



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

दिनांक: 14.10.2025

सेवा में

As per attached list of Members and Other invitees

विषय: संरक्षण उप-समिति की 63 वीं बैठक की कार्यवृत्त |

Subject: Minutes for 63rd Protection Sub-Committee Meeting-reg

संरक्षण उप-समिति की 63 वीं बैठक, दिनांक 29.09.2025 को 10:30 बजे से एनआरपीसी सचिवालय, कटवारिया सराय, नई दिल्ली में आयोजित की गयी थी | उक्त बैठक की कार्यवृत्त संलग्न है। यह उत्तर क्षेत्रीय विद्युत् समिति की वेबसाइट (<http://164.100.60.165/>) पर भी उपलब्ध है।

The 63rd meeting of Protection Sub-Committee was held on 29.09.2025 at 10:30 Hrs at NRPC Secretariat, Katwaria Sarai, New Delhi. The minutes of the meeting is attached herewith. The same is also available on NRPC website (<http://164.100.60.165/>).

Signed by Lokesh Agrawal

Date: 15-10-2025 12:21:50

(लोकेश अग्रवाल)

सहायक निदेशक (संरक्षण)

63rd Protection Sub-Committee Meeting (29th Sep, 2025)-MoM

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Minutes of
63rd Meeting of Protection Sub-Committee (PSC) of
Northern Regional Power Committee

Date and time of meeting : 29.09.2025 10.30 Hrs.

Venue : **NRPC Secretariat, Katwaria Sarai, New Delhi**

MS, NRPC welcomed all the participants and emphasized the vital role of protection in the present power system. She requested all utilities to comply the protection code of IEGC 2023 timely. MS, NRPC also expressed that NRPC Secretariat may plan for awarding recognition for best performance utilities in Northern Region in domain of protection. CGM, NRLDC expressed the concern of over voltage conditions that are likely to come in the winter season. He urged all utilities to implement the recommended over voltage protection settings by the committee. List of participants is attached as **Annexure-P**.

Part-A: NRPC

A.1.	Confirmation of minutes of 62nd meeting of Protection Sub-Committee (agenda by NRPC Secretariat)

- A.1.1 AEE (P), NRPC apprised that 62nd PSC meeting was held on 26.08.2025. Minutes of the meeting were issued vide letter dtd. 16.09.2025.
- A.1.2 AEE (P), NRPC apprised that Ayana Renewable Power Pvt Ltd. has submitted vide mail dated 18.09.2025 that the performance indices for Ayana Renewable Power One Pvt Ltd and Ayana Renewable Power Three Pvt Ltd (Bikaner) were sent on 8 July 2025 but not updated in the MoM of 62nd PSC meeting held on 26.08.2025. M/s Ayana has requested to update in the issued minutes.
- A.1.3 AEE (P), NRPC mentioned that Ayana Renewable Power Pvt Ltd. has submitted the indices for the month of June, 2025 only vide mail dated 08.07.2025. Indices for July

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2025 has not been received from Ayana Renewable Power Pvt Ltd. Therefore, in the para A.3.5 of issued MoM, non-compliance status has been mentioned for the utilities who have not submitted the performance indices for the month of June & July, 2025.

- A.1.4 As Ayana Renewable Power Pvt Ltd has not shared the protection performance indices for the month of July, 2025. Therefore, Forum decided that there is no need to change the issued MoM.

Decision of the Forum:

Forum approved the minutes of 62nd PSC meeting as issued.

A.2. Status of action taken on decisions of 62nd Protection Sub-Committee meeting (agenda by NRPC Secretariat)

- A.2.1 Status of action taken on the decisions of 62nd PSC meeting were informed to the Forum.
- A.2.2 Concerned utilities submitted the status of action taken. Forum noted the same.
- A.2.3 Updated status of action taken is attached as **Annexure-A.I.**

Decision of the Forum

Forum instructed utilities to take necessary action on pending issues.

A.3. Submission of protection performance indices along with reason and corrective action taken for indices less than unity to NRPC Secretariat for the month of August 2025 (agenda by NRPC Secretariat)

- A.3.1 AEE (P), NRPC apprised that 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 $S = N_c / N_c + N_u$
 - 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,

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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

Further, as per clause 15 (7) of IEGC 2023;

- *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 **August 2025** was presented before Forum as attached as **Annexure-A.II. Utilities from where, indices were pending, were asked to submit it timely in future.**

A.3.4 Following issues were highlighted by AEE (P):

- i. Some Utilities have not submitted data.
- ii. Utilities have submitted data for some plants but not all.
- iii. Utilities have not mentioned corrective action taken for indices less than unity.
- iv. Some utilities have sent data after cut-off date of 7th.

A.3.5 **Forum observed that following utilities are non-compliant as indices (August-2025) have not been received in NRPC Secretariat:**

- i. **NTPC (Koldam)**
- ii. **HPGCL (PTPS, Panipat)**
- iii. **Aravali Power Company Pvt. Ltd**
- iv. **IndiGrid**
- v. **SEUPPTCL**
- vi. **ACME Heeragarh powertech Pvt. Ltd**
- vii. **ACME Chittorgarh Solar Energy Pvt Ltd**
- viii. **AMP Energy Green Four Pvt. Ltd.**
- ix. **AMP Energy Green Five Pvt. Ltd.**
- x. **AMP Energy Green Six Pvt. Ltd.**
- xi. **Ayana Renewable Power Three Private Limited**
- xii. **Ayaana Renewable Power One Pvt. Ltd.**
- xiii. **Azure Power Forty One Pvt limited**
- xiv. **Azure Power Forty Three Pvt. Ltd._RSS**
- xv. **Azure Maple Pvt. Ltd.**
- xvi. **AZURE POWER INDIA Pvt. Ltd., Bhadla**
- xvii. **Azure Power Thirty Four Pvt. Ltd.**

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- xviii. **SB Energy Six Private Limited, Bhadla**
- xix. **Clean Solar Power (Jodhpur) Pvt. Ltd.**
- xx. **Eden Renewable Cite Private Limited**
- xxi. **Mahindra Renewable Private Limited**
- xxii. **Mega Surya Urja Pvt. Ltd. (MSUPL)**
- xxiii. **AURAIYA Solar**
- xxiv. **DADRI SOLAR**
- xxv. **SINGRAULI SOLAR**
- xxvi. **Anta Solar**
- xxvii. **Unchahar Solar**
- xxviii. **ReNew Solar Urja Private Limited**
- xxix. **Rising Sun Energy-K Pvt. Ltd.**
- xxx. **Serentica Renewables India 4 Private Limited**
- xxxi. **Thar Surya Pvt. Ltd.**
- xxxii. **TP Surya Pvt. Ltd.**
- xxxiii. **TRANSITION ENERGY SERVICES PRIVATE LIMITED**
- xxxiv. **Transition Green Energy Private Limited**
- xxxv. **Transition Sustainable Energy Services Private Limited**

- A.3.6 ACME representative informed that plant head will submit the protection performance indices.
- A.3.7 MS, NRPC directed that non-compliance of IEGC 2023 is not acceptable. She instructed that the list of utilities that are non-compliant with protection performance indices may be shared to Whatsapp group by NRPC Secretariat after the 7th of every month. Accordingly, remaining may submit the same.
- A.3.8 Incidents, where indices were found less than one, were discussed (**Annexure-A.III**). It was found that utilities have already taken corrective action except few. Utilities were directed to take corrective action wherever it was pending.
- A.3.9 Regarding event of 220kV Hatkoti -NMHEP -1 where line did not trip from Hatkoti end, HPPTCL representative apprised that CT ratio was not correct due to which relay did not operate. He added that CT ratio has now been corrected. Further, Forum asked HPPTCL to ensure the zone and other protection settings to be proper due to change in CT ratio. HPPTCL representative agreed to the same.
- A.3.10 Regarding tripping of 400kV Aligarh -Shamli on LBB operation due to PU wiring issue, UPPTCL representative informed that ZIV engineer is available at site to resolve the issue of card failure and will be done within 2-3 days.
- A.3.11 Regarding issue of auto recloser at 220kV Kasganj Substation for the line from Jawa-harpur, UPPTCL and UPSLDC representative confirmed to look into the matter.

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- A.3.12 UPSLDC representative was asked to take the matter of auto recloser issue at Rosa thermal plant.
- A.3.13 Forum observed that most of the trippings in Rajasthan area was due to water logging in the cable trenches. RVPN representative informed that due to excess rain in this season in Rajasthan, issues of waterlogging came. However, water was drained out from trenches using pumps.
- A.3.14 MS, NRPC recommended RVPN to do trial run of all water pumps in the substations before rainy season so that pumps can be readily available for draining water from the trenches. CGM, NRLDC was also of the same view. He urged all utilities to include this in their best practices.
- A.3.15 Regarding tripping of 240MVAR switchable line reactor at Moga substation due to DC Earth fault, POWERGRID representative informed that defective cable of trip coil has been replaced.
- A.3.16 PSTCL submitted the protection performance indices on the 29.09.2025 and is requested to submit the corrective action taken for the events that caused indices less than unity while submitting indices.
- A.3.17 Subsequently, MS, NRPC requested RE Plants to comply the IEGC with respect to protection chapter added newly in the IEGC.
- A.3.18 Further, it was also highlighted that IEGC 2023 has given responsibility to RPCs for receiving indices from all utilities however, all utilities are not members of NRPC. SLDCs have been requested in earlier PSC meetings to follow up with concerned utilities of states which are not NRPC members and to send compiled indices to NRPC.
- A.3.19 EE (P), NRPC stated that letters have been issued to all utilities for nomination of officers for reporting of protection indices and other protection related reporting.
- A.3.20 MS, NRPC highlighted that nominations shall be sent on priority by utilities.

Decision of the Forum:

Utilities were asked to submit the Protection performance indices timely by 7th day of month element wise along with corrective action taken for indices less than unity. Non-compliant utilities were asked to take necessary action for reporting data. Utilities were also requested to expedite nomination of one officer for reporting of indices.

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

A.4.1 AEE (P), NRPC apprised that as per clause 16 of IEGC 2023;

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

A.4.2 He added that the agenda has been discussed in previous PSC meeting and following was decided:

- Utilities and SLDCs shall report about the operation of SPS immediately and detailed report shall be submitted within three days of operation to the concerned RPC and RLDC.
- SLDCs may submit protection performance indices for SPS on monthly basis by 7th date of each month in the same format as that of protection performance indices of elements (lines/ICT etc). All utilities shall report their indices to concerned RLDC/SLDCs, then, after verifying SPS operation from all points, SLDC/RLDCs shall report performance indices to the NRPC Secretariat.

A.4.3 However, it has been observed that reporting of operation/failure of operation of SPS is not being done regularly by the SLDCs/utilities.

A.4.4 None of the SLDCs (except UPSLDC) have submitted indices for SPS in their control area. MS, NRPC directed all SLDCs to comply the same.

A.4.5 UPPTCL, PPGCL, LPGCL and AGEL have informed that no SPS operation has been observed. UPSLDC shared that SPS indices of UPPTCL, RPSCL & PPGCL.

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- A.4.6 STPS, Suratgarh (RVUNL) has shared that SPS for 2x315MVA ILTs for avoiding overloading operated correctly in the month of August, 2025. Forum noticed that various stages have been operated several times as submitted by RVUNL. However, no reporting has been done timely. There was no representative from RVUNL in the meeting.
- A.4.7 CGM, NRLDC suggested that Rajasthan SLDC should have already discussed with all utilities in its control area. Forum was also of the same view.
- A.4.8 HPPTCL has shared that 1 no. of correct SPS operation observed at 400/220/66kV GIS S/stn Gumma.
- A.4.9 NRLDC has informed SPS operation from Apr-August 2025. The same is attached as **Annexure-A.IV** wherein correct SPS operation at 400KV Kashipur (PTCUL) substation to avoid overloading of Transformers was informed. PTCUL representative informed that due to non-clearance of fault from Kashipur end because of relay issue of 220kV Kashipur-Jafarpur line led to correct operation of SPS. The auxiliary relay issue has been identified and relay has been changed.

Decision of the Forum:

- I. Utilities and SLDCs shall report about the operation of SPS immediately and detailed report shall be submitted within three days of operation to the concerned RPC and RLDC.
- II. SLDCs may submit protection performance indices for SPS on monthly basis by 7th date of each month in the same format as that of protection performance indices of elements (lines/ICT etc). All utilities shall report their indices to concerned RLDC/SLDCs, then after verifying SPS operation from all points, SLDC/RLDCs shall report performance indices to NRPC Secretariat.

A.5. Annual protection audit plan for FY 2025-26 (agenda by NRPC Secretariat)

- A.5.1 AEE (P), NRPC apprised that as per clause 15 of IEGC 2023;

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- *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 the 54th, 55th, 56th, 57th, 58th, 59th, 60th, 61st & 62nd PSC meeting.

A.5.3 Audit plan submitted by utilities were presented. Status of submitted annual audit plans is enclosed as **Annexure- A.V**.

A.5.4 It was observed that following utilities have not submitted their audit plans and thus are non-compliant:

1. PSTCL
2. Aravali Power Company Pvt. Ltd
3. MEJA Urja Nigam Ltd.
4. Adani Power Rajasthan Limited
5. UT of J&K
6. UT of Ladakh
7. ADHPL
8. STSL (AESL)
9. Barsingsar Plant
10. Rajwest Plant
11. ACME Chittorgarh Solar Energy Pvt Ltd
12. Altra Xergi Pvt. Ltd.
13. Amplus Ages Private Limited
14. Ayana Renewable Power Three Private Limited
15. Ayaana Renewable Power One Pvt. Ltd.
16. Azure Power Forty One Pvt limited
17. Azure Power Forty Three Pvt. Ltd._RSS
18. Azure Maple Pvt. Ltd.
19. AZURE POWER INDIA Pvt. Ltd., Bhadla
20. Azure Power Thirty Four Pvt. Ltd.
21. Clean Solar Power (Jodhpur) Pvt. Ltd.
22. Eden Renewable Cite Private Limited
23. Grian Energy private limited
24. Mahindra Renewable Private Limited
25. Mega Surya Urja Pvt. Ltd. (MSUPL)
26. AURAIYA Solar
27. DADRI SOLAR
28. SINGRAULI SOLAR
29. Anta Solar
30. Unchahar Solar
31. NTPC Devikot Solar plant_240MW

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- 32. NTPC Kolayat 400kV**
- 33. Nedan Solar NTPC**
- 34. NTPC Nokhra 300MW**
- 35. One Volt energy Pvt. Ltd.**
- 36. ReNew Solar Urja Private Limited**
- 37. Renew Surya Ayaan Pvt. Ltd.**
- 38. Rising Sun Energy-K Pvt. Ltd.**
- 39. Serentica Renewables India 4 Private Limited**
- 40. Thar Surya Pvt. Ltd.**
- 41. TRANSITION ENERGY SERVICES PRIVATE LIMITED**
- 42. Transition Green Energy Private Limited**
- 43. Transition Sustainable Energy Services Private Limited**

- A.5.5 Utilities were requested to submit the audit plan at the earliest.
- A.5.6 MS, NRPC emphasized that each utility should submit the internal protection audit plan. Further, she directed utilities to adhere to submitted schedule for the internal protection audit.
- A.5.7 PSTCL representative informed that internal protection audit is under process and has been completed for one substation. PSTCL was requested to share the protection audit plan and to share the protection audit report of audited substation.
- A.5.8 NTPC representative mentioned that a committee has been formed which will be completing the internal protection audit of all 11 generating stations in NR for the FY 2025-26 by March, 2026.
- A.5.9 BBMB representative submitted that its internal protection audit will be completed by December, 2025. MS, NRPC asked about the status of compliances of observations of the audited substations. BBMB representative replied that all settings based on the audit observations are being modified simultaneously. MS, NRPC asked BBMB to share the audit report and action taken after completion of audit of that substation.
- A.5.10 EE (P), NRPC mentioned that reporting of indices, audit plan and audit reports may be done on a web-based platform so that tracking of non-compliance can be monitored effectively. MS, NRPC was of the view that new NRPC website may be provided with such features to allow all utilities for submission of indices, audit reports and action taken reports.
- A.5.11 MS, NRPC advised that a status report be prepared by NRPC Secretariat for the financial year 2025–26, indicating the number of substations audited for each utility

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out of their total substations.

- A.5.12 EE (P), NRPC addressed that as per IEGC, 2023, utilities are required to submit the annual internal protection audit plan for the FY 2026-27 by 31st October, 2025. For that, utilities are requested to share the **substation-wise** internal protection audit plan having list of their substations. Accordingly, tracking of the schedule and audit status may be done.

Decision of the Forum:

Non-compliant utilities were asked to submit annual audit plan without any further delay. Other utilities were asked to submit report and compliance status within one month of completion of audit. Utilities were requested to share the substation-wise internal protection audit plan having list of all of their substations for FY 2026-27 latest by 31st Oct 2025.

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

- A.6.1 AEE (P), NRPC apprised that 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 above, third-party protection audit plans received from utilities were apprised to forum and the same is enclosed as **Annexure-A.VI**.
- A.6.3 It was also apprised that two different states may do mutual third-party audit as decided in the 58th PSC meeting.
- A.6.4 It was observed that audit plan has not been received from following, and thus are non-compliant:
- i. **NPCIL (RAPS-A, B, D)**
 - ii. **IPGCL (PPS-I)**
 - iii. **PSTCL**
 - iv. **UJVNL (Tiloth, Vyasi)**

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- v. **HPSEBL (except Kunihar, Baddi, Upera Nangla, Kango, Mattansidh, Nehrain)**
- vi. **HPPCL (Sainj)**
- vii. **Aravali Power Company Pvt. Ltd**
- viii. **UT of J&K**
- ix. **UT of Chandigarh**
- x. **STSL (AESL)**
- xi. **Barsingsar plant**
- xii. **Rajwest Plant**
- xiii. **ABC Renewable Pvt. Ltd**
- xiv. **ACME Heeragarh powertech Pvt. Ltd**
- xv. **ACME Pholidi**
- xvi. **ACME Deagarh**
- xvii. **ACME Raisar**
- xviii. **ACME Dhoulpar**
- xix. **ACME Chittorgarh Solar Energy Pvt Ltd**
- xx. **Adani Hybrid Energy Jaisalmer One Ltd.**
- xxi. **Adani Hybrid Energy Jaisalmer Two Ltd.**
- xxii. **Adani Hybrid Energy Jaisalmer Three Ltd.**
- xxiii. **Adani Hybrid Energy Jaisalmer Four Ltd.**
- xxiv. **Adani Renewable Energy (RJ) limited Rawara**
- xxv. **Adani Solar Energy Jaisalmer One Pvt. Ltd._450MW (Solar)**
- xxvi. **Adani Solar Enegry Four Private Limited**
- xxvii. **Adani Hybrid Energy Jaisalmer Four Ltd. (AEML 2-350)**
- xxviii. **Adani Solar Energy Jaisalmer Two Private Limited Project Two**
- xxix. **SB Energy Six Private Limited, Bhadla**
- xxx. **Adani Solar Enegry Jodhpur Two Limited, Rawara**
- xxxi. **Adani Solar Energy RJ Two Pvt. Ltd. (Devikot)**
- xxxii. **Adani Solar Energy RJ Two Pvt. Ltd. (Phalodi)**
- xxxiii. **Adani Green Energy 24 Limited (Bhimsar)**
- xxxiv. **Adani Green Twenty-Five Limited (Badisid)**
- xxxv. **Amplus Ages Private Limited**
- xxxvi. **Azure Power Forty One Pvt limited**
- xxxvii. **Azure Power Forty Three Pvt. Ltd._RSS**

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- xxxviii. **Azure Maple Pvt. Ltd.**
- xxxix. **AZURE POWER INDIA Pvt. Ltd., Bhadla**
 - xl. **Azure Power Thirty Four Pvt. Ltd.**
 - xli. **Clean Solar Power (Jodhpur) Pvt. Ltd.**
 - xlii. **Eden Renewable Cite Private Limited**
 - xlili. **Grian Energy private limited**
 - xliv. **Mahindra Renewable Private Limited**
 - xlvi. **Mega Surya Urja Pvt. Ltd. (MSUPL)**
 - xlvi. **AURAIYA Solar**
 - xlvii. **DADRI SOLAR**
 - xlvi. **SINGRAULI SOLAR**
 - xlvi. **Anta Solar**
 - I. **Unchahar Solar**
 - li. **NTPC Devikot Solar plant_240MW**
 - lii. **NTPC Kolayat_400kV**
 - liii. **Nedan Solar NTPC**
 - liv. **NTPC Nokhra_300MW**
 - lv. **One Volt energy Pvt. Ltd.**
 - lvi. **ReNew Solar Energy (Jharkhand Three) Private Limited**
 - lvii. **RENEW SOLAR POWER Pvt. Ltd. Bhadla**
 - lviii. **ReNew Solar Urja Private Limited**
 - lix. **Renew Sun Bright Pvt. Ltd. (RSBPL)**
 - lx. **Renew Surya Partap Pvt. Ltd.**
 - lxi. **Renew Surya Ravi Pvt. Ltd.**
 - lxii. **Renew Surya Roshni Pvt. Ltd.**
 - lxiii. **Renew Surya Vihan Pvt. Ltd.**
 - lxiv. **Renew Surya Ayaan Pvt. Ltd.**
 - lxv. **Renew Solar Photovoltaic Pvt Ltd**
 - lxvi. **RENEW SOLAR POWER Pvt. Ltd. Bikaner**
 - lxvii. **Rising Sun Energy-K Pvt. Ltd.**
 - lxviii. **Serentica Renewables India 4 Private Limited**
 - lxix. **TRANSITION ENERGY SERVICES PRIVATE LIMITED**
 - lxx. **Transition Green Energy Private Limited**
 - lxxi. **Transition Sustainable Energy Services Private Limited**

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- A.6.5 POWERGRID NR-2 representative informed that substations in UT of Ladakh are under purview of POWERGRID. Therefore, audit will be taken care by POWERGRID.
- A.6.6 MS, NRPC commented that two different states may do 3rd party protection audit of their substations.
- A.6.7 UPPTCL representative informed that 3rd party protection audit of all substations is about to be completed by ERDA. Reports will be shared accordingly.
- A.6.8 It was gathered that HVPN and RVPN have been performing 3rd Part protection audit of their substations mutually. Therefore, both states were requested to share the current status of audited substations.
- A.6.9 Similarly, DTL representative informed that DTL and PSTCL is going to do 3rd Part protection audit of their substations mutually.
- A.6.10 POWERGRID NR-2 representative informed that substations of Himachal, J&K & Ladakh are going to audited by POWERGRID. He also added that substations of PWOERGRID situated in Himachal & Punjab will be audited by HPPTCL & PSTCL respectively.
- A.6.11 SE (O), NRPC highlighted that J&K lacks protection experts so POWERGRID substations should not be audited by J&K. Himachal also does not have protection experts. POWERGRID representative mentioned that protection experts are available in HPPTCL and PSTCL.
- A.6.12 MS, NRPC desired that POWERGRID should get their substation audited by external vendors as substations of POWERGRID are crucial for the grid.
- A.6.13 There was no representative from UT of Chandigarh.
- A.6.14 Accordingly, based on the above, third-party protection audit has been planned as below-

Organization where audit is to be done	Organizations finalized for performing audit								
	DTL	RVPN	HVPN	UPPTCL	PSTCL	HPPTCL	PTCUL	POWERGRID	External Vendor
DTL	-	-	-	-	✓	-	-	-	-

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RVPN	-	-	✓	-	-	-	-	-	-
HVPN	-	✓	-	-	-	-	-	-	-
UPPTCL	-	-	-	-	-	-	-	-	ERDA
PSTCL	✓	-	-	-	-	-	-	-	-
HPPTCL	-	-	-	-	-	-	-	✓	-
PTCUL	-	-	-	-	-	-	-	-	CBIP
UT of J&K	-	-	-	-	-	-	-	✓	-
UT of Ladakh	-	-	-	-	-	-	-	✓	-
UT of Chandigarh									
POWERGRID	-	-	-	-	✓	✓	-	-	✓

A.6.15 MS, NRPC directed all utilities to provide details on the number of substations that have been audited so far by third-party agencies.

A.6.16 She guided utilities to complete 3rd party protection audit of their all substations within 5 years.

Decision of the Forum:

Forum directed utilities to submit audit plan. Subsequently, the audit reports along with compliance status may be submitted to NRPC Secretariat within one month of completion of audit. All utilities may provide details on the number of substations that have been audited so far by third-party agencies.

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

A.7.1 EE (P), NRPC apprised that as per clause 15 of IEGC 2023;

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

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

- ***The third-party protection audit report shall contain information sought in the format enclosed as Annexure–1 (IEGC). The protection audit reports, along with action plan for rectification of deficiencies detected, if any, shall be***

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submitted to the respective RPC and RLDC or SLDC, as the case may be, within a month of submission of third-party audit report. The necessary compliance to such protection audit report shall be followed up regularly in the respective RPC.

A.7.3 Following internal audit report was discussed in the meeting and observation was given:

S.N.	FY (Audit Date)	Utility	Stations	Observations of Forum
1	2025-26	LPGCL	Lalitpur	PD relay time to be kept as 1.5 sec for main breaker as per the philosophy. This can be done in 220kV lines. Dead time may be taken as 1 sec. for main breaker and 1.5 sec. for TIE Breaker. This can be done in 765kV Line where both Main and TIE CB were closing at same time. Dead time was found as 700msec. for 220kV Kalyanpura ckt-1, 2, Babina & Dunara which may be changed to 1 sec. Zone-2 reach setting has been taken as 120% of protected line for the 765kV Fatehbad circuit-1,2. However, as per philosophy, reach is to be kept as 150% of protected line in case of double circuit. Stage -1, Over voltage protection setting for the 765kV Fatehbad circuit-1 is not aligned with the approved settings of committee. It has been applied as 109% with 4sec. delay instead of 108% with 5sec. delay. FOTE communication system in 220kV for

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				all 4 Nos. lines are not in operation due to remote end FOTE card issue. The matter may be taken up with remote end accordingly. Other observations including above may be complied as identified in internal audit.

A.7.4 Following third party audit reports were discussed in the meeting and observation was given:

S.N.	YEAR	Utility	Stations	Observation of forum
1	June 2025	Apraava Energy Pvt. Ltd.),	Jhajjar Power Limited	LBB time delay setting may be aligned with the philosophy. Power Swing De-block time may be corrected. Zone-4 time setting needs to be corrected as recommended by auditor. Other observations including above may be complied as identified in audit.
2	Aug 2025	RVUNL	KSTPS, Kota	A/R not available in 220kV Kota -Sakatpura ckt-1,2,3,4. A/R of 220kV KTPS -

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				Beawar & Kota-Heerapura is not working. 220kV Bus Bar relay is electromechanical which needs to be replaced with numerical relay. Other observations including above may be complied as identified in audit. Protection Settings are not available in the audit report.
3	Sept 2025	Amp Green Energy Pvt. Ltd	300MW PV Project in Bhadla, Rajasthan (AMP Energy Green Four Pvt. Ltd., AMP Energy Green Five Pvt. Ltd., AMP Energy Green Six Pvt. Ltd.)	A/R is enabled only in Main-1 for 220kV transmission line. In the implemented settings, zone -3 reach of 220kV transmission line has been taken as 100% protected line + 120% of Next Longest Line) which needs to be aligned with philosophy by taking 120% of (Protected Line + Next Longest Line) Zone-3 time delay has been taken as .5 Sec which also needs to be aligned with philosophy. Over Voltage protection

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				settings for the 220kV transmission line should be aligned with philosophy. Issues in 5th (30% applied instead of 25%) harmonic settings of 150MVA transformer. Other observations including above may be complied as identified in audit.

- A.7.5 LPGCL has submitted action taken on recommendation of internal audit (FY 2024-25) team. Other utilities have not submitted action plan on recommendation of audit team.
- A.7.6 **The above submitted reports were made available at NRPC website: <http://164.100.60.165/meetings/prsub.html>**
- A.7.7 There was no representative from the RVUNL, Amp Green Energy Pvt. Ltd. in the meeting.
- A.7.8 NHPC representative requested to discuss the submitted 3rd Party protection audit reports of NHPC stations in the next meeting as the dealing officer was not available. Therefore, the same was deferred to the next meeting.
- A.7.9 EE (P), NRPC commented that it is explored to add feature on upcoming portal of NRPC for seeding observations points by utilities and compliance status.
- A.7.10 Utilities were asked to submit compliance report of the issues highlighted by audit.

Decision of the Forum:

Forum discussed the audit report and directed utilities to submit compliance report. Protection settings may be aligned with NRPC philosophy. Further, other utilities were directed to submit the protection audit report (for audited S/s as per submitted plan) to NRPC Secretariat and to update the compliance status regularly.

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A.8. Qualifying criteria for the selection of prospective bidders (Company) for conducting Third-Party Protection Audits (agenda by NRPC Secretariat)

- A.8.1 AEE (P), NRPC apprised that agenda was discussed in the 16th NPC meeting held on 04.07.2025 wherein it was apprised that ERPC has developed qualifying criteria for the selection of prospective bidders for conducting Third-Party Protection Audits, encompassing technical criteria, personnel requirements, financial criteria, evaluation & selection criteria and disqualification clause with the objective of ensuring authenticity and reliability in the audit process.
- A.8.2 Further, it was decided that the same may be circulated by the NPC Secretariat to all RPCs for their views/comments. Qualifying criteria for the selection of prospective bidders for conducting Third-Party Protection Audits, prepared by ERPC is attached as **Annexure-A.VII**.
- A.8.3 In view of above, the comments were sought from all members in the meeting.
- A.8.4 Sr. DGM, NRLDC highlighted that 132kV substation may kept for NER only.
- A.8.5 UPPTCL representative mentioned that Standard Bidding Document was prepared during selection of 3rd party protection auditor in UP which may also be used as reference. UPPTCL representative was requested to share the same with other members.
- A.8.6 EE (P), NRPC commented that financial criteria may be reviewed in case bid is invited for small number of sub-stations.
- A.8.7 MS, NRPC asked that criteria developed by ERPC is kind of reference document which will be helpful for selection of vendor/bidder. Any Utility may opt the same along with its specifications/inputs and modify for use.
- A.8.8 Accordingly, CGM, NRLDC advised that word criteria may be replaced with guidelines. Forum agreed for the same.

Decision of the Forum:

Forum recommended that criteria word should be replaced with 'Guideline' so that it shall not be binding rather it should be reference document only.

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- A.9.1 AEE (P), NRPC apprised that in 58th PSC meeting, Utilities expressed concerns regarding the quality of third-party protection audits conducted by the currently available vendors, stating that the audits are not meeting the standards and are not up to par. Additionally, the cost associated with these third-party audits is high. There had also been questions raised about the eligibility criteria of the experts conducting these audits.
- A.9.2 Subsequently, it was decided that matter may be taken up with NPC division, CEA. NRPC recommended the formulation of minimum eligibility criteria for protection auditors, along with the development of a formal certification system to evaluate their competency and suggested engaging NPTI to conduct a certification examination for protection auditors. It was also further proposed that the NPC Secretariat may coordinate with NPTI for organizing the examination and managing the overall certification process.
- A.9.3 Accordingly, in the 16th NPC meeting held on 04.07.2025, it was apprised that multiple challenges have been identified by NRPC in conducting the Third-Party Protection Audits. These include difficulties in finalizing vendors, inadequate response from potential vendors, concerns regarding the quality of audits, high associated costs, and lack of clarity concerning the eligibility of audit experts.
- A.9.4 Subsequently, it was decided that Protection Auditor Certification may be issued by CPRI, NPTI, or competent State Training Institutes. RPCs may coordinate with the State Training Institutes in this regard.
- A.9.5 In view of above, all members were requested to express their views on the above. States were also asked to inform about State Training Institute having the domain of protection/protection audit.
- A.9.6 UPPTCL representative said that training institute is available in the state. However, it is not dedicated to protection. It is for generalized purpose covering operation and maintenance domain.
- A.9.7 DTL representative said that training institute is available in the state but not extensively for the protection. It is only for employees of DTL only.

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- A.9.8 RVPN, HVPN said that training institute is available in the state.
- A.9.9 MS, NRPC mentioned that CEA recognized private organizations' institutes may also be included. SE (O), NRPC was also of the same view.
- A.9.10 CGM, NRLDC mentioned that PAL, Manesar and PMI, Noida of NTPC may be added as training institute for the Protection Auditor Certification. However, recognition of these institutes from CEA may be explored. Forum agreed for the same. He also suggested that training institute may provide the training based on the defined syllabus. But certificates may be provided by NPTI.
- A.9.11 EE (P), NRPC stated that courses for the training shall be approved by CEA for uniformity among all institutes.
- A.9.12 Subsequently, it was decided that for Protection Auditor Certification, NPTI, CPRI, State training institutes (UPPTCL, DTL, RVPN, HVPN), all CEA recognized private organizations' institutes and PAL, Manesar, PMI, Noida of NTPC (subject to CEA recognition) may be considered as competent.
- A.9.13 Utilities were requested to give comments on the process of certification of protection auditor for further discussion in the next meeting.

Decision of the Forum:

Forum decided that for Protection Auditor Certification, NPTI, CPRI, State training institutes (UPPTCL, DTL, RVPN, HVPN), all CEA recognized private organizations' institutes and PAL, Manesar, PMI, Noida of NTPC (subject to CEA recognition) may be considered as competent. Comments on the process of certification of protection auditor will be discussed in the next meeting.

Part-B: Agenda by NRLDC

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

- B.1.1 As per the discussion in pervious 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.

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- B.1.2 NRLDC representative presented all the points and discussion was held with all the respective constituents. Constituents were requested to apprise the status of the remedial actions. Updated status on the basis of discussion held in 63rd PSC meeting is attached as **Annexure-B.I**. Further, concerned members were requested to take expeditious corrective actions and resolve the issues at the earliest.

Decision of the Forum:

Forum requested all the concerned members to take necessary corrective actions at their, actions need to be expedited, and healthiness of protection & control system need to be ensured.

B.2 Multiple elements tripping events in Northern region in the month of August 2025 (agenda by NRLDC)

- B.2.1 A total of 18 grid events occurred during the months of August 2025 of which 09 are of GD-1 category, 08 are of GI-2 category and 01 are of GI-I Category. The tripping report of all the events have been issued from 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 tripping event at 400/220kV Gumma(HP) & 220kV Sawrakuddu HEP at 07:04 hrs on 06th August 2025 (As per PMU at Gumma(HP), Y-B fault converted into R-Y-B fault with delayed clearance of approx. 4 sec 80 msec is observed).
- B.2.3 Delayed clearance of fault (more than 100ms for 400kV and 160ms for 220kV system) observed in total 07 events out of 18 grid events occurred in the month. In 02 (no.) of grid events, there were no fault in the grid.
- B.2.4 ***As per IEGC clause 37.2 (c), Disturbance Recorder (DR), station Event Logger (EL), Data Acquisition System (DAS) shall be submitted within 24 hrs of the event and as per IEGC clause 37.2 (e), the user shall submit a detailed report in the case of grid disturbance or grid incidence within one (1) week of the occurrence of event to RLDC and RPC.***
- B.2.5 NRLDC requested utilities share DR/EL and the detailed report of the tripping events as per timeline mentioned in IEGC 2023 and share the same with NRLDC, NRPC and PSC forum. Remedial actions taken by constituents to avoid such multiple elements

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tripping may also be included in the detailed report.

- B.2.6 Members stated that delay occurred due to non-submission of DR/EL & tripping details from site however they are taking continuous follow up actions to ensure timely completion of tripping analysis within stipulated timeline.
- B.2.7 Further, NRLDC highlighted the major tripping events occurred during August 2025 (attached as **Annexure-B.III**). Concerned constituents/utilities were requested to share the detailed analysis of the tripping elements along with status of remedial action taken/to be taken.
- B.2.8 **Utilities were requested to prepare detailed analysis report and present the event details during 63rd PSC meeting. Events involving more than one utility may be jointly prepared and presented.**

B.2.9 Discussion during the meeting:

Tripping Events

A. Multiple elements tripping at 400/220kV Abdullapur(PG) at 07:18 hrs on 01.08.2025

NRLDC representative shared the following observations w.r.t. tripping event:

- i. Reason for the malfunction of bus bar protection needs to be shared. The case may be discussed with relay engineers / OEM also to identify the root cause and avoid such event in future.
- ii. Station event logger details of Abdullapur S/s during the event period need to be shared.
- iii. Remedial action taken report needs to be shared.

POWERGRID(NR-2) representative presented the tripping analysis of the event. Major findings were as follows:

- i) On 01.08.2025 at 07:18:19:038 Hrs, 220kV Tepla ckt-1 tripped on Z-1 Fault. (Fault current of 22kA, R-N Fault)
- ii) During this fault at 07:18:19:068 Busbar-1 operated
- iii) During inspection it was found that wrong setting parameters imported in Decentralized BB relay 7SS522 during incorporation of LBB protection.

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- iv) In Busbar setting “Operation mode BF” parameter was set to “Trip from external CBF” for Internal LBBs. Due to this parameter, as soon as Bay PU was receiving LBB initiation it was directly going for BB tripping without considering the Current parameter.
- v) Therefore, when LBB initiation was received in Tepla-1 connected to Bus-1. BB-1 tripped (tripping through 96 relay) and during Bus coupler tripping, due to LBB initiation from 96 relay it led to BB-2 tripping.
- vi) The parameter should have been set as “Trip repetition with current query”-(TRIP repetition with subsequent I> query mode is activated)
- vii) On 03.06.2025 an older version of the project has overwritten in busbar relay, which seems to be underlying reason behind wrong setting incorporation in relays.
- viii) Due to importing old backup, in 10 No. LBBs already retrofitted -Operation mode BF” parameter was set to “Trip from external CBF which led to maloperation.
- ix) Now, Busbar settings has been corrected as per latest configuration for all bays.

PSC Recommendations:

- *Proper review needs to be done after revision of protection setting and any testing work. Necessary remedial actions need to be taken to avoid maloperation of protection system and avoid such unwanted multiple elements tripping incidents*

B. Multiple elements tripping at 400/220kV Gumma(HP) & 220kV Swarakuddu HEP at 07:04 hrs on 06.08.2025

NRLDC representative shared the following observations w.r.t. tripping event:

- i. Exact reason, location and nature of fault need to be shared.
- ii. Exact reason of non-clearance of fault from line protection and reason for delayed clearance of fault need to be shared.
- iii. DR/EL (.dat/.cfg file) of all tripped elements along with tripping reports need to be shared from both the ends.

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- iv. Remedial action taken report needs to be shared.

HPPTCL representative presented the tripping analysis of the event.

Major findings were as follows:

- i. As reported, at 07:03 hrs, Y-B fault occurred on 220kV Naitwar Mori-Hatkoti line due to tree fell on the line during inclement weather condition.
- ii. On this fault, line tripped from Naitwar Mori end in Z-1 however line didn't trip from Hatkoti end. Line back up protection didn't operate in 220kV Gumma-Katkoti line also.
- iii. Due to non-clearance of fault from Hatkoti and Gumma end, 400/220kV 315 MVA ICT-1&2 tripped on O/C E/F protection operation.
- iv. During inspection it was found that line distance protection settings at Hatkoti and Gumma end were wrongly configured (CT ratio, line length etc.) due to which distance protection didn't sense the fault.
- v. NRLDC representative further raised concern over significant delayed clearance of fault and asked to review the O/C E/F protection setting of ICTs at Gumma.
- vi. HPPTCL representative agreed to review the protection settings of ICTs at Gumma(HP).
- vii. HPPTCL further informed that line distance protection settings at Hatkoti and Gumma end have been corrected.

NRLDC representative requested HPPTCL to strictly follow the FTC procedure and ensure the implementation of protection setting as per NRPC protection philosophy during FTC of transmission elements.

PSC Recommendations:

- *SLDC-HP & HPPTCL shall ensure the implementation of protection settings as per NRPC protection philosophy during FTC of new element and revision of protection during any changes in network condition. (Action: SLDC-HP/HPPTCL)*

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- HPPTCL shall review the O/C E/F protection setting of ICTs at Gumma(HP). **(Action: HPPTCL.)**
- Timely submission of DR/EL & tripping report need to be ensured.

C. Multiple elements tripping at 220kV AD Hydro HEP at 23:33 hrs on 07.08.2025

NRLDC representative shared the following observations w.r.t. tripping event:

- i. Issue related to A/R operation at Nallagarh end need to be rectified and proper A/R operation on single phase to earth fault need to be ensured.
- ii. DR/EL and tripping details of Nallagarh end yet to be received.
- iii. Remedial action taken report needs to be shared.

POWERGRID(NR-2) representative informed that A/R is in service at Nallagarh end however it didn't operate during this incident. A/R operation will be reviewed and in case of any issue the same shall be rectified.

NRPC representative also raised the issue of A/R non-operation at Phozal end. This issue has been observed number of times during availability verification.

HPSEBL & HPPTCL representatives stated that they will review the A/R operation at Phozal end take necessary actions to ensure its healthiness.

PSC Recommendations:

- POWERGRID(NR-2) shall review the A/R operation at Nallagarh end and ensure its proper operation during single phase to earth fult. **(Action: POWERGRID(NR-2)).**
- HPPTCL / HPSEBL shall review the A/R operation at Nallagarh end and ensure its proper operation. **(Action: HPPTCL / HPSEBL).**

D. Multiple elements tripping at 765/400kV Bara TPS(UP) at 21:33 hrs on 08.08.2025

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NRLDC representative shared the following observations w.r.t. tripping event:

- i. Exact reason, location and nature of fault need to be shared.
- ii. Reason of delayed clearance of fault need to be shared.
- iii. Exact reason of tripping of tie CB of 765/400 kV 1500 MVA ICT-2 at Bara (UP) and main & tie CBs at Mainpuri end of 765 KV Bara-Mainpuri (UP) Ckt-2 need to be shared.
- iv. SCADA data was suspected during the event at 765/400kV Bara(UP). Healthiness and Availability of SCADA data need to be ensured.
- v. Remedial action taken report needs to be shared.

UPPTCL & Bara(PPGCL) representative presented the tripping analysis of the event. Major findings were as follows:

- i. On dated 08.08.25 at 21:32 Hrs, 765kV switchyard at Bara experienced fault which led to operation of Main Bus-2 bus bar protection and tripping of all breakers connected to Main Bus-2.
- ii. Breaker 710 B- phase completely damaged, which resulted in operation of LBB of 711 CB
- iii. After operation of bus bar protection of main bus-2, Tie CB of ICT also tripped that lead tripping of 765/400kV ICT-2.
- iv. As per philosophy the tie CB 705 should not open on operation 96A and 96B. During inspection it was found that there was problem in BHEL drawing scheme, which have been rectified and ICT-2 taken in service.
- v. Meanwhile, 765kV Bara-Mainpuri Line-2 tripped from Mainpuri end and remained charged from Bara end through 708 TIE breaker.
- vi. As per the information received from Mainpuri end, both the circuit breakers have opened at Mainpuri end within 70 ms. Clarification is to be given in this regard from Mainpuri end.
- vii. UPPTCL representative informed that during analysis of the tripping through DR, it was found that line tripped from Mainpuri end on Directional E/F protection operation within 60-70 msec.
- viii. UPPTCL were requested to review the Directional E/F protection at Mainpuri end. The existing protection setting seems highly sensitive.

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- ix. Sudden unloading of 765kV line resulted in severe load oscillations and operation of Load shedding relay (LSR) in all the 3 units. During the LSR operation process, U2 tripped on HP exhaust pressure ration protection at 21:34:43 hrs.
- x. There was no SPS operation at Bara TPS as in SPS scheme, there is AND logic of breaker status of Bara end and MW loading(<10 MW). As the Tie CB at Bara end remained in charged condition, SPS case didn't triggered.

PSC Recommendations:

- *UPPTCL shall review and correct the DEF protection setting at Mainpuri end of 765kV Bara-Mainpuri line-2 to avoid unwanted tripping of the line. **(Action: UPPTCL).***
- *UPPTCL and Bara TPS shall review the logic of SPS operation (breaker status of both ends may be taken for desired decision) to ensure its proper operation in future events. **(Action: UPPTCL / Bara(PPGCL)).***
- *Healthiness of protection system and proper operation of protection system need to be ensured.*

E. Multiple elements tripping at 220kV Khodri HEP & Chhibro HEP at 03:03 hrs on 17.08.2025

NRLDC representative shared the following observations w.r.t. tripping event:

- i. Exact reason, nature and location of fault need to be shared.
- ii. Distance protection settings needs to be reviewed at Khodri(UK) and Majri(HP) end.
- iii. Reason of delayed clearance of fault need to be shared.
- iv. Reason of tripping of units need to be analysed.
- v. Protection co-ordination need to be reviewed at Khodri(UK). Healthiness of protection system need to be ensured.
- vi. SCADA data was freezed during the event. Availability and healthiness of SCADA data need to be ensured.

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- vii. DR/EL(.dat/.cfg file) of all tripped units need to be shared along with detailed tripping report.
- viii. Remedial action taken report needs to be shared.

UJVNL representative presented the tripping analysis of the event. Major findings were as follows:

- i. R-N fault occurred on 220kV Mazri-Visco line due to fire incident. Fault didn't clear by Mazri end and further reflected to Khodri HEP.
- ii. On this fault, standby earth fault relay of all the units at Khodri sensed the fault and initiated tripping after ~200-300 msec. 220kV Khodri-Mazri line-1 also tripped in Z-3.
- iii. NRLDC representative stated that protection settings at Khodri HEP are sensitive due to which units tripped within 200-300msec on fault in evacuating lines or in downward transmission network. NRLDC asked UJVNL representatives about implemented protection settings.
- iv. UJVNL representative informed that in case of O/C setting, there is 2 sec delay at 100% level and instantaneous tripping at 150%.
- v. NRLDC representative and PSC members stated that settings implemented at Khodri HEP are sensitive and would lead to unwanted tripping of generating units of through faults.
- vi. Regarding protection issue at Majri end, HPSEBL representative stated that they will review the protection settings and take necessary actions.

NRLDC representative requested UJVNL to submit the complete protection settings of Khodri generating station. The settings will be reviewed and necessary observations if any will be shared for required changes.

PSC Recommendations:

- *UJVNL shall share the complete protection settings of Khodri HEP to NRLDC/NRPC within a week. (Action: UJVNL (Khodri HEP)).*

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- *UJVNL shall review the protection setting of Khodri HEP and keep the settings as per standard to avoid unwanted tripping in future. (Action: UJVNL (Khodri HEP)).*
- *HPSEBL in coordination with UJVNL shall review the protection setting of 220kV Khodri-Majri line-II and Majri S/s and ensure the protection system as per standard to avoid unwanted tripping in future. (Action: HPSEBL & UJVNL).*
- *Standardisation of DR/EL (nomenclature, time synchronization and channel configuration) need to be ensured. (Action: UJVNL (Khodri HEP)).*
- *Timely submission of DR/EL & tripping report need to be ensured.*

F. Multiple elements tripping at 400/220kV Bawana(DTL) at 18:13 hrs on 22.08.2025

NRLDC representative shared the following observations w.r.t. tripping event:

- i. Exact nature, location and reason of fault need to be shared.
- ii. Exact sequence of events need to be shared.
- iii. Reason of delayed clearance of fault need to be shared.
- iv. DR/EL (.dat/.cfg file) of all tripped elements along with detailed tripping report need to be shared.
- v. Remedial action taken report needs to be shared.
- vi. Details of remedial action taken to avoid such events in future along with detailed analysis of the event need to be shared.

DTL representative presented the tripping analysis of the event. Major findings were as follows:

- i) At 18.13 Hrs. 220 kV Bawana- Shalimar Bagh ckt-1&2 tripped on line fault due to snapping of OPGW between tower no. N2-N3-N4 on both lines. Both the lines tripped instantaneously one after other indicating distance Zone-1 at 400kV Sub-Station Bawana end. Delayed clearance was due to carrier communication failure due to OPGW break between 220kV Bawana & Shalimar Bagh Sub Stations relays due to which com-

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plete Zone-2 trip time was exhausted by distance relay at Shalimar Bagh S/Stn.

- ii) Over-flux trip of 315MVA ICT-4 at Bawana occurred simultaneously due to injection of external voltage through CVT control cable during external line fault in V/f relay Blue phase CVT input. Pre-fault voltage in Blue phase CVT input recorded by relay was normal $V_c=233\text{kV}$, whereas, the voltage in Blue phase CVT input of V/f relay during occurrence of 220kV Shalimar Bagh line-2 fault was recorded as $V_c=856\text{kV}$. It was sensed as Over-flux condition by V/f relay and trip was issued accordingly. Later on CVT control cable of said transformer was checked and insulation resistance of Blue phase-earth was found very poor (252 ohms).
- iii) At 18.14Hrs. 220 kV Bawana- Rohini ckt-1&2 tripped on Earth fault at 400kV Bawana Sub Station due to B phase CT clamp damaged on said line & consequent CT dropper snapped. Later Blue phase conductor got detached from CT clamp resulting in open circuit condition of Blue phase of said line. It was sensed as earth fault condition by protection relay and line tripped on Earth fault IEC SI trip at 400kV Sub Station Bawana. It is also suspected that line tripped on DEF protection on fault of 220kV Bawana-Shalimarbagh line as back up protection.
- iv) 220kV Bawana_Rohini-1 Ckt-2 was manually opened from Bawana end to avoid line overloading at 18:24 Hrs.

PSC Recommendations:

- *Healthiness of protection system and proper operation of protection system need to be ensured.*
- *Timely submission of DR/EL & tripping report need to be ensured.*

G. Multiple elements tripping at 220kV Samaypur(BBMB) at 00:11 hrs on 29.08.2025

NRLDC representative shared the following observations w.r.t. tripping event:

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- i. Significant number of grid events due to CT failure have been recorded in BBMB control area. Necessary maintenance activities, routing testing of equipment's and other necessary measures need to be taken to avoid such events in future.
- ii. Proper isolator status and its communication is crucial for correct operation of bus bar protection operation. Unwanted operation of bus bar protection has been observed in past also due to incorrect isolator status. Frequent review of isolator status and prompt attending of any alarm related to the same may be done to avoid such events in future.
- iii. Reason of tripping of 220kV Samaypur-Harfali line from Harfali end despite of timely clearance of fault need to be investigated and shared. Any protection related issues if any, need to be rectified.
- iv. DR/EL(.dat/.cfg file) of all the tripped elements need to be shared. No DR/EL received as on 02.09.2025.
- v. Remedial action taken report needs to be shared.

BBMB representative presented the tripping analysis of the event. Major findings were as follows:

- v) On dated 29.08.2025, at 00:11 Hrs. Blue phase CT, installed in PGCIL Ballabgarh switchyard, of 220kV side of 400/220kV, 500MVA ICT-2 burst which caused phase to ground BUS Fault on 220kV Bus-1 at Samaypur(BBMB).
- vi) As ICT-2 was connected to 220kV BUS-1 of BBMB Samaypur Substation, BUS-1 tripped on BUS-BAR operation. Besides 220kV Bus-1 tripping, 220KV BUS 2A also tripped.
- vii) DRs of CU and PUs of all the tripped circuits were analyzed and it was found that the ISOLATOR STATUS of FGPP-2 feeder connected to BUS-1, were absent due to LOGIC INPUT Card Faulty. As per scheme logic, in absence of Isolator Status the numerical BUS BAR Protection issues tripping command to both buses.
- viii) The BUS 2B portion of the 220kV Bus-2, remained INTACT.
- ix) On dated 30-08-25, the faulty Input Logic Card of FGPP-2 circuit was replaced with a healthy card.

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PSC Recommendations:

- *Healthiness of protection system and proper operation of protection system need to be ensured.*
- *Timely submission of DR/EL & tripping report need to be ensured.*

H. Multiple elements tripping at 220/66kV Laltokalan(PS) at 04:35 hrs on 30.08.2025

NRLDC representative shared the following observations w.r.t. tripping event:

- i. Healthiness of busbar protection and auxiliary system at Laltokalan(PS) need to be ensured. Self-audit may be arranged at the earliest.
- ii. Distance protection needs to be reviewed in 220kV lines emanating from Laltokalan(PS).
- iii. Reason for delayed clearance of fault need to be shared.
- iv. DR/EL (.dat/.cfg file) of all the tripped elements need to be shared from Punjab.
- v. DR nomenclature need to be corrected by PG at 220 KV Ludhiana(PG)-Laltokalan(PS) (PSTCL) Ckt-1 & 2.
- vi. Trippings at Punjab end was not recorded in SCADA SOE. Healthiness and availability of SCADA data need to be ensured at S/s of Punjab.
- vii. Remedial action taken report needs to be shared.

PSTCL representative presented the tripping analysis of the event. Major findings were as follows:

- i) During antecedent condition, both the 220kV Bus were operated under split condition with bus coupler opened. Busbar-1 was connected with 220 kV Ludhiana ckt-2, Jagraon, Hambran and T/F T-1 and remaining elements were connected to Busbar-2.
- ii) At 04:35 Hrs. Y-phase clamp of 220 kV Lalton kalan - Ludhiana ckt- 2 broke and created bus fault. However, as bus bar protection is not healthy, fault cleared with the tripping of lines from remote end in Z-2.
- iii) Z-4 time delay setting at Laltokalan has been revised to 160 msec.

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- iv) Further, in case any spare bus bar relay is available then bus bar protection will be implemented by the end of October 2025.
- v) NRLDC raised concern over non-submission of DR/EL & tripping report from PSTCL which hampers the grid event analysis of Punjab control area.
- vi) PSTCL agreed to ensure the timely submission of DR/EL & tripping report of the grid events.

PSC Recommendations:

- PSTCL shall ensure the bus bar protection at 220/66kV Laltokalan(PS) at the earliest possible. **(Action: PSTCL).**
- Healthiness of protection system and its proper operation need to be ensured.
- Timely submission of DR/EL & tripping report need to be ensured.

Grid event analysis details of all the aforementioned grid incidents is attached as Annexure-B.III (A).

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

B.3 Frequent elements tripping during August 2025 (agenda by NRLDC)

B.3.1 The following transmission elements were frequently tripping during the month of August 2025:

S. NO.	Element Name	No. of forced outages	Utility/SLDC
1	132 KV Rihand(UP)-Garwa(JS) (UP) Ckt-1	11	UP/JS
2	250 MW (PSP) TEHRI HPS - UNIT 6	10	Tehri PSP
3	220 KV NAPP(NP)-Simbholi(UP) (UP) Ckt-1	7	NPCIL/UP
4	250 MW (PSP) TEHRI HPS - UNIT 5	6	Tehri PSP
5	132 KV Pilibhit(UP)-Sitarganj(PTCUL) (PTCUL)	6	UP/UK

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	Ckt-1		
6	132 KV Khatima(UP)-Pilibhit(UP) (PTCUL) Ckt-1	5	UP/UK
7	132 KV Rihand(UP)-Nagar Untari(JS) (UP) Ckt-1	4	UP/JS
8	200 MW Parbati II HEP - UNIT 3	4	NHPC

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

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

Discussion during the meeting:

- **132 KV Rihand(UP)-Garwa(JS) (UP) Ckt-1 & 132 KV Rihand(UP)-Nagar Untari(JS) (UP) Ckt-1:** UPPTCL representative stated that above both the lines are under jurisdiction of Jharkhand. Protection & maintenance is also under jurisdiction of them.
- **220 KV NAPP(NP)-Simbholi(UP) (UP) Ckt-1:** NRLDC representative raised concerned on frequent tripping of line mainly due to insulators flashover. UPPTCL was requested to share the details of actions taken / planned to be taken in this regard. UPPTCL representative informed that insulators have been replaced at few locations further actions have also been planned. NRLDC requested to expedite the necessary remedial actions in view of coming winter and line for nuclear generation evacuation.
PSC forum requested UPPTCL to expedite the replacement of faulty / porcelain insulators in the line. In view of coming winter, necessary remedial actions need to be taken to avoid frequent tripping of line.
- **250 MW (PSP) TEHRI HPS - UNIT 5:** NRLDC representative raised concerned on frequent tripping of Tehri PSP units and requested to share the details of actions taken / planned to be taken to avoid such frequent tripping in future. Tehri PSP representative stated that regular actions have been taken. Most of the tripping were due to VSI problem which has been resolved. However, tripping due to new mechanical issues have been arising. Regular follow up with GE team is being done at higher level for necessary corrective action

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to avoid such unwanted tripping. It was further stated that tripping of Unit-5 has been reduced significantly. Continuous actions are being taken to avoid tripping of Unit-6.

CGM NRLDC stated that total capacity planned for Tehri PSP is 1000 MW. If issues have not been resolved and trippings of Tehri PSP units persisted, it would be challenging for real time grid operation.

PSC forum requested Tehri PSP to take expeditious corrective actions and ensure that such issues of frequent tripping doesn't come in upcoming Tehri PSP units i.e., Unit-7&8.

- **132 KV Pilibhit(UP)-Sitarganj(PTCUL) (PTCUL) Ckt-1 & 132 KV Khatima(UK)-Pilibhit(UP) (PTCUL) Ckt-1:** NRLDC representative raised concern frequent tripping of lines and asked about the reason of trippings and details of actions taken. Being a interstate line, the availability of the line is important. PTCUL representative informed that mostly faults were of transient nature and mainly due to bird issues. The line is passing through bird sanctuary and lots of migratory birds comes during this season. A/R is operational at PTCUL end however it is not in operation at UPPTCL end. NRLDC requested UPPTCL to ensure the A/R operation at their end in above lines. As the lines are interstate, availability of A/R will improve the availability of line during transient fault.

PSC forum requested UPPTCL to keep A/R in service at Pilibhit(UP) end. PTCUL was shall ensure that ROW of line clear from vegetation through tree trimming, installation of bird guard to avoid faults due to birds.

- **200 MW Parbati II HEP - UNIT 3:** NHPC representative stated that most of the tripping is due to GT oil temperature issue in 1-phase. The tripping mentioned due to generator fault is also due to issue in cooling system. The issue has been taken up with BHEL for rectification.

PSC forum requested NHPC to take necessary corrective actions to minimise the tripping of units at Parbati_2 HEP.

B.3.4 NRLDC representative emphasized that A/R (auto re-closer) issue was found in many of these tripping. All the utilities were sensitized to ensure healthiness/in service of

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A/R in 220 kV and above transmission lines in compliance to CEA Grid Standards. It was further informed that most of the tripping were of transient in nature but due to non-operation of A/R, it resulted into tripping of the transmission element thus reducing the reliability of the grid.

- B.3.5 It was requested that all the utilities shall endeavour to keep auto re-closer in service and healthy condition of 220 kV and above voltage level transmission line. The issue of time syncing of DR/EL at many of the stations was also highlighted, constituents were requested to ensure the time syncing of DR/EL. In addition, utilities were requested to take necessary actions to ensure the Right of Way and other operation & maintenance issues to minimize the frequent faults in the line. All the utilities agreed for the same.

Decision of the Forum

Forum reiterated that frequent outages of transmission elements affect the reliability and security of the grid. Members were requested to investigate such frequent outages and share the suitable remedial measures taken/being taken in this respect.

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

- B.4.1 A total of 7 inter-regional lines tripping occurred in the month of August 2025. The list is attached at **Annexure-B.V**. The status of receipt of preliminary reports, DR/EL within 24hrs of the event and fault clearing time as per PMU data has also been mentioned in the table. The non-receipt of DR/EL & preliminary report within 24hrs of the event from SLDCs / ISTS licensees / ISGSSs is in violation of regulation 37.2(c) of IEGC and regulation 15(3) of CEA Grid Standards. As per regulations, all the utilities shall furnish the DR/EL, flag details & preliminary report to RLDC/RPC within 24hrs of the event. They shall also furnish the detailed investigation report within 7 days of the event if fault clearance time is higher than that mandated by CEA (Grid Standard) Regulations.
- B.4.2 Members were requested to note and advise the concerned for taking corrective action to avoid such tripping as well as timely submission of the information.
- B.4.3 Frequent tripping of 400kV Gorakhpur-Motihari line-1: NRLDC representative asked

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POWERGRID(NR-3) regarding reason of frequent fault in 400kV Gorakhpur-Motihari line-1. Line tripped 03 (three) times in August 2025. POWERGRID(NR-3) representative informed that line tripped during transient fault due to lightening during inclement weather conditions. During patrolling hotspot marks have been found.

- B.4.4 Tripping of 765kV Phagi-Gwalior line-1: During analysis it was found that DR of Phagi end in not as per standard. RVPNL was requested to standardise the DR of Phagi(RS) end. Time window was found not as per standard.

Decision of the Forum

Forum recommended members to take necessary actions to minimise the tripping on inter regional line and ensure proper operation of protection system.

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 short comings to 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 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 58 numbers of System Protection Scheme (SPS) approved in Northern Region. These SPS are implemented at major generation complexes, important evacuating transmission lines and ICTs which are N-1 non-complaint. System Protection

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Scheme Document of Northern Region has been revised/updated on 31st January, 2025.

- 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, correct operation of SPS as per designed logic is important to serve its purpose. To ensure this, mock testing of SPS needs to be conducted at a regular period. Clause 16.2 of IEGC 2023 also mandates the mock testing of SPS for reviewing SPS parameters & functions, at least once a year.
- 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 & 04.04.2025 and continuous follow up is being done in OCC & PSC meeting since May 2024.
- B.5.6 During 2024-25, mock testing of 14 SPS out of total 55 SPS were not conducted. In view of high demand scenario during summer 2025-26, NRLDC vide letter dated 04.04.2025 requested all the concerned utility to conduct the mock testing of pending SPS by the end of April 2025. However, as reported, mock testing of 03 SPS out of pending 14 SPS have been done. In this regard, discussion was also held in 60th, 61st and 62nd PSC meeting. PSC forum requested all the members to conduct the mock testing of all the SPS in their respective control area at the earliest.
- B.5.7 Status of mock testing of all the SPS in NR is attached as **Annexure-B.VI**.
- B.5.8 In view of the above, members were requested to take following actions:
- i. Concerned constituents / utility shall conduct the mock testing of pending SPS (whose mock testing was not conducted in FY 2024-25) at the earliest.
 - ii. In compliance with IEGC clause 16.2, users shall ensure that mock testing along with the review of SPS logic of all the SPS is conducted at least once a year. Hence utilities are also requested to share the tentative schedule and conduct the mock testing of SPS schemes in their respective control area w.r.t. FY 2025-26.

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- iii. 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.5.9 During 60th PSC meeting, forum also decided to not disable the SPS where ICTs are now N-1 compliant after augmentation. It was decided that SPS may be kept enabled with logic based on loading instead of ICT tripping. Members may share the status in this regard.

B.5.10 Regarding issue of communication card at Wangtoo S/s w.r.t. SPS of N.Jhakri, Karcham Hydro complex, HPPTCL representative informed that order has been awarded to ABB and the issue will be resolved by the end of November 2025.

B.5.11 Regarding mock testing of SPS of 765kV Agra-Gwalior D/C and HVDC Rihand-Dadri D/C, NRLDC representative informed that with the confirmation of POWERGRID, mock testing shall be scheduled during 05-15th October 2025. Concerned utilities were requested to ensure the readiness at their end and also share the list of coordinators from all the involved stations.

B.5.12 UPPTCL was requested to SPS mock testing of Anpara complex on priority.

B.5.13 RVPNL submitted the updated status of mock testing of SPS of ICTs in Rajasthan control area.

B.5.14 On the basis of inputs received during discussion in PSC meeting, updated status of SPS mock testing is attached as **Annexure-B.VI (A)**.

B.5.15 Members were requested to revise the logic of SPS from TRIPPING based logic to LOADING based logic at stations where ICTs are now N-1 compliant after ICT augmentation. Members were requested to take necessary actions in this regard and share the confirmation.

B.5.16 NRLDC representative requested members to share the schedule for SPS mock testing w.r.t. their respective control area and to share the mock test report of SPS whose mock testing have already conducted.

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Forum requested members to conduct the mock testing of SPS in their respective control area, share the tentative schedule of mock testing of SPS and share the report after conducting mock test.

B.6 Corrective action for healthiness of 500kV Mundra-Mahindergarh SPS (agenda by NRLDC)

- B.6.1 On 17th May 2024 on outage of both pole (carrying total ~1500MW), SPS of 500kV HVDC Mundra-Mahindergarh inter regional link didn't operate. This issue was discussed during 51st PSC meeting and ADANI was requested to share the details w.r.t. SPS operation during the meeting.
- B.6.2 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.6.3 Following actions were decided during the meeting:
- 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 communication path between them in coordination with the SLDCs.
 - States were requested to go through the details of load feeders mentioned in SPS document and share the changes / modifications as per 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.
 - SLDCs in coordination with their transmission and protection team shall share the status and healthiness of existing SPS system along with details of availability of communication path for incorporation of proposed revised/additional feeders.

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- B.6.4 Load end details have been received from UP, Haryana, Punjab Rajasthan & Delhi. Details and communications are attached as **Annexure-B.VII**.
- B.6.5 ADANI via mail dated 29.08.2024 has submitted the status of healthiness of 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.6.6 Details of nodal officer of different substation involved in SPS scheme has already been shared with ADANI team for coordination and further remedial actions.
- B.6.7 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.6.8 ADANI agreed for the same and stated that update would be given within 01 week. However, no detail received yet from ADANI.
- B.6.9 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 incorporation of revised decided feeders during work at their stations. States representative assured to provide all necessary coordination from their end.
- B.6.10 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 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 requirement will be completed by the end April 2025. Thereafter, after financial approval, rectification of issues will be done. ADANI was requested to ensure completion of whole work before summer 2025. State representatives were also requested to coordinate with the ADANI team and ensure incorporation of identified revised feeders for load relief in SPS.

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- B.6.11 Further, through mail dt 3rd April 2025, ADANI has informed that they 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.6.12 During 57th PSC meeting, ADANI representative informed that visit by COMTEL engineers at all the sites is completed and COMTEL will submit the report within 10 days.
- B.6.13 ADANI was requested to share the report at the earliest and make Action Plan accordingly to ensure completion of whole work before summer 2025.
- B.6.14 ADANI agreed to take expeditious actions and to share the action plan at the earliest. 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.6.15 NRLDC CGM (SO) highlighted that in view of envisaged growth in demand in next summer season, it is important to ensure rectification of issues and healthiness of SPS.
- B.6.16 ADANI representative further informed that cost implication in this case is estimated as approx. Rs. 1.5 Cr. Till now they conducted technical assessment and made cost estimation. They will look into the regulatory aspect of the same for finalising the action plan.
- B.6.17 During 59th PSC meeting, ADANI representative informed that they are doing discussions with ULDC for allocation of necessary links between locations. They have also initiated internal approval for placing necessary orders to the partner for execution of upgradation activity. They are expecting to complete the execution within 4-5 months in collaboration with all the stakeholders from respective utilities and ULDC team. Communication from ATIL in this regard is also sent to NRLDC through letter dated 10th April 2025.
- B.6.18 Forum emphasized that considering the growing energy demands in summer season, healthiness of 500kV Mundra-Mahindergarh SPS is of utmost importance for secure &

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reliable grid operation. 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.6.19 During 60th PSC meeting, ADANI representative informed that internal approval is taken for placing the order and order will be released to vendor by end of August 2025. They have expedited the execution of upgradation activity and now it is expected to get completed by August 2025.
- B.6.20 NRLDC representative requested to share weekly progress report once the execution work starts and ADANI agreed for the same.
- B.6.21 ADANI is requested to apprise the forum about identified issues at various stations, action plan and progress in rectification work.
- B.6.22 During 61st PSC meeting, ADANI representative informed that order will be released by 1st week of July to the vendor for completion of work. The vendor has given 06 (six) months' timeline for completion of whole work however, we will follow up with the vendor and try to complete the whole work within 04 months.
- B.6.23 NRLDC representative requested ADANI to expedite the necessary actions at their end as corrective actions has already been delayed. It was also requested to give action plan of corrective actions for smooth coordination and actions. Weekly progress and status of actions may also be shared.
- B.6.24 Vide mail dt 30th July 2025, ADANI has informed that order has been placed with vendor for the procurement and development of the scheme on new devices and they also shared the timeline for the upcoming broader steps which has evolved based on discussions held with the vendor.
- B.6.25 During 62nd PSC meeting, ADANI confirmed the following :
- i) The system is expected to be ready by the partner and complete the Factory Acceptance Test (FAT) by 15th September 2025.
 - ii) Following the FAT, the material will be shipped to various sites and installed by 30th October 2025. Concerned constituents need to ensure the material is kept in a safe and secure area till commissioning at original location.

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- iii) Implementation of the communication channel with the assistance of ULDC is also scheduled for completion parallelly by 30th October 2025.
- iv) Testing of the installation and wiring will be carried out by 15th November 2025. The same shall require support from respective site representatives.
- v) Testing of the communication link between Mahindergarh and other locations is planned for completion by 30th November 2025.
- vi) Finally, the testing of the SPS scheme is expected to be completed by 31st December 2025.

B.6.26 NRLDC representative apprised the forum regarding update received from ADANI via mail dt 15th September 2025. ADANI has informed that Hardware is expected to be received by the partner by 20th September 2025 and FAT is expected to be carried out by 30th September 2025. The Dispatch and site activities shall be planned based on FAT punch point closures.

B.6.27 During discussion in 63rd PSC meeting, ADANI representatives were not present in the meeting.

B.6.28 States were requested to ensure the readiness at their end. List of feeders which are not radial may be identified, and other feeders may be identified for incorporation in SPS.

Decision of the Forum:

Forum emphasized the importance of 500kV Mundra-Mahindergarh SPS and its healthiness is important to ensure rectification of issues in SPS system by end of December 2025. ADANI was requested to expedite the necessary actions at their end. It was also requested to share weekly progress and status of actions. 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.7 Confirmation of regarding implementation of proposed Overvoltage protection setting by committee (agenda by NRLDC)

B.7.1 A committee was formed by NRPC during 52nd PSC meeting held on 20th September

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2024 to review the Overvoltage Protection settings of 400kV and 765kV transmission lines in Northern Region. This committee was formed for compliance of the recommendation given by the committee formed by CEA for analysis of Grid incident occurred on 17th June 2024. The committee reviewed the Overvoltage Protection settings of 400kV and 765kV transmission lines in Northern Region, finalized the protection settings for overvoltage protection and proposed the revised overvoltage protection settings. The proposed Overvoltage protection settings were discussed and approved in 58th Protection Sub-Committee (PSC) meeting held on 26th March 2025. The PSC forum requested all to implement the proposed overvoltage protection settings in 400kV and 765kV transmission lines in their respective control area. Status of the revised overvoltage protection setting to be implemented is attached as **Annexure-B.VIII**.

- B.7.2 Further, the agenda in this regard was again discussed in 230th OCC meeting and 60th, 61st & 62nd PSC meeting. It was observed that many members are yet to confirm the implementation of revised overvoltage settings.
- B.7.3 NRLDC stated that status of confirmation received from BBMB, Rajasthan, UPPTCL, HVPNL, PSTCL (Partial), DTL, Lalitpur TPS (LPGCL), NHPC, POWERGRID NR-1, Uttarakhand, POWERGRID NR-3, NUPPL, Nathpa Jhakri and Rampur HEP.
- B.7.4 However, status of confirmation from POWERGRID NR-2, Adani, J&K, HP, Indigrd, APCPL, NTPC and RE Plants are yet to be received.
- B.7.5 SLDC Punjab vide mail dt 05th June 2025 informed that over-voltage settings implementation will take 3-4 months.
- B.7.6 During 61st PSC meeting, PSTCL representative stated that due to shortage of manpower in protection team, 3–4-month time is required for implementation of revised OV settings.
- B.7.7 PSC forum suggested PSTCL to address the issue and propose to form separate protection wing so that protection related compliance and grid event analysis may be done in stipulate time frame.
- B.7.8 During 62nd PSC meeting, PSTCL representative confirmed that implementation work

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is in progress and partially done, however work will be completed before the next PSC meeting.

- B.7.9 All members were requested to ensure the implementation of proposed overvoltage settings in their control area at the earliest to avoid any unwanted tripping during the ongoing high demand scenario. In this regard, e-mail communication was also sent dated 07.05.2025 & 03.06.2025 to all members.
- B.7.10 NRLDC representative further highlighted that the winter season in Northern region begins from mid-October onwards and remains till February, and the challenges faced during these months are well known to all the utilities. During winter with NR load reducing significantly, the lines become lightly loaded leading to high voltages in Grid. Hence, vide NRLDC letter dated 17.09.2025, it was advised to ensure timely implementation of revised approved overvoltage protection settings in all the 400 & 765kV transmission lines to avoid any unwanted tripping of transmission lines on over-voltage.
- B.7.11 POWERGRID(NR-2) representative informed that revised OV setting has been implemented in almost all the lines except 10 lines. Implementation in remaining lines shall also been done at the earliest.
- B.7.12 NRLDC requested PSTCL to ensure implementation of OV setting in all the lines at the earliest.
- B.7.13 Frequent tripping of 765kV Agra-Fatehpur line-I on Overvoltage: NRLDC also highlighted the recent tripping of 765kV Agra-Fatehpur line on OV stage-1 tripping. During analysis through PMU & DR, it was observed that there is significant difference between PMU & DR voltage data. As per PMU phase voltage is observed as 105% and in DR it is showing as 107% and initiating tripping command. POWERGRID(NR-3) were requested to review the CVT error issue and submit the analysis. Further, any review of PV setting if required will be done.
- B.7.14 POWERGRID(NR-3) agreed to submit the analysis of CVT error at 765kV Agra(PG) within 20 days.
- B.7.15 NRLDC requested all the concerned utilities are once again advised to ensure

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expeditious implementation of proposed Overvoltage Protection settings in 400kV and 765kV transmission lines in their respective control area and send a confirmation regarding this to NRPC and NRLDC.

Decision of the Forum:

Forum requested all the members to share the confirmation regarding implementation of revised overvoltage protection setting in 400kV and 765kV transmission lines in their respective control area at the earliest and send a confirmation regarding this to NRPC and NRLDC.

B.8 Status of connected load relief quantum during operation of UFR and df/dt (agenda by NRLDC)

- B.8.1 UFRs and df/dt are envisaged to take care of sudden contingencies arising out of outage of generation stations or separation of inter-regional lines. UFRs setting are for steady state operation of the Grid at considerably low frequency and df/dt settings are for dynamic change when frequency falls suddenly with jerks.
- B.8.2 As per IEGC 2023 Clause 29.(13)(d),
“SLDC shall ensure that telemetered data of feeders (MW power flow in real time and circuit breaker status) on which UFR and df/dt relays are installed is available at its control centre. SLDC shall monitor the combined load in MW of these feeders at all times. SLDC shall share the above data with the respective RLDC in real time and submit a monthly exception report to the respective RPC...”
- B.8.3 In view of the above, NRLDC requested SLDCs to share the list of feeders mapped for UFR and df/dt along with feeder-wise planned load relief quantum. SLDCs were also requested to share details of mapped/telemetered stage-wise quantum of load relief on UFR and df/dt operation against the planned quantum. Data is to be furnished in the format attached as **Annexure-B.IX**.
- B.8.4 In view of recent events due to UFR operation, major review of UFR and df/dt settings is required to avoid unwanted tripping of feeders and load loss in states.

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B.8.5 As per IEGC 2023 Clause 30.(1),

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

B.8.6 Further, this is to highlight that on 09th September 2025, significant quantum of load loss (~853 MW) occurred in NR control area during low frequency period of evening hours (18:50-18:56 hrs). As reported, load loss occurred due to UFR operation in Uttar Pradesh (~404 MW), Rajasthan (~82 MW), Punjab (~103 MW) and Uttarakhand (~264 MW) control area. However, as per PMU, frequency didn't touch the threshold of 49.400 Hz during that day.

B.8.7 NRLDC stated that in view of recent events due to UFR operation, major review of UFR and df/dt settings is required to avoid unwanted tripping of feeders and load loss in states. SLDCs were requested to review UFR settings of the relays (whether frequency settings can be done upto three decimal places or not). SLDCs were also advised to look into any issue in transducer etc to avoid any unwanted tripping on UFR operation in future.

Decision of the Forum:

Forum requested constituents to ensure the telemetry of UFR and df/dt feeders of their respective control area at the earliest. Further, UFR & df/dt relay also need to be tested to ensure its proper operation.

B.9 Frequent Tripping of Generating Units of NHPC on Turbine Bearing Temperature High (agenda by NRLDC)

B.9.1 It is observed in recent past that several generating units of NHPC are tripping frequently on Turbine Bearing Temperature High. List of such tripping events are attached as **Annexure-B.X**.

B.9.2 NRLDC presented the list of tripping of generating units of NHPC control area. Total 36 (number) of tripping have been reported at NHPC generating stations since June 2025. NHPC was requested to share the reason of frequent tripping of NHPC generating units on Turbine Bearing Temperature High. Details of actions taken to

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avoid such tripping in future may also be shared.

- B.9.3 NHPC representative stated that due to high silt in this monsoon season, shaft seal got leaked and water getting inrush into Turbine Bearing House and displacing the oil from water and affecting lubrication which further leading to high temperature of bearing.

Decision of the Forum:

NHPC was requested to present the issue in detail in next PSC meeting for better understanding of members and further discussion. Additionally, necessary remedial actions need to be taken to minimise the tripping of generating units in NHPC control area.

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

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

- C.1.1 NRLDC has submitted the FTCs allowed in month of **August 2025**. The same may be found on NRPC website: <http://164.100.60.165/meetings/prsub.html>
- C.1.2 As per approved procedure of NRPC, utilities have to put up agenda in PSC forum for final approval of settings.
- C.1.3 Following utility has submitted agenda for approval of settings:
- i. POWERGRID/NR-1
 - ii. POWERGRID NR-2
 - iii. PRTL
 - iv. RVPN
 - v. UPPTCL
- C.1.4 However, none of the settings have been put up by following utilities:
- i. HVPN
 - ii. NTPC Green Energy Limited

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iii. XL_XPPL

iv. ASSPL_BKN2

C.1.5 Further, THDC has submitted the protection settings (differential protection) for the transmission line Koteswar -Koteswar Powergrid at Koteswar HEP end for final approval of PSC Forum.

C.1.6 These all submitted settings are available at NRPC website:
<http://164.100.60.165/meetings/prsub.html>.

C.1.7 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

C.1.8 After deliberation Forum approved the settings proposed by utilities. POWERGRID was requested to share the protection settings for the transmission line Koteswar - Koteswar Powergrid at POWERGRID end.

C.1.9 MS, NRPC stated to have list of all utilities who have not submitted the agenda for final approval of protection settings after FTC given by NRLDC.

C.1.10 NRLDC representative mentioned that login credential has been given to NRPC Secretariat for accessing the protection settings of given FTCs.

C.1.11 MS, NRPC stated that all utilities who have not given agenda for final approval by PSC will be discussed in next meeting.

C.1.12 EE (P), NRPC highlighted that protection settings of FTCs given by NRLDC may be accessed through portal. However, FTC are also provided by SLDCs. Accordingly,

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SLDCs were asked to share the way by which protection settings will be shared.

- C.1.13 UPSLDC representative commented that its portal access will be shared for having protection settings.
- C.1.14 Haryana representative commented that protection settings are approved by SLDC through mail. Accordingly, same will be shared with NRPC through mail.
- C.1.15 PSTCL representative stated that Punjab SLDC gives the approval of charging on portal. The access of portal will be given after acknowledgment of SLDC.
- C.1.16 PTCUL representative mentioned that Uttarakhand SLDC gives the approval of charging through mail. The protection settings folder will be shared with NRPC through mail.
- C.1.17 Rajasthan SLDCs representative mentioned that FTCs are given through mail.
- C.1.18 MS, NRPC directed SLDCs to share the FTC letters along with submission of monthly protection settings folder for final approval. All SLDCs to highlight the deviation of any protection settings from finalized philosophy during submission of settings.
- C.1.19 All SLDCs were also requested to share the list of monthly FTCs given as similar to being done by NRLDC. The same may be found on NRPC website at <http://164.100.60.165/meetings/prsub.html> for reference.
- C.1.20 Subsequently, it was also decided that utility does not need to submit the agenda for final approval of protection settings afterwards for given FTCs by NRLDC. NRPC Secretariat shall access NRLDC FTC portal and same shall be discussed in PSC meeting.
- C.1.21 EE (P), NRPC mentioned that to implement the above decision of taking settings from FTC portal, "Procedure for Approval of Protection Settings in Northern Region" issued in August 2024 may also require amendment.

Decision of the Forum:

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Forum approved the settings proposed by utilities. It was also decided that protection settings of all given FTCs by NRLDC in every month will be considered for final approval in the upcoming PSC. Utility does not need to submit the agenda separately for final approval of protection settings. SLDCs have to share the FTC granted in a month in the same format as reported by NRLDC along with submission of protection settings folder for final approval of PSC forum. "Procedure for Approval of Protection Settings in Northern Region" issued in August 2024 may be revised.

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67	Renew Surya Ravi Pvt. Ltd.	
68	Renew Surya Roshni Pvt. Ltd.	
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63rd Protection Sub-Committee Meeting on 29.09.2025 (10:30 AM)

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42	Uma Shankar	EE	UJVNL	atestdharasu@gmail.com
43	Arvind Bahuguna	AE	UJVN Ltd.	arvind.anvi222@gmail.com
44	Vedpal Arya	AE	UJVN Ltd.	vedpal.arya@ujvn.com
45	Vijay Pal	XEN	RRVPNL	xen.prot.alwar@rvpn.co.in
46	Dinesh Singh Rathore	AEN	RRVPNL	aen.xenmpts.jpr@rvpn.co.in
Display Name on Webex				
47	Aditya	SM	HPPCL	
48	Anoop Dutta Mishra	DGM	POWERGRID NR3	
49	Ashutosh Gairola		THDC	
50	Hare Ram			
51	Kushal Chandel	DD	P&T JMP	
52	hitesh rastogi		NTPC	
53	Punjab SLDC			
54	Saurabh			
55	shailendra mohan jaiswal			
56	shashi		Apraava energy jhajjar	
57	SLDC rajasthan			
58	Sr. Xen		P&OS, PSTCL	
59	Sushant Gaurav		Indigrid	
60	vandana chib			
61	Vishal Dahiya			

Status of action taken on decisions of 62nd PSC

S.N.	Agenda No.	Agenda	Decision of 62 nd PSC	Status of action Taken
1	A.4	Intimation of performance of SPS (agenda by NRPC Secretariat	SLDCs may submit protection performance indices for SPS on a monthly basis by 7th date of each month in the same format as that of protection performance indices of elements (lines/ICT etc). All utilities shall report their indices to concerned RLDC/SLDCs, then, after verifying SPS operation from all points, SLDC/RLDCs shall report performance indices to the NRPC Secretariat.	SPS Indices awaited from all SLDCs of NR. Some utilities have reported. NRLDC has shared the SPS operation in NR during 2025-26.
2	A.8	Updation of protection settings database (agenda by NRPC Secretariat)	Drive link of database shall be shared to utilities via e-mail and password shall be shared in next PSC meeting verbally.	Link and password shall be shared to nodal officers to be nominated by utilities as mentioned in agenda no. A3.
3	A.12	Backup O/C protection in lines at NTPC (agenda by NTPC)	It was decided to constitute a sub-group for study on proposal of NTPC for 'fuse failure enabled phase over current protection.	Sub-group will be formed after receipt of nominations.
4	A.13	Frequent tripping of 70 kV HVDC Vindhyachal Pole 1 & 2 of POWERGRID due to auxiliary	A sub-group may be constituted for understanding the issue and recommendations thereon.	Sub-group has been formed. 1 st meeting has also been held on 08.10.2025.

Status of action taken on decisions of 62nd PSC

		supply source issues (agenda by NRPC Secretariat)		
5	B.8	Corrective action for healthiness of 500kV Mundra-Mahindergarh SPS (agenda by NRLDC)	ADANI was requested to expedite the necessary actions at their end. It was also requested to give action plan of corrective actions for smooth coordination and actions. Weekly progress and status of actions may also be shared. 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.	Agenda has been taken again.

Status of performance indices reporting of August 2025 (Last date of submission 07.09.2025)							
S. No.	Utility		Received Status (Yes/No)	Vide mail dated	Remarks	Indices less than 1 (Yes/No)	Reason submitted and corrective action taken
1	PGCIL	Central Government owned Transmission Company	Y	06.09.2025	NR-1	NO	NA
			Y	23.09.2025	NR-2	yes	yes
			Y	09.09.2025	NR-3	NO	NA
2	NTPC		Y	03.09.2025	Anta	NO	NA
			Y	27.09.2025	Auriya	NO	NA
			Y	08.09.2025	Dadri	NO	NA
					Koldam		
			Y	29.09.2025	Rihand	NO	NA
			Y	04.09.2025	Singrauli	NO	NA
			Y	01.09.2025	Unchahar	NO	NA
3	BBMB	Central Generating Company	Y	08.09.2025	Tanda	NO	NA
4	THDC		Y	25.09.2025		NO	NA
			Y	05.09.2025	Tehri		
			Y	05.09.2025	Tehri PSP	NO	NA
			Y	03.09.2025	Koteshwar	NO	NA
5	SJVN		Y	06.09.2025	RHPS	NO	NA
			Y	04.09.2025	NJHPS		
6	NHPC		Y	03.09.2025	-	yes	yes
7	NPCIL		Y	05.09.2025	RAPS-A	NO	NA
			Y	05.09.2025	RAPS-B	NO	NA
			Y	04.09.2025	RAPS-C(5&6)	NO	NA
			Y	02.09.2025	RAP -D (7 & 8)	NO	NA
			Y	04.09.2025	NAPS-1&2		
8	DTL	State Transmission Utility	Y	07.09.2025		NO	NA
9	HVPNL		Y	05.09.2025	-	NO	NA
10	RRVNL		Y	06.09.2025	-	YES	Yes
11	UPPTCL		Y	02.09.2025	Meerut Circle	NO	NA
			Y	02.09.2025	Agra Circle	YES	Yes
			Y	02.09.2025	Jhansi Circle	NO	NA
			Y	02.09.2025	Prayagraj Circle	NO	NA
			Y	02.09.2025	Gorakhpur Circle	NO	NA
			Y	02.09.2025	Lucknow Circle	NO	NA
12	PTCUL		Y	10.09.2025	Kumaon	NO	NA
13	PSTCL		Y	29.09.2025		Yes	No
14	HPPTCL		Y	06.09.2025	-	Yes	Yes
15	JKPTCL	UT	Y	06.09.2025	Jammu	NO	NA
		UT	Y	06.09.2025	Kashmir	NO	NA
16	Chandigarh Power Distribution Ltd	RPSG Group	Y	07.09.2025	220 Kv Kishangarh	NO	NA
17	IPGCL	State Generating Company	Y	06.09.2025	PPS-I	N	NA
			Y	06.09.2025	PPS-III, Bawana	N	NA
18	HPGCL				PTPS, Panipat		
			Y	25.09.2025	DCRTPP, Yamunanagar	N	NA
			Y	02.09.2025	RGTPP (Khedar)	N	NA
19	RRVUNL		Y	01.09.2025	KTPS	N	NA
			Y	04.09.2025	kATPP, Jhalawar		
			Y	04.09.2025	CSCTPP Chhabra		
			Y	01.09.2025	RGTPP, Ramgarh	N	NA
			Y	01.09.2025	Ctpp,Chhabra	N	NA
			Y	01.09.2025	DCCPP, Dholpur	N	NA
			Y	04.09.2025	STPS Suratgarh		
			Y	04.09.2025	SSCTPS Suratgarh		
18	UPRVUNL		Y	04.09.2025	Parichha B (220 kV)	N	NA
			Y	01.09.2025	Parichha C (400 kV)	N	NA
			Y	01.09.2025	DTPS Anpara	N	NA
			Y	08.09.2025	Obra A & B	N	NA
			Y	08.09.2025	Obra C	N	NA
			Y	08.09.2025	Harduaganj 220 kV	N	NA
			Y	08.09.2025	Harduaganj 400 kV	N	NA
			Y	08.09.2025	Anpara-A&B	N	NA
			Y	08.09.2025	Panki TPS	N	NA
			Y	08.09.2025	Jawaharpur	Yes	Yes
	NUPPL		Y	03.09.2025	Ghatampur 765 kV	N	NA
19	UJVNL		Y	04.09.2025	Dharasu	N	NA
			Y	04.09.2025	Tiloth	N	NA
			Y	03.09.2025	Khodri	N	NA
			Y	03.09.2025	Chibro	N	NA
			Y	03.09.2025	Vyasi	N	NA
20	HPPCL		Y	04.09.2025	Kashang HEP	N	NA
			Y	04.09.2025	Sawara Kuddu	N	NA
			Y	04.09.2025	Sainj	N	NA
21	PSPCL	State Generating Company & State owned Distribution Company	Y	04.09.2025	RSD	N	NA
			Y	11.09.2025	GGSTPS, Rupnagar	N	NA
			Y	01.09.2025	GVK Power Goindwal Shahib Ltd.	N	NA
			Y	05.09.2025	GHSTPS, Lehra Mohabbat	N	NA
22	HPSEBL	Distribution company	Y	06.09.2025	Hamirpur Circle	N	NA

Status of performance indices reporting of August 2025 (Last date of submission 07.09.2025)							
S. No.	Utility		Received Status (Yes/No)	Vide mail dated	Remarks	Indices less than 1 (Yes/No)	Reason submitted and corrective action taken
		having Transmission	Y	05.09.2025	Shimla Circle	N	NA
23	Prayagraj Power Generation Co. Ltd.		Y	01.09.2025	-	yes	Yes
24	Aravali Power Company Pvt. Ltd						
25	Apraava Energy Private Limited		Y	29.09.2025		N	NA
26	Talwandi Sabo Power Ltd.		Y	04.09.2025		N	NA
27	Nabha Power Limited		Y	02.09.2025		N	NA
28	MEIL Anpara Energy Ltd (Anpara-C)		Y	17.09.2025		N	NA
29	Rosa Power Supply Company Ltd		Y	03.09.2025		yes	Yes
30	Lalitpur Power Generation Company Ltd		Y	01.09.2025		N	NA
31	MEJA Urja Nigam Ltd.		Y	02.09.2025		N	NA
32	Adani Power Rajasthan Limited		Y	06.09.2025	Kawai	N	NA
33	JSW Energy Ltd. (KWHEP)		Y	01.09.2025		N	NA
	ISTS Transmission Utilities						
34	INDIGRID						
35	ADHPL		Y	06.09.2025	220 kV Prini	N	NA
36	Adani Transmission Limited	AESL	Y	08.09.2025		N	NA
37	Bikaner Khetri Transmission Limited		Y	08.09.2025		N	NA
38	Fatehgarh Bhadla Transmission Limited		Y	08.09.2025		N	NA
	State Utilities						
	Uttar Pradesh						
39	Vishnuprayag Hydro Electric Plant (J.P.)		Y	01.09.2025		N	NA
40	Alaknanda Hydro Electric Plant (GVK)		Y	01.09.2025		N	NA
41	Khara Power House (Khara)		Y	04.09.2025		N	NA
42	WUPPTCL	MEIL	Y	03.09.2025		N	NA
43	SEUPPTCL	Resurgent Power					
44	GTL	AESL	Y	08.09.2025		N	NA
45	OCBTL	AESL	Y	08.09.2025		N	NA
	Rajasthan						
46	Barsingsar Plant	NLC	Y	06.09.2025		N	NA
47	Rajwest Plant	JSW	Y	06.09.2025		N	NA
48	ATSCL	AESL	Y	08.09.2025		N	NA
49	HPTSL	AESL	Y	08.09.2025		N	NA
50	STSL	AESL	Y	08.09.2025		N	NA
51	MTSCL	AESL	Y	08.09.2025		N	NA
	RE Utilities						
52	ABC Renewable Pvt. Ltd		Y	05.09.2025		N	NA
53	ACME Heeragarh powertech Pvt. Ltd						
54	ACME Chittorgarh Solar Energy Pvt Ltd						
55	AHEJOL-Hybrid-1 Madhopura	ADANI GREEN	Y	03.09.2025		NO	NA
56	AHEJ3L - Hybrid-2B 300MW	ADANI GREEN	Y	03.09.2025		NO	NA
57	AHEJFL(AEML 250)	ADANI GREEN	Y	03.09.2025		NO	NA
58	AHEJ4L(AEML-350)	ADANI GREEN	Y	03.09.2025		NO	NA
59	ASEJ2PL(Hapasar 300MW)	ADANI GREEN	Y	03.09.2025		NO	NA
60	SPC11PL	ADANI GREEN					
60	Adani Renewable Energy (RJ) Limited Rawra 200	ADANI GREEN	Y	03.09.2025		NO	NA
61	Adani Solar Energy Four Limited SECI 50	ADANI GREEN	Y	03.09.2025		NO	NA
62	Adani Solar Energy Jodhpur Two Limited Merchant 50	ADANI GREEN	Y	03.09.2025		NO	NA
63	ASEJ05PL (RJ200)	ADANI GREEN	Y	03.09.2025		NO	NA
64	ASERJ2PL - Phalodi 150 MW	ADANI GREEN	Y	03.09.2025		NO	NA
65	ASERJ01PL-Pokhran 300 MW (SB energy six)	ADANI GREEN	Y	03.09.2025		NO	NA
66	AGE25L(Badi Sid)	ADANI GREEN	Y	03.09.2025		NO	NA
67	Bhadla park - South block	ADANI GREEN	Y	03.09.2025		NO	NA
68	AGE24L (Bhimsar)	ADANI GREEN	Y	03.09.2025		NO	NA
69	AHEJ2L - Hybrid-2A 300MW	ADANI GREEN	Y	03.09.2025		NO	NA
70	ASERJ2PL - Devikot 180 MW	ADANI GREEN	Y	03.09.2025		NO	NA
71	ASEJOPL-Hybrid 450 MW	ADANI GREEN	Y	03.09.2025		NO	NA
72	Altra Xergi Pvt. Ltd.		Y	03.09.2025		NO	NA

Status of performance indices reporting of August 2025 (Last date of submission 07.09.2025)							
S. No.	Utility		Received Status (Yes/No)	Vide mail dated	Remarks	Indices less than 1 (Yes/No)	Reason submitted and corrective action taken
73	AMP Energy Green Four Pvt. Ltd.	AMPIN ENERGY					
74	AMP Energy Green Five Pvt. Ltd.	AMPIN ENERGY					
75	AMP Energy Green Six Pvt. Ltd.	AMPIN ENERGY					
76	Amplus Ages Private Limited	GENTARI	Y	23.09.2025		N	NA
77	Avaada RJHN 240MW	Avaada	Y	05.09.2025		NO	NA
78	Avaada sunce energy Pvt limited		Y	05.09.2025		NO	NA
79	Avaada Sunrays Pvt. Ltd.		Y	05.09.2025		NO	NA
80	Avaada Sustainable RJ Pvt. Ltd.		Y	05.09.2025		NO	NA
81	Ayana Renewable Power Three Private Limited						
82	Ayaana Renewable Power One Pvt. Ltd.						
83	Azure Power Forty One Pvt limited						
84	Azure Power Forty Three Pvt. Ltd., RSS						
85	Azure Maple Pvt. Ltd.						
86	AZURE POWER INDIA Pvt. Ltd., Bhadla						
87	Azure Power Thirty Four Pvt. Ltd.						
88	SB Energy Six Private Limited, Bhadla						
89	Clean Solar Power (Jodhpur) Pvt. Ltd.	Hero Future Energies	Y	01.09.2025		NO	NA
90	Eden Renewable Cite Private Limited						
91	Grian Energy private limited	GENTARI	Y	23.09.2025		N	NA
92	Mahindra Renewable Private Limited						
93	Mega Surya Urja Pvt. Ltd. (MSUPL)						
94	AURAIYA Solar						
95	DADRI SOLAR						
96	SINGRAULI SOLAR						
97	Anta Solar						
98	Unchahar Solar						
99	NTPC Devikot Solar plant-1	NGEL	Y	17.09.2025		N	NA
100	NTPC Devikot Solar plant-2		Y	17.09.2025		N	NA
101	SKB NTPC -1 (250MW)	NGEL	Y	17.09.2025		N	NA
102	SKB NTPC-2 (300MW)		Y	17.09.2025		N	NA
103	NTPC Nokhra 300MW		Y	17.09.2025		N	NA
104	NTPC Fatehgarh 296MW		Y	17.09.2025		N	NA
105	One Volt energy Pvt. Ltd.	GENTARI	Y	23.09.2025		N	NA
106	ReNew Solar Urja Private Limited	IndiGrid					
107	ReNew Solar Energy (Jharkhand Three) Private Limited	ReNew	Y	05.09.2025		N	NA
108	Renew Sun Bright Pvt. Ltd. (RSBPL)		Y	05.09.2025		N	NA
109	Renew Surya Partap Pvt. Ltd.		Y	05.09.2025		N	NA
110	Renew Surya Ravi Pvt. Ltd.		Y	05.09.2025		N	NA
111	Renew Surya Roshni Pvt. Ltd.		Y	05.09.2025		N	NA
112	Renew Surya Vihan Pvt. Ltd.		Y	05.09.2025		N	NA
113	Renew Surya Ayaan Pvt. Ltd.		Y	05.09.2025		N	NA
114	Renew Solar Photovoltaic Pvt Ltd		Y	05.09.2025		N	NA
115	RENEW SOLAR POWER Pvt. Ltd. Bikaner		Y	05.09.2025		N	NA
116	Neemba Renew Surya Vihan Pvt. Ltd.		Y	05.09.2025		N	NA
117	Renew Surya jyoti Pvt. Ltd.		Y	05.09.2025		N	NA
118	Renew Hans Urja Pvt Ltd.		Y	05.09.2025		N	NA
119	Rising Sun Energy-K Pvt. Ltd.						
120	Serentica Renewables India 4 Private Limited						
121	Solzen Urja Private Limited	Sekura	Y	05.09.2025		N	NA
122	Tata Power Green Energy Ltd. (TPGEL)	TATA POWER	Y	03.09.2025		N	NA
123	Tata Power Renewable Energy Ltd. (TPREL)		Y	03.09.2025		N	NA
124	Banderwala Solar Plant TP Surya Ltd.		Y	03.09.2025		N	NA
125	Thar Surya Pvt. Ltd.						
126	TP Surya Pvt. Ltd.						
127	TRANSITION ENERGY SERVICES PRIVATE LIMITED						
128	Transition Green Energy Private Limited						
129	Transition Sustainable Energy Services Private Limited						



H.P. POWER TRANSMISSION CORPORATION LIMITED

(A State Government Undertaking)

Regd. Office: Himfed Bhawan, Panjari, Tutikandi, Shimla-171005

DGM (Protection & Communication), Chowki Jamwalan, Hamirpur (H.P.)-177020

Email: dgmprot.tcl@hpmail.in; Web: www.hpptcl.com

No: HPPTCL/DGM (P&C)/NRPC/2025-26-270-72

Dated:- 06/09/2025

To

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

Subject: Performance indices for protection system of HPPTCL substations and lines for the month of August, 2025.

