H) (PKTCL) Ckt 2) 400 KV Parbat_3(NH)- Banala(PG) (PKTCL) Ckt	Himachal Pradesh	HPPTCL, PGCL, NHPCL	16-Mar-25	14:46	i)Total generated power of Saini HE(H), Parbat_2(NH) and Parbat_3(NH) evacuates through 400 KV Parbat_2(NH)- Banala(PG) (PKTCL) Ckt and 400 KV Parbat_3(NH)- Banala(PG) (PKTCL) Ckt via 400 KV Parbat_2(NH)-Saini(H) (PKTCL) Ckt and 400 KV Parbat_3(NH)-Saini(H) (PKTCL) Ckt. ii)During antecedent condition, no generation was there at 400KV Parbat_2(NH), 400KV Parbat_3(NH) and 400KV Saini HE(H). iii)As reported, at 14:46hrs, 400 KV Parbat_3(NH)- Banala(PG) (PKTCL) Ckt tripped from Banala(PG) end only on R-N phase to earth fault with fault distance of 6.9km and fault current of 5.545kA from Banala(PG) end (exact reason of fault yet to be shared). iv)As further reported, 400 KV Parbat_2(NH)-Saini(H) (PKTCL) Ckt also tripped at the same time from Saini end only (exact reason of tripping yet to be shared). v)Due to tripping of both 400 KV Parbat_2(NH)-Saini(H) (PKTCL) Ckt and 400 KV Parbat_3(NH)- Banala(PG) (PKTCL) Ckt, complete blackout occurred at 400KV Parbat_3(NH) and 400KV Saini HE(H) S/s. vi)As per PMU at Nallagarh(PG), two consecutive R-N phase to earth fault is observed with delayed fault clearing time of 1240 ms and 1040 ms respectively. vii)As per SCADA, no generation loss is observed at 400KV Parbat_2(NH), 400KV Parbat_3(NH) and 400KV Saini HE(H) as there was no generation at either of them.	0	0	1240	N (Partial details received)	N (Partial details received)	N (Partial details received)
8	GD-1	1) 400/220 KV 500 MVA ICT 6 AT BHADIA_2 (PG) 2) 220 KV NOKHRA SL_BHD2 (NTPC)-BHADIA_2 (PG) (NOKHRA) Ckt-1 3) 400 KV AGEZSL SL_BHD2_PG-Bhadia_2 (PG) (AGEZSL) Ckt-1	Rajasthan	Adani Green, PGCL and NTPC	18-Mar-25	10:00	i)Generation of 220KV Nokhra (IP) and 400KV AGEZSL stations evacuate through 220 KV Nokhra SL_BHD2 (NTPC)-Bhadia_2 (PG) (NTPC_NOKHRA) Ckt and 400 KV AGEZSL SL_BHD2_PG-Bhadia_2 (PG) (AGEZSL) Ckt-1 respectively. ii)During antecedent condition, 220KV Nokhra (IP) and 400KV AGEZSL were generating approx. 262 MW and 488 MW respectively (as per PMU). iii)As reported, at 09:59:46hrs Y-Phase CT of 405-52 bay at AGEZSL RE station failed and it triggered Transformer Differential protection of main CB 404-52 and Tie CB 405-52 opened on Bus-Bar Zone-1 protection. iv)At 09:59:47 hrs, 400 KV AGEZSL SL_BHD2_PG-Bhadia_2 (PG) (AGEZSL) Ckt-1 tripped on R- Phase line differential protection. During inspection at site, spark in R-phase CVT was found and the same was replaced. v)As per PMU at 400KV Bhadi2(PG), Y-N fault cleared in 240msec followed by permanent R-N fault is observed is observed with fault clearing time of 80ms. vi)At the same time, 400/220KV 500MVA ICT-6 at Bhadi2(PG) and 220 KV NOKHRA SL_BHD2 (NTPC)-BHADIA_2 (PG) (NTPC_NOKHRA) Ckt-1 also tripped. The reason for the same is yet to be received. vii)As per PMU, solar generation loss of approx. 487 MW at AGEZSL(IP) and 262 MW at Nokhra(IP) were observed. viii)As per SCADA, total Generation loss of 1035MW was observed in NR region.	1035	0	240	N (Partial details received)	N (Partial details received)	N (Partial details received)
9	GI-2	1) 800 KV HVDC Kurukshetra(PG) Pole-02 2) 800 KV HVDC Kurukshetra(PG) Pole-04	Haryana	PGCL	19-Mar-25	19:13	i)During antecedent condition, 800KV HVDC Champa-Kurukshetra was carrying total 2578MW (Pole 01- 490 MW, Pole 02- 737MW, Pole 03- 716MW, Pole 04- 492MW). ii)As reported, at 19:13hrs Pole-2 and Pole-4 Tripped on T-Zone protection as Pole-2 protection was reading wrong values of DC current of parallel pole. Power shifted to remaining poles (Pole-1&3) and power order after the tripping were 1349 MW in Pole-1 and 1527 MW in Pole-3. iii)POWERGRID performed signal injection in control TB and affected lane was rebooted. The analog value of latched protection was found satisfactory. iv)As per PMU, fluctuation in voltage was observed. v) As per SCADA, no change in demand is observed in Haryana control area. i)Generation of 220KV AGEPL(IP) stations evacuate through 220 KV BHADIA_2 (PG)-AGEPL SL_BHD2_PG (AMP ENERGY GREEN PRIVATE LIMITED) Ckt. ii)During antecedent condition, 220 KV BHADIA_2 (PG)-AGEPL SL_BHD2_PG (AMP ENERGY GREEN PRIVATE LIMITED) Ckt was generating approx. 230MW (as per PMU). iii)As reported, at 09:34hrs, 220 KV BHADIA_2 (PG)-AGEPL SL_BHD2_PG (AMP ENERGY GREEN PRIVATE LIMITED) Ckt tripped on B-N phase to earth fault. During the inspection it was found that there was cable failure in Feeder 5. iv)Due to tripping of 220 KV BHADIA_2 (PG)-AGEPL SL_BHD2_PG (AMP ENERGY GREEN PRIVATE LIMITED) Ckt , 220/33 KV 150 MVA ICT-1 & 2 also tripped due to loss of evacuation path and 220KV AGEPL lost its connectivity from grid and blackout occurred in 220KV AGEPL S/s. v)As per PMU at 400KV Bhadia_2 S/s, no fault was observed. vi)As per PMU, solar generation loss of approx. 230 MW at AGEPL(IP) was observed.	1035	0	NA	Y(d)	Y(d)	Y(d)
10	GD-1	1) 220 KV BHADIA_2 (PG)-AGEPL SL_BHD2_PG (AMP ENERGY GREEN PRIVATE LIMITED) Ckt	Rajasthan	PGCL & Amp Energy	23-Mar-25	09:34	i)Generation of 220KV AGEPL(IP) stations evacuate through 220 KV BHADIA_2 (PG)-AGEPL SL_BHD2_PG (AMP ENERGY GREEN PRIVATE LIMITED) Ckt. ii)During antecedent condition, 220 KV BHADIA_2 (PG)-AGEPL SL_BHD2_PG (AMP ENERGY GREEN PRIVATE LIMITED) Ckt was generating approx. 230MW (as per PMU). iii)As reported, at 09:34hrs, 220 KV BHADIA_2 (PG)-AGEPL SL_BHD2_PG (AMP ENERGY GREEN PRIVATE LIMITED) Ckt tripped on B-N phase to earth fault. During the inspection it was found that there was cable failure in Feeder 5. iv)Due to tripping of 220 KV BHADIA_2 (PG)-AGEPL SL_BHD2_PG (AMP ENERGY GREEN PRIVATE LIMITED) Ckt , 220/33 KV 150 MVA ICT-1 & 2 also tripped due to loss of evacuation path and 220KV AGEPL lost its connectivity from grid and blackout occurred in 220KV AGEPL S/s. v)As per PMU at 400KV Bhadia_2 S/s, no fault was observed. vi)As per PMU, solar generation loss of approx. 230 MW at AGEPL(IP) was observed.	230	0	NA	N (Partial details received)	N	N
11	GD-1	i)220 KV LEH(PG) - BUS 1 ii)220/66 KV 50 MVA ICT 1 AT LEH(PG) iii)220 KV KHALSTI-LEH (PG) Ckt-1	Jammu & Kashmir	JKPD & PGCL	26-Mar-25	04:44	i)220/66KV Leh has double main bus system. Nimmo Baggo HEP is connected at 66KV level at 220/66KV Leh S/s. ii)During antecedent condition, 220 KV KHALSTI-LEH (PG) Ckt-1 was carrying 12MW, while 220/66KV 50MVA ICT-1 and ICT-2 were loaded 6 MW each. iii)As reported, at 04:44 hrs, 220KV Bus Bar protection operated due to flashover in GIS of Bus Coupler Bay resulting in outage of 220KV Khalsti-Leh Line & 220/66KV 50MVA ICT-1 at Leh (PG). Subsequently, 220KV Bus-2 and 220/66KV 50MVA ICT-2 also tripped (Details awaited). iv)Due to tripping of both the ICTs, the generator at Nimmo Baggo HWP also tripped due to loss of evacuation path along with other 66KV feeders. This led to complete blackout of 220KV Leh substation. v)As per PMU, R-N phase to earth fault with fault clearance time of 120msec was observed. vi)As per SCADA, load loss of approx. 21 MW in J&K control area and generation loss of approx. 6 MW at Nimmo was observed.	6	21	120	Y(d)	N (Partial details received)	N (Partial details received)