Sir,

With reference to the subject cited above, as per 48th protection sub-committee meeting, performance indices for protection system of HPPTCL for elements connected at 220 kV and above voltage level for the month of August, 2025 is enclosed herewith for your reference please.

Yours faithfully,

DA: As above


Sr. Manager (E)
O/o DGM (Prot. & Comm.),
HPPTCL, Chowki Jamwalan,
Hamirpur (HP).

Copy to:

1. The General Manager (Projects), HPPTCL, Himfed Bhawan, Shimla-05.
2. The Superintending Engineer, HPSLDC, Totu, Shimla-04.


Sr. Manager (E)
O/o DGM (Prot. & Comm.),
HPPTCL, Chowki Jamwalan,
Hamirpur (HP).

Report of performance indices for protection System for August, 2025
(for elements connected at 220 kV and above)

Sr. No.	Name of Sub-Station	Unit (SPS/Line/ICT/GT/ etc.)	Nc	Nf	Nu	Ni	Dependability Index (D) D= Nc/Nc+Nf	Security Index (S) S=Nc/Nc+Nu	Reability Index (R) R=Nc/Nc+Ni	Brief Description of Tripping	Corrective Action
1	400/220/66 KV Wangtoo Substation	400 kV Wangtoo - karcham Ckt I	-	-	-	-	-	-	-	Line tripped on Phase to Earth fault.	
		400 kV Wangtoo - karcham Ckt II	-	-	-	-	-	-	-		
		400 kV Wangtoo - kala Amb Ckt	-	-	-	-	-	-	-		
		400 kV Wangtoo - Sorang Ckt	-	-	-	-	-	-	-		
		ICT I (315 MVA, 400/220/33 kV)	-	-	-	-	-	-	-		
		ICT II (315 MVA, 400/220/33 kV)	-	-	-	-	-	-	-		
		220 kV Wangtoo - Bhaba - Kunihar Ckt	-	-	-	-	-	-	-		
		220 kV Wangtoo - Kashang Ckt	-	-	-	-	-	-	-		
		220 kV Wangtoo-Kotla ckt.	1	0	0	0	1	1	1		
		220 kV Wangtoo-Bhoktoo	-	-	-	-	-	-	-		
		Trafo I (80/100 MVA, 220/66/33 kV)	-	-	-	-	-	-	-		
		Trafo II (80/100 MVA, 220/66/33 kV)	-	-	-	-	-	-	-		
2	400/220/33kV GIS Lahal, Distt Chamba	400 kV Lahal Rajera ckt.	-	-	-	-	-	-	-		
		400 kV Lahal Kutehar ckt.	-	-	-	-	-	-	-		
		ICT -I (315 MVA, 400/220/33 kV)	-	-	-	-	-	-	-		
		ICT -2(315 MVA, 400/220/33 kV)	-	-	-	-	-	-	-		
		105 MVA Spare Transformer (400/220/33 kV)	-	-	-	-	-	-	-		
		220 kV Lahal -Budhil Ckt. 1	-	-	-	-	-	-	-		
		220 kV Lahal - Bajoli Holi Ckt.	-	-	-	-	-	-	-		
		220 kV Lahal - Heiling Ckt.	-	-	-	-	-	-	-		
		220/33 kV Transformer	-	-	-	-	-	-	-		
3	400/220/66kV GIS S/Stn GUMMA	ICT-1 (315 MVA, 400/220/33 kV)	1	0	0	0	1	1	1	Tripping occurred due to earth fault in NMHEP-Hatkoti line. However, the line (220 kV) failed to trip due to which the fault travelled upto ICTs at Gumma S/stn .	
		ICT-2 (315 MVA, 400/220/33 kV)	1	0	0	0	1	1	1		
		400kV Bus-1	-	-	-	-	-	-	-		
		400kV Bus-2	-	-	-	-	-	-	-		
		400kV Gumma-Panchkula Ckt-I	-	-	-	-	-	-	-		
		400kV Gumma-Panchkula Ckt-II	-	-	-	-	-	-	-		
		400kV Gumma-Jhakri Ckt-I	-	-	-	-	-	-	-		
		400kV Gumma-Jhakri Ckt-II	-	-	-	-	-	-	-		
		220kV Gumma-Hatkoti Ckt-I	0	1	0	0	0	0	0	Earthfault occurred In Hatkoti-NMHEP line, however CB of the said line did not open at Hatkoti end, and also at Gumma end for Gumma -Hatkoti Ckt. 1&2.	Issue resolved Relay setting for zone-3 were revised as per actual length
		220kV Gumma-Hatkoti Ckt-II	0	1	0	0	0	0	0		
4	220kV Switching S/Stn Hatkoti	220kV Hatkoti-Gumma Ckt-I	-	-	-	-	-	-	-		
		220kV Hatkoti-Gumma Ckt-II	-	-	-	-	-	-	-		
		220kV Hatkoti-Natwar Mori Ckt-I	0	1	0	1	0	0	0	Earthfault occurred in Hatkoti-NMHEP line, however CB of the said line did not open at Hatkoti end.	Issue resolved Relay setting has been revised as per actual CT ratio of 1000/1 against 500/1 adopted earlier.
		220kV Hatkoti-Snail Ckt	-	-	-	-	-	-	-		
		220kV Hatkoti-Sunda Ckt-I	-	-	-	-	-	-	-		
		220kV Hatkoti-Sunda Ckt-II	-	-	-	-	-	-	-		

Assistant Engineer (E)
O/o DGM (Prot. Comm.)
HPPTCL, Hamirpur (H.P.)

5	220/132/66 kV, GIS Substation Sunda	220 kV Sunda-Hatkoti Ckt-1	-	-	-	-	-	-	-		
		220 kV Sunda-Hatkoti Ckt-2	-	-	-	-	-	-	-		
		220/132 kV, ICT-1	-	-	-	-	-	-	-		
		220/132 kV, ICT-2	-	-	-	-	-	-	-		
		220/66 kV Transformer.	-	-	-	-	-	-	-		
6	220/33 kV GIS S/Stn. Phozal	220 kV Phojal to Nalagarh(Bay 205)	2	0	0	0	1	1	1	1. Line tripped on Phase to Earth fault (2 No.)	
		220 kV Phojal to ADHPL(Bay 201)	1	0	0	0	1	1	1	Line tripped on Phase to Earth fault.	
		220/33kV, 80/100 MVA Transformer Bank	-	-	-	-	-	-	-	Nil	
7	220/132/33kV Charor Substation	ICT - 220/132 kV Transformer	-	-	-	-	-	-	-		
		220/33 kV Power Transformer	-	-	-	-	-	-	-		
		220 kV Charor-Banala Ckt-1	2	0	0	0	1	1	1	1. Line tripped on Phase to Phase fault (2 No.).	
		220 kV Charor-Banala Ckt-2	2	0	0	0	1	1	1	1. Line tripped on Phase to Phase fault (2 No.).	
8	220/33 kV GIS S/Stn. Karian	220 KV Karian - Rajera Transmission Line	-	-	-	-	-	-	-		
		220 kV Karian-Mazra Ckt.	-	-	-	-	-	-	-		
		220/33 kV Power Transformer	-	-	-	-	-	-	-		
9	220/132 kV GIS S/Stn. Mazra	220/132/33 kV, 80/100 MVA ICT-1	-	-	-	-	-	-	-		
		220/132/33 kV, 80/100 MVA ICT-2	-	-	-	-	-	-	-		
		220 kV Mazra - Rajera Ckt.	-	-	-	-	-	-	-		
		220 kV Mazra-Karian Ckt.	-	-	-	-	-	-	-		
10	220/132 kV GIS S/stn. Dehan	220 kV Dehan-Tikkar Ckt. 1	-	-	-	-	-	-	-		
		220 kV Dehan- Tikkar Ckt. 2	-	-	-	-	-	-	-		
		220/132/33 kV, 60/80/100 MVA ICT-1	1	0	0	0	1	1	1	ICT tripped due to water Ingression In gas density monitor.	
		220/132/33 kV, 60/80/100 MVA ICT-2	-	-	-	-	-	-	-		
11	220/66/22 kV GIS S/stn. Bhoktoo	220/66 kV, 25/31.5 MVA Transformer	-	-	-	-	-	-	-		
		220 kV Bhoktoo-Kashang-Ckt.	-	-	-	-	-	-	-		
		220 kV Bhoktoo-Wangtoo Ckt.	-	-	-	-	-	-	-		
12	220/132/33 kV AIS S/stn. Kala Amb	220 kV Andheri-PKATL Ckt.1	-	-	-	-	-	-	-		
		220 kV Andheri-PKATL Ckt.2	-	-	-	-	-	-	-		
		3x53.33/66.66 MVA (223/132/33 kV Auto Transformer	-	-	-	-	-	-	-		
13	220/66 kV GIS S/stn. Heiling	220/66 kV, 80/100 MVA Transformer	1	0	0	0	1	1	1	Tranformer tripped due to flashover near 66 kV side NCT	Issue resolved after taking remedial action
		220 kV Heiling-Holi Ckt.	-	-	-	-	-	-	-		
		220 kV Heiling-Lahal Ckt.	-	-	-	-	-	-	-		


 Assistant Engineer (E)
 O/o DGM (Prot. Comm.)
 HPPTCL, Hamirpur (H.P.)

Reporting of Performance Indices for NHPC Power Stations In NR-Region Month-AUGUST '2025

[illegible]

PERFORMANCE INDICES										
Name of utility: Electricity Test & Commissioning Circle - Agra (TSW-AGRA)										
Month: Aug-2025										
S.N	Sub-station	Unit/equipment	Nc	Nf	Nu	Ni	Dependability index(D)	Security index(S)	Reliability index (R)	Remarks
1	220 KV Chhibramau	220 Kv Panki	1	0	0	0	1	1	1	
2		220 Kv Mainpuri	2	0	0	0	1	1	1	
3	220KV Kanpur South	60 MVA T/F- III	1	0	0	0	1	1	1	
4	220KV S/S Gokul	220KV Gokul-Mant (400KV) Line	1	0	0	0	1	1	1	
5	220KV S/S Kiraoli	220KV Kiraoli -Sikandra Line	1	0	0	0	1	1	1	
6	400KV S/S Mant	400KV Fatehabad CKT-II	1	0	0	0	1	1	1	
7		400 KV MURADNAGAR LINE	2	0	0	0	1	1	1	
8	400 KV S/S Panki	400 KV Panki - Unnao Line	0	0	1	1	0	0	0	Dt. 17.08.2025 17.:04Hrs. To 17.08.2025 19:18Hrs, During Synchronize work by Panel Engineer (Line Tripped at Panki End and Charge at Unnao End)
9	220 KV Panki S/S	220 KV Rania	1	0	0	0	1	1	1	
10	220 KV Kidwai nagar	220 KV Kidwai nagar -Panki line	1	0	0	0	1	1	1	
11		220 KV Bus Coupler	1	0	0	0	1	1	1	
12		220 KV Kidwai nagar -PGCIL line	1	0	0	0	1	1	1	
13	220 KV Sikandara S/S	132 KV Sikandra- Umari TSS-I	5	0	0	0	1	1	1	
14	220 KV RPH	60 MVA T/F -II	2	0	0	0	1	1	1	
15	765kv S/S Fatehabad Agra	400kv Agra-1	1	0	0	0	1	1	1	
16		400kv Mathura-2	1	0	0	0	1	1	1	
17	400 KV S/S AGRA	400 KV UNNAO	4	0	0	0	1	1	1	
18		400 KV FATEHABAD I	1	0	0	0	1	1	1	
19		220 KV AGRA I	1	0	0	0	1	1	1	
20		220 KV IOCL I	1	0	0	0	1	1	1	
21		220 KV SHAMSHABAD	1	0	0	0	1	1	1	
22	220 KV S/S SIRSAGANJ	220KV MNP UPPTCL LINE	1	0	0	0	1	1	1	
23	220 KV S/S BAH	220 KV Bah -Orai	2	0	0	0	1	1	1	
24		220 KV Bah -Mainpuri	2	0	0	0	1	1	1	
25	220 KV S/S SIKANDRA	220 KV Kirawali	1	0	0	0	1	1	1	

26	400kV S/S Aligarh	400kV Shamli line	1	0	1	1	1	0.5	0.5	Dt. 01.08.2025, 07:31Hrs. To 01.08.2025 16:15Hrs. Due to PU wiring issue, LBB operated and DT send to other end. Concerned PU was already discommunicated from central unit.
27		400kV Muradnagar	1	0	0	0	1	1	1	
28	220kV S/S Mainpuri	220kV Sirsaganj line	1	0	0	0	1	1	1	
29	220kV S/S Kasganj	220kV JTPS line	2	0	0	0	1	1	1	
30	220kV S/S Atrauli	220kV Aligarh-1 line	1	0	0	0	1	1	1	
		TOTAL	42	0	2	2				
Dependability index (D) $D=(Nc/(Nc+Nf))$			1							
Security Index (S) $S=(Nc/(Nc+Nu))$			0.95							
Reliability Index (R) $R=(Nc/(Nc+Ni))$			0.95							

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

S.No.	Sub Station (TSW AGRA)	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	400kV S/S Aligarh	400kV Shamli line	Dt. 01.08.2025, 07:31Hrs. To 01.08.2025, 16:15Hrs	U	Due to PU wiring issue, LBB operated and DT send to other end. Concerned PU was already discommunicated from central unit.	Informed to transmission wing for Shutdown.
2	400kV S/S Panki	400 KV Panki - Unnao Line	Dt. 17.08.2025 17.:04Hrs. To 17.08.2025, 19:18Hrs	U	During Synchronize work by Panel Engineer (Line Tripped at Panki End and Charge at Unnao End)	


Arvind Kumar
 Superintending Engineer

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	04.08.2025,02:34	U	During a single-phase transient fault, Auto reclose operation recorded at jawahar end but no Auto reclose operation recorded at Kasganj end	An issue with the Kasganj end no autoreclose operation working properly inform to kasganj end to solve this problem
		220kV Jawaharpur-kasganj line	09.08.2025, 21:01	U	During a single-phase transient fault, Auto reclose operation recorded at jawahar end but no Auto reclose operation recorded at Kasganj 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	PPGCL BARA	3X50 MVA 765/400 KV ICT2	08-08-2025, 21:32 Hrs	N/A	N/A	On dated 08.08.25 at 21:32 Hrs, 765KV switchyard at Bara experienced fault which led to operation of Main Bus-2 bus bar protection and tripping of all breakers connected to Main Bus-2. Further investigations revealed that R phase pole of 765kv breaker (710) was found failed and in completely damaged condition. There was no switching operation or any fault in the system prior to occurrence and particular breaker was in closed condition. After operation of bus bar protection, LBBU protection of 710 breaker got initiated and since the fault was still being fed through the TIE breaker (711), LBBU protection of 710 got operated which in turn opened the 711 TIE breaker after which the fault was completely isolated. Total time duration of fault was 283 ms as per DR and event log. After operation of bus bar protection of main bus-2, 96A and 96B lock out relay got actuated in ICT-2 704 relay panel which gave trip command to 704 (Main) as well as 705 (TIE) breakers thereby tripping of ICT-2 at 21:32:59. Meanwhile, 765KV Bara-Mainpuri Line-2 remained charged from Bara end through 708 TIE breaker but both breakers at Mainpuri end got opened which resulted in unloading of line. Sudden unloading of 765KV line resulted in severe load oscillations and operation of Load shedding relay (LSR) in all the 3 units. During the LSR operation process, U2 tripped on HP exhaust pressure ration protection at 21:34:43 hrs. 3-8Tripping of ICT 2 : After operation of bus bar protection of main bus-2, 96A and 96B lock out relay got actuated in ICT-2 704 relay panel which gave trip command to 704 (Main) as well as 705 (TIE) breakers thereby tripping of ICT-2. As per philosophy the tie CB 705 should not open on operation 96A and 96B. After investigation, some deficiencies were found in BH&EL drawing scheme, which have been rectified and ICT2 taken in service.

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	400 KV Rosa	400 KV Rosa PG Ckt#1	07/08/2025, 01:55	U	Fault was in B-phase, Zone 1. A&C phase tripped before B phase could reclosed. This lead to 3phase tripping. No reason identified for tripping of A&C phase. As per events, the B phase reclosed after the tripping of A&C poles after this it tripped again.	Mail sent to OEM for assigning service engineer for AR checking.

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

Case-1 400kv S/C Ajmer -Deedwana line at 400 KV GSS AJMER on 07.08.2025

No. of Unwanted operation – 1

Reason of unwanted operation –

BCU Problem.

Corrective Action taken – YES

BCU problem rectified..

Case-2 400 KV JODHPUR-KANKANI 1ST LINE at 400 KV GSS JODHPUR on 08.08.2025

No. of Unwanted operation – 1

Reason of unwanted operation –

Over voltage relay defective, giving tripping command without operation.

Corrective Action taken – YES

Over voltage relay replaced.

Case-3 400 KV Heerapura-Merta Line at 400 KV GSS Merta on 25.08.2025 & 28.08.2025, 400KV MERTA -KOTA PG LINE at 400 KV GSS Merta on 28.08.2025

No. of Unwanted operation – 3

Reason of unwanted operation –

DC problem due to damage of DC cable at 220 KV GSS Merta & rain water filled in trenches.

Corrective Action taken – YES

DC cable replaced & problem rectified.

Case-4 220kv Hamirgarh -Bhilwara line at 220KV GSS Hamirgarh on 05.08.2025

No. of Unwanted operation – 1

Reason of unwanted operation –

CB tripped at Hamirgarh end due to DC cable problem.

Corrective Action taken – YES

DC cable replaced & problem rectified.

Case-5 220 KV INTER CONECTOR -II at 400 KV GSS HINDAUN on 07.08.2025

No. of Unwanted operation – 1

Reason of unwanted operation –

Tripping occurred during work in panel.

Corrective Action taken – YES

Workmen asked to work carefully.

Case-6 220 KV KHETRI- RATANGARH -1st at 220 KV GSS KHETRI on 21.08.2025, 23.08.2025

No. of Unwanted operation – 3

Reason of unwanted operation –

DC cable defective.

Corrective Action taken – YES

DC cable replaced.

Case-7 220 kV Bhawad-- Bhopalgarh Ckt-I at 220 KV GSS BHAWAD on dated 21.08.2025

No. of Unwanted operation – 1

Reason of unwanted operation –

DC fault due to rain water in trenches.

Corrective Action taken – YES

Rain water drained & problem rectified..

Case-8 220/132 KV 100 MVA Tr3 AT 220 KV GSS BIKANER on 05.08.2025

No. of Unwanted operation – 1

Reason of unwanted operation –

Circuit Breaker Problem.

Corrective Action taken – YES

Circuit Breaker issue resolved and problem rectified.

Case-9 220/132 KV 100 MVA TR No 1 at 220KV GSS HAMIRGARH on 06.08.2025 and 07.08.2025

No. of Unwanted operation – 2

Reason of unwanted operation –

Circuit Breaker wiring burnt due to DC fault.

Corrective Action taken – YES

Circuit Breaker rewiring done and problem rectified.

**Case-10 220/132 KV, 160 MVA Trf(Make- TAL) at 220KV GSS SITAPURA on 15.08.2025,
220/132 KV, 100 MVA Trf-II (Make-IMP) at 220 KV GSS TEHENDESAR on 18.08.2025,
220 /132 KV 100 MVA BHEL Make TR-II at 220 KV GSS CHAKSU on 24.08.2025,
220/132 KV TRF -1, 100 MVA at 220 KV GSS KUKAS on 31.08.2025**

No. of Unwanted operation – 4

Reason of unwanted operation –

Water logging due to heavy rain.

Corrective Action taken – YES

Relay properly cleaned and covered.

Case-11 220/132KV,160MVA TRF-III at 220kV GSS PHALODI on 19.08.2025

No. of Unwanted operation – 1

Reason of unwanted operation –

Cable defective.

Corrective Action taken – YES

Cable replaced and problem rectified.

Case-12 220/132 KV , 160 MVA Tr.-I, at 220 KV GSS AJMER on 23.08.2025

No. of Unwanted operation – 1

Reason of unwanted operation –

Mechanical problem in CB.

Corrective Action taken – YES

CB attended and problem rectified.

POWERGRID NR-2										PROTECTION POWERGRID	PROTECTION OTHERS		
NR240078	608084	400KV HAMIRPUR-BANALA	8/17/2025 8:38	8/17/2025 23:02	14:24	00:00	00:00	00:00	NR2508-3684	LHWT	Line tripped on YN fault due to snapping of cnductor at Location No 42-43.	NC	
NR222012	608123	220KV KISHENPUR-SARNA-I	8/24/2025 3:12	8/24/2025 11:17	00:00	00:00	08:05	00:00	NR2508-5091	LNCC	Line tripped on R-Y-B fault due to lightening strike at LOC No. 263. During patrolling, flashover marks on insulator and hardware fitting indicate lightening. Fault data Sarma:12.6km,Ir=12.5ka,Iy=9.6ka,Ib=7.0ka. Following documents has been attached for reference: 1. GPS photo of tower name plate. 2. GPS tagged photo of tower showing flashover marks on insulator and hardware fittings. 3. Relay fault location data from Sama PSTCL. 4. Tower Schedule and *.kmz file.	NC	
NR222013	608125	220KV KISHENPUR-SARNA-II	8/24/2025 3:12	8/24/2025 11:37	00:00	00:00	08:25	00:00	NR2508-5092	LNCC	Line tripped on Y-B-N fault due to lightening strike at LOC No. 263. During patrolling, flashover marks on insulator and hardware fitting indicate lightening.Fault data Sarma :12.3km,Iy=7.6ka,Ib=7.2ka. Following documents has been attached for reference: 1. GPS photo of tower name plate. 2. GPS tagged photo of tower showing flashover marks on insulator and hardware fittings. 3. Relay fault location data from Sama PSTCL. 4. Tower Schedule and *.kmz file.	NC	
NR240120	608148	400KV KISHENPUR- NEW WANPOH-III	8/26/2025 14:44	9/1/2025 0:00	00:00	00:00	####	00:00		LNCC	400KV Kishenpur Wanpoh-3 tripped on YB Faut at 14:44 Hrs of 26.08.2025 due to felling of trees from outside line corridor resulting in failure of 02 number cross arms at LOC No 111 and 112. Tower is located at Village Gondala in Udhampur District. Till 03.09.2025,Jammu Srinagar NH and are totally closed for traffic. Also 15KM link road from NH to tower location found blocked at 8 to 9 number locations. However T/L team was able to reach site on 04.09.2025 and tower is being restored. The above failure is attributed to unprecedented heavy rainfall in J&K during 26th August and onwards. Report attached.	NC	
NR2BRT30	608161	240MVAR MOGA SWITCHABLE L/R ON MOGA-BHIWANI	8/27/2025 21:52	8/28/2025 7:34	09:42	00:00	00:00	00:00	508-5916, NL-2	OMST	Line Reactor tripped on Pole Discrepancy operated (710-52R) due to DC Earth Fault and Faulty core of TC-2 (B-Phase)	NC	
NR240106	608115	400KV PATIALA- PANCHKULA-I	8/22/2025 15:18	8/22/2025 18:06	00:00	02:48	00:00	00:00	NR2508-4904	OMSU	Line tripped on BN fault due to falling of high tree (Nilgiri/ Eucalyptus) from outside line corridor after cut by locals. Geo tagged photo showing tree base cut which is Meters away from Line centre point . Fault data Panchkulla 8.5KM, 14.3KA	NC	
NR2ICT01	608001	ABDULLAPUR 315MVA ICT-I	8/1/2025 7:18	8/1/2025 10:01	02:43	00:00	00:00	00:00	NR2508-27	SBBT	There was fault in 220KV Abdullapur Tepla-1 line and 220KV Busbar protection maloperated resulting in complete blackout of 220KV Yard.	NC	BB NOT OPERATED AT HVPNL STATION
NR2ICT02	608002	ABDULLAPUR 315MVA ICT-II	8/1/2025 7:18	8/1/2025 11:13	03:55	00:00	00:00	00:00	NR2508-31	SBBT	There was fault in 220KV Abdullapur Tepla-1 line and 220KV Busbar protection maloperated resulting in complete blackout of 220KV Yard.	NC	BB NOT OPERATED AT HVPNL STATION
NR2ICT03	608003	ABDULLAPUR 315MVA ICT-III	8/1/2025 7:18	8/1/2025 11:04	03:46	00:00	00:00	00:00	NR2508-30	SBBT	There was fault in 220KV Abdullapur Tepla-1 line and 220KV Busbar protection maloperated resulting in complete blackout of 220KV Yard.	NC	BB NOT OPERATED AT HVPNL STATION
NR2ICT57	608004	ABDULLAPUR 315MVA ICT-IV	8/1/2025 7:18	8/1/2025 10:26	03:08	00:00	00:00	00:00	NR2508-29	SBBT	There was fault in 220KV Abdullapur Tepla-1 line and 220KV Busbar protection maloperated resulting in complete blackout of 220KV Yard.	NC	BB NOT OPERATED AT HVPNL STATION
NR2STCOM0	608120	-200/+200 MVAR STATCOM NAL	8/23/2025 16:42	8/24/2025 3:17	10:35	00:00	00:00	00:00	NR2508-5062	SICT	STATCOM tripped on operation of differential protection.	NC	
NR213201	608130	132KV SEWA2 - HIRANAGAR -II	8/24/2025 5:05	8/24/2025 6:59	00:00	01:54	00:00	00:00	NR2508-5103	SRMU	Line successfully Auto Reclosed on B-N fault from Hiranagar (JKPTCL) but tripped from Sewa2 (NHPC) due to maloperation of Auto reclose scheme at Sewa 2 (NHPC). Bay and protection at Sewa2 (NHPC) is owned by NHPC. 1. Hiranagar (JKPTCL) end DR showing successful A/R at Hiranagar (JKPTCL) is attached here as Annexure.	NC	
NR213203	608122	132KV SEWA2 - HIRANAGAR -I	8/24/2025 3:11	8/24/2025 4:42	00:00	01:31	00:00	00:00	NR2508-5097	SRMU	Line successfully Auto Reclosed on Y-N fault from Hiranagar (JKPTCL) but tripped from Sewa2 (NHPC) due to maloperation of Auto reclose scheme at Sewa2 (NHPC). Bay and protection at Sewa2 (NHPC) is owned by NHPC. 1. Hiranagar (JKPTCL) end DR showing successful A/R at Hiranagar (JKPTCL) is attached here as Annexure.	NC	
NR213203	608129	132KV SEWA2 - HIRANAGAR -I	8/24/2025 5:05	8/24/2025 6:58	00:00	01:53	00:00	00:00	NR2508-5102	SRMU	Line successfully Auto Reclosed on R-N fault from Hiranagar (JKPTCL) but tripped from Sewa2 (NHPC) due to maloperation of Auto reclose scheme at Sewa2 (NHPC). Bay and protection at Sewa2 (NHPC) is owned by NHPC. 1. Hiranagar (JKPTCL) end DR showing successful A/R at Hiranagar (JKPTCL) is attached here as Annexure.	NC	
NR222001	608128	220KV BAIRASIUL-JESSORE	8/24/2025 4:12	8/24/2025 7:42	00:00	03:30	00:00	00:00	NR2508-5101	SRMU	Line remained charged from Jessore(HPTTCL) end but tripped from Bairasuil end on B-N fault.Bay and protection at Bairasuil (NHPC) is owned by NHPC. 1. Jessore (JKPTCL) end DR. 2. Copy of mail from Jessore confirming A/R successful.	NC	AR NOT OPERATED AT NHPC Bairasuil
NR240086	608022	400KV DEHAR (BBMB) - PANCHKULA (PGCIL) LILO PORTION	8/3/2025 5:54	8/3/2025 6:56	00:00	01:02	00:00	00:00	NR2508-441	SRMU	Line successfully Auto Reclosed from Panchkula (PG) but tripped from Dehar(BBMB) due to maloperation of Auto reclose scheme at Dehar(BBMB). Bay and protection at Dehar(BBMB) is owned and maintained by BBMB. For reference, following documents attached : 1. Panchkula(PG) end DR showing successful A/R at Panchkula(PG). 2. Voltage graph at Panchkula(PG) showing the line remains charged from Panchkula(PG) end after successful auto reclosure.	NC	AR NOT OPERATED AT bbmb dehar
											Total tripping including LNCC & successful autoreclosures	16	
NC											Nc is the number of correct operations at internal power system faults	15	
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 $S = Nc / (Nc + Nu)$	93.75%	
											The Relability Index defined as $R = Nc / (Nc + Ni)$	100.00%	

Tripping Details															
Punjab State Transmission Corporation Limited															
AUGUST-2025															
S.N.	Sub-Station	Unit (SPS/Line/CT/GT/etc.)	Date on which Power System Fault occurred	Local End Indications	Remote End Indications	Remarks	Corrective Action Taken	Nc	Nf	Nu	Ni	Dependability Index (D)	Security Index (S)	Reliability Index (R)	
1	400 kV S/S Muktsar	400 kV Muktsar-Makhu ckt.I	12-08-2025 at 10.47 Hrs	Zone-I, R-ph, Fault Location-1.9 km(A/R Optd.)	Zone-IB,R-ph, Fault Distance-83.7 km(A/R Optd)			1	0	0	0	1	1	1	
		220 kV Muktsar(400)-Abohar ckt.II	13-08-2025 at 01.21 Hrs	Zone-I, B-ph, fault Distance-7 km(A/R optd.)	Fault Current Ic= 1.923 kA B-Phase Distance= 31.08 km			1	0	0	0	1	1	1	
		220 kV Muktsar(400)-Abohar ckt.II	27-08-2025 at 02.49 Hrs	Zone-I, B-ph, fault Distance-17.1 km(A/R optd.)	Fault Current Ic= 3.002 kA B-Phase Distance= 20.6 km			1	0	0	0	1	1	1	
2	400 kV S/S Rajpura	220 kV Rajpura(400)-Mandi G/Grh ckt.I	08-08-2025 at 18.35 Hrs	R-ph, Ir=1.12 kA	Not tripped			0	0	1	1	#DIV/0!	0	0	
		220 kV Rajpura(400)-Mandi G/Grh ckt.I	12-08-2025 at 00.42 Hrs	Zone-1, B-ph, Fault distance-9.1 km(A/R optd.)	Zone-I, Carrier trip (A/R optd.)			1	0	0	0	1	1	1	
		220 kV Rajpura(400)-Lalru ckt.II	22-08-2025 at 16.18 Hrs	DT received	Not tripped	During Maintenance work done by CO&C team at both ends		0	0	1	1	#DIV/0!	0	0	
		220 kV Rajpura(400)-Mandi G/Grh ckt.I	28-08-2025 at 18.03 Hrs	A/R optd	A/R optd.			1	0	0	0	1	1	1	
3	400 kV S/S Dhanansu	400 kV Dhanansu-Jalandhar ckt.	20-08-2025 at 10.12 Hrs	Aided Trip Zone-2, R-ph, Fault Distance-110.8 km (A/R Optd.)	Zone-I, R-ph, Fault Distance-14.184 km(A/R Optd.)			1	0	0	0	1	1	1	
4	400 kV S/S Dhuri	220 kV Dhuri(400)-Dhuri ckt.I	06.08.25 at 21:23 (Auto Reclose Operated)	Zone-I, B-ph (A/R Optd.)	Not tripped			1	0	0	0	1	1	1	
		220 kV Dhuri(400)-Dhuri ckt.I	16.08.25 at 04:28 (Auto Reclose Operated)	Fault loop - CG, Ic = 8.59KA, Auto Reclose Operated, Fault Distance - 13.6 Km(A/R Optd.)	Zone-1, B-phase, Ic = 7.652 KA, Fault Distance= 8.268 km(A/R Optd.)			1	0	0	0	1	1	1	
		400KV Dhuri - Talwandi Sabo Ckt-1	19.08.25 at 13:12	DT Signal Send(without any power system fault)	DT received	Mal-Functioning of PLCC cabinets		0	0	1	1	#DIV/0!	0	0	
		400KV Dhuri - Talwandi Sabo Ckt-2	19.08.25 at 13:12	DT Signal Send (without any power system fault)	DT received	Mal-Functioning of PLCC cabinets		0	0	1	1	#DIV/0!	0	0	
		220 KV Dhuri(400) - Chajli ckt-2	31.08.25 at 09:01	21.1 Relay Indication:- Fault Loop - AG , Ia=5.41 KA, Fault Dist. = 33.9 KM	Auto Reclose operated, E/F, O/C R phase, Ia=6.082 KA , Zone-1, Fault dist. = 5.625 KM			1	0	0	0	1	1	1	
5	400 kV S/S Makhu	400 kV Makhu-Muktsar ckt	12.08.2025 at 10:47	Zone-IB,R-ph, Fault Distance-83.7 km(A/R Optd)	Zone-I, R-ph, Fault Location-1.9 km(A/R Optd.)			0	0	1	1	#DIV/0!	0	0	
		220kv Makhu-Algon ckt.2	25-08-2025 at 08.46	No Indications	Not tripped	Rain Water/Moisture in CT SF6 gas monitor, due to which SF6 trip shorted		0	0	1	1	#DIV/0!	0	0	
		220kv Makhu-Algon ckt.2	26.08.2025 at 02:22	No Indications	Not tripped	Rain Water/Moisture in CT SF6 gas monitor, due to which SF6 trip shorted		0	0	1	1	#DIV/0!	0	0	
		220kv Makhu-Algon ckt.2	26.08.2025 at 07:39	No Indications	Not tripped	Rain Water/Moisture in CT SF6 gas monitor, due to which SF6 trip shorted		0	0	1	1	#DIV/0!	0	0	
		400 kV Makhu-Amritsar ckt 1	26.08.2025 at 02:33	No Indications	Not tripped	Rain Water/Moisture in isolator, due to which SF6 trip shorted		0	0	1	1	#DIV/0!	0	0	
		400 kV Makhu-Amritsar ckt 1	26.08.2025 at 09:54	No Indications	Not tripped	Rain Water/Moisture in isolator, due to which SF6 trip shorted		0	0	1	1	#DIV/0!	0	0	

LUDHIANA CIRCLE															
1	220kV Sandhaur	220kV Sandhaur - Pakhowal	10/8/2025 AT 13:12	Zone - 1, Fault Location - 30.793 Km, Y-Phase, Auto Reclose Blocked	Zone - 1, Fault Location - 21.34 Km, Y-Phase, Auto Reclose Blocked			1	0	0	0	1	1	1	
2		220kV Sandhaur - Pakhowal	19/8/2025 AT 14:31	Zone - 1, Fault Location - 29.063 Km, Y-Phase, Auto Reclose Blocked	Zone - 1, Fault Location - 21.34 Km, Y-Phase, Auto Reclose Blocked			1	0	0	0	1	1	1	
3		220kV Sandhaur - Malerkotla	27/8/2025 AT 17:59	Zone - 1, Fault Location - 8.462 Km, B-Phase, Auto Reclose Blocked	Zone - 1, Fault Location - 7.519 Km, B-Phase, Auto Reclose Blocked			1	0	0	0	1	1	1	
4	220kV Mehal Kalan	220kV Mehal Kalan - Moga Ckt. 1	12/8/2025 AT 8:29	Not tripped	No Indication	Due to Internal wiring problem in breaker at Moga end		0	0	1	1	#DIV/0!	0	0	
5		220kV Mehal Kalan - Moga Ckt. 1	12/8/2025 AT 13:02	Not tripped	No Indication	Due to Internal wiring problem in breaker at Moga end		0	0	1	1	#DIV/0!	0	0	
6	220kV Jadla	220kV Jadla - Goraya	6/8/2025 AT 20:50	Zone - 1, Fault Location - 13.22 Km, B-Phase, Auto Reclose Operated	Zone - 1, Fault Location - 34.90 Km, B-Phase, Auto Reclose Operated			1	0	0	0	1	1	1	
7	220kV Dhandari 1	220kV Dhandari 1 - PGCIL Ckt. 1	10/8/2025 AT 14:01	Zone - 1, Fault Location - 6.70 Km, B-Phase, Auto Reclose Blocked	Zone - 1, Fault Location - 16.635 Km, B-Phase, Auto Reclose Blocked			1	0	0	0	1	1	1	
8	220kV Dhandari 2	220kV Dhandari 2 - Jamalpur	14/8/2025 AT 16:08	Line differential operated, R-Phase	Not Tripped			1	0	0	0	1	1	1	
9	220kV Goraya	220kV Goraya - Jadla	6/8/2025 AT 20:50	Zone - 1, Fault Location - 34.90 Km, B-Phase, Auto Reclose Operated	Zone - 1, Fault Location - 13.22 Km, B-Phase, Auto Reclose Operated			1	0	0	0	1	1	1	
10		T-7 (220/66 Kv 100 MVA)		14/8/2025 AT 17:01	HV Side: Master LV Side: REF, Master	N/A	Y-Phase CT of LV side got opened from CT marshalling box		0	0	1	1	#DIV/0!	0	0
11				14/8/2025 AT 16:27	HV Side: Master LV Side: REF, Master	N/A	Y-Phase CT of LV side got opened from CT marshalling box		0	0	1	1	#DIV/0!	0	0
12	220kV Himmatpura	220kV Himmatpura - Lehra Mohabbat ckt. 1	22/8/2025 AT 11:07	Zone - 1, Fault Location - 22.71 Km, R-Phase, Auto Reclose Blocked	Zone - 1, Fault Location - 6.937 Km, R-Phase, Auto Reclose Blocked			1	0	0	0	1	1	1	
13	220kV Dharamkot	220kV Dharamkot - Makhu ckt. 2	31/8/2025 AT 5:13	Zone - 1, Fault Location - 5.104 Km, B-Phase, Auto Reclose Blocked	Not Tripped			1	0	0	0	1	1	1	
14	220kV Jagraon	220kV Jagraon - Lalton Kalan	30/8/2025 AT 4:36	Zone - 1, Fault Location - 25.43 Km, Y-Phase, Auto Reclose Blocked	Not Tripped			1	0	0	0	1	1	1	
15	220kV Sahnewal	220kV Sahnewal - PGCIL Ckt. 1	30/8/2025 AT 12:46	DT Receive	Zone - 1, Fault Location - 9.15 Km, R-Phase, Auto Reclose Blocked, E/F			1	0	0	0	1	1	1	
16	220kV Lalton Kalan	220kV Lalton Kalan - Fzr Road	30/8/2025 AT 4:36	Zone - 4, R-Phase, Auto Reclose Blocked	Zone - 2, Fault Location - 25.43 Km, R-Phase, Auto Reclose Blocked			1	0	0	0	1	1	1	
17		T-4 (220/66 Kv 100 MVA)	15/8/2025 AT 21:03	Main PRV trip	N/A	Contacts of PRV were short from the PRV relay due to presence of moisture		0	0	1	1	#DIV/0!	0	0	
18		T-4 (220/66 Kv 100 MVA)	16/8/2025 AT 16:23	Main PRV trip	N/A	Contacts of PRV were short from the PRV relay due to presence of moisture		0	0	1	1	#DIV/0!	0	0	
19	220kV Lalton Kalan	T-5 (220/66 Kv 100 MVA)	27/8/2025 AT 23:05	HV and LV master trip only	N/A	Contacts of REF relay were found to be shorted		0	0	1	1	0	0	0	
20		220kV Lalton Kalan - Jagraon	30/8/2025 AT 4:36	Not Tripped	Zone - 1, Fault Location - 25.43 Km, Y-Phase, Auto Reclose Blocked			0	1	0	1	#DIV/0!	#DIV/0!	#DIV/0!	
21		220kV Lalton Kalan - PGCIL Ckt. 1	30/8/2025 AT 4:36	Not Tripped	Zone - 1, Fault Location - 1.80 Km, R-Phase, Auto Reclose Blocked			1	0	0	0	0.5	1	1	
22		220kV Lalton Kalan - PGCIL Ckt. 2	30/8/2025 AT 4:36	Not Tripped	Zone - 2, Y-Phase, Auto Reclose Blocked	Y-phase Clamp of CT got detached from line side		0	1	0	1	#DIV/0!	#DIV/0!	#DIV/0!	
23		220kV Lalton Kalan - Humbaran	30/8/2025 AT 4:36	Not Tripped	Zone - 2, Y-Phase, Auto Reclose Blocked			0	0	1	1	#DIV/0!	0	0	
24		220kV Fzr Road	220kV Fzr Road - Lalton Kalan	30/8/2025 AT 4:38	Zone - 2, Fault Location - 19.90 Km, R-Phase, Auto Reclose Blocked	Zone - 4, R-Phase, Auto Reclose Blocked			1	0	0	0	1	1	1
25	220kV Humbaran	220kV Humbaran - Lalton Kalan	30/8/2025 AT 4:36	Zone - 2, Y-Phase, Auto Reclose Blocked	Not Tripped			0	0	1	1	#DIV/0!	0	0	
26	220 Kv Pakhowal	220 Kv Pakhowal - Sandhaur	19/8/2025 AT 14:31	Zone - 1, Fault Location - 21.34 Km, Y-Phase, Auto Reclose Blocked	Zone - 1, Fault Location - 29.063 Km, Y-Phase, Auto Reclose Blocked			1	0	0	0	1	1	1	
27		220 Kv Pakhowal - Sandhaur	27/8/2025 AT 17:59	Zone - 1, Fault Location - 7.519 Km, B-Phase, Auto Reclose Blocked	Zone - 1, Fault Location - 8.462 Km, B-Phase, Auto Reclose Blocked			1	0	0	0	1	1	1	

[illegible]

BATHINDA CIRCLE														
1	220 kV S/S Mansa	220 kV Budhlada (New element)	02.08.2025 at 22:18 hrs	O/C YB-ph, Distance-1.511km O/C B-ph & E/F	CB OFF	During the charging of New Line on NO Load at 00:03 hrs on 03.08.2025 after the clearance from AEE/TLSC & with the permission of PC/Patiala, but line was tripped again. Line charged at 19:52 hrs on 03.08.2025 after clearance from AEE/TLSC & Protection Bathinda.	1	0	0	0	1	1	1	
2	220 kV S/S Mansa	220 kV Budhlada	06.08.2025 at 19:50 hrs	Master trip & SOTF operated & DT send	N.A.	Line holds on 22:06 hrs after disable function in both DPRs & clearance taken from TLSC & PC/Patiala. No supply affected.	1	0	0	0	1	1	1	
3	220 kV S/S GNDTP	220 kV Muktsar CKT-2	07.08.2025 at 14:20 hrs	DPR operated Main -1, YB phase, Z-1, Distance-33.6 km IR-0.11 KA, IY- 4.42 KA,IB-4.35 KA	DPR operated Main -1, YB phase, Z-1, Distance-13.34 km	No Fault found to TL/Muksar	1	0	0	0	1	1	1	
4	220 kV S/S Abohar	220 kV S/S Abohar-Mukatsar CKT-2	13.08.2025 at 01:22 hrs	DPR operated Main -1, B phase, Z-1 Distance-31.08 km, R - 134 A, Y-309 A, B -1923 A Main -2, Distance-30.08 km	DPR operated Main -1, B phase, Z-1 Distance-7 km, B Phase-11.07 kA	No visible fault found to TL/Mukatsar. Line charged at 07:40 hrs.	1	0	0	0	1	1	1	
5	220 kV S/S Bajakhana	220 kV Lehra CKT-2	14.08.2025 at 16:13 hrs	DPR operated, O/C B phase Main-1, CN, Z-1, Distance:20.22 km IA-154 A,IB-225, IC-3084 Main-2, CN, Z-1, Distance: 20.12 km, IA-156A,IB-227 IC-3088A	DPR Operated C phase, Z-1 Distance-5 km	No fault found. Line charged at 20:29 hrs after patrolling. No supply affected.	1	0	0	0	1	1	1	
6	220 kV S/S Katorewala	220 kV Katorewala-Abohar line	16.08.2025 at 04:13 hrs	DPR Main-1 Y phase, E/F Z-1 Distance-13.3 km, IA-152.9 KA, IB-4.966 KA IC-82.84 A DPR Main-2, Z-1, Y phase, E/F, Distance-16.61 km	Auto Reclose operated DPR operated Main -1, Y phase, Z-1, Distance-9.56 km DPR operated Main -1, Y phase, Distance-8.1 km	As per fault location, patrolling done, no visible fault found, line charged at 10:21.	1	0	0	0	1	1	1	
7	220 kV S/S GNDTP	220 kV Muktsar CKT-1	22.08.2025 at 12:17 hrs	DPR operated Main -1, BN phase, Z-1, Distance-23.69 km IR-18.71 KA, IY- 16.96 KA, IB-5.352 KA DPR operated Main -2, BN phase, Z-1, Distance-23.6km	DPR operated Main -1, BN phase, Z-1, Distance-19.35 km	No Fault found.	1	0	0	0	1	1	1	
8	220 kV S/S Maur	220 kV Maur-Lehra Line A-2	24.08.2025 at 12:27 hrs	DPR Main-1 RN phase Distance-24.42 km, IR-1354 A, IY- 435.6 A,IB-549.1 KA DPR Main-2, Z-1, RN phase, E/F Distance-26 km & DIR O/C &E/F Relay IR-1442 A, IY- 440.8 A, IB- 572.1 A IN-2195 A	DPR Operated, Z-1, RN phase Distance-22.164 km IR-5.765 A, IY- 0.493 mA, IB-0.600 mA	No Fault found.Try taken after consultation with SDO/TL Bathinda.No supply affected.	1	0	0	0	1	1	1	
9	220 kV S/S GNDTP	220 kV Badal Line	25.08.2025 at 05:19 hrs	Auto-Reclosed DPR Main-1 Operated, Z-1 , Y Phase, Distance: 9.325 km	DPR Main-1 Operated, Z-2,YB Phase, Distance: 47.87 km	No supply affected.	1	0	0	0	1	1	1	
10	220 kV S/S Abohar	220 kV Abohar-Mukatsar CKT-1	27.08.2025 at 02:49 hrs	DPR Main-1 Operated, CN Phase, Tripped phase C, Z-1, Distance: 20.66 km, IA-111.6 A IB-265.1 A, IC-3.002 KA DPR Main-2 Distance: 20.5 km	Auto- Reclose operated Main-1 ,Z-1 Distance -17.1 km, B Phase-6.37 KA, Main -2, Z-1, Distance -17.1 km	Tripped from Abohar end only. No visible fault found. CKT Charged from Abohar end at 11:05 hrs after clearance given by AEE/TL. No supply affected.	1	0	0	0	1	1	1	
11	220 KV S S Muktsar	220KV Muktsar-Bathinda ckt No-1	22.08.2025 at 12:17 to 15:23 =03 hrs 06 Minutes	DPR Main 1 Relay operated , B Phase , Zone-1, 19.35KM	DPR Main 1&2 Relay operated , B Phase , Zone-1, 23.69 KM		1	0	0	0	1	1	1	
12	220 KV S S Muktsar	220KV Muktsar-Bathinda ckt No-1	22.08.2025 at 15:23 to 21:30 =06 hrs 07 Minutes	DPR Main 1 Relay operated , B Phase , Zone-1, 19.35KM	DPR Main 1&2 Relay operated , B Phase , Zone-1, 23.69 KM		1	0	0	0	1	1	1	
11	220 kV S/S Bajakhana	220/66 kV, 160 MVA P/T/F T-1	27.08.2025 at 14:01 hrs	Master relay opted at HV side, REF relay opted at LV side	N.A.	T/F charged on NO load at 16:53 hrs after by passing Y-phase LV side damaged LA.	1	0	0	0	1	1	1	
12	220 kV S/S Mansa	220 kV Mansa-Talwandi line	28.08.2025 at 22:34 hrs	O/C & E/F operated R Phase-92 A, Y Phase-134 A, B Phase -707 A,N-525 A	N.A.	Tripped from Mansa end only. CKT charged from Mansa end at 23:55 hrs after consultation with PC Patiala, TL Bathinda & SSE Mansa.	1	0	0	0	1	1	1	

PATIALA CIRCLE															
1	220 KV S/S Kharar	220 kv RTP- kharar line	5.8.25	C-PHASE,ZONE-1,DIST-30.02KM,IA-348.6A,IB-161.9A,IC-3.388KA	C-PHASE;IC-12.88KA,DIST-9.96KM	Due to transient fault		1	0	0	0	1	1	1	
2	220KV S/S Mohali-I	220 kV Mohali- RTP line	19.08.25	Mohali End: Main1: Z-1 RYB, Ia-0.16 kA, Ib- 0.21ka, Ic- 4.82 kA, Dist-21.4 kM, Main2: Started CN, Trip C, Z-1, Dist- 21.05 kM, Ic-5.143 kA	RTP End: Started phase CN Z-1 trip ph-c, Dist-5.02 kM, Ic-6.603 kA	Due to transient fault		1	0	0	0	1	1	1	
		220 kV Mohali- RTP line	24.08.25	Mohali End: Main1: Ia- 2.26 kA, 0.29 kA, Ic- 0.23 kA, Zone1, distance: 31.8 kM	RTP end Dist- 31.47 kM, Z1 Ia- 4.511 kA, Ib- 219.9 A, Ic- 224.9 A,	Due to transient fault		1	0	0	0	1	1	1	
3	220 kV S/S Majra	220 kv Ganguwal Majra	3.8.2025 at 12:55 Hrs	Main I: Zone I, Ie=2.147 KA Main II: Zone I, Type CG Phase C, 53.6KM	Zone I, Ic=12.72 KA; A,B,C tripped Phase, 2.64KM	No Fault found(Line Patrolling done AEE/TL ropar from tower no.1-10 no.,52-66no.)		1	0	0	0	1	1	1	
4	220 kv Derabassi	100 MVA PTF T3	13.08.2025 at 03:25 Hrs	MASTER AND REF OPERATED	-	There is chance of damage of control cable and will be checked after availing shutdown during OFF Period or in winter		1	0	0	0	#REF!	1	1	
5	220KV S/S Malerkotla	220kV Malerkotla-Dhuri Ckt-2	6.8.2025 at 21.23 to 7.8.2025 at 12.59	DPR M-1 Z-1 B-phase 10.59kA 9.372KM DPR M-2 Z-1 B-phase 10.57kA 9.401KM	DPR M-1 Z-1 13.7KM DPR M-2 Z-1 B-phase 6.982kA	After receive message from AEE TL PSTCL Bhalwan as B-phase suspension disc string replaced at tower no 33. Line charged as per instructions of PC Patiala.		1	0	0	0	1	1	1	
		220kV Malerkotla-Dhuri Ckt-2	14.8.2025 at 21.58 to 16.8.25 at 20.30	DPR M-1 Z-1 B-phase 10.78kA 9.116KM DPR M-2 Z-1 B-phase 10.81kA 9.155KM	DPR M-2 Z-1 B-phase 6.936kA 11.20KM	Line charged as per instructions of PC Patiala at 20:30 (16.08.2025) after receive message from AEE TL PSTCL Bhalwan as Breakdown attended at Tower No 52 & 53.		1	0	0	0	1	1	1	
		220kV Malerkotla-Amlah	23.8.2025 at 04.15 to 23.8.2025 at 05.33	DPR M-1 Z-1 Ia-10.87kA 10.25KM & DPR M-2 Z-1 R-phase 10.964kA 10.2KM	Circuit breaker not tripped	Line charged as per instructions of PC Patiala.		1	0	0	0	1	1	1	
		220kV Malerkotla-Amlah	25.08.2025 at 06.01 to 25.8.2025 at 16.33	DPR M-1 Z-1 R-phase 15.92kA 5.358KM	DPR M-1 Z-2 R-phase 3.876kA 30.94KM DPR M-2 Z-2 R-phase 3.401kA	After receive message from AEE TL PSTCL Mandi Gobindgarh as disc string replaced at tower no 112, line charged as per instructions of PC Patiala.		1	0	0	0	1	1	1	
		220 kV Malerkotla-Ikolaha	26.08.2025 at 18.40 to 27.08.2025 at 15.08	DPR M-2 Z-1 B-phase 4.852kA 32.14KM	DPR Z-1 B-phase 7.056kA 2.76KM	After receive message from AEE TL PSTCL Gobindgarh as line patrolled from TN 36/20 to 90, TN 42,44,61,67,76,85 top patrolled, No visible fault found, line is clear to charge. Line charged as per instructions of PC Patiala.		1	0	0	0	1	1	1	
6	220kV S/S Dhuri	220kV Dhuri-Bhalwan Ckt-1	16.8.2025 at 4.28 to 16.8.2025 at 06.11	DPR M-1 Z-1 B-phase 7.652kA 8.268KM DPR M-2 Z-1 B-phase 7.676kA 8.461KM	Circuit breaker not tripped	Line not tripped from Bhalwan end, line tripped from Dhuri end. Line charged at 06:11 (16.08.2025) as per instructions of PC Patiala.		1	0	0	0	1	1	1	
7	220kV S/S Nabha	100MVA PTF T-3	26.8.2025 at 14.23 to 26.8.2025 at 21.24	CTR alarm optd. (HV) & REF (LV)	-	Due to B-phase limb damage of 66kV Samundgarh line circuit breaker.		1	0	0	0	1	1	1	
8	220kV S/S Devigarh	100MVA PTF T-3	30.8.2025 at 8:15 to 30.8.2025 at 11.05	DIR O/C+E/F+MT	No Reason Found	No Reason Found		0	0	1	1	#DIV/0!	0	0	
9	220KV S/S Chhajli	100 MVA P-T/F T-1	27.8.25 at 1.19 to 27.8.25 at 2.53	No Indication	Blackout occurred due to jerk caused by tripping of 220kv line Chhajli-Bangan ckt-1 which caused BB Protection to mismatch indicating open CT & Isolator Discrepancy alarm	blackout occurred due to jerk caused by tripping of 220kv line Chhajli-Bangan ckt-1 which caused BB Protection to mismatch indicating open CT & Isolator Discrepancy alarm and supply restored through by charging the 220KV Bhalwan ckt no-01 at 01:54.		0	0	1	1	#DIV/0!	0	0	
		220 kv Chhajli Bangan Ckt-1	27.8.25 at 1.19 to 27.8.25 at 10.30	E/F, R ph, Fault Current=5.533Ka , Zone-1, PDR , Distance=7.46km,	DPR Main 1 & Main 2 optd, Zone -1, Distance=25.83km, R ph, Ia=3.580Ka, Ib=70.72a, Ic=106.7a	Blacout occurred for 35 mints at 220KV S/S Chhajli due to this tripping which cause BB protection to operate		1	0	0	0	1	1	1	
		220 kv Chhajli Bangan Ckt-2	27.8.25 at 1.19 to 27.8.25 at 8.51	No Indication	Not tripped			0	0	1	1	#DIV/0!	0	0	
		220 kv Chhajli Bhalwan Ckt-1	27.8.25 at 1.19 to 27.8.25 at 1.54	No Indication	Not tripped			0	0	1	1	#DIV/0!	0	0	
		220 kv Chhajli Bhalwan Ckt-2	27.8.25 at 1.19 to 27.8.25 at 2.51	No Indication	Not tripped			0	0	1	1	#DIV/0!	0	0	
JALANDHAR CIRCLE															

1	220 KV S/S Rehanha Jattan	220 kV Rehana Jattan Line	02.08.2025 at 14.50 Hrs	M-1 R ph, Z-1, 20.44km,Ia-5.392Ka, M-2 R-ph, Z-1, 20.47km,Ia-5.304kA	M-1,R-ph,Z-1,5.50km,Ia-7.171kA	Disc flash Tower No.25		1	0	0	0	1	1	1
2	220 KV S/S Mahilpur	220 kV Mahilpur Bhakra -2Line	10.08.2025 at 12.50 Hrs	B-ph,Z-1,21.23 km, Ib-4.439kA	B-ph,Z-1,DT received,Ia-283,Ib-324.9,Ic-40337kA, 4.723km	Bad Weather		1	0	0	0	1	1	1
3	220 kV S/S Jamsher	220 kV Jamsher-BBMB Ckt-1	17.08.2025 at 09.38 Hrs	M-1,A-N, Z-1, 4.866km,38.78kA,117.2kA,125.4 kA	A-N,Z-1,10.29km, 4.487 k	Bad Weather		1	0	0	0	1	1	1
4	220 kV S/S Hoshiarpur	220 kV Hoshiarpur Nakodar Line	25.08.2025 at 10.46 Hrs	R,Y,B-ph ,Carrier protectoion On by COC	ON	Carrier modem card faulty at Nkd end		1	0	0	0	1	1	1
5	220 kV S/S Jamsher	220 kV Jamsher Mahilpur Ckt-1	26.08.2025 at 06.19 Hrs	C-N,Z-1,17.65km,Ic-5.866kA	C-N,Z-1,18.62km,Ic-4.349kA	Bad Weather		1	0	0	0	1	1	1
6	220 kV S/S Jamsher	220 kV Jamsher Rehana Jattan	27.08.2025 at 11.30Hrs	M-1,R-ph,Z-1,7.51kA,13.19km, 2,R-ph,Z-1,11.80km,7.554kA	M-1,R-ph,Z-1,8.833km,7.915kA	Bad Weather		1	0	0	0	1	1	1
7	220 kV S/S Mahilpur	220 kV Mahilpur Rehana Jattan	27.08.2025 at 13.03 Hrs	R,B-ph,Z-1,Ic-400kA,17.10 km	B-ph,Z-1,Ic-3.405kA, 7.345km	Bad Weather		1	0	0	0	1	1	1
8	220 kV S/S Jamsher	220 kV Jamsher Mahilpur Ckt-1	30.08.2025 at 17.58Hrs	B-ph,Z-1,If-6.956 kA,15.90km	B-ph,Z-1,15.89km,If-5.241kA	Disc string rreplacement T No. 76 and Bad weather		1	0	0	0	1	1	1

Sl. No.	Month	SPS Operated	Details of SPS operated	No. of times operated in Month	No. of correct operations	No. of mal-operation	No. of times failed to operate	Remarks
1	May'25	SPS for safe evacuation of Lalitpur TPS Generation	1. i) At 15:32:37 hrs, B-N fault occurred on 765 KV Agra Fatehabad(UP)-Lalitpur(LPG) (UP) Ckt-1 and A/R started. At the same instant, 765 KV Agra Fatehabad(UP)-Lalitpur(LPG) (UP) Ckt-2 tripped on operation of OV stage-2 protection. As per DR of line, voltage of R-ph of 765KV Lalitpur-Agra Fatehabad line-II increased from 441kV to ~845kV for ~140msec. ii) Further, after dead time of A/R operation, 765 KV Agra Fatehabad(UP)-Lalitpur(LPG) (UP) Ckt-1 also tripped due to permanent nature of fault. iii) As per PMU at Agra765(PG), B-N phase to earth fault with delayed clearance of ~560msec is observed. iv) Due to tripping of both the 765kV evacuating lines, case-3 for SPS for safe evacuation of Lalitpur generation operated. As per SPS case-3, in case of tripping of both the 765kV lines, one 660MW unit, in this case unit-3 shall come to house load and remaining unit shall trip. 220kV lines to Lalitpur and Jhansi shall also trip. v) However, as 100MVA ST-2 already tripped at 15:26 hrs during LBB operation of 220kV Bus-1, BFP for Unit-3 was not available and therefore, 660MW Unit-3 also tripped along with 660MW Unit-1&2. 220kV line to Lalitpur(2nd ckt) also tripped on SPS operation. vi) Due to tripping of both the units and all the 220kV feeders on loss of evacuation path and SPS operation, complete 765/220kV Lalitpur S/s got blackout. vii) As per SCADA, generation loss of 1040MW at Lalitpur TPS (UP) and change in UP demand of ~90MW is observed. 2. i) At 13:49 hrs, 765 KV Agra Fatehabad(UP)-Lalitpur(LPG) (UP) Ckt-2 tripped on R-B phase to phase fault. ii) Further at 13:56hrs, 765 KV Agra Fatehabad(UP)-Lalitpur(LPG) (UP) Ckt-1 tripped on R-N phase to earth fault. iii) Due to tripping of both the 765kV evacuating lines, case-3 for SPS for safe evacuation of Lalitpur generation operated. As per SPS case-3, in case of tripping of both the 765kV lines, one 660MW unit (in this case unit-3 shall come to house load and remaining unit shall trip. 220kV lines to Lalitpur and Jhansi shall also trip. iv) As a result, 660 MW Lalitpur Unit-1 & Unit-2 tripped alongwith 220 KV Lalitpur-Jhansi (UP) Ckt, 220kV Lalitpur-Lalitpur/220 ckt-2, 220kV Lalitpur-Lalitpur/220 ckt-1 and 220 KV Lalitpur-Babina (UP) Ckt tripped on SPS. v) As per SPS, the generation of 660MW Unit-3 reduced to 70MW for house load operation. vi) As per PMU at 765KV Agra(PG), two consecutive R-N phase to phase faults with fault clearing time of 120ms is observed.	1 03.05.2025 at 15:32hrs 2 11.05.2025 at 13:49hrs	2	0	0	During 1st event: As 100MVA ST-2 already tripped at 15:26 hrs during LBB operation of 220kV Bus-1, BFP for Unit-3 was not available and therefore, 660MW Unit-3 also tripped along with 660MW Unit-1&2. 220kV line to Lalitpur(2nd ckt) also tripped on SPS operation.
2	May'25	HVDC Rihand-Dadri SPS	i) As reported at 20:21 hrs, during multiple elements tripping event in Dadri, Meerut complex on subsequent line faults, 500 KV HVDC Rihand-Dadri (PG) Ckt-1 and Ckt-2 tripped due to commutation failure. At the time of tripping 500 KV HVDC Rihand-Dadri (PG) Ckt-1 and Ckt-2 were carrying total ~1150 MW. As a result of tripping of both the ckt, SPS condition 2 operated. ii) As per details received from POWERGRID, as per logic if commutation failure persists for more than 2600 ms then the Protection shall issue a Y Trip to the converters. Since starting from 20:20:58:2785 Hrs. 12 successive commutation failures were detected at a gap of less than 500ms, at 20:21:00.8782 both Poles of the Rihand Dadri HVDC Link tripped on Commutation failure protection from HVDC Dadri S/s. iii) As per SPS case-2 operation, there should be load shed in load group-A, B, C & D and generation back down of total ~500 MW at Rihand & Singrauli TPS. As per SCADA data, generation backdown of ~135MW is observed in Rihand Stage I and Stage II. However, there wasn't any significant generation back down (only ~30MW) in Singrauli observed. At load stations also, no significant load relief was observed as per SCADA. As per status received from sites, SPS signal was sent from POWERGRID (Dadri S/s) however SPS action didn't occur at multiple stations due to issue in SPS system at load stations end.	1 21.05.2025 at 20:21hrs	1	0	0	As per details received from SLDs and POWERGRID, SPS signal was sent from POWERGRID (Dadri S/s) however SPS action didn't occur at multiple stations due to issue in SPS system at load stations end. Non-operation of SPS at Singrauli, Malerkotla, Muzaffarnagar, Modipuram, Panipat(HR). Confirmation from some of the load stations not received yet.
3	Jul'25	SPS for reliable evacuation of power from N. Jhakri, Rampur, Karcham Wangtoo, Sawra Kuddu, Baspa, Sorang and Nalwar Mori HEP	At 06:25 hrs, case-1 of "SPS for reliable evacuation of power from N. Jhakri, Rampur, Karcham Wangtoo, Sawra Kuddu, Baspa, Sorang and Nalwar Mori HEP" operated. As per SPS logic, condition for SPS case-1 operation is "Load on any of the lines at Jhakri, Rampur or Gumma towards Nalagarh or Panchkula exceeds 900 MW". However, loading on all the evacuating lines were within permissible limit (<900MW).	1 14.07.2025 at 06:25hrs	0	1		As confirmed, SPS operated due to faulty transducer of the 400kV Rampur-Nalagarh transmission line at the Rampur end and faulty transducer has been successfully replaced by the NPS team
4	Aug'25	SPS for Transformers at 400KV Kashipur (PTCUL) substation to avoid overloading of Transformers	i) As reported, at 04:39 hrs, Y-N fault occurred on 220KV Kashipur-Jafarpur line. Due to non clearance of fault from Kashipur end due relay issue, 400/220KV ICTs at Kashipur tripped on overcurrent protection operation. At the same time, case-2 of SPS for ICTs at Kashipur also operated. This further led to tripping of 220KV Kashipur-Jafarpur line CB at Kashipur end and 132KV Kashipur-Jaspur line.	1 18.08.2025 at 04:39hrs	1	0		
Total				4	3	1	0	

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-1,2,3)					
2	NTPC	Central Generating Company	Received					
3	BBMB		Received					
4	THDC		Received	Tehri- March, 2026 Koteshwar- December, 2025				
5	SJVN		Received (NJHPS, RHPS)					
6	NHPC		Received					
7	NPCIL		Received (RAP C)	July, 2025				
				Conducted (RAPS-1,2)	Jun-25			61
8	Delhi SLDC	SLDC						
9	Haryana SLDC							
10	Rajasthan SLDC							
11	Uttar Pradesh SLDC		Received (Jaypee Vishnuprayag, WUPPTCL, SEUPPTCL, Alaknanda, GTL)	GTL- Jan'2026 & Feb'2026				
12	Uttarakhand SLDC							
13	Punjab SLDC							
14	Himachal Pradesh SLDC							
15	DTL	State Transmission Utility	Received					
16	HVPNL		Received					
17	RRVNL		Received				62	
18	UPPTCL		Received (All zones)	Jan-March 2026				
19	PTCUL		Received	July-December 2025				
20	PSTCL							
21	HPPTCL		Received					
22	IPGCL	State Generating Company	Received (PPS-III, I)					
23	HPGCL		Received	Aug'25				
24	RRVUNL		Received					
25	UPRVUNL		Received (Anpara B)	Jun-25				
			Received (Obra A & B)	Jan - March 2026				
			Received (Anpara D)	May-25				
			Received (Harduaganj)	April -May 2025				
			Received (Harduaganj D)	April -May 2025				
			Received (Harduaganj E)	April -May 2025				
			Received (Parichha)	May-25				
			Received (Parichha Ext)	Feb-26				
			Received (Obra C)	Mar-26				
			Received (Jawaharpur)	Jul-25				
26	UJVNL		Received (Chibro)	Oct-25				
		Received (Khodri)	Nov-25					
		Received (Vyasi)	Dec-25					
		Received (Dharashu, Tiloth)						
27	HPPCL		Received (Kasheng HEP, Sawara Kuddu, Sainj)	Nov'25-Mar'26				
28	PSPCL	State Generating Company & State owned Distribution Company	Received (GHTP, GGSSTP, GATP, RSD)					
29	HPSEBL	Distribution company having Transmission connectivity ownership	Received					
30	Prayagraj Power Generation Co. Ltd.	IPP having more than 1000 MW installed capacity	Received	Aug'25	Completed	25.09.2025		
31	Aravali Power Company Pvt. Ltd							
32	Apraava Energy Private Limited		Received	May'25				
33	Talwandi Sabo Power Ltd.		Received	May'25				
34	Nabha Power Limited		Received	May'25				
35	MEIL Anpara Energy Ltd		Received	May'25				
36	Rosa Power Supply Company Ltd		Received	Jan'26				
37	Lalitpur Power Generation Company Ltd		Received	Oct - Nov 2025	Completed	25.08.2025	63	
38	MEJA Urja Nigam Ltd.							
39	Adani Power Rajasthan Limited							
40	JSW Energy Ltd. (KWHEP)		Received	Nov-25 to Feb 26				
41	UT of J&K	UT of Northern Region						
42	UT of Chandigarh							
	ISTS Transmission Utilities							
43	INDIGRID		Received	Aug-25 to March-26				
44	ADHPL							
45	Adani Transmission Limited		Received(400kV Mohindergarh SS)	October, 2025				
46	Bikaner Khetri Transmission Limited		Received (765 kV Bikaner and Khetri extension bays)	September, 2025				
47	Fatehgarh Bhadla Transmission Limited		Received (400 kV Fatehgarh SS)	September, 2025				
48	Powergrid Sikar Transmission Limited		Received	Sikar- August,25				

49	Powergrid Aligarh Sikar Transmission Limited		Received	Aligarh- April, 25 August,25	Sikar-				
50	Powergrid Ajmer Phagi Transmission Limited		Received	March,2025					
51	Powergrid Bikaner Transmission System Limited		Received	Bikaner-II Feb,2025					
52	Powergrid Khetri Transmission System Limited		Received	Khetri-Feb,2025					
53	Powergrid Ramgarh Transmission Limited		Received	Fatehgarh-II Dec, 2025 Fatehgarh-III May, 2025					
54	Powergrid Fatehgarh Transmission Limited		Received	Fatehgarh-II Dec, 2025 Bhadla-II Jan, 2025					
55	Powergrid Bhadla Transmission Limited		Received	Fatehgarh-II Dec, 2025 Bhadla-II Jan, 2025					
56	Powergrid Meerut Simbhavli Transmission Limited		Received	Nov, 2025					
57	Powergrid Kala Amb Transmission Limited		Received	September, 2025					
	State Utilities								
	Uttar Pradesh								
58	Vishnuprayag Hydro Electric Plant (J.P.)		Received	Jun-25					
59	Alaknanda Hydro Electric Plant (GVK)		Received	Dec'25 -Mar'26					
60	Ghatampur TPS		Received	February, 26					
61	Khara Power House (Khara)		Received	Dec'25					
62	WUPPTCL		Received	Oct-25					
63	SEUPPTCL		Received	Jan-26					
64	ATSCL	AESL	Received (400/220KV Alwar SS)	September, 2025					
65	GTL	AESL	Received (765 kV Hapur extension bays)	September, 2025					
66	GTL	AESL	Received (765 kV Agra and Gr. Noida extension bays)	September, 2025					
67	HPTSL	AESL	Received (220kV Ranpur SS)	August, 2025					
68	MTSCL	AESL	Received (400/220/132KV Deedwana SS)	August, 2025					
69	OBTL	AESL	Received (400/220/132KV Badaun SS)	Jan'2026					
70	STSL	AESL							
	Rajasthan								
71	Barsingsar Plant	NLC							
72	Rajwest Plant	JSW							

	RE Utilities							
73	ABC Renewable Pvt. Ltd							
74	ACME Heeragarh powertech Pvt. Ltd	Received	Jun-25					
75	ACME Pholidi	Received	Jun-25					
76	ACME Deagarh	Received	Jun-25					
77	ACME Raisar	Received	Jun-25					
78	ACME Dhoulpar	Received	Jun-25					
79	ACME Chittorgarh Solar Energy Pvt Ltd							
80	Adani Hybrid Energy Jaisalmer One Ltd.	Received	Jul-25					
81	Adani Hybrid Energy Jaisalmer Two Ltd.	Received	Jul-25					
82	Adani Hybrid Energy Jaisalmer Three Ltd.	Received	Aug-25					
83	Adani Hybrid Energy Jaisalmer Four Ltd.	Received	Aug-25					
84	Adani Renewable Energy (RJ) limited Rawara	Received	Sep-25					
85	Adani Solar Energy Jaisalmer One Pvt. Ltd. 450MW (Solar)	Received	Oct-25					
86	Adani Solar Energy Four Private Limited	Received	Sep-25					
87	Adani Hybrid Energy Jaisalmer Four Ltd. (AEML 2-350)	Received	Sep-25					
88	Adani Solar Energy Jaisalmer Two Private Limited Project Two	Received	Oct-25					
89	SB Energy Six Private Limited, Bhadla	Received	Oct-25					
90	Adani Solar Energy Jodhpur Two Limited, Rawara	Received	Sep-25					
91	Adani Solar Energy RJ Two Pvt. Ltd. (Devikot)	Received	Nov-25					
92	Adani Solar Energy RJ Two Pvt. Ltd. (Phalodi)	Received	Nov-25					
93	Adani Green Energy 24 Limited (Bhimsar)	Received	Nov-25					
94	Adani Green Twenty-Five Limited (Badisid)	Received	Dec-25					
95	Altra Xergi Pvt. Ltd.							
96	AMP Energy Green Four Pvt. Ltd.		Completed				62	
97	AMP Energy Green Five Pvt. Ltd.	Received	Completed				62	
98	AMP Energy Green Six Pvt. Ltd.	Received	Completed				62	
99	Amplus Ages Private Limited							
100	Avaada RJHN 240MW	Received	Oct-25	completed				
101	Avaada sunce energy Pvt limited	Received	Oct-25	completed				
102	Avaada Sunrays Pvt. Ltd.	Received	Oct-25	completed				
103	Avaada Sustainable RJ Pvt. Ltd.	Received	Oct-25	completed				
104	Ayana Renewable Power Three Private Limited							
105	Ayaana Renewable Power One Pvt. Ltd.							
106	Azure Power Forty One Pvt limited							
107	Azure Power Forty Three Pvt. Ltd. RSS							
108	Azure Maple Pvt. Ltd.							
109	AZURE POWER INDIA Pvt. Ltd., Bhadla							
110	Azure Power Thirty Four Pvt. Ltd.							
111	Clean Solar Power (Jodhpur) Pvt. Ltd.							
112	Eden Renewable Cite Private Limited							
113	Grian Energy private limited							
114	Mahindra Renewable Private Limited							
115	Mega Surya Urja Pvt. Ltd. (MSUPL)							
116	AURAIYA Solar							
117	DADRI SOLAR							
118	SINGRAULI SOLAR							
119	Anta Solar							
120	Unchahar Solar							
121	NTPC Devikot Solar plant 240MW							
122	NTPC Kolayat 400kV							
123	Nedan Solar NTPC							
124	NTPC Nokhra 300MW							
125	One Volt energy Pvt. Ltd.							
126	ReNew Solar Energy (Jharkhand Three) Private Limited	Received	19-11-2025					
127	RENEW SOLAR POWER Pvt. Ltd. Bikaner	Received	17-11-2025					
128	ReNew Solar Urja Private Limited							
129	Renew Sun Bright Pvt. Ltd. (RSBPL)	Received	20-11-2025					
130	Renew Surya Partap Pvt. Ltd.	Received	21-11-2025					
131	Renew Surya Ravi Pvt. Ltd.	Received	18-11-2025					
132	Renew Surya Roshni Pvt. Ltd.	Received	24-11-2025					
133	Renew Surya Vihan Pvt. Ltd.	Received	28.11.2025					
134	Renew Surya Ayaan Pvt. Ltd.							
135	Renew Solar Photovoltaic Pvt Ltd	Received	25-11-2025					
136	Renew Hans Urja Pvt Ltd	Received	26-11-2025					
137	Renew Surya Jyoti Pvt Ltd	Received	27-11-2025					
138	Rising Sun Energy-K Pvt. Ltd.							
139	Serentica Renewables India 4 Private Limited							
140	Solzen Urja Private Limited	Received	Oct-25					
141	Tata Power Green Energy Ltd. (TPGEL) (225MW)	Received	30-1-2026					
142	Tata Power Renewable Energy Ltd. (TPREL) (300MW)	Received	28-1-2026					
143	Thar Surya Pvt. Ltd.							
144	TP Surya Ltd., Noorsar (110MW)	Received	30-1-2026					
145	Banderwala Solar Plant TP Surya Ltd. (300MW)	Received	28-02-2026					
146	TRANSITION ENERGY SERVICES PRIVATE LIMITED							
147	Transition Green Energy Private Limited							
148	Transition Sustainable Energy Services Private Limited							

Status of 3rd Party Protection Audit Plan									
S. No.	NPFC 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 (7 S/s of NR-1, 1 S/s of NR-2, 4 S/s of Nr-3)	By Jan 2025					
2	NTPC	Central Generating Company	Received (Singrauli, Rihand, Unchahar, Dadri, Dadri Gas, Auraya Gas, Faridabad Gas, Anta Gas Power Station)	By Oct 2028					
3	BBMB		Received (Tanda)	By 17.07.2025					
4	THDC		Received	Feb-27					
5	SJVN		Received	March 2026-Tehri, F.Y. 2025-26- Koteshwar					
6	NHPC		Received	Nov-Dec 2025 for RHPS, Nov 24- March 25 for NJHPS					
7	NPCIL		Received	F.Y-2025-26		Completed (Bairawi)	Sep-25		
8	Delhi SLDC		SLDC	Completed (220KV) (NAPS)	Jan'25	Completed	Completed (Sali)	Jul-25	
9	Haryana SLDC	BAPS-C (6&5)			Completed	Completed (Bairawi)	Aug-25		
10	Rajasthan SLDC				Completed		18.01.2025	57	
11	Uttar Pradesh SLDC						05.12.2024		
12	Uttarakhand SLDC	Received (Tanda extension)		17.07.2025					
13	Punjab SLDC	Received (Tanda)		17.07.2025					
14	Himachal Pradesh SLDC								
15	DTL								
16	HV/PNL	State Transmission Utility		Received	September, 2025 to November, 2026				
17	RRV/PNL			Received (5 Substations)	June-Oct 2025				
18	UPPTCL		Received (40 Substations)	Mar-26					
19	PTCL		Received	2026	going on				
20	PSTCL		Received	By Dec 2025	Completed (30 Substations)		55		
21	HPPTCL		Received	FY 25-26					
22	IPGCL		Received (PPS-III)	FY 25-26					
23	HPGCL		PTPS, Panipat	Nov-26					
24	RRVUNL			DCRTPP, Yamunanagar	Aug-25	Completed	22.08.2025		Detailed report is yet to be submitted
	RGTPP (Khedra)			Oct-25					
	CTPP, Chhabra	2029							
	CSCTPP, Chhabra	2027-28		Not Completed	Feb-24	53			
	STPS, suratgarh	Sep-27							
	SSCTPP, suratgarh	2028-29							
	KTPS, Kota	2025-2026							
	KATPP, Jhalawar	2027							
	RGTPP, Ramgarh	Jun-26							
	DCCPP, Dholpur	Jun-26							
	Obra-B	2026-27							
	Obra-C	Feb-26							
	Anpara D	2025							
	Anpara R	2025							
	Harduaganj	2025							
	Harduaganj D	2025							
	Harduaganj E	2025							
	Parichha	2025							
	Parichha Ext	2025							
	Jawaharpur	2025							
	Parki	2025							
26	UJVNL		Dharasu	2025		Completed in Nov, 2024	56	submitted	
	Tiloth								
	Vyasi								
	Chilim								
	Khodli				Completed	Nov-23	55		
	Swara Kuddu		2026			Nov-23	55		
	Saini								
28	PSPCL		State Generating Company & State owned Distribution Company	Kashang HEP	FY 2025-26				
				Received (GHTP)	Dec, 2025				
				Received (GATP)	May 2025				
		GGSSTP		2026					
29	HPSEBL	Distribution company having Transmission connectivity ownership	RSD/ Sahapur Kandi	Mar-26					
			Kunihar	Conducted	19.10.2024	20.11.2024	55		
			Upper Nangal	Conducted	11.02.2025		61		
			Kango	Conducted	Report not submitted				
			Mattansidh	Conducted	Report not submitted				
			Nehrain	Conducted	Report not submitted				
			Badi	Conducted	Report not submitted				
30	Prayagraj Power Generation Co. Ltd.	IPP having more than 1000 MW installed capacity	Received	Conducted	04.03.2025	61			
31	Aravali Power Company Pvt. Ltd		Received	Dec-24	January 2025	08.01.2025	59		
32	Apravaa Energy Private Limited		Received	By May, 2025	Completed	Jun-25	63		
33	Talwandi Sabo Power Ltd.		Conducted		completed	20.12.2024	60		
34	Nabha Power Limited		Received	By December, 2025					
35	MEIL Anpara Energy Ltd		Received	* May 2025					
36	Rosa Power Supply Company Ltd		Conducted	By 30.09.2024	08.08.2024	13.01.2025	57		
37	Lalitpur Power Generation Company Ltd		Conducted		26.03.2024	June, 2024	54		
38	MEJA Una Nigam Ltd.		Conducted		Completed in Oct, 2024	Nov-24	59		
39	Adani Power Rajasthan Limited		Conducted	November, 2024	Kawal	04.12.2024	56		
40	JSW Energy Ltd. (KWHEP)	UT of Northern Region	Received	December 2024 to March 2025	Completed	29.01.2025	57	Pending	
41	UT of J&K (JKPTCL)							Pending	
42	UT of Chandigarh (CDPL)								
	ISTS Transmission Utilities								
43	INDIGRID		Received (PTCL)	FY 25-26					
44	ADHPL		Received (NRSS 29)	FY 24-25					
45	Adani Transmission Limited		Received	* September 2026					
46	Bikaner Khetri Transmission Limited		Received (400KV Mohinderagarh SS)	October, 2025					
47	Fatehgarh Bhadia Transmission Limited		Received (765 KV Bikaner and Khetri extension bays)	September, 2025					
			Received (400 KV Fatehgarh SS)	September, 2025					
	State Utilities								
48	Uttar Pradesh								
49	Vishnupravaaj Hydro Electric Plant (J.P.)		Received	December, 2028					
50	Alaknanda Hydro Electric Plant (GVK)		Received	Mar-25					
51	Ghatampur TPS		Received	F.Y 27-28					
52	Khara Power House (Khara)		Received	Dec-25					
53	WUPPTCL		Conducted		Completed	20.03.2025	58		
54	SEUPPTCL		Completed		Completed	October, 2024	58		
55	ATSL	AESL	Received (400/220KV Alwar SS)	September, 2025					
56	GTL	AESL	Received (765 KV Hapur extension bays)	September, 2025					
57	GTL	AESL	Received (765 KV Agra and Gr. Noida extension bays)	September, 2025					
58	HPTSL	AESL	Received (220KV Ranpur SS)	August, 2025					
59	MTSCL	AESL	Received (400/220/132KV Deedwana SS)	August, 2025					
59	OCBTL	AESL	Received (400/220/132KV Badaun SS)	Jan-25					
60	STSL	AESL			Completed (report not shared)				
61	Rajasthan								
61	Barsingar Plant	NLC							
62	Rajvest Plant	JSW							
	RE Utilities								
63	ABC Renewable Pvt. Ltd								
64	ACME Heeraagarh powertech Pvt. Ltd								
65	ACME Phokli								
66	ACME Deigarh								
67	ACME Raisar								
68	ACME Dholpur								
69	ACME Chittorgarh Solar Energy Pvt Ltd								
70	Adani Hybrid Energy Jaisalmer One Ltd.								
71	Adani Hybrid Energy Jaisalmer Two Ltd.								
72	Adani Hybrid Energy Jaisalmer Three Ltd.								
73	Adani Hybrid Energy Jaisalmer Four Ltd.								

74	Adani Renewable Energy (RJ) limited Rawara						
75	Adani Solar Energy Jaisalmer One Pvt. Ltd.,_450MW (Solar)						
76	Adani Solar Energy Four Private Limited						
77	Adani Hybrid Energy Jaisalmer Four Ltd. (AEML 2-350)						
78	Adani Solar Energy Jaisalmer Two Private Limited Project Two						
79	SB Energy Six Private Limited, Bhadla						
80	Adani Solar Energy Jodhpur Two Limited, Rawara						
81	Adani Solar Energy RJ Two Pvt. Ltd. (Devkot)						
82	Adani Solar Energy RJ Two Pvt. Ltd. (Phalodi)						
83	Adani Green Energy 24 Limited (Bhimgar)						
84	Adani Green Twenty-Five Limited (Badisid)						
85	Altra Xeroj Pvt. Ltd.	Concluded			Completed	04.02.2025	60
86	AMP Energy Green Four Pvt. Ltd.				Completed for common Substation		
87	AMP Energy Green Five Pvt. Ltd.	Received	Nov-27				
88	AMP Energy Green Six Pvt. Ltd.	Received	Nov-27			02.09.2025	63
89	Amplus Apex Private Limited						
90	Avaada RJHR, 240MW	Received	Aug-26				
91	Avaada sunce energy Pvt limited	Received	Aug-26				
92	Avaada Sunrays Pvt. Ltd.	Received	Aug-27				
93	Avaada Sustainable RJ Pvt. Ltd.	Received	Aug-27				
94	Avana Renewable Power Three Private Limited	Concluded			24.05.2025		61
95	Avana Renewable Power One Pvt. Ltd.	Concluded					59
96	Azure Power Forty One Pvt limited.						
97	Azure Power Forty Three Pvt. Ltd. RSS						
98	Azure Maple Pvt. Ltd.						
99	AZURE POWER INDIA Pvt. Ltd., Bhadla						
100	Azure Power Thirty Four Pvt. Ltd.						
101	Cleen Solar Power (Jodhpur) Pvt. Ltd.						
102	Eten Renewable Cile Private Limited						
103	Grian Energy private limited						
104	Mahindra Renewable Private Limited						
105	Mega Surya Urja Pvt. Ltd. (MSUPL)						
106	AURAIYA Solar						
107	DADRI SOLAR						
108	SINGRAULI SOLAR						
109	Anta Solar						
110	Unchahar Solar						
111	NTPC Devkot Solar plant, 240MW	Received	Aug-26				
112	NTPC Kolaver, 400KV	Received	May-26				
113	Nedra NTPC	Received	Jul-26				
114	NTPC Nakhra, 300MW	Received	Jun-26				
115	One Volt energy Pvt. Ltd.						
116	ReNew Solar Energy (Jharkhand Three) Private Limited						
117	RENEW SOLAR POWER Pvt. Ltd. Bhadla						
118	ReNew Solar Urja Private Limited						
119	Renew Sun Bright Pvt. Ltd. (RSBPPL)						
120	Renew Surya Partap Pvt. Ltd.						
121	Renew Surya Rav Pvt. Ltd.						
122	Renew Surya Roshni Pvt. Ltd.						
123	Renew Surya Vihan Pvt. Ltd.						
124	Renew Surya Ayan Pvt. Ltd.						
125	Renew Solar Photovoltaic Pvt Ltd						
126	RENEW SOLAR POWER Pvt. Ltd. Bikaner						
127	Rising Sun Energy-K Pvt. Ltd.						
128	Serentica Renewables India 4 Private Limited						
129	Solzen Urja Private Limited	Received	Oct-26				
130	Tata Power Green Energy Ltd. (TPGEL) (225MW)	Received			31-03-2027		
131	Tata Power Renewable Energy Ltd. (TPREL) (300MW)	Received			31-03-2027		
132	Thar Surya Pvt. Ltd.						
133	TP Surya Ltd., Noorsar (110MW)	Received	31-03-2027				
134	Bandarwala Solar Plant TP Surya Ltd. (300MW)	Received	31-03-2027				
135	TRANSITION ENERGY SERVICES PRIVATE LIMITED						
136	Transition Green Energy Private Limited						
137	Transition Sustainable Energy Services Private Limited						

Annex-A

Qualification Requirements for selection of prospective Bidders for Third Party Protection Audit

Qualifying Criteria for this bid shall be as mentioned as under herein and shall prevail over other conditions in the bid, in case of any conflict or inconsistency.

The bidders must fulfill the following minimum Qualifying Criteria:

1. Technical Criteria –

- (a) To ensure that the selected contractor has the technical expertise and resources to execute the protection audit effectively, the following technical qualification criteria must be met:

Experience in Protection System Audits

The bidder must have extensive experience in conducting protection system audits, relay coordination studies, and testing of protection devices.

- Project Experience:

The bidder must have successfully completed at least:

Two (2) protection system audit projects for 132 k V and above substations each since 2019 for generation/ transmission utility.

- Works carried out under Sub-Contract without consent from Principal Client/Owner will not be considered as Similar Completed Work
- Bidder shall upload statutory requirement as per extant rules

Project References and Testimonials

The bidder must provide references and testimonials from previous clients to demonstrate their expertise and reliability. Each reference must include:

- Name of the client organization.
- Contact details of the project manager or point of contact.
- Brief description of the project scope and deliverables.
- Contract value and project duration.
- A completion certificate and performance report from the client mentioning details of designated team.

Personnel Requirements

The bidder must have a dedicated team of qualified and experienced personnel to execute the project. The team must include one team leader and at least three protection engineers:

- Team Leader:
 - Nationality should be Indian

- Bachelor's degree in Electrical Engineering/ Electrical and Electronics Engineering with minimum of 10 years of experience in protection systems, protection audit etc including experience as team leader in minimum 2 no of protection audit projects of 132 k V system and above.

Or

Master's degree in fields associated with Electrical Engineering and Bachelor's degree in Electrical Engineering/ Electrical and Electronics Engineering with minimum of 7 years of experience in protection systems, protection audit etc including experience as team leader in minimum 2 no of protection audit projects of 132 k V system and above.

Or

PhD. in fields associated with Electrical Engineering, Master's degree in fields associated with Electrical Engineering and Bachelor's degree in Electrical Engineering/ Electrical and Electronics Engineering with minimum of 3 years of experience in protection systems, protection audit etc including experience as team leader in minimum 2 no of protection audit projects of 132 k V system and above.

- **Protection Engineers:**

- Nationality should be Indian
- Bachelor's degree in Electrical Engineering/ Electrical and Electronics Engineering with minimum of 7 years of experience in protection systems, protection audit etc
- Or
- Master's degree in fields associated with Electrical Engineering and Bachelor's degree in Electrical Engineering/ Electrical and Electronics Engineering with minimum of 5 years of experience in protection systems, protection audit etc
- Or
- PhD. in fields associated with Electrical Engineering, Master's degree in fields associated with Electrical Engineering and Bachelor's degree in Electrical Engineering/ Electrical and Electronics Engineering with minimum of 3 years of experience in protection systems, protection audit etc

- List of copies of documents given below signed by the proposed professional staff attested by current employer must be submitted by bidder-

- a) Identity Proof (PAN Card/ Voter ID)
- b) Proof of Qualification (Degree / Mark Sheet)
- c) Proof of Experience (Experience Certificate by employer / client)
- d) CV

- Bidder needs to ensure that team member whose Profile is being submitted along with the bid, shall only be allowed to conduct protection audit. In case of change in any team member within contract, decision will be solely on decision of Member Secretary, RPC.

2. Financial Criteria / turnover:

The minimum average annual financial turnover of the bidder during the last three years, ending on 31st March of the previous financial year should be (as per contract).

Documentary evidence in the form of certified Audited Balance Sheets of relevant periods or a certificate from the Chartered Accountant / Cost Accountant

indicating the turnover details for the relevant period shall be uploaded with the bid. In case the date of constitution / incorporation of the bidder is less than 3-year-old, the average turnover in respect of the completed financial years after the date of constitution shall be taken into account for this criteria.

The certificate from Chartered Accountant/Cost Accountant indicating the turnover details for the relevant period should also contain UDIN.

Note: MSEs and Start-ups are exempted only from Prior Turnover criteria as mentioned at Sl. No. 2 above. However, qualifying requirements mentioned at Sl. No. 1 above is mandatory for all bidders including MSEs & start-ups.

3. Evaluation and Selection Criteria

The evaluation and selection of the bidder for the protection audit project will be based on a comprehensive assessment of technical, financial, and operational capabilities. The criteria are designed to ensure the selection of a competent, experienced, and reliable bidder.

Pre-Qualification Criteria

Bidders must meet the following pre-qualification criteria to be considered for further evaluation:

a) Legal Eligibility:

- The bidder must be a registered legal entity in India or a recognized international organization with authorization to operate in India.
- Valid registration certificates and statutory clearances (if any) must be submitted.
- Bidder should not be the OEM or its authorized representative of any protection system. Self-Declaration shall be submitted in this regard.
- Bidders should not have Joint venture with OEM of any protection system. Self-Declaration shall be submitted in this regard.

b) Technical manpower strength:

- Minimum technically qualified team strength of the organization should be 15 nos with the min. qualification of BE/B. Tech in Electrical Engineering/ Electrical and Electronics Engineering. Minimum strength of personnel passing eligibility criteria of team leader as defined above should be 3. Minimum strength of personnel passing eligibility criteria of protection engineer as defined above should be 10.
- Experience:
 - Minimum 7 years of experience in conducting protection audits or similar projects in the power sector.
 - The bidder must have successfully completed at least:

Two (2) protection system audit project for 132 k V and above substations since 2019 for generation/ transmission utility.

- Financial Stability:
- Average annual turnover of (as per contract) over the last 3 financial years.

- Positive net worth and a valid solvency certificate.
- c) Technical proposals shall contain the complete details of experience of the Bidder along with a detailed description about the methodology and work plan for performing the assignment along with timelines.

- **Technical Evaluation Criteria**

Mode of Tendering – QCBS.

The technical evaluation will be based on the bidder's expertise, approach, and resources.

Criteria	Description	Weightage
Experience	Number of protection audit projects for 132 k V and above S/s each completed since 2019	30
	Greater than or equal to 4 completed projects	30
	completed 3 projects	20
	completed 2 projects	10
	Below 2 projects	Not eligible
	Scale of protection audit for 132 k V and above S/s each completed since 2019	20
	Greater than or equal to 20 number of bays and major elements (ICT/ Reactor/ Bus/Generator) for particular station having maximum number of bays and major elements covered in protection audit project.	20
	Less than 20 numbers of bays and major elements (ICT/ Reactor/ Bus/ Generator) for particular station having maximum number of bays and major elements covered in protection audit project.	10
	Nature of protection audit for 132 k V and above S/s each completed since 2019	20
	Protection audit had been done for greater than or equal to 3 numbers of generating stations	20
	Protection audit had been done for at least 1 number of generating station however less than 3 numbers of generating stations	10
	Protection audit had not been done for any generating station	0
Technical Expertise	Experience of the project team	30
	Team Lead	20
	Experience as team lead in more than 4 no. of Protection audit projects of 132 k V and above S/s each.	20
	Experience as team lead in less than or equal to 4 no. and at least 2 no. of Protection audit projects of 132 k V and above S/s each.	15
	Experience as team lead in less than 2 no. of Protection audit projects of 132 k V and above S/s each.	Not eligible
	Protection Engineer	10

	7 years of experience in protection systems, protection audit etc for each member.	10
	7 years of experience in protection systems, protection audit etc for at least 2 members	5

- **Financial Evaluation Criteria**

The financial evaluation will be based on the total bid price (exclusive of GST)

- **Final Selection**

The final selection will be based on the combined score from the technical and financial evaluations.

Weightage

- o Technical Score: 70%
- o Financial Score: 30%

The bidder with the highest combined score will be awarded the contract.

- The bidders, who have participated in any of the tender of Central/State Govt. Departments Bids earlier during last 1 year and evaluated as L-1 bidder, either refused to execute the job on their quoted bids or whose bids were unworkable for minimum wages or any other statutory compliances, will be made disqualified in the Technical Evaluation of this tender without assigning any further reason. The past 1-year period will be reckoned from the due date of this tender to the due date of previous tenders

Documents to be furnished as proof of eligibility

- In support of work experience, bidder shall submit the copy of Supply Orders/ Work Orders/Letter of award with BOQ along with copy of successful completion certificate and performance certificate issued containing the name/designation and contact details of the officials issuing the performance certificate. The performance certificate should clearly indicate period of contract and actual executed value of the contract.
- In case of experience certificate produced by the Contractors for having executed works for private organizations, TDS certificates shall also be produced along with experience certificate.
- Valid registration certificates and statutory clearances (if any) must be submitted.
- Self-Declaration shall be submitted stating that bidder should not be the OEM or its authorized representative of any protection system equipment.
- Self-Declaration shall be submitted stating that bidders should not have Joint venture with OEM of any protection system equipment.
- Auditor certificate regarding average annual turnover of at least INR 140 lakhs over the last 3 financial years.
- Positive net worth and a valid solvency certificate.
- List of documents given below for designated team signed by the proposed professional staff attested by current employer must be submitted by bidder-
 - Identity Proof (PAN Card/ Voter ID)
 - Proof of Qualification (Degree / Mark Sheet)
 - Proof of Experience (Experience Certificate by employer / client)
 - CV
- Any other document as required as per QR

Status of actions points recommended during previous PSC meetings				
S. No	Agenda	Remdial actions recommended during PSC meeting	Status of remdial action taken	
			62nd PSC (26.08.2025)	63rd PSC (29.09.2025)
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 stated that status is same and approval of own funding to complete the work is in process. <i>PSC forum requested HPSEBL to take expeditious actions at their end and ensure the healthiness of protection system in this complex.</i>	HPSEBL stated that protection issues related to protection settings have been resolved by HPSEBL protection team and other actions plans which require replacement of isolators, old protection panels are pending. Scheme for the same has been submitted to system planning wing. After approval, further actions will be expedited. <i>PSC forum requested HPSEBL to submit the compliance report mentioning details of action taken and planned to be taken with tentative timeline. Further, these stations to be kept under observation and necessary actions need to be taken to minimise the tripping incidents.</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 all the differential protection requirement in state is compiled and tendering process is in progress. <i>PSC forum recommended HVPNL to expedite the implementation of differential protection in short lines and also share the expected timeline.</i>	HVPNL representative informed that due to revision in requirement there is delay in tendering process. Further update shall be given after confirmation. Matter has been taken on priority. <i>PSC forum raised concern over long pending action and requested HVPNL to expedite the process of implementation of differential protection in short lines and also share the expected timeline.</i>
3	Multiple elements tripping at 400kV Sainj (HP), 400kV Parbat2 & Parbat3 (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 Parbat2 end. b) NHPC and HPPCTCL shall review the healthiness of PLCC at Parbat3 and Sainj end and take necessary actions to ensure their proper operation. c) Expedite the implementation of differential protection in 400kV Parbat2-Sainj line. d) Standardisation of recording instruments (DR/EL) need to be ensured.	NHPC representative stated that status is same. Estimated time for completion of OPGW work and differential protection implementation is by Oct-Nov 2025. HPPCL representative stated that 3 PLCC card were found faulty and they would complete the work within next one-two months. <i>PSC forum recommended NHPC & HPPCL to take expeditious action at their end and ensure healthiness of protection system.</i>	NHPC representative stated that status is same. Estimated time for completion of OPGW work and differential protection implementation is by Oct-Nov 2025. HPPCL representative stated that PLCC card has been sent for repair and after repair, they will be installed. Estimate timeline is by October 2025. Further, it was informed that Sainj HPS is under outage due to flood disaster. Necessary actions are being taken for its revival. <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 400kV Koteswar(PG) on 17th May 2024, 17:21 hrs	51 PSC: a) In view of short line length of 400kV Koteswar(PG)-Tehri D/C, POWERGRID shall plan for the differential protection in the line on priority in near future to avoid overreach of distance protection.	POWERGRID(NR-1) representative informed that status is same as previous meeting, estimated time for completion of work is ~6 months i.e., by Feb'26. <i>PSC forum requested POWERGRID to expedite the work related to implementation of differential protection scheme on 400kV Koteswar(PG)-Tehri(TH) D/C.</i>	POWERGRID(NR-1) representatives were not present in the meeting.
5	Multiple elements tripping at 220kV Sarna (PS) on 04th May 2024, 07:10 hrs	51 PSC: a) Punjab shall expedite the commissioning of new bus scheme. b) POWERGRID shall revise the Z-4 time delay setting of Kishenpur lines at Sarna (PS) end as 160msec till bus bar get operational.	PTCL representative informed that new panel for busbar scheme is already delivered and commissioning activity will be started soon. It would be completed by October'25. <i>PSC forum requested PTCL to expedite the work related to implementation of bus bar protection at Sarna S/s.</i> <i>RVUNL representatives were not present.</i>	PTCL representative informed that new panel for busbar scheme is already delivered and commissioning activity will be started after paddy. It would be completed by 15th November 2025. <i>PSC forum requested PTCL 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.	<i>PSC forum requested RVUNL for expeditious actions at their end.</i>	RVUNL representatives were not present in the meeting.
7	Frequent tripping of 220 KV Anta(NT)-Sakatpura(RS) (RS) Ckt-1	52 & 53 PSC: RVPN was requested to expedite the process of relay replacement and rectification of issues related to A/R operation.	RVPN representative informed that work is getting delayed due to trench issue in yard. However, work would be completed by November'25. <i>PSC forum requested RVPNL to expedite the actions at their end.</i>	RVPNL representative informed that work is getting delayed due to ongoing civil work for upgradation of control room. After completion of civil work, protection related issues will be resolved. Necessary protection equipments, panels have already arrived at site. Estimated timeline for completion of work is December 2025. <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.	SLDC UP informed that Unit-1 related work has been done, AR Relay replacement for 220kV Saharanpur- Behat line is also done, Unit-2 and Unit-3 relay replacement work will start after October 2025. <i>PSC forum requested UPPTCL to expedite the replacement of relay at Khara(UP) end.</i>	SLDC UP informed that Unit-1 related work has been done, AR Relay replacement for 220kV Saharanpur- Behat line is also done, Unit-2 and Unit-3 relay replacement work will start from 03 November 2025. <i>PSC forum requested UPPTCL to expedite the replacement of relays at Khara(UP) end.</i>
9	Multiple elements tripping at 220kV Khodri HEP & Chibro HEP on 5th, 11th & 19th September 2024 and 15th & 20th July 2025	53 & 62 PSC: a)Timely submission of disturbance recorder (DR) and event logger (EL) files need to be ensured. As per IECG 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)HPPCTCL shall taken necessary actions to rectify the protection related issue in 220kV Khodri-Majri ckt-2. c)OV protection needs to be disabled in 220kV lines at the earliest. d)Over frequency and over current protection operation in units at Khodri HEP need to be reviewed. e)A/R should be made operational in Sarsawan line at the earliest. f)UJVNL shall share the CPRI audit report and details of remedial action taken within one week. g)Replacement of Units breakers need to be expedited.	UJVUNL representative informed that current status is same as tender for A/R is at approval stage. At present maintenance of protection system of 220kV Khodri-Majri line-II at Khodri end is under jurisdiction of HPSEB. Necessary actions to rectify the protection related issues in 220kV Khodri-Majri ckt-2 is to be taken by HPSEB. <i>PSC forum requested UJVNL to share the audit report of CPRI and also requested to mutually resolve the protection related pending issues at the earliest.</i>	UJVUNL representative informed that current status is same as tender for A/R is at approval stage. Unit protection setting has been revised. Protection related issues of 220kV Khodri-Majri line-II is yet to be resolved by HPSEBL. <i>PSC forum requested UJVNL to review the unit protection setting and keep settings as per standard to avoid unwanted trippings in future and also requested HPSEBL & UJVNL to mutually resolve the protection related pending issues of 220kV Khodri-Majri line-II at the earliest.</i>
10	Multiple elements tripping at 400/220kV Obra_A(UP) on 9th October 2024	54 PSC Recommendations: a)UPPTCL & Obra_A(UP) shall ensure the implementation of LBB protection at the earliest at 220kV side. b)GPS scheme shall be implemented at Obra_B(UP) by the end of January 2025 and time sync of recording devices will be ensured.	UPPTCL representative informed that status is same as previous meeting, work will be completed within 4 months and LBB relay will be replaced by FY 2026-27. <i>PSC forum requested UPPTCL for expedited corrective actions.</i>	UPPTCL representative informed that status is same as previous meeting, work will be completed within 4 months and LBB relay will be replaced in FY 2026-27. <i>PSC forum requested UPPTCL for expedited corrective actions.</i>
11	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 status is same as previous meeting, work will be completed within 4 months <i>PSC forum requested UPPTCL for expedited corrective actions.</i>	UPPTCL representative informed that status is same as previous meeting, work will be completed within 4 months. <i>PSC forum requested UPPTCL for expedited corrective actions.</i>
12	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.	RAPS representative stated that A/R scheme is not available at RAPS-A end. Issue has been raised to the NPCIL design team and estimated to complete by September 2025. <i>PSC forum requested RAPS to expedite the necessary remedial actions.</i>	NPCIL representatives were not present in the meeting.
13	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 work of 400 KV Talwandi Saboo(PSG)-Nakodar (PSG) (PS) Ckt-1 has been completed and replacement work of 400 KV Amritsar(PG)-Makhu(PS) (PSTCL) Ckt-1 will be completed by October 2025. <i>PSC forum requested PSTCL for expeditious actions to avoid frequent trippings during fog.</i>	PSTCL representative informed that status is same as previous meeting, insulator replacement work of 400 KV Amritsar(PG)-Makhu(PS) (PSTCL) Ckt-1 will be completed by October 2025. <i>PSC forum requested PSTCL for expeditious actions to avoid frequent trippings during fog.</i>
14	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 one pair of Digital PLCC (50W) has been allotted for Muradnagar and Aligarh ends through diversion from Bareilly, yet to be installed and commissioned. <i>PSC forum requested UPPTCL for expedited corrective actions.</i>	UPPTCL representative informed that status is same, tentative timeline for completion of work is 02 months (by the end of november 2025). <i>PSC forum requested UPPTCL to expedite the corrective actions.</i>
15	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 representative informed that status is same as previous meeting, carrier cabinets are yet to be allotted. <i>PSC forum requested UPPTCL for expedited corrective actions.</i>	UPPTCL representative informed that status is same as previous meeting, as consolidate procurement will be done, there is delay in process. <i>PSC forum requested UPPTCL for expedited corrective actions.</i>

16	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	PSPCL representative did not respond regarding this point. <i>PSC forum requested PSPCL to share detailed report along with observations and remedial action taken at the earliest.</i>	SLDC-Punjab representative stated that multiple communications has been done with PSPCL however no response has been received. <i>PSC forum requested SLDC-Punjab and PSPCL to share detailed report along with observations and remedial action taken at the earliest.</i>
17	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 busbar replacement scheme has been sanctioned from corporate and expected time of completion is by Nov'25. <i>PSC forum requested RVPNL to expedite corrective actions at their end.</i>	RVPNL representative stated that existing bus bar protection relay is of electromechanical type and in service. New bus bar relay(numerical type) is under procurement stage. <i>PSC forum requested RVPNL to expedite corrective actions at their end.</i>
18	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 tender has been floated for 23 towers replacement. The estimate time required for completion of work is 6 months (by end of Dec'25). <i>PSC forum requested RVPNL to take expeditious corrective action to minimise frequent faults in line.</i>	RVPNL representative informed that tender was floated for 23 towers replacement. However, no bid received. Further follow-up is being done. <i>PSC forum requested RVPNL to take expeditious corrective action to minimise frequent faults in line.</i>
19	Frequent tripping of 400 KV Merta-Kankani (RS) Ckt-1	59 PSC Recommendations: A/R operation need to be reviewed at both the ends.	RVPNL representative informed that shutdown of this line is yet to be availed and A/R operation would be reviewed accordingly. <i>PSC forum requested RVPNL to review A/R operation at Kankani end at the earliest.</i>	RVPNL representative informed that A/R is healthy at Merta end, A/R of Tie CB at kankani end has also been tested and is healthy. A/R of Main CB is not operating due to wiring issue. Same will be rectified on next available shutdown. <i>PSC forum requested RVPNL to review A/R operation at Kankani end at the earliest.</i>
20	Multiple elements tripping at 400kV AGE2SL & 220kV Nokhra(IP) at 10:00 hrs on 18th March, 2025	59 PSC Recommendations: NTPC need to ensure over-voltage is disabled at Nokhra end of 220kV Nokhra-Bhadla2 Ckt.	NTPC representative informed that this issue has been resolved by OEM. Presently, tripping at the line breaker will occur only if: Line voltage remains above 112% for more than 5 seconds, or Line voltage exceeds 140% for more than 100 ms. These settings, already in use for other NTPC solar plants, ensure adequate protection of the equipment installed at the solar plant while providing sufficient time for inverters installed at project to meet LVRT/HVRT requirements. <i>PSC recommended to maintain the relay setting as per philosophy. Same can only be changed after taking approval in PSC for case to case basis. NTPC is requested to take this as separate agenda in next PSC for approval of such settings.</i>	NTPC RE representatives were not present in the meeting.
21	Multiple elements tripping at 765/220 kV Lalitpur TPS(UP) at 15:32 hrs on 03rd May, 2025	61 PSC Recommendation: a) In line with the NRPC protection philosophy, UPPTCL shall implement the DT scheme at 220kV level also. b) A/R need to be reviewed in 220kV Lalitpur-Jhansi line and 220kV Lalitpur-Dunara line.	Lalitpur TPS representative was not present in the meeting.	Lalitpur TPS representative informed that A/R testing has been done which is found OK and DT scheme will be configured after FORTE implementation. Process to the same is in process. <i>PSC forum requested Lalitpur to expedite the corrective actions.</i>
22	Multiple elements tripping at 400 kV Uri-II HEP (NHPC) at 21:35 hrs on 18th May, 202	61 PSC Recommendation: NHPC in coordination with the POWERGRID(NR-2) shall review the healthiness of carrier protection in 400kV Uri_2-Wagaoora line	NHPC representative stated that shutdown of the said element is required and in view of high hydro season, work would be completed by Oct'25. <i>PSC forum requested to complete the work within the stipulated time.</i>	NHPC representative stated that shutdown of the said element is required and in view of high hydro season, work would be completed by Oct'25. <i>PSC forum requested to complete the work within the stipulated time.</i>
23	Multiple elements tripping at 765/400 kV Meerut(PG) and 400kV Dadri TPS(NTPC) at 19:55 hrs & 20:00 hrs respectively on 21st May, 2025	61 PSC Recommendation: a) DTL shall review whether any UFR relay is still in service at 400kV Dadri, Mandola complex or any other stations which is not part of present Delhi islanding scheme. b) POWERGRID shall study the philosophy for implementing O/C E/F relay as back up in case of VT fuse fail in both Main-I & II relay to avoid such major grid event.	POWERGRID representative stated that study is being done for finalizing setting of non directional O/C E/F protection in case of VT fail alarm in both Main-&II. Once it is finalised same shall be shared and implemented accordingly. <i>PSC forum agreed with this proposal and requested to expedite the process.</i>	<i>PSC forum stated that a subgroup under NRPC has been formed regarding the criteria for protection settings during VT fuse fail alarm. The matter shall be taken up in the subgroup discussion.</i>
24	Multiple elements tripping at 220kV Maharanibagh(DTL) & 220/66kV Pragati(DTL) at 03:48 hrs on 15.06.2025	62 PSC Recommendation: a) Old REB 500 scheme of bus bar protection need to be up-graded & replaced by PGCL in coordination with DTL. b) Distance protection settings need to be reviewed at 220kV Maharanibagh-Pragati Ckt-2. c) DR nomenclatures need to be corrected and time synchronisation issue need to be resolved at the earliest at Maharanibagh.	DTL representative stated that Peripheral unit (PU) of ABB make Bus-Bar Protection Scheme which is an old scheme wrongly issued tripping commands to the circuits in 200ms. NRPC representative also highlighted that it is also observed that all the DR files i.e., bus bar relay DR of Pragati end, line protection relay DR w.r.t. Maharanibagh lines tripping are not in standard format. DRs nomenclature are not as per standard, time is not GPS synced. DTL and PGCL agreed to correct the same.	DTL representative informed that identified PUs will be replaced in coordination with POWERGRID. Standardisation of DR/EL will also be done. <i>PSC forum requested DTL & POWERGRID(NR-1) to expedite the corrective actions.</i>
25	Multiple elements tripping at 220/132kV Pampore(J&K) at 23:25 hrs on 20.06.2025	62 PSC Recommendation: a) DR/EL along with detailed tripping report along with remedial action taken details need to be shared within one week. b) Healthiness of protection system and other auxiliary equipments need to be ensured at 220/132kV Pampore(J&K). c) Line protection settings at 220/132kV Pampore(J&K) need to be reviewed in line with NRPC Protection philosophy.	J&K representative was not present during the meeting.	J&K representative was not present during the meeting.
26	Multiple elements tripping at 220/132kV Moga(PS), 220 kV /66kV Badhni kalan(PS) & 220/66 kV Himmatpura(PS) at 11:06 hrs on 01.07.2025	62 PSC Recommendation: a) Healthiness of bus bar protection need to be ensured at Baghapurana and Ajitwal S/s. b) New busbar protection need to be installed at Moga PSTCL at the earliest. c) Line protection settings at 220/132kV Moga(PS), 220 kV /66kV Badhni kalan(PS) & 220/66 kV Himmatpura(PS) need to be reviewed in line with NRPC Protection philosophy. d) CT mismatch issue at both the ends of 220 kV Moga PSTCL – Moga ckt-2 need to be addressed and differential protection need to be installed at the earliest by PSTCL in co-ordination with PGCL.	PSTCL representative informed the following points: a) Due to mismatch in CT ratios of both ends of ckt-2, settings have been suggested by OEM, the approval of which is pending from PGCL end. b) 220 kV Busbar protection at 220 kV Baghapurana has been checked for any false initiation and differential current and now in Healthy condition. c) New Busbar Protection Panel has arrived at 220 kV Moga PSTCL and work of commissioning will start after paddy season.	PSTCL representative informed the following points: a) Differential protection work has been completed. Now, differential protection is in service in all four lines. b) New Busbar Protection Panel has arrived at 220 kV Moga PSTCL and work of commissioning will start after paddy season. Estimate timeline for bus bar protection installation is October 2025. <i>PSC forum requested PSTCL to complete the bus bar protection installation work within the stipulated time.</i>
27	Multiple elements tripping at 220/66kV Narela(DTL) at 15:41 hrs on 10.07.2025	62 PSC Recommendation: a) Tele-protection communication need to be restored at 220kV Narela at the earliest. b) Line protection settings need to be reviewed at 220kV Narela-Mandola D/C as per NRPC protection philosophy. c) Availability and healthiness of SCADA data at 220kV Narela need to be ensured.	DTL representative stated that Zone 1 reach extended to 90% of PL till Tele-protection communication restoration.	DTL representative stated that status is same. <i>PSC forum requested DTL to implement the Tele-protection communication system at the earliest.</i>
28	Multiple elements tripping at 220/132kV Ziankote(J&K) at 10:18 hrs on 24.07.2025	62 PSC Recommendation: a) DR/EL along with detailed tripping report along with remedial action taken details need to be shared within one week. b) Zone-2 settings need to be revised to 160ms at Amarghar end of 220kV Amarghar-Ziankote D/C. c) Healthiness of protection system and other auxiliary equipments need to be ensured at 220/132kV Ziankote(J&K). d) Line protection settings at 220/132kV Ziankote(J&K) need to be reviewed in line with NRPC Protection philosophy.	J&K representative was not present during the meeting.	J&K representative was not present during the meeting.

S.No.	Category of Grid Incident/ Disturbance	Name of Elements (Tripped/Manually opened)	Affected Area	Owner/ Agency	Outage		Loss of generation / loss of load during the Grid Disturbance		Fault Clearance time (in ms)	Compliance of Protection Protocol/Standard		
	(GI-I to GD-V)				Date	Time	Generation Loss(MW)	Load Loss (MW)		Flash Report Submission (Y/N)	DR/EL Submission (Y/N)	Detail Tripping Report Submission (Y/N)
1	GI-2	1) 220kV Bus-1 at Abdullapur (PG) 2) 220kV Bus-2 at Abdullapur (PG) 3) 400/220 kV 315 MVA ICT 1 at Abdullapur(PG) 4) 400/220 kV 315 MVA ICT 2 at Abdullapur(PG) 5) 400/220 kV 315 MVA ICT 3 at Abdullapur(PG) 6) 400/220 kV 315 MVA ICT 4 at Abdullapur(PG) 7) 220kV Abdullapur-Joria Ckt-I 8) 220kV Abdullapur-Joria Ckt-II 9) 220kV Abdullapur-Jagadahri Ckt-I 10) 220kV Abdullapur- Jagadahri Ckt-II 11) 220kV Abdullapur-Tepla Ckt-I 12) 220kV Abdullapur-Tepla Ckt-II 13) 220kV Abdullapur-Rampur Ckt-I 14) 220kV Abdullapur-Rampur Ckt-II 15) 220kV Abdullapur-Rajokheri Ckt-I 16) 220kV Abdullapur-Rajokheri Ckt-II 17) 220kV Abdullapur-Railway Ckt-I 18) 220kV Abdullapur-Railway Ckt-II	Haryana	PGCIL, HVPNL	1-Aug-25	07:18	0	50	120	Y(d)	Y(d)	Y(d)
2	GD-1	1) 220kV CB Ganj-Pantnagar Ckt 2) 220kV Kashipur-Pantnagar Ckt 3) 220kV Kashipur-Jafarpur Ckt 4) 132kV Bazpur-Haldwani Ckt 5) 132kV Pithoragarh-Chandak Ckt	Uttarakhand	PTCUL	1-Aug-25	20:06	0	440	80	Y	Y	Y
3	GD-1	1) 220kV Naitwar Mori- Hatkot iCkt 2) 220kV Naitwar Mori- Sawra Kuddu Ckt 3) 220kV Sawra Kuddu- Hatkot Ckt 4) 400/220 KV 315 MVA ICT 1 AT GUMMA (HP) 5) 400/220 KV 315 MVA ICT 2 AT GUMMA (HP)	Himachal Pradesh	HPPTCL	6-Aug-25	07:04	111	37	4080	Y(d)	Y(d)	Y(d)
4	GD-1	1) 220 KV AD Hydro(AD)-Phozal(HP) (ADHPL) Ckt 2) 220 KV AD Hydro(AD)-Nallagarh(PG) (ADHPL) Ckt 3) 96 MW Unit-1 at AD Hydro HEP 4) 96 MW Unit-2 at AD Hydro HEP	Himachal Pradesh	HPPTCL, PGCIL, ADHPL	7-Aug-25	16:38	210	0	80	Y	Y	Y
5	GD-1	1) 220 KV AD Hydro(AD)-Nallagarh(PG) (ADHPL) Ckt 2) 96 MW Unit-1 at AD Hydro HEP 3) 96 MW Unit-2 at AD Hydro HEP	Himachal Pradesh	PGCIL, ADHPL	7-Aug-25	23:33	210	0	160	Y	Y	Y
6	GI-2	1) 765KV Bus 2 at Bara(UP) 2) 765/400 kV 1500 MVA ICT 2 at Bara(UP) 3) 765 KV Bara-Mainpuri (UP) Ckt-2 4) 660 MW Bara PPGCL TPS - UNIT 2	Uttar Pradesh	UPPTCL, PPGCL	8-Aug-25	21:33	610	0	360	Y	Y	Y(d)
7	GI-1	1)220 KV Khodri(UK)-Majri(HP) (UK) Ckt-1 2)220 KV Khodri(UK)-Majri(HP) (UK) Ckt-2 3)220/132 kv 100 MVA ICT at Khodri(UK) 4)30 MW Unit-1 at Khodri(UK) 5)30 MW Unit-2 at Khodri(UK) 6)30 MW Unit-3 at Khodri(UK) 7)30 MW Unit-4 at Khodri(UK) 8)60 MW Unit-3 at Chhibro(UK) 9)60 MW Unit-4 at Chhibro(UK)	Uttarakhand	HPPTCL, PTCUL	17-Aug-25	03:03	185	0	520	Y(d)	Y	Y
8	GI-2	1) 220kV Kashipur-Jafarpur line 2) 220kV Kashipur-Pantnagar Line 3) 400/220kV 315 MVA ICT-1 at Kashipur(UK) 4) 400/220kV 315 MVA ICT-2 at Kashipur(UK) 5) 132kV Kashipur-Jaspur Line	Uttarakhand	PTCUL	18-Aug-25	04:39	0	250	1640	Y	N	Y
9	GI-2	1) 220kV Kashipur-Jafarpur line 2) 400/220kV 315 MVA ICT-1 at Kashipur(UK) 3) 400/220kV 315 MVA ICT-2 at Kashipur(UK) 4) 400kV Kashipur(UK)-Moradabad(UP) (UK) Line	Uttarakhand	PTCUL	18-Aug-25	05:27	0	85	1440	Y	N	Y
10	GI-2	1) 400 KV Vindhyachal(PG)-Vindhyachal(NT) (PG) Ckt-1 2) 70 KV Vindhyachal(PG) Pole-1 3) 70 KV Vindhyachal(PG) Pole-2	Uttar Pradesh	PGCIL, NTPC	19-Aug-25	03:12	0	0	NA	Y(d)	Y(d)	Y(d)
11	GD-1	1) 220 KV AD Hydro(AD)-Nallagarh(PG) (ADHPL) Ckt 2) 220 KV Phozal(HP)-Nallagarh(PG) (ADHPL) Ckt 3) 96 MW Unit-1 at AD Hydro HEP 4) 96 MW Unit-2 at AD Hydro HEP	Himachal Pradesh	PGCIL, ADHPL, HPPTCL	20-Aug-25	11:08	210	0	80	Y	N	N

S.No.	Category of Grid Incident/ Disturbance	Name of Elements (Tripped/Manually opened)	Affected Area	Owner/ Agency	Outage		Loss of generation / loss of load during the Grid Disturbance		Fault Clearance time (in ms)	Compliance of Protection Protocol/Standard		
	(GI-I to GD-V)				Date	Time	Generation Loss(MW)	Load Loss (MW)		Flash Report Submission (Y/N)	DR/EL Submission (Y/N)	Detail Tripping Report Submission (Y/N)
12	GD-1	1) 220 KV Bhadla_2 (PG)-AEGPL_SL_BHD2_PG (AMP Energy Green Private Limited) Ckt-1 2) 220/33 kV 150 MVA ICT 1 at AEGPL_SL_BHD2_PG 3) 220/33 kV 150 MVA ICT 2 at AEGPL_SL_BHD2_PG	Rajasthan	PGCIL, AEGPL	20-Aug-25	15:53	274	0	80	Y(d)	N (Partial details received)	N
13	GI-2	1) 400/220kV 215 MVA ICT-4 at Bawana(DTL) 2) 220kV Bawana-Shalimarbagh (DTL) Ckt-1 3) 220kV Bawana-Shalimarbagh (DTL) Ckt-2 4) 220kV Bawana-Rohini-I (DTL) Ckt-1 5) 220kV Bawana-Rohini-I (DTL) Ckt-2 6) 220kV Rohini-I-Shalimarbagh (DTL) Ckt-1	Delhi	DTL	22-Aug-25	18:13	0	470	520	N	N	Y(d)
14	GD-1	1) 220 KV Bhakra_R-Jamalpur (BB) Ckt-1 2) 220 KV Bhakra_R-Jamalpur (BB) Ckt-2 3) 220 KV Bhakra_R(BB)-Mahilpur(PS) (PS) Ckt-1 4) 220 KV Bhakra_R(BB)-Mahilpur(PS) (PS) Ckt-2 5) 220 KV Bhakra_R-Ganguwal (BB) Ckt-1 6) 220 KV Bhakra_R-Ganguwal (BB) Ckt-2 7) 126 MW Unit-1 at Bhakra Right(BB) 8) 157 MW Unit-6 at Bhakra Right(BB) 9) 157 MW Unit-7 at Bhakra Right(BB) 10) 157 MW Unit-8 at Bhakra Right(BB) 11) 157 MW Unit-9 at Bhakra Right(BB) 12) 157 MW Unit-10 at Bhakra Right(BB)	Himachal Pradesh	BBMB, PSTCL	24-Aug-25	15:48	756	0	120	Y(d)	N	N
15	GI-2	1) 765 KV Gr.Noida_2(UP)-Meerut(PG) (PG) Ckt-1 2) 250 MW (PSP) TEHRI HPS - UNIT 5 3) 250 MW (PSP) TEHRI HPS - UNIT 6	Uttarakhand	UPPTCL, PGCIL, THDC	24-Aug-25	17:42	470	0	80	Y(d)	Y(d)	Y(d)
16	GD-1	1) 220 KV Fatehgarh_II(PG)-Devikot SL_FTGH2 (NTPC_DEVIKOT) (NTPC_DEVIKOT) Ckt-1	Rajasthan	PGCIL, NTPC Green	29-Aug-25	10:31	183	0	NA	N	N	N
17	GI-2	1) 220kV Bus-1 at Samaypur (BBMB) 2) 220kV Bus-2A at Samaypur (BBMB) 3) 400/220kV 500 MVA ICT-2 at Ballabhgarh(PG) 4) 400/220kV 500 MVA ICT-3 at Ballabhgarh(PG) 5) 400/220kV 500 MVA ICT-4 at Ballabhgarh(PG) 6) 220kV Samaypur-Charkhi Dadri line 7) 220kV Samaypur- Ballabhgarh line-1 8) 220kV Samaypur- Ballabhgarh line-2 9) 220kV Samaypur- Ballabhgarh line-3 10) 220kV Samaypur- Badshahpur line-1 11) 220kV Samaypur- Faridabad Sec58 line-1 12) 220kV Samaypur- Faridabad Sec58 line-2 13) 220kV Samaypur- Harfali line	Haryana	PGCIL, BBMB, HVPNL	29-Aug-25	00:11	0	345	120	Partial details received	Partial details received	Partial details received
18	GD-1	1) 220 KV Ludhiana(PG)-Laitokalan(PS) (PSTCL) Ckt-1 2) 220 KV Ludhiana(PG)-Laitokalan(PS) (PSTCL) Ckt-2 3) 220 kV Laitokalan – Ferozpur Road (PS) Ckt 4) 220 kV Laitokalan – Hambran (PS) Ckt 5) 220 kV Laitokalan – Jagraon (PS) Ckt	Punjab	PGCIL, PSTCL	30-Aug-25	04:35	0	180	400	Y(d)	N(PS), Y(PG)	Y(d)

Grid Event summary for August 2025

S.No.	Category of Grid Incident/ Disturbance (GL4 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)	Points of Discussion
					Date	Time		Generation Loss(MW)	Load Loss (MW)		
1	GI-2	1) 220KV Bus-1 at Abdullapur (PG) 2) 220KV Bus-2 at Abdullapur (PG) 3) 400/220 kv 315 MVA ICT 1 at Abdullapur(PG) 4) 400/220 kv 315 MVA ICT 2 at Abdullapur(PG) 5) 400/220 kv 315 MVA ICT 3 at Abdullapur(PG) 6) 400/220 kv 315 MVA ICT 4 at Abdullapur(PG) 7) 220KV Abdullapur-Jorla Ckt-I 8) 220KV Abdullapur-Jorla Ckt-II 9) 220KV Abdullapur-Jagadhri Ckt-I 10) 220KV Abdullapur-Jagadhri Ckt-II 11) 220KV Abdullapur-Tegla Ckt-I 12) 220KV Abdullapur-Tegla Ckt-II 13) 220KV Abdullapur-Rampur Ckt-I 14) 220KV Abdullapur-Rampur Ckt-II 15) 220KV Abdullapur-Rajokheri Ckt-I 16) 220KV Abdullapur-Rajokheri Ckt-II 17) 220KV Abdullapur-Railway Ckt-I 18) 220KV Abdullapur-Railway Ckt-II	Haryana	PGCIL, HVNPL	1-Aug-25	07:18	i)400/220 kv Abdullapur(PG) has double main & transfer bus scheme at 220KV level. ii)During antecedent condition, 400/220KV 315 MVA ICT-1, 2, 3 & 4 were carrying 80 MW, 86 MW, 85 MW & 77 MW respectively. iii)As reported at 07:18 hrs, R-N phase to earth fault occurred on 220KV Abdullapur-Tegla line-1. iv)As per PMU, R-N phase to earth fault which cleared within 120 msec is observed. v)At the same time, bus bar 2-1 & 2-2 protection of 220KV bus at Abdullapur(PG) operated leading to tripping of all the elements connected at 220KV level. As informed, bus bar protection mal-operated on through fault. vi)Protection setting of bus bar protection has been reviewed and tested, protection was found OK. Bus bar protection has bene put under observation. vii)As per DTL of Abdullapur end of Abdullapur-Tegla line-1, R-N phase to earth fault in 2-1 with fault current of ~20kA is observed. R-ph A/R started but line tripped on bus bar protection operation. viii)As per SCADA, change in demand of approx. 50 MW was observed in Haryana control area. ix)As reported by Punjab, line differential along with distance protection installation will be completed within one week for 220 KV Moga(PG)-Moga(PG) (PSTCL) Ckt-1, 2, 3 & 4. x)Majority of the elements were relived by 10:30 hrs.	0	50	120	i)Reason of maloperation of bus bar protection needs to be shared. ii)The case may be discussed with relay engineer / OEM also to identify the root cause and avoid such event in future. iii)Station event loggar details of Abdullapur's during the event period need to be shared. iv)Remedial action taken report needs to be shared.
2	GD-1	1) 220KV Naitwar Mori- Hatkoti Ckt 2) 220KV Naitwar Mori- Saera Kuddu Ckt 3) 220KV Saera Kuddu- Hatkoti Ckt 4) 400/220 kv 315 MVA ICT 1 AT GUMMA (HP) 5) 400/220 kv 315 MVA ICT 2 AT GUMMA (HP)	Himachal Pradesh	HPPTCL	6-Aug-25	07:04	i)Generation of Naitwar Mori HEP and Sawarkuddu HEP evacuates through 400/220KV Gumma ICTs via 220KV Hatkoti-Gumma D/C. Sawarkuddu is directly connected to Hatkoti from one line and with LEO at Naitwar Mori in second line. ii)During antecedent condition, 3*37 MW Sawarkuddu HEP was generating approx. 111 MW total and generation of Naitwar Mori HEP was under outage due to high silt. iii)As reported, at 07:03 hrs, 220KV Naitwar Mori-Hatkoti line tripped on phase to earth fault due to tree fell on the line during inclement weather condition. Due to non-clearance of fault from the line protection, 400/220KV 315 MVA ICT-1&2 at Gumma(HP) tripped on O/C I/F protection. iv)As per PMU at Gumma(HP), Y-B fault converted into R-Y-B fault with delayed clearance of approx. 4 sec 80 msec is observed. v)Due to tripping of both 315 MVA ICTs at Gumma(HP), 37 MW Unit-1, 2 & 3 at Sawarkuddu HEP tripped due to loss of evacuation path. vi)As per SCADA, generation loss of approx. 111 MW at Sawarkuddu HEP and change in demand of approx. 37 MW in HP control area is observed.	111	37	4080	i)Exact reason, location and nature of fault need to be shared. ii)Exact reason of non-clearance of fault from line protection and reason for delayed clearance of fault need to be shared. iii)DTR/L (Last c/c file) of all tripped elements along with tripping reports need to be shared from both ends. iv)Remedial action taken report needs to be shared.
3	GD-1	1) 220 KV AD Hydro(AD)-Nallaghar(PG) (ADNP) Ckt 2) 96 MW Unit-1 at AD Hydro HEP 3) 96 MW Unit-2 at AD Hydro HEP	Himachal Pradesh	PGCIL, ADNPL	7-Aug-25	23:33	i)Generation of AD Hydro HEP (2*96 MW) evacuates through 220KV AD Hydro-Nallaghar line (~175km) and 220KV AD Hydro-Phozal line(~148km)~>220KV Phozal-Nallaghar Line. Both the lines are on same tower. There is L2D portion at 220/230 kV in second line. ii)During antecedent condition, 96 MW Unit-1 and Unit-2 at AD Hydro HEP(HP) were generating approx. 210 MW. 220KV AD Hydro-Phozal line was already under tripped condition since 16:38 hrs due to snapping of conductor between tower location no. 27 & 28. Generation of AD Hydro was evacuating through 220KV AD Hydro-Nallaghar line only. iii)As reported at 23:33 hrs, 220 KV AD Hydro(AD)-Nallaghar(PG) (ADNP) Ckt tripped due to B-N phase fault. Line successfully autoreclosed from AD Hydro end however it tripped from Nallaghar end due to pole discrepancy (issue in A/R operation). iv)As per DR of AD Hydro end, B-N fault (1.5kA) was sensed in Z-1(120km from Nallaghar) end and line successfully autoreclosed after dead time. However, line tripped from Nallaghar end due to issue in A/R operation. v)At the same time, 96 MW Unit-1 and Unit-2 at AD Hydro HEP (generating ~210 MW) also tripped due to loss of evacuation path. vi)As per SCADA plot of AD Hydro HEP generation, loss of ~210 MW is observed and as per SCADA plot of HP demand, no change in HP demand is observed during the event time. vii)Line patrolling was done and no abnormalities was found. Further, line was charged at 00:20 hrs on 08.08.2025 and evacuation path to AD Hydro HEP restored.	210	0	160	i)Issue related to A/R operation at Nallaghar end need to be rectified and proper A/R operation on single-phase to earth fault need to be shared. ii)DTR/L and tripping details of Nallaghar end to be received. iii)Remedial action taken report needs to be shared.
4	GI-2	1) 765KV Bus 2 at Bara(UP) 2) 765/400 kv 1500 MVA ICT-2 at Bara(UP) 3) 765 KV Bara- Mainpuri (UP) Ckt-2 4) 660 MW Bara PGCL TPS - UNIT 2	Uttar Pradesh	UPPTCL, PGCL	8-Aug-25	21:33	i)765/400KV Bara(UP) S/s has one and half breaker bus scheme at both 765kV and 400KV level. During antecedent condition, 660 MW Bara PGCL TPS - UNIT 1, 2 & 3 were carrying 614 MW, 610 MW and 546 MW. ii)As reported, at 21:33 hrs, R-phase pole of 710 main circuit breaker got damaged. This has triggered the Bus Bar Protection operation at 765KV Bus 2 at Bara(UP) resulting in the tripping of all main CBs connected to Bus-2. iii)However, Tie Cbf of 765/400 kv 1500 MVA ICT-2 at Bara (UP) has also tripped resulting in tripping of ICT-2 (wrong busbar logic suspected). iv)During the same time, 765 KV Bara-Mainpuri (UP) Ckt-2 tripped from Mainpuri end only due to Zone-2 distance protection operation at the Mainpuri end. However, line remained charged through the tie bay from the Bara end. v)Due to tripping of 765 KV Bara-Mainpuri (UP) Ckt-2 and 765/400 kv 1500 MVA ICT-2 at Bara (UP) and as total Ex-Bus Generation at Bara TPS was more than 1400MW during antecedent condition, Case-3 of "SPS for safe evacuation of Bara TPS Generation" operated resulting in tripping of 660 MW Bara PGCL TPS - UNIT 2. vi)As per PMU at Mainpuri(UP), R-N phase to earth fault was observed with delayed fault clearing time of 360 ms. vii)As per SCADA, no change in demand of UP control area and generation loss of approx. 610 MW at Bara TPS was observed.	610	0	360	i)Exact reason, location and nature of fault need to be shared. ii)Reason of delayed clearance of fault need to be shared. iii)Exact reason of tripping of the CB of 765/400 kv 1500 MVA ICT-2 at Bara (UP) and main tie CBs at Mainpuri end of 765 KV Bara-Mainpuri (UP) Ckt-2 need to be shared. iv)SCADA data was suspected during the event at 765/400KV Bara(UP). Healthiness and Availability of SCADA data need to be ensured. v)Remedial action taken report need to be shared.
5	GI-1	3120 KV Khodri(UK)-Majri(HP) [UK] Ckt-1 2120 KV Khodri(UK)-Majri(HP) [UK] Ckt-2 3120/132 kv 100 MVA ICT at Khodri(UK) 4180 MW Units-1 at Khodri(UK) 5130 MW Unit-2 at Khodri(UK) 6130 MW Unit-3 at Khodri(UK) 7180 MW Unit-4 at Khodri(UK) 8960 MW Unit-1 at Chhibro(UK) 9960 MW Unit-4 at Chhibro(UK)	Uttarakhand	HPPTCL, PTCUL	17-Aug-25	03:03	i)220KV Khodri(UK) and 220KV Chhibro(UK) generating station have 4 generating units each of 30MW and 60MW respectively and have double main bus scheme. ii)During antecedent condition, 30 MW Unit-1, 2, 3 & 4 at Khodri(UK) were in running condition and were generating approx. 23 MW, 22 MW, 23 MW and 22 MW respectively. Also, 60 MW Unit-1, 2, 3 & 4 at Chhibro(UK) were in running condition and were generating approx. 52 MW, 54 MW, 45 MW and 50 MW respectively (as per SCADA). iii)As reported, at 03:03 hrs, fault occurred at 220KV Majri-VISCO feeder as VISCO 220KV overhead panel caught fire due to overheating at VISCO end. It led to the tripping of 220 KV Khodri(UK)-Majri(HP) [UK] Ckt-1 & 2. iv)As per FIR and TR received, 220 KV Khodri(UK)-Majri(HP) [UK] Ckt-1 tripped on zone-4 distance protection operation at Majri end and zone-3 distance protection operation at Khodri end sensing the fault at a distance of 38.2 km at Khodri end. As per DR, fault current was I=12171A, Iy=1185A and Ix=1156A from Khodri end. v)220 KV Khodri(UK)-Majri(HP) [UK] Ckt-2 tripped from Majri(HP) end only due to over-current protection operation at Majri end. As per DR, fault current was I=608A, Iy=622A and Ix=608A from Khodri end and fault persisted for 1.55s in this ckt. vi)During the same time, 220/132 kv 100 MVA ICT at Khodri(UK) tripped on Earth Fault Protection Operation. vii)Further, 30 MW Unit-1, 2, 3 & 4 at Khodri(UK) tripped on GT Stand-by I/F protection and 60 MW Unit-3 & 4 at Chhibro(UK) tripped on GT Instantaneous Earth fault protection (S0NT) operation and Generator Negative phase Sequence Protection operation respectively. viii)As per PMU at Dehradun(PG), R-N phase to earth fault with delayed fault clearing time of 520 msec was observed. ix)As per SCADA, Reduction in Generation of approx. 234 MW in Uttarakhand control area including generation loss of 185 MW [30 MW at Khodri(UK) and 95 MW at Chhibro(UK)] was observed.	185	0	520	i)Exact reason, nature and location of fault need to be shared. ii)Distance protection settings needs to be reviewed at Khodri(UK) and Majri(HP) end. iii)Reason of delayed clearance of fault need to be shared. iv)Protection co-ordination need to be reviewed at Khodri(UK). v)Healthiness of protection system need to be ensured. vi)SCADA data was Freed during the event. Availability and healthiness of SCADA data need to be ensured. vii)DTR/L (Last c/c file) of all tripped units need to be shared along with detailed tripping report viii)Remedial action taken report need to be shared.
6	GI-2	1) 400/220KV 215 MVA ICT-4 at Bawana(DTL) 2) 220KV Bawana-Shalimarbagh (DTL) Ckt-1 3) 220KV Bawana-Shalimarbagh (DTL) Ckt-2 5) 220KV Bawana-Rohini-I (DTL) Ckt-1 5) 220KV Bawana-Rohini-I (DTL) Ckt-2 6) 220KV Rohini-I-Shalimarbagh (DTL) Ckt-1	Delhi	DTL	22-Aug-25	18:13	i)400/220/66kV Bawana(DTL) has one and half breaker scheme at 400KV level and double main and transfer bus scheme at 220KV level. ii)During antecedent condition, bus wise arrangement at 220KV Bawana was as follows: a.220KV Bus-I: 220KV /C of 315 MVA ICT-2, 200/66kV 100MVA Pt. Tr, 220KV Rohini-II ckt-1 & 2. c.220KV Bus-II: 220KV /C of 315 MVA ICT-3, 220KV Khanjwalia ckt-1 & 2. c.220KV Bus-III: 220KV /C of 315 MVA ICT-1, 220KV Rohini-I ckt-1, 220KV Shalimarbagh Ckt-1 d.220KV Bus-IV: 220KV /C of 315 MVA ICT-4, 220KV Rohini-I ckt-2, 220KV Shalimarbagh Ckt-2 e.220KV Bus-V: 220KV /C of 315 MVA ICT-5, 220KV DSIC Bawana Ckt-1 f.220KV Bus-VI: 220KV /C of 315 MVA ICT-6, 220KV DSIC Bawana Ckt-2 g.220KV Bus Section and Bus Coupler were closed. iii)As reported, at 18:13 hrs, 400/220KV 215 MVA ICT-4 at Bawana(DTL) tripped on overflux protection operation. iv)During the same time, 220KV Bawana-Shalimarbagh (DTL) Ckt-1 & 2 tripped on zone-1 distance protection operation. During patrolling, OPGW between tower no. N-2, N-3, N-4 was found broken. v)Further, at 18:25 hrs, 220KV Bawana-Rohini-I (DTL) Ckt-2 was manually opened from Bawana end to protection the line from overloading. vi)At 18:35 hours, 220KV Rohini-I-Shalimarbagh (DTL) Ckt-1 was manually opened from Rohini-I end due to fault in Y-ph bus isolator at Shalimarbagh(DTL). vii)As per PMU at Maharahga(PG), R-N phase to earth fault followed by B-N phase to earth fault with fault clearance time of respectively 480 ms (delayed) and 520 ms (delayed) was observed. ix)As per SCADA, change in demand of approx. 540 MW in Delhi control area was observed. But as reported by SLDC Delhi, load loss of approx. 470 MW occurred.	0	470	520	i)Exact nature, location and reason of fault need to be shared. ii)Exact sequence of events need to be shared. iii)Reason of delayed clearance of fault need to be shared. iv)DTR/L (Last c/c file) of all tripped elements along with detailed tripping report need to be shared. v)Remedial action taken report need to be shared.
7	GI-2	1) 220KV Bus-1 at Samaypur (BBMB) 2) 220KV Bus-2A at Samaypur (BBMB) 3) 400/220KV 500 MVA ICT-2 at Ballabgarh(PG) 4) 400/220KV 500 MVA ICT-3 at Ballabgarh(PG) 5) 400/220KV 500 MVA ICT-4 at Ballabgarh(PG) 6) 220KV Samaypur-Charkhi Dadri line 7) 220KV Samaypur-Ballabgarh line-1 8) 220KV Samaypur-Ballabgarh line-2 9) 220KV Samaypur-Ballabgarh line-3 10) 220KV Samaypur-Badshahpur line-1 11) 220KV Samaypur-Faridabad sec5 line-1 12) 220KV Samaypur-Faridabad sec5 line-2 13) 220KV Samaypur-Harfil line	Haryana	PGCIL, BBMB, HVNPL	29-Aug-25	00:11	i)220KV Samaypur(BBMB) has double main bus scheme. There are 03 (three) 220KV Buses i.e., Bus-1, Bus-2A and Bus-2B. 400/220KV 500 MVA ICT-1,2,3&4 at Ballabgarh(PG) feeds the 220KV Samaypur S/s. ii)During the antecedent condition, bus sectioner CB between 220KV Bus-2A and 2B was under shutdown for replacement of B-ph Ckt due to high-Tan Delta value. 400/220KV 500 MVA ICT-3,2,3&4 at Ballabgarh(PG) were carrying ~200 MW each. iii)As reported, at 00:11 hrs, B-ph Ckt at 220KV side of 400/220KV 500 MVA ICT-2 damaged and created bus fault on 220KV Bus-1. On this fault, Bus bar protection of 220KV Bus-1 operated. At the same time, bus bar protection of 220KV Bus-2A also operated due to isolator status issue of Faridabad sec5 line-2. 220KV Bus-2B remained in service. iv)Due to the bus bar protection operation, all the elements connected to 220KV Bus-1 and Bus-2A i.e., 400/220KV ICT-2,3&4 at Ballabgarh(PG), 220KV feeders to Ballabgarh-I, II, III, Badshahpur-I, Faridabad sec5s-UI, and Charkhi Dadri tripped. Elements connected to 220KV Bus-2B i.e., 400/220KV ICT-1 at Ballabgarh(PG), 220KV feeders to Pall-I, II, Badshahpur-I remained in service. v)At the same time, 220KV Samaypur-Harfil line tripped from Harfil end only (recorded in SCADA SOE). Reason of the same yet to be received. vi)As per PMU at Ballabgarh(PG), B-N phase to earth fault which cleared within 120 msec is observed. vii)As per SCADA, change in demand of ~345 MW in Haryana control area is observed. viii)As informed by BBMB, during investigation it was found that isolator status of Faridabad sec5 line-2 was absent due to LOGIC INPUT Card Faulty. As per scheme logic, in absence of isolator Status the numerical BUS BAR Protection issues the trip command to both parallel buses. Further, the faulty LOGIC INPUT Card of Faridabad sec5 line-2 at Samaypur S/s has been replaced with the healthy card on date 30.08.2025. 400/220KV ICT-2 at Ballabgarh(PG) is under shutdown for replacement of damaged CT.	0	345	120	i)Significant number of grid events due to CT failure have been reported in Delhi control area. Necessary maintenance activities, routine testing of equipments and other necessary measures need to be taken to avoid such events in future. ii)Proper isolator status and its communication is crucial for correct operation of bus bar protection operation. Unwanted operation of bus bar protection has been observed in past also due to incorrect isolator status. Frequent review of isolator status and prompt attending of any alarm related to the same may be done to avoid such events in future. iii)Reason of tripping of 220KV Samaypur-Harfil line from Harfil end despite of timely clearance of fault need to be investigated and shared. Any protection related issues if any, need to be rectified. iv)DTR/L (Last c/c file) of all the tripped elements need to be shared. No DTR/L received as on 02.09.2025.
8	GD-1	1) 220 KV Ludhiana(PG)-Lafkalan(PG) (PSTCL) Ckt-1 2) 220 KV Ludhiana(PG)-Lafkalan(PG) (PSTCL) Ckt-2 3) 220 KV Lafkalan - Ferozpur Road (PS) Ckt 4) 220 KV Lafkalan - Hambran (PS) Ckt 5) 220 KV Lafkalan - Jagraon (PS) Ckt	Punjab	PGCIL, PSTCL	30-Aug-25	04:35	i)220KV Lafkalan(PS) has double main bus arrangement at 220KV side. ii)During antecedent condition, 220 KV Ludhiana(PG)-Lafkalan(PG) (PSTCL) Ckt-2, 220 KV Lafkalan - Hambran (PS) Ckt, 220 KV Lafkalan - Jagraon (PS) Ckt and 220/66 kv 160 MVA ICT-1 at Lafkalan(PS) were connected to 220KV Bus-1 at Lafkalan(PS) and remaining elements were connected to 220KV Bus-2 at Lafkalan(PS). iii)As reported, at 04:35 hrs, Y-ph CT clamp of 220 KV Ludhiana(PG)-Lafkalan(PS) (PSTCL) Ckt-2 broke at Lafkalan end. As per DR, 220 KV Ludhiana(PG)-Lafkalan(PS) (PSTCL) Ckt-2 tripped on Y-N phase to earth fault with fault distance of 2.14km and fault current of 25.78kA from Ludhiana(PG) end; zone-2 distance protection operated at Ludhiana(PG) end. iv)Distance protection relay at Lafkalan(PS) of 220 KV Ludhiana(PG)-Lafkalan(PS) (PSTCL) Ckt-2 didn't pick-up during this fault hence other lines connected to Bus-1 (220 KV Ludhiana - Hambran (PS) Ckt and 220 KV Lafkalan - Jagraon (PS) Ckt) tripped from remote end with zone-2 indications. v)Busbar protection at Lafkalan was not healthy and zone-4 time delays of lines at Lafkalan end were also not modified to 160ms, zone-4 delays were kept as 350ms, hence lines tripped from remote ends. vi)Further after 720 sec of occurrence of this fault (as per PMU), 220 KV Ludhiana(PG)-Lafkalan(PS) (PSTCL) Ckt-2 tripped on R-N phase to earth fault with fault distance of 2.79km and fault current of 27.95kA from Ludhiana(PG) end (as per DR); zone-1 distance protection operated at Ludhiana(PG) end and carrier sent to Lafkalan(PS) end. No A/R operation observed on this fault. As reported by Punjab, Lafkalan end picked E/F on this fault, but unspicked after 407ms. vii)220 KV Lafkalan - Ferozpur Road (PS) Ckt sensed this fault in zone-4 at Lafkalan end and in zone-2 at Ferozpur end. However, as R-ph limb of CB at Lafkalan end got stuck, fault cleared at zone-2 from remote end. This line was taken under shutdown to address this CB issue. viii)Due to tripping of all 220KV lines at 220/66kV 160 MVA ICT-1 and 100MVA ICT-4 & 5 got failed and ICTs are mainly operated. Complete blackout occurred at 220KV Lafkalan(PS) S/s. ix)As per PMU, Y-N phase to earth fault followed by R-N phase to earth fault was observed with fault clearing time of 400ms (delayed) and 80ms respectively. x)As per SCADA, change in demand of approx. 180 MW in Punjab control area was observed.	0	180	400	i)Healthiness of busbar protection and auxiliary system at Lafkalan(PS) need to be ensured. Self-audit may be arranged at the earliest. ii)Distance protection need to be reviewed in 220KV lines emanating from Lafkalan(PS). iii)Reason of delayed clearance of fault need to be shared. iv)DTR/L (Last c/c file) of all the tripped elements need to be shared from Punjab. v)DTR nomenclature need to be corrected by PG at 220 KV Ludhiana(PG)-Lafkalan(PS) (PSTCL) Ckt-1 & 2. vi)Tripping at Punjab end were not recorded in SCADA SOE. Healthiness and availability of SCADA data need to be ensured at S/s of Punjab. vii)Remedial action taken report need to be shared.

Multiple Element Tripping Event at 400/220kV Abdullapur(PG)

At 07:18 hrs on 01.08.2025

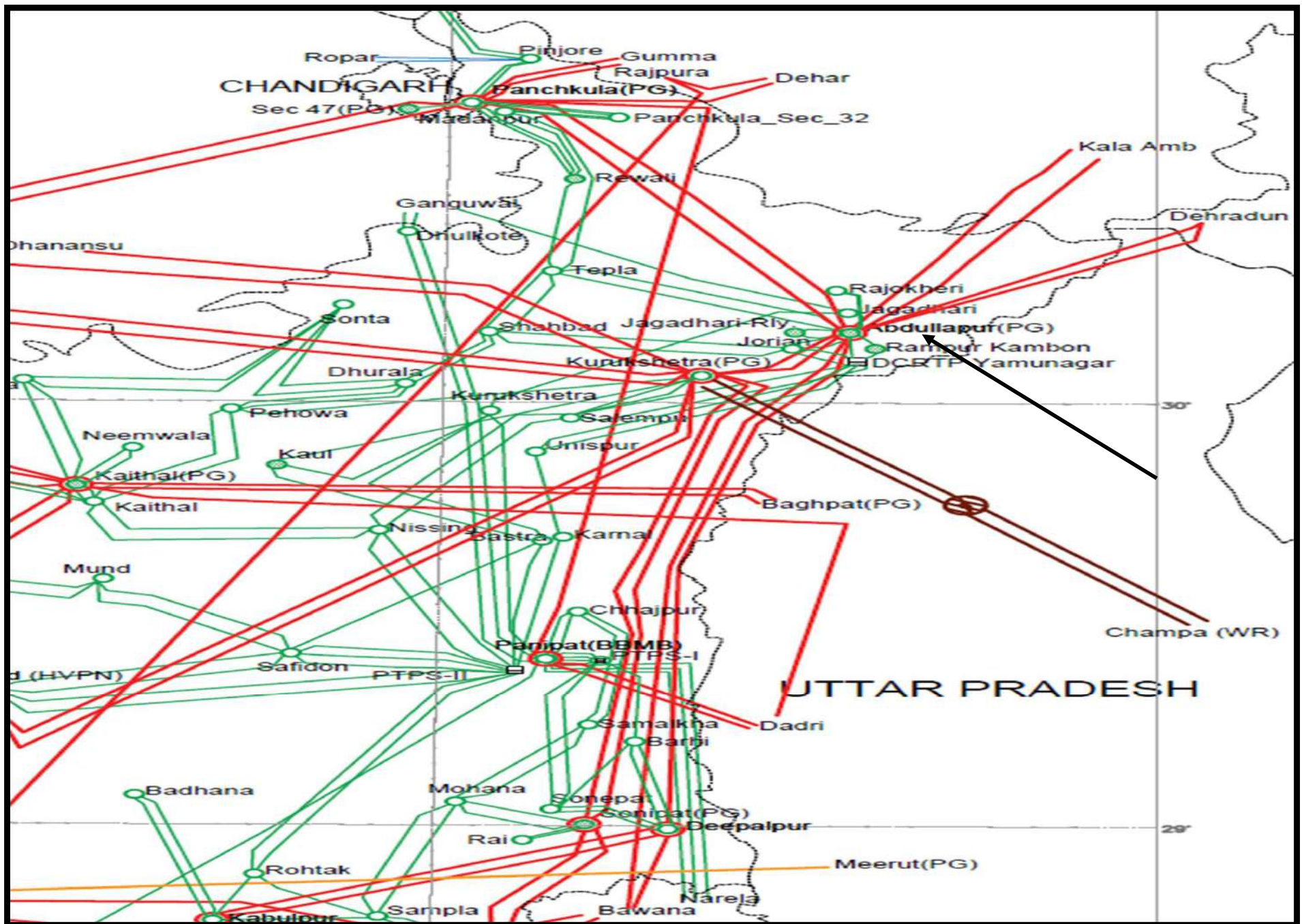
Tripped Elements

S. No	Name of Elements	Outage Time	Revival Time	Reason of tripping
1.	220kV Bus-1 at <u>Abdullapur</u> (PG)		10:26 <u>hrs</u>	R-N fault occurred on 220kV <u>Abdullapur-Tepla</u> line-I. At the same time, 220kV Bus bar Z-1 & 2 operated leading to tripping of all the elements connected at 220kV side.
2.	220kV Bus-2 at <u>Abdullapur</u> (PG)		10:01 <u>hrs</u>	
3.	400/220 kV 315 MVA ICT 1 at <u>Abdullapur</u> (PG)	07:18 <u>hrs</u>	10:01 <u>hrs</u>	
4.	400/220 kV 315 MVA ICT 2 at <u>Abdullapur</u> (PG)		17:13 <u>hrs</u>	
5.	400/220 kV 315 MVA ICT 3 at <u>Abdullapur</u> (PG)		11:04 <u>hrs</u>	
6.	400/220 kV 315 MVA ICT 4 at <u>Abdullapur</u> (PG)		10:26 <u>hrs</u>	
7.	220kV <u>Abdullapur-Joria</u> line-I		11:58 <u>hrs</u>	
8.	220kV <u>Abdullapur-Joria</u> line-II		11:58 <u>hrs</u>	
9.	220kV <u>Abdullapur-Jagadahri</u> line-I		10:31 <u>hrs</u>	
10.	220kV <u>Abdullapur- Jagadahri</u> line-II		10:35 <u>hrs</u>	
11.	220kV <u>Abdullapur-Tepla</u> line-I		17:58 <u>hrs</u>	
12.	220kV <u>Abdullapur-Tepla</u> line-II		13:04 <u>hrs</u>	
13.	220kV <u>Abdullapur-Rampur</u> line-I		12:12 <u>hrs</u>	
14.	220kV <u>Abdullapur-Rampur</u> line-II		12:12 <u>hrs</u>	
15.	220kV <u>Abdullapur-Rajokheri</u> line-I		14:42 <u>hrs</u>	
16.	220kV <u>Abdullapur-Rajokheri</u> line-II		12:03 <u>hrs</u>	
17.	220kV <u>Abdullapur-Railway</u> line-I		11:53 <u>hrs</u>	
18.	220kV <u>Abdullapur-Railway</u> line-II		10:16 <u>hrs</u>	

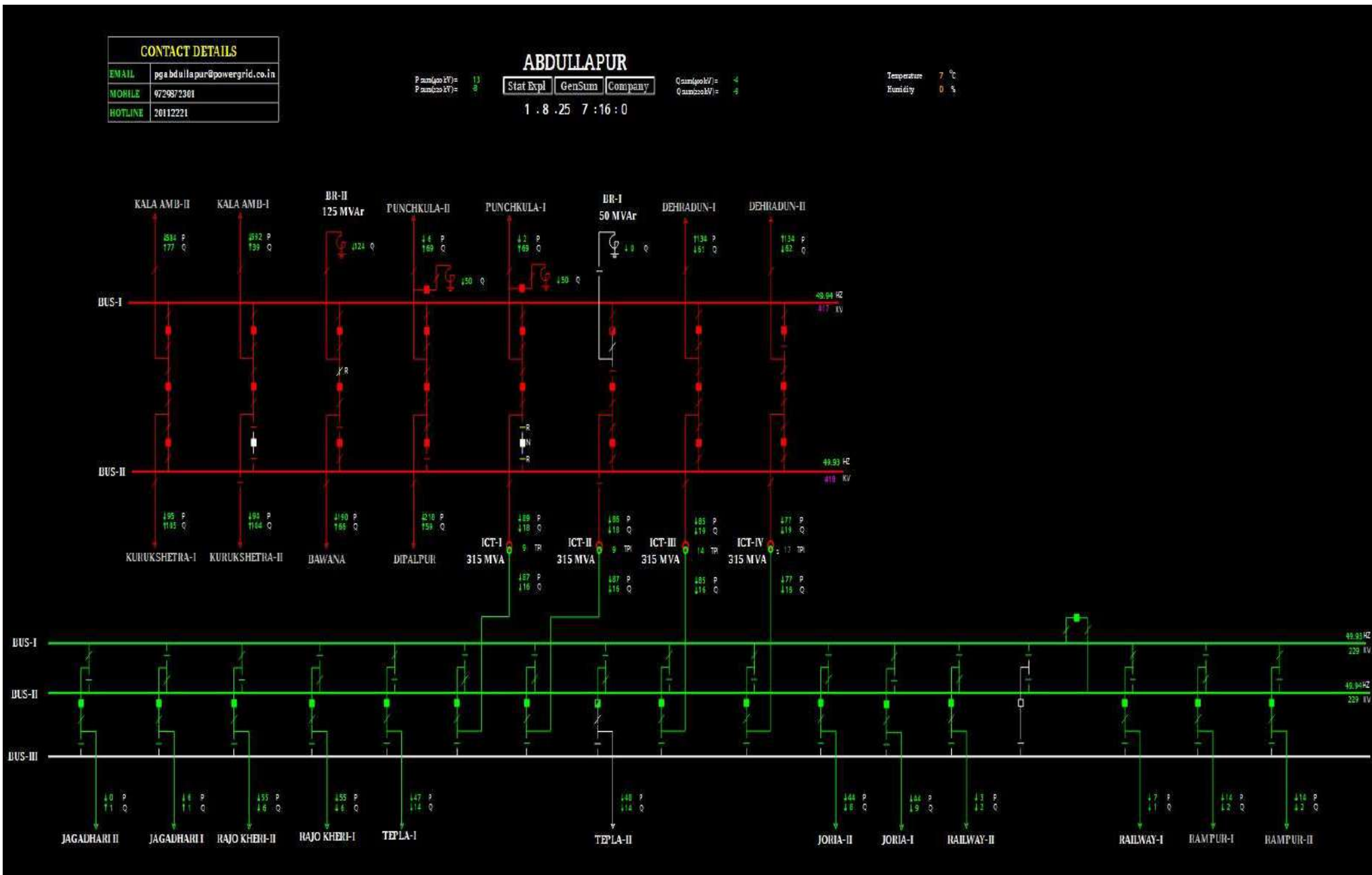
Brief details of the event

- i. 400/220 kV Abdullapur(PG) has double main & transfer bus scheme at 220KV level.
- ii. During antecedent condition, 400/220kV 315 MVA ICT-1, 2, 3 & 4 were carrying 89 MW, 86 MW, 85 MW & 77 MW respectively.
- iii. As reported at 07:18 hrs, R-N phase to earth fault occurred on 220kV Abdullapur-Tepla line-I.
- iv. As per PMU, R-N phase to earth fault which cleared within 120 msec is observed.
- v. At the same time, bus bar Z-1 & Z-2 protection of 220kV bus at Abdullapur(PG) operated leading to tripping of all the elements connected at 220kV level. As informed, bus bar protection mal-operated on through fault. Protection setting of bus bar protection has been reviewed and tested, protection was found OK. Bus bar protection has been put under observation.
- vi. As per DR of Abdullapur end of Abdullapur-Tepla line-I, R-N phase to earth fault in Z-1 with fault current of ~20kA is observed. R-ph A/R started but line tripped on bus bar protection operation.
- vii. As per SCADA, change in demand of approx. 50 MW was observed in Haryana control area.
- viii. As reported by Punjab, line differential along with distance protection installation will be completed within one week for 220 KV Moga(PG)-Moga(PS) (PSTCL) Ckt-1, 2, 3 & 4.
- ix. Majority of the elements were revived by 10:30 hrs.

Network Diagram



SLD of 400/220kV Abdullapur(PG) before the event



SLD of 400/220kV Abdullapur(PG) after the event

CONTACT DETAILS	
EMAIL	pg.abdullapur@powergrid.co.in
MOBILE	9729872301
HOTLINE	20112221

ABDULLAPUR

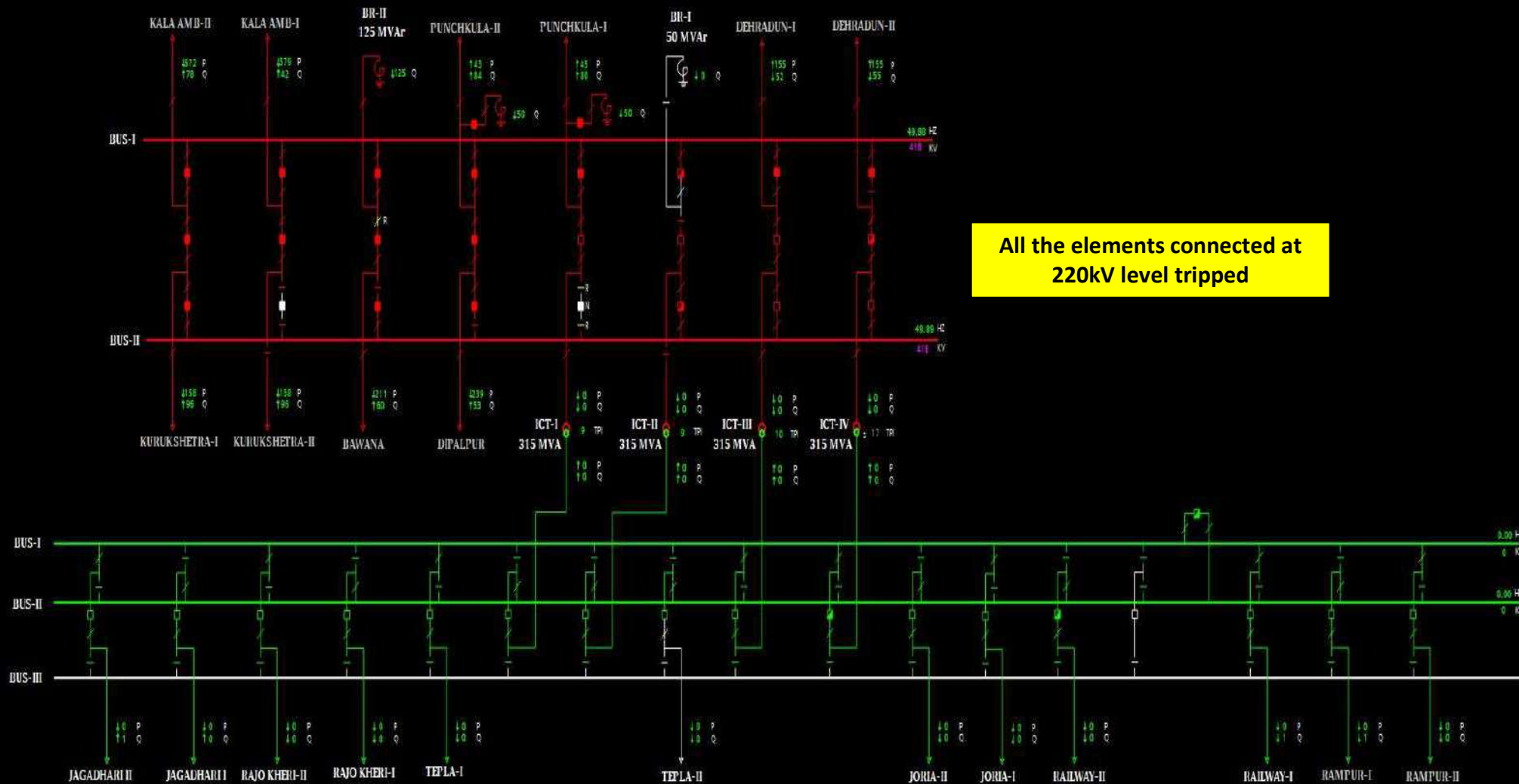
P_{max400 kV} = 11
P_{max220 kV} = 0

Star Expl GenSum Company

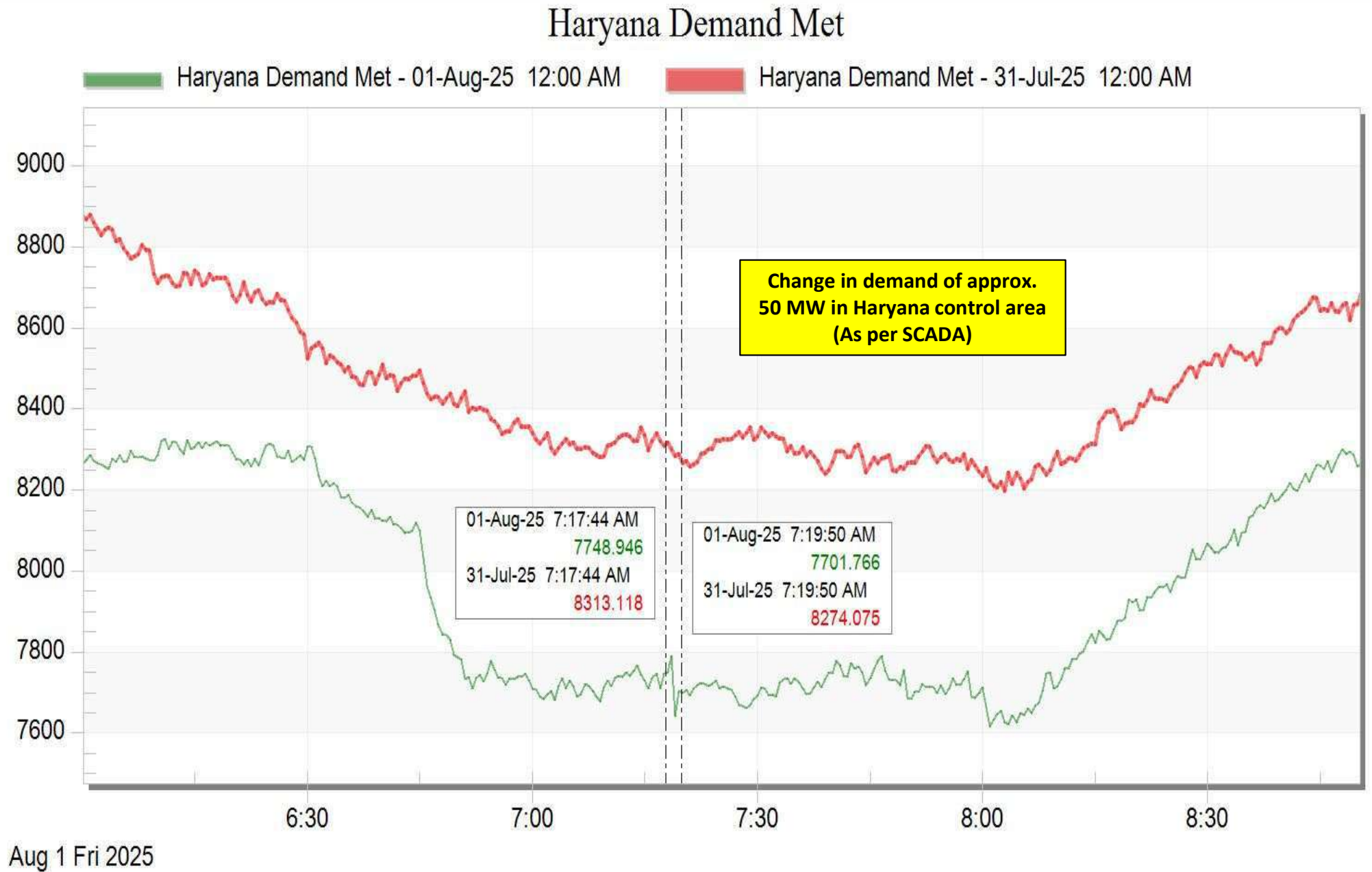
Q_{max400 kV} = 0
Q_{max220 kV} = 0

Temperature 7 °C
Humidity 0 %

1.8 .25 7:20:0

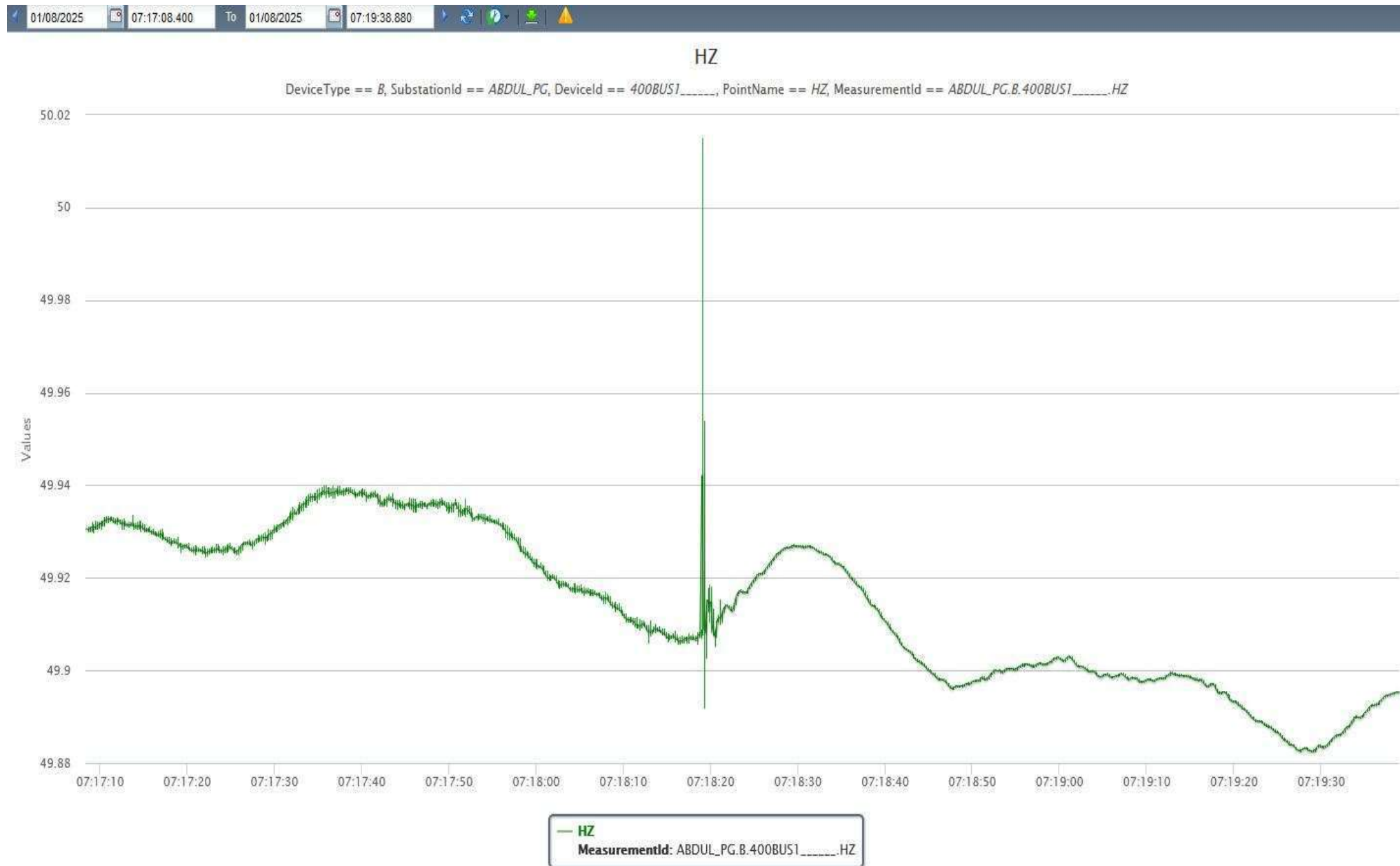


Haryana Demand during the event



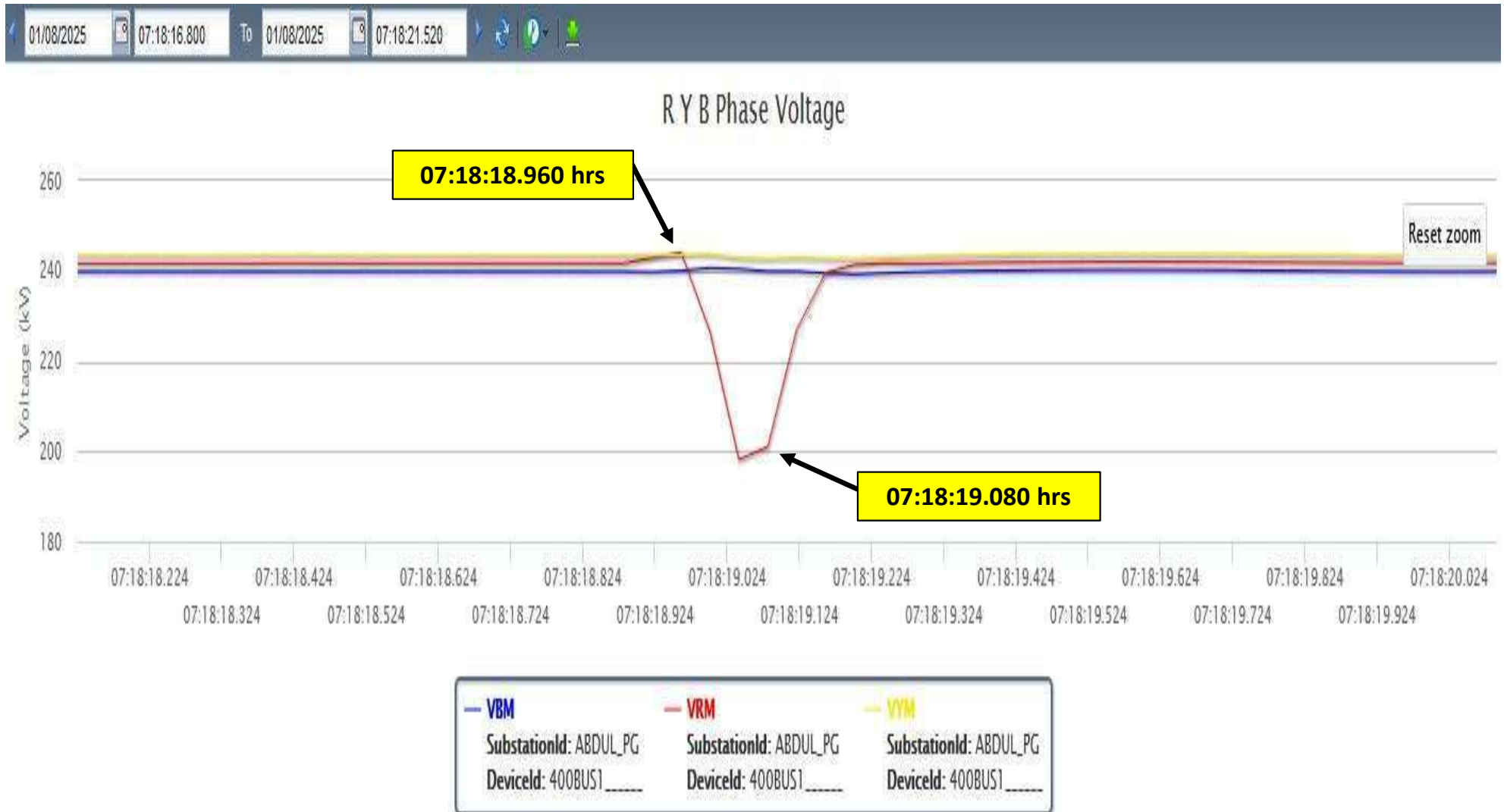
PMU Plot of frequency at Abdullapur(PG)

07:18 hrs/01-Aug-25

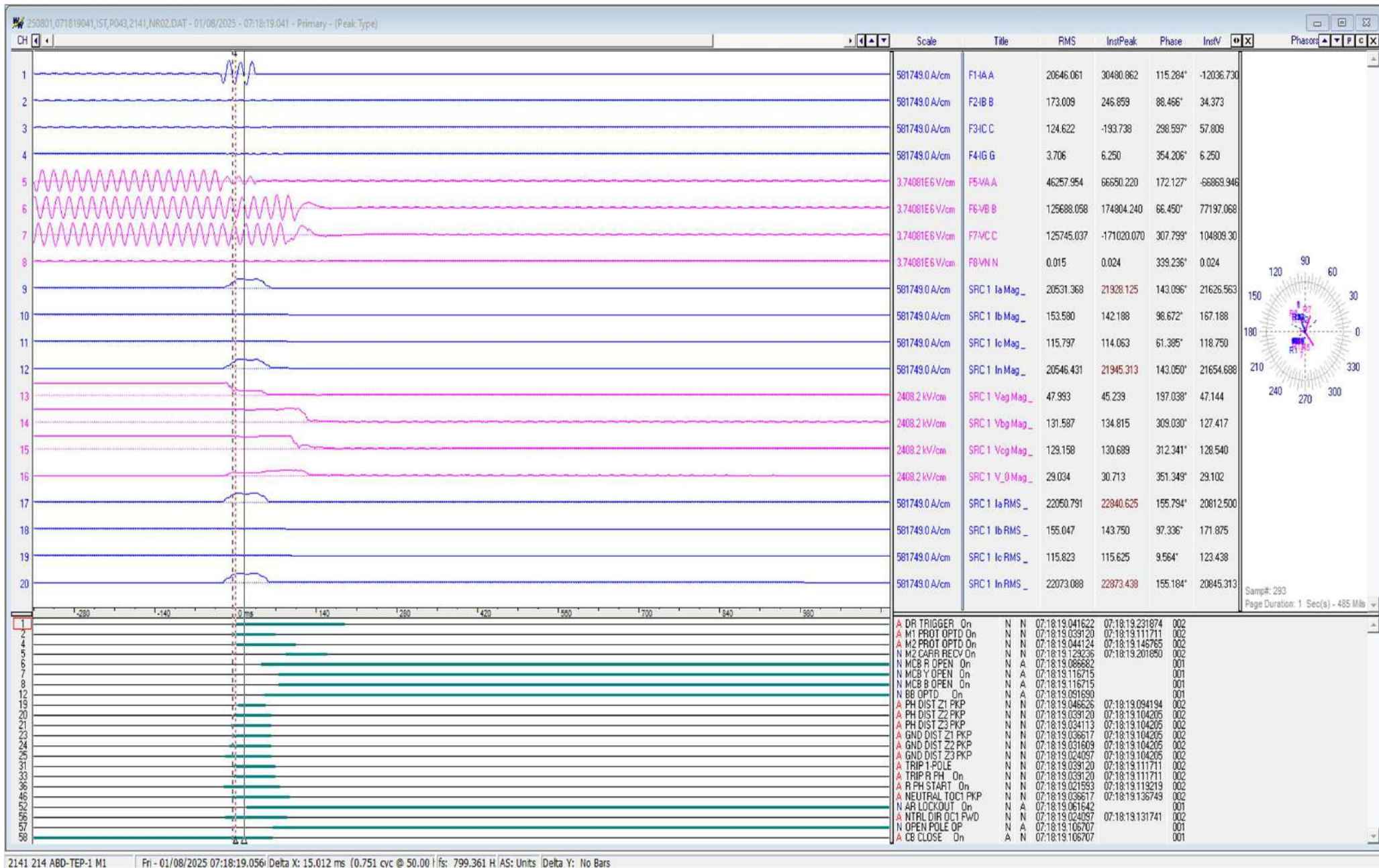


PMU Plot of phase voltage magnitude at Abdullapur(PG)

07:18 hrs/01-Aug-25

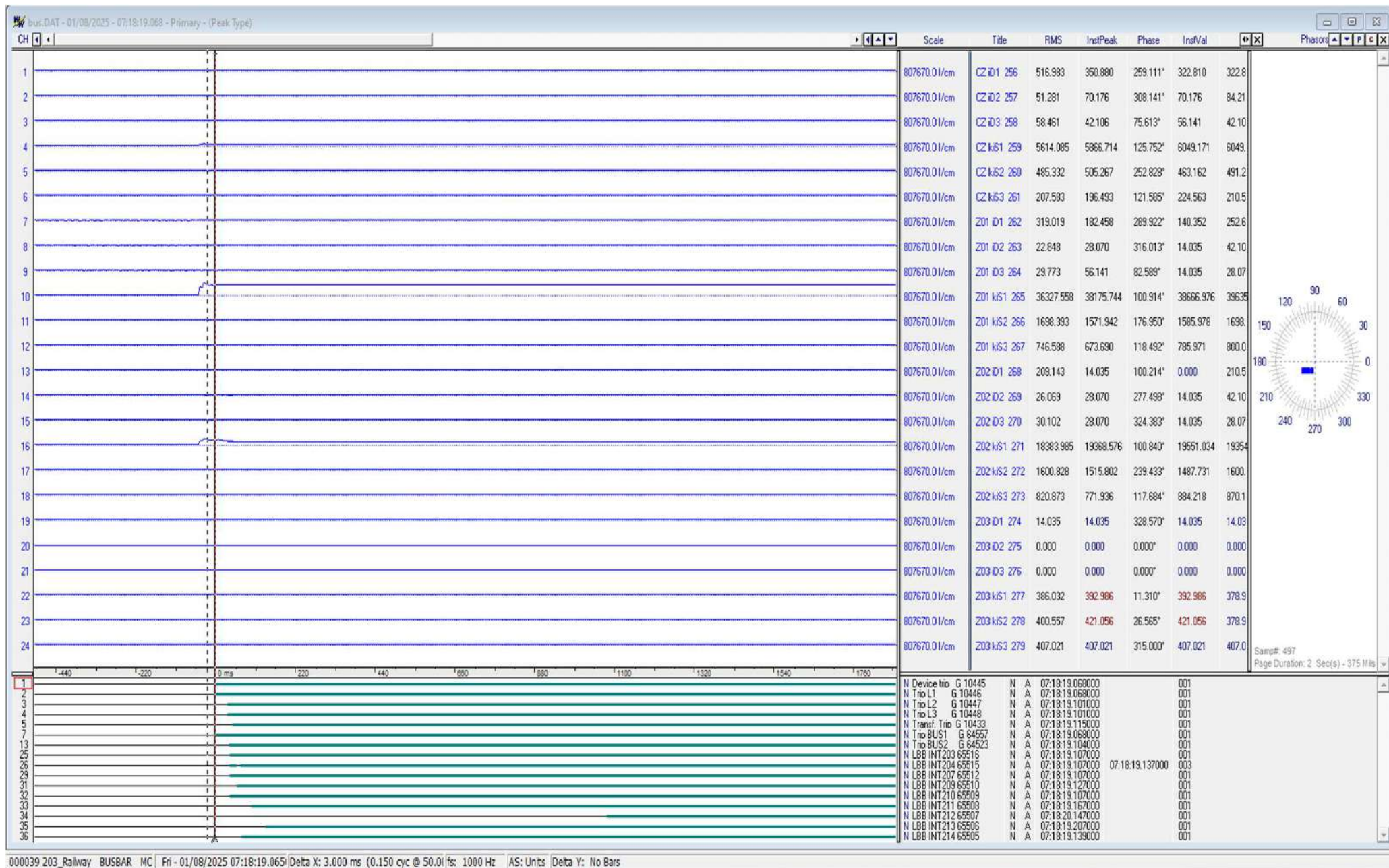


DR of 220kV Abdullapur(end)-Tepla Line-I



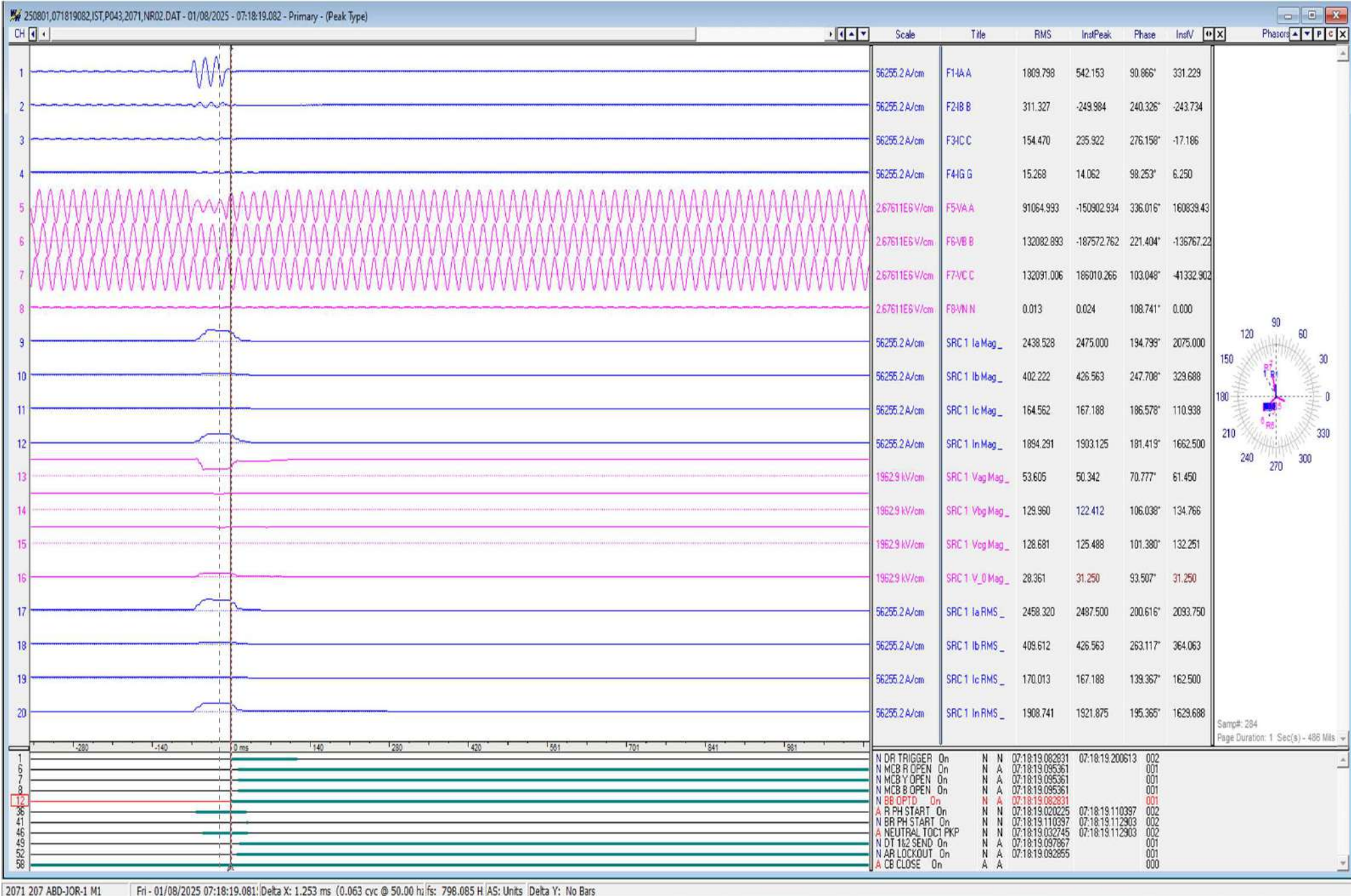
R-N fault, Z-1, ~20kA. A/R started but line tripped after ~60 msec due to Bus bar protection operation

DR of bus bar protection at Abdullapur(PG)



Bus bar Z-1 & 2 operated

DR of M-1 relay of 220kV Abdullapur-Joria line-I



SCADA SOE

Time	Station Name	Voltage	Element Name	Element Type	Element Status	Remarks
07:18:19,110	ABDULLAPUR	220kV	10T3	Circuit Breaker	Open	CB at 220kV side of 400/220kV ICT-3 at Abdullapur(PG) opened
07:18:19,114	ABDULLAPUR	220kV	07JORIA1	Circuit Breaker	Open	Line CB at Abdullapur end of 220kV Abdullapur-Joria line-I opened
07:18:19,117	ABDULLAPUR	400kV	2T4TIE	Circuit Breaker	disturbe	
07:18:19,118	ABDULLAPUR	220kV	09T4	Circuit Breaker	disturbe	
07:18:19,125	ABDULLAPUR	220kV	18JGDRI2	Circuit Breaker	Open	Line CB at Abdullapur end of 220kV Abdullapur-Jhadhri line-II opened
07:18:19,131	ABDULLAPUR	220kV	14TEPLA1	Circuit Breaker	Open	Line CB at Abdullapur end of 220kV Abdullapur-Tepla line-I opened
07:18:19,139	ABDULLAPUR	400kV	6T3	Circuit Breaker	Open	Main CB at Abdullapur end of 400/220kV ICT-3 at Abdullapur(PG) opened
07:18:19,143	ABDULLAPUR	400kV	5T3TIE	Circuit Breaker	Open	Tie CB at Abdullapur end of 400/220kV ICT-3 at Abdullapur(PG) opened
07:18:19,149	ABDULLAPUR	220kV	11TEPLA2	Circuit Breaker	Open	Line CB at Abdullapur end of 220kV Abdullapur-Tepla line-II opened
07:18:19,151	ABDULLAPUR	220kV	08JORIA2	Circuit Breaker	Open	Line CB at Abdullapur end of 220kV Abdullapur-Joria line-II opened
07:18:19,152	ABDULLAPUR	220kV	01RMPUR2	Circuit Breaker	Open	Line CB at Abdullapur end of 220kV Abdullapur-Rampur line-II opened
07:18:19,156	ABDULLAPUR	220kV	02RMPUR1	Circuit Breaker	Open	Line CB at Abdullapur end of 220kV Abdullapur-Rampur line-I opened
07:18:19,157	ABDULLAPUR	220kV	06RAIL_2	Circuit Breaker	disturbe	
07:18:19,162	ABDULLAPUR	220kV	16RJKHR2	Circuit Breaker	Open	Line CB at Abdullapur end of 220kV Abdullapur-Rajkhori line-II opened
07:18:19,162	ABDULLAPUR	220kV	17JGDRI1	Circuit Breaker	Open	Line CB at Abdullapur end of 220kV Abdullapur-Jhadhri line-I opened
07:18:19,186	ABDULLAPUR	220kV	03RAIL_1	Circuit Breaker	Open	Line CB at Abdullapur end of 220kV Abdullapur-Rail line-I opened
07:18:19,189	ABDULLAPUR	220kV	15RJKHR1	Circuit Breaker	Open	Line CB at Abdullapur end of 220kV Abdullapur-Rajkhori line-I opened
07:18:19,217	ABDULLAPUR	400kV	11T1PN1	Circuit Breaker	Open	Tie CB at Abdullapur end of 400/220kV ICT-1 at Abdullapur(PG) opened
07:18:19,389	ABDULLAPUR	220kV	12T2	Circuit Breaker	Open	CB at 220kV side of 400/220kV ICT-2 at Abdullapur(PG) opened
07:18:20,152	ABDULLAPUR	400kV	8T2R1	Circuit Breaker	Open	Tie CB at Abdullapur end of 400/220kV ICT-2 at Abdullapur(PG) opened
07:18:20,153	ABDULLAPUR	400kV	9T2	Circuit Breaker	disturbe	
07:18:20,472	ABDULLAPUR	220kV	13T1	Circuit Breaker	Open	CB at 220kV side of 400/220kV ICT-1 at Abdullapur(PG) opened
07:18:27,911	ABDULLAPUR	400kV	3T4	Circuit Breaker	Open	Main CB at Abdullapur end of 400/220kV ICT-4 at Abdullapur(PG) opened
07:19:11,119	ABDULLAPUR	220kV	04MBC	Circuit Breaker	disturbe	

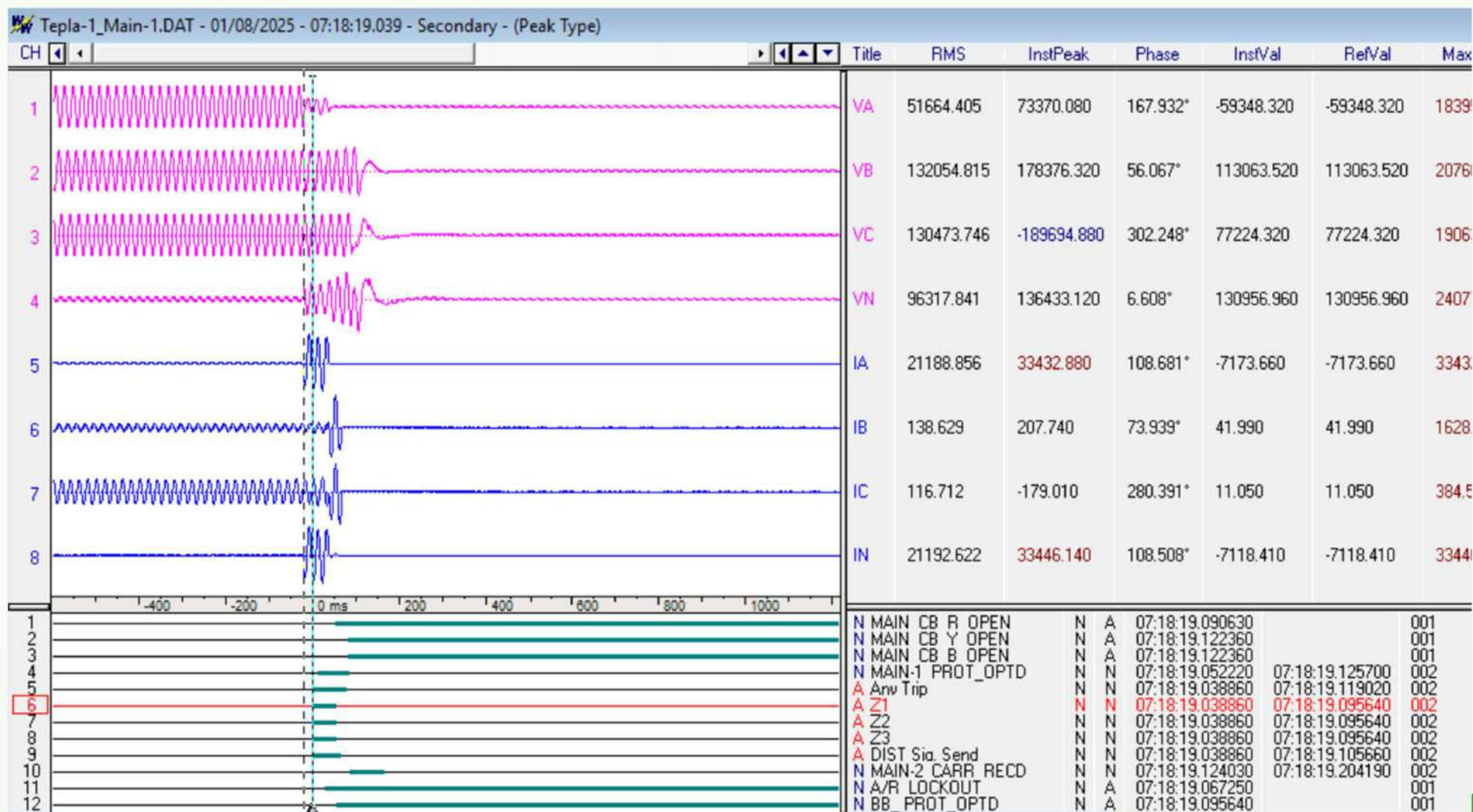
Points for Discussion

- i. Reason of maloperation of bus bar protection needs to be shared. The case may be discussed with relay engineer / OEM also to identify the root cause and avoid such event in future.
- ii. Station event logger details of Abdullapur S/s during the event period need to be shared.
- iii. Remedial action taken report needs to be shared.