S.No.	Category of Grid Incident/ Disturbance	Name of Elements (Tripped/Manually opened)	Affected Area	Owner/ Agency	Outage		Event (As reported)	Loss of generation / loss of load during the Grid Disturbance		Fault Clearance time (in ms)	Compliance of Protection Protocol/Standard		
					Date	Time		Generation Loss(MW)	Load Loss (MW)		Flash Report Submission (Y/N)	DR/EI Submission (Y/N)	Detail Tripping Report Submission (Y/N)
12	GD-1	i)220 KV Panchkula(PG)-Pinjore (HR) (HVPNL) Ckt-2 ii)220 KV Panchkula(PG)-Pinjore (HR) (HVPNL) Ckt-1 iii)220 KV Pinjore(HR)-Baddi (HP) (HVPNL) Ckt-1 iv)220 KV Pinjore(HR)-Baddi (HP) (HVPNL) Ckt-2	HP & Haryana	PGCIL, HVPNL & HPSEB	26-Mar-25	13:37	i)220KV Pinjore(HR) and 220KV Baddi S/s has double main bus arrangement at 220KV side. ii)During antecedent condition, 220 KV Panchkula (PG)-Pinjore (HR) (HVPNL) Ckt-1 & Ckt-2 were carrying 136MW each, while 220KV Pinjore – Baddi Ckt1 & 2 were carrying 125MW each. (As per SCADA). Further, 220/66KV Baddi(HP) S/s was operating in split mode and load of 220/66KV was being fed from 220KV Pinjore – Baddi Ckt-1 & 2 iii)As reported, at 13:37 hrs, 220 KV Panchkula(PG)-Pinjore (HR) (HVPNL) Ckt-2 tripped on R-N phase to earth fault. The fault location was 30KM from Panchkula end, 2-2 distance protection operated. The fault current as reported by POWERGRID was 4.2KA but as per the DR submitted fault current was 3.8KA. It is pertinent to mention that due to tripping of Ckt-2 all the load shifted on 220 KV Panchkula(PG)-Pinjore (HR) (HVPNL) Ckt-1. iv)Further at 13:42 hrs, 220 KV Panchkula(PG)-Pinjore (HR) (HVPNL) Ckt-1 was manually hand tripped due to heavy sparking on Bus isolator 20589 at Panchkula end. v)With the outage of 220KV Panchkula-Pinjore D/C, 220KV Pinjore station became dead and load of Baddi(HP) also got affected. vi)As per PMU at Panchkula(PG), R-N phase to earth fault is observed with delayed fault clearing time of 240msec. vii)As per SCADA, change in demand of approx. 113MW is observed in HP control area respectively. No change in demand of Haryana control area observed.	0	113	360	N (Partial details received)	N (Partial details received)	N (Partial details received)
13	GI-1	i)220 KV SAHARANPUR(UP)-KHODRI(UK) (UP) Ckt-4 ii)220 KV SARSAWAN(UP)-KHODRI(UK) (UP) Ckt-1 iii)220 KV KHODRI(UK)-MAJRI(HP) (UK) Ckt-1 iv)220 KV KHODRI(UK)-MAJRI(HP) (UK) Ckt-2	UK & HP	HPSEB, UPPCL &PTCUL	28-Mar-25	07:31	i)220 Khodri Sub station has double main Bus Bar system with 4 * 60MW generating units. ii)During antecedent condition, 220 KV KHODRI(UK)-MAJRI(HP) (UK) Ckt-1 and Ckt-2 were carrying 82MW load each, while 220 KV SAHARANPUR (UP) – KHODRI (UK) (UP) was carrying 19MW load (as per SCADA). iii)As reported, at 07:31 hrs, Bus Bar protection operated due to R phase CB blast of Unit 1 at Khodri. Due to bus bar protection operation, 220KV As per DR of 220 KV KHODRI(UK)-MAJRI(HP) (UK) Ckt-1 and Ckt2, R-N phase to earth fault can be observed along with 2-4 distance protection operation from Khodri end. iv)As per PMU, R-N phase to earth fault was observed in the system with delayed fault clearance of 240 msec observed. v)As per Disturbance short report submitted by UP SLDC, 220 KV SAHARANPUR(UP)-KHODRI(UK) (UP) Ckt-1 tripped on R-N, transient earth fault, 2-3 and the fault current is 1.9KA . vi)220 KV SARSAWAN(UP)-KHODRI(UK) (UP) Ckt-1 tripped on Z-1, R-N fault, fault distance: 85.22KM from Sarawan(UP) end. The line did not open from Sarawan end. vii)Due to tripping of 220KV Khodri-Majri D/C which were only feeding source at 220KV side at Majri (HP), load of 220/132KV Majri(HP) got affected. viii)As per SCADA, change in demand and generation of approx. 90 MW and 96 MW respectively in Himachal and Uttarakhnad control area were observed. However, SLDC Uttarakhnad and SLDC Himachal informed generation loss of 75MW and load loss of 160MW.	90	160	240	Y(d)	N (Partial details received)	Y(d)
14	GD-1	i)220 KV Bhadla(PG)-Azure Maple PSS SL_BHD_PG (APMPL) Ckt-1 ii)220/33kV 130 MVA ICT1 at Azure 34	Rajasthan	PGCIL & Azure	31-Mar-25	13:43	i)Generation of 220KV Azure Maple(IP) station evacuates through 220 KV Bhadla(PG)-Azure Maple PSS SL_BHD_PG (APMPL) (APMPL) Ckt-1 which was generating approx. 290 MW (as per PMU). Similarly, 220KV Azure 34(IP) station evacuates through 220 KV BHADLA(PG)-AZURE POWER 34 SOLAR(APTEL) (APTEL) Ckt-1 which was generating 132MW (as per PMU). ii)As reported, at 13:43hrs, 220 KV Bhadla(PG)-Azure Maple PSS SL_BHD_PG (APMPL) (APMPL) Ckt-1 tripped on R-N phase to earth fault due to differential protection operation on account of tree fell on the line. At the same time 130 MVA 220/33KV ICT at 220kv Azure 34 also tripped on account of Differential relay protection (exact reason yet to be shared) iii)Due to tripping of 220 KV Bhadla(PG)-Azure Maple PSS SL_BHD_PG (APMPL) (APMPL) Ckt-1 and 130 MVA 220/33KV ICT1 at Azure34, Azure Maple(IP) and Azure 34 S/s lost its connectivity from grid and blackout occurred at 220KV Azure Maple(IP) and 220KV Azure 34(IP) S/s. iv)As per PMU at Bhadla(PG), R-N phase to earth fault (voltage dipped upto 0.95 p.u.) is observed with fault clearing time of 160ms. After the fault clearance voltage increased upto 1.04 p.u. v)As per PMU at Bhaas(PG), a sharp drop in frequency is observed from 49.90 Hz to 49.82 Hz and frequency recovered to 49.91 Hz within 1 min. vi)As per SCADA, dip in NR total solar generation of approx. 802 MW is observed. vii)As per SCADA, solar generation loss of approx. 290MW at Azure Mapple, 132MW at Azure34, 115MW at TPREL and 115MW at AHEJ4L RE stations were observed. Drop in generation of TPREL and AHEJ4L is suspected due to LVRT non-compliance. Details is yet to be received from RE stations. viii)As per DR (Bhadla end) of 220 KV Bhadla(PG)-Azure Maple PSS SL_BHD_PG (APMPL) (APMPL) Ckt-1, R-N phase to earth fault (~7.3KA) with unsuccessful A/R operation is observed. 3-ph A/R was observed instead of 1-ph A/R.	802	0	160	N (Partial details received)	N (Partial details received)	N (Partial details received)

Sr No	Element Name	Outage Date	Outage Time	Reason
1	220 KV Badarpur(NT)-Alwar MIA(RS) (RS) Ckt-1	11-Mar-25	12:08	Transient fault
		13-Mar-25	11:59	Phase to Ground Fault B-N
		14-Mar-25	11:13	Phase to earth fault B-N
		19-Mar-25	14:16	Transient fault
		20-Mar-25	10:04	Phase to earth fault B-N
		21-Mar-25	12:22	Transient fault
		22-Mar-25	03:59	Phase to Ground Fault B-N
		23-Mar-25	14:20	Transient fault
2	220 KV Nara(UP)-Roorkee(UK) (UP) Ckt-1	26-Mar-25	13:40	Earth fault
		11-Mar-25	17:40	Phase to earth fault R-N
		15-Mar-25	02:05	Phase to Phase Fault R-Y
		23-Mar-25	14:55	Transient fault
3	220 KV RAPS_A(NP)-Sakatpura(RS) (RS) Ckt-1	23-Mar-25	14:57	Transient fault
		08-Mar-25	03:16	Phase to earth fault R-N
		19-Mar-25	01:28	Transient fault
		29-Mar-25	04:40	Transient fault
4	220 KV RAPS_A(NP)-Sakatpura(RS) (RS) Ckt-2	30-Mar-25	04:22	Transient fault
		11-Mar-25	02:44	Phase to earth fault R-N
		19-Mar-25	01:28	Transient fault
		19-Mar-25	04:02	Transient fault
5	220 KV RAPS_B(NP)-Sakatpura(RS) (RS) Ckt-1	19-Mar-25	05:59	Transient fault
		08-Mar-25	05:19	Phase to earth fault R-N
		11-Mar-25	12:45	Phase to Ground Fault B-N
		16-Mar-25	04:32	Phase to earth fault R-N
6	220/33 kV 150 MVA ICT 2 at ABCRenew_RJ01_SL_BHD2_PG	29-Mar-25	02:54	Transient fault
		02-Mar-25	11:47	Operation of transformer protection
		03-Mar-25	13:06	Operation of transformer protection
		19-Mar-25	15:19	Phase to Ground Fault Y-N
7	400 KV Bareilly-Unnao (UP) Ckt-1	15-Mar-25	12:54	Phase to earth fault Y-N
		17-Mar-25	13:29	Phase to earth fault B-N
		21-Mar-25	02:31	Phase to Ground Fault R-N
8	400 KV Merta-Kankani (RS) Ckt-1	08-Mar-25	13:02	Phase to earth fault B-N
		08-Mar-25	14:36	Phase to earth fault B-N
		26-Mar-25	13:42	Phase to earth fault B-N
9	400 KV Suratgarh(RVUN)-Ratangarh(RS) (RS) Ckt-1	02-Mar-25	03:38	Phase to earth fault R-N
		29-Mar-25	02:31	Over Voltage
		29-Mar-25	20:59	Over Voltage
10	400/220 kV 240 MVA ICT 3 at Obra_B(UP)	14-Mar-25	12:02	Operation of transformer protection
		15-Mar-25	11:33	Operation of transformer protection
		26-Mar-25	11:11	Operation of transformer protection
11	400/33 kV 150 MVA ICT 1 at Renew SuryaRavi SL_BKN_PG (RSRPL)	03-Mar-25	09:37	Operation of transformer protection
		08-Mar-25	11:42	Operation of transformer protection
		11-Mar-25	14:51	Relay maloperation