**Tripping of 220kV Busbar-1&2 at
400/220kV Abdullapur on
01.08.2025 at 07:18:19hrs**

Abdullapur BB Tripping

- On 01.08.2025 at 07:18:19:038 Hrs 220kV Tepla ckt-1 tripped on Z-1 Fault. (Fault current of 22kA, R-N Fault)
- During this fault at 07:18:19:068 Busbar-1 operated



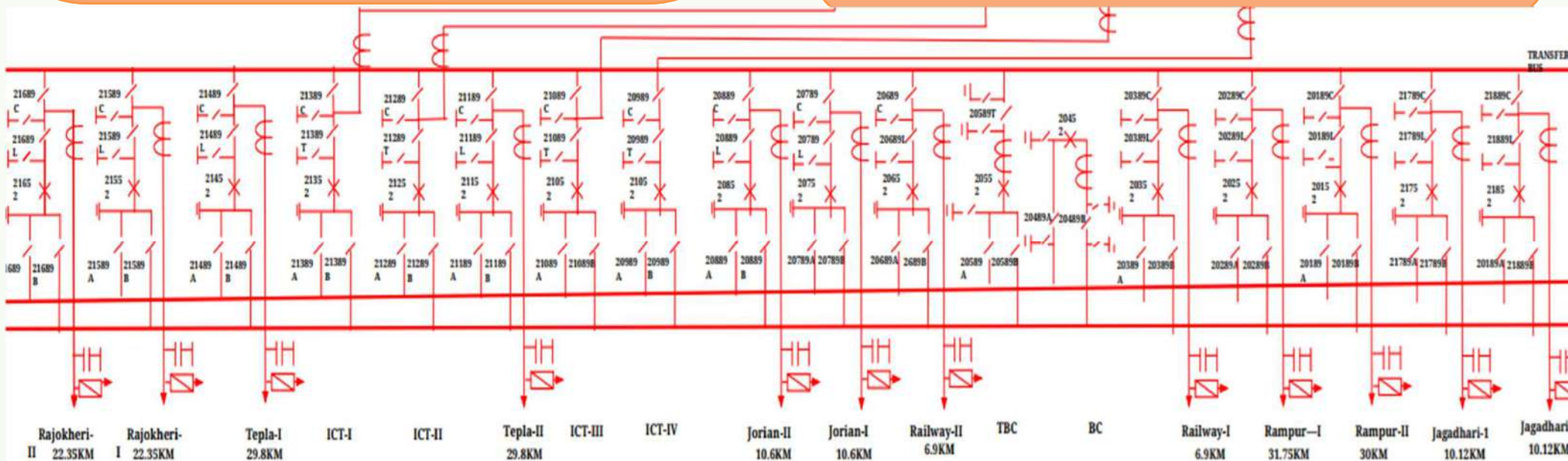
Abdullapur BB Tripping

At **07:18:19:068** Following elements connected to Bus-1 tripped due to tripping of 220KV Bus-1 at Abdullapur SS

1. 315 MVA ICT-3 (tripped from 400 & 220KV side)
2. 315 MVA ICT-4 (tripped from 400 & 220KV side)
3. 220KV Rampur-2
4. 220KV Railway-1
5. 220KV Johrian-1
6. 220KV Tepla-1
7. 220KV Rajokheri-2
8. 220kV Jagdhari-2

At **07:18:19:104** Busbar-2 operated following elements connected to Bus-2 tripped

1. 315 MVA ICT-1 (tripped from 400 & 220KV side)
2. 315 MVA ICT-2 (tripped from 400 & 220KV side)
3. 220KV Rampur-1
4. 220KV Railway-2
5. 220KV Johrian-2
6. 220KV Tepla-2
7. 220KV Rajokheri-1
8. 220kV Jagdhari-1



- Wrong setting parameters imported in Decentralized BB relay 7SS522.
- In Busbar setting “Operation mode BF” parameter was set to “**Trip from external CBF**” for Internal LBBs . Due to this parameter as soon as Bay PU receives LBB initiation it directly goes for BB tripping without considering the Current parameter.
- So when LBB initiation was received in Tepla-1 connected to Bus-1. BB-1 tripped (tripping through 96 relay)
- During Bus coupler tripping, due to LBB initiation from 96 relay it led to BB-2 tripping.
- The parameter should have been set as “**Trip repetition with current query**”-(TRIP repetition with subsequent I> query mode is activated)

Settings:

No.	Settings	Value
1714	Binary input mode / supervision BF	Initiation without supervision ▼
1715	Operation mode BF	TRIP from external CBF Protection
1716	Low-current mode BF	Off
1717	TRIP repeat mode	3pole
1718	Current threshold for BF	0.10 I / In
1720	Time delay for BF with 1-pole faults	0.20 sec
1721	Time delay for BF with multi-pole faults	0.20 sec
1722	Time delay for BF low current mode	0.20 sec
1724	Time delay BF after CB fault	0.50 sec
1725	Time delay for TRIP repeat	0.10 sec
1726	Time delay for CB open	0.00 sec
1727	Supervision bin. input BF-release	15.00 sec

- Decentralized Siemens make BB relay 7SS522 was commissioned at Abdullapur SS in 30.10. 2013
- Internal LBB Function via PUs was used for 03 No. Bays – ICT-4, Rajokheri 1&2 during commissioning.
- For other bays, internal LBB function was enabled in from Oct' 2024 to June' 2025
- It is now learned that on 03.06.2025 an older version of the project has overwritten in busbar relay, which seems to be underlying reason behind wrong setting incorporation in relays.
- Due to importing old backup, in 10 No. LBBs already retrofitted - Operation mode BF" parameter was set to "Trip from external CBF" which led to maloperation.

Corrective action taken:

- Busbar settings has been corrected as per latest configuration for all bays.

Thank you.

Multiple Element Tripping Event at 400/220kV Gumma(HP) & 220kV Sawrakuddu HEP

At 07:04 hrs on 06.08.2025

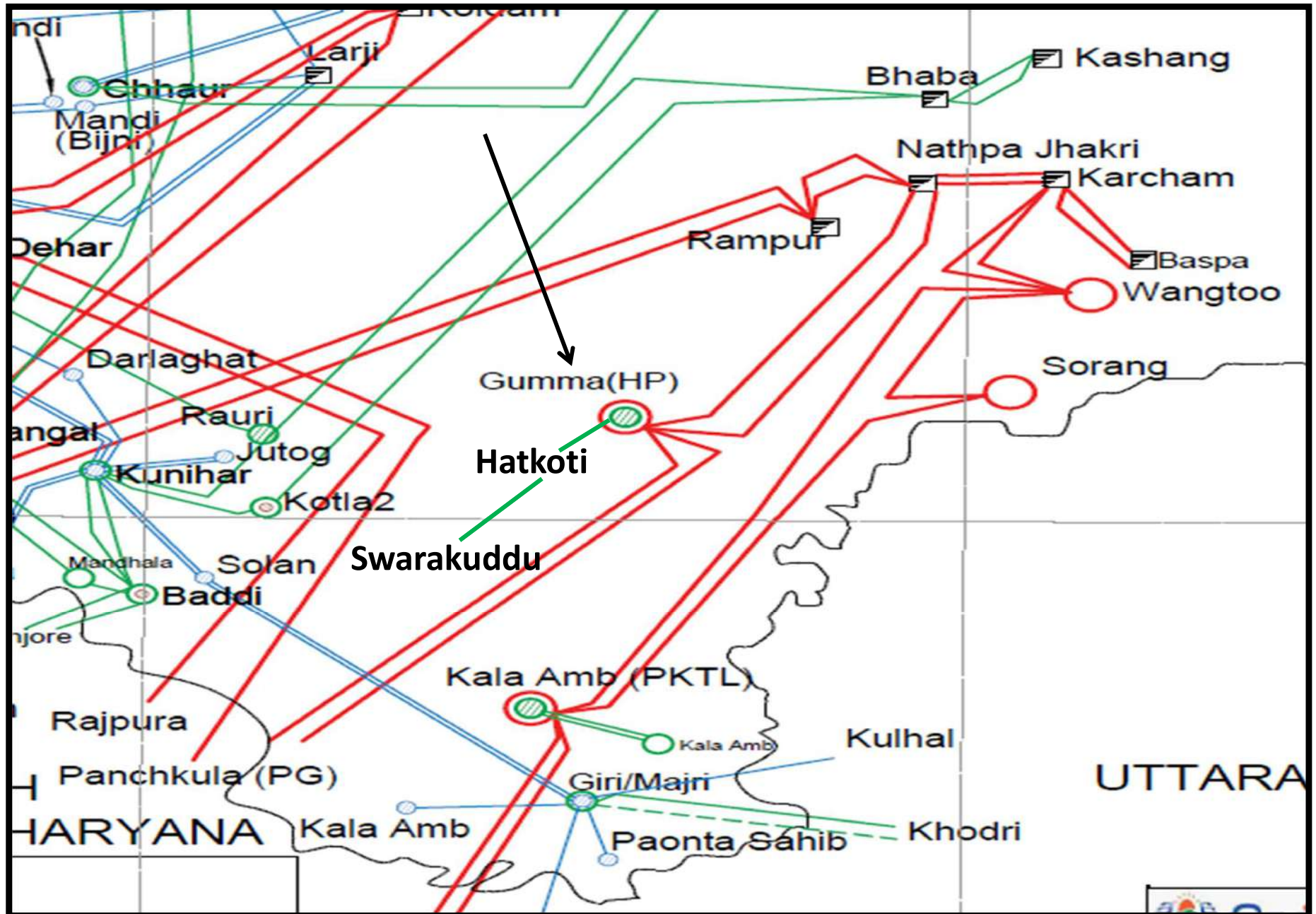
Tripped Elements

S. No	Name of Elements	Outage Time	Revival Time	Reason of tripping
1.	220kV <u>Naitwar</u> Mori- <u>Hatkoti</u> line	07:04 hrs	21:48 hrs	Fault occurred due to tree fell on the line
2.	220kV <u>Naitwar</u> Mori- Sawra <u>Kuddu</u> Line		14:07 hrs	Tripped on the same fault incident
3.	220kV Sawra <u>Kuddu</u> - <u>Hatkoti</u> Line		09:54 hrs	
4.	400/220 KV 315 MVA ICT 1 AT GUMMA (HP)		09:13 hrs	
5.	400/220 KV 315 MVA ICT 2 AT GUMMA (HP)		09:18 hrs	

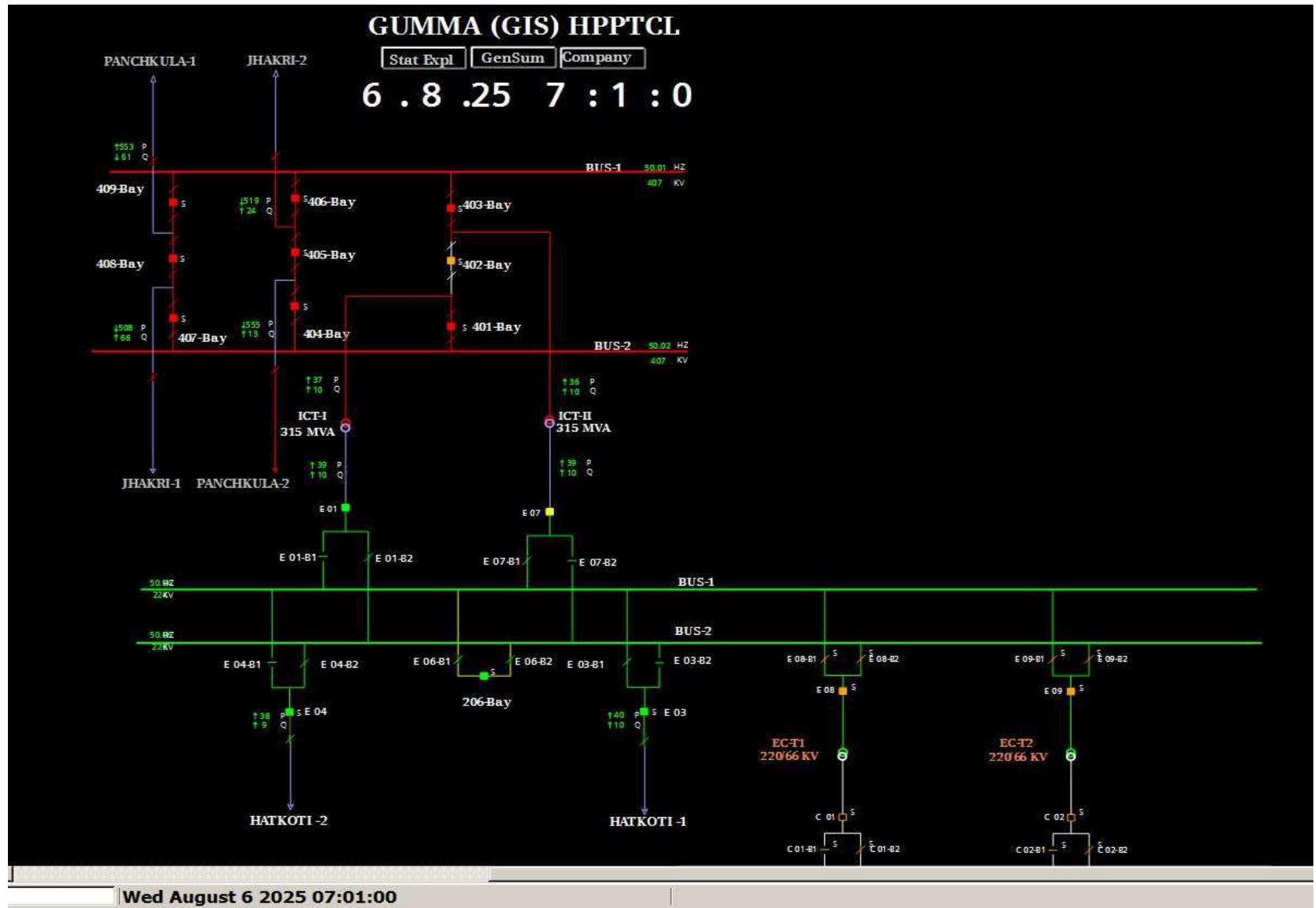
Brief details of the event

- i. Generation of Naitwar Mori HEP and Sawrakuddu HEP evacuates through 400/220kV Gumma ICTs via 220kV Hatkoti-Gumma D/C. Sawrakuddu is directly connected to Hatkoti from one line and with LILO at Naitwar Mori in second line.
- ii. During antecedent condition, 3*37 MW Sawrakuddu HEP was generating approx. 111 MW total and generation of Naitwar Mori HEP was under outage due to high silt.
- iii. As reported, at 07:03 hrs, 220kV Naitwar Mori-Hatkoti line tripped on phase to earth fault due to tree fell on the line during inclement weather condition. Due to non-clearance of fault from the line protection, 400/220kV 315 MVA ICT-1&2 at Gumma(HP) tripped on O/C E/F protection.
- iv. As per PMU at Gumma(HP), Y-B fault converted into R-Y-B fault with delayed clearance of approx. 4 sec 80 msec is observed.
- v. Due to tripping of both 315 MVA ICTs at Gumma(HP), 37 MW Unit-1, 2 & 3 at Sawrakuddu HEP tripped due to loss of evacuation path.
- vi. As per SCADA, generation loss of approx. 111 MW at Sawrakuddu HEP and change in demand of approx. 37 MW in HP control area is observed.

Network Diagram



SLD of 400/220kV Gumma(HP) before the event

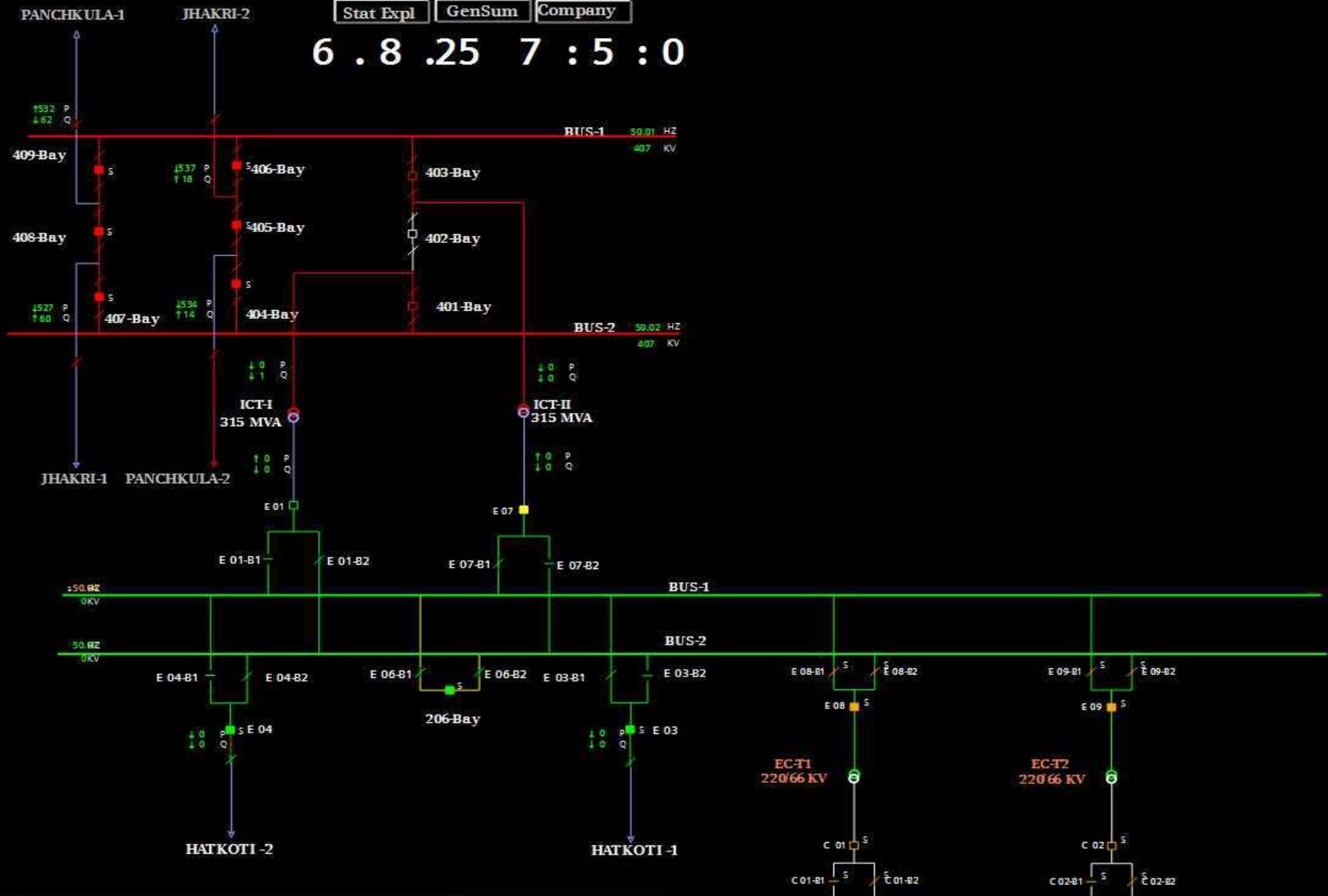


SLD of 400/220kV Gumma(HP) after the event

GUMMA (GIS) HPPTCL

Stat Expl GenSum Company

6 . 8 .25 7 : 5 : 0

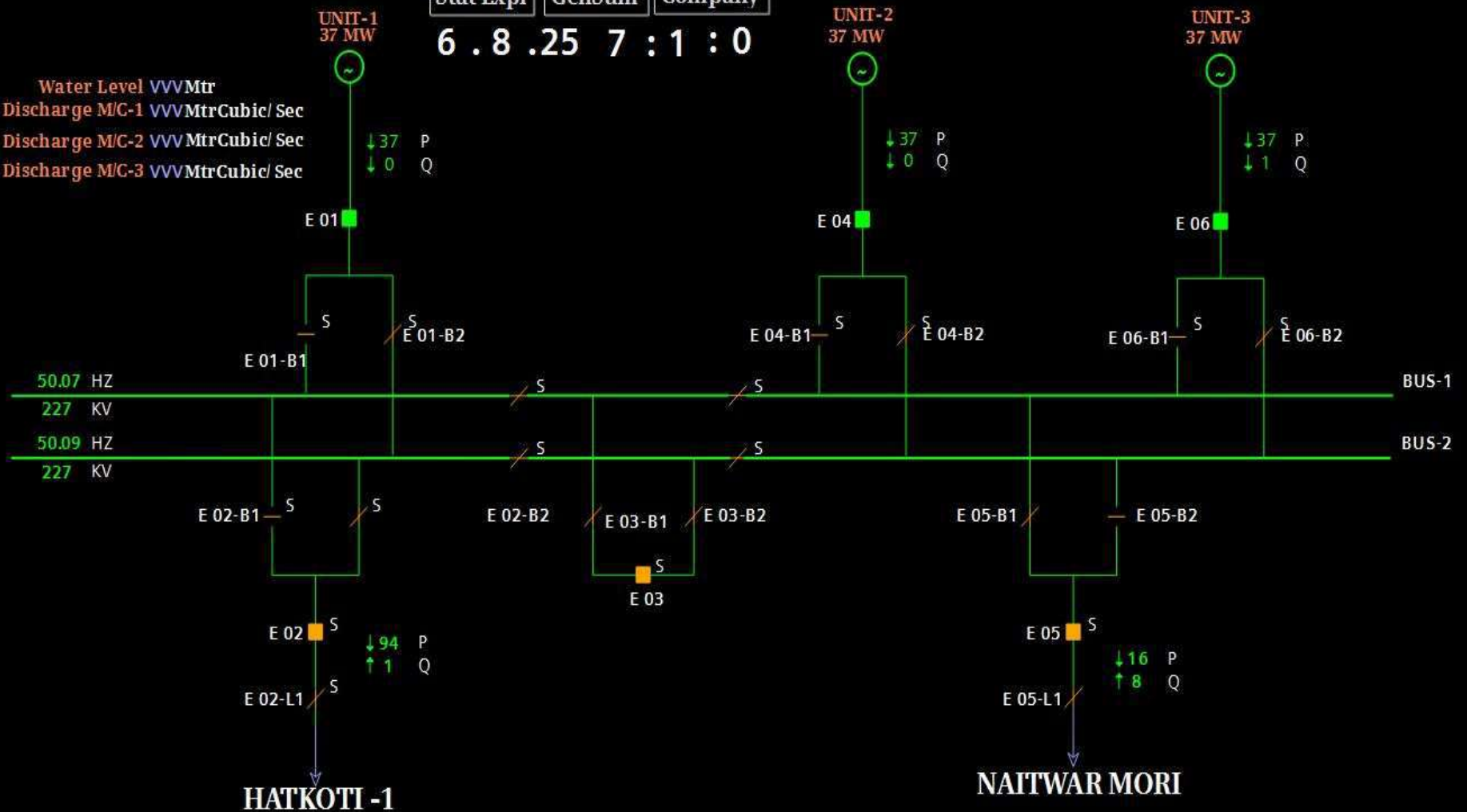


SLD of 220kV Sawrakuddu(HP) before the event

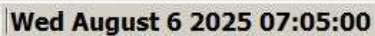
SAWRA KUDDU HPPCL (111 MW)

Stat Expl	GenSum	Company
6 . 8 .25	7 : 1 : 0	

Water Level VVV Mtr
Water Discharge M/C-1 VVV Mtr Cubic/ Sec
Water Discharge M/C-2 VVV Mtr Cubic/ Sec
Water Discharge M/C-3 VVV Mtr Cubic/ Sec

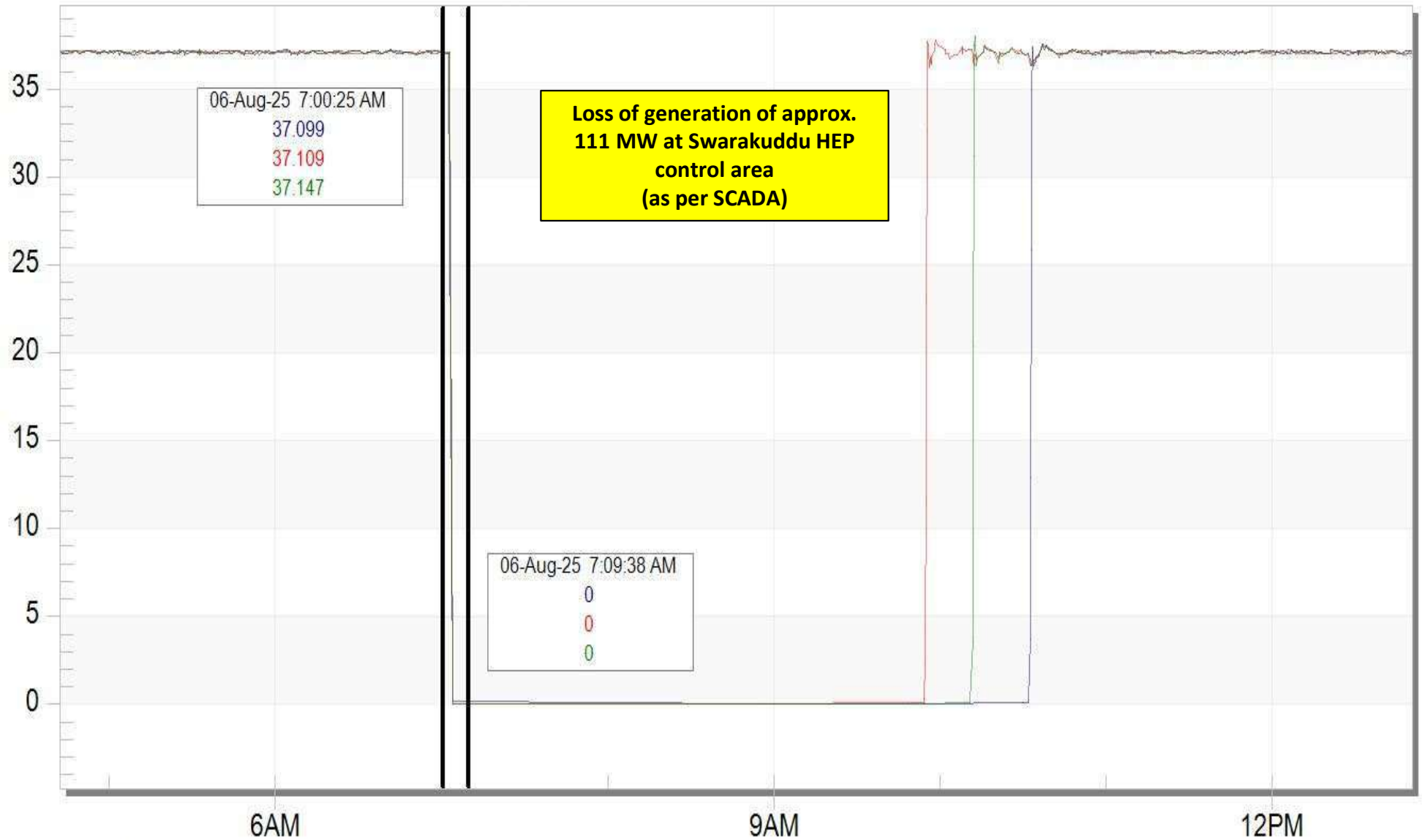


SAWRA KUDDU HPPCL (111 MW)



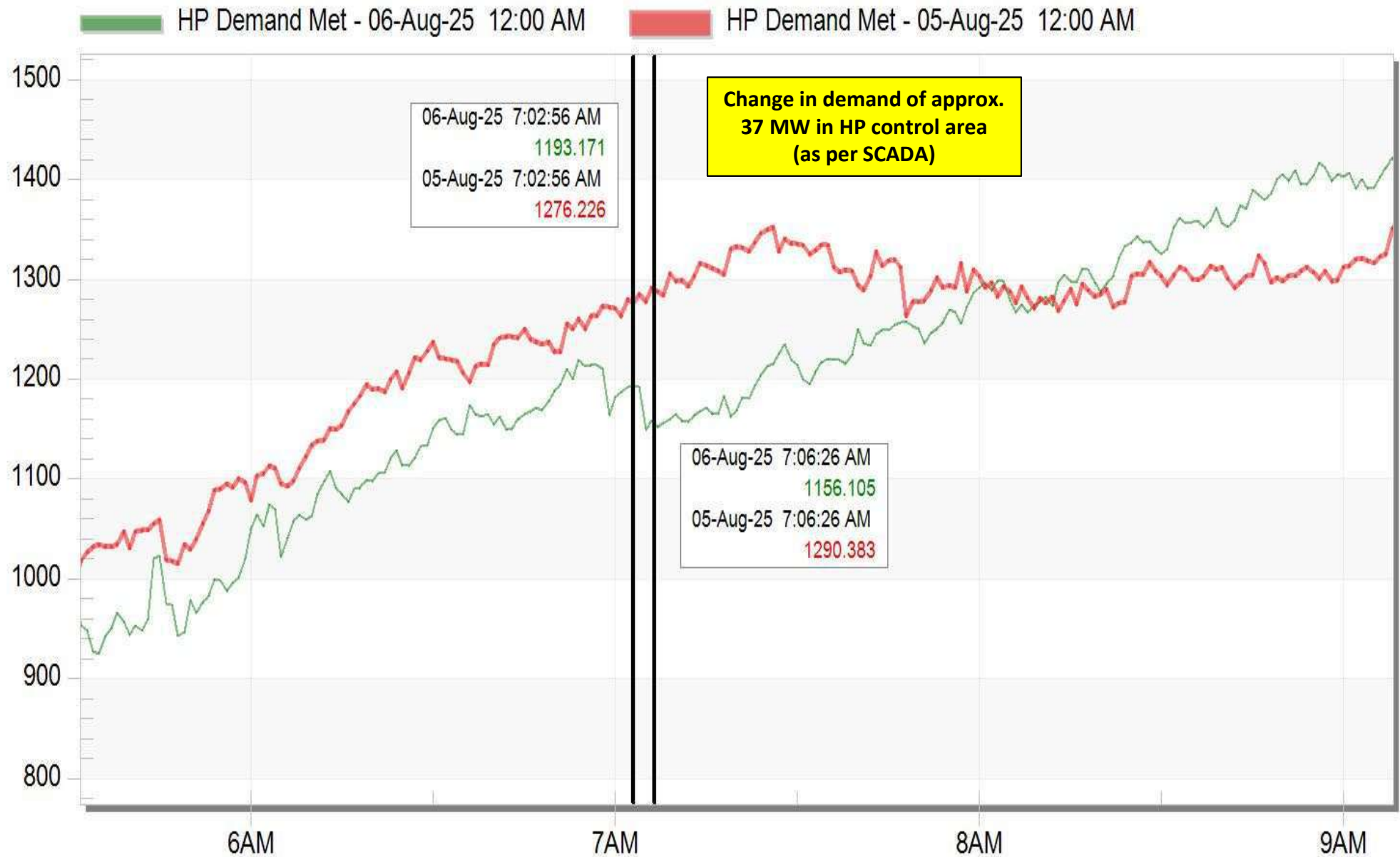
Sawrakuddu HEP generation during the event

!COMPANIES!HPSEBL!SAWRA_HP!220!01H01!P.MvMoment
!COMPANIES!HPSEBL!SAWRA_HP!220!04H02!P.MvMoment
!COMPANIES!HPSEBL!SAWRA_HP!220!06H03!P.MvMoment



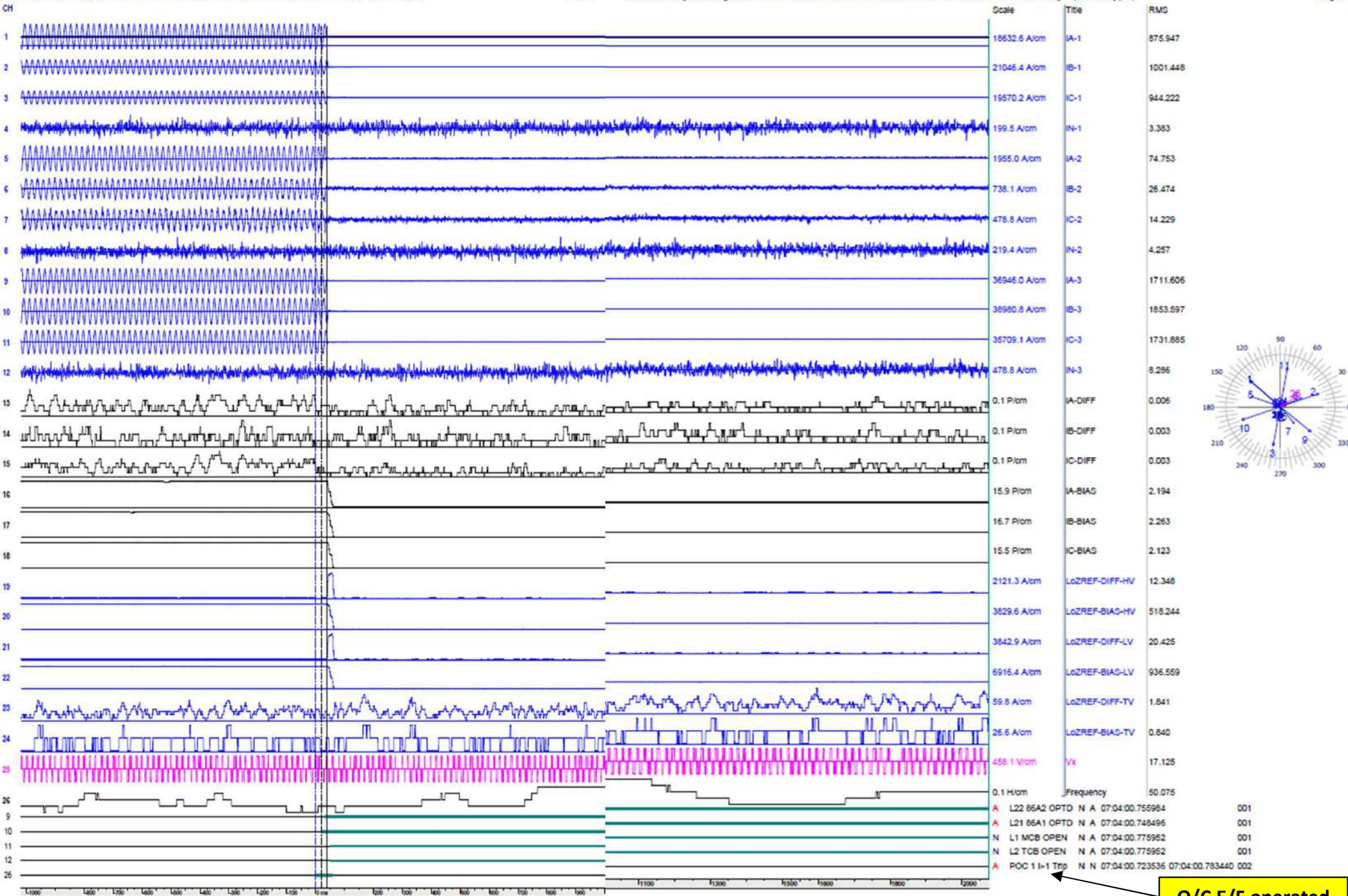
Himachal Pradesh Demand during the event

HP Demand Met



DR of 400/220 kV 315 MVA ICT 1 at Gumma (HP)

Page: 2



O/C E/F operated

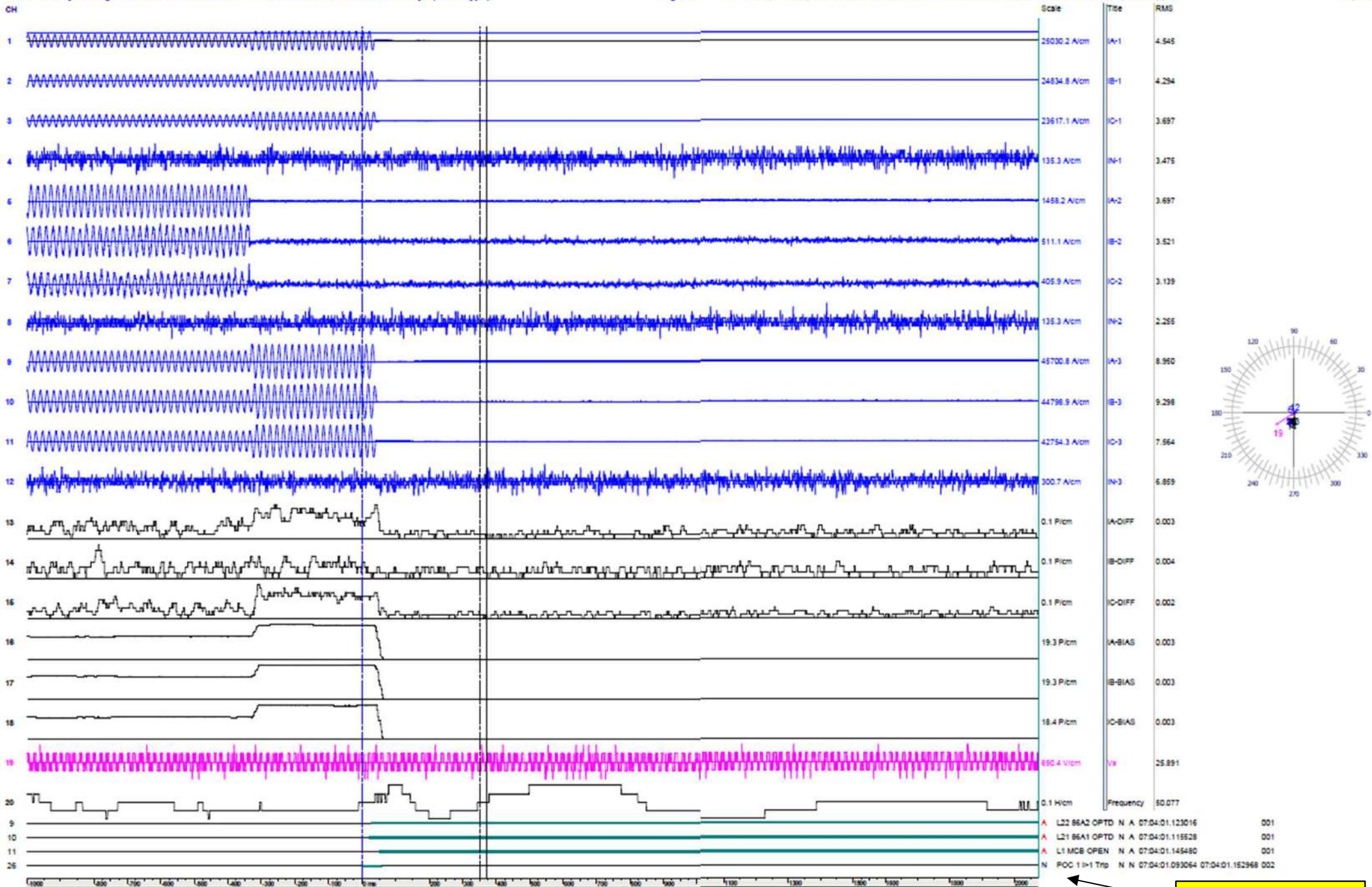
DR of 400/220 kV 315 MVA ICT 2 at Gumma (HP)

Wednesday 06 August 2025 07:04:01.001.DAT - 06/08/2025 - 07:04:01.093 - Primary - (Peak Type)

Page: 1

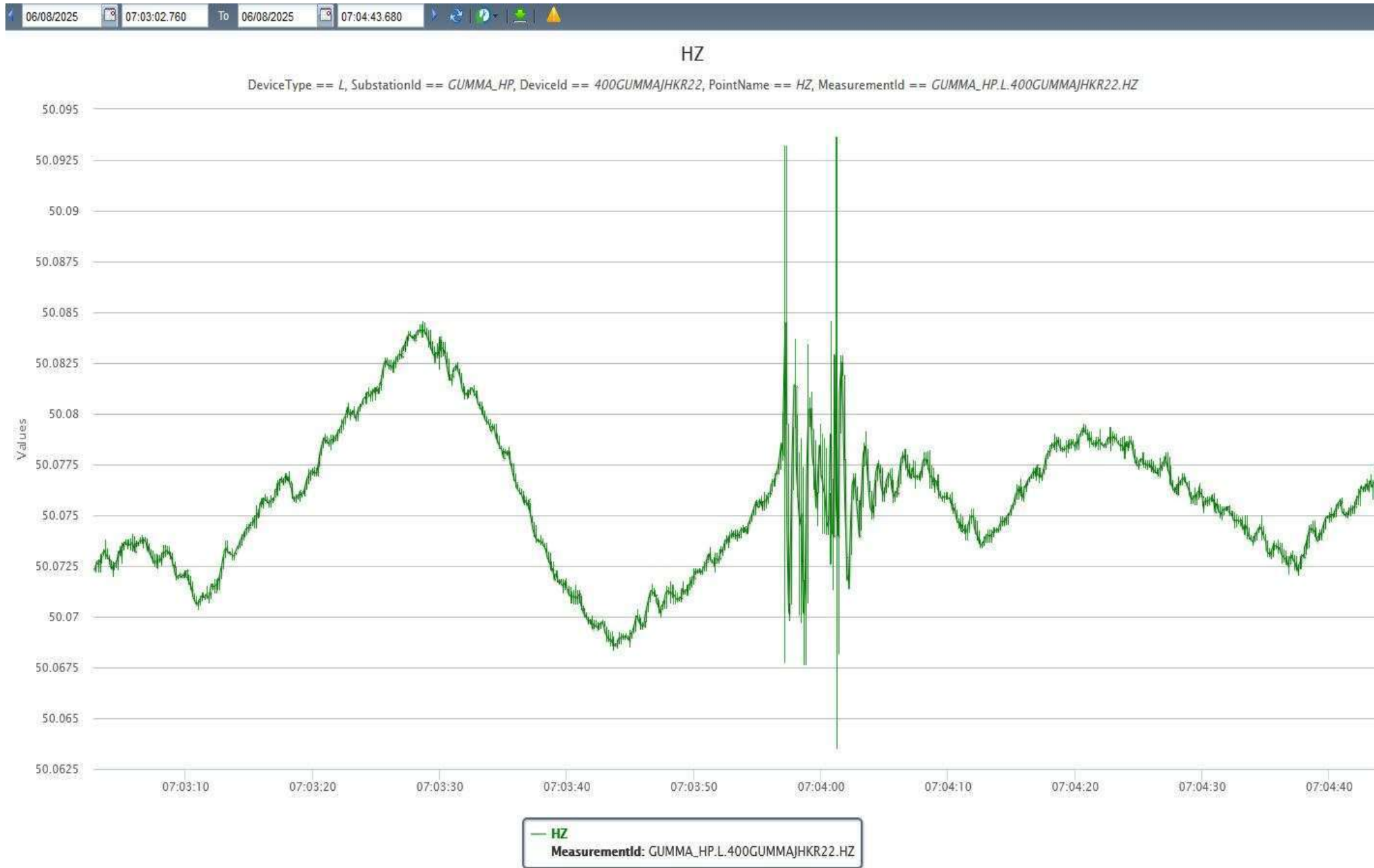
Wednesday 06 August 2025 07:04:01.001.DAT - 06/08/2025 - 07:04:01.093 - Primary - (Peak Type)

Page: 2



PMU Plot of frequency at Gumma(HP)

07:03 hrs/06-Aug-25



PMU Plot of phase voltage magnitude at Gumma(HP)

07:03 hrs/06-Aug-25



SCADA SOE

Time	Station Name	Voltage(kV)	Element Name	Element Type	Element Status	Remarks
07:04:01,000	GUMMA_H	400	01ICT1	Circuit Breaker	Open	Main CB at 400kV side of 400/220kV 315 MVA ICT-1 at Gumma(HP) opened
07:04:01,000	GUMMA_H	400	03ICT2	Circuit Breaker	Open	Main CB at 400kV side of 400/220kV 315 MVA ICT-2 at Gumma(HP) opened
07:04:01,000	GUMMA_H	400	02TIE	Circuit Breaker	Open	Tie CB at 400kV side of 400/220kV 315 MVA ICT-1&2 at Gumma(HP) opened
07:04:01,000	GUMMA_H	220	01T01	Circuit Breaker	Open	CB at 220kV side of 400/220kV 315 MVA ICT-1 at Gumma(HP) opened
07:04:01,318	SAWRA_H	220	03MBC	Circuit Breaker	Open	Bus coupler breaker opened
07:04:01,318	SAWRA_H	220	06H03	Circuit Breaker	Open	CB of 37 MW unit-3 at Sawrakuddu HEP opened
07:04:01,325	SAWRA_H	220	01H01	Circuit Breaker	Open	CB of 37 MW unit-1 at Sawrakuddu HEP opened
07:04:01,343	SAWRA_H	220	04H02	Circuit Breaker	Open	CB of 37 MW unit-2 at Sawrakuddu HEP opened

Points for Discussion

- i. Exact reason, location and nature of fault need to be shared.
- ii. Exact reason of non-clearance of fault from line protection and reason for delayed clearance of fault need to be shared.
- iii. DR/EL (.dat/.cfg file) of all tripped elements along with tripping reports need to be shared from both the ends.
- iv. Remedial action taken report needs to be shared.

**H.P. POWER TRANSMISSION CORPORATION LIMITED**

(A State Government Undertaking)

Regd. Office: Himfed Bhawan, Panjari, Tutikandi, Shimla-171005

DGM (Protection & Communication), Chowki Jamwalan, Hamirpur (H.P.)-177020Email: dgmprot.tcl@hptcl.in; Web: www.hpptcl.com

To

The Superintending Engineer (Operation),
Northern Regional Power Committee,
18-A, Shaheed Jeet Singh Marg,
Katwaria Sarai, New Delhi-110016

Subject: Tripping Report in respect of fault on dated 06.08.2025 in 220kV Hatkoti-Naitwar Mori Transmission Line.

References: NRPC 63rd PSC Meeting agenda Annexure-B. II - Grid Events Analysis August 2025 at Sr. No. 02.

Chief Engineer, HPSLDC, Totu, Shimla letter No. 4841-43 dated 19.09.2025 regarding Agenda item B.10 of 235th OCC Meeting

Sir,

With reference to the subject cited matter, please find herewith enclosed the detailed tripping report in respect of above referred Grid Event for information please.

DA: As Above.

Yours Sincerely,

Signed by

Virender Kumar

Date: 19-09-2025 16:38:18

Dy. General Manager (P&C),
HPPTCL, Chowki Jamwalan,
Hamirpur (H.P.).

Copy for kind information to: -

1. The General Manager (Projects), HPPTCL, Himfed Bhawan, Shimla-171005.
2. The General Manager, NRLDC, Grid Controller of India Limited, 18-A, Shaheed Jeet Singh Marg, Katwaria Sarai, New Delhi-110016
3. The Chief Engineer, HPSLDC, Totu, Shimla-171011
4. The Superintending Engineer, HPSLDC, Totu, Shimla-171011.

Sd/-

Dy. General Manager (P&C),
HPPTCL, Chowki Jamwalan,
Hamirpur (H.P.).

Annexure-1**Tripping Report in respect of fault on dated 06.08.2025 in 220kV Hatkoti-Naitwar Mori Transmission Line**

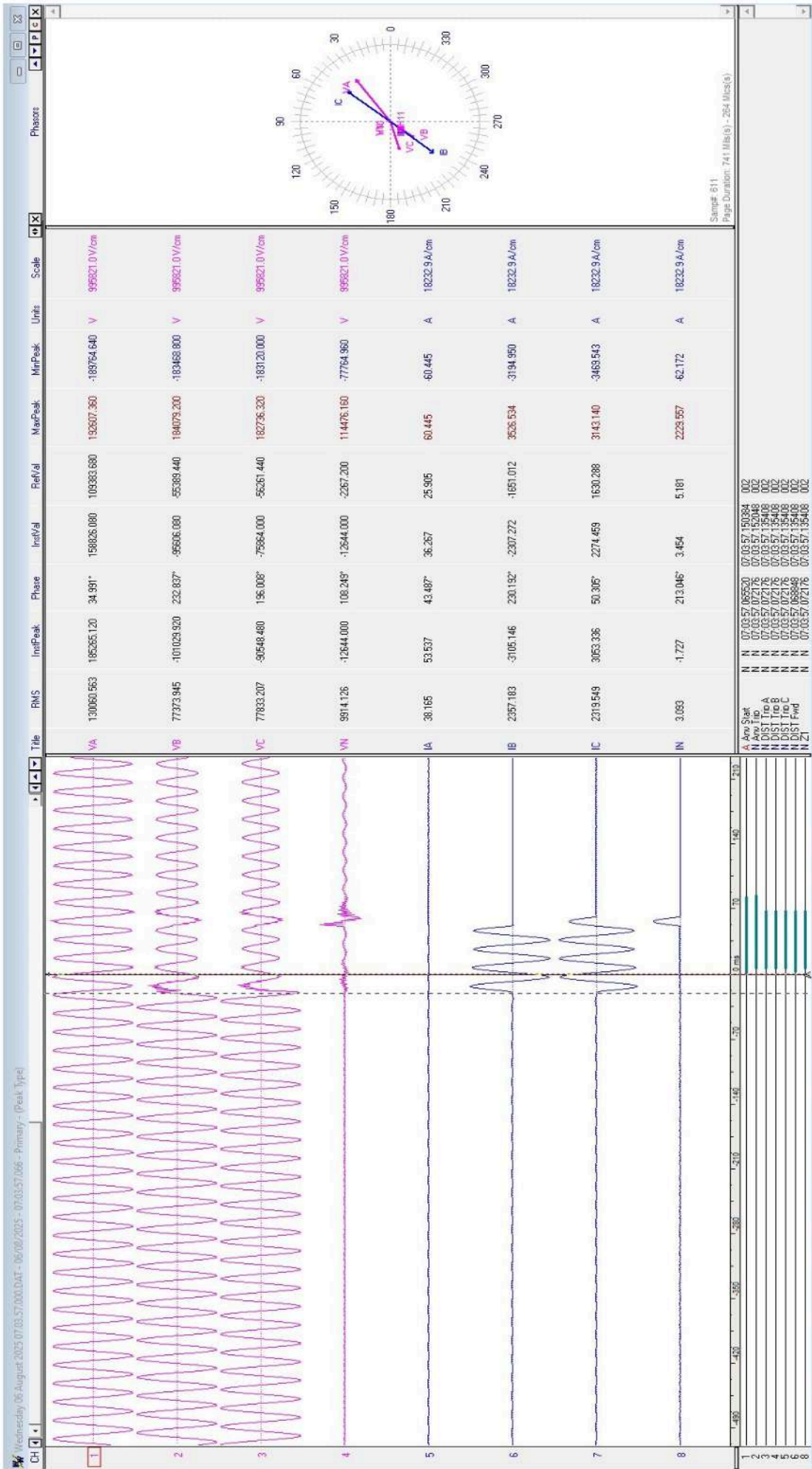
History: On dated 06.08.2025 at 07:03Hrs, a tree fell on the 220kV Hatkoti-Naitwar Mori Transmission Line (Naitwar Mori End) due to which Naitwar Mori end breaker tripped in Zone-1 at 07:03:57.065 (DR attached as **Annexure-A**). However, the breakers of Hatkoti End of said line and Gumma-Hatkoti circuits did not operate on account of said tripping, due to which fault travelled towards Gumma substation and tripped both 315MVA, 400/220kV ICTs banks on Earth Fault at 07:04:01.098 (DR attached as **Annexure-B**). Accordingly tripping report was sent by PIU Gumma shift-Incharge to HPSLDC on dated 07.08.2025 at 13:32Hrs (Copy attached as **Annexure-C**).

Analysis of fault & Remedial Measures thereof: After detailed analysis of Fault DR, Events and Relay settings, the remedial measures taken, have been summarized as under:

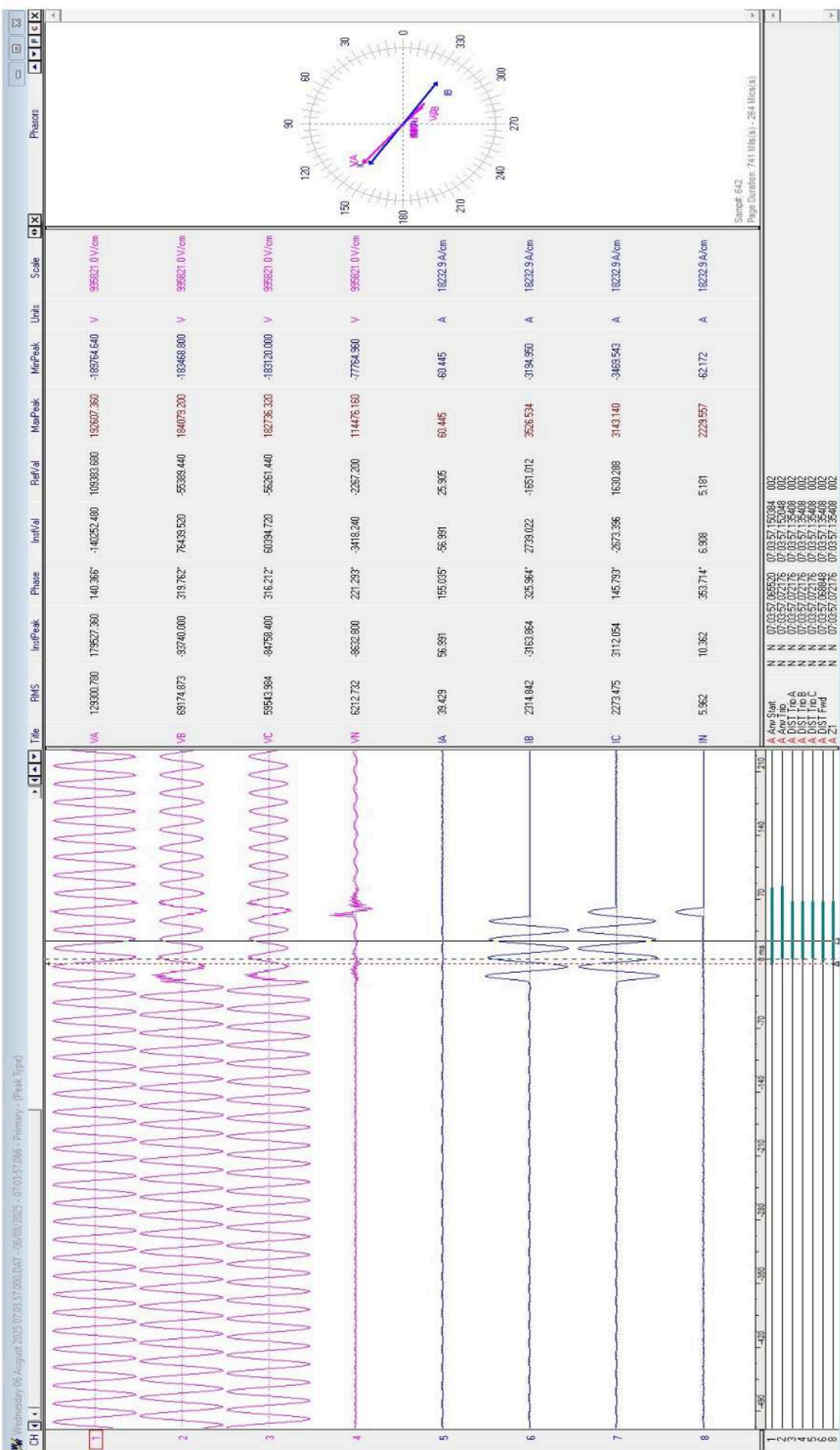
1. It has been observed in the Main-1 & Main 2 Relays of 220 kV Hatkoti-Mori Transmission line (Hatkoti End), previous/old relay setting file was uploaded in the relays which had old/previous relay settings (due to different CT Ratio i.e. 500/1 against 1000/1 etc.) due to which this fault remained beyond the Zone-3 reach limit and both relays failed to sense this fault. *However, same has been rectified and copy of the updated relay settings is attached as **Annexure-D**.*
2. In Main-1 & Main-2 Relays of 220 kV Gumma-Hatkoti D/C Transmission Line, Zone-3 reach settings were not revised earlier as per observation made at S.No.1, due to which this fault remained beyond the Zone-3 reach limit and both relays failed to sense this fault. *However, Same has been rectified and copy of the updated relay settings is attached as **Annexure-E**.*

Natwar Mori End DR

Annexure-A



Natwar Mori End DR



Natwar Mori End DR

File: C:\Users\AE-2\AppData\Local\Wavem\WAVESUMM.DTB

File Information:

Station: NATWAR MORI
Device: 115
File Name: E:\SHUBHAM\P&C\FAULT\GUMMA FAULT-06-08-2025\MORI END EVENTS AND DR OF L1 AND L2\L1 M1 DAT AND CFG DR\Wednesday 06 August 2025 07.03.57.000.DAT
File Size: 248065 Bytes
Prefault Time: 06/08/2025 07:03:56.558000
Trigger Time: 06/08/2025 07:03:57.066000
Save Time: 08-13-2025 12:59:36
Process Time: 08-18-2025 15:54:52
Start Date & Time: 06/08/2025 07:03:56.558000
End Date & Time: 06/08/2025 07:03:58.074688
File Duration: 1 Sec(s) - 516 Mils(s) - 688 Mics(s)
Sampling Frequency: 1201.923077, 832.000 Microsecond Rate
Line Frequency: 50.000000

Maximum/Minimum Analog Summary:

	Max-Inst	Min-Inst	Max-RMS	Min-RMS	One-Bit	Inst-Diff	RMS-Diff	pUnits	Description
>	192607.360	-189764.640	131218.625	52521.129	17.4400	2842.720	78697.496	V	1-VA
	184079.200	-183468.800	160003.438	64828.969	17.4400	610.400	95374.469	V	2-VB
	182736.320	-183120.000	181515.516	54327.203	17.4400	383.680	127188.313	V	3-VC
	114476.160	-77764.960	45722.672	348.800	17.4400	36711.200	45373.872	V	4-VN
	60.445	-60.445	40.807	0.997	1.7270	0.000	39.810	A	5-IA
	3526.534	-3194.950	2387.488	2.264	1.7270	331.584	2385.224	A	6-IB
	3143.140	-3465.543	2349.513	0.488	1.7270	326.403	2349.025	A	7-IC
	2229.557	-62.172	1108.596	0.000	1.7270	2167.385	1108.596	A	8-IN

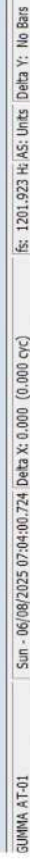
Events/Sensors Activity Summary:

	Fst	Lst	Fst-Change	Lst-Change	Changes	Description
>Fst Lst	07:03:57.065520	07:03:57.150384	002			1-Any Start
N N	07:03:57.072176	07:03:57.152048	002			2-Any Trip
N N	07:03:57.072176	07:03:57.135408	002			3-DIST Trip A
N N	07:03:57.072176	07:03:57.135408	002			4-DIST Trip B
N N	07:03:57.072176	07:03:57.135408	002			5-DIST Trip C
N N	07:03:57.068848	07:03:57.135408	002			6-DIST Fwd
N N	07:03:57.072176	07:03:57.135408	002			8-21

Events/Sensors Activity Log:

	Trigger-Time	Description
> State		
A	06/08/2025 07:03:57.065520	1-Any Start
A	06/08/2025 07:03:57.068848	6-DIST Fwd
A	06/08/2025 07:03:57.072176	2-Any Trip
A	06/08/2025 07:03:57.072176	3-DIST Trip A
A	06/08/2025 07:03:57.072176	4-DIST Trip B
A	06/08/2025 07:03:57.072176	5-DIST Trip C
A	06/08/2025 07:03:57.072176	8-21
N	06/08/2025 07:03:57.135408	3-DIST Trip A
N	06/08/2025 07:03:57.135408	4-DIST Trip B
N	06/08/2025 07:03:57.135408	5-DIST Trip C
N	06/08/2025 07:03:57.135408	6-DIST Fwd
N	06/08/2025 07:03:57.135408	8-21
N	06/08/2025 07:03:57.150384	1-Any Start
N	06/08/2025 07:03:57.152048	2-Any Trip

Annexure-B



315MVA, 400/220kV ICT Bank-1 Gumma DR

File C:\Users\AT-3\AppData\Local\Wareem\Wareem\WAVE\SUMMARY.DAT

File Information:

Station: AT-01

Device: GUMMA

File Name: E:\SHUSHAM\PC\FAULT\GUMMA FAULT-06-08-2025\NRPC\DR ANNEX-A & B\ANNEX-A GUMMA ICT DR\ICT-1 DR\Wednesday 06 August 2025 07:04:00.000 B-401 87T.DAT

File Size: 974641 Bytes

Default Time: 06/08/2025 07:03:59.706000

Trigger Time: 06/08/2025 07:04:00.724000

Save Time: 08-07-2025 10:36:06

Process Time: 09-19-2025 15:17:55

Start Date 66 Time: 06/08/2025 07:03:59.706000

End Date 66 Time: 06/08/2025 07:04:02.800208

File Duration: 3 Sec(s) - 94 Mils(s) - 208 Mics(s)

Sampling Frequency: 1201.933077, 832.000 Microsecond Rate

Line Frequency: 50.000000

Maximum/Minimum Analog Summary:

	Max-Inst	Min-Inst	Max-RMS	Min-RMS	One-Bit	Inst-Diff	RMS-Diff	PUnits	Description
1-IR-1	1289.854	-1289.854	1186.750	1.858	2.7620	0.000	1184.812	A	1-IR-1
2-IR-1	1455.336	-1455.336	1353.350	2.709	2.7620	0.000	1350.611	A	2-IR-1
3-IC-1	1359.904	-1359.904	968.194	1.817	2.7620	8.286	966.376	A	3-IC-1
4-IN-1	13.810	-13.810	5.295	1.953	2.7620	0.000	3.336	A	4-IN-1
5-IR-2	135.338	-135.338	134.250	1.869	2.7620	0.000	122.421	A	5-IR-2
6-IR-2	45.716	-52.478	33.163	2.255	2.7620	2.762	30.908	A	6-IR-2
7-IC-2	33.144	-33.144	24.888	2.033	2.7620	0.000	22.825	A	7-IC-2
8-IN-2	16.572	-13.810	5.581	0.000	2.7620	0.000	5.581	A	8-IN-2
9-IR-3	2557.612	-2557.612	2378.356	3.343	5.5240	0.000	2375.053	A	9-IR-3
10-IR-3	2690.188	-2706.760	2480.276	4.023	5.5240	16.572	2476.253	A	10-IR-3
11-IC-3	2474.752	-2469.228	1775.054	3.762	5.5240	5.524	1771.322	A	11-IC-3
12-IN-3	33.144	-33.144	13.150	4.510	5.5240	0.000	8.639	A	12-IN-3
13-IR-DIFF	0.014	0.000	0.011	0.001	0.0028	0.014	0.010	PU	13-IR-DIFF
14-IR-DIFF	0.011	0.000	0.009	0.001	0.0028	0.011	0.008	PU	14-IR-DIFF
15-IC-DIFF	0.017	0.000	0.014	0.000	0.0028	0.017	0.014	PU	15-IC-DIFF
16-IR-BIAS	2.204	0.000	2.204	0.000	0.0028	0.204	2.204	PU	16-IR-BIAS
17-IR-BIAS	2.312	0.000	2.310	0.003	0.0028	2.312	2.308	PU	17-IR-BIAS
18-IC-BIAS	2.146	0.000	2.144	0.000	0.0028	2.146	2.143	PU	18-IC-BIAS
19-LOGREF-DIFF-HV	293.703	0.000	271.848	0.857	0.9207	293.703	270.992	A	19-LOGREF-DIFF-HV
20-LOGREF-BIAS-HV	530.208	0.000	529.978	1.606	1.8410	530.208	528.372	A	20-LOGREF-BIAS-HV
21-LOGREF-DIFF-LV	532.049	0.000	490.459	1.295	1.8410	532.049	489.204	A	21-LOGREF-DIFF-LV
22-LOGREF-BIAS-LV	957.580	0.000	957.580	0.400	3.6830	957.580	957.180	A	22-LOGREF-BIAS-LV
23-LOGREF-DIFF-TV	6.286	0.000	6.957	0.757	0.9207	6.286	6.199	A	23-LOGREF-DIFF-TV
24-LOGREF-BIAS-TV	3.682	0.000	3.505	0.000	1.8410	3.682	3.505	A	24-LOGREF-BIAS-TV
25-Vx	31.710	-31.710	26.688	0.000	31.7100	0.000	26.688	V	25-Vx
26-Frequency	50.083	50.072	50.083	50.072	0.0025	0.010	0.010	Hz	26-Frequency

Events/Sensors Activity Summary:

Est	Lat	Est-Change	Lat-Change	Changes	Description
N	N	07:04:00.755964	xxxx:xx:xxxxxx	001	9-L22 86A2 OPTD
N	N	07:04:00.746196	xxxx:xx:xxxxxx	001	10-L21 86A1 OPTD
N	N	07:04:00.775962	xxxx:xx:xxxxxx	001	11-L1 MCB OPEN
N	N	07:04:00.775962	xxxx:xx:xxxxxx	001	12-L2 ICB OPEN
N	N	07:04:00.729536	07:04:00.783440	002	26-FOC 1 I>1 Trip

Events/Sensors Activity Log:

State	Trigger-Time	Description
A	06/08/2025 07:04:00.723536	26-FOC 1 I>1 Trip
A	06/08/2025 07:04:00.748496	10-L21 86A1 OPTD
A	06/08/2025 07:04:00.755964	9-L22 86A2 OPTD
A	06/08/2025 07:04:00.775962	11-L1 MCB OPEN

[illegible]

315MVA, 400/220kV ICT Bank-2 Gumma DR

File C:\Users\AE\Desktop\Local\Warren\WVCSUMM.DAT

* File Information: *

Station: MI-02

Device: GUNDA

File Name: E:\SHUBHAM\PC\Fault\GUNDA_FAULT-06-08-2025\Wednesday 06 August 2025 07:04:01.000 B-403 877.DAT

File Size: 81321 Bytes

Default Time: 06/08/2025 07:04:00.093000

Trigger Time: 06/08/2025 07:04:01.093000

Save Time: 06-07-2025 10:36:12

Process Time: 06-18-2025 16:02:29

Start Date & Time: 06/08/2025 07:04:00.093000

End Date & Time: 06/08/2025 07:04:03.167240

File Duration: 3 Sec(s) - 74 Mils(s) - 240 Mils(s)

Sampling Frequency: 1201.923077, 832.000 Microsecond Rate

Line Frequency: 50.000000

* Maximum/Minimum Analog Summary: *

>	Max-Inst	Min-Inst	Max-RMS	Min-RMS	One-Bit	Inst-Bit	RMS-Diff	pUnits	Description
	2314.556	-2289.174	1615.505	1.410	2.7620	30.382	1614.095	A	1-IA-1
	2297.994	-2264.940	1614.599	2.599	2.7620	31.144	1612.101	A	2-IB-1
	2190.266	-2148.936	1530.124	1.638	2.7620	41.430	1528.486	A	3-IC-1
	11.048	-13.810	5.896	0.000	2.7620	2.762	5.886	A	4-IN-1
	135.338	-132.576	114.508	2.110	2.7620	2.762	112.398	A	5-IA-2
	46.934	-46.954	38.668	2.110	2.7620	0.000	38.558	A	6-IB-2
	44.152	-30.392	22.994	2.183	2.7620	13.910	20.901	A	7-IC-2
	13.810	-11.048	5.524	1.691	2.7620	2.762	3.833	A	8-IN-2
	4209.288	-4187.192	2937.546	4.830	5.5240	22.096	2932.717	A	9-IA-3
	4093.294	-4137.476	2937.957	3.826	5.5240	44.192	2924.131	A	10-IB-3
	3910.992	-3944.136	2774.556	4.232	5.5240	33.144	2770.324	A	11-IC-3
	27.620	-27.620	11.933	4.219	5.5240	0.000	7.714	A	12-IN-3
	0.022	0.000	0.020	0.001	0.0028	0.022	0.019	PU	13-IA-DIFF
	0.017	0.000	0.014	0.002	0.0028	0.017	0.012	PU	14-IB-DIFF
	0.025	0.000	0.021	0.001	0.0028	0.025	0.020	PU	15-IC-DIFF
	3.546	0.000	3.542	0.001	0.0028	3.546	3.541	PU	16-IA-BIAS
	3.552	0.000	3.538	0.002	0.0028	3.552	3.536	PU	17-IB-BIAS
	3.386	0.000	3.342	0.001	0.0028	3.386	3.341	PU	18-IC-BIAS
	63.420	-63.420	34.231	14.474	31.7100	0.000	19.777	V	19-Vx
	50.083	50.072	50.083	50.072	0.0025	0.010	0.010	Hz	20-Frequency

* Events/Sensors Activity Summary: *

>Fst	Lst	Fst-Change	Lst-Change	Changes	Description
N	N	07:04:01.123016	XX:XX:XX:XXXXX	001	9-122 86A2 OFTD
N	N	07:04:01.115528	XX:XX:XX:XXXXX	001	10-121 86A1 OFTD
N	N	07:04:01.145480	XX:XX:XX:XXXXX	001	11-111 MCB OPEN
N	N	07:04:01.093064	07:04:01.152968	002	26-FOC 1 I>1 Trip

* Events/Sensors Activity Log: *

>	State	Trigger-Time	Description
A		06/08/2025 07:04:01.093064	26-FOC 1 I>1 Trip
A		06/08/2025 07:04:01.115528	10-121 86A1 OFTD
A		06/08/2025 07:04:01.123016	9-122 86A2 OFTD
A		06/08/2025 07:04:01.145480	11-111 MCB OPEN
N		06/08/2025 07:04:01.152968	26-FOC 1 I>1 Trip

Multiple Element Tripping Event at 220kV AD Hydro HEP (ADHPL)

At 23:33 hrs on 07.08.2025

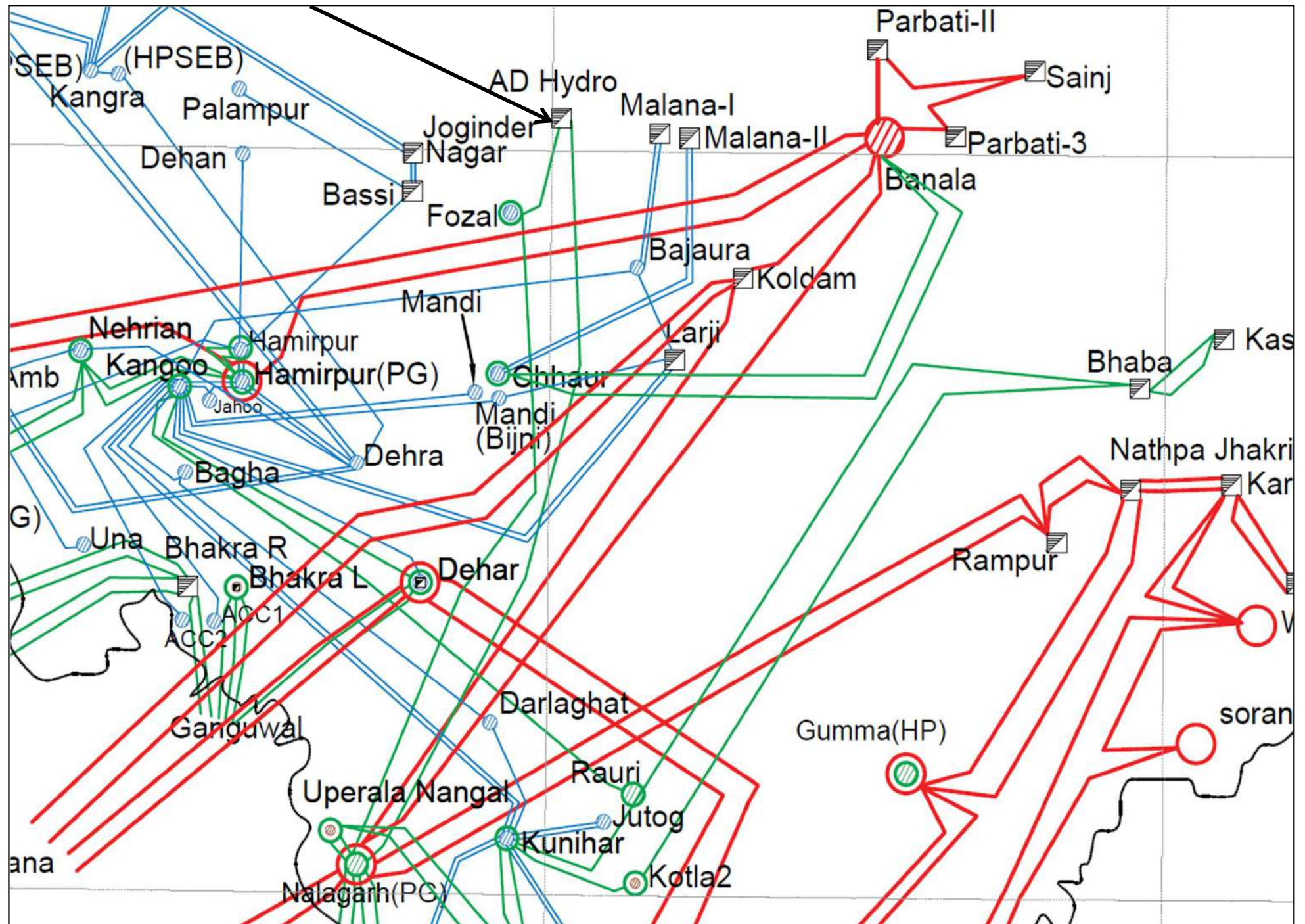
Tripped Elements

S. No	Name of Elements	Outage Time	Revival Time	Reason of tripping
1.	220 KV AD Hydro(AD)-Nallagarh(PG) (ADHPL) Ckt	23:33 hrs	00:20 hrs, 08.08.2025	B-N fault followed; Z-1 (54.7km) from <u>Nallagarh</u> end; <u>Ib</u> =1.5kA
2.	96 MW Unit-1 at AD Hydro HEP		00:25 hrs, 08.08.2025	Due to loss of evacuation path
3.	96 MW Unit-2 at AD Hydro HEP		00:28 hrs, 08.08.2025	

Brief details of the event

- i. Generation of AD Hydro HEP (2*96 MW) evacuates through 220kV AD Hydro-Nallagarh line (~175km) and 220kV AD Hydro-Phozal line(~14km)--> 220kV Phozal-Nallagarh Line. Both the lines are on same tower. There is LILO portion at 220/33kV Phozal in second line.
- ii. During antecedent condition, 96 MW Unit-1 and Unit-2 at AD Hydro HEP(IP) were generating approx. 210 MW. 220kV AD Hydro-Phozal line was already under tripped condition since 16:38 hrs due to snapping of conductor between tower location no. 27 & 28. Generation of AD Hydro was evacuating through 220kV AD Hydro-Nallagarhline only.
- iii. As reported at 23:33 hrs, 220 KV AD Hydro(AD)-Nallagarh(PG) (ADHPL) Ckt tripped due to B-N phase to earth fault. Line successfully autoreclosed from AD Hydro end however it tripped from Nallagarh end due to pole discrepancy (issue in A/R operation).
- iv. As per DR of AD Hydro end, B-N fault (1.5kA) was sensed in Z-1(120km from Nallagarh end) and line successfully autoreclosed after dead time. However, line tripped from Nallagarh end due to issue in A/R operation.
- v. At the same time, 96 MW Unit-1 and Unit-2 at AD Hydro HEP (generating ~210 MW) also tripped due to loss of evacuation path.
- vi. As per SCADA plot of AD Hydro HEP generation, loss of ~210 MW is observed and as per SCADA plot of HP demand, no change in HP demand is observed during the event time.
- vii. Line patrolling was done and no abnormalities was found. Further, line was charged at 00:20 hrs on 08.08.2025 and evacuation path to AD Hydro HEP restored.

Network diagram



SLD of 220/33kV ADHPL(IP) before the event

CONTACT DETAILS	
EMAIL	adhplcontrolroom@lnjbhilwara.com adhpl192@gmail.com
MOBILE	9816109820 / 9418614679

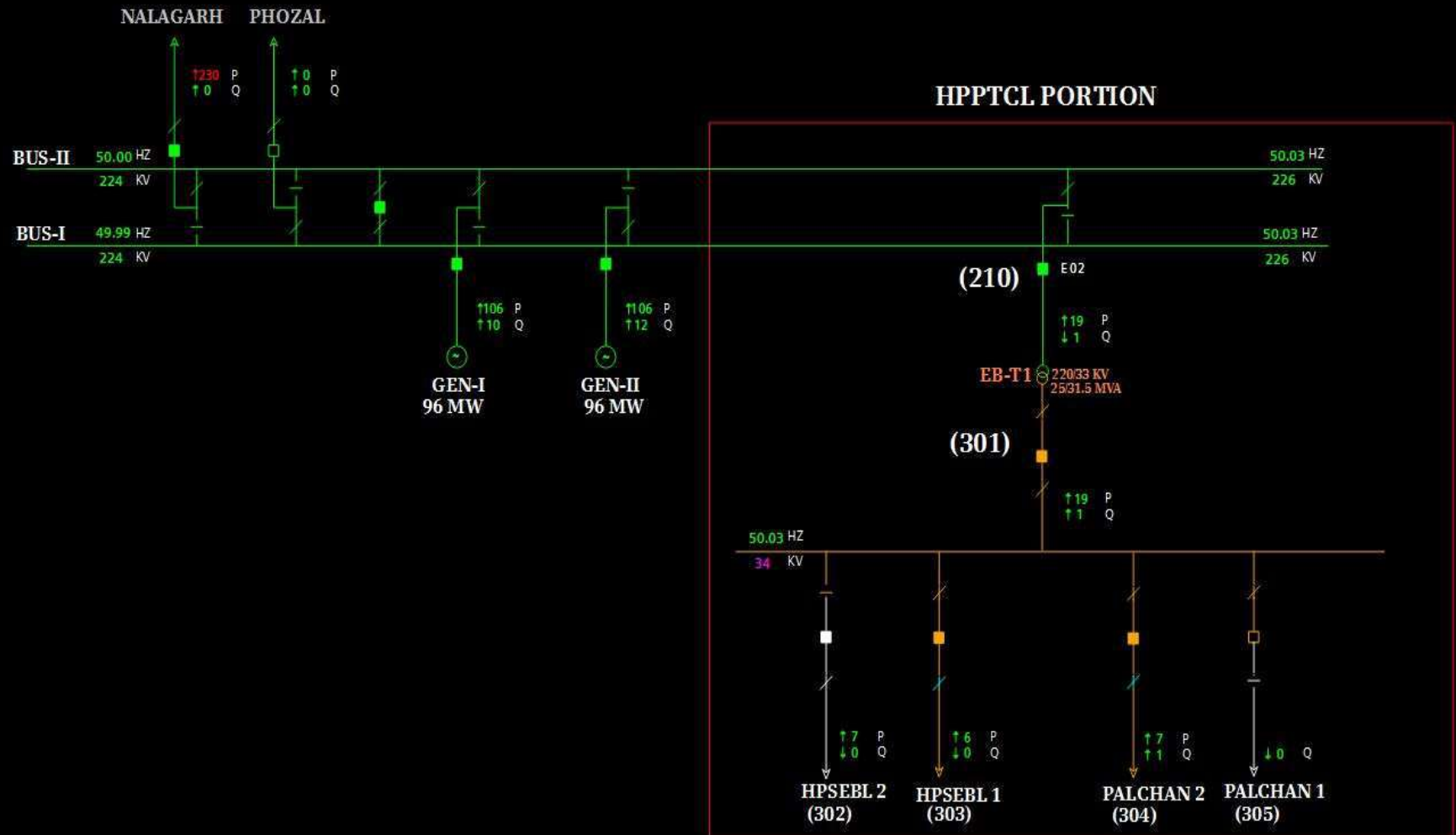
Psum(220 kV) = 18
Qsum(220 kV) = -22

A D HYDRO

Stat Expl GenSum Company

7 . 8 . 25 23:31:0

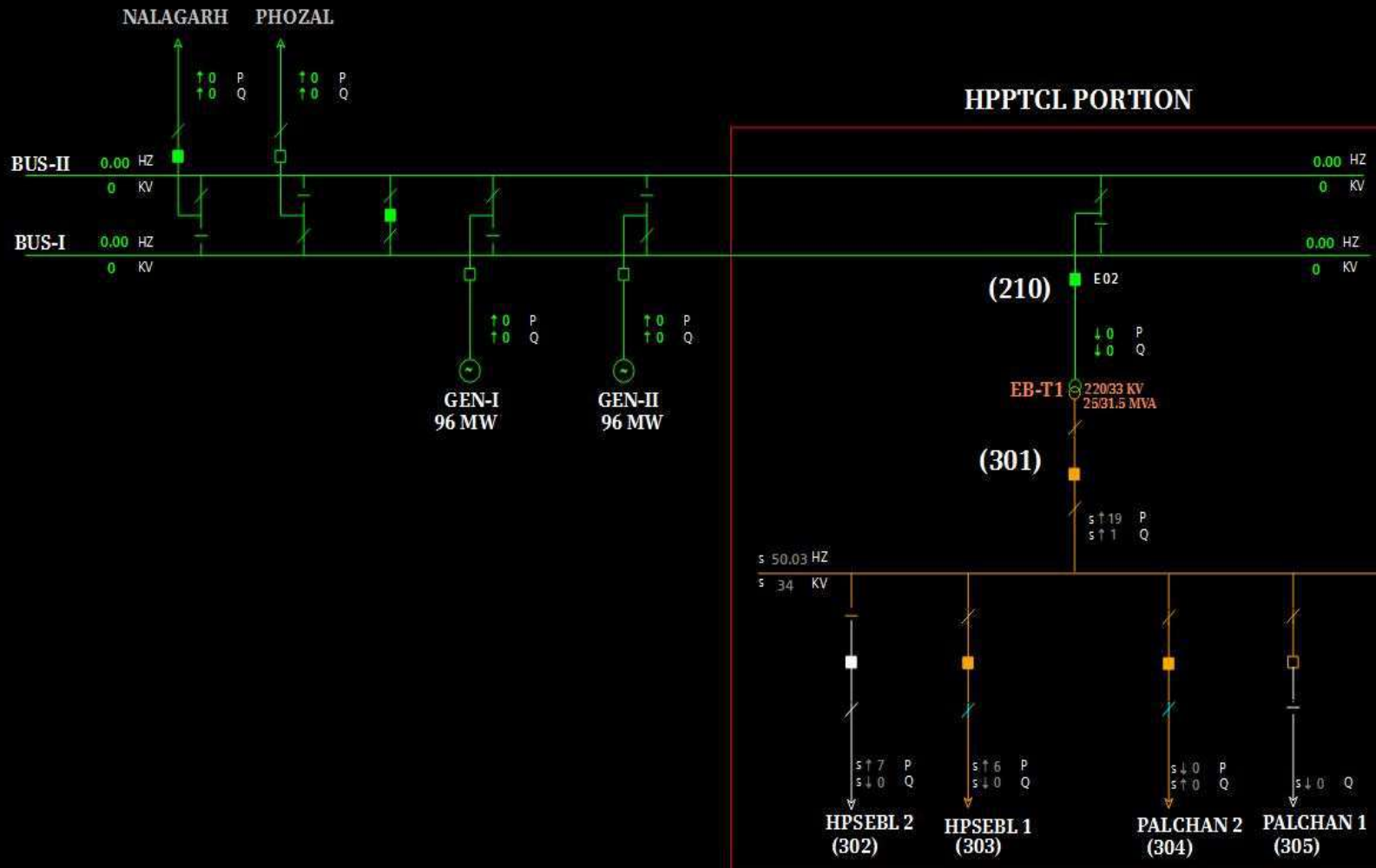
PL = 212
SENT = 210



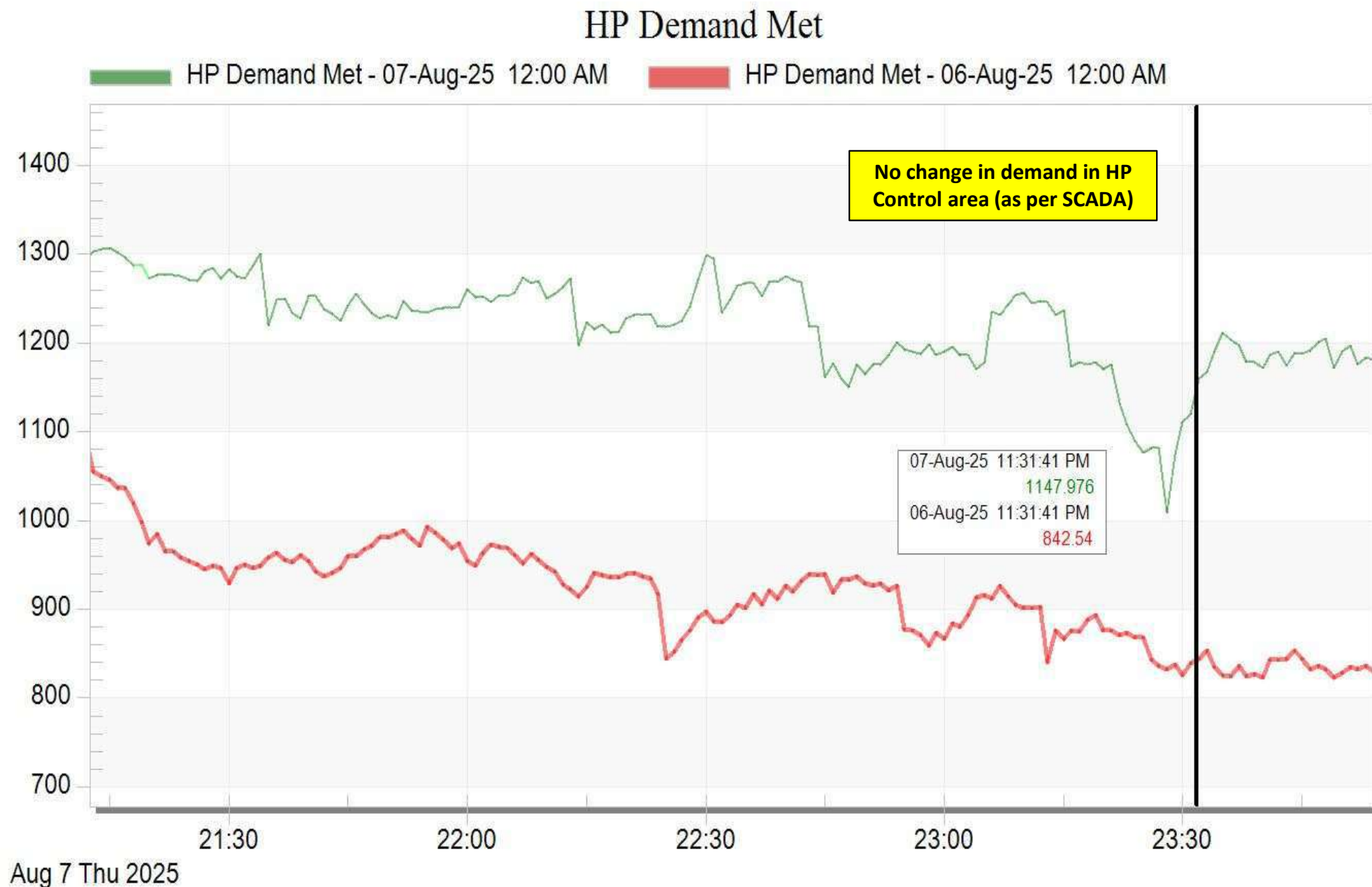
SLD of 220/33kV ADHPL(IP) after the event

CONTACT DETAILS	
EMAIL	adhplcontrolroom@lnjbhilwara.com adhpl192@gmail.com
MOBILE	9816109820 / 9418614679

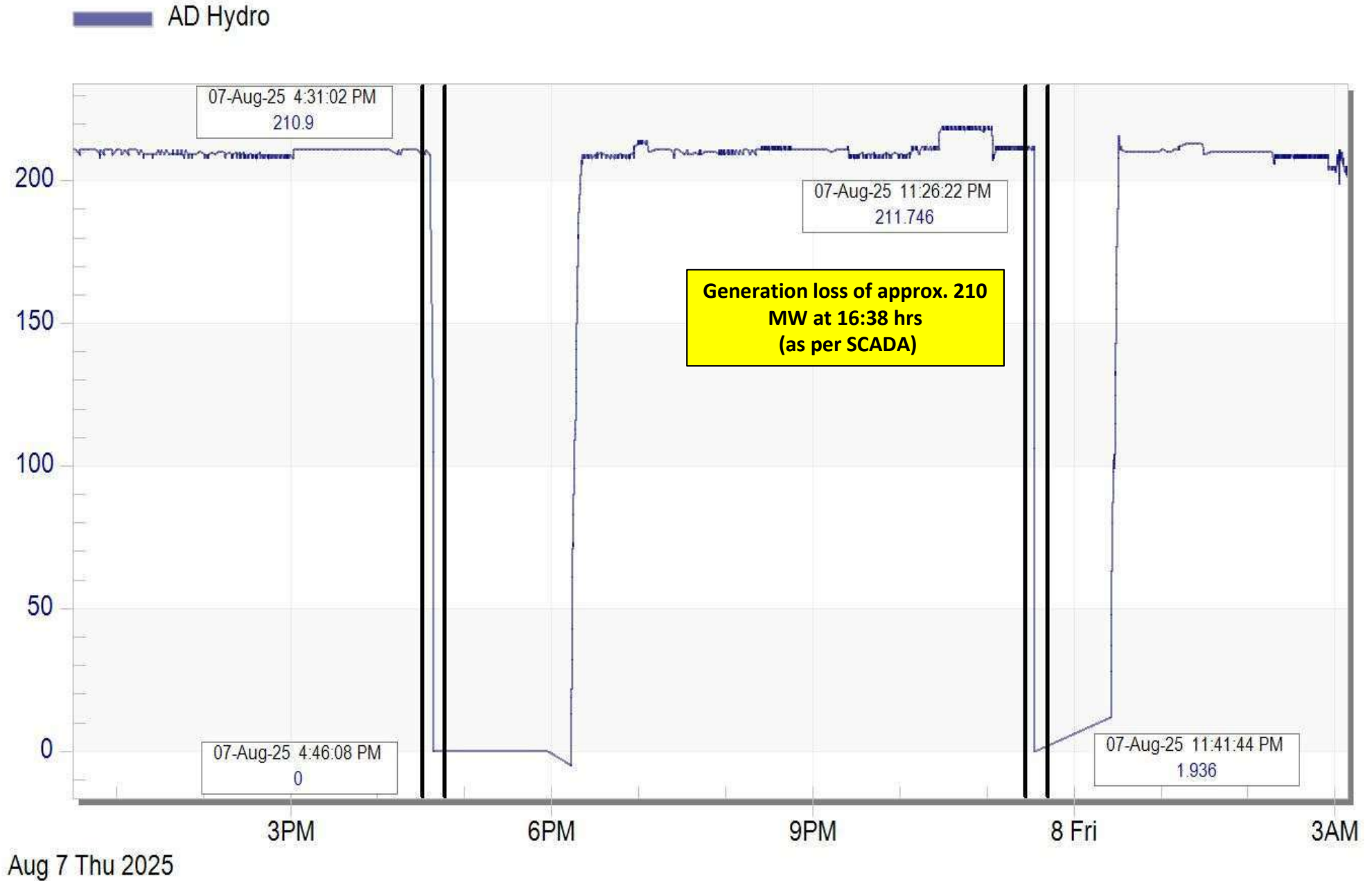
A D HYDRO
P sum(220 kV) = 0
Q sum(220 kV) = -22
Stat Expl GenSum Company
7 . 8 . 25 23:36:0
PL = 0
SENT = 0



Himachal Pradesh demand during the event



ADHPL Generation during the event



PMU Plot of frequency at Nallagarh(PG)

23:33hrs/07-Aug-25

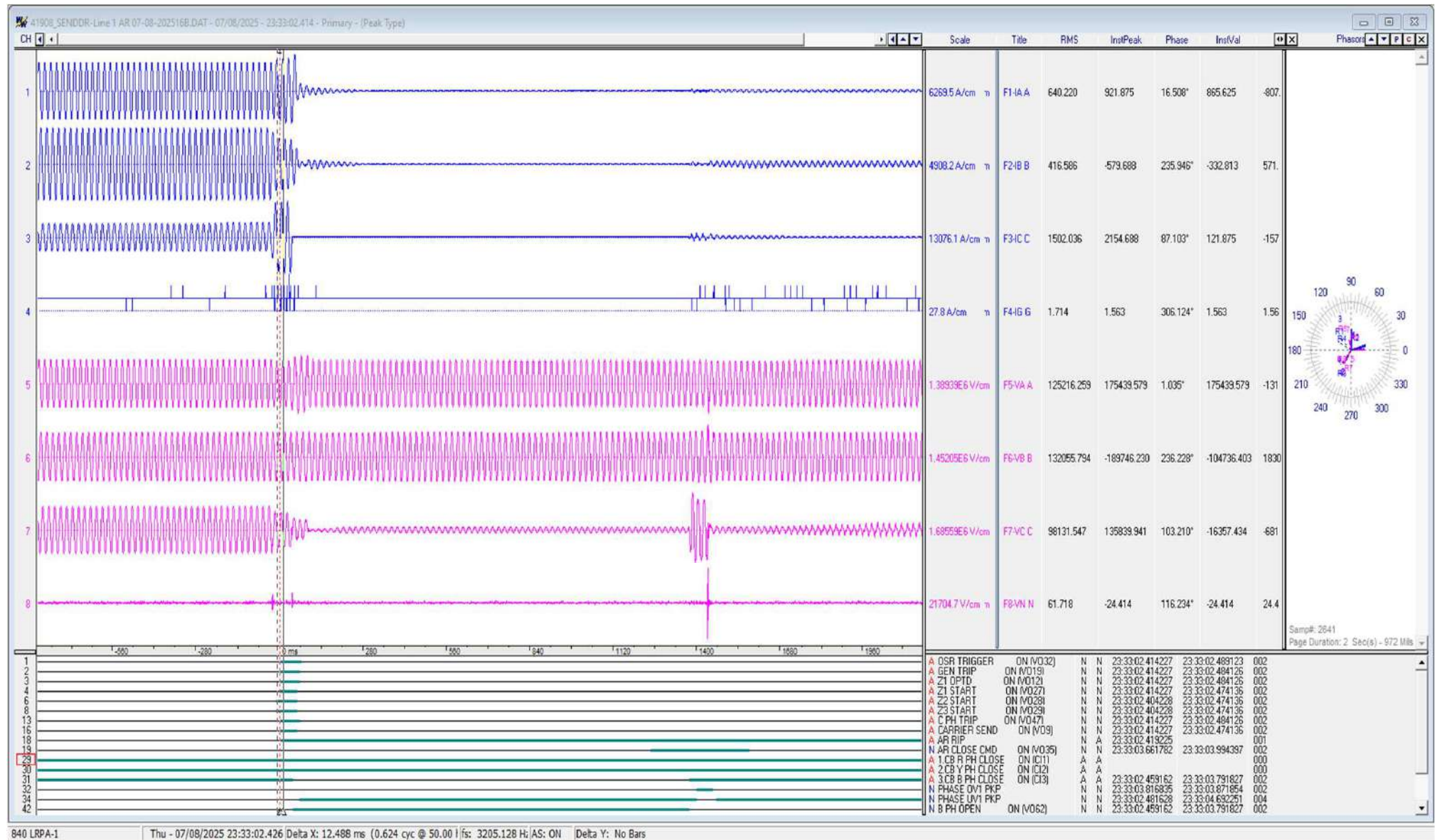


PMU Plot of phase voltage magnitude at Nallagarh(PG)

23:33hrs/07-Aug-25



DR of 220 KV AD hydro(AD) (end)-Nallagarh(PG) (ADHPL) Ckt



✓ 23:33:02:426 hrs: Z-1 operated, B-N fault ($I_b=1.5\text{kA}$) with successful A/R at AD Hydro end; Pole discrepancy at Nallagarh end;

SCADA SOE

Time	Station Name	Voltage	Element Name	Element Type	Element Status	Remarks
23:33:01,975	ADHYDRO	220kV	05H02	Circuit Breaker	Open	CB of 96 MW Unit-2 at AD Hydro opened
23:33:04,679	NALAGARH	220kV	12ADHYD1	Circuit Breaker	Open	Line CB at Nallagarh end of 220kV AD Hydro-Nallagarh line opened
23:34:59,977	ADHYDRO	220kV	02H01	Circuit Breaker	Open	CB of 96 MW Unit-1 at AD Hydro opened

Points for Discussion

- i. Issue related to A/R operation at Nallagarh end need to be rectified and proper A/R operation on single phase to earth fault need to be ensured.
- ii. DR/EL and tripping details of Nallagarh end yet to be received.
- iii. Remedial action taken report needs to be shared.