Grid Events to be discussed in 59th PSC Meeting											
S.No.	Category of Grid Incident/ Disturbance	Name of Elements (Tripped/Manually opened)	Affected Area	Owner/ Agency	Outage		Event (As reported)	Loss of generation / loss of load during the Grid Disturbance		Fault Clearance time (in ms)	Points of discussion
					Date	Time		Generation Loss(MW)	Load Loss (MW)		
1	GI-1	1) 220 KV Dasuya(PS)-Jalandhar(BB) (BBMB) Ckt-2 2) 220 KV Dasuya(PS)-Jalandhar(PG) (PG) Ckt-1 3) 220 KV Sarala(PS)-Dasuya(PS) (PG) Ckt-2 4) 220 KV Pong(BB)-Dasuya(PS) (BBMB) Ckt-2	Punjab	PSTCL, BBMB, PGCL	10-Mar-25	14:32	i)220KV Dasuya(PS) has double main bus scheme. ii)As reported at 14:32hrs, B-ph conductor of 220 KV Dasuya(PS)-Jalandhar(BB) Ckt-2 broken due to damage of insulator string and fell on 220KV bus-2. iii)As per PMU at Jalandhar(PG), R-N fault with delayed clearance of ~560msec is observed. iv)Fault was not cleared in time from Dasuya end. (Exact details w.r.t. bus bar protection at Dasuya end yet to be received.) v)Line connected to 220KV Bus-2 i.e., 220 KV Dasuya(PS)-Jalandhar(PG) (PG) Ckt-1, 220 KV Sarala(PS)-Dasuya(PS) (PG) Ckt-2 and 220 KV Pong(BB)-Dasuya(PS) (BBMB) Ckt-2 tripped from remotend end. As reported, 220KV bus coupler at Dasuya(PS) also tripped. vi)As per SCADA, change in demand of approx. 100 MW is observed in Punjab control area.	0	100	560	Details analysis of the event and remedial action taken details.
2	GD-1	1) 220 KV Baghat(PG)-Baraut(UP) (UP) Ckt-1 2) 220 KV Baghat(PG)-Baraut(UP) (UP) Ckt-2 3) 220 KV Mirpur-Baraut(UP) Ckt 4) 220 KV Muradnagar_new-Baraut(UP) Ckt 5) 220/132KV 200MVA ICT-1 at Baraut(UP) 6) 220/132KV 200MVA ICT-2 at Baraut(UP) 7) 220/132KV 200MVA ICT-3 at Baraut(UP)	Uttar Pradesh	UPPTCL, PGCL	12-Mar-25	01:06	i)220/132/33KV Baraut(UP) S/s has single main and transfer bus scheme in all voltage levels. ii)As reported at 01:06 hrs, R-ph CT of 220 KV Baghat(PG)-Baraut(UP) (UP) Ckt-1 got damaged which further led to bus bar protection operation at 220KV Baraut(UP). As a result, all the elements connected to 220KV Bus tripped and complete blackout occurred at 220/132/33KV Baraut(UP) S/s. iii)However, as per DR at Baghat(PG) end of 220 KV Baghat(PG)-Baraut(UP) (UP) Ckt-1, R-N fault (I _r =~7.71kA) converted to R-Y-N fault (I _r =~14.48kA, I _y =~15.87kA) was observed in 220 KV Baghat(PG)-Baraut(UP) (UP) Ckt-1 and fault was cleared in zone-2 from Baghat(PG) end with fault clearing time of ~440ms. iv)As per DR at Baghat(PG) end of 220 KV Baghat(PG)-Baraut(UP) (UP) Ckt-2, R-N fault (I _r =~8.53kA) was observed in 220 KV Baghat(PG)-Baraut(UP) (UP) Ckt-2 and fault was sensed in zone-2 at Baghat(PG) end with fault clearing time of ~240ms. v)As per SCADA SOE, 220 KV Baghat(PG)-Shamli(UP) (UP) Ckt also tripped during the same time (exact reason of tripping yet to be shared). vi)As per PMU at Meerut(PG), R-N phase to ground fault converted to R-Y-N double phase to ground fault with delayed fault clearing time of 440ms was observed. vii)As per SCADA, change in demand of approx. 40MW is observed in Uttar Pradesh control area.	0	40	440	Details analysis of the event and remedial action taken details.
3	GD-1	1) 220 KV Delhi RR(BB)-Narela(DV) (BBMB) Ckt-1 2) 220 KV Delhi RR(BB)-Narela(DV) (BBMB) Ckt-2	Delhi	DTL, BBMB	14-Mar-25	18:34	i)220/66/33KV Delhi Rohtak Road(BB) S/s has double main bus arrangement at 220KV level. ii)During antecedent condition, incoming power at Delhi Rohtak Road(BB) through 220 KV Delhi RR(BB)-Narela(DV) (BBMB) D/C was approx. 17 MW each (as per SCADA) which was supplying load of Delhi Rohtak Road(BB) S/s. iii)As reported, at 18:34hrs, 220 KV Delhi RR(BB)-Narela(DV) (BBMB) Ckt-1 tripped on R-B phase to phase fault with following relay indications: fault distance of 1.185km and fault current of I _r =~2.587kA and I _b =~2.523kA from Delhi RR(BB) end and fault distance of 17.59 km and fault current of I _r =~3.841kA and I _b =~3.878kA from Narela(DV) end. During patrolling, a kite string was found tangled between R and B phases at tower loc. no. 1506A, which was later removed. iv)During the same time, 220 KV Delhi RR(BB)-Narela(DV) (BBMB) Ckt-2 also tripped from Narela end only with following relay indications : fault distance of 17.59 km and fault current of I _r =~3.841kA and I _b =~3.878kA from Narela(DV) end (exact reason of fault yet not shared). During patrolling, nothing abnormal was found. v)Due to tripping of 220 KV Delhi RR(BB)-Narela(DV) (BBMB) D/C, complete blackout occurred at 220/66/33KV Delhi Rohtak Road(BB) S/s. vi)As per PMU at Mandaula(PG), R-B phase to phase fault with fault clearing time of 80 ms is observed. vii)As per SCADA, change in demand of approx. 30 MW is observed in Delhi control area.	0	30	80	Details analysis of the event and remedial action taken details.
4	GD-1	1) 400 KV Parbat_2(NH)-Sainj(HP) (PKTCL) Ckt 2) 400 KV Parbat_3(NH)-Banala(PG) (PKTCL) Ckt	Himachal Pradesh	HPPTCL, PGCL, NHPC	16-Mar-25	14:46	i)Total generated power of Sainj HE(PH), Parbat_2(NH) and Parbat_3(NH) evacuates through 400 KV Parbat_2(NH)-Banala(PG) (PKTCL) Ckt and 400 KV Parbat_3(NH)-Banala(PG) (PKTCL) Ckt via 400 KV Parbat_2(NH)-Sainj(HP) (PKTCL) Ckt and 400 KV Parbat_3(NH)-Sainj(HP) (PKTCL) Ckt. ii)During antecedent condition, no generation was there at 400KV Parbat_2(NH), 400KV Parbat_3(NH) and 400KV Sainj HE(PH). iii)As reported, at 14:46hrs, 400 KV Parbat_3(NH)-Banala(PG) (PKTCL) Ckt tripped from Banala(PG) end only on R-N phase to earth fault with fault distance of 6.9km and fault current of 5.545kA from Banala(PG) end (exact reason of fault yet to be shared). iv)As further reported, 400 KV Parbat_2(NH)-Sainj(HP) (PKTCL) Ckt also tripped at the same time from Sainj end only (exact reason of tripping yet to be shared). v)Due to tripping of both 400 KV Parbat_3(NH)-Banala(PG) (PKTCL) Ckt and 400 KV Parbat_2(NH)-Sainj(HP) (PKTCL) Ckt, complete blackout occurred at 400KV Parbat_3(NH) and 400KV Sainj HE(PH) S/s. vi)As per PMU at Nallagah(PG), two consecutive R-N phase to earth fault is observed with delayed fault clearing time of 1240 ms and 1040 ms respectively. vii)As per SCADA, no generation loss is observed at 400KV Parbat_2(NH), 400KV Parbat_3(NH) and 400KV Sainj HE(PH) as there was no generation at either of them.	0	0	1240	Details analysis of the event and remedial action taken details.
5	GD-1	1) 400/220 KV 500 MVA ICT 6 AT BHADLA_2 (PG) 2) 220 KV NOKHRA SL_BHD2 (NTPC)-BHADLA_2 (PG) (NOKHRA) Ckt-1 3) 400 KV AGE25L SL_BHD2_PG-Bhadla_2 (PG) (AGE25L) Ckt-1	Rajasthan	Adani Green, PGCL and NTPC	18-Mar-25	10:00	i)Generation of 220kv Nokhra (IP) and 400kv AGE25L stations evacuate through 220 KV Nokhra SL_BHD2 (NTPC)-Bhadla_2 (PG) (NTPC_NOKHRA) Ckt and 400 KV AGE25L SL_BHD2_PG-Bhadla_2 (PG) (AGE25L) Ckt-1 respectively. ii)During antecedent condition, 220KV Nokhra (IP) and 400KV AGE25L were generating approx. 262 MW and 488 MW respectively (as per PMU). iii)As reported, at 09:59:49hrs, Y-Phase CT of 405-52 bay at AGE25L RE station failed and it triggered Transformer Differential protection of main CB 404-52 and Tie CB 405-52 opened on Bus-Bar Zone-1 protection. iv)At 09:59:47 hrs, 400 KV AGE25L SL_BHD2_PG-Bhadla_2 (PG) (AGE25L) Ckt-1 tripped on R- Phase line differential protection. During inspection at site, spark in R-phase CVT was found and the same was replaced. v)As per PMU at 400KV Bhadla2(PG), Y-N fault cleared in 240msec followed by permanent R-N fault is observed is observed with fault clearing time of 80ms. vi)At the same time, 400/220KV 500MVA ICT-6 at Bhadla2(PG) and 220 KV NOKHRA SL_BHD2 (NTPC)-BHADLA_2 (PG) (NTPC_NOKHRA) Ckt-1 also tripped. The reason for the same is yet to be received. vii)As per PMU, solar generation loss of approx. 487 MW at AGE25L(IP) and 262 MW at Nokra(IP) were observed. viii)As per SCADA, total Generation loss of 1035MW was observed in NR region.	1035	0	240	Details analysis of the event and remedial action taken details.
6	GD-1	8220 KV Bhadla(PG)-Azura Maple PSS SL_BHD_PG (APMPL) Ckt-1 4220/33KV 130 MVA ICT-1 at Azura 34	Rajasthan	PGCL & Azura	31-Mar-25	13:43	i)Generation of 220kv Azura Maple(IP) station evacuates through 220 KV Bhadla(PG)-Azura Maple PSS SL_BHD_PG (APMPL) (APMPL) Ckt-1 which was generating approx. 290 MW (as per PMU). Similarly, 220KV Azura 34(P) station evacuates through 220 KV BHADLA(PG)-AZURE POWER 34 SOLAR(APTFL) (APTFL) Ckt-1 which was generating 132MW (as per PMU). ii)As reported, at 13:43hrs, 220 KV Bhadla(PG)-Azura Maple PSS SL_BHD_PG (APMPL) (APMPL) Ckt-1 tripped on R-N phase to earth fault due to differential protection operation on account of tree fell on the line. At the same time 130 MVA 220/33KV ICT at 220kv Azura 34 also tripped on account of Differential relay protection (exact reason yet to be shared). iii)Due to tripping of 220 KV Bhadla(PG)-Azura Maple PSS SL_BHD_PG (APMPL) (APMPL) Ckt-1 and 130 MVA 220/33KV ICT-1 at Azura34, Azura Maple(IP) and Azura 34 S/s lost its connectivity from grid and blackout occurred at 220KV Azura Maple(IP) and 220KV Azura 34(P) S/s. iv)As per PMU at Bhadla(PG), R-N phase to earth fault (voltage dipped upto 0.95 p.u.) is observed with fault clearing time of 160ms. After the fault clearance voltage increased upto 1.04 p.u. v)As per PMU at Basu(PG), a sharp drop in frequency is observed from 49.90 Hz to 49.82 Hz and frequency recovered to 49.91 Hz within 1 min. vi)As per SCADA, dip in NR total solar generation of approx. 802 MW is observed. vii)As per SCADA, solar generation loss of approx. 290MW at Azura Maple, 132MW at Azura34, 115MW at TPREL and 115MW at AHEJAL RE stations were observed. Drop in generation of TPREL and AHEJAL is suspected due to LVRT non-compliance. Details is yet to be received from RE stations. viii)As per DR (Bhadla end) of 220 KV Bhadla(PG)-Azura Maple PSS SL_BHD_PG (APMPL) (APMPL) Ckt-1, R-N phase to earth fault (~7.3kA) with unsuccessful A/R operation is observed. 3-ph A/R was observed instead of 1-ph A/R.	802	0	160	Details analysis of the event and remedial action taken details.
Utilities are requested to prepare detailed analysis report and present the event details during 58th PSC meeting of following grid events (Events involved more than one utility may be jointly prepared and presented):											