Multiple Element Tripping Event at 765/400kV Bara(UP)

At 21:33 hrs on 08.08.2025

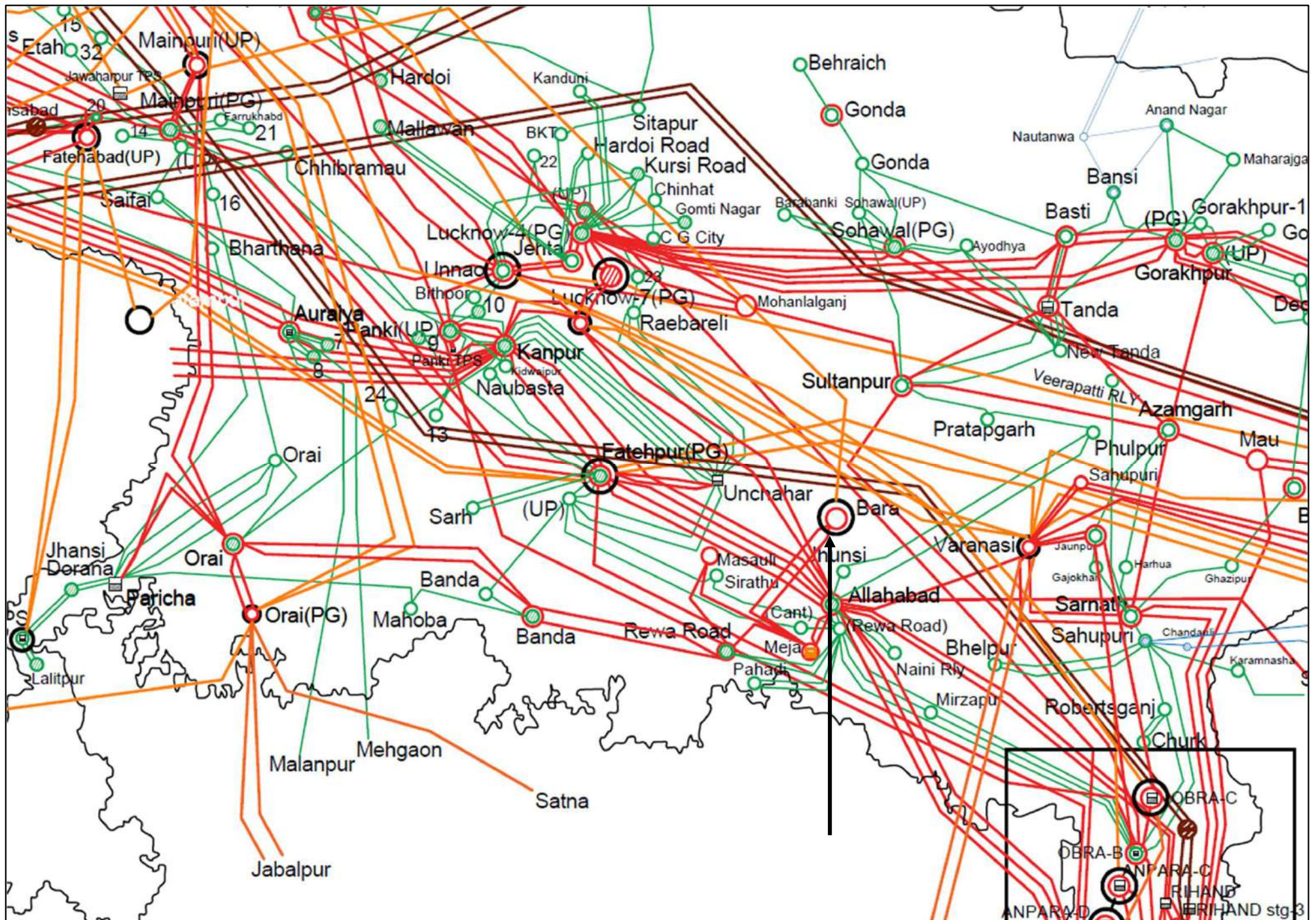
Tripped Elements

S. No	Name of Elements	Outage Time	Revival Time	Reason of tripping
1.	765KV Bus 2 at Bara(UP)	21:33 <u>hrs</u>	12:37 <u>hrs</u> on 08 th Aug'25	Bus bar protection operated due to fault in R-phase pole of 710 Main bay CB.
2.	765/400 kV 1500 MVA ICT 2 at Bara(UP)		06:39 <u>hrs</u> on 08 th Aug'25	
3.	765 KV Bara-Mainpuri (UP) Ckt-2		23:54 <u>hrs</u>	Tripped on zone-2 from Mainpuri
4.	660 MW Bara PPGCL TPS - UNIT 2		04:17 <u>hrs</u> on 08 th Aug'25	SPS operated

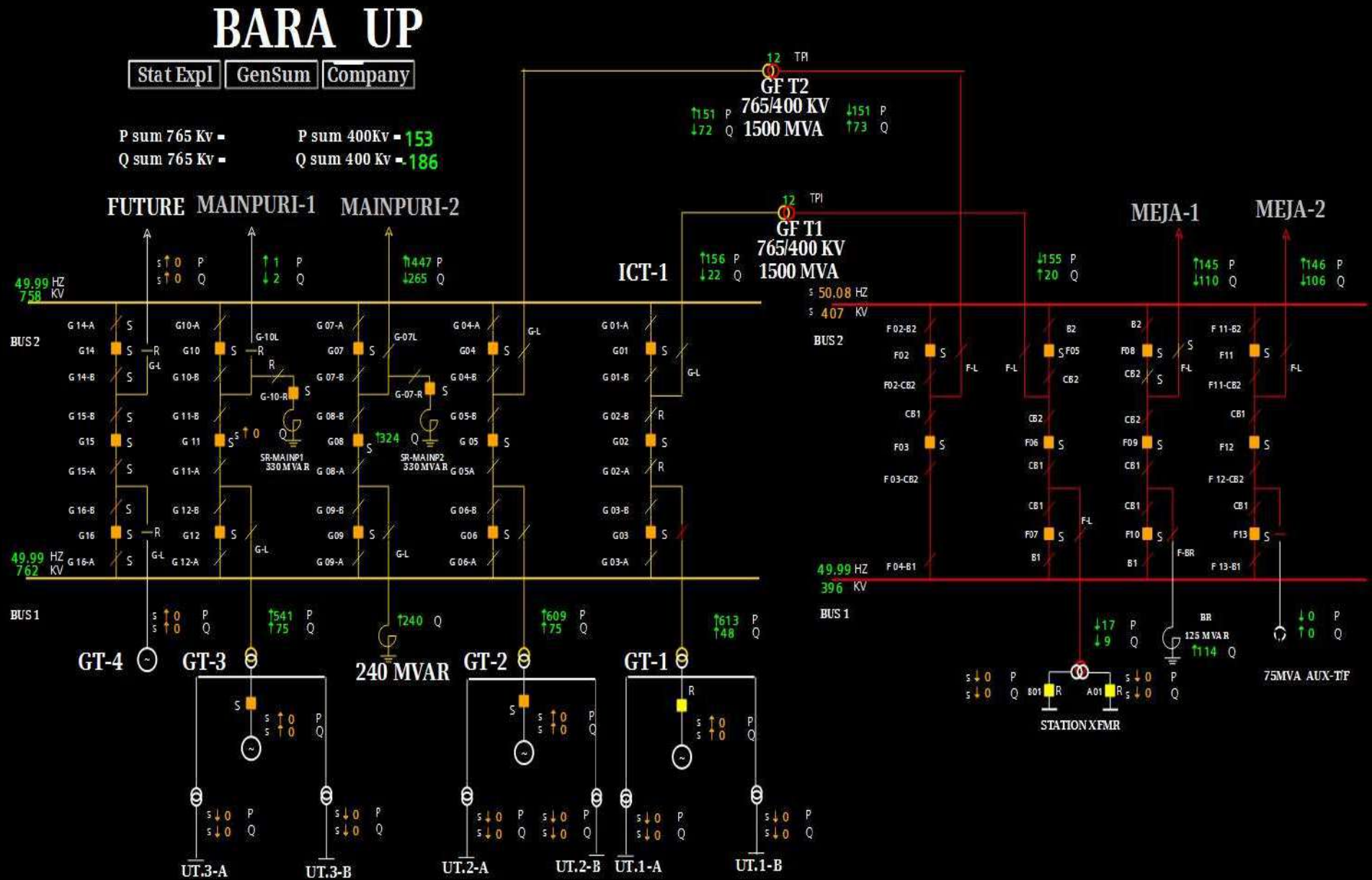
Brief details of the event

- i. 765/400kV Bara(UP) S/s has one and half breaker bus scheme at both 765kV and 400kV level. During antecedent condition, 660 MW Bara PPGCL TPS - UNIT 1, 2 & 3 were carrying 614 MW, 610 MW and 546 MW.
- ii. As reported, at 21:33 hrs, R-phase pole of 710 main circuit breaker got damaged. This has triggered the Bus Bar Protection operation at 765KV Bus 2 at Bara(UP) resulting in the tripping of all main CBs connected to Bus-2.
- iii. However, Tie CB of 765/400 kV 1500 MVA ICT-2 at Bara (UP) has also tripped resulting in tripping of ICT-2 (wrong busbar logic suspected).
- iv. During the same time, 765 KV Bara-Mainpuri (UP) Ckt-2 tripped from Mainpuri end only due to Zone-2 distance protection operation at the Mainpuri end. However, line remained charged through the tie bay from the Bara end.
- v. Due to tripping of 765 KV Bara-Mainpuri (UP) Ckt-2 and 765/400 kV 1500 MVA ICT-2 at Bara (UP) and as total Ex-Bus Generation at Bara TPS was more than 1400MW during antecedent condition, Case-3 of “SPS for safe evacuation of Bara TPS Generation” operated resulting in tripping of 660 MW Bara PPGCL TPS - UNIT 2.
- vi. As per PMU at Mainpuri(PG), R-N phase to earth fault was observed with delayed fault clearing time of 360 ms.
- vii. As per SCADA, no change in demand of UP control area and generation loss of approx. 610 MW at Bara TPS was observed.

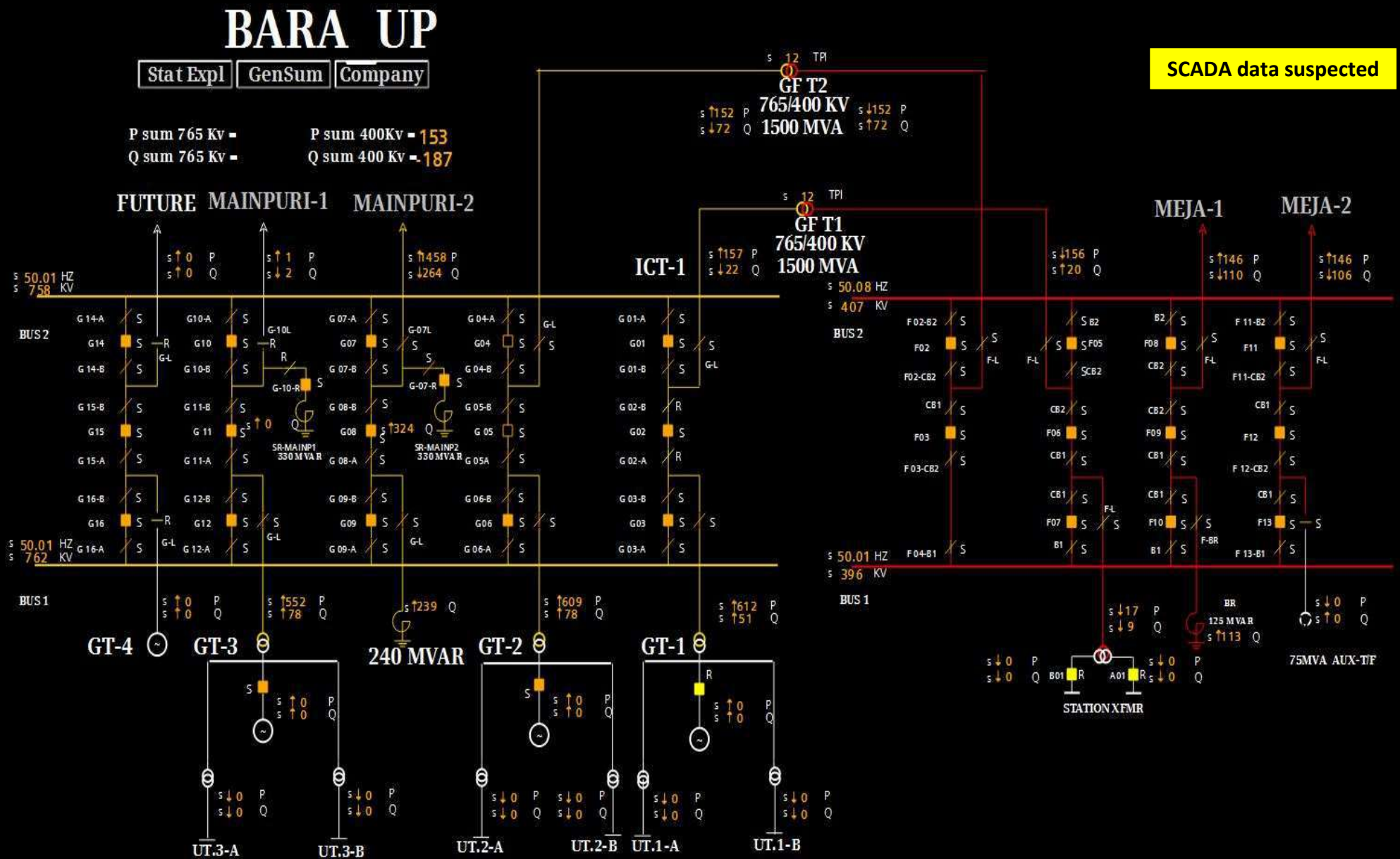
Network Diagram



SLD of 765/400kV Bara(UP) before the event @21:31 hrs



SLD of 765/400kV Bara(UP) after the event @21:36 hrs



SLD of 765/400kV Bara(UP) after the event @21:44:30 hrs

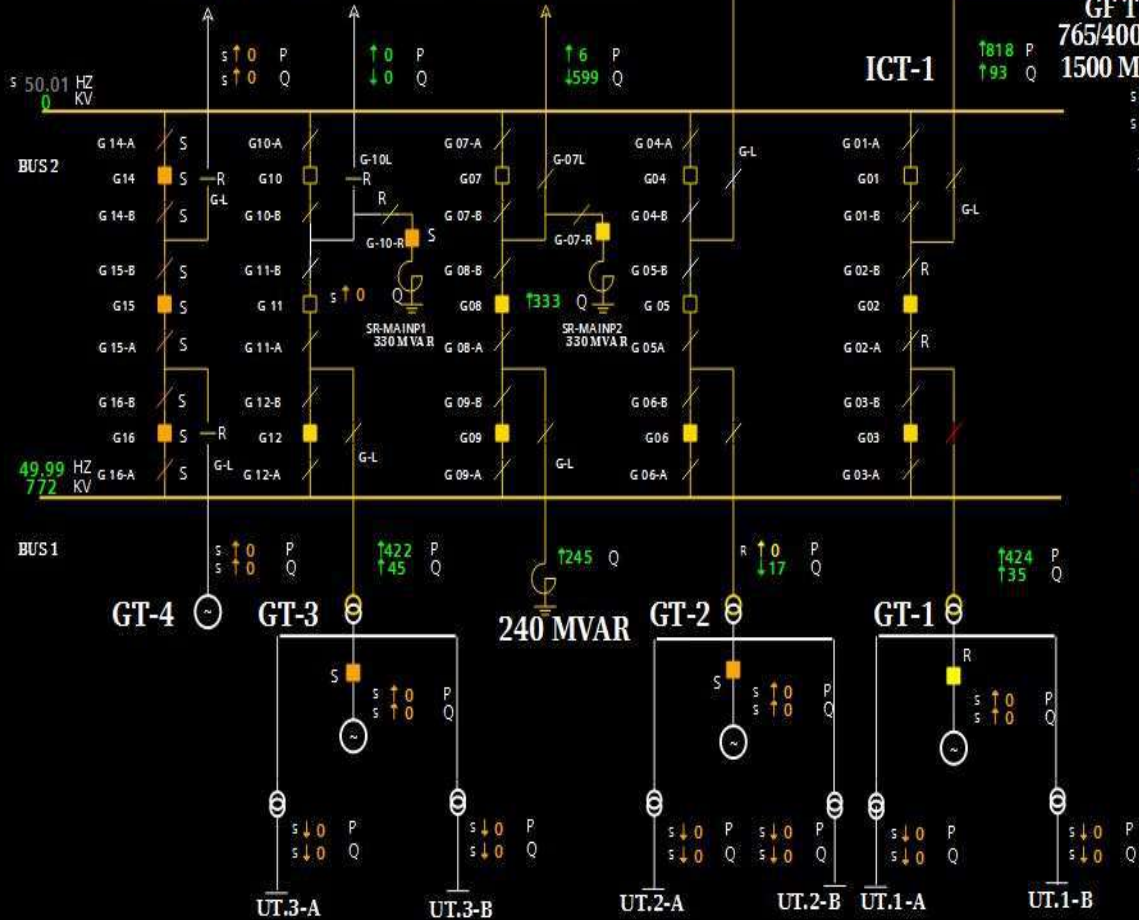
BARA UP

Stat Expl GenSum Company

P sum 765 Kv -
Q sum 765 Kv -

P sum 400Kv - 1
Q sum 400 Kv - 119

FUTURE MAINPURI-1 MAINPURI-2

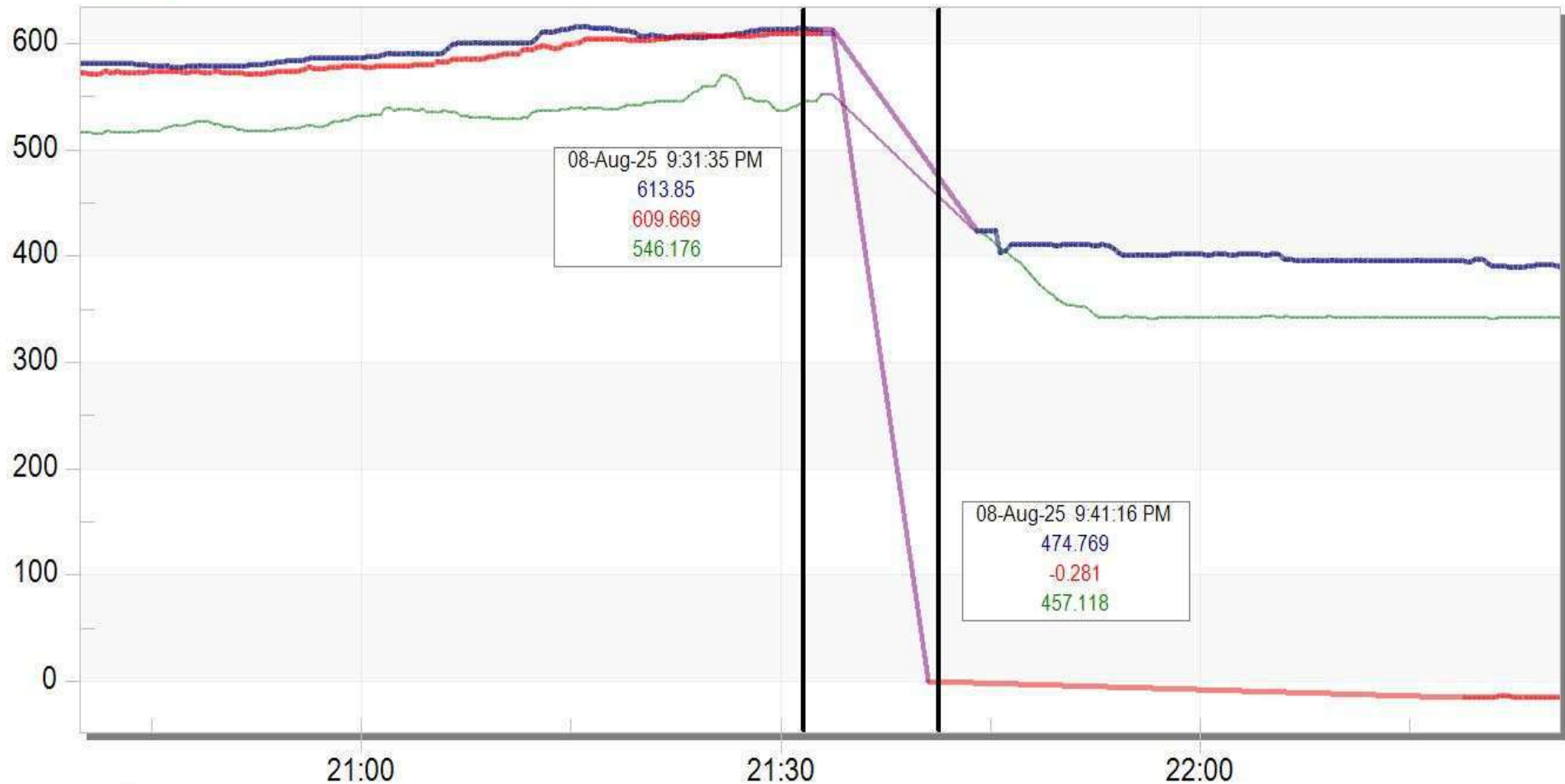


Bara(UP) TPS generation during the event

Bara TPS generation

!COMPANIES!UPPTCL!BARA_UP!765!LIGT1!P.MvMoment
!COMPANIES!UPPTCL!BARA_UP!765!LIGT2!P.MvMoment
!COMPANIES!UPPTCL!BARA_UP!765!LIGT3!P.MvMoment

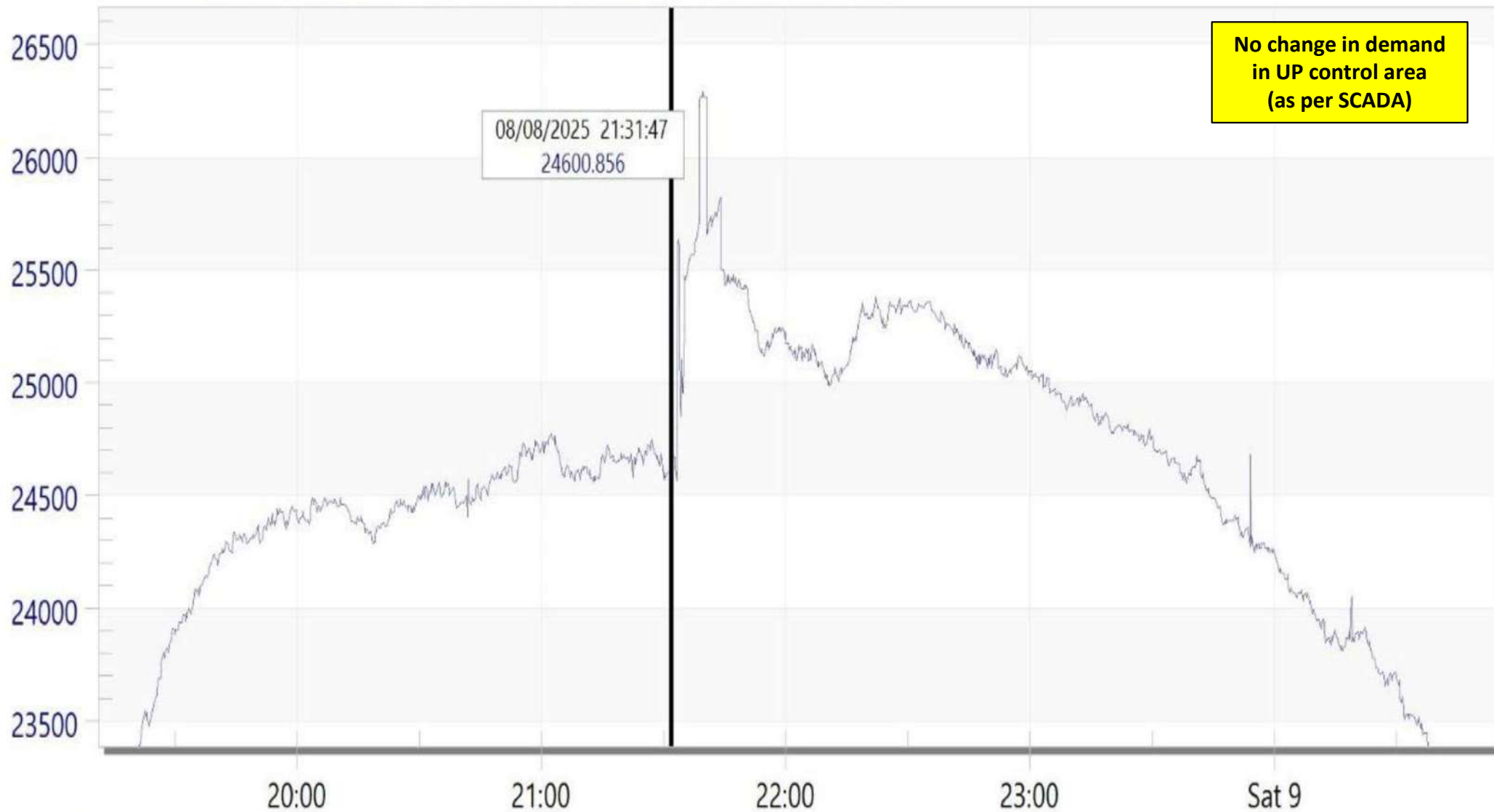
Loss of generation of approx.
610 MW at Bara TPS
(as per SCADA)



Uttar Pradesh Demand during the event

UP Demand

MNRL.SCADA02.PGCIL/NRLDC_PG/LD/UP_LOAD/P/MvMoment

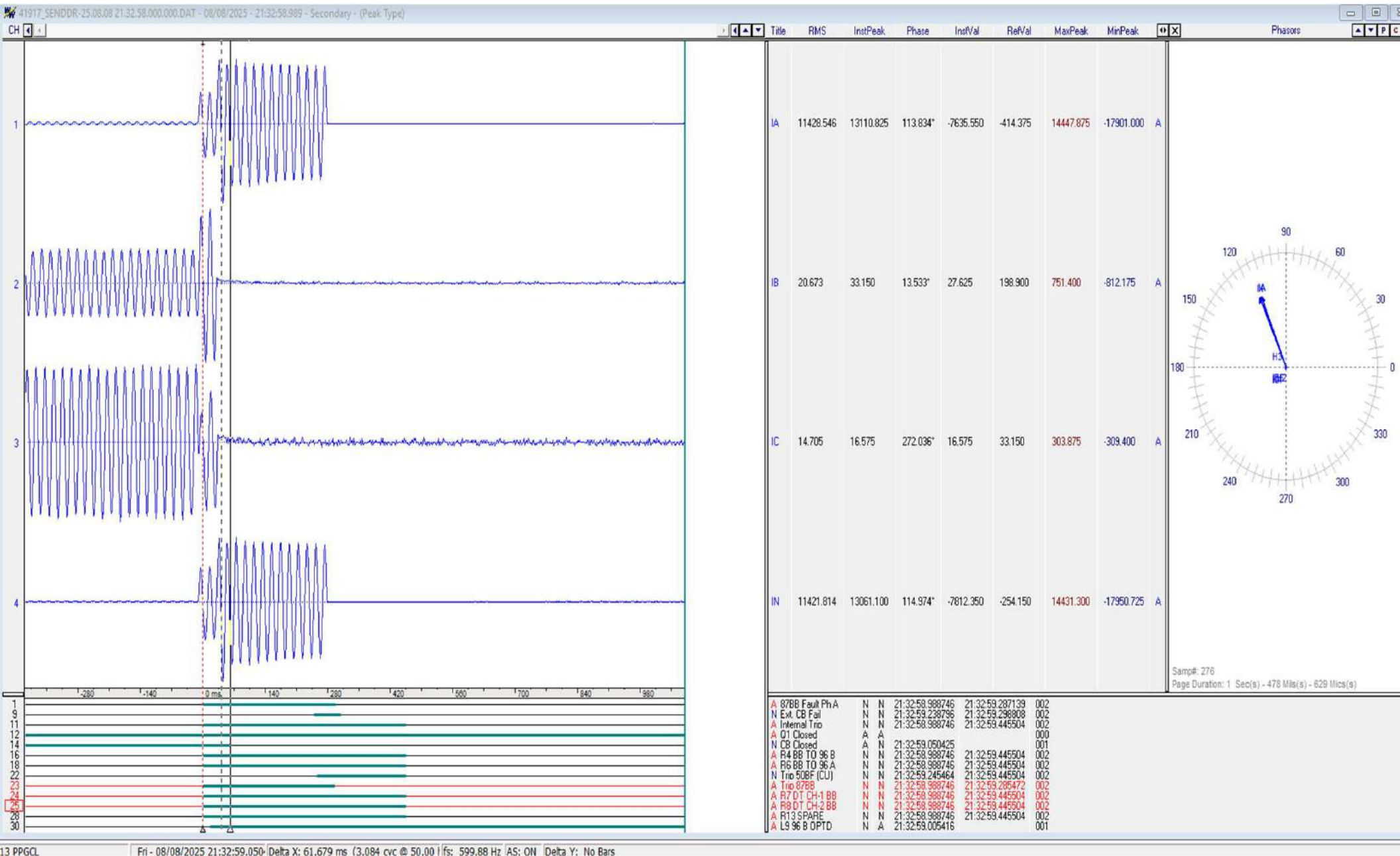


No change in demand
in UP control area
(as per SCADA)

08/08/2025 21:31:47
24600.856

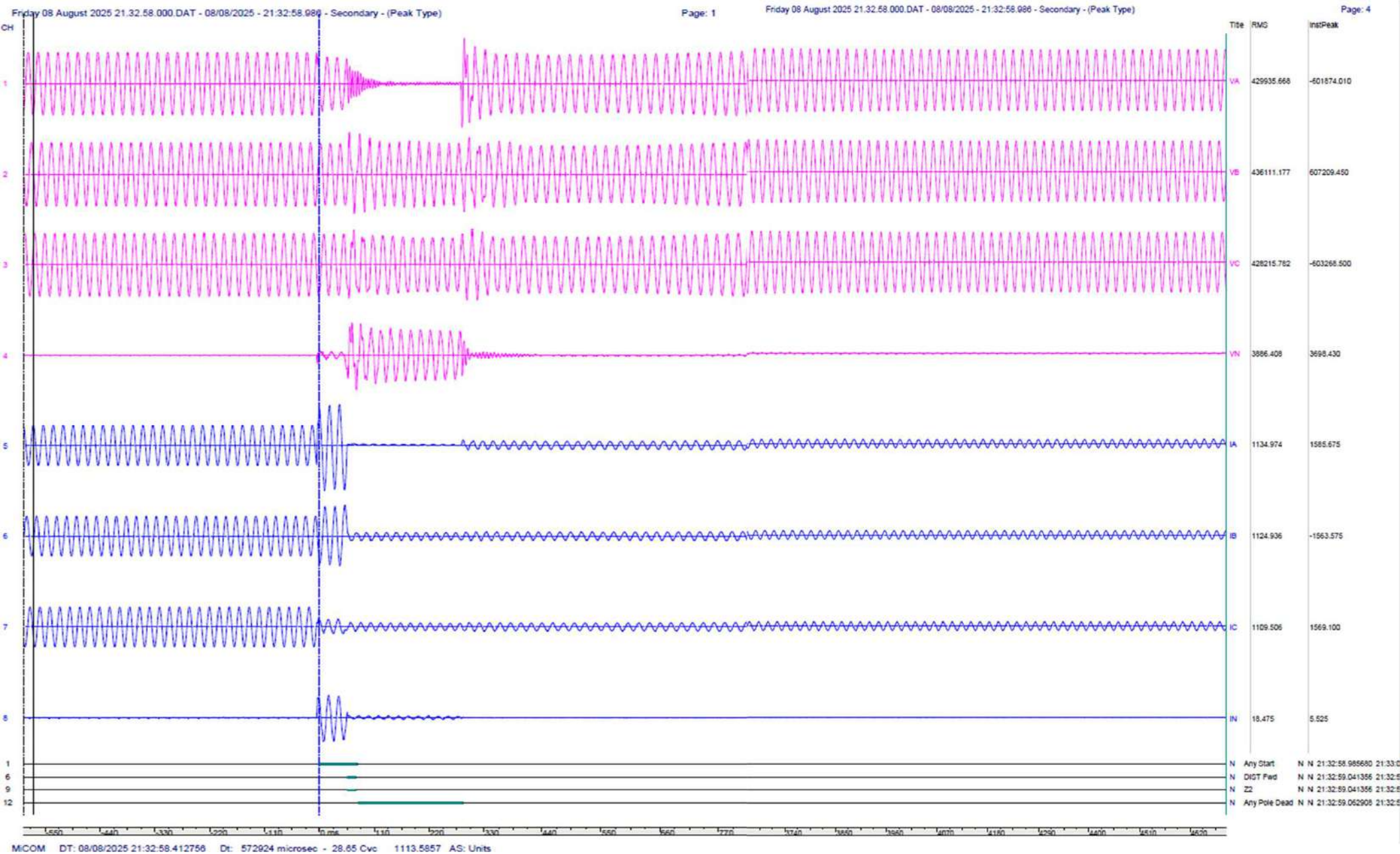
Aug Fri 8 2025

DR of 765kV Bus 2 at Bara(UP)



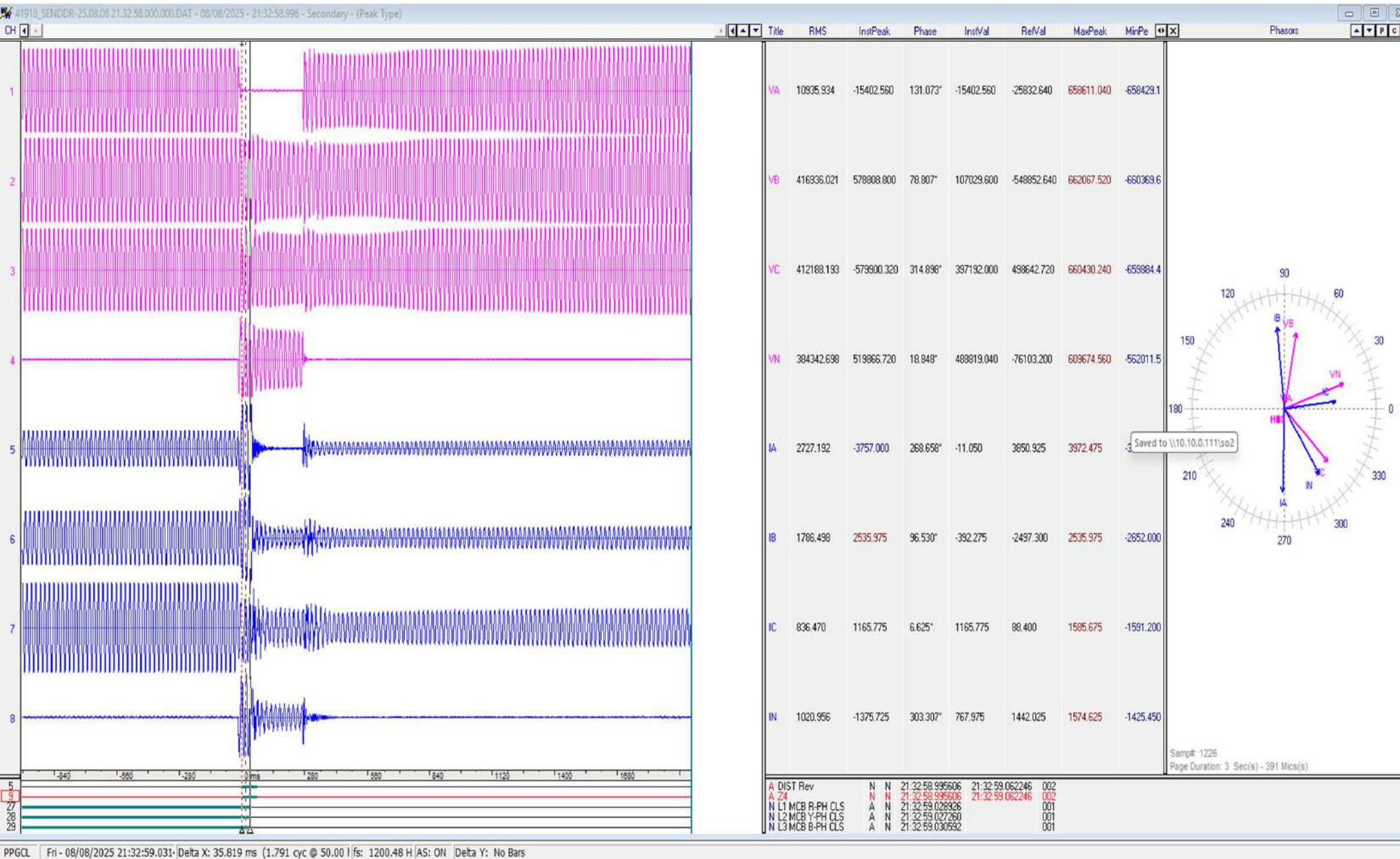
- ✓ R-N fault; fault current= ~ 11.429 kA
- ✓ Busbar differential (87 BB) operated

DR of 765 KV Bara-Mainpuri (end) (UP) Ckt-2



- ✓ R-N fault; fault current= $\sim 2.411\text{kA}$
- ✓ Fault sensed in zone-2, line tripped from Mainpuri end only

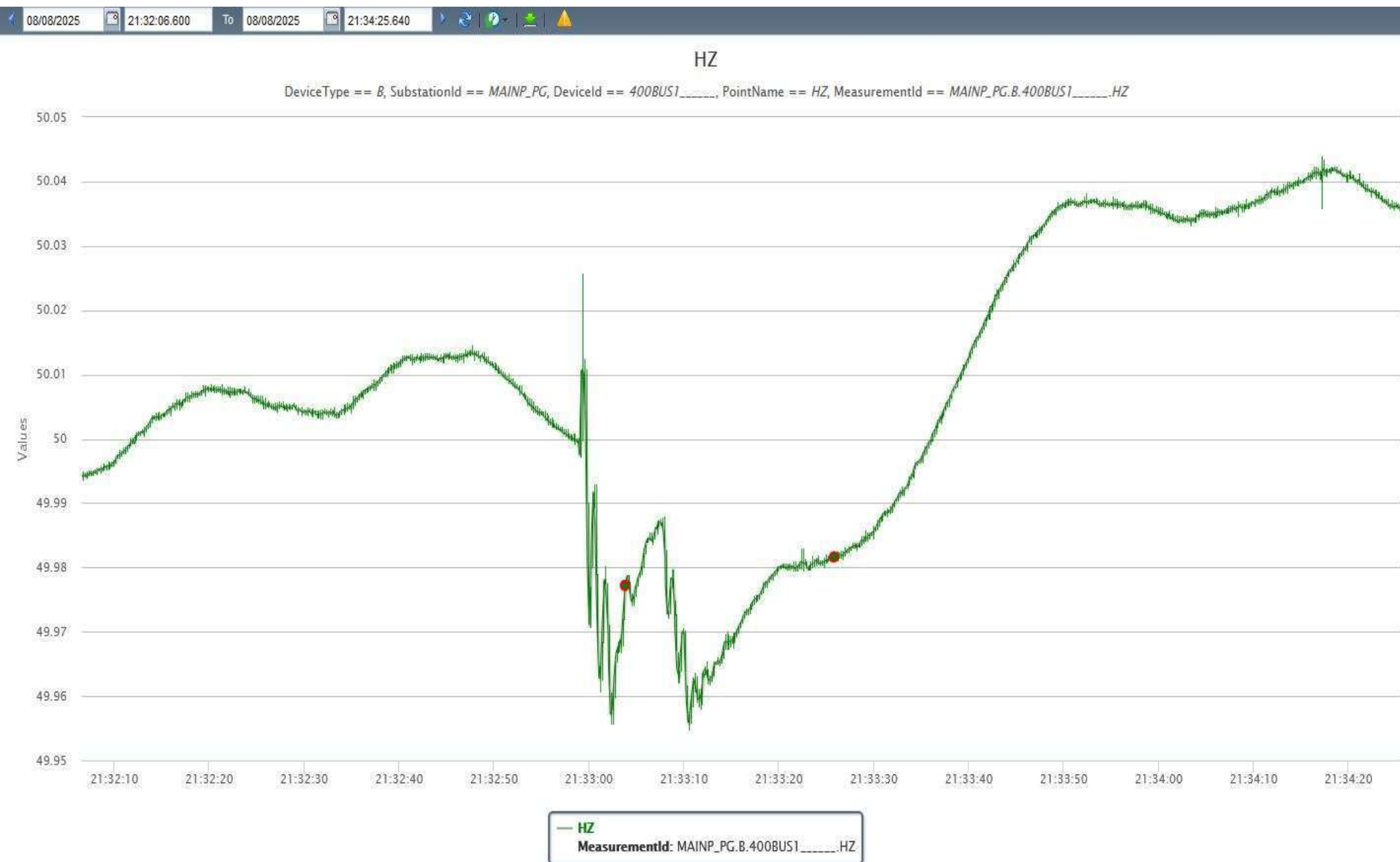
DR of 765 KV Bara (end)-Mainpuri (UP) Ckt-2



- ✓ R-N fault; fault current= ~ 2.727 kA
- ✓ Fault sensed in zone-4; line remained charged from Bara end

PMU Plot of frequency at Mainpuri(PG)

21:33 hrs/08-Aug-25



PMU Plot of phase voltage magnitude at Mainpuri(PG)

21:33 hrs/08-Aug-25



SCADA SOE

Time	Station Name	Voltage Level	Element Name	Element Type	Element Status	Remarks
21:32:59,037	BARA_UP	765kV	04T2	Circuit Breaker	Open	Main CB at 765kV side of 765/400 kV 1500 MVA ICT-2 at Bara(UP) opened
21:32:59,042	BARA_UP	765kV	05T2GT2	Circuit Breaker	Open	Tie CB at 765kV side of 765/400 kV 1500 MVA ICT-2 at Bara(UP) opened
21:32:59,057	MANP1_UP	765kV	05BARAT2	Circuit Breaker	Open	Tie CB at Mainpuri(UP) end of 765 KV Bara-Mainpuri (UP) Ckt-2 opeend
21:32:59,057	MANP1_UP	765kV	04BARA2	Circuit Breaker	Open	Main CB at Mainpuri(UP) end of 765 KV Bara-Mainpuri (UP) Ckt-2 opeend

Points for Discussion

- i. Exact reason, location and nature of fault need to be shared.
- ii. Reason of delayed clearance of fault need to be shared.
- iii. Exact reason of tripping of tie CB of 765/400 kV 1500 MVA ICT-2 at Bara (UP) and main & tie CBs at Mainpuri end of 765 KV Bara-Mainpuri (UP) Ckt-2 need to be shared.
- iv. SCADA data was suspected during the event at 765/400kV Bara(UP). Healthiness and Availability of SCADA data need to be ensured.
- v. Remedial action taken report need to be shared.

PRAYAGRAJ POWER GENERATION COMPANY LIMITED

Aug-2025 Tripping



PRAYAGRAJ POWER GENERATION COMPANY LTD.

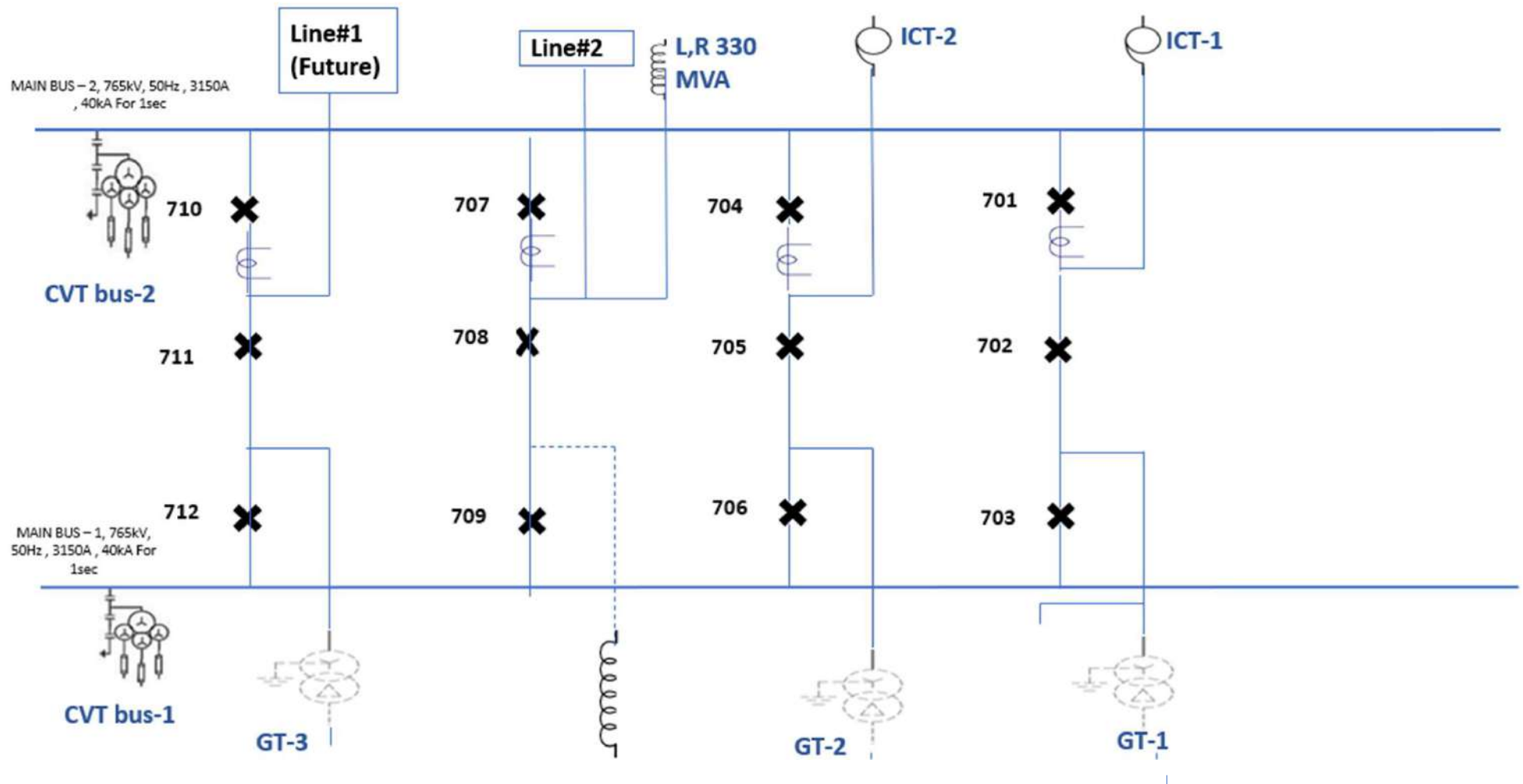
CONTENT

- 1. Grid Event Summary**
- 2. 765kv Switchyard SLD**
- 3. Brief Description of the event**
- 4. Analysis of Bus Bar 2 Protection operated.**
- 5. Analysis of Line 2 Protection operated.**
- 6. Analysis of Tripping of ICT**
- 7. Analysis of Tripping of Unit 2**
- 8. Conclusion**

Grid Event Summary

Tripped/Manually opened)	Date & Time	Events	NRPC Comment
1) 765KV Bus 2 at Bara(UP) 2) 765/400 kV 1500 MVA ICT 2 at Bara(UP) 3) 765 KV Bara-Mainpuri (UP) Ckt-2 4) 660 MW Bara PPGCL TPS - UNIT 2	8-Aug-2025	1)765/400kV Bara(UP) S/s has one and half breaker bus scheme at both 765kV and 400kV level. During antecedent condition, 660 MW Bara PPGCL TPS - UNIT 1, 2 & 3 were carrying 614 MW, 610 MW and 546 MW. 2)As reported, at 21:33 hrs., R-phase pole of 710 main circuit breaker got damaged. This has triggered the Bus Bar Protection operation at 765KV Bus 2 at Bara(UP) resulting in the tripping of all main CBs connected to Bus-2. 3)However, Tie CB of 765/400 kV 1500 MVA ICT-2 at Bara (UP) has also tripped resulting in tripping of ICT-2 (wrong busbar logic suspected). 4)During the same time, 765 KV Bara-Mainpuri (UP) Ckt-2 tripped from Mainpuri end only due to Zone-2 distance protection operation at the Mainpuri end. However, line remained charged through the tie bay from the Bara end. 5)Due to tripping of 765 KV Bara-Mainpuri (UP) Ckt-2 and 765/400 kV 1500 MVA ICT-2 at Bara (UP) and as total Ex-Bus Generation at Bara TPS was more than 1400MW during antecedent condition, Case-3 of "SPS for safe evacuation of Bara TPS Generation" operated resulting in tripping of 660 MW Bara PPGCL TPS - UNIT 2. 6)As per PMU at Mainpuri(PG), R-N phase to earth fault was observed with delayed fault clearing time of 360 ms. 7)As per SCADA, no change in demand of UP control area and generation loss of approx. 610 MW at Bara TPS was observed	1)Exact reason, location and nature of fault need to be shared. 2)Reason of delayed clearance of fault need to be shared. 3)Exact reason of tripping of tie CB of 765/400 kV 1500 MVA ICT-2 at Bara (UP) and main & tie CBs at Mainpuri end of 765 KV Bara-Mainpuri (UP) Ckt-2 need to be shared. 4)SCADA data was suspected during the event at 765/400kV Bara(UP). Healthiness and Availability of SCADA data need to be ensured. 5)Remedial action taken report need to be shared

765kV SLD



Brief Description of event

- On dated 08.08.25 at 21:32 Hrs, 765kV switchyard at Bara experienced fault which led to operation of Main Bus-2 bus bar protection and tripping of all breakers connected to Main Bus-2.
- Breaker 710 B- phase completely damaged, which resulted in operation of LBB of 711 CB
- After operation of bus bar protection of main bus-2, Tie CB of ICT also tripped that lead tripping of ICT 2.
- Meanwhile, 765kV Bara-Mainpuri Line-2 remained charged from Bara end through 708 TIE breaker but both breakers at Mainpuri end got opened which resulted in unloading of line.
- Sudden unloading of 765kV line resulted in severe load oscillations and operation of Load shedding relay (LSR) in all the 3 units. During the LSR operation process, U2 tripped on HP exhaust pressure ration protection at 21:34:43 hrs

Pre Fault Condition At BARA

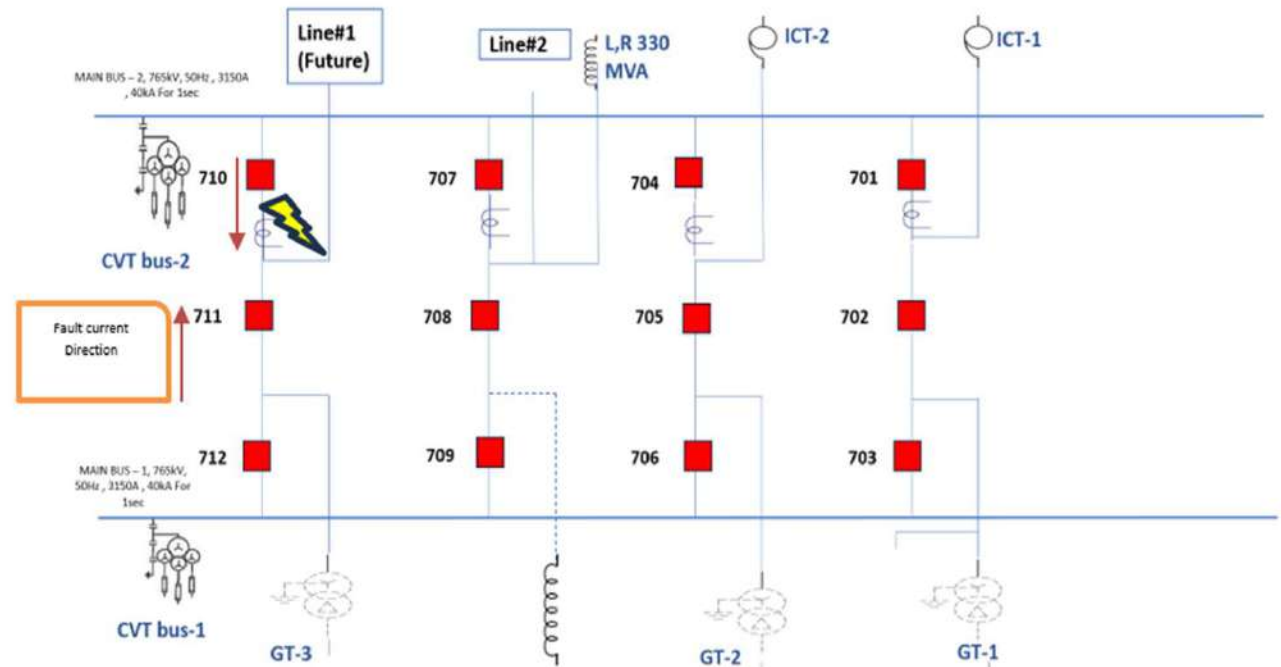


Figure A: Pre Fault Condition at BARA

Analysis of Bus Bar 2 Protection operated

Trip Time	Phase	CB 701	CB 704	CB 707	CB 710	Remarks
	R	21:32:59:034	21:32:59:037	21:32:59:036	21:32:59:036	
	Y	21:32:59:036	21:32:59:032	21:32:59:034	21:32:59:039	
	B	21:32:59:036	21:32:59:037	21:32:59:035	21:32:59:042	

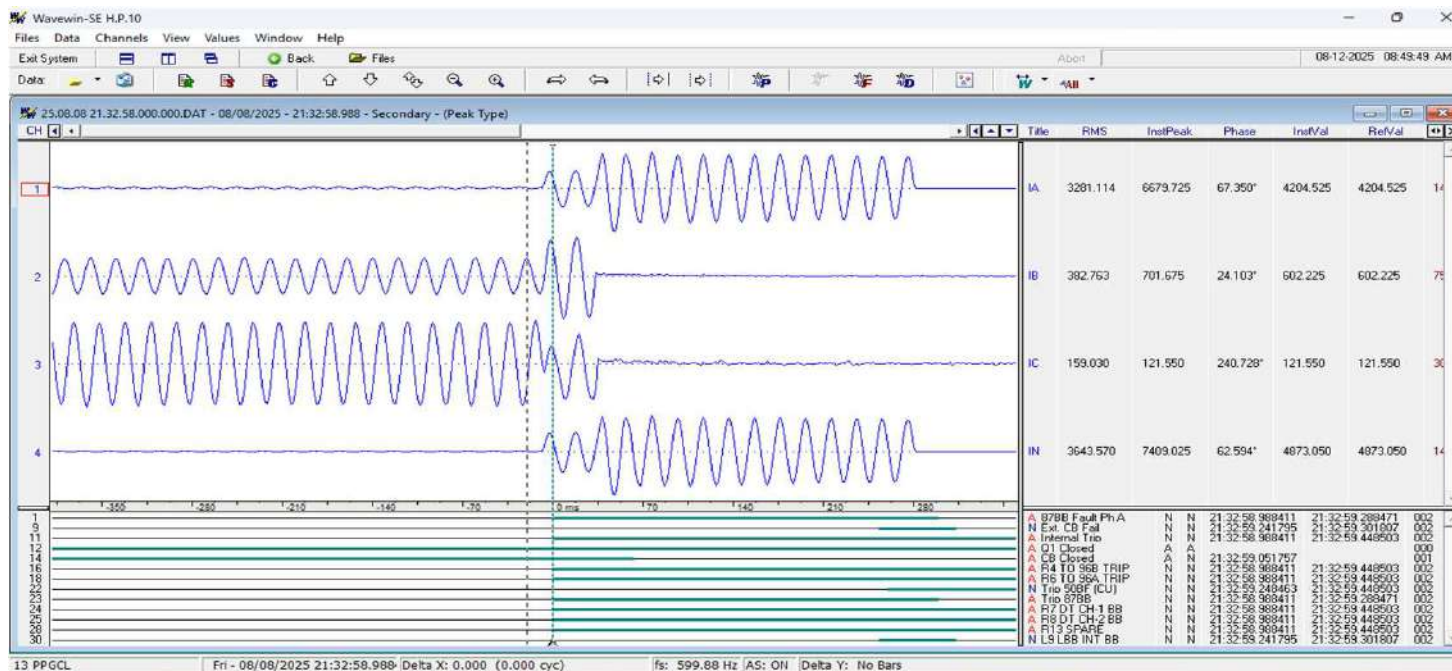


Figure B: DR of PUA Bus Bar Relay

Analysis of Bus Bar 2 Protection operated

- The fault was in R phase (CB 710) and the fault current was feeding continuously through CB 711.
- The three phase trip LBB initiation signal already persisting due operation of 96B.
- Hence CB 710 LBB protection acted.

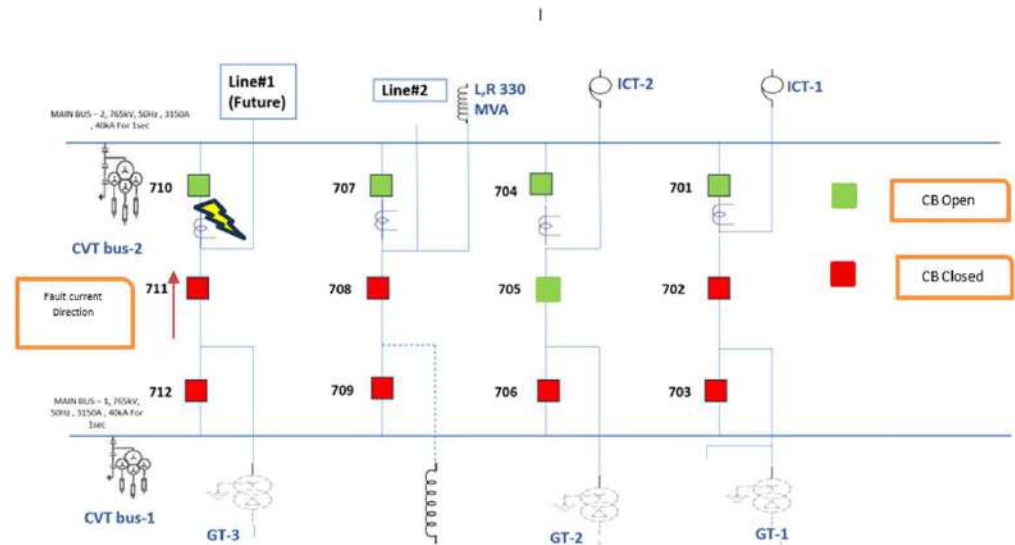


Figure C: Main2 Bus Bar Protection Zone 2 Operated at BARA

Analysis of Bus Bar 2 Protection operated

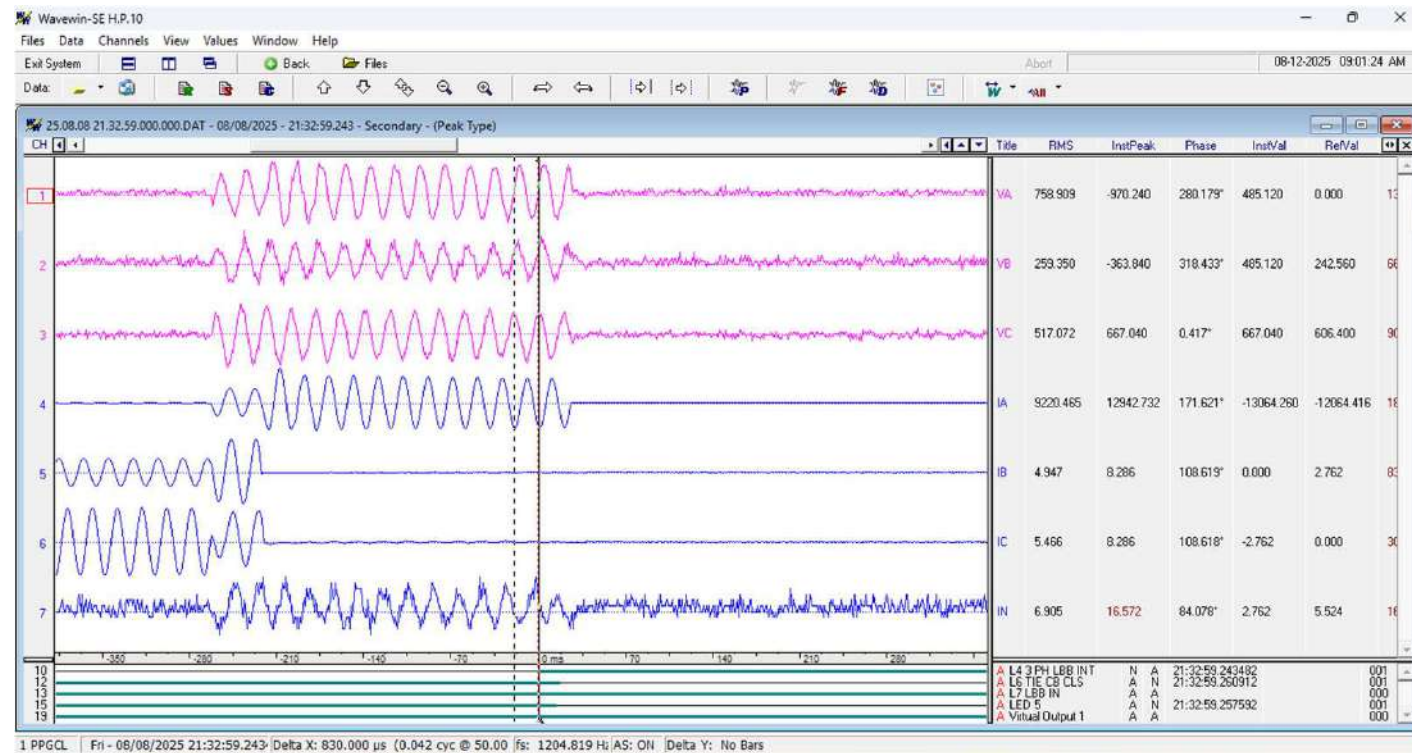


Figure D: DR of 710 LBB Relay

Analysis of Bus Bar 2 Protection operated

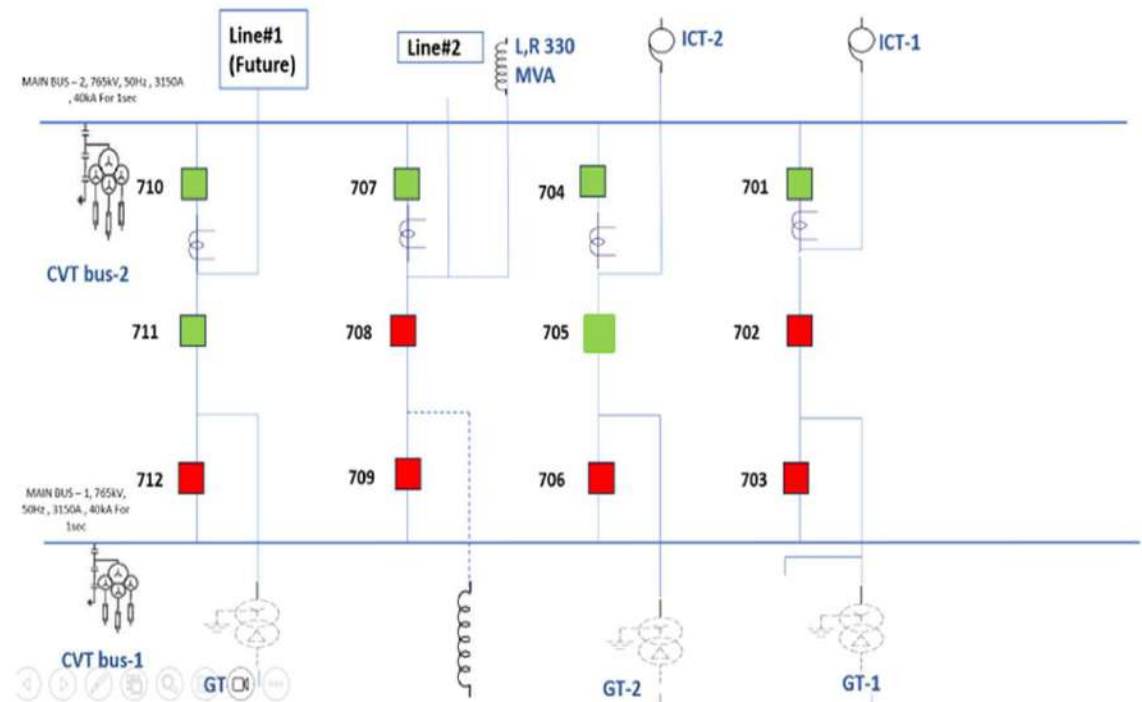


Figure E: Condition at BARA after 710 LBB operation

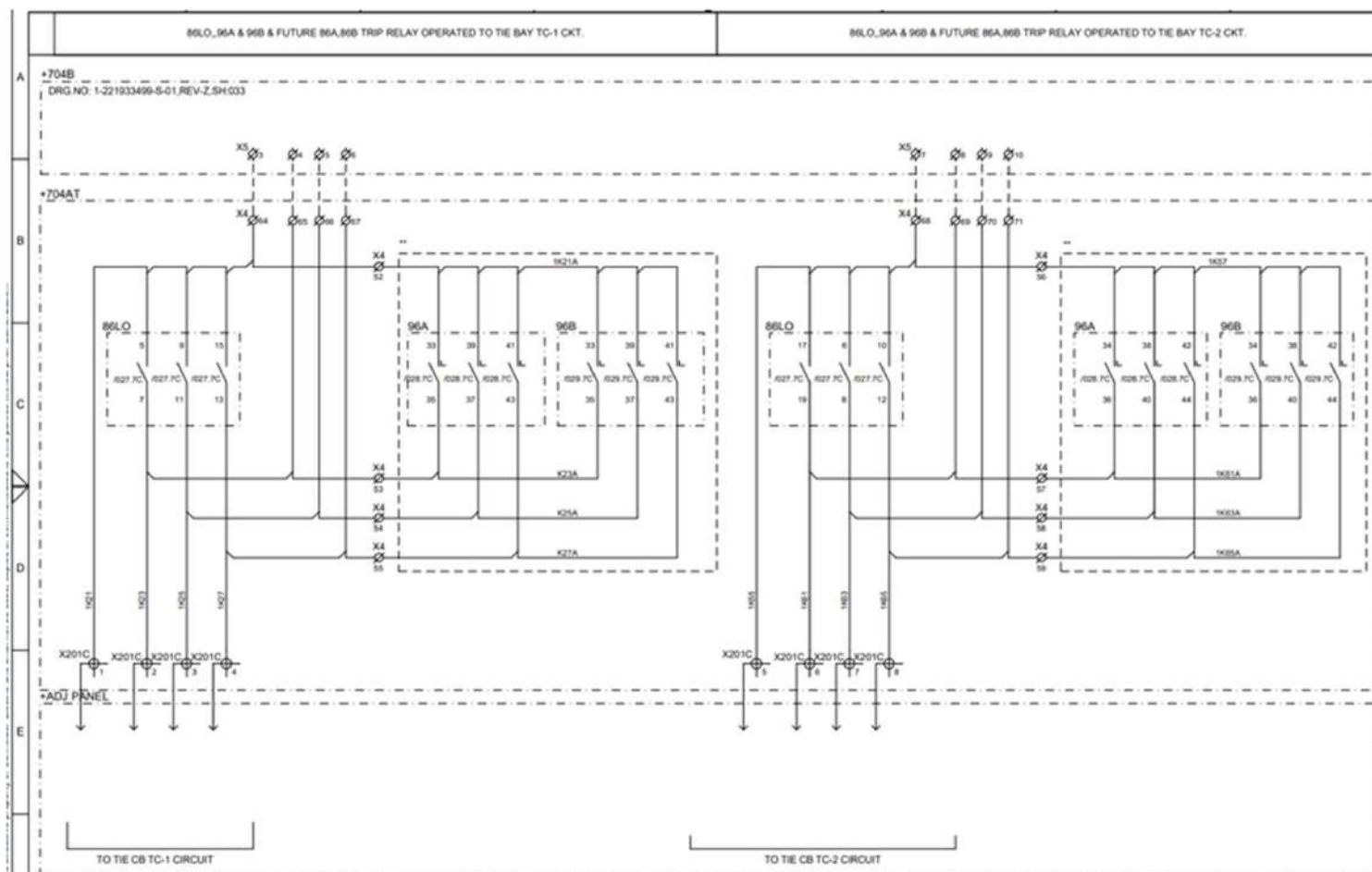
Bara Mainpuri Circuit 2 Tripping:

- There was no line protection operated at PPGCL end, only zone 4 protection alarm was only initiated, line 2 circuit breaker 707 was open on main 2 bus bar protection but the line was in charged condition through tie CB 708 from PPGCL end.
- As per the information received from Mainpuri end, both the circuit breakers have opened at Mainpuri end within 70 ms. Clarification is to be given in this regard from Mainpuri end.

Tripping of ICT 2 :

- After operation of bus bar protection of main bus-2, 96A and 96B lock out relay got actuated in ICT-2.
- 704 relay panel which gave trip command to 704 (Main) as well as 705 (TIE) breakers thereby tripping of ICT-2.
- As per philosophy the tie CB 705 should not open on operation 96A and 96B.
- The above problem were found in BHEL drawing scheme, which have been rectified and ICT2 taken in service.

Tripping of
ICT 2 :



Conclusion

SR NO	NAME OF ELEMENT	OBSERVATION	CORRECTIVE ACTION TAKEN
1	Main 2 Busbar protection operated	Correctly operated as per protection philosophy because of fault was within main 2 busbar zone	The faulty circuit breaker CB710 and secondary damaged CB 707 & CB 711 were disconnected from the system. The CB 710 "R phase" failure incident information was shared with OEM. OEM experts visited the site and collected the required data and sent it to the factory for detailed analysis.
2	765 KV Bara- Mainpuri Circuit 2 Tripping	765kV Bara-Mainpuri Line-2 remained charged from Bara end through 708 TIE breaker but both breakers at Mainpuri end got opened which resulted in unloading of line.	SEUPTCL will analyze and explain the reason for opening of line 2 for both breakers.
3	765/400 KV 1500 MVA ICT 2 Tripping	As per existing scheme, its operation was OK but when compared with ICT 1 scheme some deficiency was found.	The ICT 2 scheme has been modified in line with ICT 1.

Thank You

Multiple Element Tripping Event at 220kV Khodri(UK) and 220kV Chhibro(UK)

At 03:03 hrs on 17.08.2025

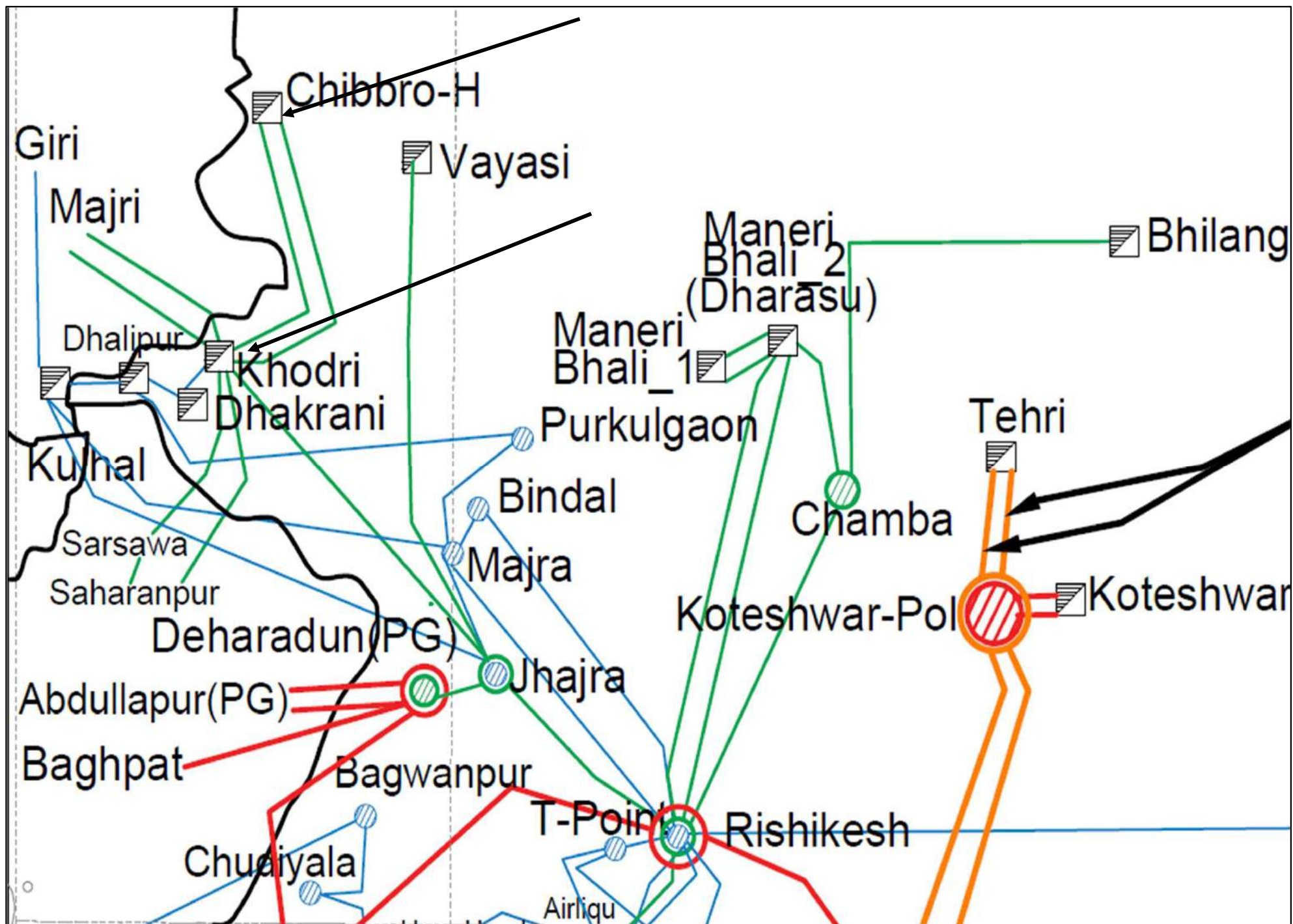
Tripped Elements

S. No	Name of Elements	Outage Time	Revival Time	Reason of tripping
1.	220 KV <u>Khodri(UK)-Majri(HP)</u> (UK) Ckt-1	03:03 <u>hrs</u>	06:19 <u>hrs</u>	Fault occurred at 220kV <u>Majri-VISCO</u> feeder as VISCO 220kV overhead panel caught fire
2.	220 KV <u>Khodri(UK)-Majri(HP)</u> (UK) Ckt-2		06:58 <u>hrs</u>	
3.	220/132 kV 100 MVA ICT at <u>Khodri(UK)</u>		07:40 <u>hrs</u>	Earth fault Protection Operated
4.	30 MW Unit-1 at <u>Khodri(UK)</u>		03:55 <u>hrs</u>	GT Stand-by E/F protection operated
5.	30 MW Unit-2 at <u>Khodri(UK)</u>		03:30 <u>hrs</u>	
6.	30 MW Unit-3 at <u>Khodri(UK)</u>		03:48 <u>hrs</u>	
7.	30 MW Unit-4 at <u>Khodri(UK)</u>		03:52 <u>hrs</u>	
8.	60 MW Unit-3 at <u>Chhibro(UK)</u>		03:55 <u>hrs</u>	GT Instantaneous Earth fault protection (50NT) operated
9.	60 MW Unit-4 at <u>Chhibro(UK)</u>		03:50 <u>hrs</u>	Generator Negative phase Sequence Protection Operated

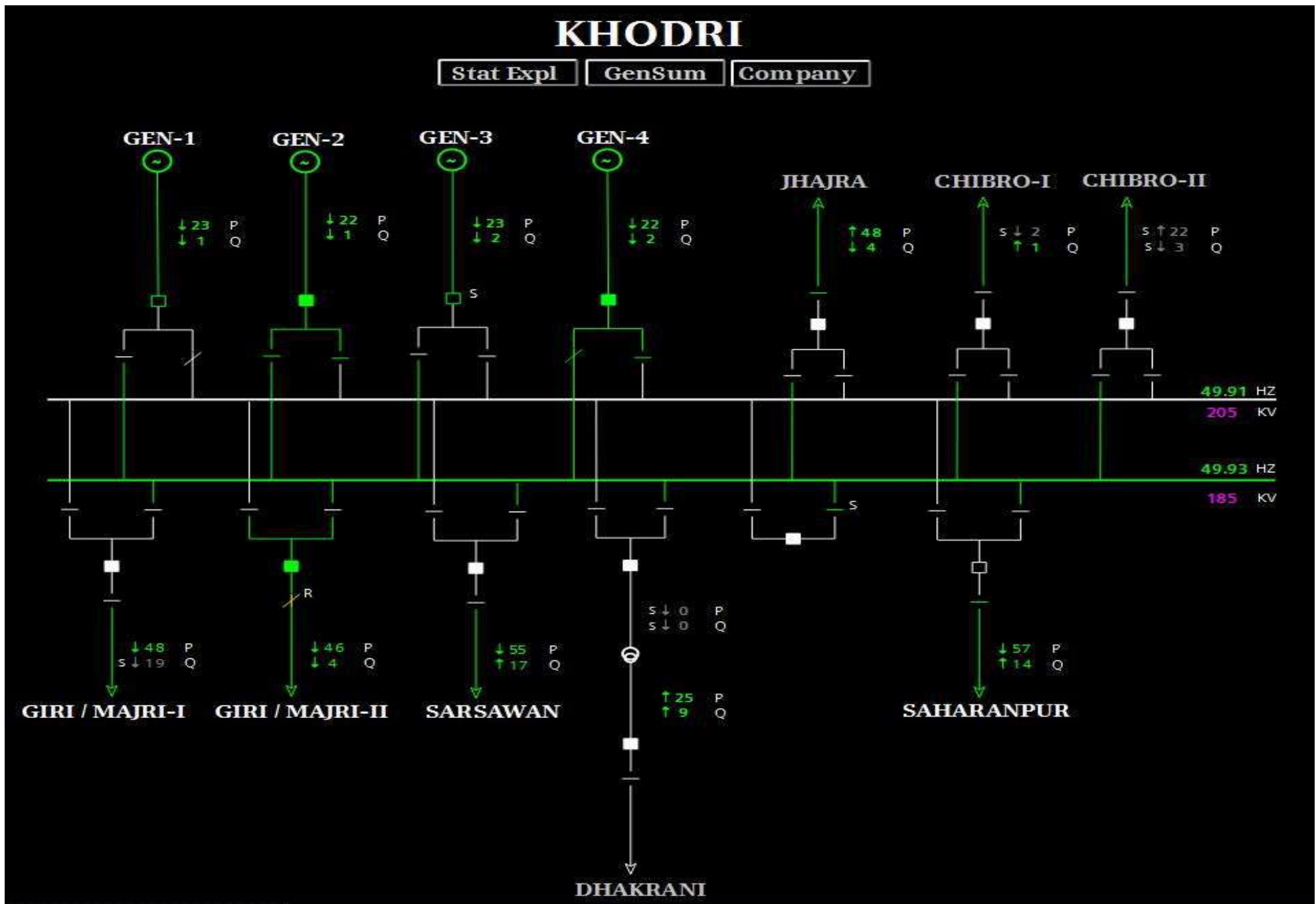
Brief details of the event

- i. 220KV Khodri(UK) and 220kV Chhibro(UK) generating station have 4 generating units each of 30MW and 60MW respectively and have double main bus scheme.
- ii. During antecedent condition, 30 MW Unit-1, 2, 3 & 4 at Khodri(UK) were in running condition and were generating approx. 23 MW, 22 MW, 23 MW and 22 MW respectively. Also, 60 MW Unit-1, 2, 3 & 4 at Chhibro(UK) were in running condition and were generating approx. 52 MW, 54 MW, 45 MW and 50 MW respectively (as per SCADA).
- iii. As reported, at 03:03 hrs, fault occurred at 220kV Majri-VISCO feeder as VISCO 220kV overhead panel caught fire due to overheating at VISCO end. It led to the tripping of 220 KV Khodri(UK)-Majri(HP) (UK) Ckt-1 & 2.
- iv. As per FIR and TR received, 220 KV Khodri(UK)-Majri(HP) (UK) Ckt-1 tripped on zone-4 distance protection operation at Majri end and zone-3 distance protection operation at Khodri end sensing the fault at a distance of 38.24 km from Khodri end. As per DR, fault current was $I_r \sim 1171A$, $I_y \sim 1185A$ and $I_b \sim 1156A$ from Khodri end.
- v. 220 KV Khodri(UK)-Majri(HP) (UK) Ckt-2 tripped from Majri(HP) end only due to over-current protection operation at Majri end. As per DR, fault current was $I_r \sim 608A$, $I_y \sim 622A$ and $I_b \sim 608A$ from Khodri end and fault persisted for 1.518s in this ckt.
- vi. During the same time, 220/132 kV 100 MVA ICT at Khodri(UK) tripped on Earth fault Protection Operation.
- vii. Further, 30 MW Unit-1, 2, 3 & 4 at Khodri(UK) tripped on GT Stand-by E/F protection and 60 MW Unit-3 & 4 at Chhibro(UK) tripped on GT Instantaneous Earth fault protection (50NT) operation and Generator Negative phase Sequence Protection operation respectively.
- viii. As per PMU at Dehradun(PG), R-N phase to earth fault with delayed fault clearing time of 520 msec was observed.
- ix. As per SCADA, Reduction in Generation of approx. 234 MW in Uttarakhand control area including generation loss of 185 MW [90 MW at Khodri(UK) and 95 MW at Chhibro(UK)] was observed.

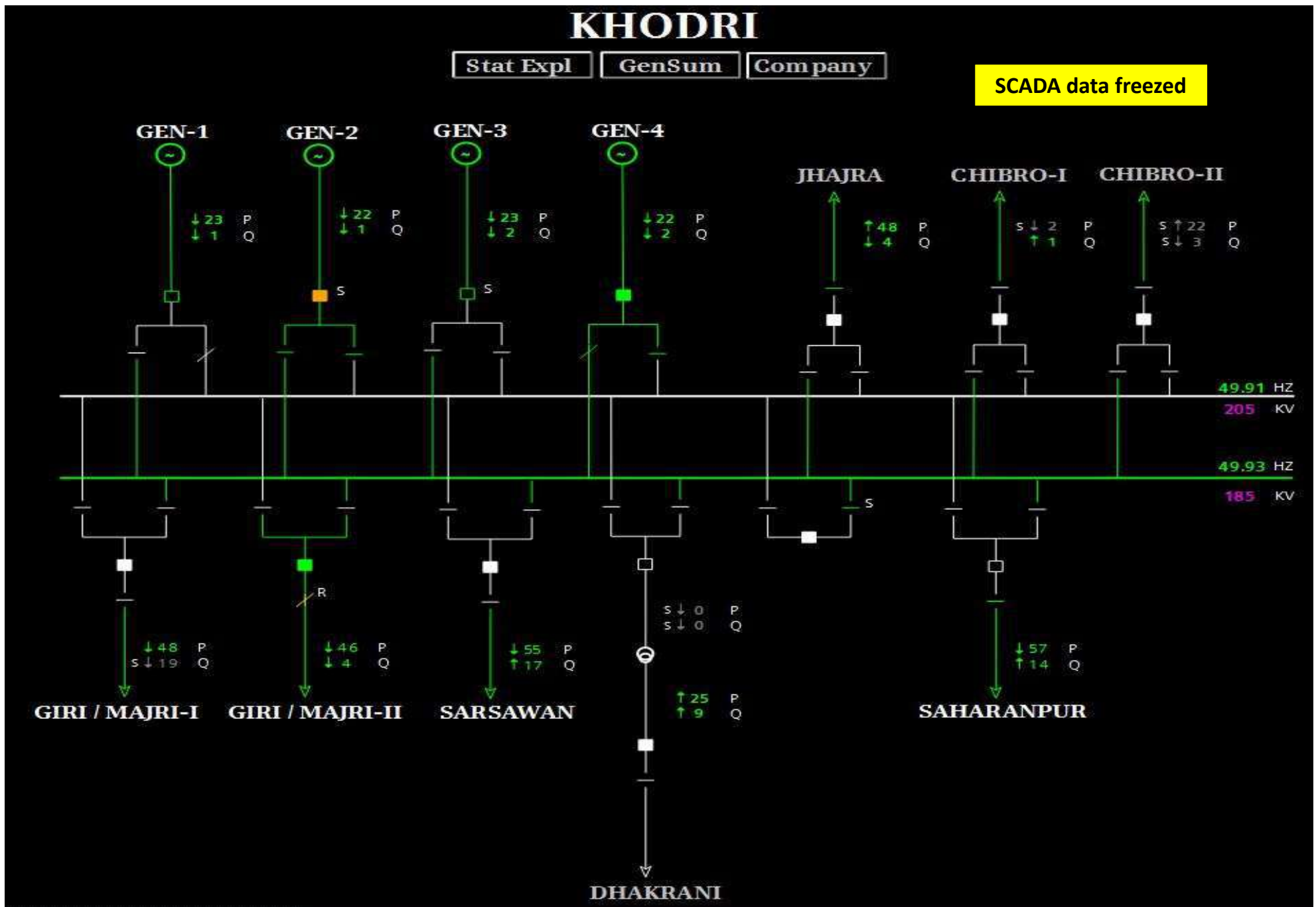
Network Diagram



SLD of 220kV Khodri(UK) before the event



SLD of 220kV Khodri(UK) after the event



SLD of 220/132kV Majri(HP) before the event

13.8 .25 13:42:44

GIRI

Stat Expl

GenSum

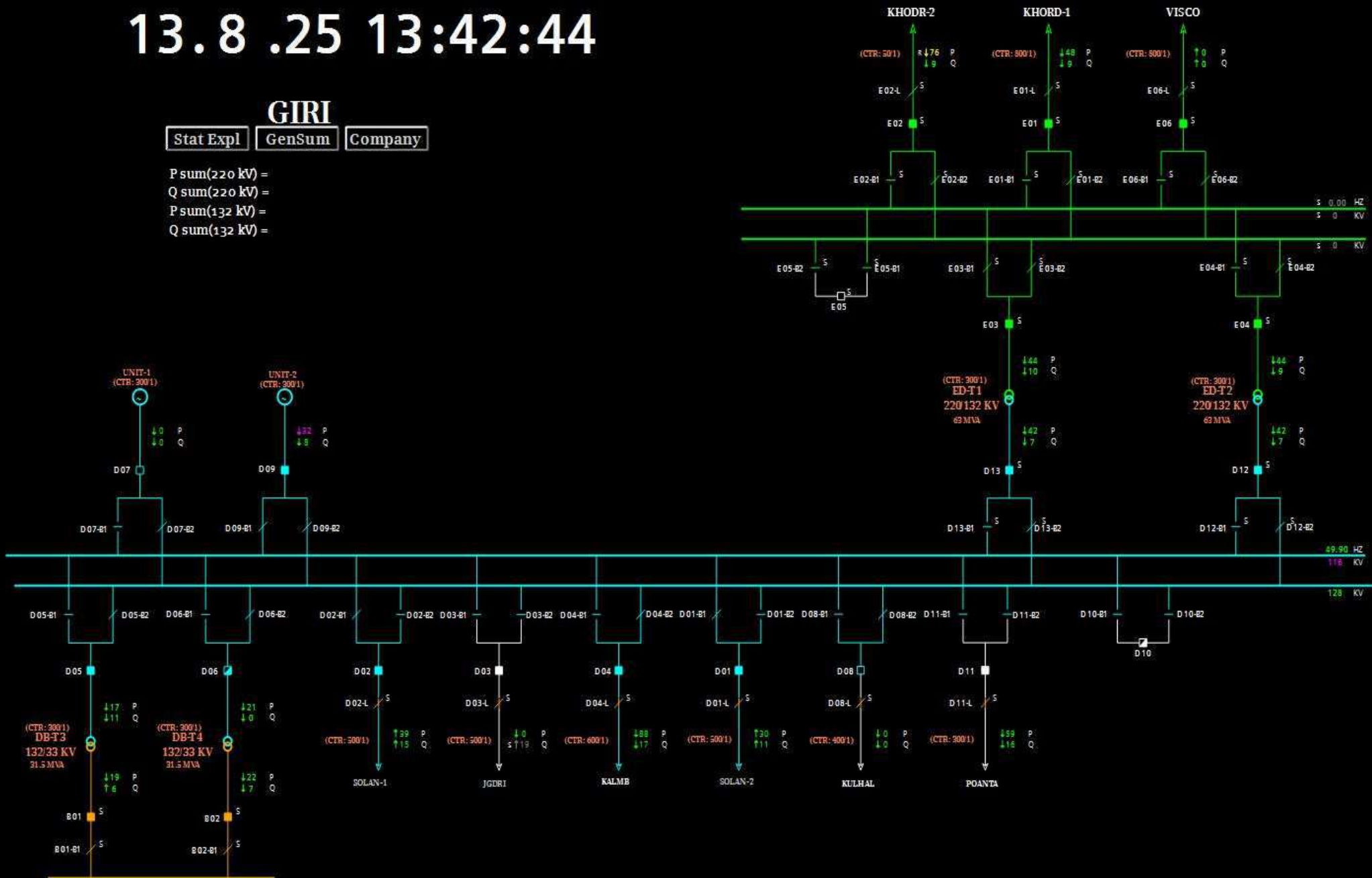
Company

P sum(220 kV) =

Q sum(220 kV) =

P sum(132 kV) =

Q sum(132 kV) =



SLD of 220/132kV Majri(HP) after the event

13.8 .25 13:42:44

GIRI

Stat Expl

GenSum

Company

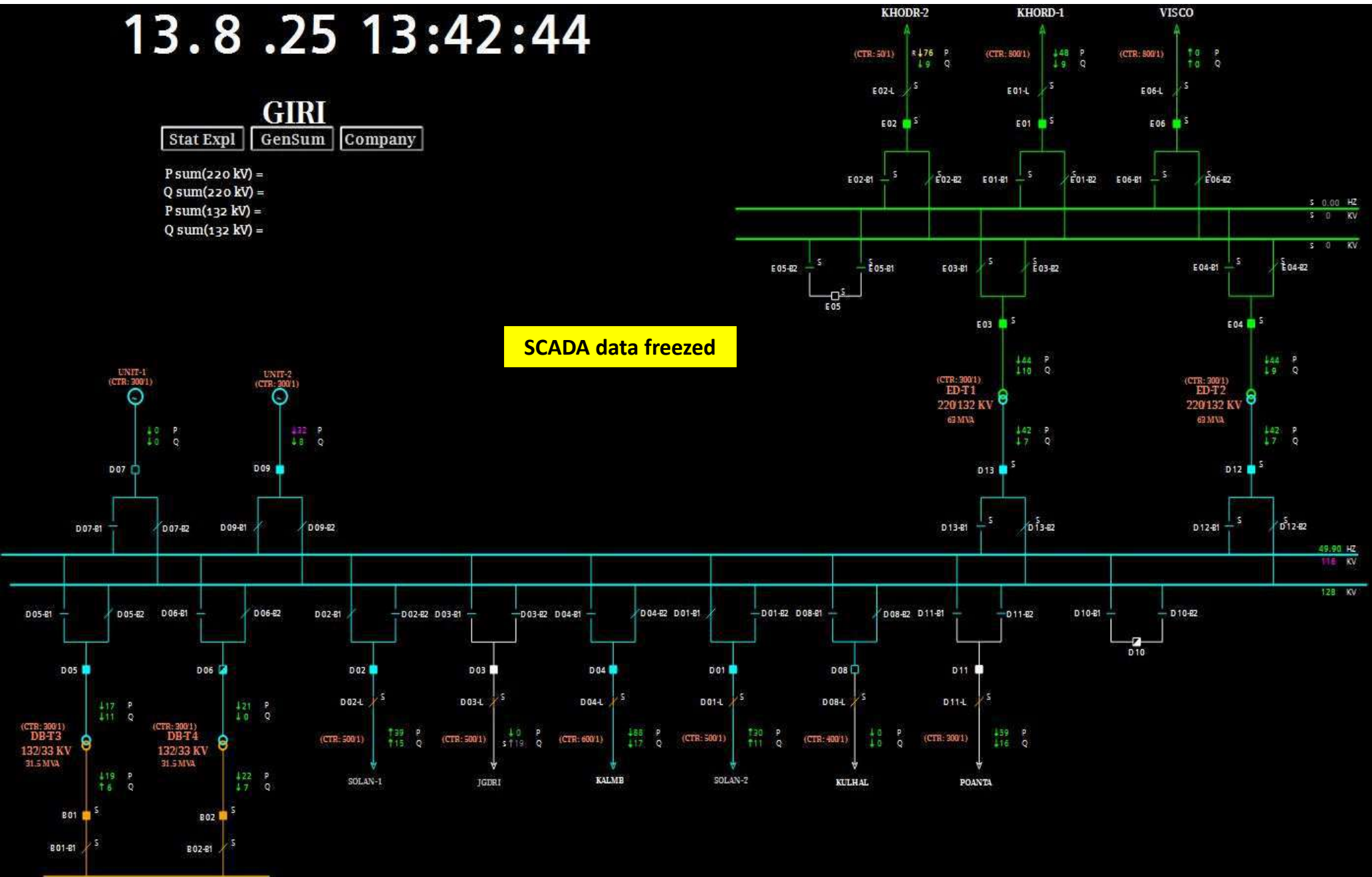
P sum(220 kV) =

Q sum(220 kV) =

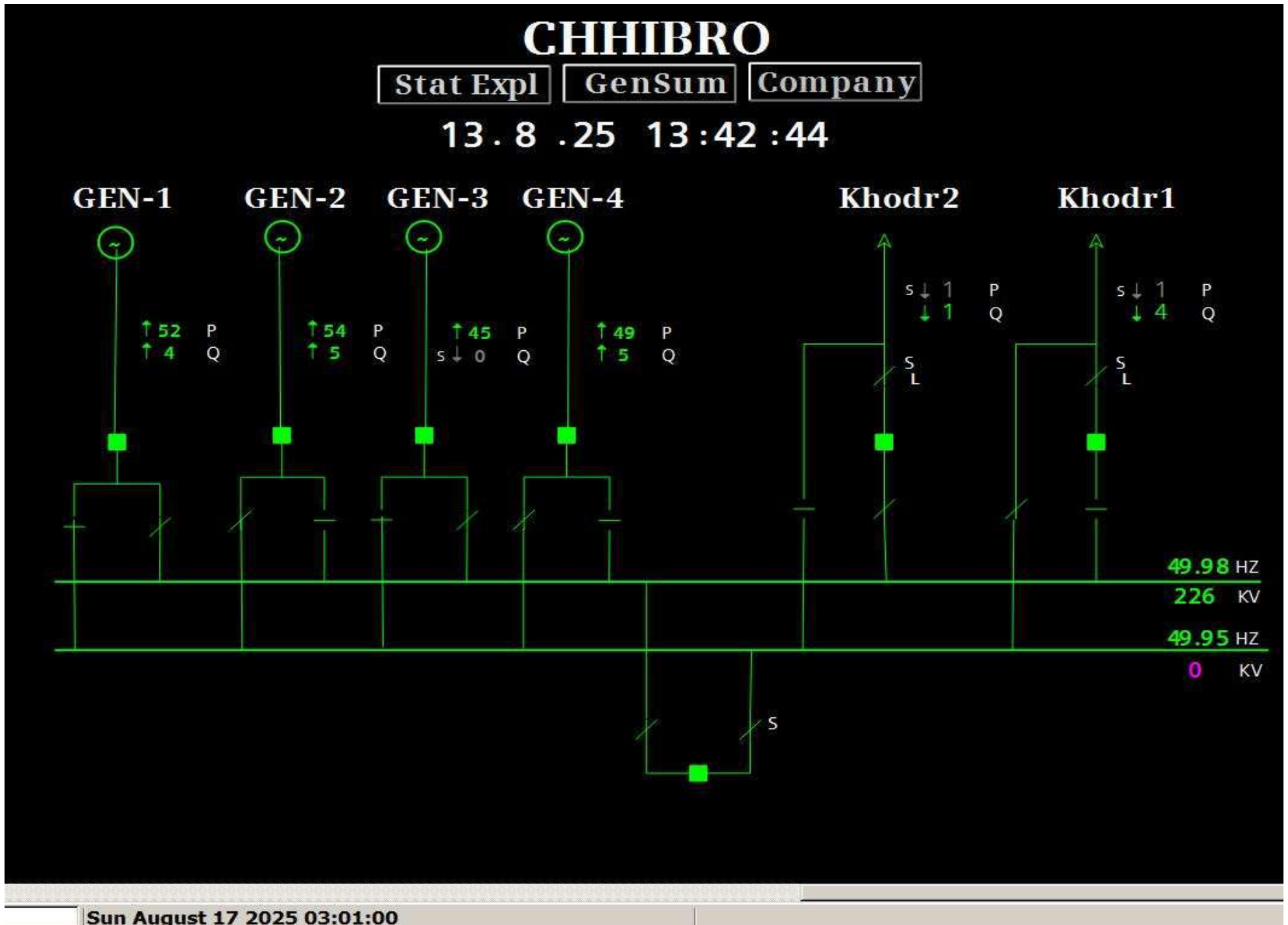
P sum(132 kV) =

Q sum(132 kV) =

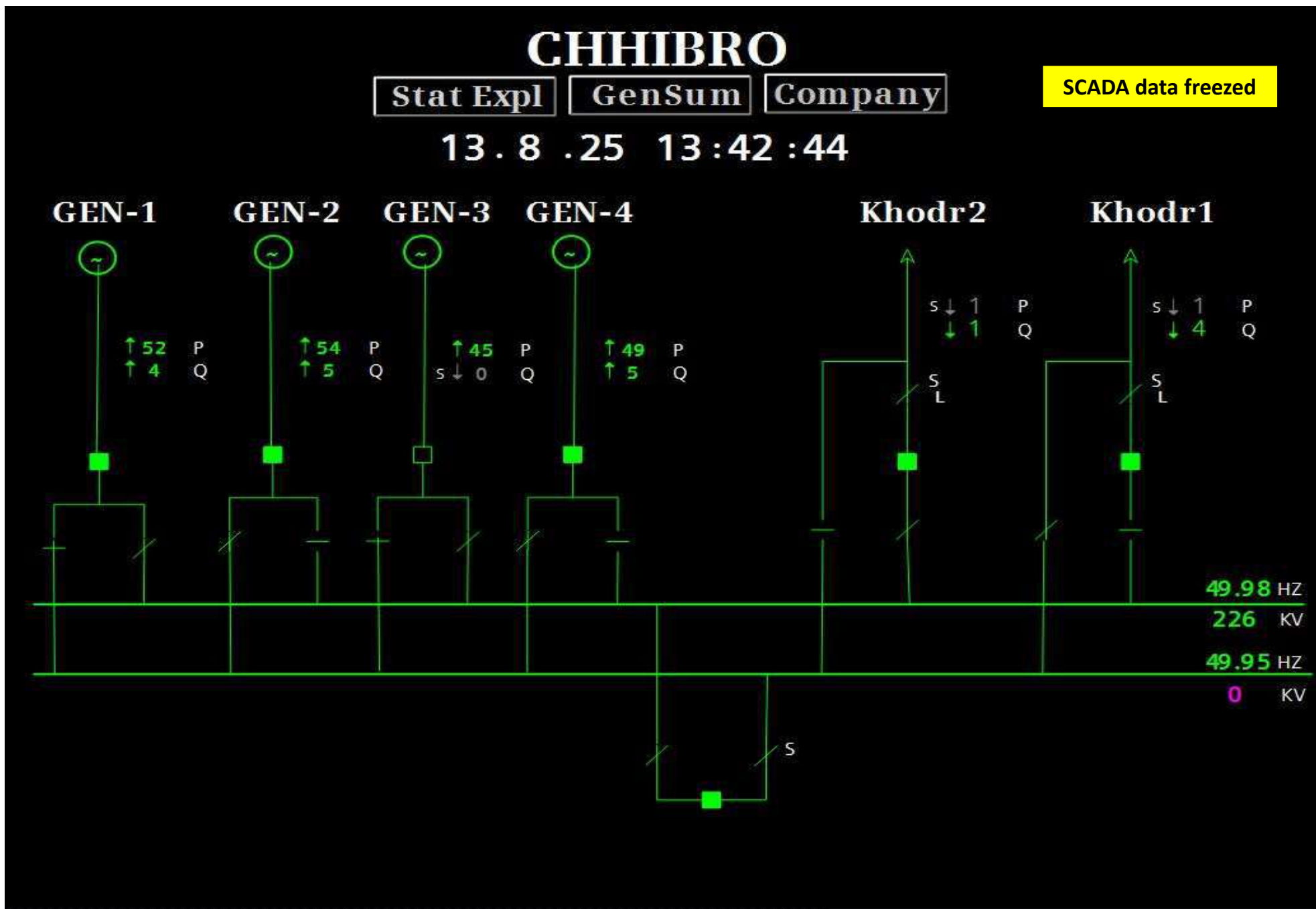
SCADA data freezed



SLD of 220kV Chhibro(UK) before the event



SLD of 220kV Chhibro(UK) after the event



Uttarakhand Generation Summary before the event

Generation of Uttarakhand

REGIONAL SUMMARY

THERMAL

GAMMA 0 KV

	CAPACITY	MW	MVAR
UNIT-1	75	0	0
UNIT-2	75	0	0
UNIT-3	75	0	0
TOTAL	225	0	

SRAVANTI S 218 KV

	CAPACITY	MW	MVAR
UNIT-1	75	S 0	S 0
UNIT-2	75	S 0	S 0
UNIT-3	75	S 0	S 0
TOTAL	225	S 0	

CHIBBRO 226 KV

	CAPACITY	MW	MVAR
UNIT-1	60	52	4
UNIT-2	60	54	5
UNIT-3	60	45	S -0
UNIT-4	60	49	5
TOTAL	240	201	

CHILLA 129 KV

	CAPACITY	MW	MVAR
UNIT-1	36	31	4
UNIT-2	36	35	1
UNIT-3	36	30	2
UNIT-4	36	S 0	0
TOTAL	144	S 95	

DHAKRANI S 0 KV

	CAPACITY	MW	MVAR
UNIT-1	11.25	0	-0
UNIT-2	11.25	-0	-0
UNIT-3	11.25	10	S 0
TOTAL	33.75	10	

DHALIPUR 7 KV

	CAPACITY	MW	MVAR
UNIT-1	17	0	-0
UNIT-2	17	0	-0
UNIT-3	17	0	-0
TOTAL	51	0	

HYDRO

KHATIMA KV

	CAPACITY	MW	MVAR
UNIT-1	13.8	S 0	S 0
UNIT-2	13.8	S 0	S 0
UNIT-3	13.8	S 0	S 0
TOTAL	41.4	S 0	

KHODRI 205 KV

	CAPACITY	MW	MVAR
UNIT-1	30	23	1
UNIT-2	30	22	1
UNIT-3	30	23	2
UNIT-4	30	22	2
TOTAL	120	90	

KULHAL 2 KV

	CAPACITY	MW	MVAR
UNIT-1	10	S 10	S 1
UNIT-2	10	S 11	1
UNIT-3	10	S 10	S 1
TOTAL	30	S 31	

RAMGANGA 0 KV

	CAPACITY	MW	MVAR
UNIT-1	76	0	38
UNIT-2	76	0	0
UNIT-3	76	0	0
TOTAL	228	0	

MANERBHALI 1 220 KV

	CAPACITY	MW	MVAR
UNIT-1	30	27	3
UNIT-2	30	29	2
UNIT-3	30	25	3
TOTAL	90	81	

MANERBHALI 2(Dharasu) KV

	CAPACITY	MW	MVAR
UNIT-1	76	76	9
UNIT-2	76	0	0
UNIT-3	76	70	12
UNIT-4	76	71	0
TOTAL	304	217	

VYASI 128 KV

	CAPACITY	MW	MVAR
UNIT-1	60	58	5
UNIT-2	60	59	5
TOTAL	120	117	

Micro Hydro (MW) R 130
 Total Hydro (MW) S 971
 Total Thermal (MW) S 0

Uttarakhand Generation Summary after the event

Generation of Uttarakhand

REGIONAL SUMMARY

THERMAL

GAMMA 0 KV

	CAPACITY	MW	MVAR
UNIT-1	75	0	0
UNIT-2	75	0	0
UNIT-3	75	0	0
TOTAL	225	0	

SRAVANTI S 218 KV

	CAPACITY	MW	MVAR
UNIT-1	75	S 0	S 0
UNIT-2	75	S 0	S 0
UNIT-3	75	S 0	S 0
TOTAL	225	S 0	

Generation loss occurred at Chhibro and Khodri, SCADA data was freezed

CHIBBRO 226 KV

	CAPACITY	MW	MVAR
UNIT-1	60	52	4
UNIT-2	60	54	5
UNIT-3	60	45	S -0
UNIT-4	60	49	5
TOTAL	240	201	

CHILLA 129 KV

	CAPACITY	MW	MVAR
UNIT-1	36	31	4
UNIT-2	36	35	1
UNIT-3	36	30	2
UNIT-4	36	S 0	0
TOTAL	144	S 95	

DHAKRANI S 0 KV

	CAPACITY	MW	MVAR
UNIT-1	11.25	0	-0
UNIT-2	11.25	-0	-0
UNIT-3	11.25	10	S 0
TOTAL	33.75	10	

DHALIPUR 7 KV

	CAPACITY	MW	MVAR
UNIT-1	17	0	-0
UNIT-2	17	0	-0
UNIT-3	17	0	-0
TOTAL	51	0	

HYDRO

KHATIMA KV

	CAPACITY	MW	MVAR
UNIT-1	13.8	S 0	S 0
UNIT-2	13.8	S 0	S 0
UNIT-3	13.8	S 0	S 0
TOTAL	41.4	S 0	

KHODRI 205 KV

	CAPACITY	MW	MVAR
UNIT-1	30	23	1
UNIT-2	30	22	1
UNIT-3	30	23	2
UNIT-4	30	22	2
TOTAL	120	90	

KULHAL 2 KV

	CAPACITY	MW	MVAR
UNIT-1	10	S 10	S 1
UNIT-2	10	S 11	1
UNIT-3	10	S 10	S 1
TOTAL	30	S 31	

RAMGANGA 0 KV

	CAPACITY	MW	MVAR
UNIT-1	76	0	38
UNIT-2	76	0	0
UNIT-3	76	0	0
TOTAL	228	0	

MANERBHALI 1 220 KV

	CAPACITY	MW	MVAR
UNIT-1	30	27	3
UNIT-2	30	29	2
UNIT-3	30	25	3
TOTAL	90	81	

MANERBHALI 2(Dharasu) KV

	CAPACITY	MW	MVAR
UNIT-1	76	76	9
UNIT-2	76	0	0
UNIT-3	76	70	12
UNIT-4	76	71	0
TOTAL	304	217	

VYASI 128 KV

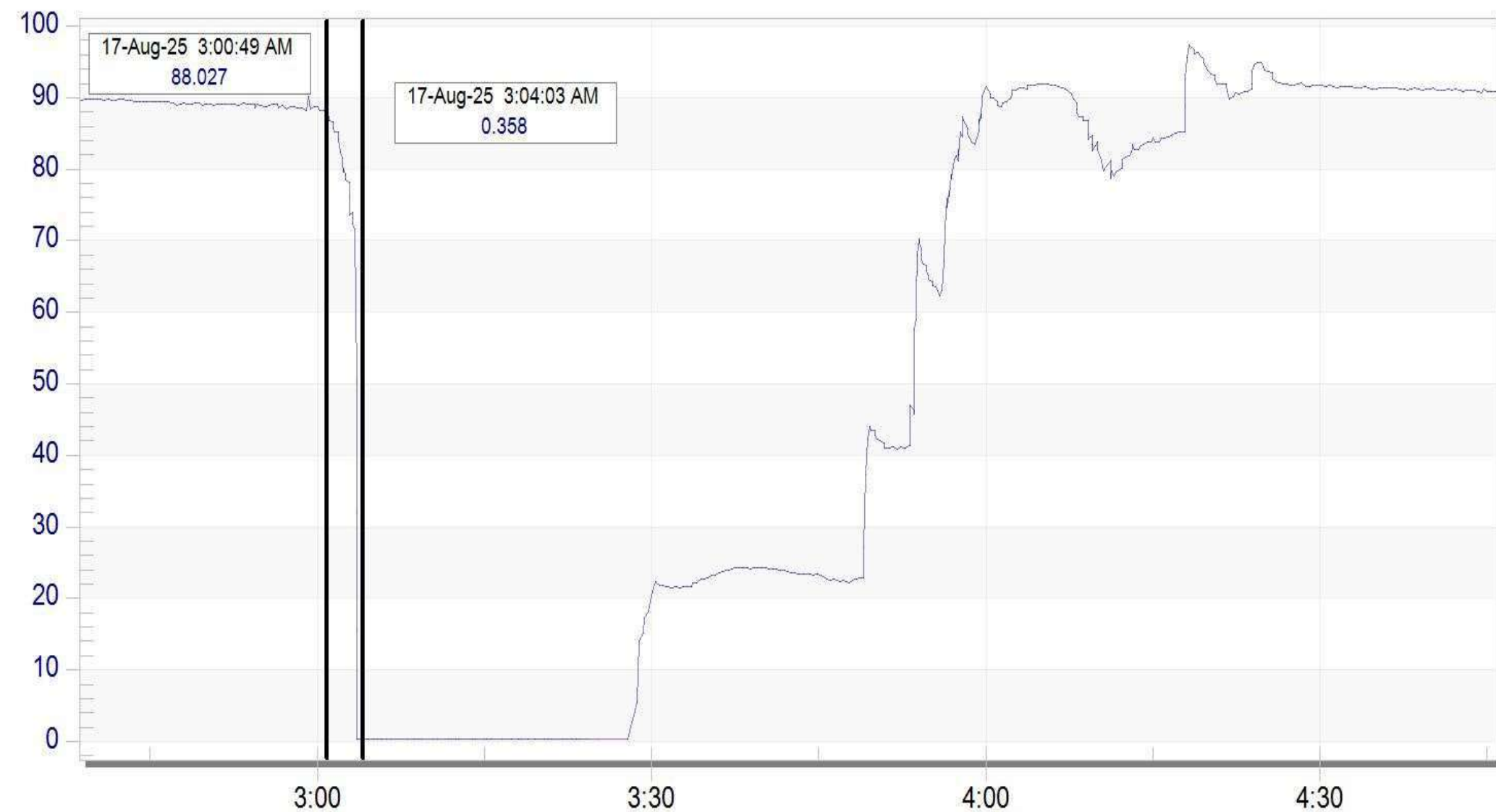
	CAPACITY	MW	MVAR
UNIT-1	60	58	5
UNIT-2	60	59	5
TOTAL	120	117	

Micro Hydro (MW) R 130
Total Hydro (MW) S 971
Total Thermal (MW) S 0

Khodri(UK) Generation during the event

!COMPANIES!PGCIL!RPTUK_PG!PL!KHODR_UK!P.MvMoment

Generation loss of approx.
90 MW at Khodri(UK)

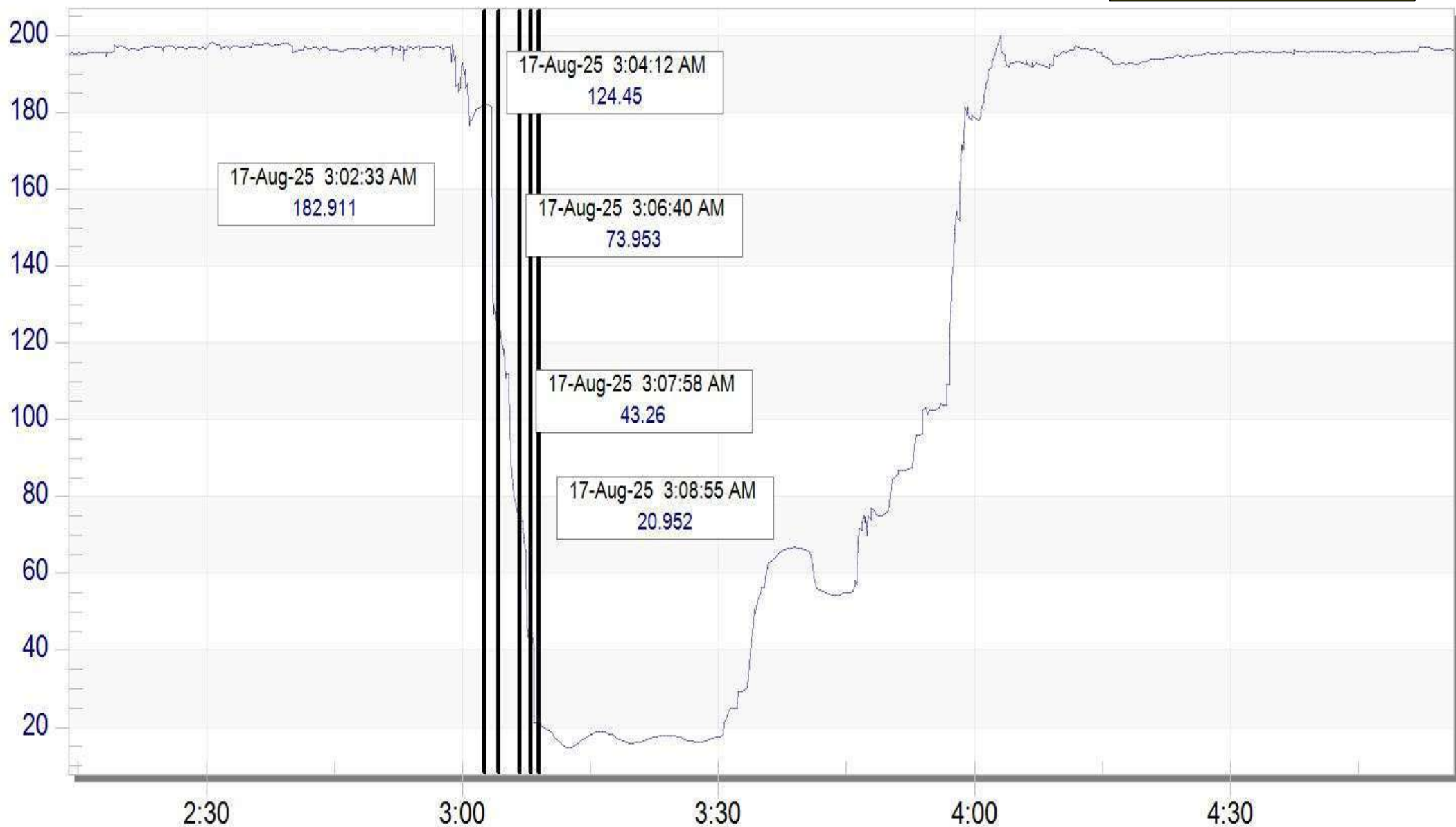


Aug 17 Sun 2025

Chhibro(UK) Generation during the event

!COMPANIES!PGCIL!RPTUK_PG!PL!CHBRO_UK!P.MvMoment

Generation loss of approx.
95 MW at Chhibro(UK)

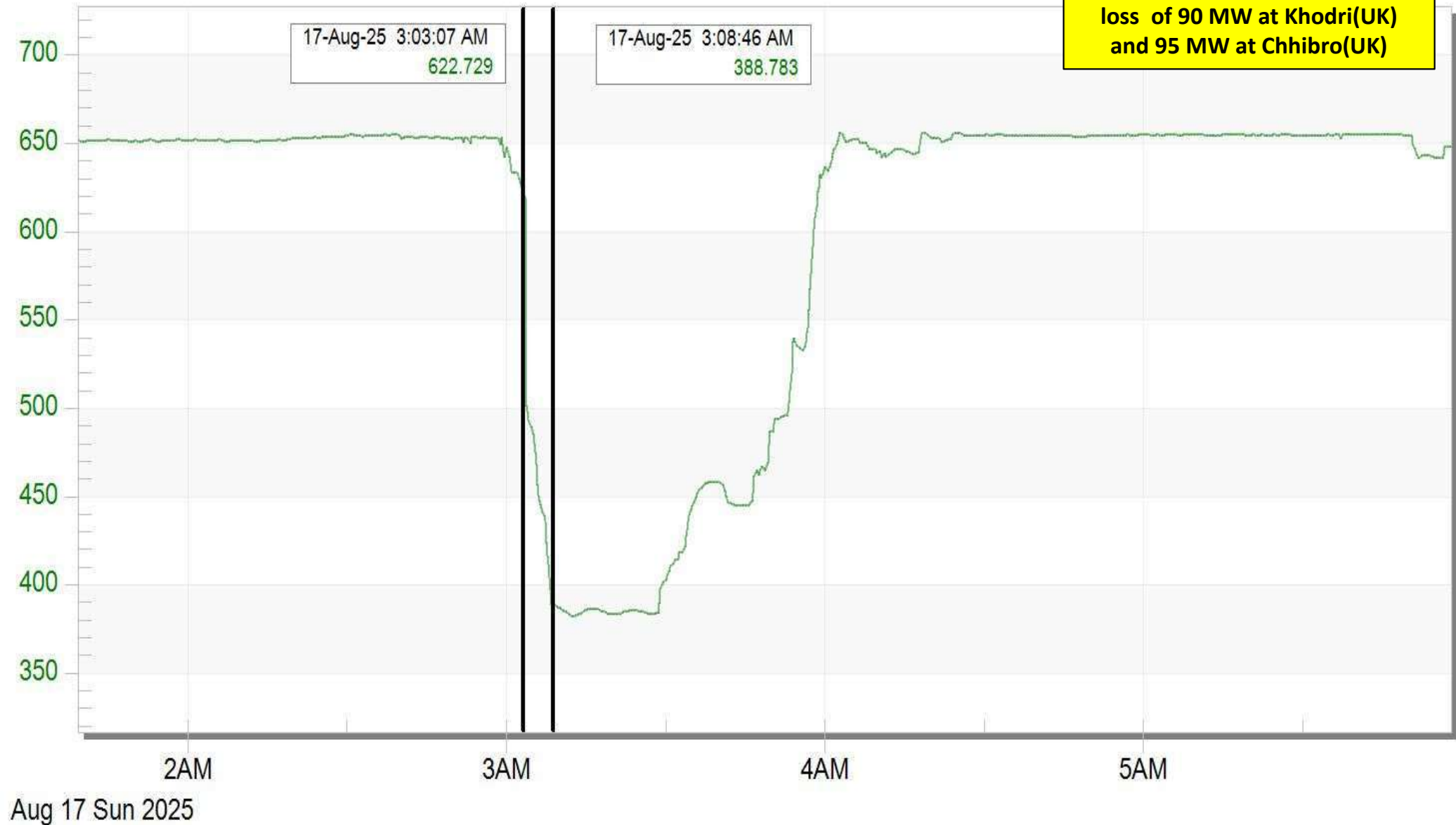


Aug 17 Sun 2025

Uttarakhand Generation during the event

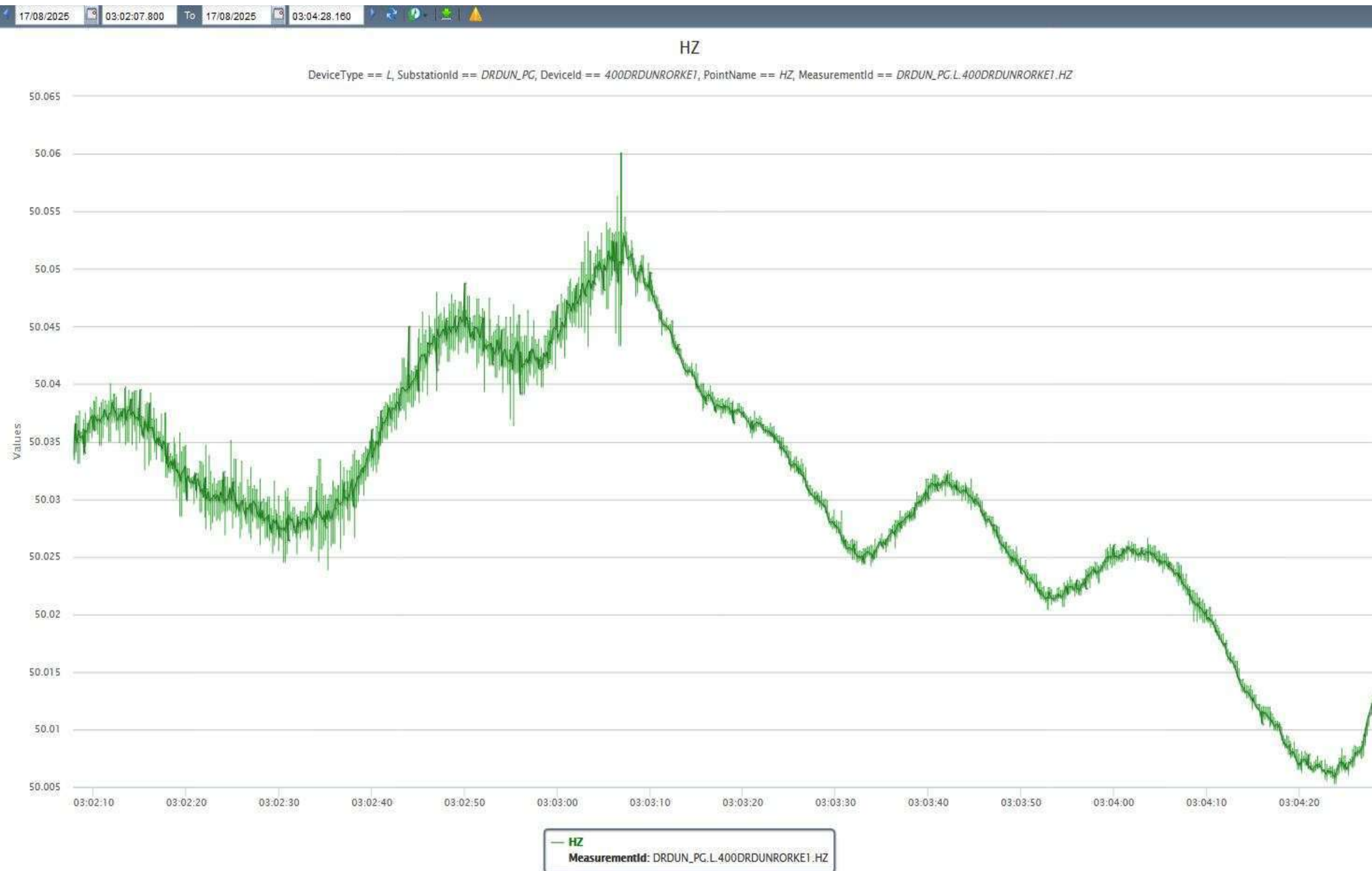
UTTARAKHAND GENERATION - 17-Aug-25 12:00 AM

Reduction in Generation of approx. 234 MW in Uttarakhand control area including generation loss of 90 MW at Khodri(UK) and 95 MW at Chhibro(UK)



PMU Plot of frequency at Dehradun(PG)

03:03hrs/17-Aug-25

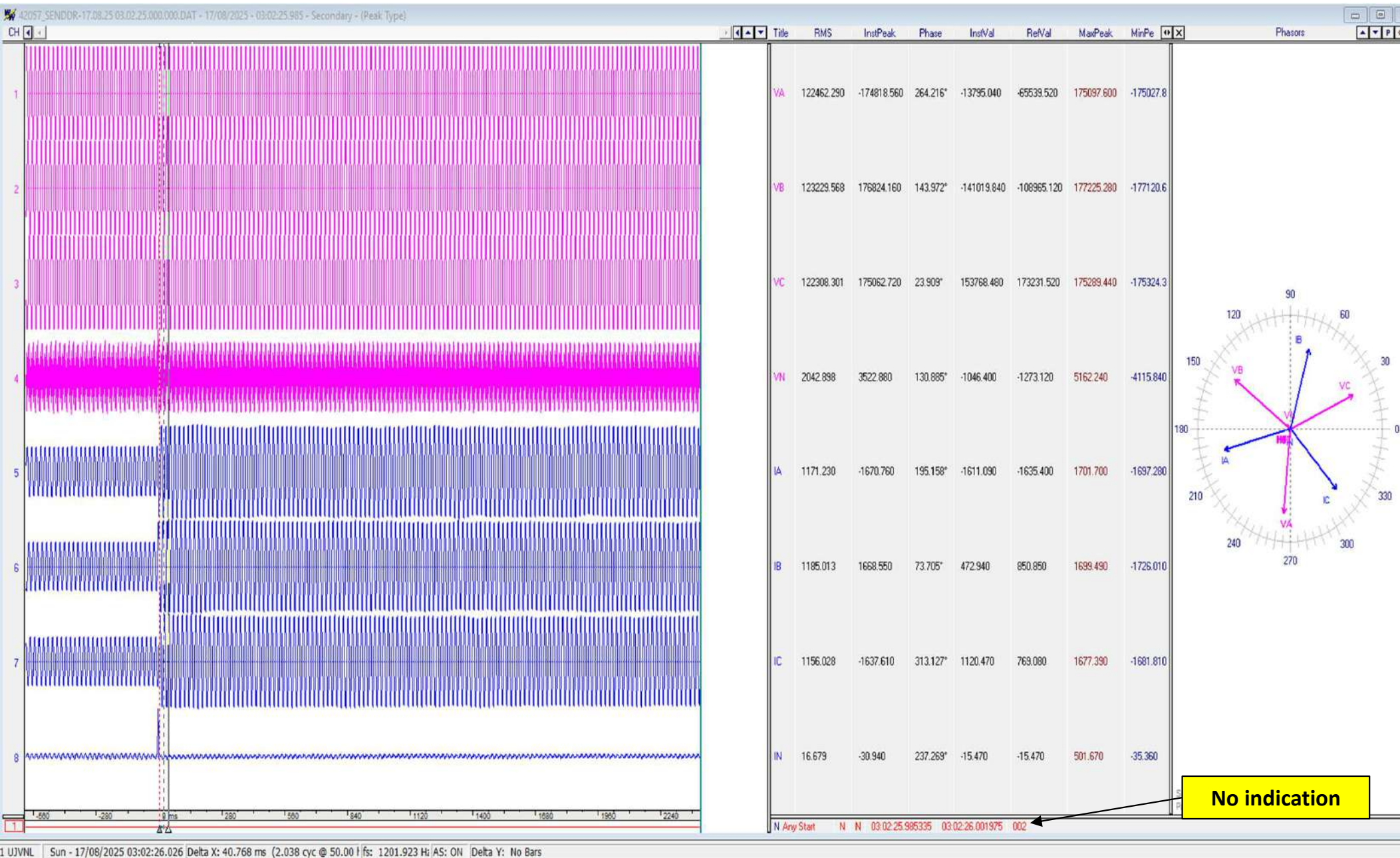


PMU Plot of Voltage at Dehradun(PG)

03:03hrs/17-Aug-25

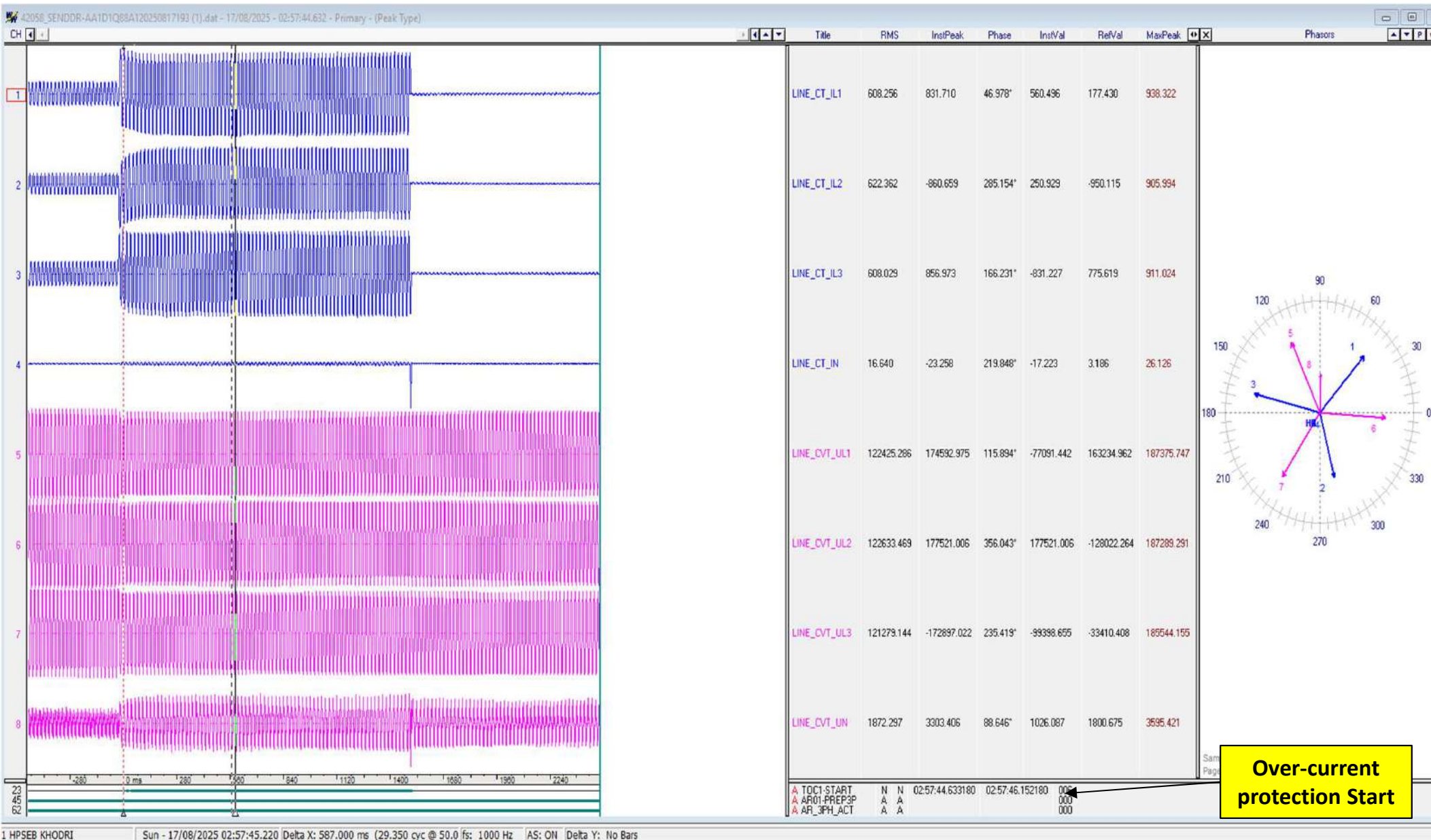


DR of 220 KV Khodri(UK) (end)-Majri(HP) (UK) Ckt-1



✓ $I_r \sim 1171A$, $I_y \sim 1185A$ and $I_b \sim 1156A$

DR of 220 KV Khodri(UK) (end)-Majri(HP) (UK) Ckt-2



- ✓ $I_r \sim 608A$, $I_y \sim 622A$ and $I_b \sim 608A$
- ✓ Fault clearing time ~ 1.518 s
- ✓ Line tripped from Majri end only

SCADA SOE

Time	Station Name	Voltage Level	Element Name	Element Type	Element Status	Remarks
03:03:16,107	KHODR_UK	220kV	T1T1	Circuit Breaker	Close	CB at 220kV side of 220/132 kV 100 MVA ICT at Khodri(UK) opened
03:03:19,512	CHBRO_UK	220kV	G3G3	Circuit Breaker	Open	CB at 220kV side of 60 MW Chhibro Unit-3 opened

Points for Discussion

- i. Exact reason, nature and location of fault need to be shared.
- ii. Distance protection settings needs to be reviewed at Khodri(UK) and Majri(HP) end.
- iii. Reason of delayed clearance of fault need to be shared.
- iv. Reason of tripping of units need to be analysed.
- v. Protection co-ordination need to be reviewed at Khodri(UK). Healthiness of protection system need to be ensured.
- vi. SCADA data was freezed during the event. Availability and healthiness of SCADA data need to be ensured.
- vii. DR/EL(.dat/.cfg file) of all tripped units need to be shared along with detailed tripping report.
- viii. Remedial action taken report need to be shared.

Report on Disturbance of various Elements
at Khodri & Chibro Power Station on
17.08.25

- Date& Time of event: 17.08.2025 at 03:03 hrs.
- Substation affected: 220 KV Khodri and Chibro
- Date & Time of Restoration:17.08.2025 at 07:40 hrs.

ANTECEDENT CONDITION:

- During Antecedent condition 88 MW Power was being generated from Khodri and 195 MW Power was being evacuated from Chibro to Khodri through 220 kV Chibro-Khodri-Feeders.

Elements Tripped :

- Unit # 1 KPS
- Unit # 2 KPS
- Unit # 3 KPS
- Unit # 4 KPS
- 220/132 KV ICT (885)
- 220kV Khodri-Mazri -I (86) Feeder
- Unit # 3 CPS
- Unit # 4 CPS

Transmission/Generation element Tripping details

S.N 0	Name of Element	Tripping Time (Hrs)	Revival Time (Hrs)	Reason/Remarks/Relay
1.	Unit#1 KPS	03:03 hrs	03:55 hrs	Standby earth fault protection of GTF(51N) operated
2.	Unit#2 KPS	03:03 hrs	03:30 hrs	Standby earth fault protection of GTF(51N) operated
3.	Unit#3 KPS	03:03 hrs	03:48 hrs	Standby earth fault protection of GTF(51N) operated
4.	Unit#4 KPS	03:03 hrs	03:52 hrs	Standby earth fault protection of GTF(51N) operated
5.	220/132kV ICT (885)	03:03 hrs	07:40 hrs	Earth fault protection operated
6.	220kV Khodri-Mazri-I(86) Feeder	03:03 hrs	06:19 hrs	Distance protection operated on Zone-3. Fault location = 38.24 km, IA=1.802kA, Ib=1.195kA, Ic=1.126kA
7.	Unit # 3 CPS	03:03 hrs	03:55 hrs	Instantaneous transformer earth fault protection(50 NT) operated
8.	Unit # 4 CPS	03:03 hrs	03:50 hrs	Generator negative phase sequence protection operated

Event Description:-

(i) On date 17.08.2025 at 03:03 hrs 220KV Khodri-Mazri feeder ckt-I tripped with distance protection operated (nature-3 phase to earth,distance-38.2 KM, Zone-3) due to disturbance observed in grid. This grid disturbance commenced because there was a fire incident occurred at Mazri-visco line at far end. This event created heavy jerk in Grid, due to which, all four generating units got tripped on standby earth fault protection(51N) operated. Heavy current passed through neutral of generator transformer. The main trip initiated by 51N_EF_Trip relay. The BUSH_CT-7-IL1:- 103.294(A), BUSH_CT-7-IL2 :- 54.779(A), BUSH_CT-7-IL3:- 36.759(A), BUSH_CT-7-3I0:- **93.428(A)** have shows very heavy current flowing through the neutral ground of 220 kV GT. Which confirms it was ground fault.

(ii)At the same time 220/132KV Khodri-Dhakrani (ICT) also got tripped on earth fault protection.

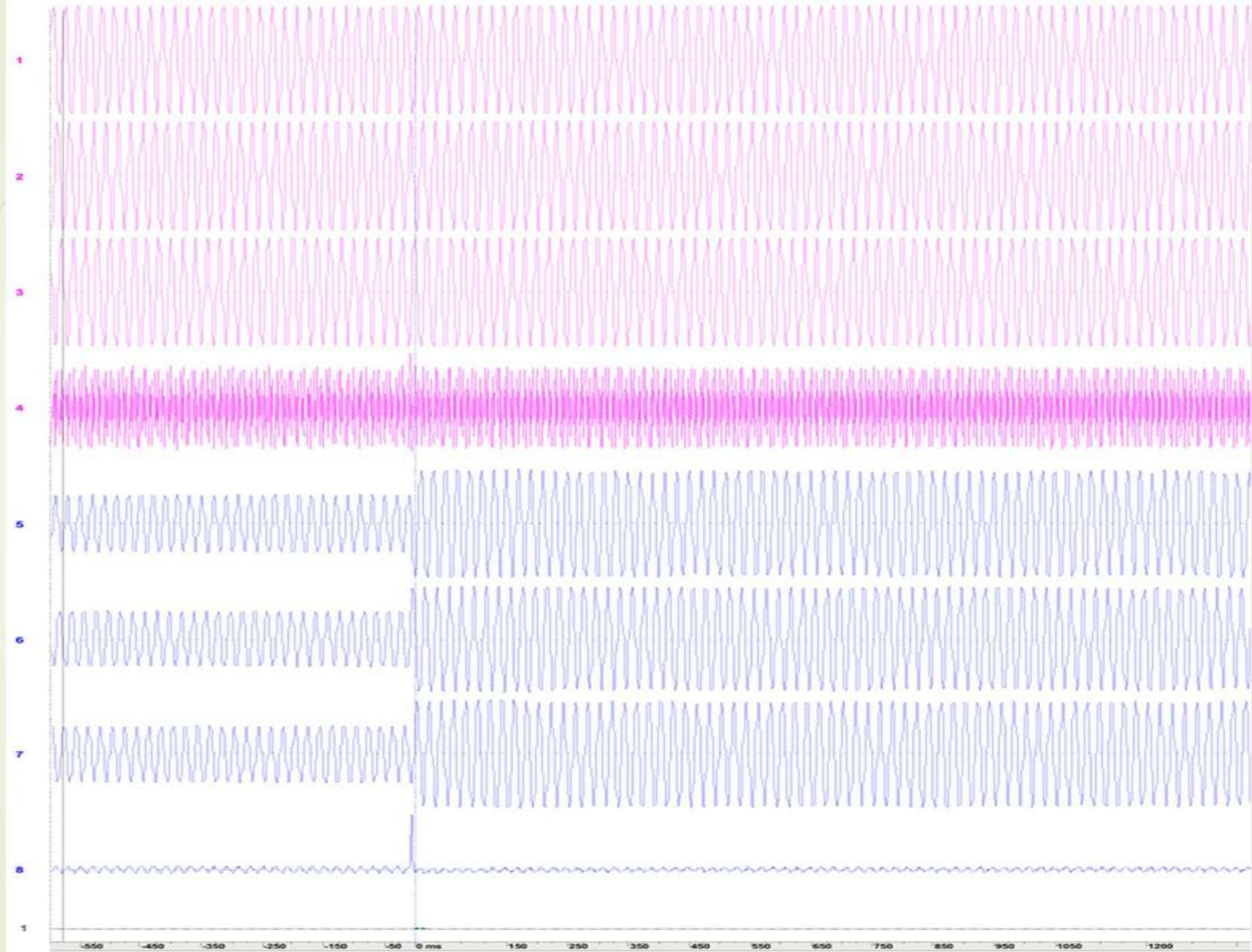
(iii)Generation Unit #3 & U#4 of Chibro got tripped due to grid disturbance on Instantaneous transformer earth fault protection (50NT) and generator negative phase sequence protection operated respectively.

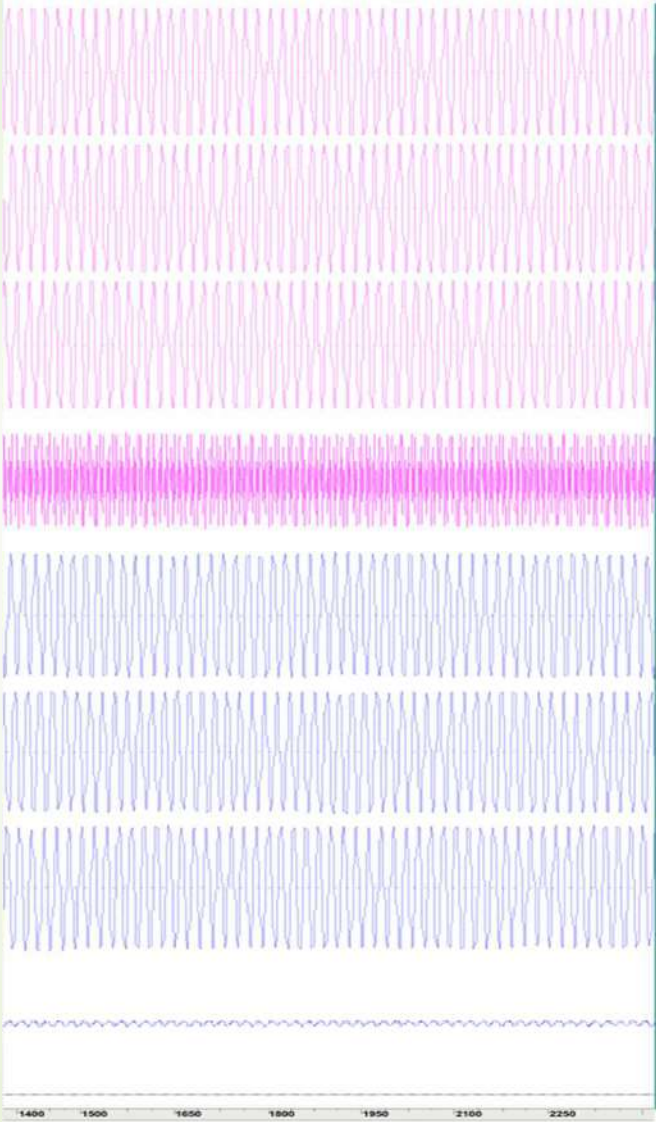
Action taken:

All flags and facia have been reset and any abnormality not found at Switchyard on physical inspection. Finally, restoration of generating units and feeders have been completed till 07:40 hrs. on dated 17.08.2025.

Note : The DR, EL data of 220 KV Khodri-Mazri-ckt-I, generating unit #1,U#2 and U#3 of khodri power station is attached below respectively :

CH





Title	RMS	InstPeak	Phase	InstVal	RefVal	MaxPeak	MinPeak
VA	121776.397	-173684.960	309.256°	105843.360	-65539.520	175097.600	-175027.840
VB	122589.720	-175917.280	188.985°	-174783.680	-108965.120	177225.280	-177120.640
VC	121738.138	174243.040	68.862°	65539.520	173231.520	175289.440	-175324.320
VN	2019.005	-3400.800	132.561°	-3400.800	-1273.120	5162.240	-4115.840
IA	629.535	-895.050	239.303°	-453.050	-1635.400	1701.700	-1697.280
IB	622.813	890.630	118.879°	-424.320	850.850	1699.490	-1726.010
IC	607.804	861.900	358.474°	861.900	769.080	1677.390	-1681.810
IN	19.419	-30.940	221.337°	-13.260	-15.470	501.670	-35.360

N Any Start N N 03:02:25.985335 03:02:26.001975 002

* File Information:

* -----

Station: UJVNL
 Device: 1
 File Name: C:\USERS\UJVNL\DOCUMENTS\SE S1 STUDIO\KHODRI -MAZRI_SESTUDIO\P442\1\DR\17.08.25 03.02.25.000.000.DAT
 File Size: 492865 Bytes
 Prefault Time: 17/08/2025 03:02:25.389000
 Trigger Time: 17/08/2025 03:02:25.985000
 Save Time: 08/18/2025 11:12:34
 Process Time: 08/18/2025 11:18:31
 Start Date && Time: 17/08/2025 03:02:25.389000
 End Date && Time: 17/08/2025 03:02:28.406527
 File Duration: 3 Sec(s) - 17 Mils(s) - 527 Mics(s)
 Sampling Frequency: 1200.480192, 833.000 Microsecond Rate
 Line Frequency: 50.000000

* Maximum/Minimum Analog Summary:

* -----

> Max-Inst	Min-Inst	Max-RMS	Min-RMS	One-Bit	Inst-Diff	RMS-Diff	pUnits	Description
175097.600	-175027.840	152754.797	105791.039	17.4400	69.760	46963.758	V	1-VA
177225.280	-177120.640	174609.281	107300.773	17.4400	104.640	67308.508	V	2-VB
175289.440	-175324.320	123063.094	42165.027	17.4400	34.880	80898.066	V	3-VC
5162.240	-4115.840	3540.320	1874.909	17.4400	1046.400	1665.411	V	4-VN
1701.700	-1697.280	1188.331	287.880	2.2100	4.420	900.452	A	5-IA
1699.490	-1726.010	1204.992	419.900	2.2100	26.520	785.092	A	6-IB
1677.390	-1681.810	1177.226	569.467	2.2100	4.420	607.759	A	7-IC
501.670	-35.360	184.376	10.691	2.2100	466.310	173.685	A	8-IN

* Events/Sensors Activity Summary:

* -----

>Fst	Lst	Fst-Change	Lst-Change	Changes	Description
N	N	03:02:25.985335	03:02:26.001975	002	1-Any Start



Disturbance Short Report

Disturbance Recordings Information

Device Information

Recorder ID	1
IED type	REG670
IED version	1.2.3.18
Station name	KHODRI
Object name	UNIT#1_MAIN#1
IED name	UNIT#1

Fault Information

Trig date and time	17-08-2025 03:02:36.030
Trigger signal name	51G_START
Recording number	758
Total recording time	3319 ms
Pre-trig recording time	1000 ms
Post trig recording time	1999 ms
Max. recording time	3000 ms

General Recordings Information

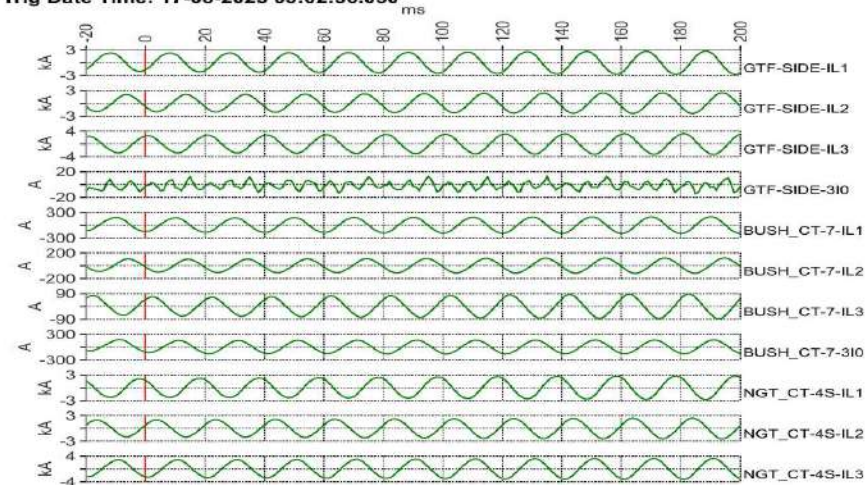
Disturbance recorder	Installed
Event recorder	Installed
System frequency	50 Hz
Sampling frequency	1 kHz
Active setting group during recording	1

Fault Location Information

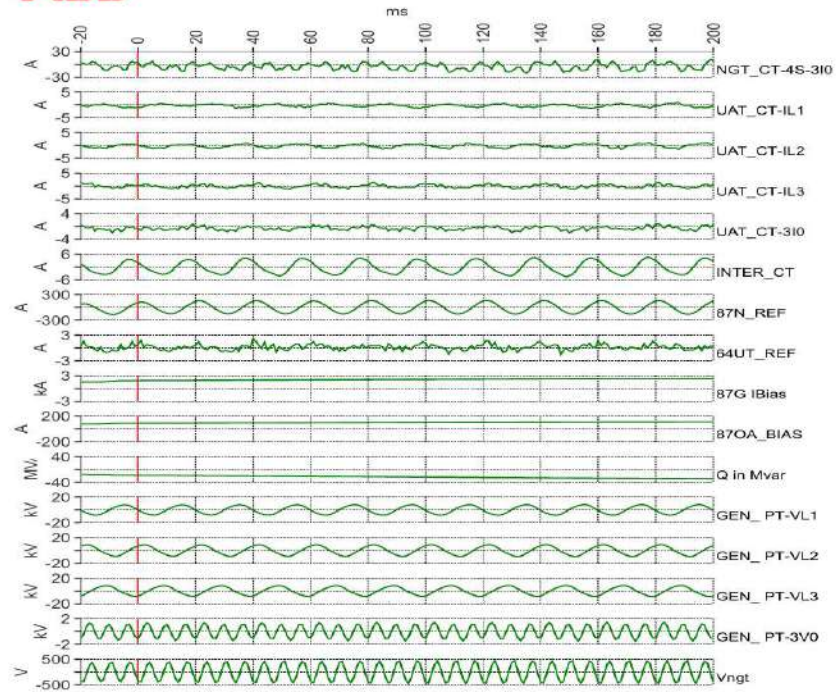
Fault loop type	Not applicable
Fault location	Not applicable
Status of fault calculation	Not applicable
Fault direction	Not applicable

Analog Time Diagram

Trig Date Time: 17-08-2025 03:02:36.030

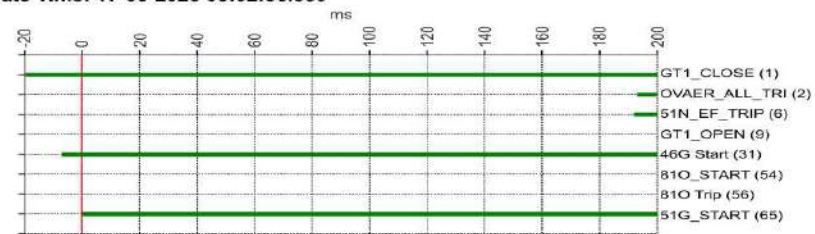


Recording File Name: C:\ProgramData\ABB\PCMDatabases\DisturbanceRecordings\Unit-1 0302 AM\Substation_AA1\Voltage Level_J1
(Bay_Q01\REG670_AA1K1Q01A1\AA1K1Q01A1202508172f6



Binary Time Diagram

Trig Date Time: 17-08-2025 03:02:36.030

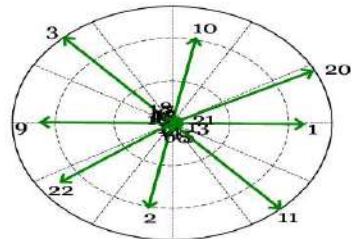




Vector Diagrams

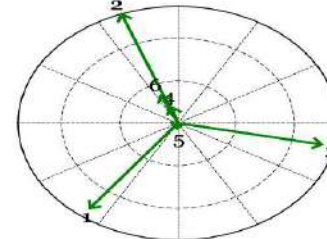
Calculation Time Period : -7 ms to 12 ms

Currents



No.	Name	RMS	Angle
1	GTF-SIDE-IL1	1567.07(A)	359.3°
2	GTF-SIDE-IL2	1400.644(A)	258.5°
3	GTF-SIDE-IL3	1894.567(A)	132.7°
4	GTF-SIDE-3I0	6.048(A)	340.1°
5	BUSH_CT-7-IL1	115.059(A)	326.2°
6	BUSH_CT-7-IL2	72.129(A)	245.7°
7	BUSH_CT-7-IL3	46.234(A)	104.3°
8	BUSH_CT-7-3I0	101.328(A)	302.6°
9	NGT_CT-4S-IL1	1566.74(A)	179.4°
10	NGT_CT-4S-IL2	1404.532(A)	78.5°
11	NGT_CT-4S-IL3	1891.226(A)	312.7°
12	NGT_CT-4S-3I0	7.317(A)	119.7°
13	UAT_CT-IL1	0.671(A)	3.7°
14	UAT_CT-IL2	0.621(A)	213.2°
15	UAT_CT-IL3	0.548(A)	123.3°
16	UAT_CT-3I0	0.888(A)	147.2°
17	INTER_CT	2.431(A)	185.2°
18	87N_REF	100.629(A)	122.1°
19	64UT_REF	0.726(A)	136.8°
20	87G IBias	1869.823(A)	26.9°
21	87OA_BIAS	90.935(A)	22.3°
22	Q in Mvar	18478140.0 (VAr)	215.9°

Voltages



No.	Name	RMS	Angle
1	GEN_PT-VL1	5728.6(V)	232.9°
2	GEN_PT-VL2	6247.418(V)	110.7°
3	GEN_PT-VL3	5744.223(V)	348.5°
4	GEN_PT-3V0	883.247(V)	106.0°
5	Vngt	284.212(V)	264.7°
6	95G Sum 3V0	1624.067(V)	113.8°

**Events List**

Channel Number	Name	Status	Time
31	46G Start	On	17-08-2025 03:02:36.022
65	51G_START	On	17-08-2025 03:02:36.030
6	51N_EF_TRIP	On	17-08-2025 03:02:36.222
2	OVAER_ALL_TRI	On	17-08-2025 03:02:36.223
1	GT1_CLOSE	Off	17-08-2025 03:02:36.317
6	51N_EF_TRIP	Off	17-08-2025 03:02:36.326
2	OVAER_ALL_TRI	Off	17-08-2025 03:02:36.328
9	GT1_OPEN	On	17-08-2025 03:02:36.342
31	46G Start	Off	17-08-2025 03:02:36.350
65	51G_START	Off	17-08-2025 03:02:36.350
54	81O_START	On	17-08-2025 03:02:36.775
56	81O Trip	On	17-08-2025 03:02:37.014
2	OVAER_ALL_TRI	On	17-08-2025 03:02:37.015
56	81O Trip	Off	17-08-2025 03:02:37.438
2	OVAER_ALL_TRI	Off	17-08-2025 03:02:37.441
54	81O_START	Off	17-08-2025 03:02:37.441



Disturbance Short Report

Disturbance Recordings Information

Device Information

Recorder ID	1
IED type	REG670
IED version	2.0.0.13
Station name	Station name
Object name	UNIT#2_MAIN#2
IED name	UNIT#2

Fault Information

Trig date and time	17-08-2025 03:02:48.755
Trigger signal name	51N_SEF_START
Recording number	558
Total recording time	3016 ms
Pre-trig recording time	1000 ms
Post trig recording time	2000 ms
Max. recording time	3000 ms

General Recordings Information

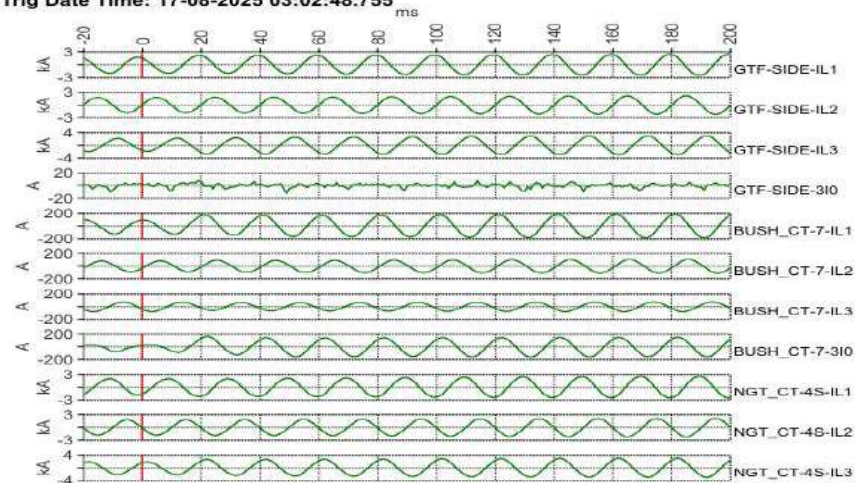
Disturbance recorder	Installed
Event recorder	Installed
System frequency	50 Hz
Sampling frequency	1 kHz
Active setting group during recording	1

Fault Location Information

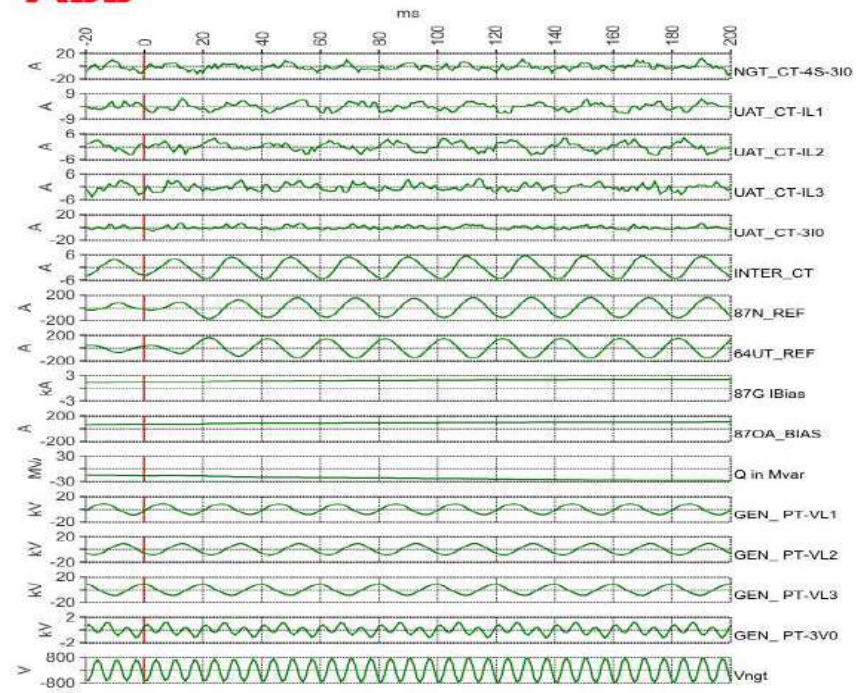
Fault loop type	Not applicable
Fault location	Not applicable
Status of fault calculation	Not applicable
Fault direction	Not applicable

Analog Time Diagram

Trig Date Time: 17-08-2025 03:02:48.755

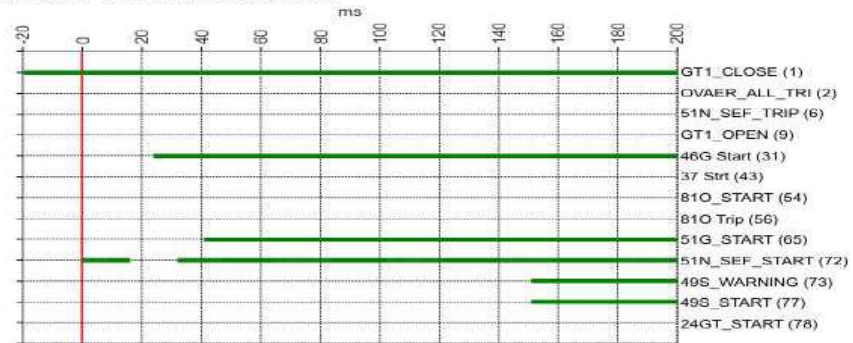


Recording File Name: C:\ProgramData\ABB\PCMDatabases\DisturbanceRecordings\Unit-2 0302 AM\Substation_AA1\Voltage Level_J1
Bay_Q01\REG670_AA1J1Q02A1\AA1J1Q02A1_DR558_20250817030248

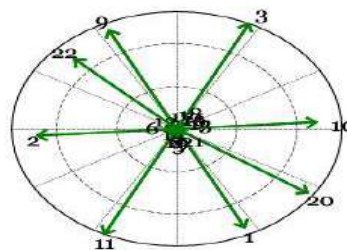


**Binary Time Diagram**

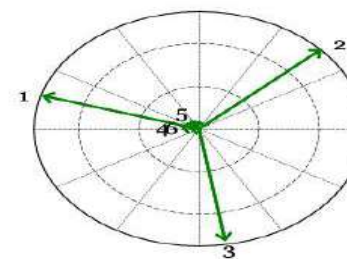
Trig Date Time : 17-08-2025 03:02:48.755

**Vector Diagrams**

Calculation Time Period : 0 ms to 19 ms

Currents

No.	Name	RMS	Angle
1	GTF-SIDE-IL1	1416.601(A)	296.0°
2	GTF-SIDE-IL2	1279.113(A)	183.9°
3	GTF-SIDE-IL3	1509.673(A)	64.0°
4	GTF-SIDE-3I0	4.083(A)	303.0°
5	BUSH_CT-7-IL1	87.071(A)	267.0°
6	BUSH_CT-7-IL2	58.071(A)	165.0°
7	BUSH_CT-7-IL3	52.632(A)	27.9°
8	BUSH_CT-7-3I0	53.065(A)	253.1°
9	NGT_CT-4S-IL1	1418.405(A)	116.1°
10	NGT_CT-4S-IL2	1279.549(A)	3.9°
11	NGT_CT-4S-IL3	1510.336(A)	244.0°
12	NGT_CT-4S-3I0	5.111(A)	133.1°
13	UAT_CT-IL1	2.437(A)	32.4°
14	UAT_CT-IL2	1.442(A)	190.1°
15	UAT_CT-IL3	1.799(A)	56.4°
16	UAT_CT-3I0	3.161(A)	55.0°

Voltages

No.	Name	RMS	Angle
1	GEN_PT-VL1	6062.211(V)	163.3°
2	GEN_PT-VL2	6159.22(V)	42.5°
3	GEN_PT-VL3	5930.212(V)	279.4°
4	GEN_PT-3V0	655.276(V)	169.0°
5	Vnqt	488.401(V)	123.5°
6	95G Sum 3V0	331.495(V)	167.7°



17	INTER_CT	2.67(A)	87.5°
18	87N_REF	53.948(A)	71.5°
19	64UT_REF	53.65(A)	251.7°
20	87G IBias	1457.861(A)	325.3°
21	87OA_BIAS	72.408(A)	316.1°
22	Q in Mvar	16282120.0 (VAr)	136.1°

Events List

Channel Number	Name	Status	Time
72	51N_SEF_START	On	17-08-2025 03:02:48.755
72	51N_SEF_START	Off	17-08-2025 03:02:48.772
31	46G Start	On	17-08-2025 03:02:48.779
72	51N_SEF_START	On	17-08-2025 03:02:48.787
65	51G_START	On	17-08-2025 03:02:48.796
73	49S_WARNING	On	17-08-2025 03:02:48.905
77	49S_START	On	17-08-2025 03:02:48.905
6	51N_SEF_TRIP	On	17-08-2025 03:02:48.955
2	OVAER_ALL_TRI	On	17-08-2025 03:02:48.957
6	51N_SEF_TRIP	Off	17-08-2025 03:02:49.043
72	51N_SEF_START	Off	17-08-2025 03:02:49.043
1	GT1_CLOSE	Off	17-08-2025 03:02:49.044
2	OVAER_ALL_TRI	Off	17-08-2025 03:02:49.044
43	37 Strt	On	17-08-2025 03:02:49.060
78	24GT_START	On	17-08-2025 03:02:49.060
9	GT1_OPEN	On	17-08-2025 03:02:49.069
43	37 Strt	Off	17-08-2025 03:02:49.075
65	51G_START	Off	17-08-2025 03:02:49.075
31	46G Start	Off	17-08-2025 03:02:49.084
73	49S_WARNING	Off	17-08-2025 03:02:49.105
77	49S_START	Off	17-08-2025 03:02:49.105
78	24GT_START	Off	17-08-2025 03:02:49.171
54	81O_START	On	17-08-2025 03:02:49.542
56	81O Trip	On	17-08-2025 03:02:49.819
2	OVAER_ALL_TRI	On	17-08-2025 03:02:49.821



Disturbance Short Report

Disturbance Recordings Information

Device Information

Recorder ID	1
IED type	REG670
IED version	2.0.0.13
Station name	Station name
Object name	UNIT#3_MAIN#1
IED name	UNIT#3

Fault Information

Trig date and time	17-08-2025 03:02:55.382
Trigger signal name	51N_SEF_START
Recording number	14
Total recording time	3008 ms
Pre-trig recording time	1000 ms
Post trig recording time	2000 ms
Max. recording time	3000 ms

General Recordings Information

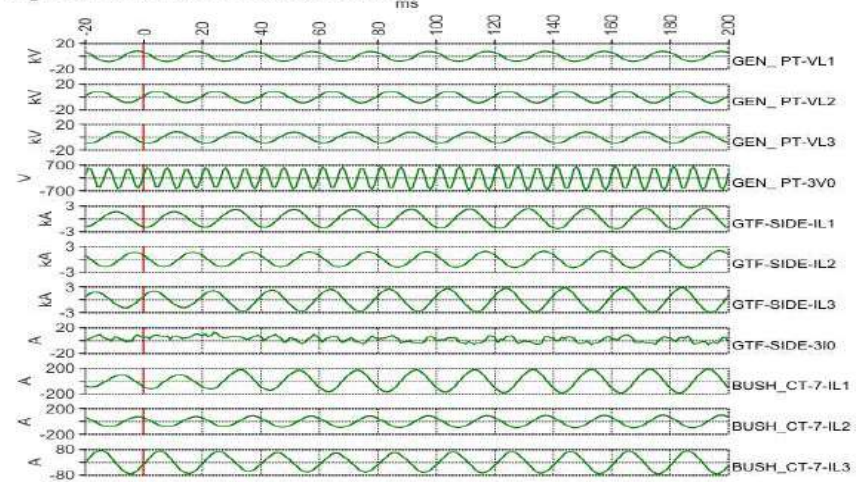
Disturbance recorder	Installed
Event recorder	Installed
System frequency	50 Hz
Sampling frequency	1 kHz
Active setting group during recording	1

Fault Location Information

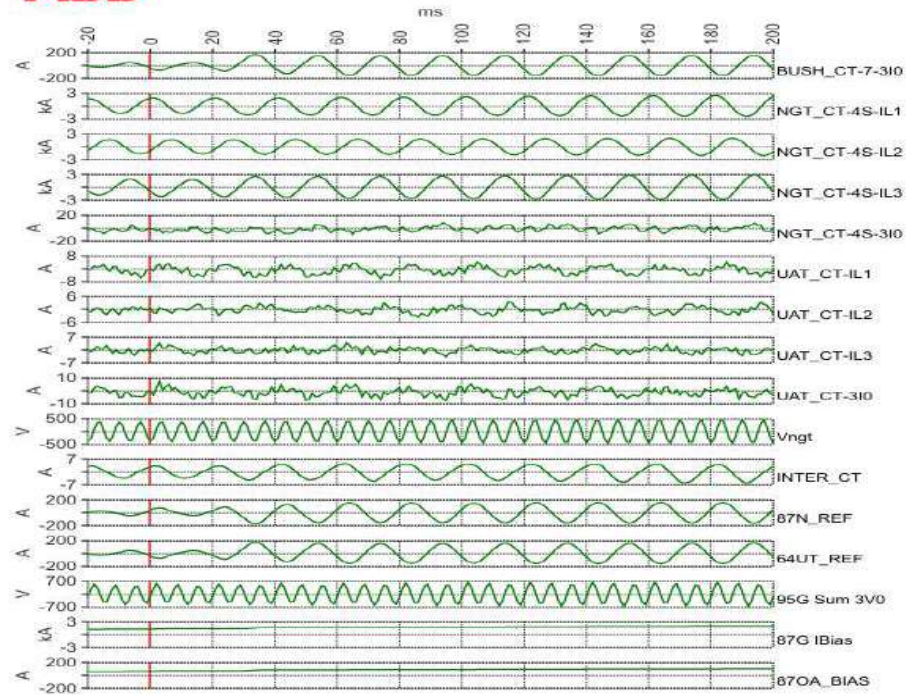
Fault loop type	Not applicable
Fault location	Not applicable
Status of fault calculation	Not applicable
Fault direction	Not applicable

Analog Time Diagram

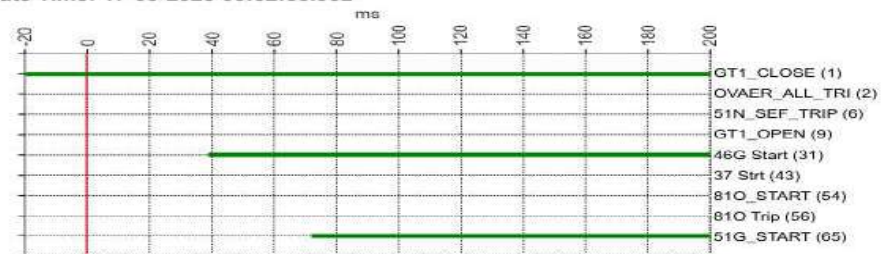
Trig Date Time: 17-08-2025 03:02:55.382



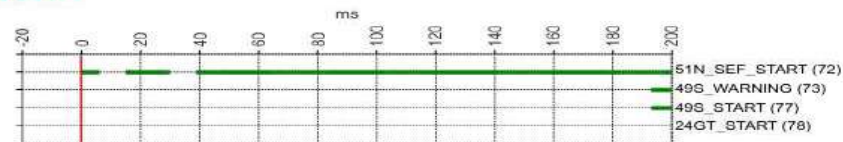
Recording File Name: C:\ProgramData\ABB\PCMDatabases\DisturbanceRecordings\Unit-3_0302 AM\Substation_AA1\Voltage_Level_J1
Bay_Q01\REG670_AA1\J1Q03A1\AA1\J1Q03A1_DR14_20250817030255



Binary Time Diagram
Trig Date Time: 17-08-2025 03:02:55.382

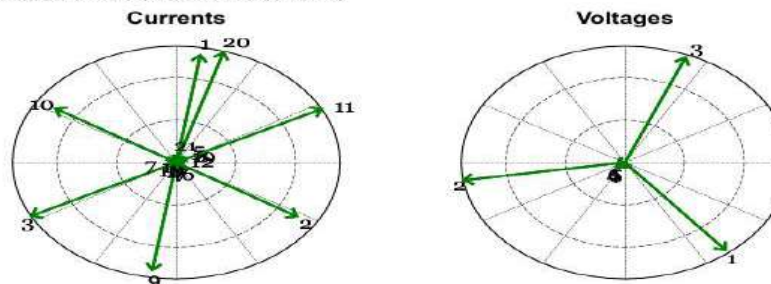


Recording File Name: C:\ProgramData\ABB\PCMDDataBases\DisturbanceRecordings\Unit-3 0302 AM\Substation_AA1\Voltage Level_J1
Bay_Q01\REG670_AA1J1Q03A1\AA1J1Q03A1_DR14_20250817030255



Vector Diagrams

Calculation Time Period : 0 ms to 19 ms



No.	Name	RMS	Angle	No.	Name	RMS	Angle
1	GTF-SIDE-IL1	1294.851(A)	81.0°	1	GEN_PT-VL1	6061.394(V)	309.2°
2	GTF-SIDE-IL2	1203.29(A)	327.8°	2	GEN_PT-VL2	6230.371(V)	188.8°
3	GTF-SIDE-IL3	1380.112(A)	207.4°	3	GEN_PT-VL3	6085.022(V)	67.7°
4	GTF-SIDE-3I0	6.634(A)	238.2°	4	GEN_PT-3V0	396.231(V)	215.2°
5	BUSH_CT-7-IL1	76.977(A)	50.9°	5	Vngt	272.842(V)	219.9°
6	BUSH_CT-7-IL2	55.162(A)	308.2°	6	95G Sum 3V0	361.125(V)	216.1°
7	BUSH_CT-7-IL3	49.439(A)	173.6°				
8	BUSH_CT-7-3I0	41.657(A)	32.8°				
9	NGT_CT-4S-IL1	1294.957(A)	261.0°				
10	NGT_CT-4S-IL2	1204.248(A)	147.9°				
11	NGT_CT-4S-IL3	1381.428(A)	27.4°				
12	NGT_CT-4S-3I0	4.51(A)	20.0°				
13	UAT_CT-IL1	2.621(A)	182.3°				
14	UAT_CT-IL2	1.075(A)	357.7°				
15	UAT_CT-IL3	1.722(A)	183.8°				
16	UAT_CT-3I0	3.54(A)	184.3°				
17	INTER_CT	2.329(A)	246.1°				
18	87N_REF	41.949(A)	211.9°				
19	64UT_REF	41.938(A)	32.2°				
20	87G IBias	1368.556(A)	73.1°				
21	87OA_BIAS	68.307(A)	80.9°				

Events List

Channel Number	Name	Status	Time
72	51N_SEF_START	On	17-08-2025 03:02:55.382
72	51N_SEF_START	Off	17-08-2025 03:02:55.389
72	51N_SEF_START	On	17-08-2025 03:02:55.397
72	51N_SEF_START	Off	17-08-2025 03:02:55.413
31	46G Start	On	17-08-2025 03:02:55.421
72	51N_SEF_START	On	17-08-2025 03:02:55.421

Recording File Name: C:\ProgramData\ABB\PCMDatabases\DisturbanceRecordings\Unit-3 0302 AMSubstation_AA1\Voltage Level_11 Bay_Q01\REG670_AA1J1Q03A1\AA1J1Q03A1_DR14_20250817030255



65	51G_START	On	17-08-2025 03:02:55.454
73	49S_WARNING	On	17-08-2025 03:02:55.575
77	49S_START	On	17-08-2025 03:02:55.575
6	51N_SEF_TRIP	On	17-08-2025 03:02:55.589
2	OVAER_ALL_TRI	On	17-08-2025 03:02:55.591
6	51N_SEF_TRIP	Off	17-08-2025 03:02:55.685
72	51N_SEF_START	Off	17-08-2025 03:02:55.685
1	GT1_CLOSE	Off	17-08-2025 03:02:55.686
2	OVAER_ALL_TRI	Off	17-08-2025 03:02:55.687
43	37 Strt	On	17-08-2025 03:02:55.701
78	24GT_START	On	17-08-2025 03:02:55.701
9	GT1_OPEN	On	17-08-2025 03:02:55.708
43	37 Strt	Off	17-08-2025 03:02:55.718
65	51G_START	Off	17-08-2025 03:02:55.718
31	46G Start	Off	17-08-2025 03:02:55.725
73	49S_WARNING	Off	17-08-2025 03:02:55.775
77	49S_START	Off	17-08-2025 03:02:55.775
78	24GT_START	Off	17-08-2025 03:02:55.814
54	81O_START	On	17-08-2025 03:02:56.230
56	81O Trip	On	17-08-2025 03:02:56.525
2	OVAER_ALL_TRI	On	17-08-2025 03:02:56.527



Disturbance Short Report

Disturbance Recordings Information

Device Information

Recorder ID	1
IED type	REG670
IED version	1.2.3.20
Station name	KHODRI
Object name	UNIT#4_MAIN#1
IED name	UNIT#4

Fault Information

Trig date and time	17-08-2025 03:02:36.270
Trigger signal name	51G_START
Recording number	973
Total recording time	3248 ms
Pre-trig recording time	1001 ms
Post trig recording time	1999 ms
Max. recording time	3000 ms

General Recordings Information

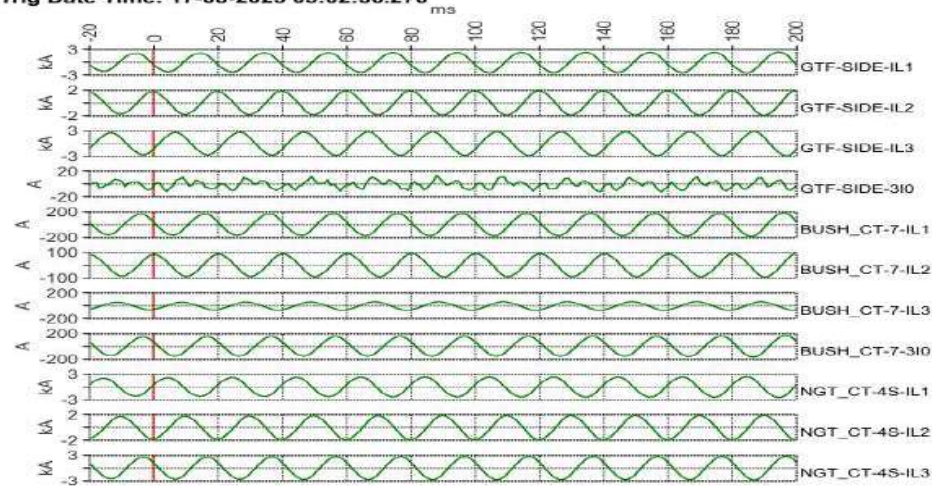
Disturbance recorder	Installed
Event recorder	Installed
System frequency	50 Hz
Sampling frequency	1 kHz
Active setting group during recording	1

Fault Location Information

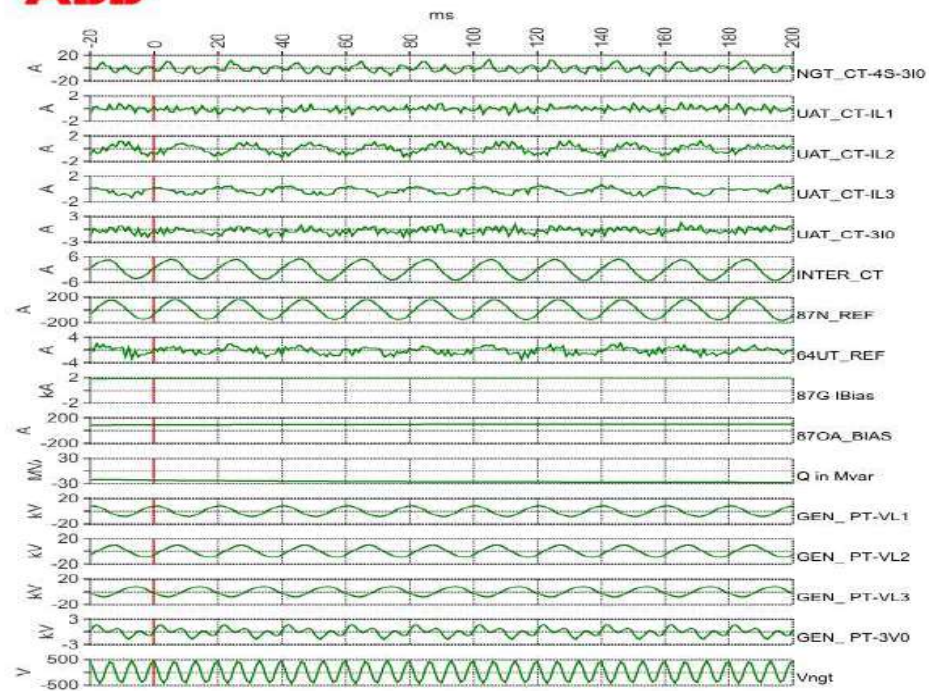
Fault loop type	Not applicable
Fault location	Not applicable
Status of fault calculation	Not applicable
Fault direction	Not applicable

Analog Time Diagram

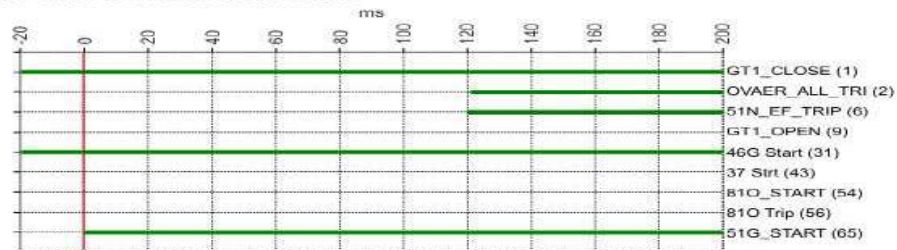
Trig Date Time: 17-08-2025 03:02:36.270



Recording File Name: C:\ProgramData\ABB\PCMDatabases\DisturbanceRecordings\Unit-4_0303 AM\Substation_AA1\Voltage_Level_I1\Bay_Q01\REG670_AA1J1Q04A2\AA1J1Q04A2202508173cd



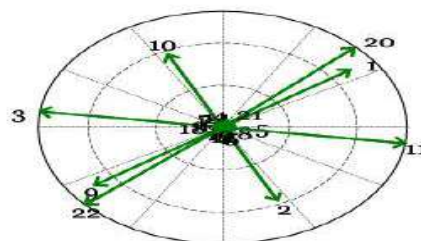
Binary Time Diagram
Trig Date Time: 17-08-2025 03:02:36.270



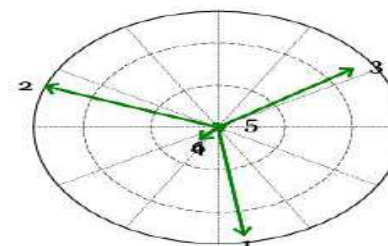
Recording File Name: C:\ProgramData\ABB\PCMDatabases\DisturbanceRecordings\Unit-4 0303 AM\Substation_AA1\Voltage Level_J1
Bay_Q011REG670_AA1J1Q04A2\AA1J1Q04A2202508173ed

**Vector Diagrams**

Calculation Time Period : -79 ms to -60 ms

Currents

No.	Name	RMS	Angle
1	GTF-SIDE-IL1	1385.047(A)	35.7°
2	GTF-SIDE-IL2	1133.756(A)	295.3°
3	GTF-SIDE-IL3	1626.205(A)	172.1°
4	GTF-SIDE-3I0	5.827(A)	103.9°
5	BUSH_CT-7-IL1	103.294(A)	8.2°
6	BUSH_CT-7-IL2	54.779(A)	287.9°
7	BUSH_CT-7-IL3	36.759(A)	135.7°
8	BUSH_CT-7-3I0	93.428(A)	352.7°
9	NGT_CT-4S-IL1	1389.201(A)	215.6°
10	NGT_CT-4S-IL2	1133.735(A)	115.2°
11	NGT_CT-4S-IL3	1626.742(A)	352.1°
12	NGT_CT-4S-3I0	5.81(A)	242.1°
13	UAT_CT-IL1	0.371(A)	137.9°
14	UAT_CT-IL2	0.656(A)	115.0°
15	UAT_CT-IL3	0.636(A)	265.9°
16	UAT_CT-3I0	0.811(A)	159.8°
17	INTER_CT	2.834(A)	206.6°
18	87N_REF	95.484(A)	171.3°
19	64UT_REF	1.023(A)	213.9°
20	87G IBias	1609.381(A)	43.9°
21	87OA_BIAS	80.219(A)	50.6°

Voltages

No.	Name	RMS	Angle
1	GEN_PT-VL1	5906.491(V)	278.7°
2	GEN_PT-VL2	6318.86(V)	159.3°
3	GEN_PT-VL3	5614.234(V)	34.6°
4	GEN_PT-3V0	860.845(V)	225.8°
5	Vngt	273.477(V)	23.8°
6	95G Sum 3V0	864.279(V)	226.4°



22 Q in Mvar 18695044.0 221.8°
(VAr)

Events List

Channel Number	Name	Status	Time
31	46G Start	On	17-08-2025 03:02:36.190
65	51G_START	On	17-08-2025 03:02:36.270
6	51N_EF_TRIP	On	17-08-2025 03:02:36.390
2	OVAER_ALL_TRI	On	17-08-2025 03:02:36.391
1	GT1_CLOSE	Off	17-08-2025 03:02:36.481
6	51N_EF_TRIP	Off	17-08-2025 03:02:36.486
2	OVAER_ALL_TRI	Off	17-08-2025 03:02:36.487
43	37 Strt	On	17-08-2025 03:02:36.502
9	GT1_OPEN	On	17-08-2025 03:02:36.510
31	46G Start	Off	17-08-2025 03:02:36.518
43	37 Strt	Off	17-08-2025 03:02:36.518
65	51G_START	Off	17-08-2025 03:02:36.518
54	81O_START	On	17-08-2025 03:02:37.081
56	81O Trip	On	17-08-2025 03:02:37.414
2	OVAER_ALL_TRI	On	17-08-2025 03:02:37.417
56	81O Trip	Off	17-08-2025 03:02:37.622
2	OVAER_ALL_TRI	Off	17-08-2025 03:02:37.624
54	81O_START	Off	17-08-2025 03:02:37.624

Multiple Element Tripping Event at 400/220/66kV Bawana(DTL)

At 18:13 hrs on 22.08.2025

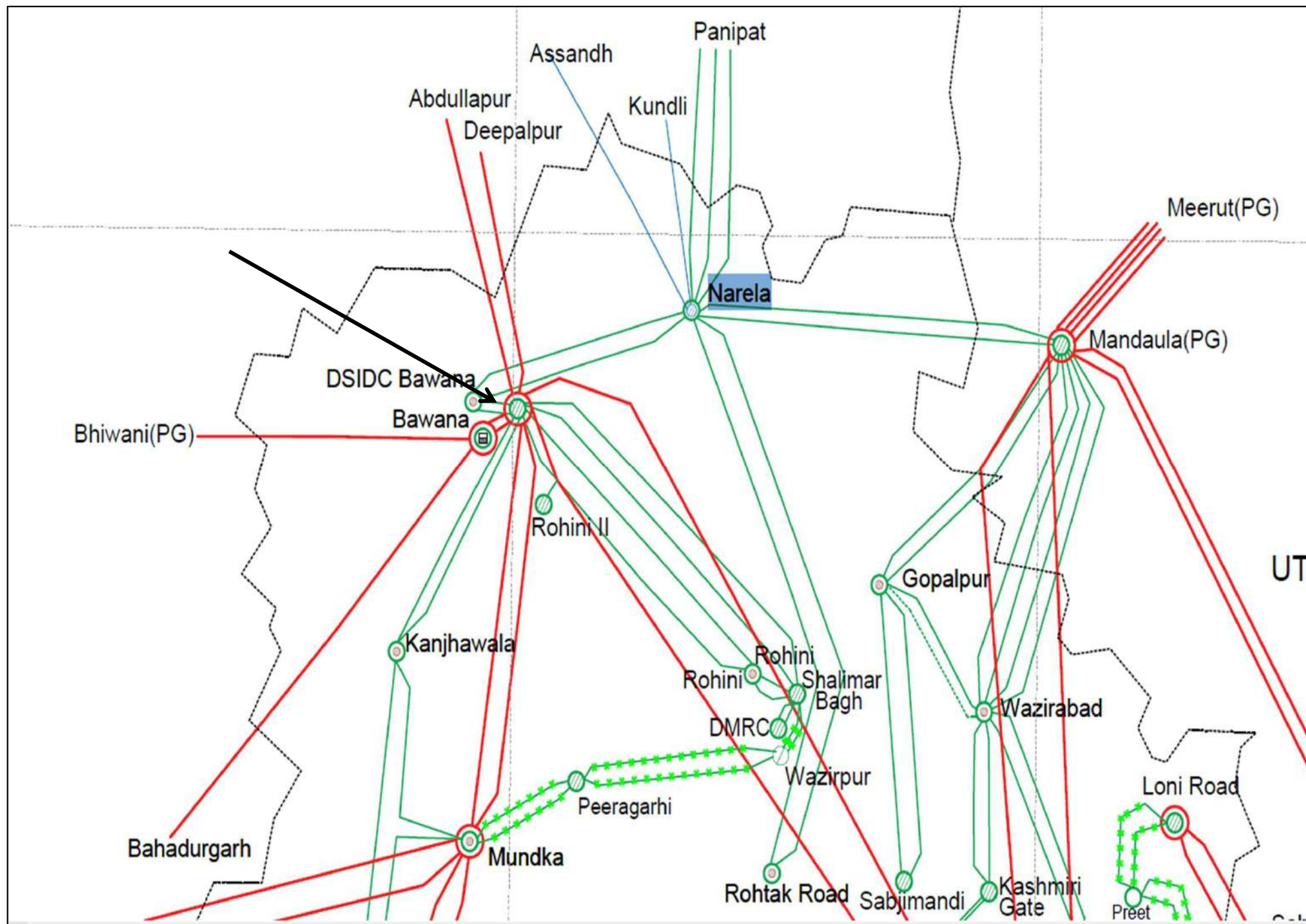
Tripped Elements

S. No	Name of Elements	Outage Time	Revival Time	Reason of tripping
1.	400/220kV 215 MVA ICT-4 at Bawana(DTL)	18:13 hrs	19:55 hrs	Overflux protection operated
2.	220kV Bawana-Shalimarbagh (DTL) Ckt-1		23:44 hrs	OPGW between Tower no. N-2, N-3, N-4 broken
3.	220kV Bawana-Shalimarbagh (DTL) Ckt-2		23:44 hrs	
4.	220kV Bawana-Rohini-I (DTL) Ckt-1		Not reported	B-ph CT clamp damaged
5.	220kV Bawana-Rohini-I (DTL) Ckt-2	18:25 hrs	18:38 hrs	Manually opened
6.	220kV Rohini-I--Shalimarbagh (DTL) Ckt-1	18:35 hrs	Not reported	

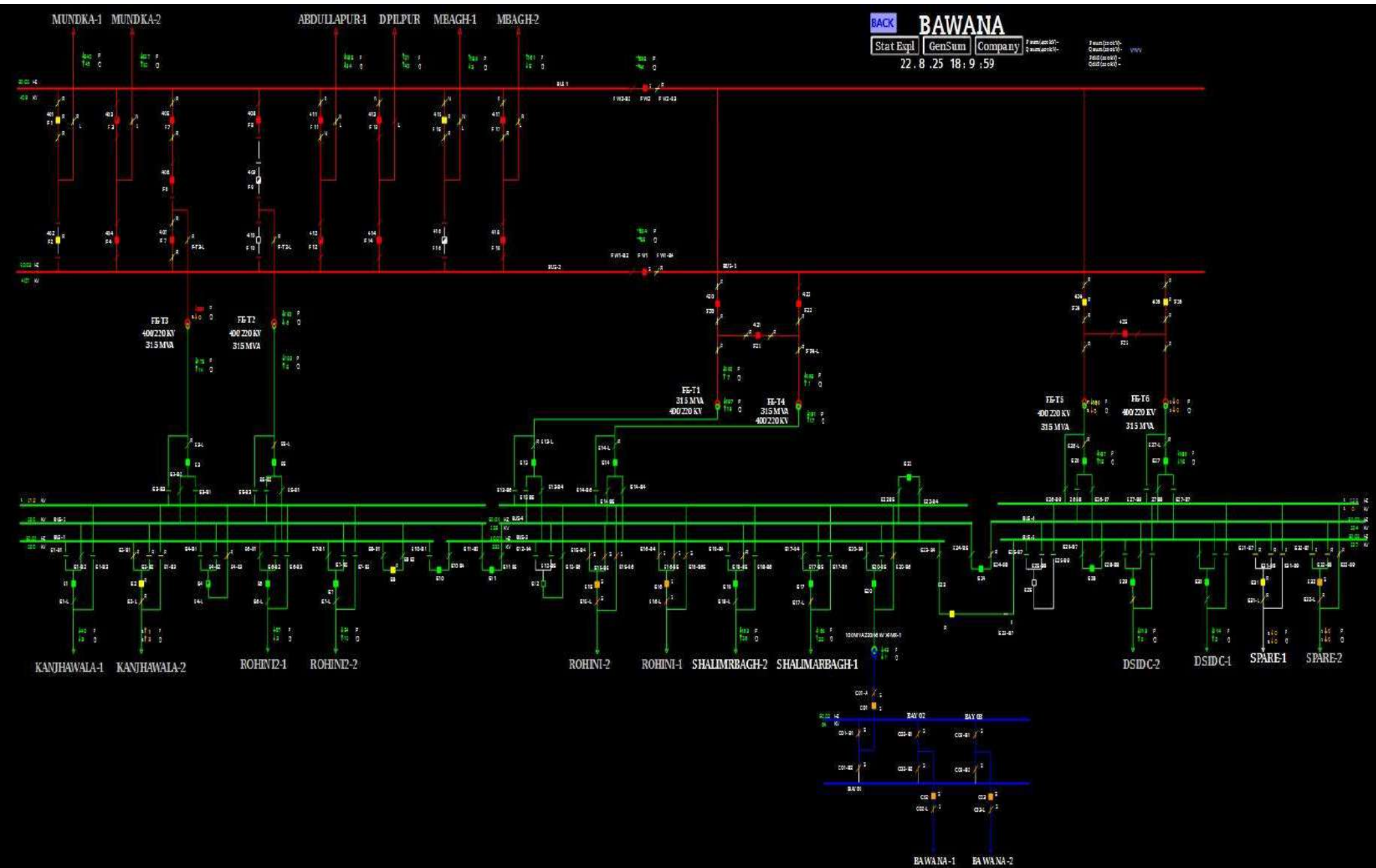
Brief details of the event

- i. 400/220/66kV Bawana(DTL) has one and half breaker scheme at 400kV level and double main and transfer bus scheme at 220kV level.
- ii. During antecedent condition, bus wise arrangement at 220kV Bawana was as follows: 220kV Bus-I: 220kV I/C of 315 MVA ICT-2, 200/66kV 100MVA Pr. Tr., 220kV Rohini-II ckt-1 & 2. 220kV Bus-II: 220kV I/C of 315 MVA ICT-3, 220kV Khanjawala ckt-1 & 2. 220kV Bus-III: 220kV I/C of 315 MVA ICT-1, 220kV Rohini-I ckt-1, 220kV Shalimarbagh Ckt-1. 220kV Bus-IV: 220kV I/C of 315 MVA ICT-4, 220kV Rohini-I ckt-2, 220kV Shalimarbagh Ckt-2. 220kV Bus-V: 220kV I/C of 315 MVA ICT-5, 220kV DSIDC Bawana Ckt-1. 220kV Bus-VI: 220kV I/C of 315 MVA ICT-6, 220kV DSIDC Bawana Ckt-2. 220kV Bus Section and Bus Coupler were closed.
- iii. As reported, at 18:13 hrs, 400/220kV 215 MVA ICT-4 at Bawana(DTL) tripped on overflux protection operation.
- iv. During the same time, 220kV Bawana-Shalimarbagh (DTL) Ckt-1 & 2 tripped on zone-1 distance protection operation. During patrolling, OPGW between tower no. N-2, N-3, N-4 was found broken.
- v. 220kV Bawana-Rohini-I (DTL) Ckt-1 also tripped due to B-ph CT clamp damaged.
- vi. Further, at 18:25 hrs, 220kV Bawana-Rohini-I (DTL) Ckt-2 was manually opened from Bawana end to protect the line from overloading.
- vii. At 18:35 hours, 220kV Rohini-I--Shalimarbagh (DTL) Ckt-1 was manually opened from Rohini-I end due to flash in Y-ph bus isolator at Shalimarbagh(DTL).
- viii. As per PMU at Maharahibagh(PG), R-N phase to earth fault followed by B-N phase to earth fault with fault clearance time of respectively 480 ms (delayed) and 520 ms (delayed) was observed.
- ix. As per SCADA, change in demand of approx. 540 MW in Delhi control area was observed. But as reported by SLDC Delhi, load loss of approx. 470 MW occurred.