Utilities are requested to prepare detailed analysis report and present the event details during 58th PSC meeting of following grid events (Events involving more than one utility may be jointly prepared and presented):

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	765 KV Orai-Jabalpur (PG) Ckt-1	POWERGRID	15-Mar-25	12:52	Nil	PLCC maloperation	NA	NA	Yes (After 24 hours)	Yes (After 24 hours)	PLCC maloperation at Jabalpur end	As per PMU, no fault in system is observed. As per DR of Orai end, no fault in system is observed and DT received at Orai end.
2	800 KV HVDC Kurukshetra(PG) Pole-4	POWERGRID	15-Mar-25	17:18	Nil	Tripped due to commutation failure detected in Pole-2.	GI-2	NA	Yes (After 24 hours)	Yes (After 24 hours)	Maloperation of C&P system	As per PMU, no fault in system and fluctuation n voltage is observed.Pole-2 blocked due to the false initiation of Blocking Seq 2 due to maloperation of HVDC C&P system due to faulty CIB card. Pole 4 blocked on DC under current protection. Faulty CIB card has been replaced.
3	800 KV HVDC Kurukshetra(PG) Pole-2	POWERGRID	15-Mar-25	17:18	Nil	Commutation failure led to tripping of Pole-2.		NA	Yes (After 24 hours)	Yes (After 24 hours)	Maloperation of C&P system	
4	220 KV Ranpur(RS)-Bhanpura(MP) (RS) Ckt-1	RRVNL	17-Mar-25	03:46	Nil	Failure of PT	NA	NA	Yes (After 24 hours)	Yes (After 24 hours)		As per PMU at Kota(PG), no fault in system is observed. As per DR of 220 KV Ranpur(RS)-Bhanpura(MP) (RS) Ckt-1 of Ranpur end, R-N fault is observed. As reported, fault occurred due to PT blast at Ranpur end. However, DR(.dat/.cfg) files and event analysis not received.
5	220 KV Modak(RS)-Bhanpura(MP) (MPSEB) Ckt-1	MPSEB	17-Mar-25	03:47	Nil	Failure of PT	NA	NA	Yes (After 24 hours)	No		
6	400 KV RAPS_D(NP)-Shujalpur(PG) (RTCL) Ckt-1	POWERGRID	19-Mar-25	16:55	Nil	Bus Bar Protection Operated	NA	NA	No	No	DR/EL & tripping report not received	As reported, bus bar protection operated at RAPS D end. However, as per PMU, no fault in system is observed. Reason of bus bar protection operation and outage of elements despite of one & half breaker scheme not received.
7	400 KV RAPS_D(NP)-Shujalpur(PG) (RTCL) Ckt-2	POWERGRID	19-Mar-25	16:55	Nil	Bus Bar Protection Operated	NA	NA	No	No	DR/EL & tripping report not received	
8	800 KV HVDC Kurukshetra(PG) Pole-4	POWERGRID	19-Mar-25	19:13	Nil	T-zone protection operated at Champa end	GI-2	NA	Yes (After 24 hours)	Yes (After 24 hours)		Pole-2 and Pole-4 Tripped on T-Zone protection as Pole-2 protection was reading wrong values of DC current of parallel pole. This initiated T-Zone protection. The affected lane was rebooted and after rebooting, analog values of latched protection found ok.
9	800 KV HVDC Kurukshetra(PG) Pole-2	POWERGRID	19-Mar-25	19:13	Nil	T-zone protection operated at Champa end		NA	Yes (After 24 hours)	Yes (After 24 hours)		
10	220 KV Auraiya(NT)-Malanpur(MP) (PG) Ckt-1	POWERGRID	21-Mar-25	05:21	Nil	Phase to Ground Fault Y-N	NA	120 msec	No	No	DR/EL & tripping report not received	As per PMU at Agra(PG), Y-N phase to earth fault with no A/R operation is observed. DR/EL & tripping report not received from Auraiya(NTPC).