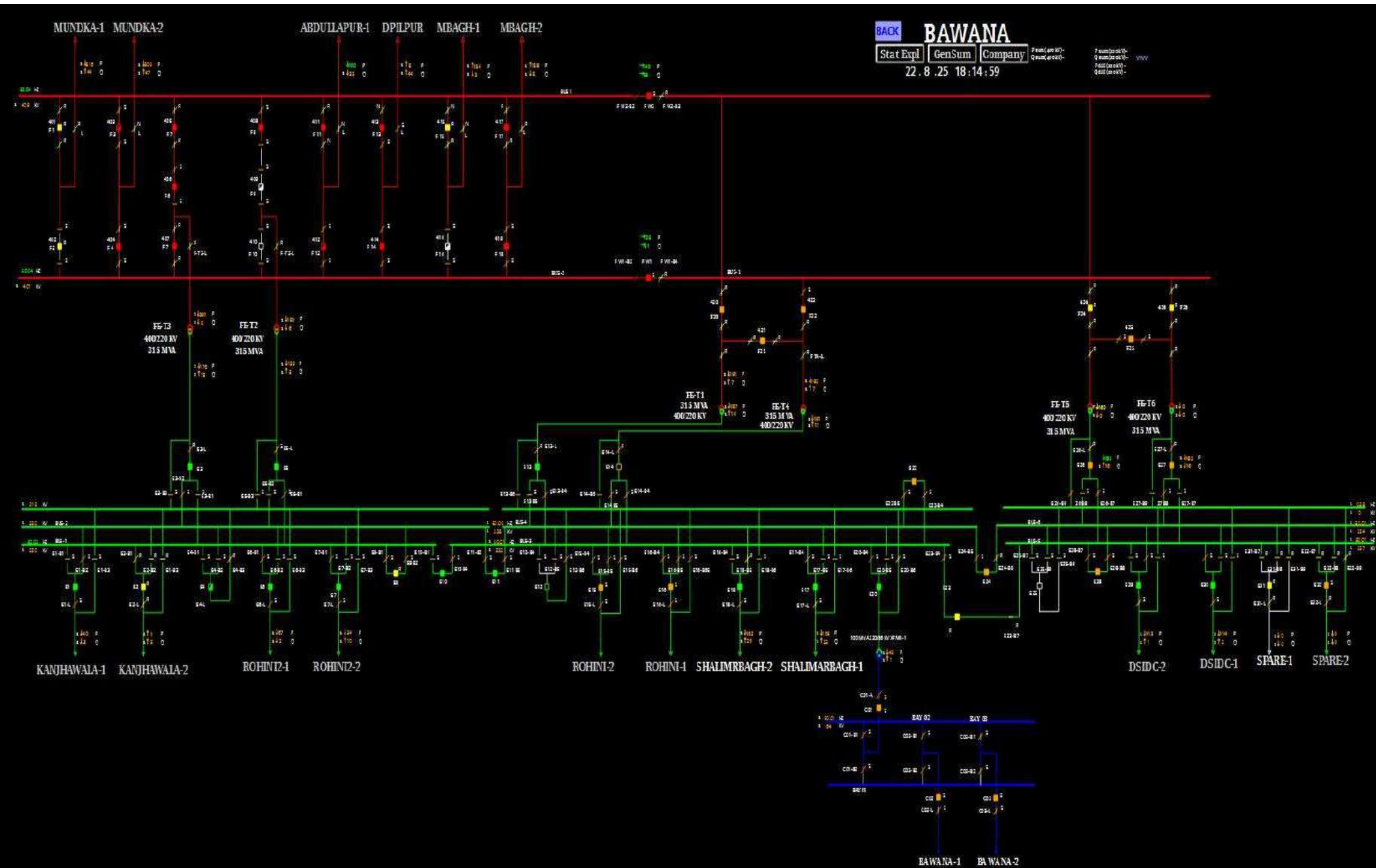
Network Diagram



SLD of 400/220/66kV Bawana(DTL) before the event

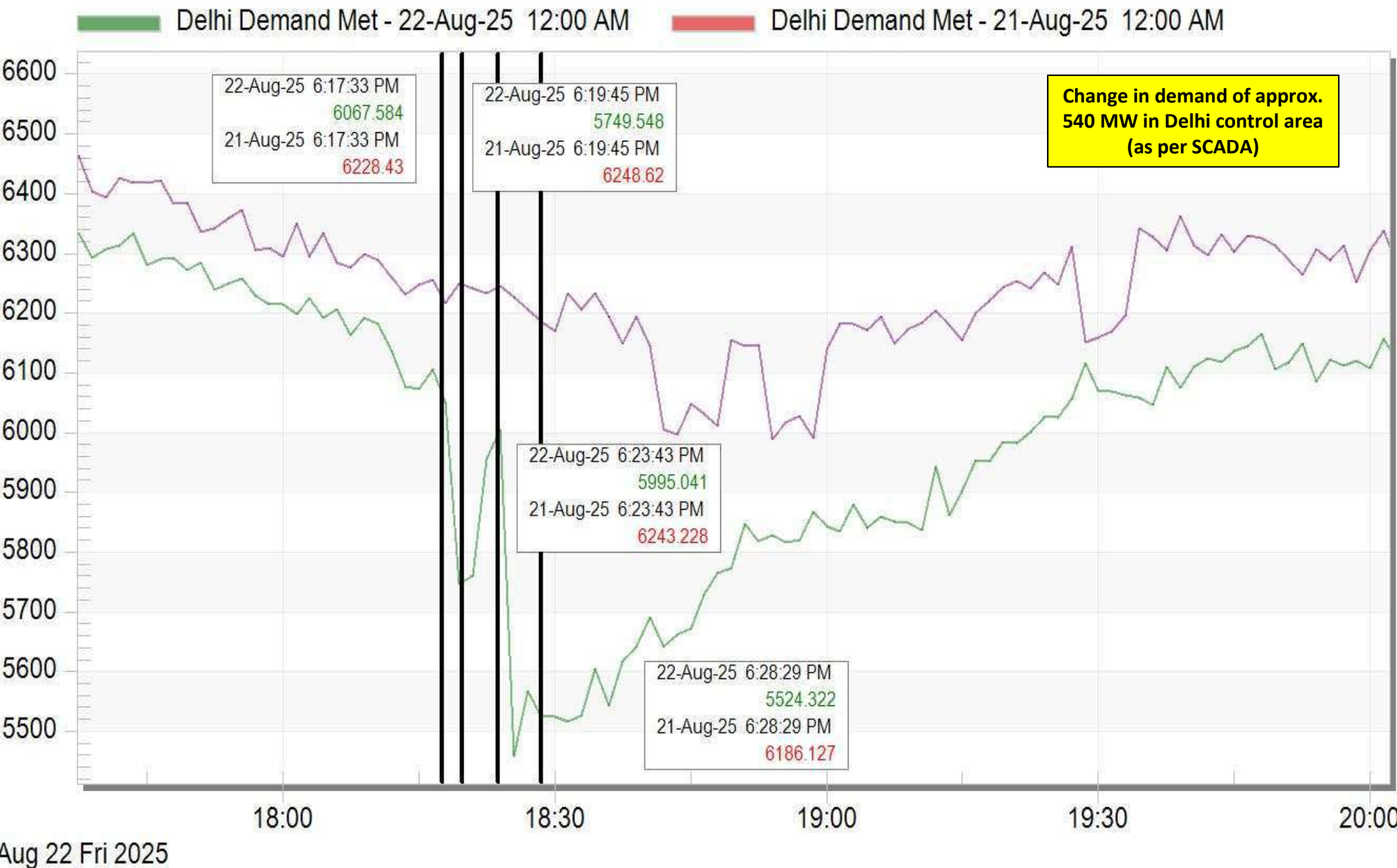


SLD of 400/220/66kV Bawana(DTL) after the event



Delhi Demand during the event

Delhi Demand Met



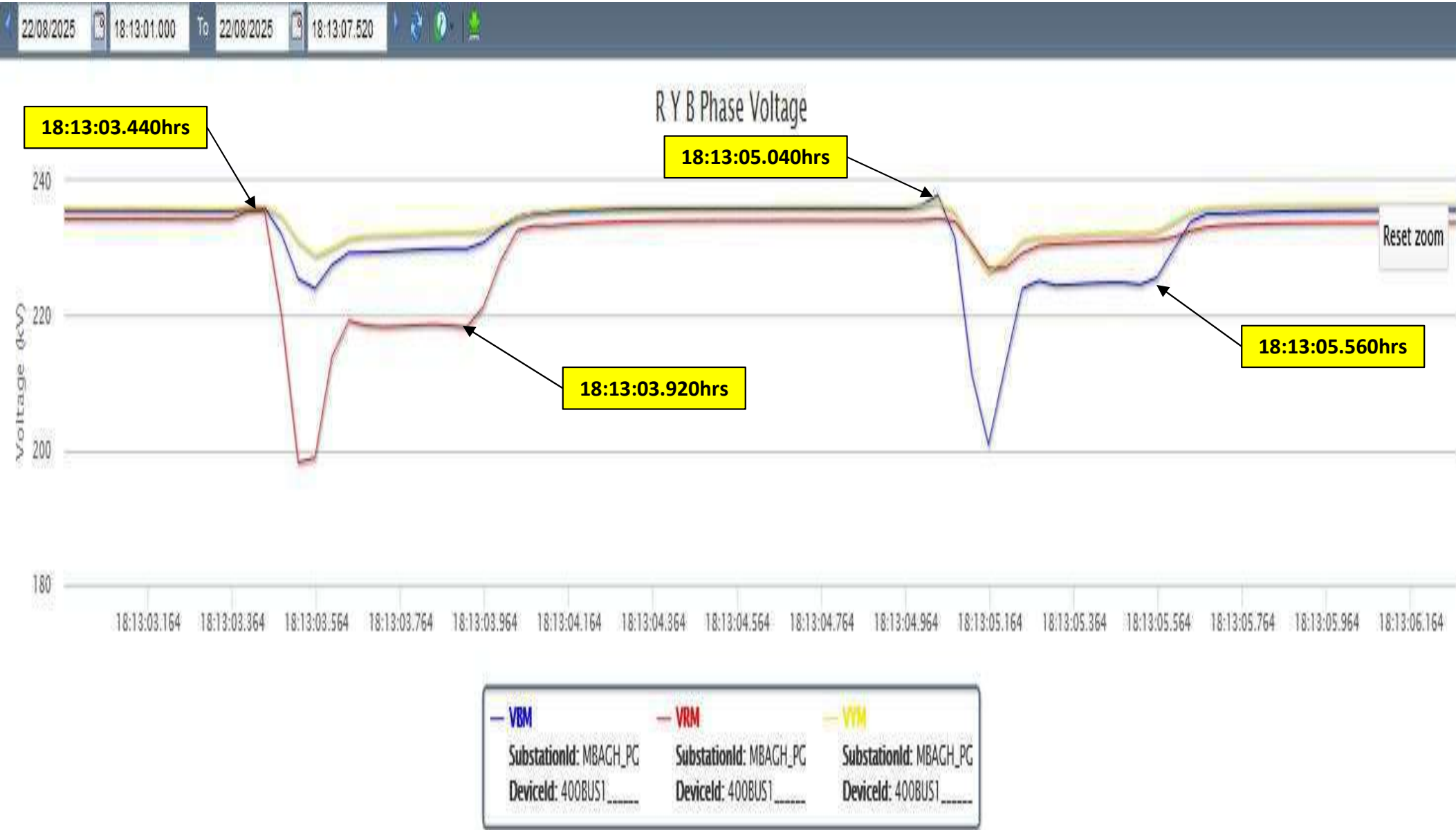
PMU Plot of frequency at Maharaniibagh(PG)

18:13 hrs/22-Jul-25



PMU Plot of phase voltage magnitude at Maharaniibagh(PG)

18:13 hrs/22-Jul-25



SCADA SOE

Time	Station Name	Voltage Level	Element Name	Element Type	Element Status	Remarks
18:12:15,805	BWANA_DV	220kV	14T4	Circuit Breaker	Open	CB at 220kV side of 400/220kV 315 MVA ICT-4 at Bawana(DTL) opened
18:12:15,861	BWANA_DV	220kV	18SHALI2	Circuit Breaker	Open	CB at Bawana(DTL) end of 220kV Bawana-Shalimarbagh (DTL) Ckt-2 opened
18:12:16,519	BWANA_DV	400kV	22T4	Circuit Breaker	Open	Main CB at 400kV side of 400/220kV 315 MVA ICT-4 at Bawana(DTL) opened
18:12:16,770	BWANA_DV	400kV	21T1T4	Circuit Breaker	Open	Tie CB at 400kV side of 400/220kV 315 MVA ICT-4 at Bawana(DTL) opened
18:12:17,921	BWANA_DV	220kV	17SHALI1	Circuit Breaker	Open	CB at Bawana(DTL) end of 220kV Bawana-Shalimarbagh (DTL) Ckt-1 opened

Points for Discussion

- i. Exact nature, location and reason of fault need to be shared.
- ii. Exact sequence of events need to be shared.
- iii. Reason of delayed clearance of fault need to be shared.
- iv. DR/EL (.dat/.cfg file) of all tripped elements along with detailed tripping report need to be shared.
- v. Remedial action taken report need to be shared.

Presentation on DTL Tripping analysis for tripping dated 22 August 2025 in Delhi Area

INTRODUCTION

1. Time & Date of Event: - 18:13 Hrs. 22-08-2025
2. Substation affected along with voltage level: - 400 kV Bawana, DTL.

3. Brief event summary: -

Pre-fault system configuration:

400kV S/Stn. Bawana:

All 315MVA ICT-1,2,4,5&6 were connected in parallel.

220kV S/Stn. Shalimar Bagh:

220kV Bus-1: 220kV Bawana Ckt-1, 220kV Rohini-1 Ckt-1, 220kV Wazirpur Ckt-1, 220kV SGTN Ckt-1&2

220kV Bus-2: 220kV Bawana Ckt-2, 220kV Rohini-1 Ckt-2, 220kV Wazirpur Ckt-2, 220kV/66kV 100MVA Tx-2, 220kV/33kV 100MVA Tx-1&3.

220kV Bus Coupler was off

220kV S/Stn. Rohini-1:

220kV Bus-1: 220kV Bawana Ckt-1, 220kV Shalimar Bagh Ckt-1, 100MVA Tx-1&2

220kV Bus-2: 220kV Bawana Ckt-2, 220kV Shalimar Bagh Ckt-2, 100MVA Tx-3&4

220kV Bus Coupler was off

Brief description of tripping and sequence of events:

- **220kV Bawana_Shalar Bagh Ckt 2 and 315MVA ICT-2, Trip Time 18.13.09 Hrs at Bawana Sub Station:**
- 220kV Bawana_Shalar Bagh Ckt 2 tripped on Zone-1 by Main 2 distance, Red-phase fault due to OPGW snap and drop on R-phase line conductor at a location outside 400kV Bawana Sub station. Fault values $V_a=10.6\text{kV}$, $I_a=32\text{kA}$, fault cleared in 66mSec. 315MVA ICT-4 tripped on Over flux Stage-2 due to ground potential rise of Blue phase CVT secondary cable during external fault of 220kV Shalar Bagh Ckt-2.
- **220kV Bawana_Shalar Bagh Ckt 1, Trip Time 18.13.10 Hrs at Bawana Sub Station:**
- 220kV Bawana_Shalar Bagh Ckt 1 tripped on Zone-1 by Main 2 distance, Blue-phase fault due to OPGW snap and drop on B-phase line conductor at a location outside 400kV Bawana Sub station. Fault values $V_a=13.3\text{kV}$, $I_a=30.7\text{kA}$, fault cleared in 70mSec.
- **220kV Bawana_Rohini 1 Ckt 1, Trip Time 18.14.55 Hrs at Bawana Sub Station:**
- Consequent to fault on Shalar Bagh Ckt-1, 220kV Bawana_Rohini 1 Ckt 1 started fault contribution $I_c=7.1\text{kA}$ beyond Zone-3 reach (Refer Main 2 relay DR) to OPGW fault via Rohini 1 & Shalar Bagh Sub Station. As a result, IEC Standard Inverse Earth fault protection got started, which continued for approx. 354mSec. and thereafter Blue phase CT dropper got detached from CT terminal and line got trip on Earth Fault at 18.14.55 Hrs.
- **18.21 Hrs. at Rohini 1 Sub Station Bus Coupler Switching ON:**
- Supply of 220kV Rohini 1 Bawana Ckt 1 got fail at Rohini 1 Sub Station. 220kV Bus Coupler was closed manually at 18.21Hrs to meet downstream load requirements. As a result 220kV Bawana_Rohini 1 Ckt 2 was intended to supply load demand of Ckt 1 through Bus Coupler to Rohini 1 Substation.
- **66kV RG-24 Ckt 1&2, Trip Time 18.23 Hrs. at Rohini 1 Sub Station:**
- SPS line Overload Scheme at Rohini 1 Substation designed for overload relief to Bawana Ckt-1 & 2 issued trip to 66kV RG-24 Ckt 1&2 for overload relief to prevent overloading of 220kV Rohini 1_Bawana Ckt 2. 220kV Bawana_Rohini 1 Ckt 2 manually switch OFF Time 18.25 Hrs from Bawana Sub Station 220kV Bawana_Rohini 1 Ckt 2 was switched to OFF position manually by Bawana Sub Station to avoid any overloading of 220kV Bawana_Rohini Ckt-2 line.
- **220kV Rohini 1_Shalar Bagh Ckt 1&2, 66kV IC-1,2,3&4 manually switch OFF Time 18.35 Hrs at Rohini-1 Sub Station:**
- As a consequence, of power supply of Rohini 1 Bawana Ckt-2 at Rohini 1 Sub Station, Line Ckt, Breaker of 220kV Shalar Bagh Ckt-1&2, 66kV IC-1,2,3&4 were switched off manually at Rohini 1 Sub Station.

Elements affected:

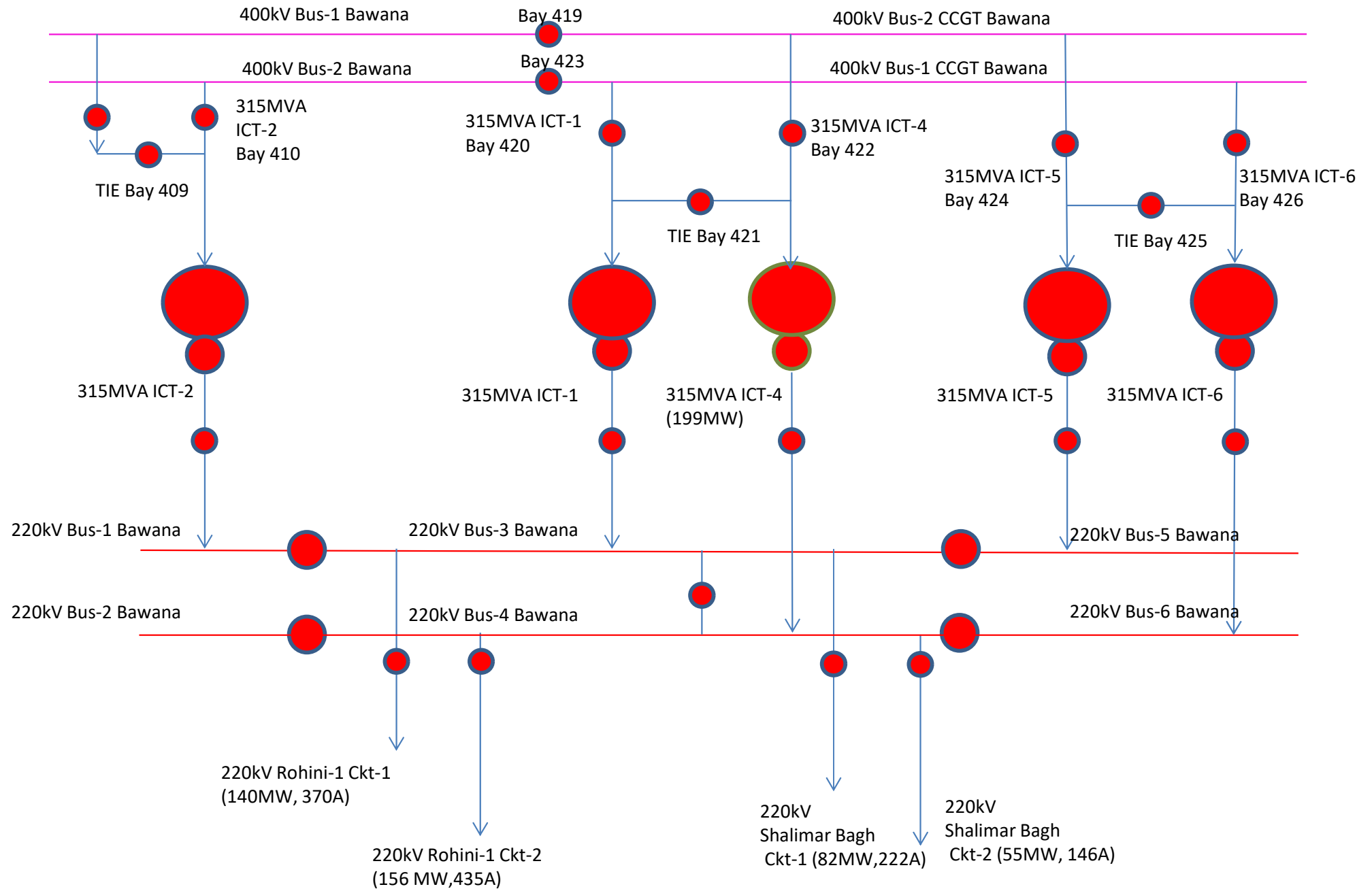
Sr. No.	Name of Element Tripped (with load)	Date & Time of incident	Date& Time of restoration	Relay Indications	Remarks
1	220kV Bawana_Shalar Bagh Ckt-1 (167MW)	22/08/2025 18.13Hrs	22/08/2025 23.46Hrs	At Bawana Zone-1, B phase At Shalar Bagh Zone-2	OPGW snap between Tower N2-N3-N4
2	220kV Bawana_Shalar Bagh Ckt-2 (162MW)	22/08/2025 18.13Hrs	22/08/2025 23.46Hrs	At Bawana Zone-1, R phase At Shalar Bagh Zone-2	OPGW snap between Tower N2-N3-N4
3	315MVA ICT-4	22/08/2025 18.13Hrs	22/08/2025 18.55Hrs	Over flux Trip	CVT control cable insulation fail in switchyard cable of 315MVA ICT-4 at Bawana.
4	220kV Bawana_Rohini-1 Ckt-1(140MW)	22/08/2025 18.14Hrs	22/08/2025 17.48Hrs	At Bawana Earth fault trip	Blue Phase CT clamp damaged & CT dropper snapped causing Earth fault trip.

Restoration of Supply:-

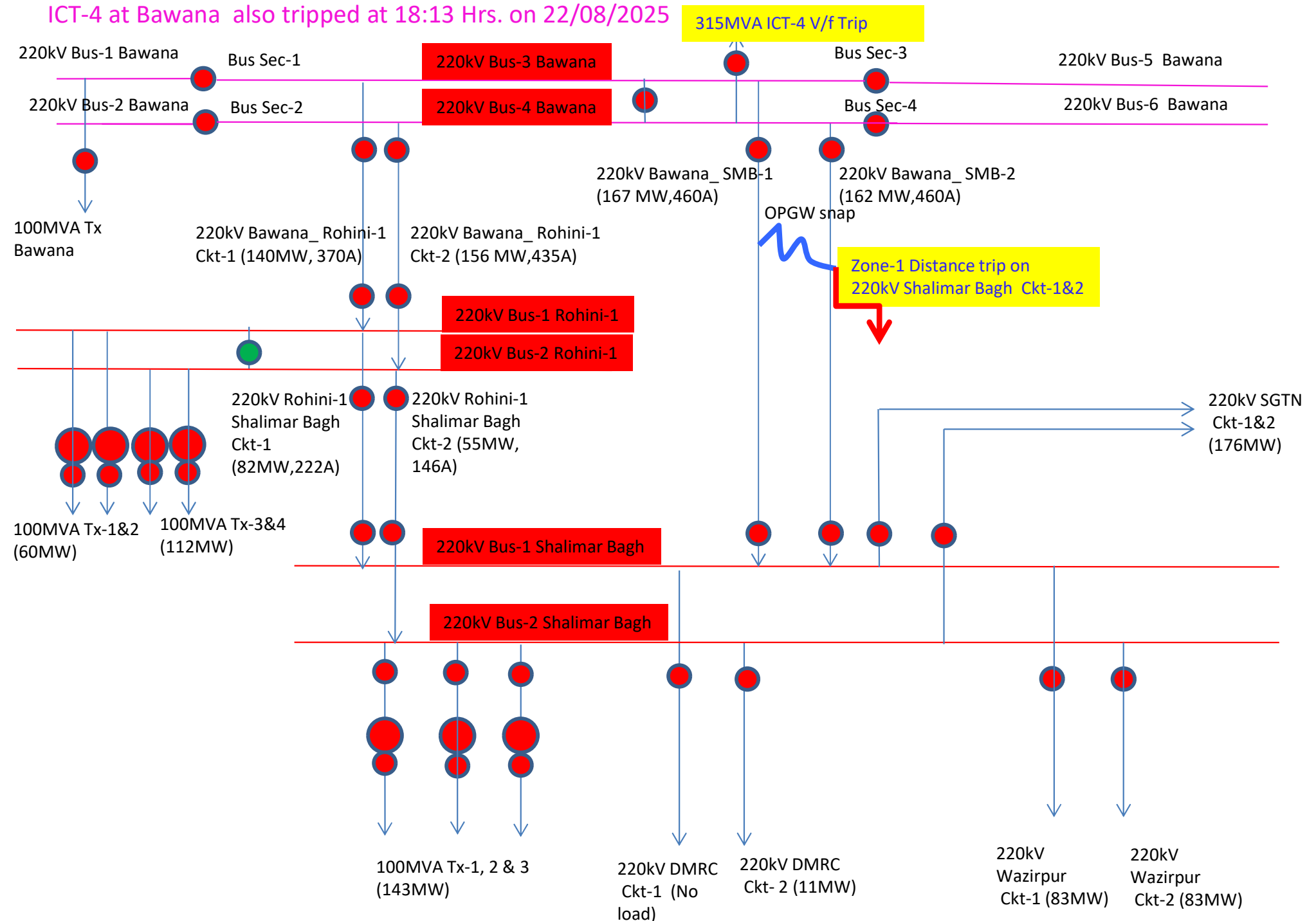
- At 18:45 hrs, 220 kV Bawana- Rohini-I ckt 2 energised and load of 220 kV Rohini-I was normalized.
- At 19:04 hrs, the supply at 220 kV Shalimar Bagh substation was restored from 220kV Wazirpur Ckt-I.

Sequence of events

Pre fault configuration of system at 400kV Bawana at 18:13 Hrs. on 22/08/2025



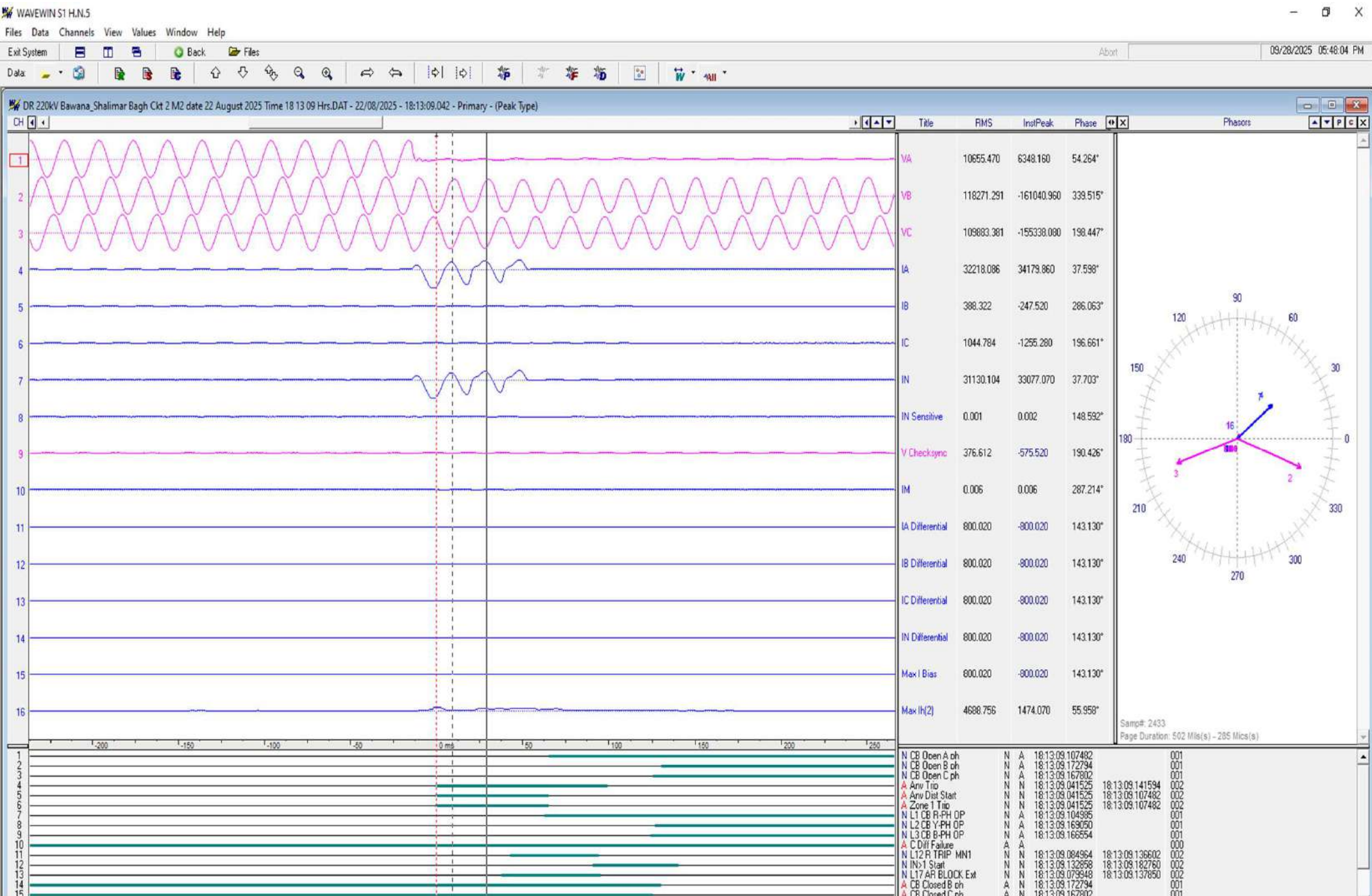
Event-1 : Optical Fiber Ground wire snapped on 220 kV Bawana_Shalker Bagh Circuit-1&2 causing its trip and 315MVA ICT-4 at Bawana also tripped at 18:13 Hrs. on 22/08/2025



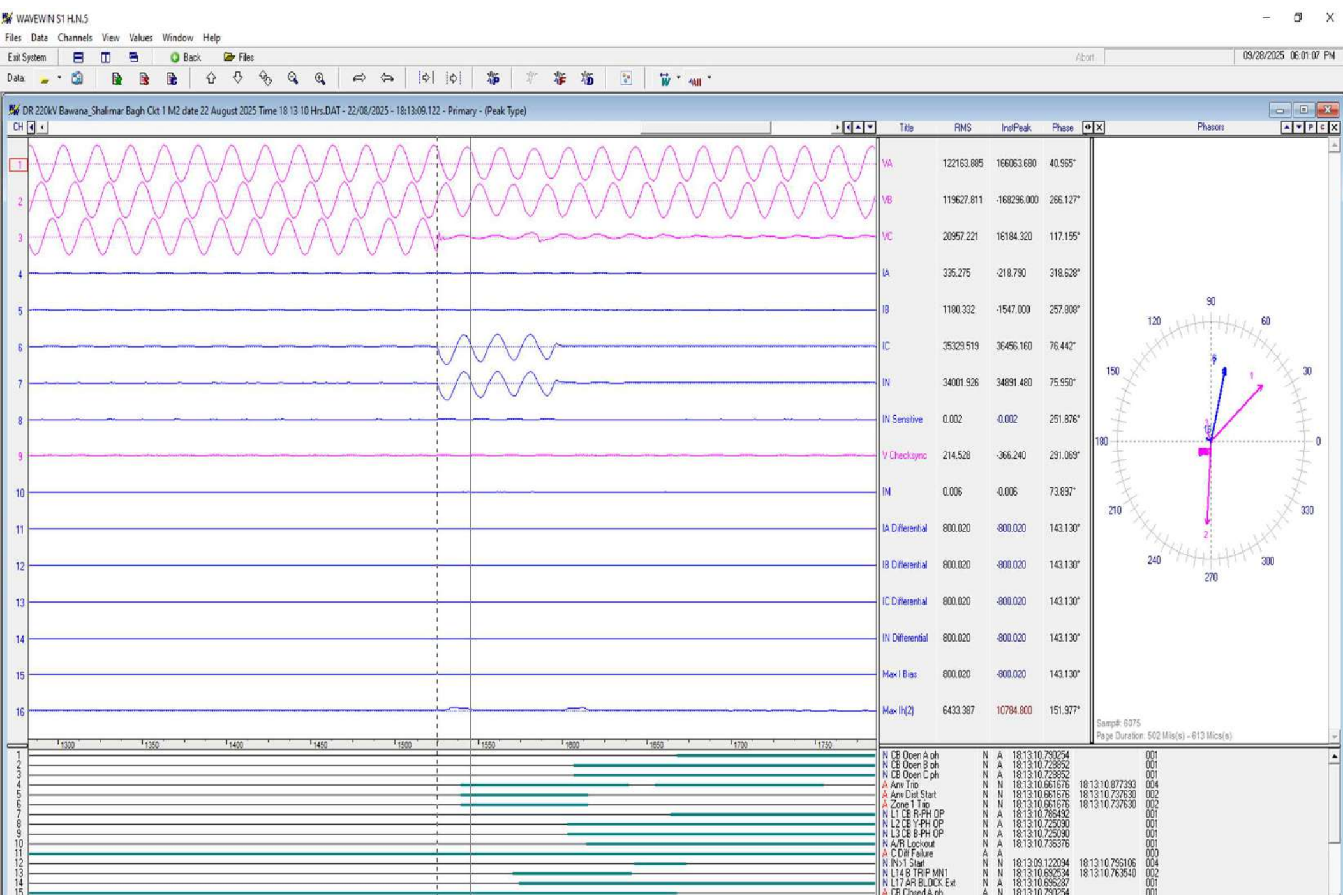
Reason of tripping of 220kV Bawana_Shalar Bagh Ckt-1&2 and 315MVA ICT 4 at Bawana

1. At 18.13 Hrs. 220 kV Bawana- Shalar Bagh ckt-1&2 tripped on line fault due to snapping of OPGW between tower no. N2-N3-N4 on both lines. Both of the lines tripped instantaneously one after other indicating Distance Zone-1 at 400kV Sub-Station Bawana end. Delayed clearance was due to OPGW break, causing relay carrier communication failure due to OPGW break between 220kV Bawana_Shalar Bagh Sub Stations relays due to which complete Zone-2 trip time was exhausted by distance relay at Shalar Bagh S/Stn.
2. Over-flux trip of 315MVA ICT-4 at Bawana occurred simultaneously due to injection of external voltage through CVT control cable during external line fault in V/f relay Blue phase CVT input. Pre-fault voltage in Blue phase CVT input recorded by relay was normal $V_c=233\text{kV}$, whereas, the voltage in Blue phase CVT input of V/f relay during occurrence of 220kV Shalar Bagh line-2 fault was recorded as $V_c=856\text{kV}$. It was sensed as Over-flux condition by V/f relay and trip was issued accordingly. Later on CVT control cable of said transformer was checked and insulation resistance of Blue phase-earth was found very poor (252 ohms).

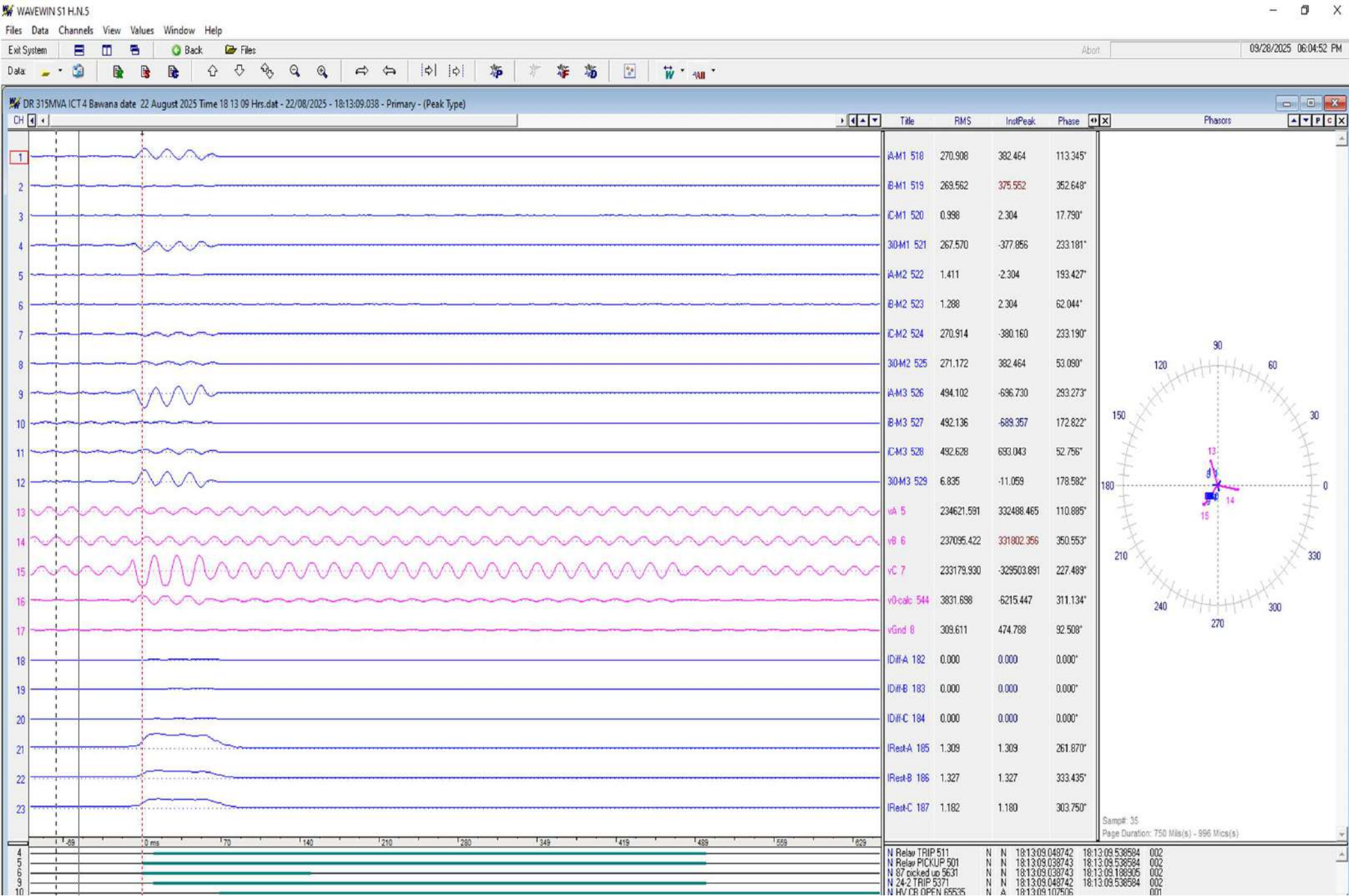
DR 220kV Bawana Shalimar Bagh Ckt 2 Distance Main 2 Relay date 22 August 2025



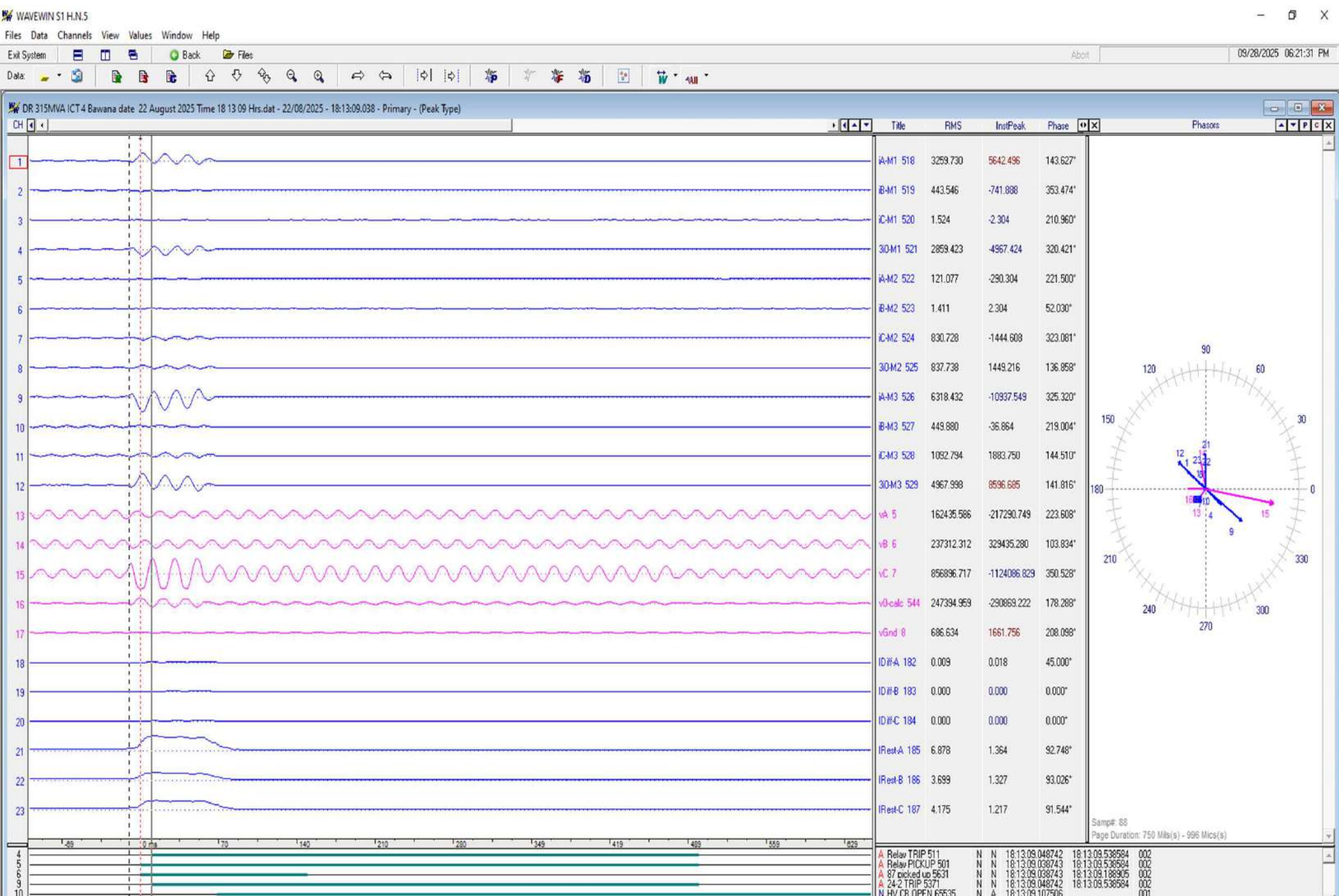
DR 220kV Bawana Shalimar Bagh Ckt 2 Distance Main 2 Relay date 22 August 2025



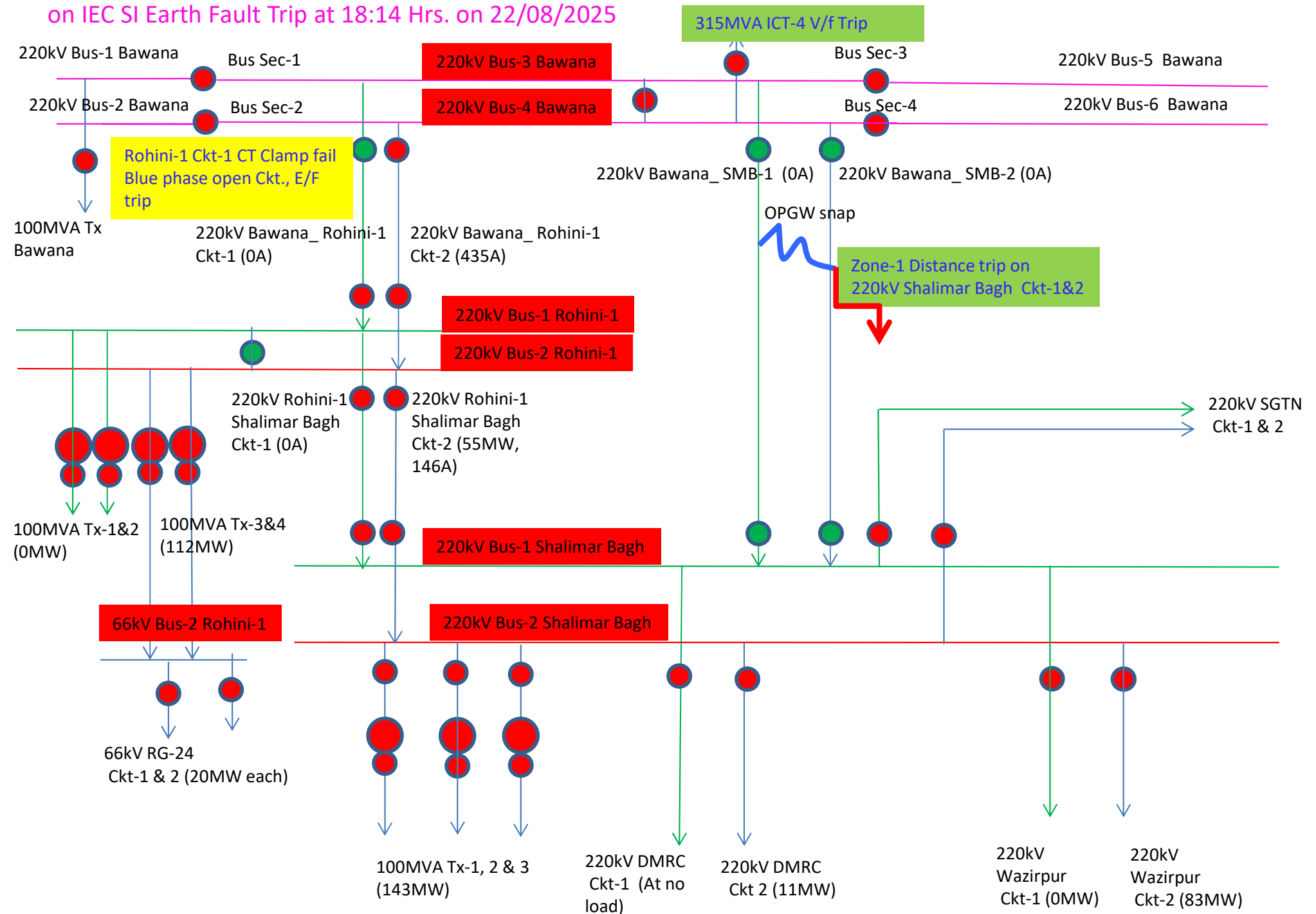
315MVA ICT-4 Bawana Pre-fault CVT voltage in normal state, $V_c=233\text{kV}$



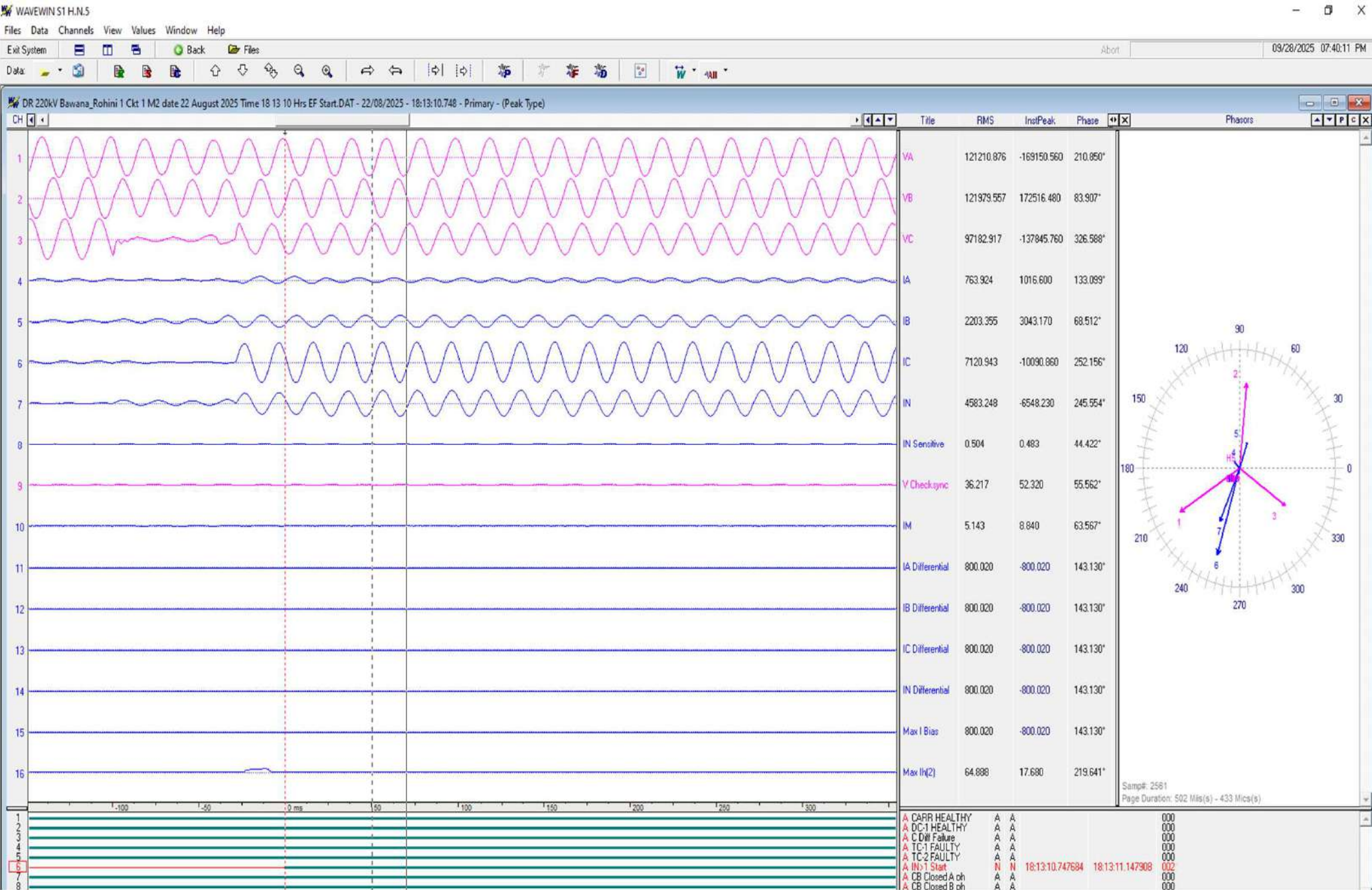
315MVA ICT-4 Bawana during-fault CVT voltage in abnormal state, $V_c=856kV$ resulting in V/f trip on Transformer



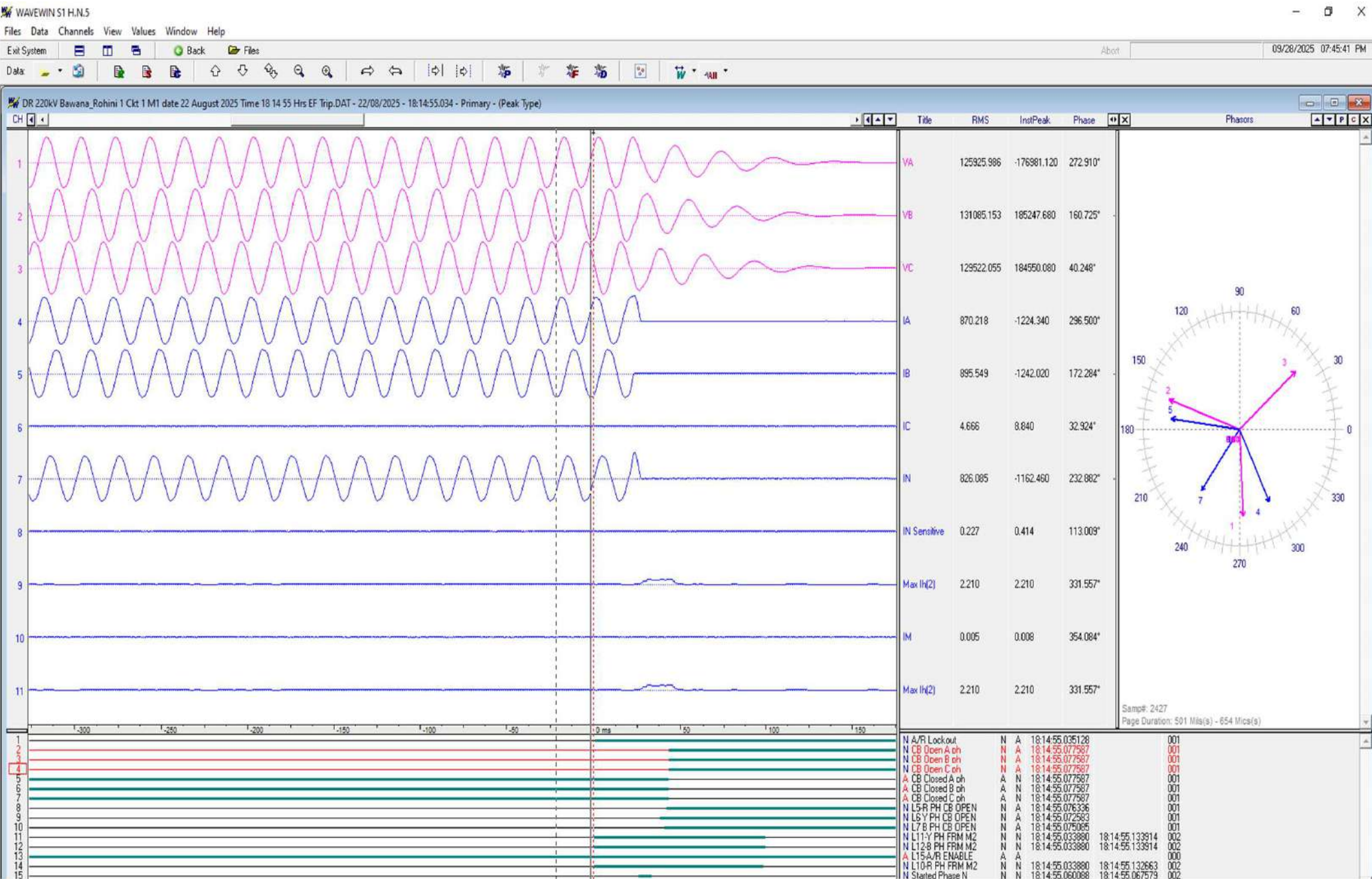
Event-2 : Blue phase CT clamp failed on 220 kV Bawana_Rohini-1 Circuit-1 causing its open circuit and said element trip on IEC SI Earth Fault Trip at 18:14 Hrs. on 22/08/2025



DR 220kV Bawana_Rohini 1 Ckt 1 Distance Main 2 relay Earth Fault start



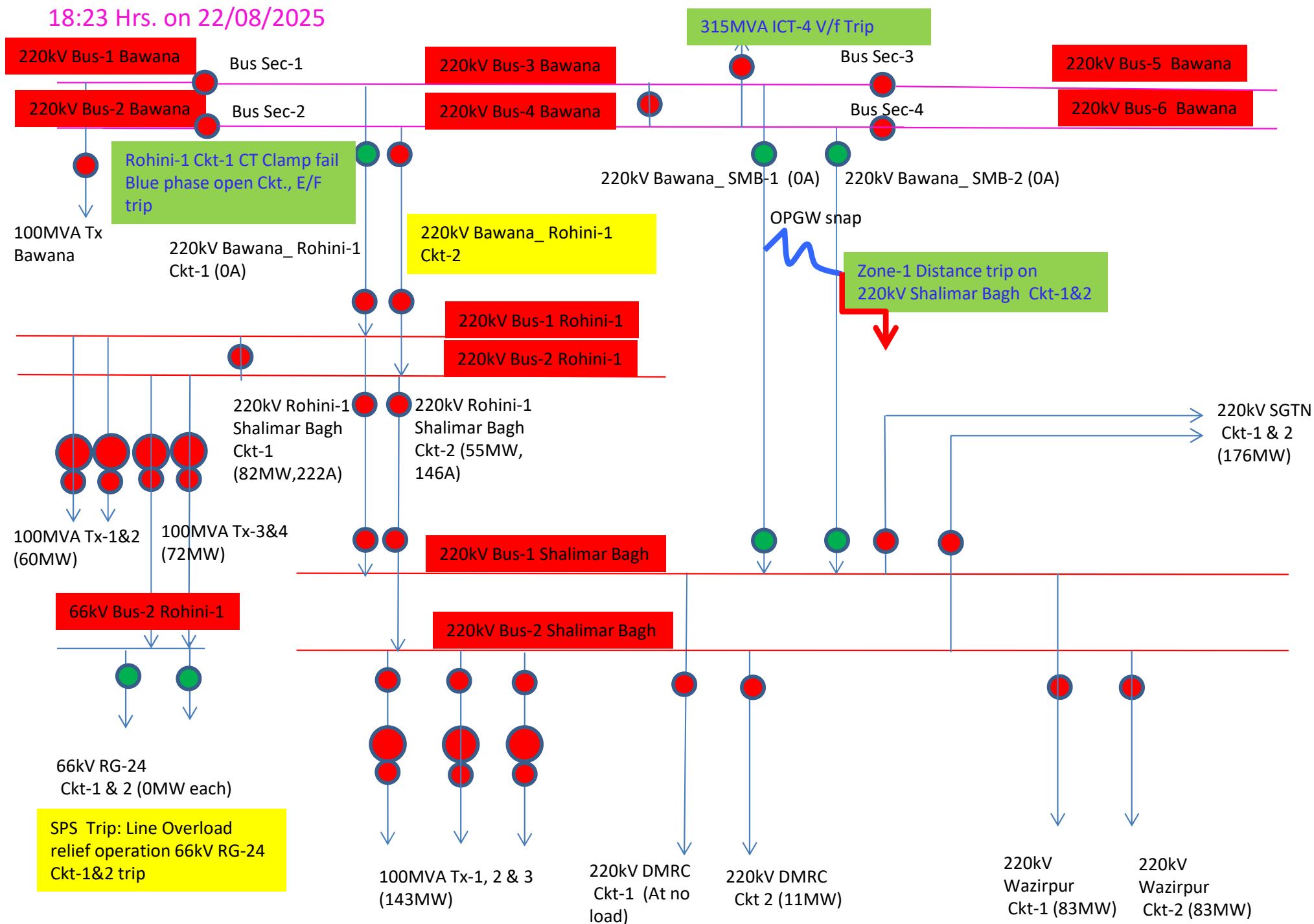
DR 220kV Bawana_Rohini 1 Ckt 1 Distance Main 1 relay Earth Fault Trip



Reason of tripping of 220kV Bawana_Rohini 1 Ckt-1 at Bawana

At 18.14Hrs. 220 kV Bawana- Shalimar Bagh ckt-1&2 tripped on Earth fault at 400kv Bawana Sub Station due to B phase CT clamp damaged on said line & consequent CT dropper snapped. Later Blue phase conductor got detached from CT clamp resulting in open circuit condition of Blue phase of said line. It was sensed as earth fault condition by protection relay and line tripped on Earth fault IEC SI trip at 400kV Sub Station Bawana.

Event-4 : SPS Overload relief operation occurred at Rohini-1 S/Stn. resulting in SPS tripping of 66kV RG-24 Ckt-1&2 at 18:23 Hrs. on 22/08/2025



Multiple Element Tripping Event at 220kV Samaypur(BBMB) and 400/220kV Ballabhgarh(PG)

At 00:11 hrs on 29.08.2025

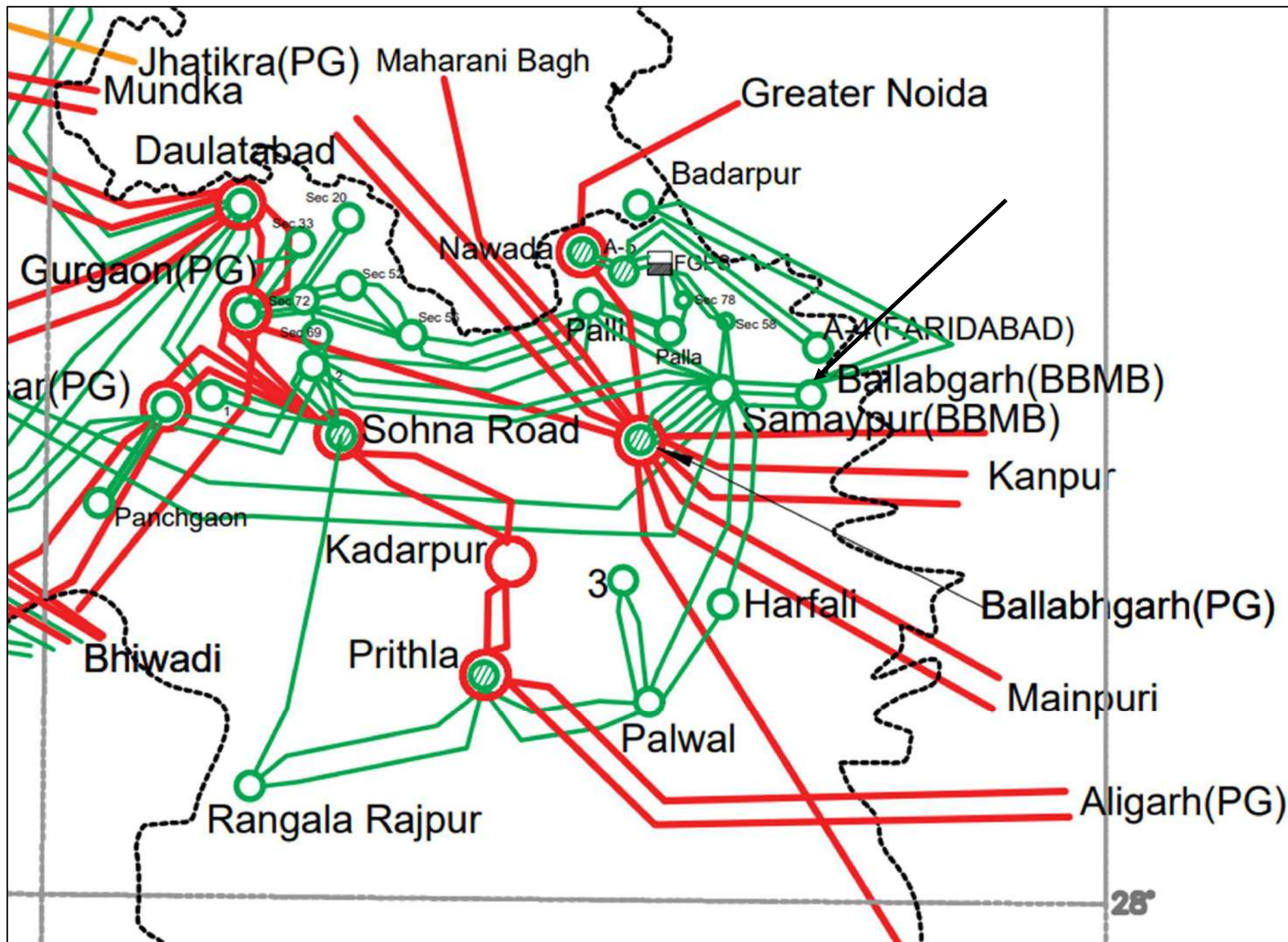
Tripped Elements

S. No	Name of Elements	Outage Time	Revival Time	Reason of tripping
1.	220kV Bus-1 at Samaypur (BBMB)	00:11hrs	02:36 hrs	B-ph CT at 220kV side of 400/220kV 500 MVA ICT-2 damaged and bus fault occurred.
2.	220kV Bus-2A at Samaypur (BBMB)		02:41 hrs	
3.	400/220kV 500 MVA ICT-2 at Ballabgarh(PG)		Under shutdown	
4.	400/220kV 500 MVA ICT-3 at Ballabgarh(PG)		02:37 hrs	
5.	400/220kV 500 MVA ICT-4 at Ballabgarh(PG)		16:08 hrs	
6.	220kV <u>Samaypur-Charkhi Dadri</u> line		02:49 hrs	Bus bar protection of 220kV Bus-1 operated. At the same time, 220kV Bus-2A also tripped due to isolator status issue of Faridabad Sec58 line-2.
7.	220kV Samaypur- Ballabgarh line-1		02:54 hrs	
8.	220kV Samaypur- Ballabgarh line-2		03:01 hrs	
9.	220kV Samaypur- Ballabgarh line-3		04:18 hrs	
10.	220kV <u>Samaypur- Badshahpur</u> line-1		03:43 hrs	
11.	220kV Samaypur- Faridabad Sec58 line-1		04:14 hrs	
12.	220kV Samaypur- Faridabad Sec58 line-2		03:17 hrs	
13.	220kV Samaypur- Harfali line			Line tripped from Harfali end only

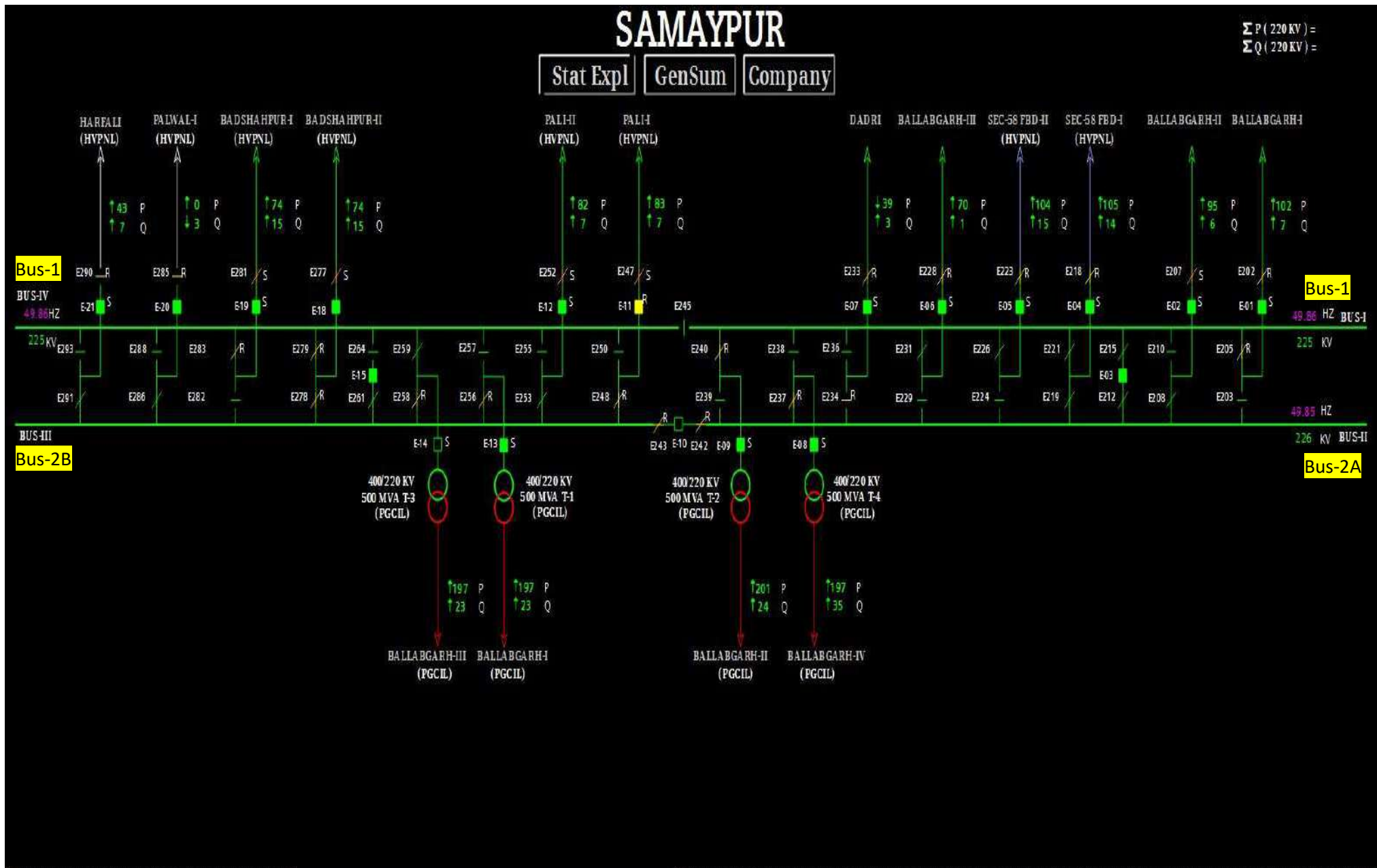
Brief details of the event

- i. 220KV Samaypur(BBMB) has double main bus scheme. There are 03 (three) 220kV Buses i.e., Bus-1, Bus-2A and Bus-2B. 400/220kV 500 MVA ICT-1,2,3&4 at Ballabgarh(PG) feeds the 220kV Samaypur S/s. During the antecedent condition, bus sectionliser CB between 220kV Bus-2A and 2B was under shutdown for replacement of R-ph CT due to high Tan Delta value. 400/220kV 500 MVA ICT-1,2,3&4 at Ballabgarh(PG) were carrying ~200 MW each.
- ii. As reported, at 00:11 hrs, B-ph CT at 220kV side of 400/220kV 500 MVA ICT-2 damaged and created bus fault on 220kV Bus-1. On this fault, Bus bar protection of 220kV Bus-1 operated. At the same time, bus bar protection of 220kV Bus-2A also operated due to isolator status issue of Faridabad Sec58 line-2. 220kV Bus-2B remained in service.
- iii. Due to the bus bar protection operation, all the elements connected to 220kV Bus-1 & Bus-2A i.e., 400/220kV ICT-2,3&4 at Ballabgarh(PG), 220kV feeders to Ballabgarh-I, II, III, Badshahpur-I, Faridabad sec58-I,II, and Charkhi Dadri tripped. Elements connected to 220kV Bus-2B i.e., 400/220kV ICT-1 at Ballabgarh(PG), 220kV feeders to Palli-I, II, Badshahpur-II remained in service.
- iv. As per SCADA SOE, 220kV Samaypur-Harfali line tripped from Harfali end only during the same time (reason of the same yet to be received).
- v. As per PMU at Ballabgarh(PG), B-N phase to earth fault which cleared within 120 msec is observed.
- vi. As per SCADA, change in demand of ~345 MW in Haryana control area is observed.
- vii. As informed by BBMB, during investigation it was found that isolator status of Faridabad sec58 line-2 was absent due to LOGIC INPUT Card Faulty. As per scheme logic, in absence of Isolator Status the numerical BUS BAR Protection issues the trip command to both parallel buses. Further, the faulty LOGIC INPUT Card of Faridabad sec58 line-2 at Samaypur S/s has been replaced with the healthy card on date 30.08.2025. 400/220kV ICT-2 at Ballabgarh(PG) is under shutdown for replacement of damaged CT.