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

Summary of Grid Event occurred in J&K control area during Jan'24-Mar'25										
Sl. No.	Category of Grid Disturbance (C-1 to C-5)	Name of Elements (Triggered/Manually opened)	Affected Area	Owner/ Agency	Outage		Event (As reported)	Loss of generation / loss of load during the Grid Disturbance		Fault Clearance time (in min)
					Date	Time		Generation Loss(MW)	Load Loss (MW)	
1	GD-1	1) 220 KV Alustang-Dress (PG) CH	Jammu and Kashmir	PSCL, BPTCL	19-Feb-24	10:19	(i) 220KV Dressing has double main bus arrangement at 220KV side. (ii) During antecedent condition, approx. 25MW power was coming from Alustang to Dress and approx. 25MW power was going out from Dress to Kargil. (iii) As reported, at 10:19 hrs, 220 KV Alustang-Dress (PG) CH tripped on R phase to earth fault with distance of 80km from Dress end. (iv) Due to this tripping supply to 220 KV Dress (PG) Kargil CH was lost and blackout occurred at 220/66KV Dressing(S) S/s. (v) As per PMU at Amargah, R phase to earth fault is observed with fault clearing time of 280ms. (vi) As per SCADA, change in demand of approx. 200MW is observed in J&K control area.	0	260	280
2	GD-1	1) 220 KV Alustang-Dress (PG) CH	Jammu and Kashmir	PSCL, BPTCL	25-Feb-24	10:00	(i) 220KV Dressing has double main bus arrangement at 220KV side. (ii) During antecedent condition, approx. 47MW power was coming from Alustang to Dress and approx. 47MW power was going out from Dress to Kargil. (iii) As reported, at 10:00 hrs, 220 KV Alustang-Dress (PG) CH tripped on R phase to phase fault with fault current of 20kA and 2.3kA from Alustang end and R and B phases respectively and fault distance of 63km from Alustang end and 64.8km from Dress end. (iv) Due to this tripping supply to 220 KV Dress (PG) Kargil CH was lost and blackout occurred at 220/66KV Dressing(S) S/s. (v) As per PMU at Amargah, R phase to phase fault is observed with fault clearing time of 80ms. (vi) As per SCADA, change in demand of approx. 115MW is observed in J&K control area.	0	115	80
3	GD-1	1) 220 KV Alustang-Dress (PG) CH	Jammu and Kashmir	PSCL, BPTCL	3-Feb-24	09:10	(i) 220KV Dressing has double main bus arrangement at 220KV side. 220KV Dress is connected with 220/120KV Kargil which is further connected with Khushal and Loh. Chuhak HPF is connected at 66KV level at 220/66KV Kargil and Nemoa Baga HPF is connected at 66KV at 220/66KV Loh. (ii) During antecedent condition, approx. 25MW power was coming from Alustang to Dress and approx. 25MW power was going out from Dress to Kargil. (iii) As reported, at 09:10 hrs, 220 KV Alustang-Dress (PG) CH tripped on R phase to earth fault. (iv) Due to this tripping supply to 220 KV Dress (PG) Kargil CH was lost and blackout occurred at 220/66KV Dressing(S) S/s. (v) As per PMU at Amargah, R phase to earth fault is observed with fault clearing time of 120ms. (vi) As per SCADA, load loss of approx. 200MW is observed in J&K control area.	0	23	120
4	GD-1	1) 220 KV Alustang-Dress (PG) CH	Jammu and Kashmir	PSCL, BPTCL	3-Feb-24	03:09	(i) During antecedent condition, approx. 60MW power was coming from Alustang to Dress and approx. 60MW power was going out from Dress to Kargil. Chuhak HPF was generating 100MW. (ii) As reported, at 03:09 hrs, 220 KV Alustang-Dress (PG) CH tripped on R phase to earth fault. The system remained stable at 220/66KV Dressing(S) Kargil, Khushal and Loh. (iii) Due to this tripping supply to 220 KV Dress (PG) Kargil CH was lost and blackout occurred at 220/66KV Dressing(S) S/s. (iv) As per PMU at Amargah, R phase to earth fault is observed with fault clearing time of 120ms. (v) As per SCADA, load loss of approx. 14MW is observed in J&K control area.	0	14	120
5	GI-1	1) 220 KV Amargah (INDIGRIS) Zarkotah (PG) CH-1 2) 220 KV Amargah (INDIGRIS) Zarkotah (PG) CH-2	Jammu and Kashmir	INDIGRIS, BPTCL	18-Mar-24	04:15	(i) 220/120KV Zarkotah S/s have two bus at 220KV side i.e., main bus & reserve bus. (ii) During antecedent condition, 220KV Amargah (INDIGRIS) - Zarkotah (PG) CH-1 was carrying 100MW each and feeding Zarkotah load. (iii) As reported, at 04:15 hrs, 220 KV Amargah (INDIGRIS) Zarkotah (PG) CH-2 tripped on R phase to earth fault with fault distance of 1.8kA and 1.4kA respectively. (Exact reason, nature and location of fault need to be shared). (iv) As reported, at the same time, 220 KV Amargah (INDIGRIS) Zarkotah (PG) CH-1 also tripped on R phase to earth fault with fault clearing time of 220ms. (v) As per PMU at Amargah, R phase to earth fault is observed with fault clearing time of 220ms. (vi) As per SCADA, change in demand of approx. 220MW is observed in J&K control area.	0	225	NA
6	GD-1	1) 220 KV Alustang-Dress (PG) CH	Jammu and Kashmir	PSCL	29-Apr-24	06:06	(i) Power flows from Alustang(S) to Dress(S) to Kargil to Khushal to Loh (radial connection). Generation of Chuhak is connected to Kargil and generation of Nemoa Baga is connected to Loh. (ii) As reported, at 06:06 hrs, 220 KV Alustang-Dress (PG) CH tripped on R phase to phase fault with fault distance of 80km from Dressing(S). (iii) Within the tripping of 220 KV Alustang-Dress (PG) CH, complete blackout occurred at 220/66KV Dressing(S) and supply to Kargil, Khushal and Loh also failed. (iv) Information of Chuhak and Nemoa Baga tripped due to loss of evacuation path resulting in generation loss of approx. 70MW each at Chuhak and Nemoa Baga (as per SCADA). (v) As per PMU at Amargah (INDIGRIS), R phase to phase fault is observed with fault clearing time of 120ms. (vi) As per SCADA, change in demand of approx. 14MW is observed in J&K control area.	14	15	120
7	GI-1	1) 220 KV Amargah (INDIGRIS) Zarkotah (PG) CH-1 2) 220 KV Amargah (INDIGRIS) Zarkotah (PG) CH-2	Jammu and Kashmir	INDIGRIS, BPTCL	10-May-24	1:06	(i) 220/120KV Zarkotah S/s have two bus at 220KV side i.e., main bus & reserve bus. (ii) During antecedent condition, 220KV Amargah (INDIGRIS) - Zarkotah (PG) CH-1 was carrying 100MW each and feeding Zarkotah load. (iii) As reported, at 01:06 hrs, 220 KV Amargah (INDIGRIS) Zarkotah (PG) CH-2 tripped on R phase to earth fault with fault current of $I_{sc} = 2.11kA$ and $I_{sc} = 1.73kA$ and fault distance of 1.74kA from Zarkotah(S) end, fault cleared in zone-1 at Zarkotah(S). (iv) As reported, at the same time, 220 KV Amargah (INDIGRIS) Zarkotah (PG) CH-2 also tripped on over-current protection operation. (v) As per PMU at Amargah (INDIGRIS), R phase to phase fault is observed with fault clearing time of 120ms is observed. (vi) As per SCADA, change in demand of approx. 130MW is observed in J&K control area.	0	130	120
8	GD-1	1) 220 KV Wagwara(PG) Pampore(PG) (PG) CH-1 2) 220 KV Wagwara(PG) Pampore(PG) (PG) CH-2	Jammu and Kashmir	PSCL, BPTCL	23-May-24	14:40	(i) 220/120KV Pampore has double main bus arrangement at 220KV side. (ii) During antecedent condition, power flow from Wagwara(S) to Pampore(PG) S/s was approx. 200 MW through 220 KV Wagwara(PG) Pampore(PG) (PG) CH-1. (iii) As reported, at 14:40 hrs, 220 KV Wagwara(PG) Pampore(PG) (PG) CH-1 tripped on R phase to earth fault with fault distance of 2.8kA from Wagwara(S) end and 2.8kA from Pampore(PG) S/s. (iv) As reported, at the same time, 220 KV Wagwara(PG) Pampore(PG) (PG) CH-2 also tripped on over-current protection operation. (v) As per PMU at Amargah (INDIGRIS), R phase to phase fault is observed in zone-1 and zone-2 with fault clearing time of 120ms. (vi) As per SCADA, change in demand of approx. 233MW is observed in J&K control area.	0	233	120
9	GD-1	1) 220 KV Bar[INDIGRIS] Kishorepur (PG) CH-1 2) 220 KV Bar[INDIGRIS] Kishorepur (PG) CH-2	Jammu and Kashmir	PSCL, BPTCL	3-Jan-24	17:31	(i) As reported, at 17:30 hrs, 220 KV Bar[INDIGRIS] Kishorepur (PG) CH-1 tripped on R phase to earth fault with fault current of 3.0kA from Kishorepur(S) end (as per DR). As per DR, zone-1 distance protection operated at Kishorepur(S) and (exact reason and location of fault yet to be shared). (ii) During the same time, 220 KV Bar[INDIGRIS] Kishorepur (PG) CH-2 also tripped on R phase to earth fault with fault current of 3.0kA from Kishorepur(S) end (as per DR). As per DR, fault cleared in zone-2 at Kishorepur(S) line remained. (iii) As reported, at the same time, 220 KV Bar[INDIGRIS] Kishorepur (PG) CH-2 also tripped on R phase to earth fault with fault clearing time of 120ms is observed. (iv) As per PMU at Kishorepur(S), R phase to phase fault with fault clearing time of 120ms is observed. (v) As per SCADA, load loss of approx. 120MW is observed in J&K control area.	0	120	120
10	GD-1	1) 220 KV Alustang-Dress (PG) CH	Jammu and Kashmir	PSCL	6-Jan-24	19:31	(i) Power flows from Alustang(S) to Dress(S) to Kargil to Khushal to Loh (radial connection). Generation of Chuhak is connected to Kargil and generation of Nemoa Baga is connected to Loh. (ii) As reported, at 19:31 hrs, 220 KV Alustang-Dress (PG) CH tripped on R phase to earth fault with fault distance of 110km from Alustang(S). (iii) Within the tripping of 220 KV Alustang-Dress (PG) CH, complete blackout occurred at 220/66KV Dressing(S) and supply to Kargil, Khushal and Loh also failed. (iv) Information of Chuhak and Nemoa Baga tripped due to loss of evacuation path resulting in generation loss of approx. 37MW & 10MW at Chuhak and Nemoa Baga respectively (as per SCADA). (v) As per PMU at Amargah (INDIGRIS), R phase to earth fault is observed with fault clearing time of 80ms. (vi) As per SCADA, change in demand of approx. 60MW is observed in J&K control area.	61	0	80
11	GI-1	1) 220/120KV 100MVA CT 1 at Bar[INDIGRIS] 2) 220/120KV 100MVA CT 2 at Bar[INDIGRIS] 3) 220/120KV 100MVA CT 3 at Bar[INDIGRIS]	Jammu and Kashmir	PSCL	7-Jan-24	16:29	(i) As reported, at 16:29 hrs, 220/120KV 100MVA CT 1 at Bar[INDIGRIS] tripped on over current earth fault protection (exact reason, location and type of fault yet to be shared). (ii) As reported, at the same time, 220/120KV 100MVA CT 2 at Bar[INDIGRIS] and 220/120KV 100MVA CT 3 at Bar[INDIGRIS] also tripped on overcurrent protection. (iii) As per PMU at Kishorepur(S), R phase to phase fault with delayed fault clearing time of 230ms is observed. (iv) As per SCADA, load loss of approx. 365MW is observed in J&K control area.	0	365	230
12	GI-1	1) 220 KV Samba(PG) Hiranagar(PG) (PG) CH-1 2) 220 KV Samba(PG) Hiranagar(PG) (PG) CH-2	Jammu and Kashmir	PSCL, BPTCL	13-Jan-24	06:48	(i) 220/120KV Hiranagar has double main bus arrangement at 220KV side. (ii) As reported, at 06:48 hrs, 220 KV Samba(PG) Hiranagar(PG) (PG) CH-1 tripped on R phase to earth fault. Fault cleared in zone-1, fault current $I_{sc} = 3.0kA$ and fault distance was 0.8km from Hiranagar end (Exact reason of fault yet to be received). (iii) As reported, at the same time, 220 KV Samba(PG) Hiranagar(PG) (PG) CH-2 also tripped from Hiranagar(S) and on overcurrent protection operation. (iv) As per PMU at Samba(PG), R phase to earth fault is observed in zone-1 with fault clearing time of 80ms is observed. (v) As per SCADA, change in demand of approx. 160MW is observed in J&K control area.	0	160	80
13	GI-1	1) 220 KV Amargah (INDIGRIS) Zarkotah (PG) CH-1 2) 220 KV Amargah (INDIGRIS) Zarkotah (PG) CH-2	Jammu and Kashmir	PSCL, INDIGRIS	18-Jan-24	11:01	(i) 220/120KV Zarkotah S/s have two bus at 220KV side i.e., main bus & reserve bus. 220KV Amargah-Zarkotah CH-1 & CH-2 are on the same tower (DC tower) and line length is "12.6km". (ii) During antecedent condition, 220KV Amargah (INDIGRIS) - Zarkotah (PG) CH-1 was carrying 100 MW each and feeding Zarkotah load. (iii) As reported, at 11:01 hrs, 220 KV Amargah (INDIGRIS) Zarkotah (PG) CH-1 tripped from both ends on R phase to earth fault. During pattering it was found that fault occurred due to vegetation fire in bottom of the line. (iv) As per DR at fault the circuit of Amargah end, Amargah and Zarkotah protection relay cleared R fault in 2.1 (2.0) and 2.2 (2.1) seconds in zone 1 and 2 respectively. (v) As confirmed by Amargah (INDIGRIS), in view of non-availability of carrier communication and A/R scheme at Zarkotah end, A/R has been kept disabled at Amargah end and time delay of 2 also kept as instantaneous at Amargah end. (vi) As per PMU at Amargah (INDIGRIS), R phase to earth fault which cleared within 120 msec is observed. (vii) As per SCADA, change in demand of approx. 210MW is observed in J&K control area.	0	210	120
14	GI-1	1) 220/120KV 100MVA CT 1 at Bar[INDIGRIS] 2) 220/120KV 100MVA CT 2 at Bar[INDIGRIS] 3) 220/120KV 100MVA CT 3 at Bar[INDIGRIS] 4) 220/120KV 100MVA CT 4 at Bar[INDIGRIS]	Jammu and Kashmir	JPTCL	2-Aug-24	11:03	(i) As reported, at 11:03 hrs, 220/120KV 100MVA CT 1, 100MVA CT 2, 100MVA CT 3 and 100MVA CT 4 at Bar[INDIGRIS] tripped on R phase to phase fault which occurred on 100MVA Bar-Canal (PG) CH-1 (exact reason, location of fault and type of protection operation is yet to be received). (ii) As reported, due to tripping of CT-1, the complete load shifted on 220/120KV 100MVA CT 2 & 3 which led to tripping of 220/120KV 100MVA CT 2 & 3 on overloading at Bar[INDIGRIS] S/s. (iii) As per PMU at Kishorepur(S), R phase to phase fault with fault clearing time of 120ms is observed. (iv) As per SCADA, load loss of approx. 345MW is observed in J&K control area.	0	345	120
15	GI-1	1) 220 KV Amargah (INDIGRIS) Zarkotah (PG) CH-1 2) 220 KV Amargah (INDIGRIS) Zarkotah (PG) CH-2	Jammu and Kashmir	PSCL, INDIGRIS	26-Aug-24	13:53	(i) 220/120KV Zarkotah S/s have two bus at 220KV side i.e., main bus & reserve bus. 220KV Amargah-Zarkotah CH-1 & CH-2 are on the same tower (DC tower) and line length is "12.6km". (ii) During antecedent condition, 220KV Amargah (INDIGRIS) - Zarkotah (PG) CH-1 was carrying 100 MW each and feeding Zarkotah load. (iii) As reported, at 13:53 hrs, 220 KV Amargah (INDIGRIS) Zarkotah (PG) CH-1 tripped from both ends on R phase to phase fault with fault distance of 0.8km and fault distance was 0.8km from Hiranagar end (Exact reason of fault yet to be received). (iv) As per DR at fault the circuit of Amargah end, Amargah and Zarkotah protection relay cleared R fault in 2.1 (2.0) and 2.2 (2.1) seconds in zone 1 and 2 respectively. (v) As confirmed by Amargah (INDIGRIS), in view of non-availability of carrier communication and A/R scheme at Zarkotah end, A/R has been kept disabled at Amargah end and time delay of 2 also kept as instantaneous at Amargah end. (vi) As per PMU at Amargah (INDIGRIS), R phase to phase fault which cleared within 120 msec is observed. (vii) As per SCADA, change in demand of approx. 180MW is observed in J&K control area.	0	180	120
16	GI-1	1) 220 KV Amargah (INDIGRIS) Zarkotah (PG) CH-1 2) 220 KV Amargah (INDIGRIS) Zarkotah (PG) CH-2	Jammu and Kashmir	PSCL, INDIGRIS	11-Oct-24	10:03	(i) 220/120KV Zarkotah S/s have two bus at 220KV side i.e., main bus & reserve bus. 220KV Amargah-Zarkotah CH-1 & CH-2 are on the same tower (DC tower) and line length is "12.6km". (ii) During antecedent condition, 220KV Amargah (INDIGRIS) - Zarkotah (PG) CH-1 was carrying 100 MW each and feeding Zarkotah load. (iii) As reported, at 10:03 hrs, 220 KV Amargah (INDIGRIS) Zarkotah (PG) CH-1 tripped from both ends on R phase to phase fault. During pattering it was found that the fault had occurred between Tower no. 77 and 78, as some locals were cutting trees in the vicinity of the fault location. (iv) As per PMU at Amargah (INDIGRIS), R phase to earth fault which cleared within 80 msec is observed. (v) As per SCADA, change in demand of approx. 175MW is observed in J&K control area.	0	175	80
17	GI-1	1) 220 KV Wagwara(PG) Pampore(PG) (PG) CH-1 2) 220 KV Wagwara(PG) Pampore(PG) (PG) CH-2	Jammu and Kashmir	PSCL, BPTCL	16-Oct-24	12:45	(i) 220/120KV Pampore has double main bus arrangement at 220KV side. (ii) During antecedent condition, power flow from Wagwara(S) to Pampore(PG) S/s was approx. 140 MW (10 MW each) through 220 KV Wagwara(PG) Pampore(PG) (PG) CH-1. (iii) As reported, at 12:45 hrs, 220 KV Wagwara(PG) Pampore(PG) (PG) CH-1 tripped on R phase to earth fault with fault distance of 2.8kA from Wagwara(S) end and 2.8kA from Pampore(PG) S/s. (iv) As reported, at the same time, 220KV Wagwara(PG) Pampore(PG) (PG) CH-2 also tripped from Wagwara and among the fault in zone-2 with fault distance of 11.8kA from Wagwara end. (v) As per PMU at Amargah (INDIGRIS), R phase to earth fault which cleared within 80 msec is observed. (vi) As per SCADA, change in demand of approx. 350 MW is observed in J&K control area.	0	350	100
18	GI-1	1) 220 KV Amargah (INDIGRIS) Zarkotah (PG) CH-1 2) 220 KV Amargah (INDIGRIS) Zarkotah (PG) CH-2	Jammu and Kashmir	PSCL, INDIGRIS	26-Nov-24	14:13	(i) 220/120KV Zarkotah S/s have two bus at 220KV side i.e., main bus & reserve bus. 220KV Amargah-Zarkotah CH-1 & CH-2 are on the same tower (DC tower) and line length is "12.6km". (ii) During antecedent condition, 220KV Amargah (INDIGRIS) - Zarkotah (PG) CH-1 was carrying 100 MW each and feeding Zarkotah load. (iii) As reported, at 14:13 hrs, 220 KV Amargah (INDIGRIS) Zarkotah (PG) CH-1 tripped on R phase to earth fault with fault distance of 22.34 km (as per I) and fault current of 0.7-3.8kA (as per DR) from Amargah end. Fault cleared in zone-2 at Amargah end. (iv) As reported, at the same time, 220KV Amargah (INDIGRIS) Zarkotah (PG) CH-2 also tripped on R phase to earth fault with fault distance of 27.44 km (as per I) and fault current of 0.7-3.8kA (as per DR) from Amargah end. Fault cleared in zone-2 at Amargah end. (v) As confirmed by Amargah (INDIGRIS), in view of non-availability of carrier communication and A/R scheme at Zarkotah end, A/R has been kept disabled at Amargah end and time delay of 2 was also kept as instantaneous at Amargah end. (vi) As per PMU at Amargah (INDIGRIS), R phase to earth fault which cleared within 80 msec is observed. (vii) As per SCADA, change in demand of approx. 260 MW is observed in J&K control area.	0	260	80
19	GI-1	1) 220 KV Amargah (INDIGRIS) Zarkotah (PG) CH-1 2) 220 KV Amargah (INDIGRIS) Zarkotah (PG) CH-2	Jammu and Kashmir	INDIGRIS and JPTCL	10-Dec-24	05:57	(i) 220/120KV Zarkotah S/s have two bus at 220KV side i.e., main bus & reserve bus. (ii) During antecedent condition, 220KV Amargah (INDIGRIS) - Zarkotah (PG) CH-1 was carrying 100 MW each and feeding Zarkotah load. (iii) As reported, at 05:57 hrs, 220 KV Amargah (INDIGRIS) Zarkotah (PG) CH-1 tripped from both ends on R phase to earth fault. (iv) As reported, at the same time, 220KV Amargah (INDIGRIS) Zarkotah (PG) CH-2 also tripped from both ends on R phase to earth fault. (v) As per PMU at Amargah (INDIGRIS), R phase to earth fault which cleared within 120 msec is observed. (vi) As per SCADA, change in demand of approx. 225MW is observed in J&K control area.	0	225	120
20	GI-1	1) 220 KV Samba(PG) Hiranagar(PG) (PG) CH-1 2) 220 KV Samba(PG) Hiranagar(PG) (PG) CH-2	Jammu and Kashmir	JPTCL	31-Dec-24	13:33	(i) 220/120KV Hiranagar has double main bus arrangement at 220KV side. (ii) During antecedent condition, power flow from Wagwara(S) to Hiranagar(PG) S/s was approx. 140 MW (10 MW each) through 220 KV Wagwara(PG) Pampore(PG) (PG) CH-1. (iii) As reported, at 13:33 hrs, 220 KV Samba(PG) Hiranagar(PG) (PG) CH-1 tripped on R phase to earth fault with fault distance of 11.8 km (as per I) and fault current of 0.7-3.8kA (as per DR) from Amargah end. Fault cleared in zone-2 at Amargah end. (iv) As reported, at the same time, 220KV Samba(PG) Hiranagar(PG) (PG) CH-2 also tripped on R phase to earth fault with fault distance of 11.8 km (as per I) and fault current of 0.7-3.8kA (as per DR) from Amargah end. Fault cleared in zone-2 at Amargah end. (v) As confirmed by Amargah (INDIGRIS), in view of non-availability of carrier communication and A/R scheme at Zarkotah end, A/R has been kept disabled at Amargah end and time delay of 2 was also kept as instantaneous at Amargah end. (vi) As per PMU at Amargah (INDIGRIS), R phase to earth fault which cleared within 80 msec is observed. (vii) As per SCADA, change in demand of approx. 78 MW is observed in J&K control area.	0	78	80
21	GI-1	1) 220 KV Amargah (INDIGRIS) Zarkotah (PG) CH-1 2) 220 KV Amargah (INDIGRIS) Zarkotah (PG) CH-2	Jammu and Kashmir	INDIGRIS and JPTCL	31-Dec-24	10:47	(i) 220/120KV Zarkotah S/s have two bus at 220KV side i.e., main bus & reserve bus. 220KV Amargah-Zarkotah CH-1 & CH-2 are on the same tower (DC tower) and line length is "12.6km". (ii) During antecedent condition, 220KV Amargah (INDIGRIS) - Zarkotah (PG) CH-1 was carrying 100 MW each and feeding Zarkotah load. (iii) As reported, at 10:47 hrs, 220 KV Amargah (INDIGRIS) Zarkotah (PG) CH-1 tripped on R phase to earth fault with fault distance of 11.8 km (as per I) and fault current of 0.7-3.8kA (as per DR) from Amargah end. Fault cleared in zone-1 at Zarkotah end. (iv) As reported, at the same time, 220KV Amargah (INDIGRIS) Zarkotah (PG) CH-2 also tripped on R phase to earth fault with fault distance of 11.8 km (as per I) and fault current of 0.7-3.8kA (as per DR) from Amargah end. Fault cleared in zone-1 at Zarkotah end. (v) As confirmed by Amargah (INDIGRIS), in view of non-availability of carrier communication and A/R scheme at Zarkotah end, A/R has been kept disabled at Amargah end and time delay of 2 was also kept as instantaneous at Amargah end. (vi) As per PMU at Amargah (INDIGRIS), R phase to earth fault which cleared within 80 msec is observed. (vii) As per SCADA, change in demand of approx. 235 MW is observed in J&K control area.	0	235	80
22	GI-1	1) 220/120KV 100MVA CT 1 at Delina (PG) 2) 220/120KV 100MVA CT 2 at Delina (PG) 3) 220/120KV 100MVA CT 3 at Delina (PG)	Jammu and Kashmir	PSCL, BPTCL	17-Jan-25	0:00:03.333	(i) 220/120KV Delina has double main bus arrangement at 220KV side. (ii) During antecedent condition, 220KV Amargah (INDIGRIS) - Delina (PG) CH-1 was carrying 100 MW each and feeding Delina load. (iii) As reported, at 0:00:03.333 hrs, 220/120KV 100MVA CT 1 at Delina (PG) tripped on earth fault (exact reason of protection operation need to be shared). (iv) During the same time, 220/120KV 100MVA CT 2 at Delina (PG) and 220/120KV 100MVA CT 3 at Delina (PG) also tripped on over-current protection operation. (v) As per PMU at Amargah (INDIGRIS), R phase to earth fault with fault clearing time of 80 msec is observed. (vi) As per SCADA, change in demand of approx. 210 MW is observed in J&K control area.	0	210	80
23	GI-1	1) 220 KV Amargah (INDIGRIS) Zarkotah (PG) CH-1 2) 220 KV Amargah (INDIGRIS) Zarkotah (PG) CH-2	Jammu and Kashmir	INDIGRIS and JPTCL	28-Feb-25	0:00:03.333	(i) 220/120KV Zarkotah S/s have two bus at 220KV side i.e., main bus & reserve bus. 220KV Amargah-Zarkotah CH-1 & CH-2 are on the same tower (DC tower) and line length is "12.6km". (ii) During antecedent condition, 220KV Amargah (INDIGRIS) - Zarkotah (PG) CH-1 was carrying 100 MW each and feeding Zarkotah load. 220KV Amargah (INDIGRIS) - Zarkotah (PG) CH-2 was already tripped at 01:45 hrs on R fault. (iii) As reported, at 0:00:03.333 hrs, 220 KV Amargah (INDIGRIS) Zarkotah (PG) CH-2 also tripped on R phase (Details of cause and location of fault yet to be received). (iv) As per PMU at Amargah (INDIGRIS), R phase to earth fault which cleared within 80 msec is observed. (v) As per SCADA, change in demand of approx. 125 MW is observed in J&K control area.	0	125	NA

24	GD-1	((220 KV LEH)PG) - BUS 1 ((220/66 KV 50 MVA ICT 1 AT LEH)PG) ((220 KV ANAGZI LEH)PG) ICT-1	Jammu and Kashmir	RESCO & PGCL	26-Nov-25	0.19722222	((220/66KV) leh has double main bus system. Nimoo Bago HPP is connected at 66KV level at 220/66KV leh 1A. During emergency condition, 220 KV ANAGZI-Leh (PG) ICT-1 was carrying 128MW while 220/66KV 50MVA ICT-1 and ICT-2 were loaded 6 MW each. WAs reported, at 04:44 hrs, 220KV Bus Bar protection operated due to flashover in GIS of Bus Coupler Bay resulting in outage of 220KV Khush-Leh Line & 220/66KV 50MVA ICT-1 at Leh (PG). Subsequently, 220KV Bus-2 and 220/66KV 50MVA ICT-2 also tripped. Details awaited. Due to tripping of both the ICTs, the generator at Nimoo Bago HPP also tripped due to loss of evacuation path along with other 66KV feeders. This led to complete blackout of 220KV leh substation. gWh per PMU, R-R phase to earth fault with fault clearance time of 220msec was observed. WAs per SCADA, total loss of approx. 20 MW in B&C control area and generation loss of approx. 6 MW at Nimoo were observed.	6	21	120
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**Status of submission of FIR/DR/EL/Tripping Report
on NR Tripping Portal of J&K
Time Period: Jan 2024- Mar 2025**

S. No.	Utility	Total No. of tripping	First Information Report (Not Received)		Disturbance Recorder (Not Received)	Disturbance Recorder (NA) as informed by utility	Disturbance Recorder (Not Received)	Event Logger (Not Received)	Event Logger (NA) as informed by utility	Event Logger (Not Received)	Tripping Report (Not Received)	Tripping Report (NA) as informed by utility	Tripping Report (Not Received)
			Value	%	Value	%	Value	%	Value	%	Value	%	Value
1	Jan-24	1	0	0	1	0	100	1	0	100	1	0	100
2	Feb-24	21	3	14	21	0	100	21	0	100	18	0	86
3	Mar-24	9	4	44	4	5	100	4	5	100	4	4	80
4	Apr-24	13	6	46	7	1	58	8	1	67	6	0	46
5	May-24	23	3	13	4	19	100	3	20	100	4	8	27
6	Jun-24	29	2	7	28	0	97	28	0	97	12	0	41
7	Jul-24	11	0	0	11	0	100	11	0	100	11	0	100
8	Aug-24	16	0	0	16	0	100	16	0	100	16	0	100
9	Sep-24	17	0	0	15	2	100	15	2	100	11	6	100
10	Nov-24	9	4	44	4	5	100	5	4	100	4	3	67
11	Dec-24	11	1	9	11	0	100	11	0	100	8	0	73
12	Jan-25	1	0	0	1	0	100	1	0	100	0	0	0
13	Feb-25	5	4	80	4	1	100	4	1	100	4	0	80
14	Mar-25	8	0	0	8	0	100	8	0	100	8	0	100
Total in NR Region		160	23	14	122	32	95	123	32	96	95	21	68

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

Fw: Mundra-Mohindergarh HVDC , SPS-NR defect resolutions

Deepak Kumar

Tue 04-Feb-25 17:04

To: Sugata Bhattacharya (सुगता भट्टाचार्या) <sugata@grid-india.in>;

📎 1 attachments (23 KB)

Revised Schedule for Site Visit.xlsx;

From: Sumeet Sharma <Sumeet.Sharma@adani.com>

Sent: Monday, February 3, 2025 6:58 PM

To: aen.com; m.alwar@rvpn.co.in; aen.mpt&s.rtg@rvpn.co.in; aen.comm.ratangarh@rvpn.co.in; aen.subsldc.bhl@rvpn.co.in; xen.mpts.bhl@rvpn.co.in; aen.prot.mertacity@RVPN.CO.IN; aen.comm.merta@RVPN.CO.IN; nainwal@powergrid.in; vinaykumargupta@powergrid.in; ravindra_kumar@powergrid.in; smahajan1999@powergrid.in; rkagrawal83@powergrid.in; dharmendrameena@powergrid.in; vineet@powergrid.in; bhakalramjash@powergrid.in; dhanonda400kv@gmail.com; sse220kvlulaahir@hvpn.org.in; sse220kvrwr@hvpn.org.in; sse132kvdadri@hvpn.org.in; ae-220kvg1-mgg@pstcl.org; sse-pm-lalton@pstcl.org; sse-pm-mlrk@pstcl.org; eeetdshamli@upptcl.org; ee400mrd2@upptcl.org; ae.protection@upslcd.org; ase-sldcop@pstcl.org; bl.gujar@dtl.gov.in; ce.ld@rvpn.co.in; ce-sldc; dtldata@yahoo.co.in; dtlscheduling@gmail.com; eesldccontrol@upslcd.org; ldrrvpnl@rvpn.co.in; ldshutdown@gmail.com; ldshutdown@rvpn.co.in; paritosh.joshi@dtl.gov.in; pccont@bbmb.nic.in; pc-sldcop@pstcl.org; rajbir-walia79@yahoo.com; rtamc.nr1@powergrid.in; pankaj.jha@powergrid.in; neerajk@powergrid.in; se.mpts.udr@rvpn.co.in; se.prot.engg@rvpn.co.in; se.sold@rvpn.co.in; sera@upslcd.org; sesc@upslcd.org; sesldcop@hvpn.org; se-sldcop; setncmrt@upptcl.org; sldcdata@gmail.com; sldcharyanacr@gmail.com; sldcmintoroad@gmail.com; system.uppcl@gmail.com; xenemtcbhpp2@bbmb.nic.in; xenmpccggn@hvpn.org; xenplgss@hvpn.org

Cc: NRLDC SO 2; Somara Lakra (सोमारा लाकरा); Mahavir Prasad Singh (महावीर प्रसाद सिंह); Deepak Kumar; Sunil Kumar Raval; Namandeep Matta; Kali Charan Sahu; RAVINDRA ATALE; Nihar Raj; Milan Popat; Abhishek Kukreja; Naman Vyas; Abhishek Kumar Singh

Subject: Mundra-Mohindergarh HVDC , SPS-NR defect resolutions

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Dear Sirs,

This refers to the matter discussed during recent Protection subcommittee (PSC) meetings with regards to the requirement of rectifications of SPS-NR implemented for Mundra-Mohindergarh HVDC transmission. We have awarded the service to M/s commtel for survey and restoration of possible elements installed at the locations.

Please note that Engineers from M/s CommTel shall be visiting your stations as per the attached schedule and necessary coordination shall be done by Mr. Abhishek Singh (Station -in charge) of Mohindergarh HVDC station (AESL-GD). He can be contacted at Mobile: 9671306831.

We request your kind permission and necessary support in carrying out the observations/possible restorations of the installations at your respective stations.

Thank you.

Regards,

Sumeet Sharma

Head- Automation, Communications , OT-Cyber & Technology

Adani Energy Solutions Limited.(Grid Division)

Mob +91 90990 05648 | sumeet.sharma@adani.com | www.adani.com

KP Epitome | 10th Floor South Wing | SG Highway | Ahmedabad-382421 | Gujarat

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Project : To check Sytem healthiness anc configuration of system installed Under M/s Adani

S. No	Site name	Region	Site visit
1	Ialtokalan	Punjab	03.02.2025
2	Gobidngarh		04.02.2025
3	Malerkotla		05.02.2025
4	Mandula	UP	06.02.2025
5	Bamnauli	DTL	07.02.2025
6	Ratangarh	Rajasthan	06.02.2025
7	Bhilwara		07.02.2025
8	Merta		07.02.2025
9	Alwar		08.02.2025
10	PG Bhiwani	Haryana	10.02.2025
11	BBMB bhiwani		10.02.2025
12	Hissar		11.02.2025
13	Dadri		11.02.2025
14	Bahadurgah		12.02.2025
15	Dhanoda		12.02.2025
16	Shamli	UP	12.02.2025

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

Thu 8/29/2024 7:29 PM

To:NRLDC SO 2 <nrlcdso2@grid-india.in>; CPCC1 <rtamc.nr1@powergrid.in>;

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

5 attachments (9 MB)

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

****Warning****

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Dear Sir,

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

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

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

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

15	Dhanonda	ON	-	OFF
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There alarms on the system are due to the following reasons.

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

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

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

Thanks and Regards,

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



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

Sent: Tuesday, August 27, 2024 10:07 AM

To: SLDC Punjab <se-sldcprojects@pstcl.org>; PC PSTCL SLDC PUNJAB <pcpstcl@gmail.com>; Haryana <sldcharyanacr@gmail.com>; Delhi <sldcmintoroad@gmail.com>; UP <sera@upsldc.org>; Rajasthan <SE.LDRVNL@RVPN.CO.IN>; ce.ld@rvpn.co.in; CPCC1 <rtamc.nr1@powergrid.in>; neerajk@powergrid.in; setncmrt@upptcl.org; bharatlalgujar@gmail.com; akashdeep3433786@gmail.com; xenemtcbhpp2@bbmb.nic.in; PC Control Room <pccont@bbmb.nic.in>; se.prot.engg@rvpn.co.in; Arunkumar P <Arunkumar.P@adani.com>; Kali Charan Sahu <Kalicharan.Sahu@adani.com>; rajbir-walia79@yahoo.com; ase-sldcop@pstcl.org; sesldcop@hvpn.org.in; cepso@upsldc.org; se-sldcop <se-sldcop@pstcl.org>; SICHVDC Controlroom <SICHVDC.Controlroom@adani.com>

Cc: seo-nrpc <seo-nrpc@nic.in>; somara.lakra <somara.lakra@grid-india.in>; Mahavir Prasad Singh (महावीर प्रसाद सिंह) <mahavir@grid-india.in>; Sugata Bhattacharya (सुगता भट्टाचार्या) <sugata@grid-india.in>; deepak.kr <deepak.kr@grid-india.in>; AMIT SHARMA <amsharma@grid-india.in>; bikaskjha <bikaskjha@grid-india.in>; Manas Ranjan Chand (मानस रंजन चंद) <manas@grid-india.in>; Aman Gautam (अमन गौतम) <amangautam@grid-india.in>

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

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Sir,

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



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

No: - 2661 /SE(R&A)/EE-II/SPS

Dated: - 07/08/2024

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

Subject- Regarding SPS of HVDC Mundra-Mahendargarh line

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

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

(Sangeeta)

Superintending Engineer (R&A)

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

Dated: - 2024

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

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

(Sangeeta)

Superintending Engineer (R&A)



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

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

दूरभाष : 0131-2608038

Ph. 0131-2608038

E-mail : seetcmzn@upptcl.org, seetcmzn@gmail.com

संख्या / No. 1062 / E.T.C./MZN/400 KV S/S Shamli

दिनांक / DATED 5.8/24

Subject: - Regarding SPS of HVDC Mundra-Mahendargarh.

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

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

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

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

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

(A) In Maximum Load Condition:-

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

(B) In Average Load Condition :-

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

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

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

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

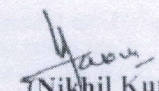
(A). In Maximum Load Condition :-

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

(B). In Average Load Condition :-

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

Submitted for information and necessary action


(Nikhil Kumar)
Superintending Engineer

संख्या / No.

/E.T.C./MZN/

दिनांक / DATED

Copy forwarded to the following for information and necessary action :

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

(Nikhil Kumar)
Superintending Engineer

कार्यालय
अधीक्षण अभियन्ता
विद्युत परीक्षण एवं परिचालन मण्डल
उ०प्र० पावर ट्रांसमिशन कारपोरेशन लि०
प्रथम तल पारेषण भवन, 130-डी, विक्टोरिया पार्क
मेरठ- 250 003
मोबाइल: 9412749817



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

No. 82... / ETCC-MT /

Dated- 30/05/24

Sub :- SPS related to HVDC Mundra-Mahendargarh.

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

(By e-mail)

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

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

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

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

(Pramod Kumar Mishra)
Superintending Engineer

No. 82... / ETCC-MT /

Dated/- 30/05/24

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

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

(Pramod Kumar Mishra)
Superintending Engineer

Rajasthan Details

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

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

Email

Control Room CONTROL ROOM SLDC

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

From : Executive Engineer TS Rewari
<xentsrwr@hvpn.org.in>

Thu, Aug 29, 2024 01:20 PM

Subject : Re: Review of SPS installed for 500kV HVDC Mundra - Mahindergarh.**To :** Control Room CONTROL ROOM SLDC
<controlroomsldc@hvpn.org.in>**Cc :** SE TS GGN <setsggn@hvpn.org.in>, Executive Engineer Executive Engineer
<xen400kvdhanoda@hvpn.org.in>, Substation Engineer <sse220kvlulaahir@hvpn.org.in>

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

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

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

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

In reference of trailing email it is submitted that 220 kV Lula Ahir is connected with 400 kV Dhanonda through 220kV D/C line and with 220 kV Dadri through 220kV S/C line and with 220 kV Rewari with 220kV S/C line.

In general circuits of 400 kV Dhanonda and 220 kV Dadri runs in synchronization. The maximum load (for FY 2023-24) on three no. 100 MVA TFs installed at 220 kV Lula Ahir is 53.46 MVA, 86.26 MVA and 87.02 MVA. It is further added that in general 220 kV Dadri takes load from 220 kV Lula Ahir substation and thus act as sink.

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

Regards
XEN/TS Division
HVPNL Rewari.

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

Sir,

Please see the attachments.

--

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

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

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

Fri 8/30/2024 12:44 PM

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

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

 2 attachments (209 KB)

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

****Warning****

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Sir,

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

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

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

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

Rest information kept unchanged. It is also added here that the fiber connectivity is also available on all the above substations.

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

This is for information & further necessary action please.

From: "Executive Engineer TS Rewari" <xentsrwr@hvpn.org.in>

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

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

Sent: Thursday, August 29, 2024 1:20:08 PM

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

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

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

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

From: "Executive Engineer TS Rewari" <xentsrwr@hvpn.org.in>

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

Cc: "SE TS GGN" <setsggn@hvpn.org.in>, "Executive Engineer Executive Engineer" <xen400kvdhanoda@hvpn.org.in>, "Substation Engineer" <sse220kvnamaul@hvpn.org.in>

Sent: Wednesday, August 28, 2024 12:46:13 PM

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

In reference of trailing email it is submitted that 220 kV Lula Ahir is connected with 400 kV Dhanonda through 220kV D/C line and with 220 kV Dadri through 220kV S/C line and with 220 kV Rewari with 220kV S/C line.

In general circuits of 400 kV Dhanonda and 220 kV Dadri runs in synchronization. The maximum load (for FY 2023-24) on three no. 100 MVA TFs installed at 220 kV Lula Ahir is 53.46 MVA, 86.26 MVA and 87.02 MVA. It is further added that in general 220 kV Dadri takes load from 220 kV Lula Ahir substation and thus act as sink.

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

Regards

XEN/TS Division

HVPNL Rewari.

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

To: "Executive Engineer TS Rewari" <xentsrwr@hvpn.org.in>, "Executive Engineer TS Rohtak" <xentsrtk@hvpn.org.in>, "Executive Engineer Ts Bhiwani" <xentsbhw@hvpn.org.in>, "Executive Engineer Executive Engineer" <xen400kvdhanoda@hvpn.org.in>, xendhanonda@gmail.com

Cc: "Chief Engineer SO Commercial" <cesocomml@hvpn.org.in>, "Chief Engineer TS Panchkula" <cetspkl@hvpn.org.in>, "Chief Engineer TS Hisar" <cetshsr@hvpn.org.in>, "Superintending Engineer SLDC OP" <sesldcop@hvpn.org.in>, "SE TS Rohtak" <setsrtk@hvpn.org.in>, "SE TS GGN" <setsggn@hvpn.org.in>, "Superintending Engineer TS Hisar" <setshsr@hvpn.org.in>, "Superintending Engineer MP CC Dhulkote" <sempccdk@hvpn.org.in>, "Superintending Engineer MP CC Delhi" <sempccdelhi@hvpn.org.in>, "Executive Engineer MP Rohtak" <xenmpccrtk@hvpn.org.in>, "XEN MP Hisar" <xenmpccchr@hvpn.org.in>, "XEN MP CC" <xenmpccggn@hvpn.org.in>

Sent: Wednesday, August 21, 2024 11:57:59 AM

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

Sir,

Please see the attachments.

--

Regards,

SCE (पाली प्रभारी अभियंता)/SLDC Control room,

HVPNL Panipat

Contact No- 9053090722,9053090721,0180-2664095

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Regards,

SCE (पाली प्रभारी अभियंता)/SLDC Control room,

HVPNL Panipat

Contact No- 9053090722,9053090721,0180-2664095

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HARYANA VIDYUT PRASARAN NIGAM LIMITED

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

To

The Executive Engineer,
LDPC, HVPNL,
Panipat.

Memo No.Ch-116/OMBE-7

Dated: 29.08.2024

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

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

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

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

This is for kind information and necessary action please.


Executive Engineer,
Transmission System Division,
HVPNL, Bhiwani

CC to:

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

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

SLDC, DELHI <sldcmintoroad@gmail.com>

Wed 8/28/2024 3:48 PM

To:NRLDC SO 2 <nrlDCso2@grid-india.in>;

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

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

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

Regards,
SLDC Delhi

On Tue, Aug 27, 2024 at 10:07 AM NRLDC SO 2 <nrlDCso2@grid-india.in> wrote:

Sir,

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

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

सादर धन्यवाद/ Thanks & Regards
प्रणाली संचालन-II/ System Operation-II
उ०क्षे०भा०प्रे०के०/ NRLDC
ग्रिड कंट्रोलर ऑफ इंडिया लिमिटेड/ Grid Controller of India Limited
Formerly known as
पोसोको / POSOCO

Punjab Details

Punjab Control Area	Name of S/S	66kV Feeders	Average Demand(Amp.)	Maximum Demand(Amp.)
	220/66kV Gobindgarh	66kV Talwara-19(ADANI SPS)	375	430
		66kV Talwara-2(ADANI SPS)	375	430
	220/66kV Lalton kalan	66kV Gill road-1(DADRI SPS)	543	610
		66kV Gill Road-2(DADRI SPS)	518	692
		66kV Dugri(DADRI SPS)	325	450
	220/66kV Malerkotla	66kV Malerkotla(ADANI SPS)	213	403
		66kV Amargarh(ADANI SPS)	238	405
		66kV Malaud ckt 1(DTPC SPS)	257	356

Note: 66kV Malaud at 220kV S/S Malerkotla was bifurcated into two circuits in the month of July 2024.

Nodal officers details

Control Area	Station Name	Nodal Person (SPS, communication system)	Contact details	Email Id
Rajasthan	220/132kV Alwar	Sh. Vijaypal Yadav XEN (Prot.) Ms. Pooja Verma AEN (Comm)	9413361407 9413375366	xen.prot.alwar@rvpn.co.in aen.comm.alwar@rvpn.co.in
	220/132kV Ratangarh	Sh. Mukesh Somra AEN (MPT&S) , Sh. Dharmender Singh (Comm.)	9414061442 9413383246	aen.mpt&s.rtg@rvpn.co.in aen.comm.ratangarh@rvpn.co.in
	220/132kV Bhilwara	Sh. Madhusudan Sharma, AEN (SLDC-comm Sh. Suresh Garg, XEN (MPT&S)	9413383176 9414061424	aen.subsldc.bhl@rvpn.co.in xen.mpts.bhl@rvpn.co.in
	220/132kV Merta	Mukesh Kumar (AEN Prot.) Mahip Singh (Aen) Comm)	7734806466 9413362995	aen.prot.mertacity@RVPN.CO.IN aen.comm.merta@RVPN.CO.IN
BBMB	400/220kV Bhiwani(BBMB)			
POWERGRID	400/220kV Hissar(PG)			
	Bhiwani(PG)			
	400/220kV Bahadurgarh(PG)			
Haryana	400/220kV Dhanonda	Gautam / SSE, 400kV Dhanonda	9313472669	ghanonda400kv@gmail.com
	220kV Lulahir	Er. Subhash Chander	9416373135	sse220kvlulaahir@hvpn.org.in
	220kV Rewari	Er. Kavinder Yadav	9315315649	sse220kvrwr@hvpn.org.in
	132kV Charkhi Dadri	Vivek Sangwan	9034459489	sse132kvdadri@hvpn.org.in
Punjab	220/66kV Gobindgarh	Er. Harwinder Singh	96461-18184	ae-220kvg1-mgg@pstcl.org
	220/66kV Laltokalan	Er. Supinder Singh	96461-24495	sse-pm-lalton@pstcl.org
	220/66kV Materkotla	Er. Sanju Bala	96461-64007	sse-pm-mlrk@pstcl.org
UP	Shamli	Er. Krishna Nand	9412756631	eeetdshamli@upptcl.org
	400kV Muradnagar	Er. D.S. Sengar	9412748666	ee400mrd2@upptcl.org
Delhi	400/220kV Bamnauli			
	400/220kV Mandola			