Network Diagram

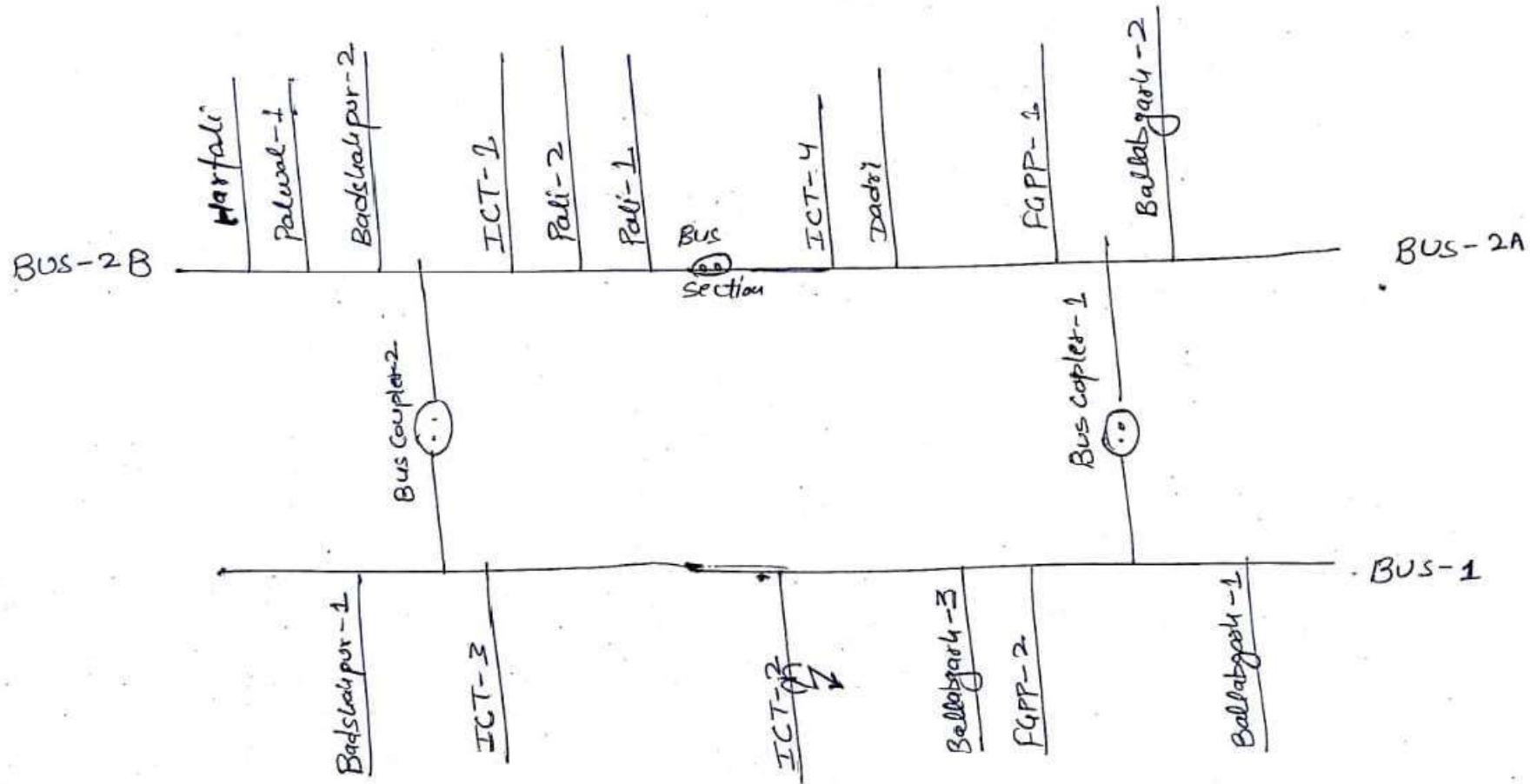


SLD of 220kV Samaypur(BBMB) after the event



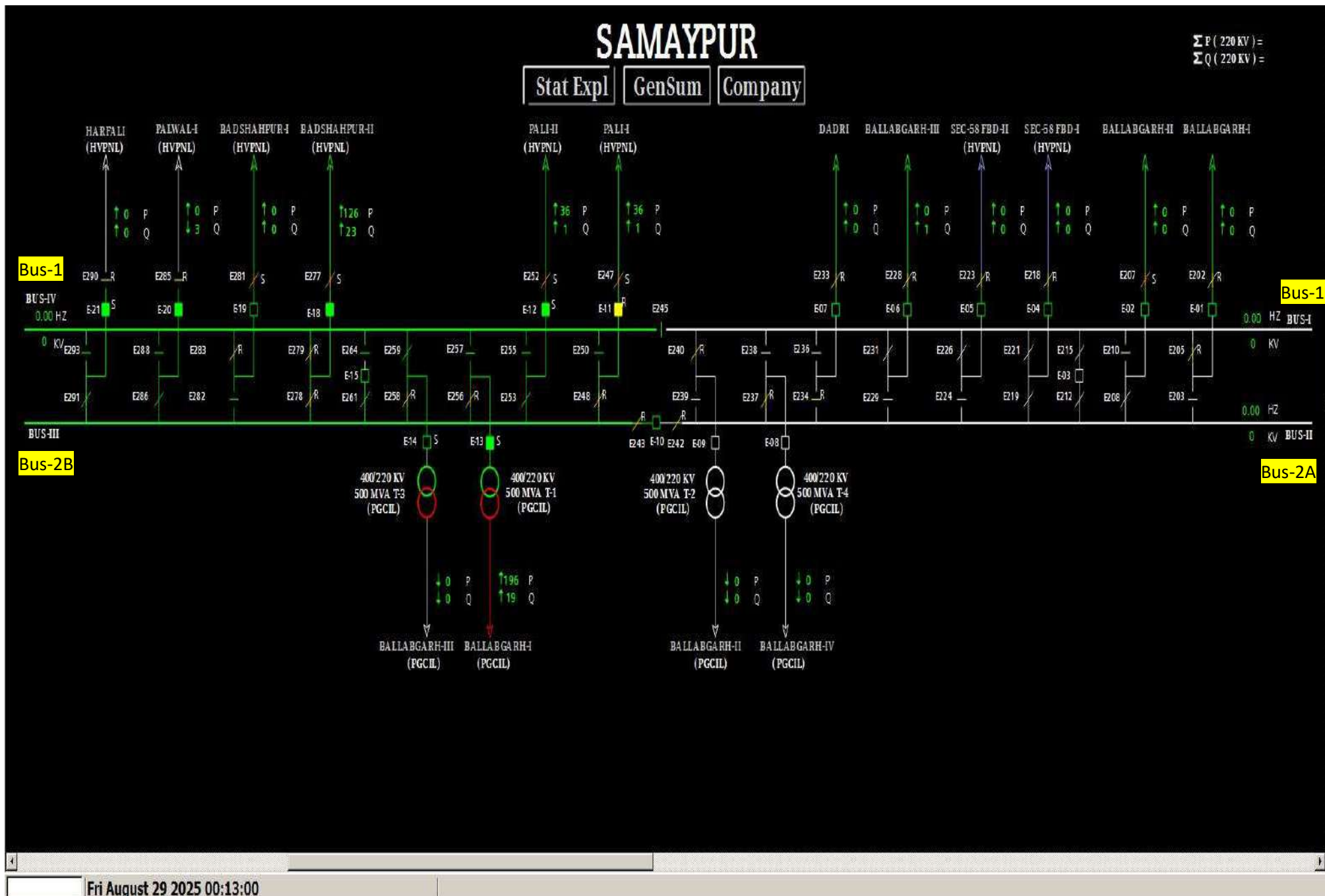
SLD of 220kV Samaypur(BBMB) after the event (received from BBMB)

SLD of 220kV BBMB Samaypur at time of tripping
on date 29.08.2025, 00:11 Hrs



SLD

SLD of 220kV Samaypur(BBMB) after the event



SLD of 400/220kV Ballabgarh(PG) before the event

CONTACT DETAILS	
EMAIL	ballabgarhss@powergrid.co.in
MOBILE	9711992098 / 9711272895
HOTLINE	20113221 / 20112481

P sum(400 kV) = 197

BALLABGARH

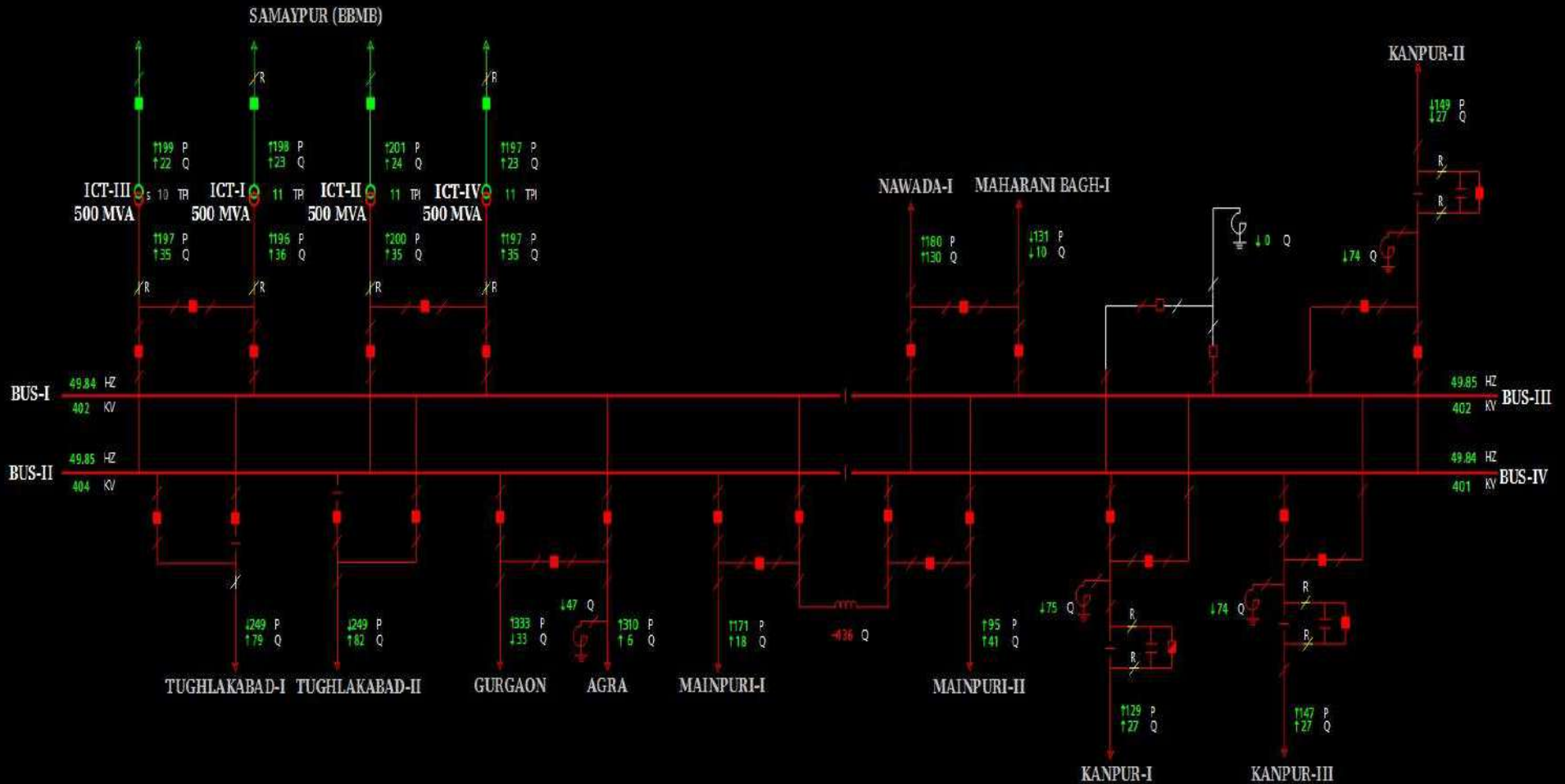
Stat Expl GenSum Company

Q sum(400 kV) = 40

Temperature 31 °C

Humidity 0 %

29.8 .25 0 : 8 : 59



SLD of 400/220kV Ballabgarh(PG) after the event

CONTACT DETAILS

EMAIL	ballabgarhss@powergrid.co.in
MOBILE	9711992098 / 9711272895
HOTLINE	20113221 / 20112481

BALLABGARH

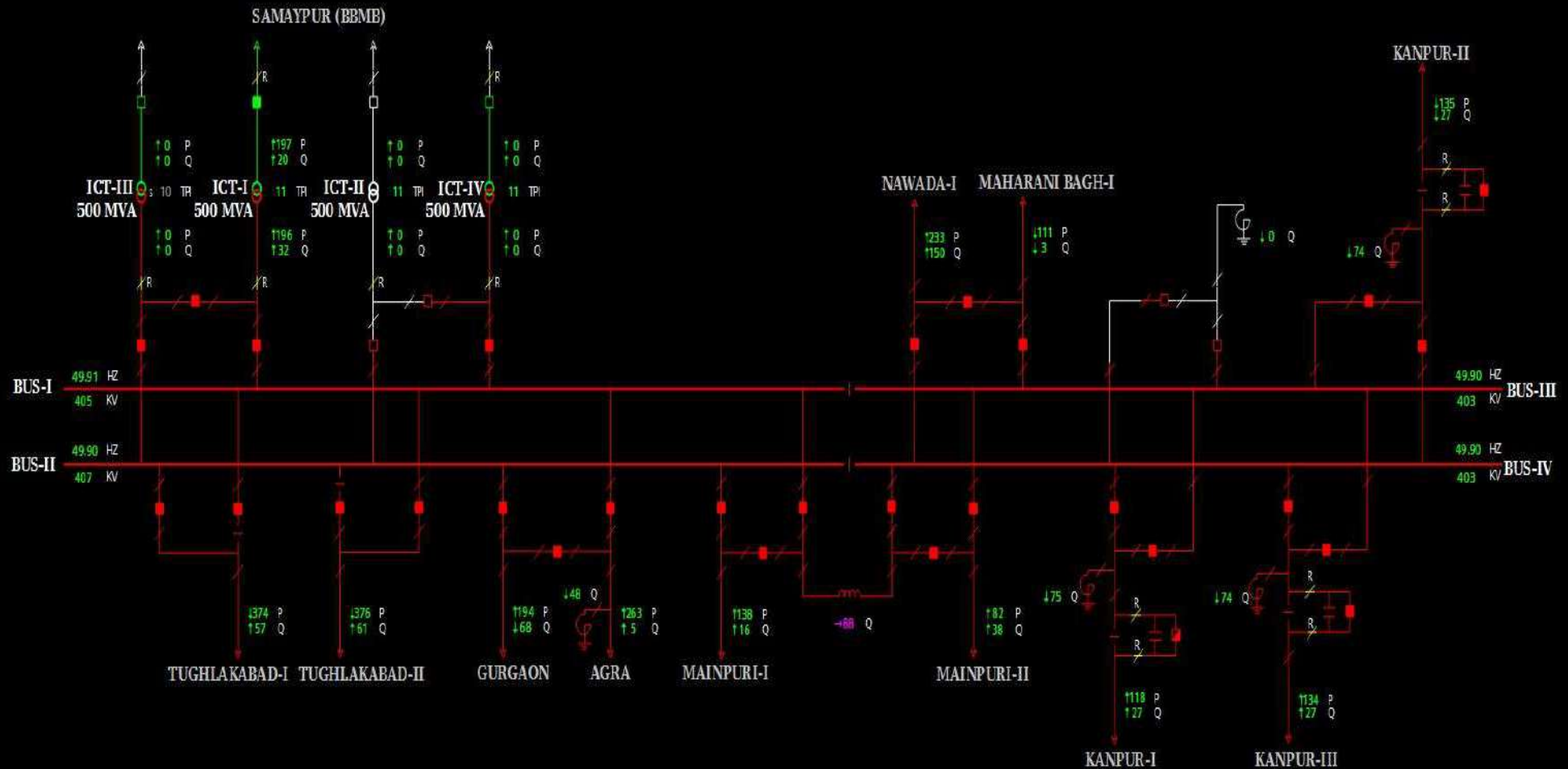
P sum(400 kV) = 5 -1

Stat Exp1 GenSum Company

Q sum(400 kV) = 5 149

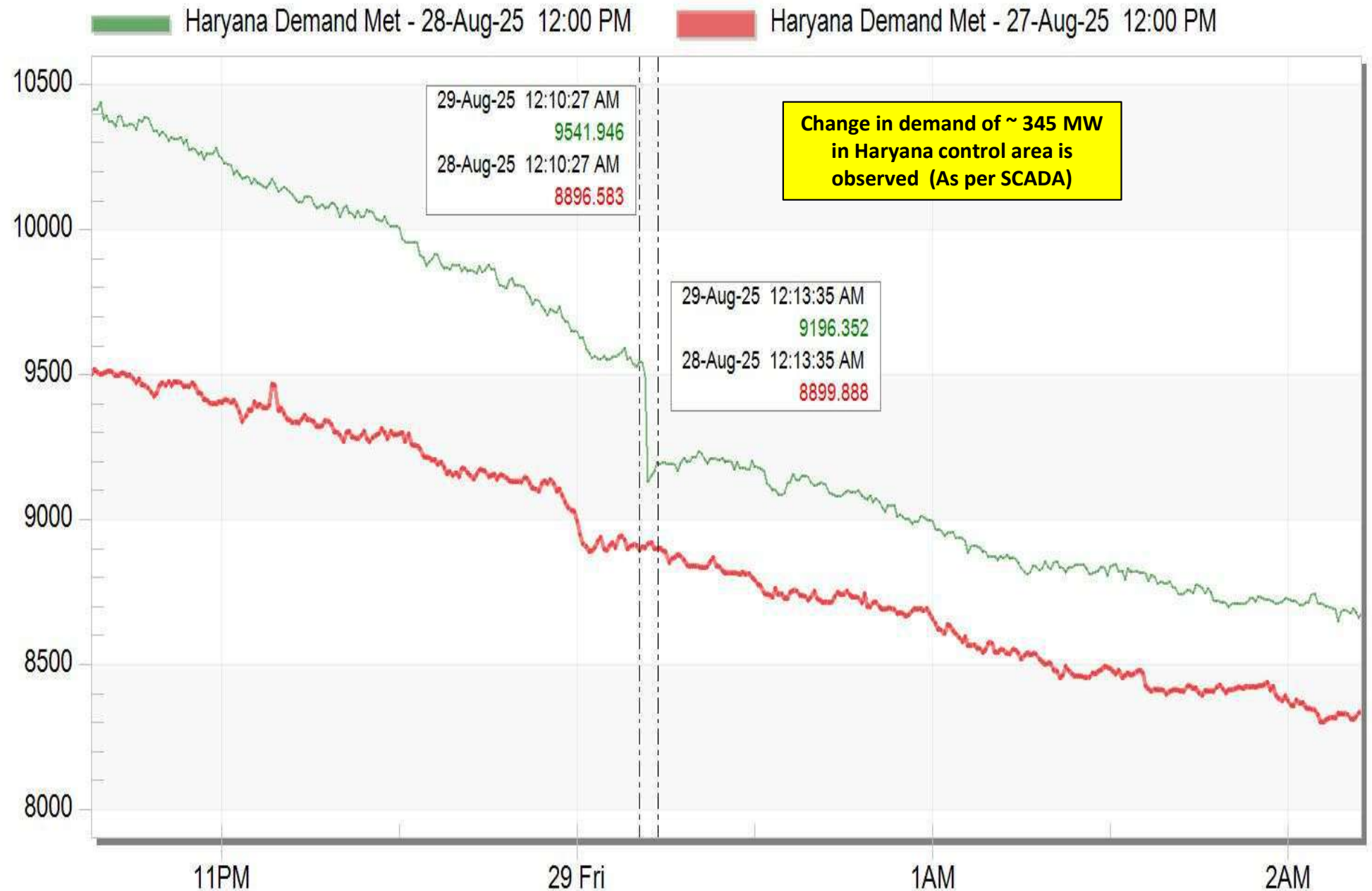
Temperature 31 °C
Humidity 0 %

29.8 .25 0 :12:59

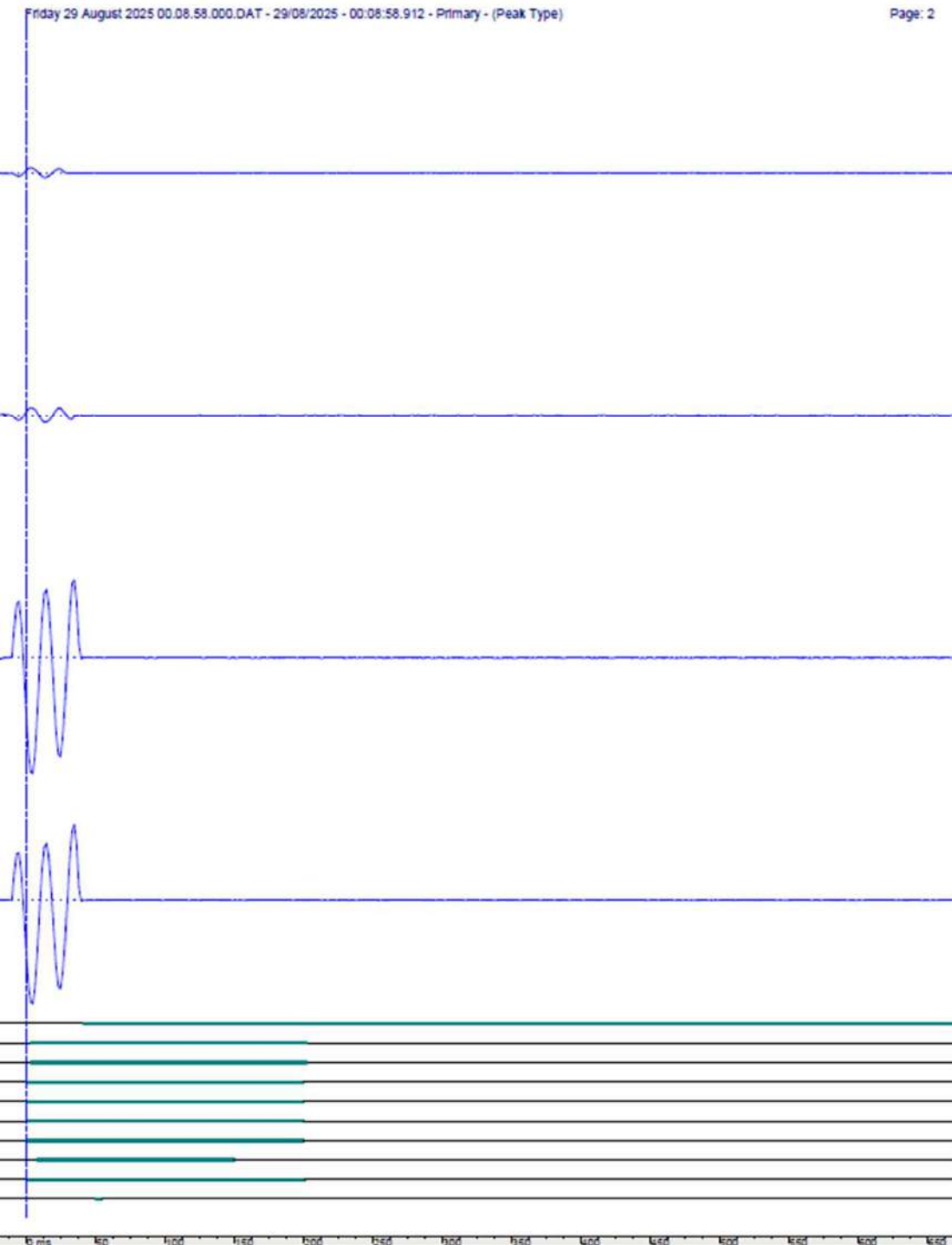


Haryana demand during the event

Haryana Demand Met



DR of 220kV Bus-1 at Samaypur(BB)



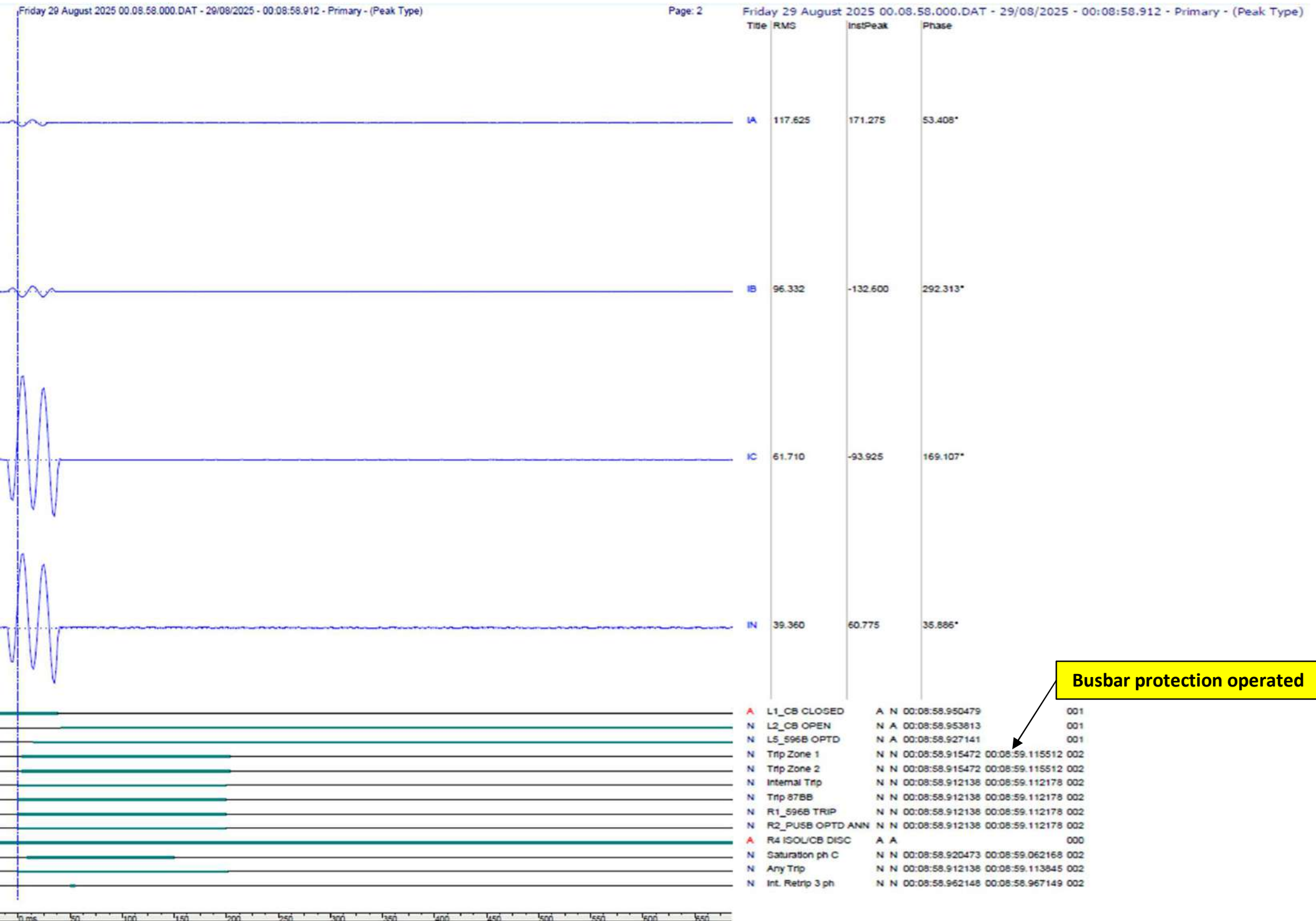
Friday 29 August 2025 00:08:58.000.DAT - 29/08/2025 - 00:08:58.912 - Primary - (Peak Type)

Title	RMS	InstPeak	Phase
IA	116.790	-171.275	205.009°
IB	89.544	121.550	77.930°
IC	71.949	-99.450	321.605°
IN	29.667	44.200	194.336°

N	I2_CB OPEN	N	A	00:08:58.953480	001
N	Trip Zone 1	N	N	00:08:58.915139 00:08:59.115179	002
N	Trip Zone 2	N	N	00:08:58.915139 00:08:59.115179	002
N	Internal Trip	N	N	00:08:58.911805 00:08:59.111845	002
N	Trip 87BB	N	N	00:08:58.911805 00:08:59.111845	002
N	R1_S96A TRIP	N	N	00:08:58.911805 00:08:59.111845	002
N	R2_FUSA OPTD ANIN	N	N	00:08:58.911805 00:08:59.111845	002
N	Saturation ph C	N	N	00:08:58.920140 00:08:59.061835	002
N	Any Trip	N	N	00:08:58.911805 00:08:59.113512	002
N	Int. Retrip 3 ph	N	N	00:08:58.961815 00:08:58.966816	002

Busbar protection operated

DR of 220kV Bus-2A at Samaypur(BB)



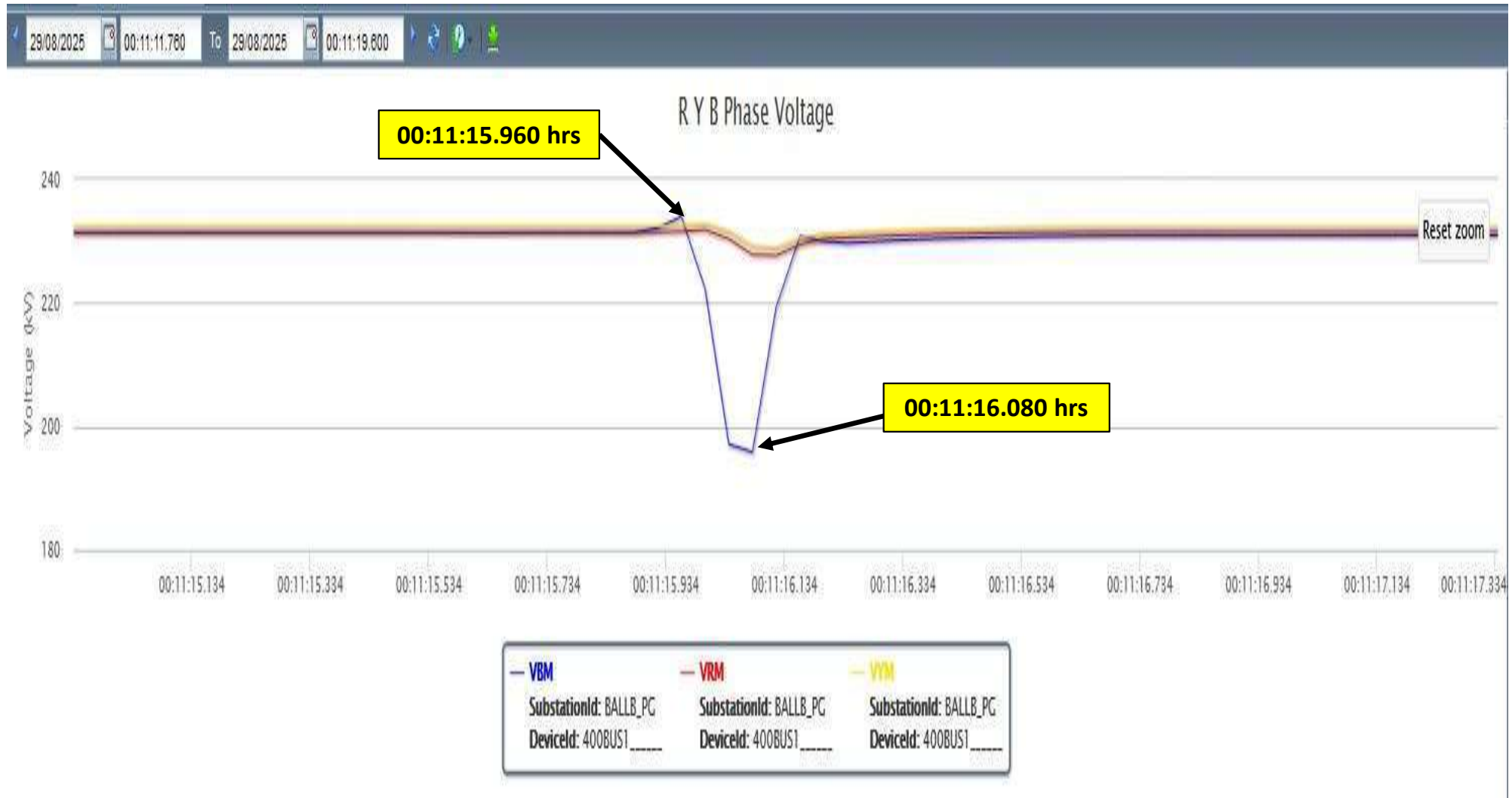
PMU Plot of frequency at Ballabhgarh(PG)

00:11 hrs/29-Aug-25



PMU Plot of phase voltage magnitude at Ballabgarh(PG)

00:11 hrs/29-Aug-25



SCADA SOE

Time	Station Name	Voltage (kV)	Element Name	Element Type	Element Status	Remarks
00:11:16,118	SAMAYUR	220kV	07DADRI	Circuit Breaker	Open	Line CB at Samaypur end of 220kV Samaypur-Dadri line opened
00:11:16,126	SAMAYUR	220kV	15MBC	Circuit Breaker	Open	Bus coupler CB of 220kV Bus-1 and Bus-2B opened
00:11:16,127	SAMAYUR	220kV	03MBC	Circuit Breaker	Open	Bus coupler CB of 220kV Bus-1 and Bus-2A opened
00:11:16,132	SAMAYUR	220kV	06BLBGH3	Circuit Breaker	Open	Line CB at Samaypur end of 220kV Samaypur-Ballabhgarh line-3 opened
00:11:16,133	SAMAYUR	220kV	05FRDBD2	Circuit Breaker	Open	Line CB at Samaypur end of 220kV Samaypur-Faridabad line-2 opened
00:11:16,133	SAMAYUR	220kV	04FRDBD1	Circuit Breaker	Open	Line CB at Samaypur end of 220kV Samaypur-Faridabad line-1 opened
00:11:16,133	SAMAYUR	220kV	02BLBGH2	Circuit Breaker	Open	Line CB at Samaypur end of 220kV Samaypur-Ballabhgarh line-2 opened
00:11:16,141	HARFLI	220	04SMYUR	Circuit Breaker	Open	Line CB at Harfali end of 220kV Samaypur-Harfali line opened
00:11:16,141	SAMAYUR	220kV	19BADSH1	Circuit Breaker	Open	Line CB at Samaypur end of 220kV Samaypur-Badshahpur line-1 opened
00:11:16,150	SAMAYUR	220kV	01BLBGH1	Circuit Breaker	Open	Line CB at Samaypur end of 220kV Samaypur-Badshahpur line-1 opened
00:11:16 ***	BALLABGARH	400kV	08T2T4	Circuit Breaker	Open	Tie CB at 400kV side of 400/220kV 500MVA ICT-2&4 at Ballabhgarh opened
00:11:16 ***	BALLABGARH	400kV	09T2	Circuit Breaker	Open	Main CB at 400kV side of 400/220kV 500MVA ICT-2 at Ballabhgarh opened
00:11:16 ***	BALLABGARH	220kV	04T4	Circuit Breaker	Open	CB at 220kV side of 400/220kV 500MVA ICT-4 at Ballabhgarh opened
00:11:16 ***	BALLABGARH	220kV	03T3	Circuit Breaker	Open	CB at 220kV side of 400/220kV 500MVA ICT-3 at Ballabhgarh opened
00:11:16 ***	BALLABGARH	220kV	02T2	Circuit Breaker	Open	CB at 220kV side of 400/220kV 500MVA ICT-2 at Ballabhgarh opened

Points for Discussion

- i. Significant number of grid events due to CT failure have been recorded in BBMB control area. Necessary maintenance activities, routing testing of equipment's and other necessary measures need to be taken to avoid such events in future.
- ii. Proper isolator status and its communication is crucial for correct operation of bus bar protection operation. Unwanted operation of bus bar protection has been observed in past also due to incorrect isolator status. Frequent review of isolator status and prompt attending of any alarm related to the same may be done to avoid such events in future.
- iii. Reason of tripping of 220kV Samaypur-Harfali line from Harfali end despite of timely clearance of fault need to be investigated and shared. Any protection related issues if any, need to be rectified.
- iv. DR/EL(.dat/.cfg file) of all the tripped elements need to be shared. No DR/EL received as on 02.09.2025.

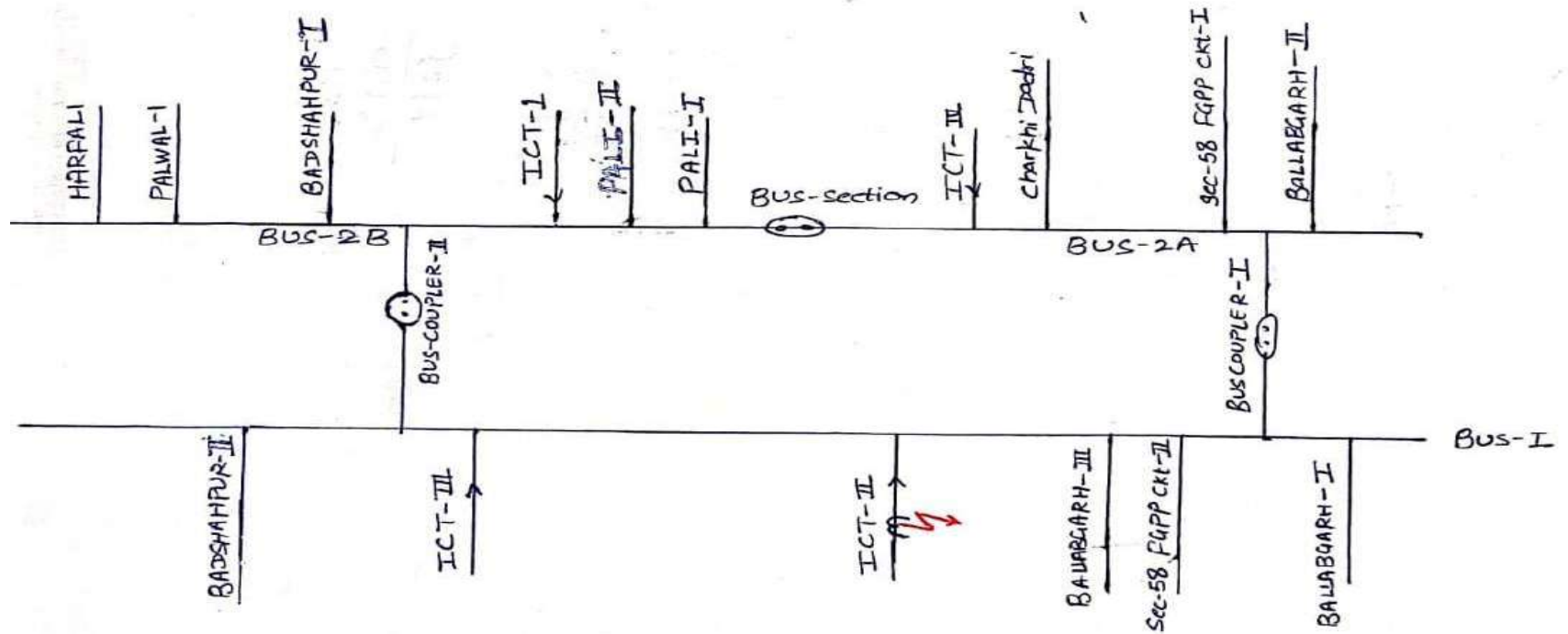


Multiple Tripping Analysis Report

Analysis of Multiple Grid Elements Tripping
at 220kV BBMB Samaypur Sub-Station
on dated 29.08.2025

SLD:

SINGLE LINE DIAGRAM OF 220KV BBMB SAMAYPUR AT
TIME MULTIPLE TRIPPINGS ON DATED 29.08.2025 AT 00:11 HRS.



PS: All ICTs & their CTs and Circuit Breakers are installed in PGCIL Ballabgarh switchyard.

BRIEF INTRODUCTION

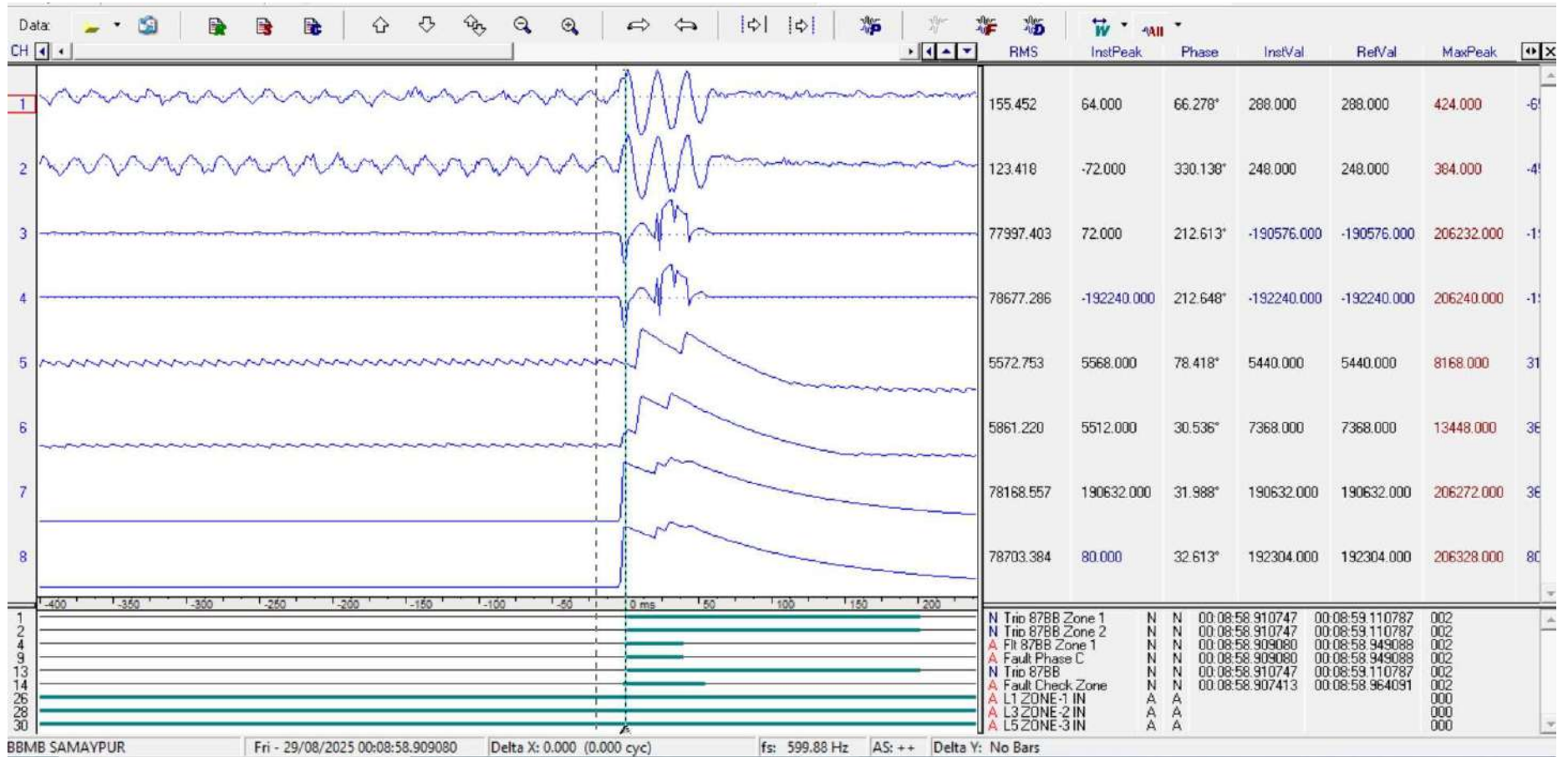
- On dated 29.08.2025 at 00:11 Hrs., blue phase CT of 220 kV side of 400/220kV, 500MVA ICT-2 installed in PGCIL Ballabgarh switchyard damaged creating blue phase to ground Bus Fault. As the above mentioned ICT is directly connected to 220 kV BBMB Samaypur Sub-station, Bus Bar protection scheme at Samaypur Sub-station operated.

Tripped elements :

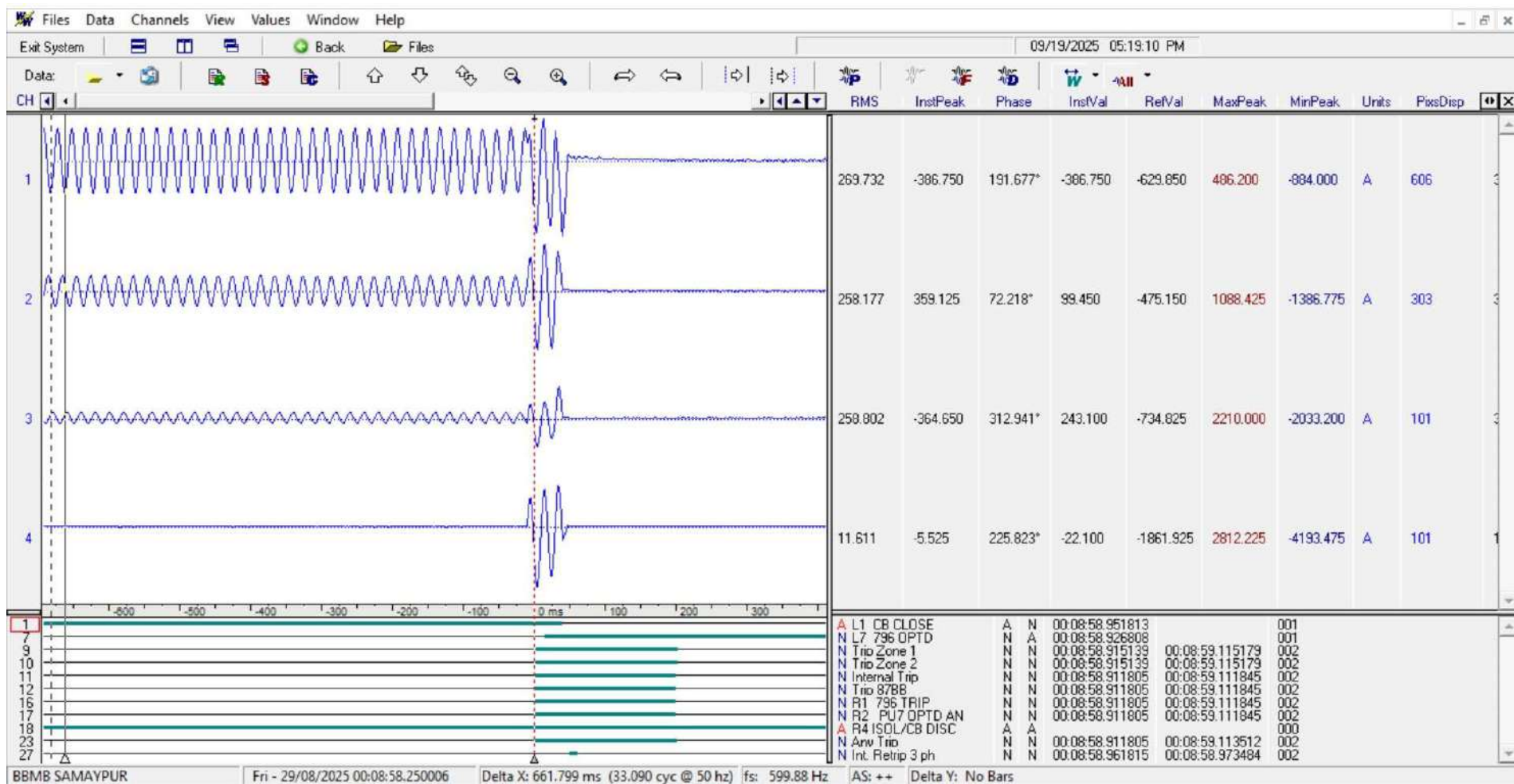
Tripped Element	Time of Tripping
220kV BUS-1	00:11 Hrs.
400/220kV, 500MVA ICT-2	00:11 Hrs.
400/220kV, 500MVA ICT-3(220kV side)	00:11 Hrs.
220kV BUS Coupler-1 & BUS-2A	00:11 Hrs.
220kV BUS Coupler-2	00:11 Hrs.
220kV Charkhi Dadri	00:11 Hrs.
220kV Ballabgarh Ckt-1	00:11 Hrs.
220kV Ballabgarh Ckt-2	00:11 Hrs.
220kV Sector-58 FDB ckt-2	00:11 Hrs.
220kV Badshahpur ckt-1	00:11 Hrs.
220kV Sector-58 FDB ckt-1	00:11 Hrs.
220kV Ballabgarh Ckt-3	00:11 Hrs.

Detailed Analysis:

- On dated 29.08.2025 at 00:11 Hrs., Blue phase CT of 220kV side of 400/220kV, 500MVA ICT-2 installed in PGCIL Ballabgarh switchyard creating blue phase to ground Bus Fault. The above mentioned ICT is connected to 220kV Bus-1 of BBMB Samaypur Substation. Therefore Bus-1 tripped immediately on operation of Bus-Bar protection scheme.
- Besides 220kV Bus-1, 220KV Bus 2A also tripped. After analyzing the DR & events of CU & PUs of all the tripped circuits, it was found that Isolator status in PU of 220 kV FGPP ckt.-2 is absent due to faulty input logic Card.
- In the absence of Isolator Status, the numerical Bus Bar Protection scheme issues trip command to both buses as per scheme logic.
- Isolator status of all 220 kV ckts. connected with Bus 2B were correct therefore Bus 2B remained intact.



[DRs\CU.CFG](#)



[DRs\FGGP 2.CFG](#)

Location & type of Fault:

Blue phase CT of 220kV side of 400/220kV, 500MVA ICT-2 installed in PGCIL Ballabgarh switchyard bursted, which caused phase to ground BUS Fault.

Action taken:

- On dated 30.08.2025 the faulty Input Logic Card of 220 kV FGPP-2 circuit was replaced with a healthy card.
- Blue Phase CT of 220kV side of 400/220kV ICT-2 was replaced with new CT & ICT-2 was charged at 13:04 Hrs. on dated 04.09.2025.

Remedial Action :

- All operational staff has been instructed for regular checking of isolator status in Busbar and LBB relay.
- It has also been instructed to make an entry of isolator status in record register daily.

Thank You

Multiple Element Tripping Event at 220/66kV Laltokalan(PS)

At 04:35 hrs on 30.08.2025

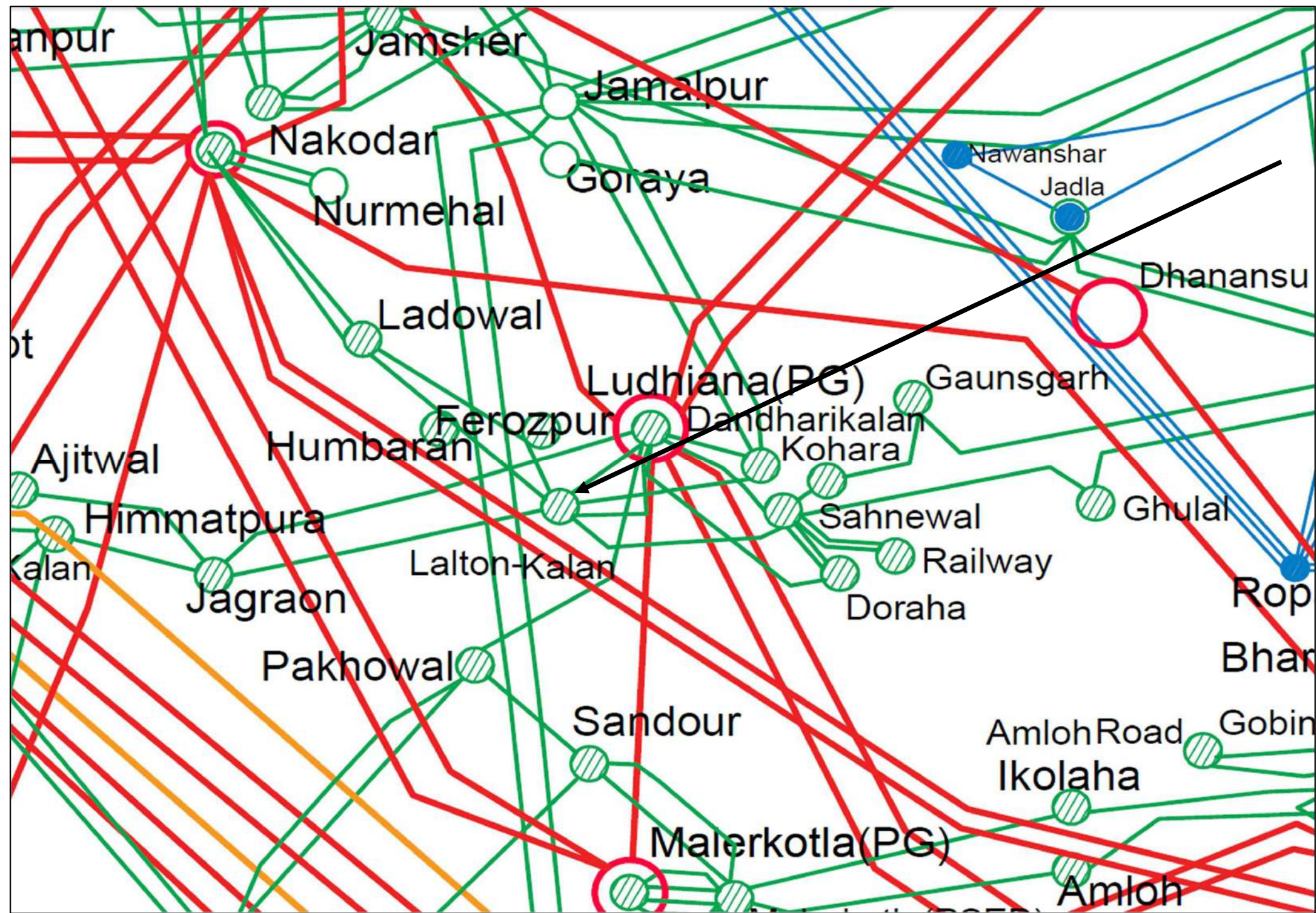
Tripped Elements

S. No	Name of Elements	Outage Time	Revival Time	Reason of tripping
1.	220 KV Ludhiana(PG)- <u>Laltokalan(PS) (PSTCL) Ckt-1</u>	04:35 <u>hrs</u>	10:24 <u>hrs</u>	Y-ph CT clamp of 220 KV Ludhiana(PG)- <u>Laltokalan(PS) (PSTCL) Ckt-2</u> broke at <u>Laltokalan</u> end
2.	220 KV Ludhiana(PG)- <u>Laltokalan(PS) (PSTCL) Ckt-2</u>		21:53 <u>hrs</u>	
3.	220 kV <u>Laltokalan – Ferozpur Road (PS) Ckt</u>		Under shutdown	
4.	220 kV <u>Laltokalan – Hambran (PS) Ckt</u>		06:02 <u>hrs</u>	
5.	220 kV <u>Laltokalan – Jagraon (PS) Ckt</u>		07:32 <u>hrs</u>	

Brief details of the event

- i. 220kV Laltokalan(PS) has double main bus arrangement at 220kV side.
- ii. During antecedent condition, 220 KV Ludhiana(PG)-Laltokalan(PS) (PSTCL) Ckt-2, 220 kV Laltokalan – Hambran (PS) Ckt, 220 kV Laltokalan – Jagraon (PS) Ckt and 220/66 kV 160 MVA ICT-1 at Laltokalan(PS) were connected to 220kV Bus-1 at Laltokalan(PS) and remaining elements were connected to 220kV Bus-2 at Laltokalan(PS).
- iii. As reported, at 04:35 hrs, Y-ph CT clamp of 220 KV Ludhiana(PG)-Laltokalan(PS) (PSTCL) Ckt-2 broke at Laltokalan end. As per DR, 220 KV Ludhiana(PG)-Laltokalan(PS) (PSTCL) Ckt-2 tripped on Y-N phase to earth fault with fault distance of 2.14km and fault current of 25.78kA from Ludhiana(PG) end; zone-2 distance protection operated at Ludhiana(PG) end.
- iv. Distance protection relay at Laltokalan(PS) of 220 KV Ludhiana(PG)-Laltokalan(PS) (PSTCL) Ckt-2 didn't pick up during this fault hence other lines connected to Bus-1 (220 kV Laltokalan – Hambran (PS) Ckt and 220 kV Laltokalan – Jagraon (PS) Ckt) tripped from remote end with zone-2 indications.
- v. Busbar protection at Laltokalan was not healthy and zone-4 time delays of lines at Laltokalan end were also not modified to 160ms, zone-4 delays were kept as 350ms, hence lines tripped from remote ends.
- vi. Further after 720 ms of occurrence of this fault (as per PMU), 220 KV Ludhiana(PG)-Laltokalan(PS) (PSTCL) Ckt-1 tripped on R-N phase to earth fault with fault distance of 2.79km and fault current of 27.96kA from Ludhiana(PG) end (as per DR); zone-1 distance protection operated at Ludhiana(PG) end and carrier sent to Laltokalan(PS) end. No A/R operation observed on this fault. As reported by Punjab, Laltokalan end picked E/F on this fault, but unpicked after 407ms.
- vii. 220 kV Laltokalan – Ferozpur Road (PS) Ckt sensed this fault in zone-4 at Laltokalan end and in zone-2 at Ferozpur end. However, as R-ph limb of CB at Laltokalan end got stuck, fault cleared in zone-2 from remote end. This line was taken under shutdown to address this CB issue.
- viii. Due to tripping of all 220kV lines at Laltokalan(PS) S/s, supply to 220/66kV 160 MVA ICT-1 and 100MVA ICT-4 & 5 got failed and ICTs are manually opened. Complete blackout occurred at 220kV Laltokalan(PS) S/s.
- ix. As per PMU, Y-N phase to earth fault followed by R-N phase to earth fault was observed with fault clearing time of 400ms (delayed) and 80ms respectively.
- x. As per SCADA, change in demand of approx. 180 MW in Punjab control area was observed.

Network Diagram



SLD of 400/220kV Ludhiana(PG) before the event

CONTACT DETAILS

EMAIL	ludhiana@powergrid.co.in
MOBILE	9729872318
HOTLINE	20112218 / 51

LUDHIANA

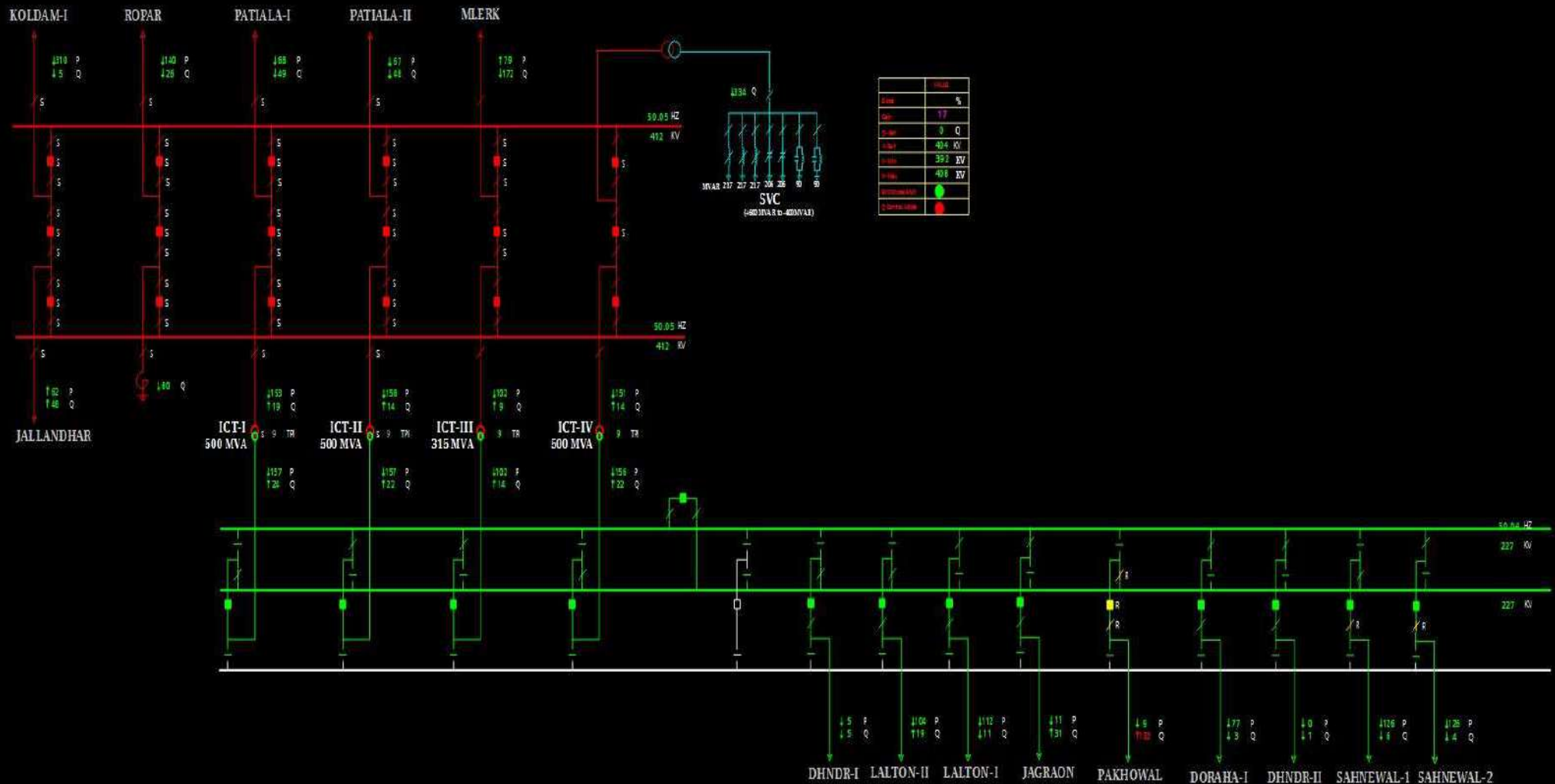
P sum(400 kV) = 2
P sum(220 kV) = 4

Stat Expl

Gen Sum

Company

Q sum(400 kV) = -879
Q sum(220 kV) = 76



SLD of 400/220kV Ludhiana(PG) after the event

CONTACT DETAILS

EMAIL	ludhiana@powergrid.co.in
MOBILE	9729872318
HOTLINE	20112218 / 51

LUDHIANA

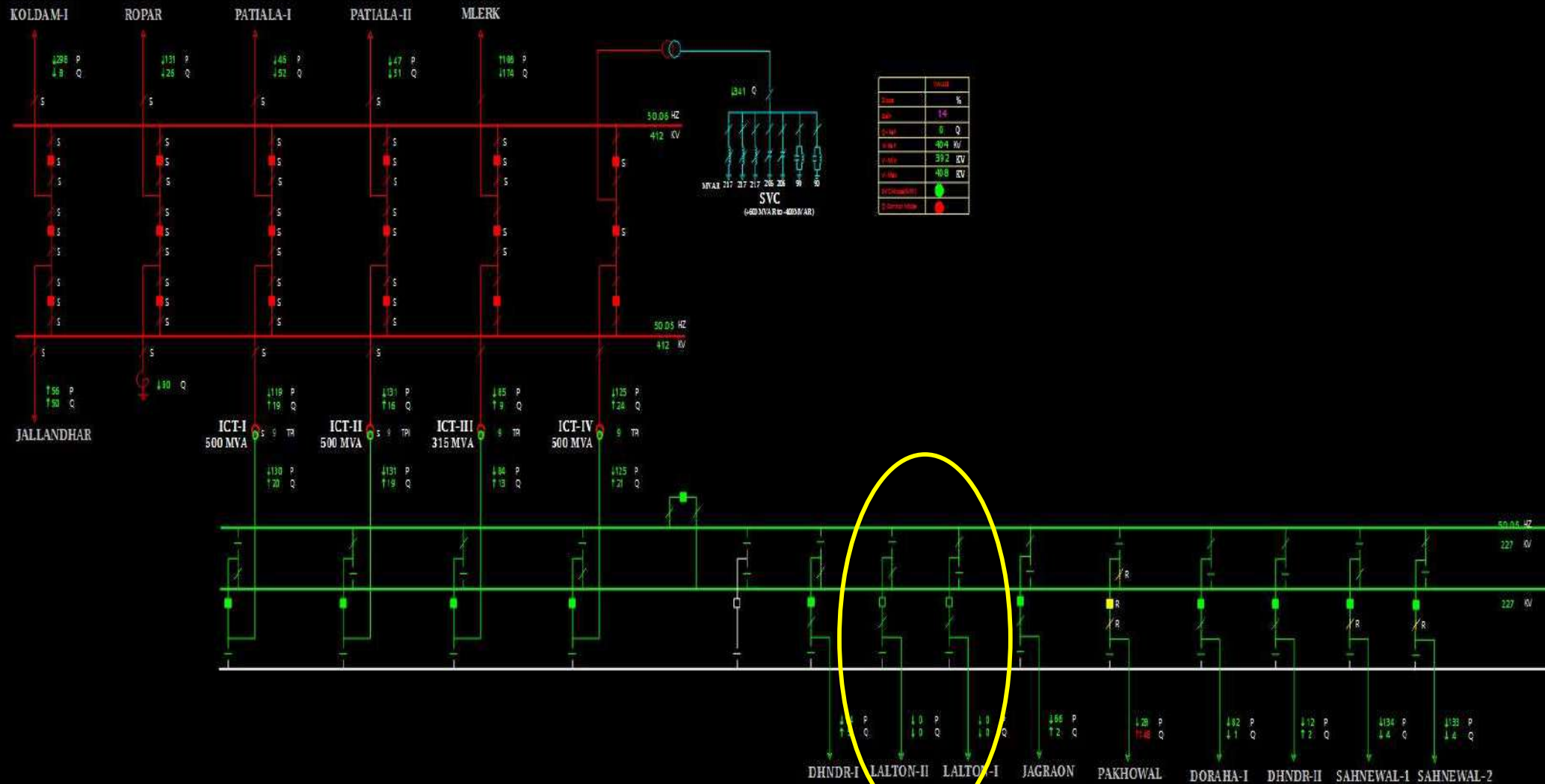
P sum(400 kV) = 1
P sum(220 kV) = 2

Stat Expl

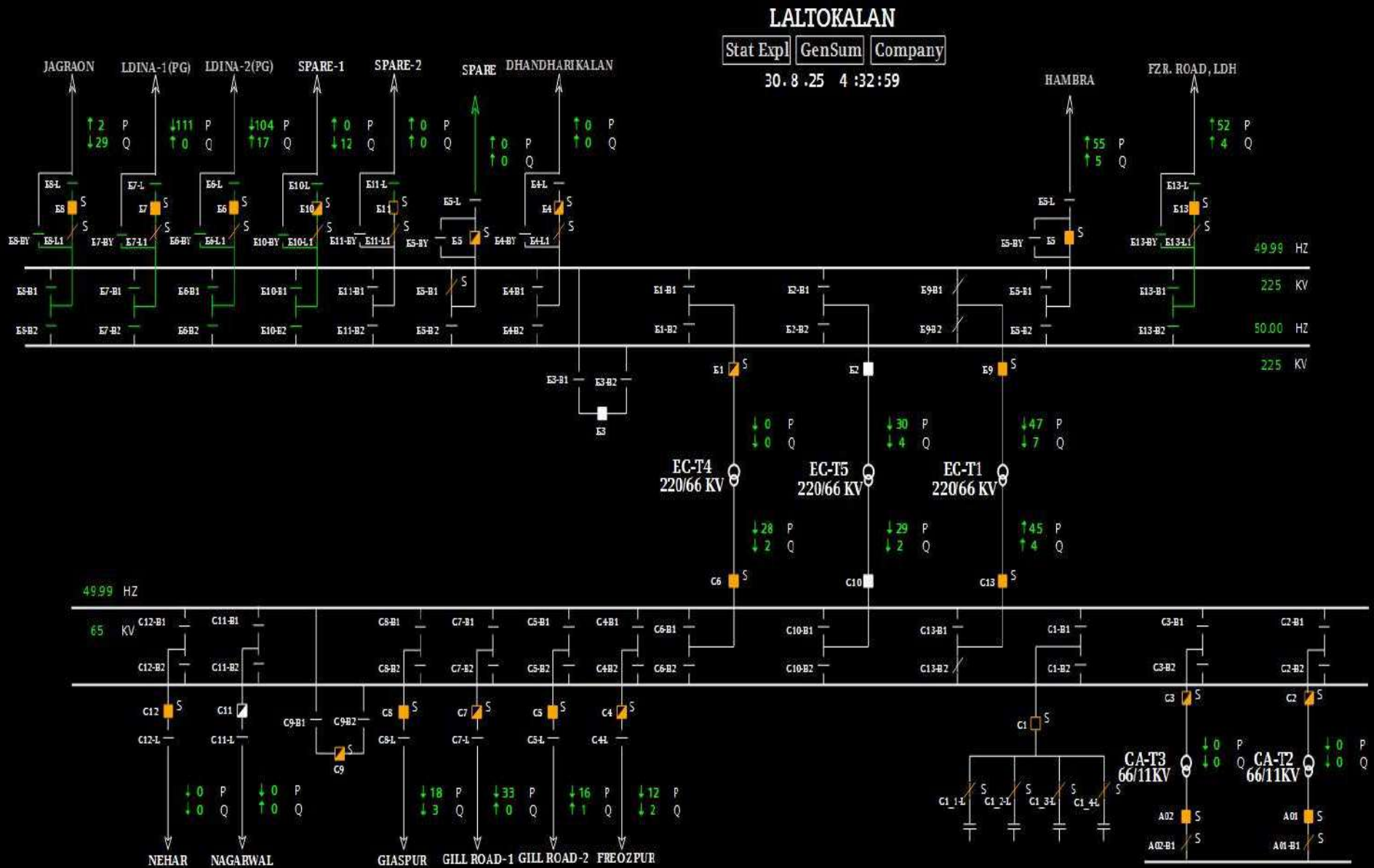
GenSum

Company

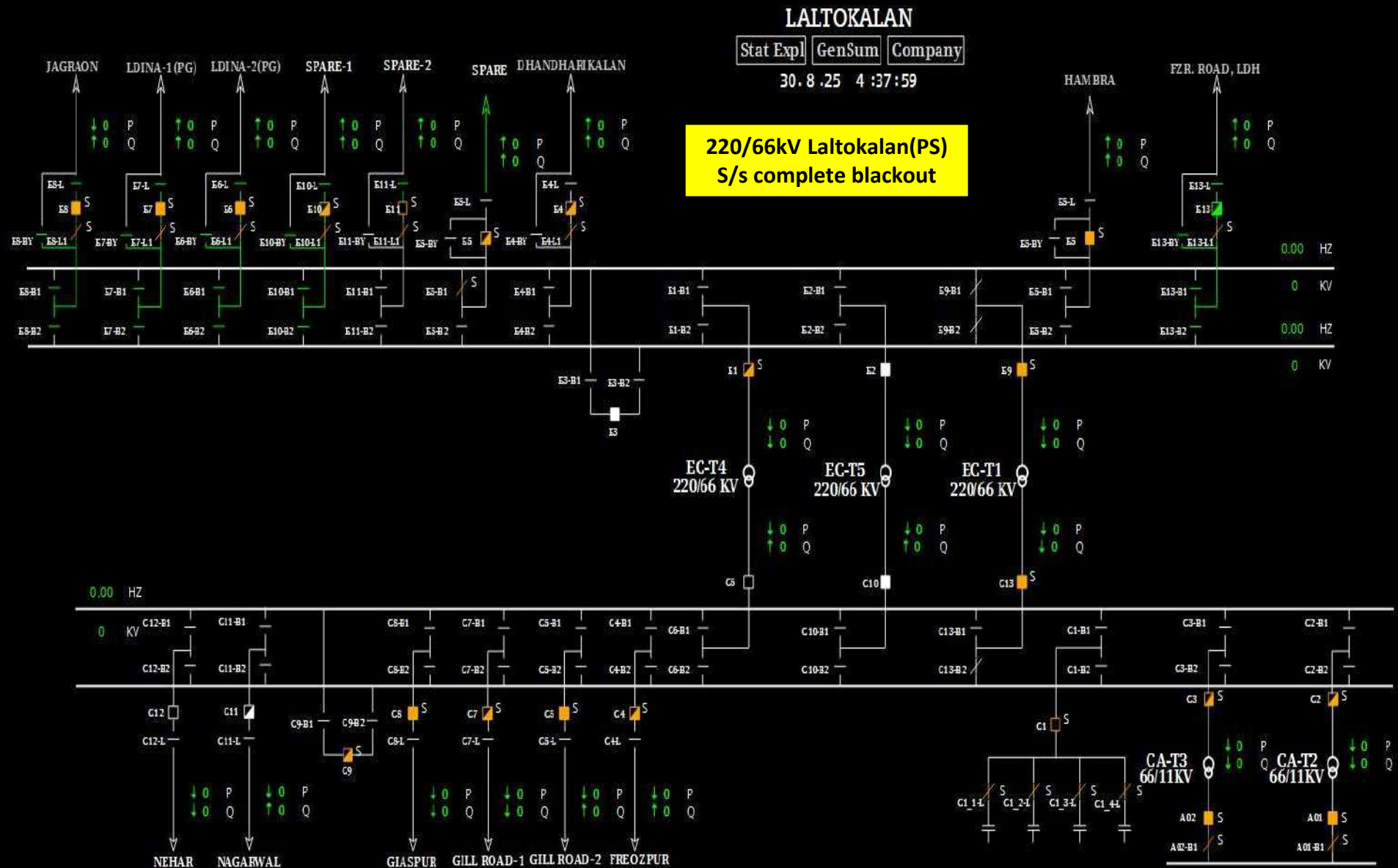
Q sum(400 kV) = -699
Q sum(220 kV) = -71



SLD of 220/66kV Laltokalan(PS) before the event

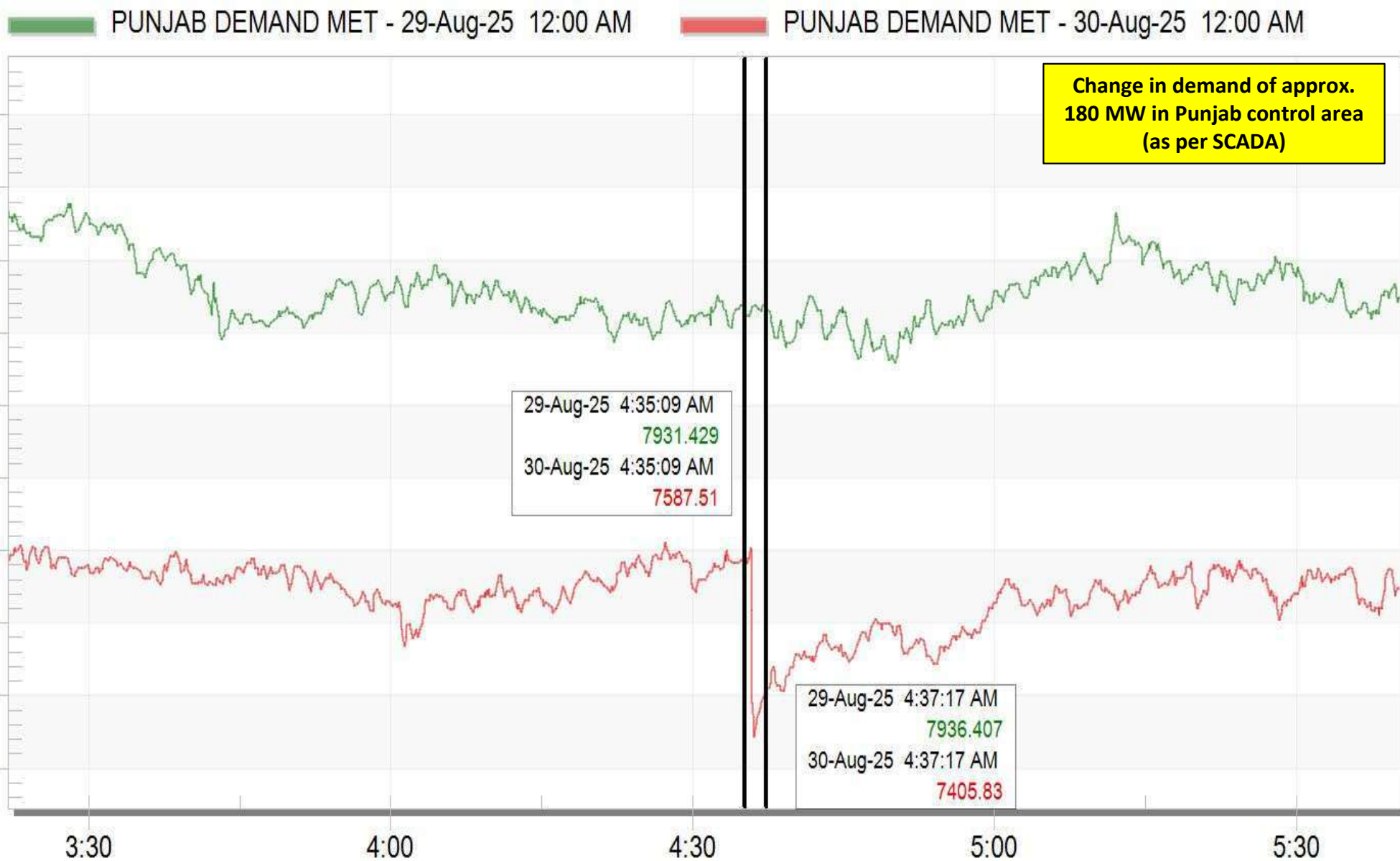


SLD of 220/66kV Laltokalan(PS) after the event



Punjab Demand during the event

Punjab Demand



Aug 29 Fri 2025

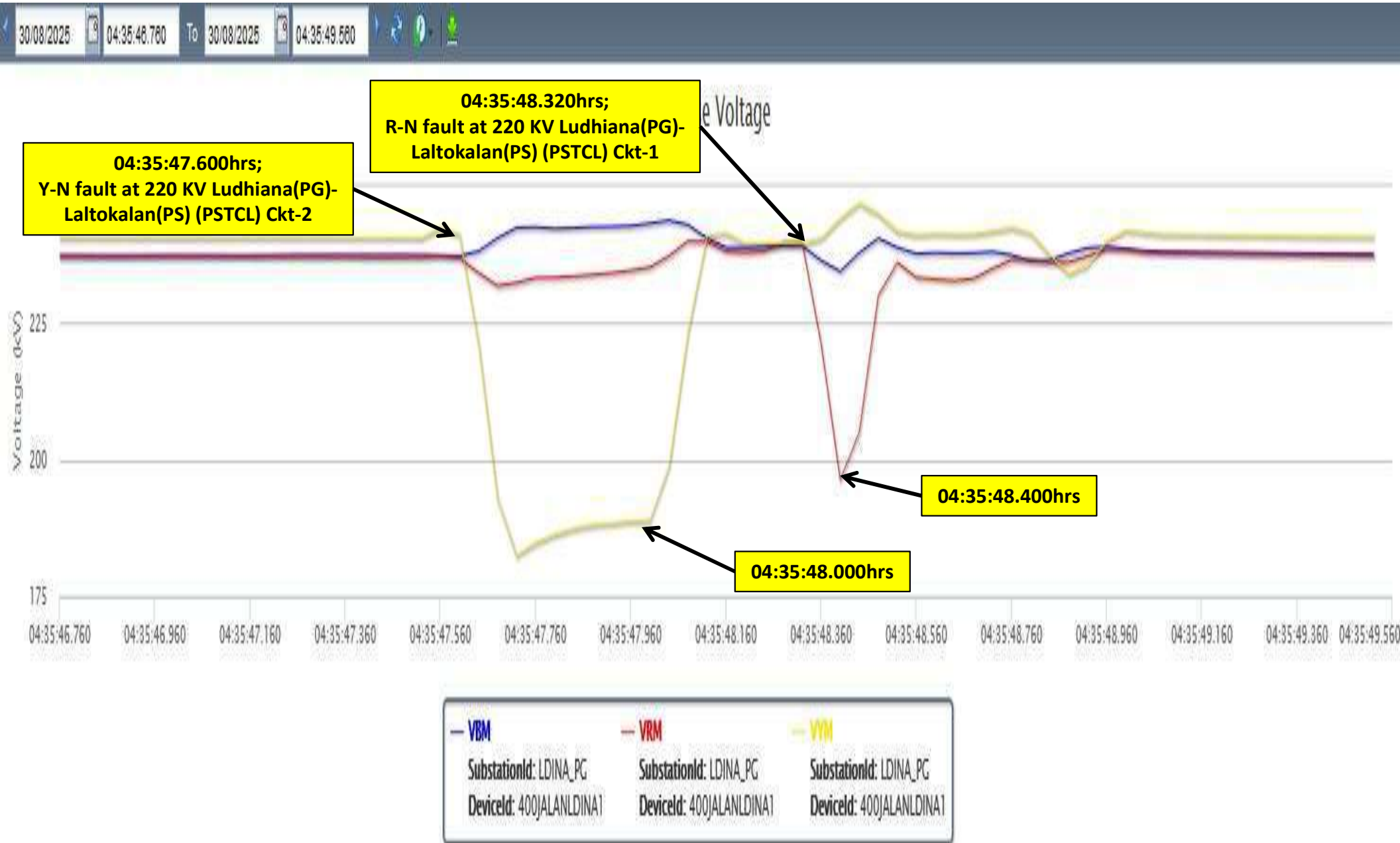
PMU Plot of frequency at Ludhiana(PG)

04:35 hrs/30-Aug-25

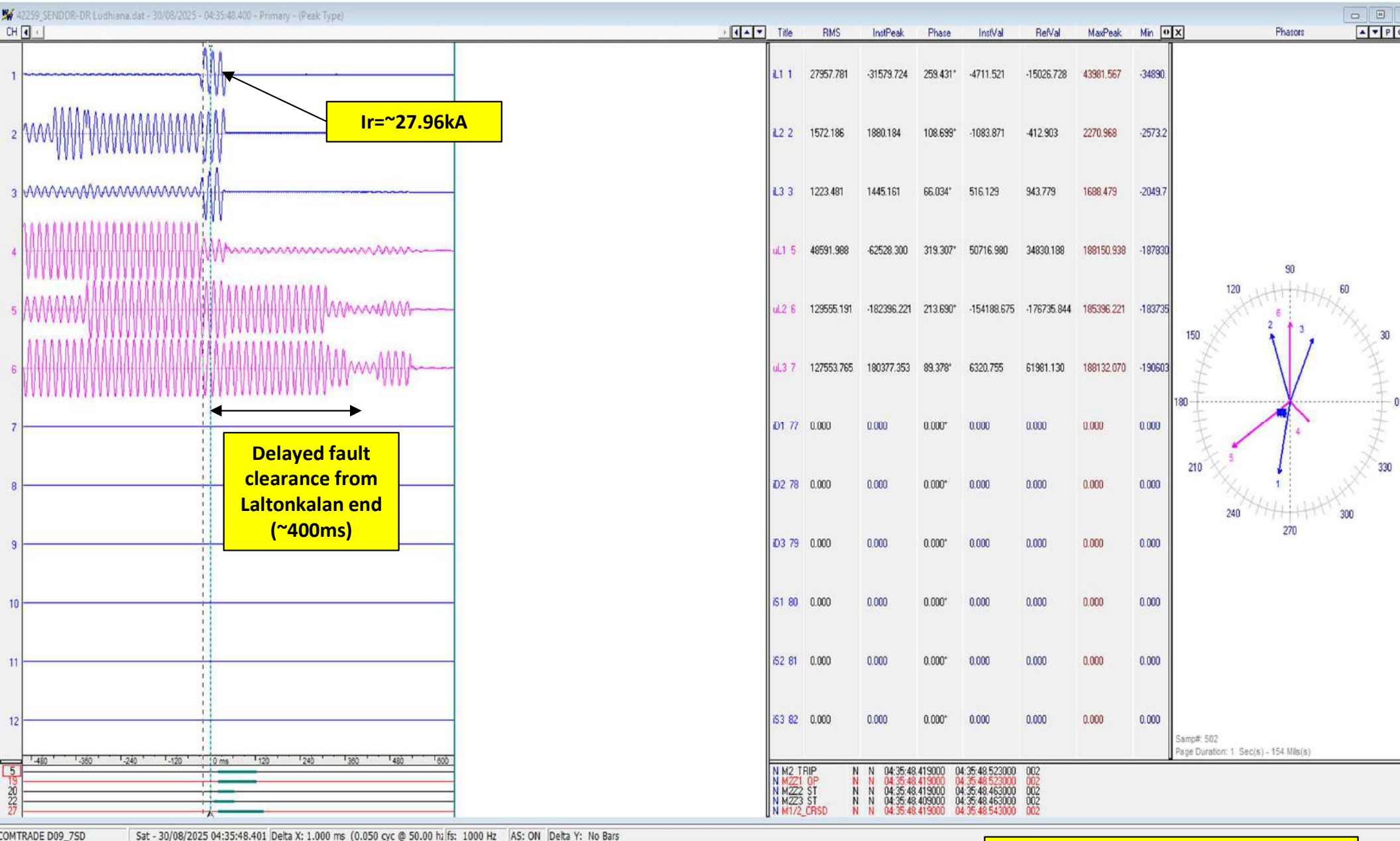


PMU Plot of Phase voltage magnitude at Ludhiana(PG)

04:35 hrs/30-Aug-25



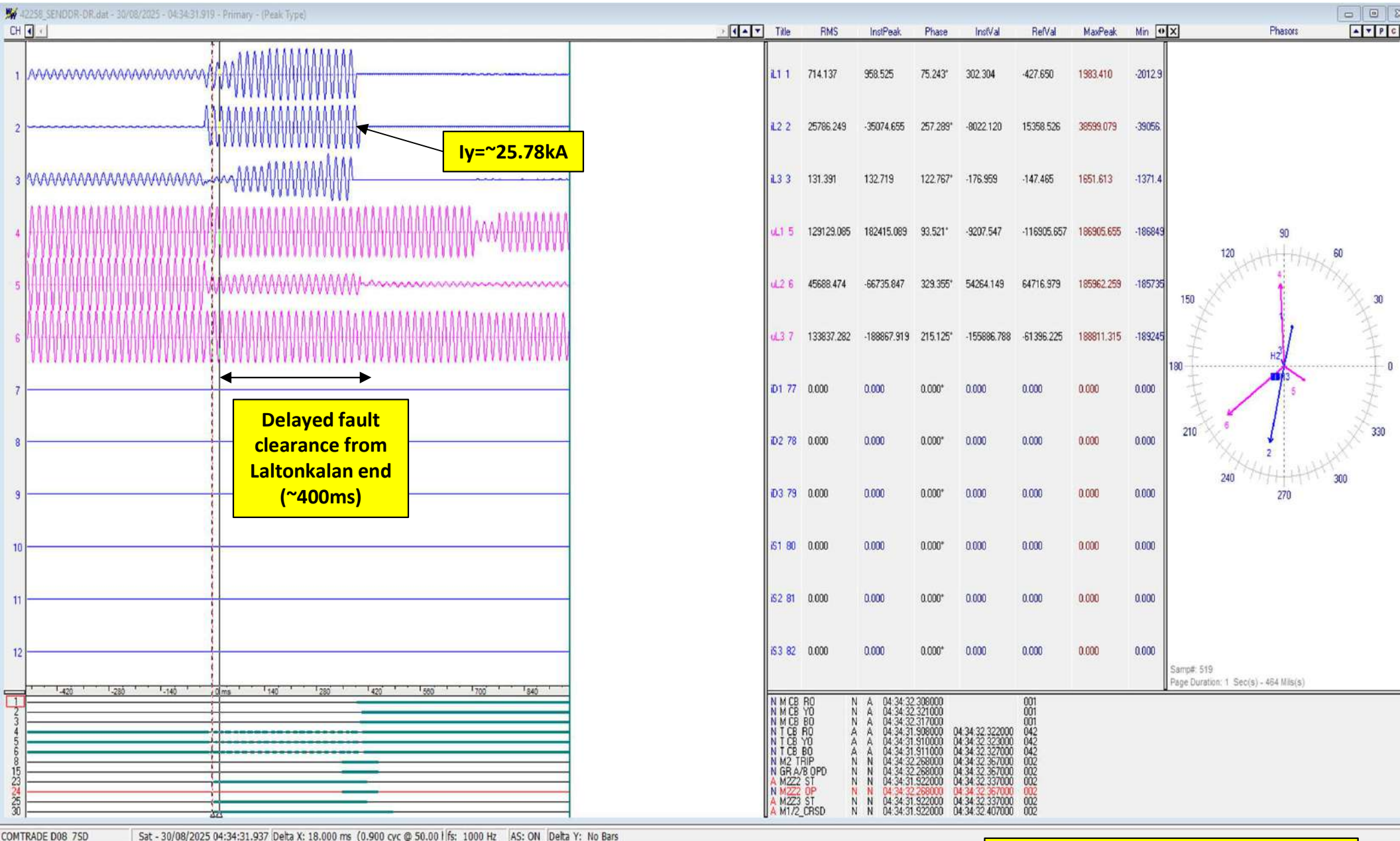
DR of 220 KV Ludhiana(PG)(end)-Laltokalan(PS) (PSTCL) Ckt-1



- ✓ R-N phase to earth fault. Fault current: $I_r \approx 27.96\text{kA}$.
- ✓ Zone-1 distance protection operated and carrier sent.
- ✓ A/R operation is not observed.

DR nomenclature need to be corrected

DR of 220 KV Ludhiana(PG)(end)-Laltokalan(PS) (PSTCL) Ckt-2



- ✓ Y-N phase to earth fault. $I_y \sim 25.78\text{kA}$.
- ✓ Zone-2 distance protection operated.

DR nomenclature need to be corrected

SCADA SOE

Time	Station Name	Voltage	Element Name	Element Type	Element Status	Remarks
04:35:48,065	LDINA_PG	220kV	08JGRAO	Circuit Breaker	Open	Line CB at Ludhiana(PG) end of 220 KV Ludhiana(PG)-Laltokalan(PS) (PSTCL) Ckt-2 opened
04:35:48,444	LDINA_PG	220kV	09LINE_3	Circuit Breaker	Open	Line CB at Ludhiana(PG) end of 220 KV Ludhiana(PG)-Laltokalan(PS) (PSTCL) Ckt-1 opened
04:35:48,716	LALTN_PS	66kV	6T4	Circuit Breaker	Open	CB at 66kV side of 220/66 kV 100 MVA ICT-4 at Laltokalan(PS) opened
04:35:48,756	LALTN_PS	220kV	13FRLDH	Circuit Breaker	disturbe	
04:35:48,848	LALTN_PS	66kV	12NEHAR	Circuit Breaker	Open	Line CB at Laltonkalan(PS) end of 66kV Laltonkalan-Nehar Ckt opened
04:36:05,745	FRLDH_PS	220kV	2LALTN	Circuit Breaker	disturbe	

Points for Discussion

- i. Healthiness of busbar protection and auxiliary system at Laltokalan(PS) need to be ensured. Self-audit may be arranged at the earliest.
- ii. Distance protection need to be reviewed in 220kV lines emanating from Laltokalan(PS).
- iii. Reason of delayed clearance of fault need to be shared.
- iv. DR/EL (.dat/.cfg file) of all the tripped elements need to be shared from Punjab.
- v. DR nomenclature need to be corrected by PG at 220 KV Ludhiana(PG)-Laltokalan(PS) (PSTCL) Ckt-1 & 2.
- vi. Trippings at Punjab end were not recorded in SCADA SOE. Healthiness and availability of SCADA data need to be ensured at S/s of Punjab.
- vii. Remedial action taken report need to be shared.

Sr No	Element Name	Outage Date	Outage Time	Reason
1	132 KV Rihand(UP)-Garwa(JS) (UP) Ckt-1	02-Aug-25	11:05	Phase to earth fault R-N
		05-Aug-25	09:28	Phase to earth fault B-N
		09-Aug-25	04:38	Phase to earth fault B-N
		10-Aug-25	11:05	Phase to earth fault R-N
		12-Aug-25	05:03	Phase to earth fault B-N
		12-Aug-25	18:34	Phase to earth fault B-N
		13-Aug-25	22:20	Phase to earth fault B-N
		15-Aug-25	20:03	Phase to earth fault B-N
		23-Aug-25	04:44	Transient fault
2	250 MW (PSP) TEHRI HPS - UNIT 6	23-Aug-25	16:22	Phase to Ground Fault B-N
		27-Aug-25	23:05	Phase to earth fault B-N
		01-Aug-25	09:15	Unit Speed was in dead band ,Unit tripped via QSD
		02-Aug-25	09:19	Turbine Problem
		07-Aug-25	20:00	Oil Leakage
		08-Aug-25	10:46	Due to Partial discharge in condition monitoring system (CMS), QSD was initiated
		11-Aug-25	11:46	Due to significant leakage from main firefighting header common for Tehri HPP and Tehri PSP GSU transformers.
		24-Aug-25	17:42	AC excitation system (VSI) detected voltage dip in the 400kV Grid voltage which led to unit tripping.
		21-Aug-25	09:15	Generator Fault
3	220 KV NAPP(NP)-Simbholi(UP) (UP) Ckt-1	20-Aug-25	09:15	Turbine Problem
		27-Aug-25	11:30	During the starting sequence in PU mode, machine got tripped on Quick shutdown due to Too Late To Execute (TLTE) of runner rewatering process.
		29-Aug-25	14:45	Tripped due to malfunctioning of float valve level gauge of oil leakage tank of MIV/ Governing system.
		04-Aug-25	05:37	Phase to earth fault R-N
		01-Aug-25	10:04	Phase to earth fault Y-N
		01-Aug-25	22:10	Phase to earth fault B-N
		04-Aug-25	09:12	Phase to earth fault Y-N
		14-Aug-25	22:42	Phase to earth fault B-N
		15-Aug-25	21:09	Phase to earth fault B-N
4	250 MW (PSP) TEHRI HPS - UNIT 5	27-Aug-25	14:08	Phase to earth fault R-N
		07-Aug-25	22:18	Due to machine operation in dead band range.
		08-Aug-25	19:11	Due to stopping sequence test as a part of test at higher head.
		08-Aug-25	21:07	Due to stopping sequence test as a part of tests at higher head.
		11-Aug-25	11:48	Due to significant leakage from main firefighting header common for Tehri HPP and Tehri PSP GSU transformers.
		24-Aug-25	17:42	AC excitation system (VSI) detected voltage dip in the 400kV Grid voltage which led to unit tripping.
		17-Aug-25	09:31	Fault in relay of VSI cooling skid.
5	132 KV Pilibhit(UP)-Sitarganj(PTCUL) (PTCUL) Ckt-1	06-Aug-25	18:19	Phase to earth fault R-N
		06-Aug-25	20:46	Phase to earth fault Y-N
		20-Aug-25	22:35	Phase to earth fault R-N
		21-Aug-25	00:46	Phase to earth fault R-N
		23-Aug-25	01:01	Phase to earth fault R-N
		27-Aug-25	17:16	Phase to earth fault R-N
6	132 KV Khatima(UK)-Pilibhit(UP) (PTCUL) Ckt-1	06-Aug-25	05:24	Phase to earth fault Y-N
		06-Aug-25	18:21	Phase to earth fault R-N
		06-Aug-25	20:46	Phase to earth fault Y-N
		17-Aug-25	08:42	Phase to earth fault Y-N
		19-Aug-25	08:44	Phase to earth fault B-N
7	132 KV Rihand(UP)-Nagar Untari(JS) (UP) Ckt-1	11-Aug-25	02:30	Phase to earth fault R-N
		25-Aug-25	05:14	Transient fault
		31-Aug-25	04:43	Phase to earth fault R-N
		31-Aug-25	12:00	Phase to earth fault R-N
8	200 MW Parbati II HEP - UNIT 3	09-Aug-25	19:45	Generator Transformer protection operated
		12-Aug-25	06:52	GT trip
		14-Aug-25	06:29	Generator Fault
		16-Aug-25	10:12	Maloperation of Butterfly valve.

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	800 KV HVDC Agra(PG) Pole-3	POWERGRID	01-Aug-25	09:55	Nil	Earth fault	NA	80	Yes	Yes		As per PMU, fluctuation in voltage is observed. As reported, 800 KV HVDC Agra(PG) Pole-3 tripped on Valve Short Circuit Protection operation.
2		POWERGRID	05-Aug-25	20:52	Nil	Phase to earth fault Y-N	NA	80	Yes	Yes		As per PMU and DR, Y-N phase to earth fault with unsuccessful A/R is observed. Fault current was ~3.25kA (zone-1) from Gorakhpur(PG).
3	400 KV Gorakhpur(PG)-Motihari(BS) (PG) Ckt-1	POWERGRID	07-Aug-25	04:58	Nil	Phase to earth fault Y-N	NA	80	Yes	Yes		As per PMU and DR, Y-N phase to earth fault with unsuccessful A/R is observed. Fault current was 11.18kA (zone-1) from Gorakhpur(PG).
4		POWERGRID	09-Aug-25	01:12	Nil	Phase to earth fault Y-N	NA	80	Yes	Yes		As per PMU and DR, Y-N phase to earth fault with unsuccessful A/R is observed. Fault current was 2.18kA (zone-2) from Gorakhpur(PG).
5	400 KV Gorakhpur(PG)-Motihari(BS) (PG) Ckt-2	POWERGRID	11-Aug-25	05:27	Nil	Phase to earth fault R-N	NA	80	Yes	Yes		As per PMU and DR, R-N phase to earth fault with unsuccessful A/R is observed. Fault current was 3.5kA (zone-1) from Gorakhpur(PG).
6	765 KV Phagi(RS)-Gwalior(PG) (PG) Ckt-1	POWERGRID	21-Aug-25	02:52	Nil	Phase to earth fault B-N	NA	80	Yes	Yes	DR time window is not as per standard.	As per PMU and DR, B-N phase to earth fault with successful A/R followed by another B-N phase to earth fault within A/R reclaim time is observed. Fault current was ~2.59kA from Phagi(RS).
7	765 KV Chittorgarh-Banaskantha (PG) Ckt-1	POWERGRID	28-Aug-25	13:08	Nil	Phase to earth fault B-N	NA	80	Yes (After 24 hours)	Yes (After 24 hours)		As per PMU and DR, B-N phase to earth fault with unsuccessful A/R is observed. Fault current was ~4.53kA (zone-1) from Chittorgarh(PG).

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 during 2025-26

Sr. No.	Scheme Name	Owner / Agency	Commission Year	Last Review	Mock testing conducted before 2025-26	Tentative Schedule of SPS Mock testing to be conducted during 2025-26	Date of SPS Mock testing conducted during 2025-26	Remarks
1	SPS for WR-NR corridor - 765kV Agra-Gwalior D/C	POWERGRID			27-03-2025	Schedule awaited		
2	SPS for contingency due to tripping of HVDC Mundra-Mahendergarh	ADANI				SPS Unhealthy		As reported by ADANI, work order has been placed and action plan also have been received. Tentative timeline for revival of SPS is by December 2025.
3	SPS for high capacity 400 kV Muzaffarpur-Gorakhpur D/C Inter-regional tie-line related contingency	POWERGRID				Schedule awaited		Not conducted in 2024-25 also.
4	SPS for 1500 MW HVDC Rihand-Dadri Bipole related contingency	POWERGRID			19-03-2025 and 20-03-2025	Schedule awaited		During mock testing, issue identified at Singrauli, Malerkotla. During recent operation on 21.05.2025, non-operation of SPS at Muradnagar, Modipuram, Malerkotla, Singrauli observed.
5	System Protection Scheme (SPS) for HVDC Balia-Bhiwadi Bipole	POWERGRID				Schedule awaited		Not conducted in 2024-25 also
6	SPS for reliable evacuation of power from NJPS, Rampur, Sawra Kuddu, Baspa Sorang and Karcham Wangtoo HEP	SJVN/HPPTCL/JS W/POWERGRID/SORANG			19-12-2024	Dec-25	04-09-2025 (Partial: Case-1, 3 & 5 conducted)	Case-6(i): Under implementation stage (tentative by 15th August 2025), Case 6(ii): communication card issue at Wangtoo(HP)
7	SPS for Reliable Evacuation of Ropar Generation	PSTCL				SPS Unhealthy		As reported by PSTCL, SPS need to be reviewed whether it is required or not.
8	SPS for Reliable Evacuation of Rosa Generation	UPPTCL			20-04-2024	conducted	12-04-2025	Mock test report received (Review to be done in view of commissioning of 400kV Rosa-Badaun D/C in April 2021.)
9	SPS for evacuation of Kawai TPS, Kalisindh TPS generation complex	RVPNL			14-03-2025 (Partial)	conducted	26-04-2025	Study w.r.t. Automatic load shedding part has been done. Proposed Will be put up in 234 OCC
10	SPS for evacuation of Anpara Generation Complex	UPPTCL			08-10-2024 (unit-7) and 19-10-2024 (unit-6)	Schedule awaited		
11	SPS for evacuation of Lalitpur TPS Generation	UPPTCL			21-05-2024	conducted	09-04-2025	Mock test report received
12	SPS for Reliable Evacuation of Bara TPS Generation	UPPTCL			20-11-2024	conducted	23-05-2025	Mock test report received
13	SPS for Transformers at Maharaniabagh (PG) substation	POWERGRID				conducted	Apr-25	Mock test report received
14	SPS for Transformers at Mandola (PG) substation	POWERGRID				conducted	Apr-25	Mock test report received
15	SPS for Transformers at Moradabad (UPPTCL) Substation	Uttar Pradesh			20-04-2024	conducted	02-04-2025	Mock test report pending
16	SPS for Transformers at Muradnagar (UPPTCL) Substation	UPPTCL			27-03-2025	Mar-26		
17	SPS for Transformers at Agra (UPPTCL) Substation	UPPTCL			21-03-2025	Schedule awaited		
18	SPS for Transformers at 400kV Sarojinagar (UPPTCL) Substation	UPPTCL			15-05-2024	conducted	23-07-2025	Mock test report received
19	SPS for Transformers at 220kV Sarojinagar (UPPTCL) Substation	UPPTCL			06-06-2024	conducted	23-07-2025	Mock test report received
20	SPS for Transformers at 400kV Unnao (UPPTCL) Substation	UPPTCL			19-05-2023	SPS made healthy on 27.05.2025	27.05.2025	Mock test report received
21	SPS for Transformers at 400kV Bareilly (UPPTCL) Substation	UPPTCL				Revised SPS approved in 234 OCC		SPS yet to be implemented
22	SPS for Transformers at 400kV Azamgarh (UPPTCL) Substation	UPPTCL			06-05-2024	conducted	19-04-2025	Mock test report received
23	SPS for Transformers at 400kV Mau (UPPTCL) Substation	UPPTCL			27-04-2024	conducted	21-04-2025	Mock test report received
24	SPS for Transformers at 400kV Sarnath (UPPTCL) Substation	UPPTCL			23-05-2024	conducted	01-04-2025	Mock test report received
25	SPS for Transformer at 400kV Rajpura (PSTCL) Substation	PSTCL			31-01-2025	Schedule awaited		
26	SPS for Transformers at 400kV Mundka (DTL) Substation	DTL			03-02-2025	Schedule awaited		
27	SPS for Transformers at 400kV Deepalpur (JKTPL) Substation	HVPNL				conducted	08-05-2025	Mock test report pending
28	SPS for Transformers at 400kV Ajmer (RVPN) Substation	RVPNL			10-09-2024	10-09-2025		
29	SPS for Transformers at 400kV Merta (RVPN) Substation	RVPNL			12-09-2024	12-09-2025		
30	SPS for Transformers at 400kV Chittorgarh (RVPN) Substation	RVPNL			31-08-2024 and 05-09-2024	05-09-2025		

31	SPS for Transformers at 400kV Jodhpur (RVPN) Substation	RVPNL			24-09-2024	24-09-2025		
32	SPS for Transformers at 400kV Bhadla (RVPN) Substation	RVPNL			27-09-2024	27-09-2025		
33	SPS for Transformers at 400kV Ratangarh (RVPN) Substation	RVPNL			20-09-2024	20-09-2025		
34	SPS for Transformers at 400kV Nehtaur(WUPPTCL) Substation	UPPTCL			11-01-2025	Schedule awaited		
35	SPS for Transformers at Obra TPS	UPPTCL			20-05-2024	Schedule awaited		
36	SPS for Transformers at 400KV Kashipur (PTCUL) substation	PTCUL			Septemeber 2024	Sep-25		
37	SPS for Transformers at 400KV Fatehgarh Solar Park (AREPRL)	ADANI				conducted	19-04-2025	Mock test report received.
38	SPS to relive transmission congestion in RE complex (Bhadla2)	POWERGRID				conducted	26-08-2025	Mock test report pending
39	SPS for Transformers at 400kV Bikaner (RVPN) Substation	RVPNL			26-09-2024	26-09-2025		
40	SPS for Transformers at 400kV Bawana (DTL) Substation	DTL			04-01-2025	Dec-25		
41	SPS for Transformers at 400kV Bhilwara (RVPN) Substation	RVPNL			09-07-2024 and 10-07-2024	10-07-2025		
42	SPS for Transformers at 400kV Hinduan (RVPN) Substation	RVPNL			26-09-2024	26-09-2025		
43	SPS for Transformers at 400kV Suratgarh (RVPN) Substation	RVPNL			20-10-2024	20-10-2025		
44	SPS for Transformers at 400kV Babai(RS) Substation	RVPNL			20-10-2024	20-10-2025		
45	SPS for Transformers at 400kV Allahabad(PG) Substation	UPPTCL			25.07.2024	Schedule awaited		
46	SPS for Transformers at 400kV Jaunpur(UP) Substation	UPPTCL						Yet to be implemented
47	SPS for Transformers at 765kV Jhatikara(PG) Substation (Bamnauli section)	POWERGRID				conducted	Jun-25	Mock test report received.
	SPS for Transformers at 765kV Jhatikara(PG) Substation (Mundka section)					conducted	Jun-25	
48	SPS for Transformers at 765kV Bhiwani(PG) Substation	POWERGRID				SPS implemented		Mock test report received.
49	SPS for Transformers at 400kV Panki (UPPTCL) Substation	UPPTCL				Approved in 234 OCC		Yet to be implemented
50	SPS for Transformers at 400kV Agra(PG) Substation	POWERGRID/UPPTCL				Approved in 234 OCC		Yet to be implemented

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

Sr. No.	Scheme Name	Owner / Agency	Commission Year	Last Review	Mock testing conducted before 2025-26	Tentative Schedule of SPS Mock testing to be conducted during 2025-26	Date of SPS Mock testing conducted during 2025-26	Remarks
1	SPS for WR-NR corridor - 765kV Agra-Gwalior D/C	POWERGRID			27-03-2025	10.10.2025		
2	SPS for contingency due to tripping of HVDC Mundra-Mahendergarh	ADANI				SPS Unhealthy		As reported by ADANI, work order has been placed and action plan also have been received. Tentative timeline for revival of SPS is by December 2025.
3	SPS for high capacity 400 kV Muzaffarpur-Gorakhpur D/C Inter-regional tie-line related contingency	POWERGRID				SPS Under Review		Not conducted in 2024-25 also.
4	SPS for 1500 MW HVDC Rihand-Dadri Bipole related contingency	POWERGRID			19-03-2025 and 20-03-2025	Oct-25		During mock testing, issue identified at Singrauli, Malerkotla. During recent operation on 21.05.2025, non-operation of SPS at Muradnagar, Modipuram, Malerkotla, Singrauli observed.
5	System Protection Scheme (SPS) for HVDC Balia-Bhiwadi Bipole	POWERGRID				SPS Under Review		Not conducted in 2024-25 also
6	SPS for reliable evacuation of power from NJPS, Rampur, Sawra Kuddu, Baspa Sorang and Karcham Wangtoo HEP	SJVN/HPPTCL/JS W/POWERGRID/SORANG			19-12-2024	Dec-25	04-09-2025 (Partial: Case-1, 3 & 5 conducted)	Case-6(i): Under implementation stage (tentative by 15th August 2025), Case 6(ii): communication card issue at Wangtoo(HP)
7	SPS for Reliable Evacuation of Ropar Generation	PSTCL				SPS Under Review		As reported by PSTCL, SPS need to be reviewed whether it is required or not.
8	SPS for Reliable Evacuation of Rosa Generation	UPPTCL			20-04-2024	conducted	12-04-2025	Mock test report received (Review to be done in view of commissioning of 400kV Rosa-Badaun D/C in April 2021.)
9	SPS for contingency due to tripping of evacuating lines from Narora Atomic Power Station	NAPS / UPPTCL				SPS Under Review		Not conducted in 2024-25 also. As reported by UPPTCL, no SPS system is in service at Narora S/s.
10	SPS for evacuation of Kawai TPS, Kalisindh TPS generation complex	RVPNL			14-03-2025 (Partial)	conducted	26-04-2025	Study w.r.t. Automatic load shedding part has been done. Proposed Will be put up in 234 OCC
11	SPS for evacuation of Anpara Generation Complex	UPPTCL			08-10-2024 (unit-7) and 19-10-2024 (unit-6)	Schedule awaited		
12	SPS for evacuation of Lalitpur TPS Generation	UPPTCL			21-05-2024	conducted	09-04-2025	Mock test report received
13	SPS for Reliable Evacuation of Bara TPS Generation	UPPTCL			20-11-2024	conducted	23-05-2025	Mock test report received
14	SPS for Lahal Generation	HPPTCL			08-07-2020	SPS Under Review		As reported by HPPTCL, SPS at Lahal not required now.
15	SPS for Transformers at Ballabgarh (PG) substation	POWERGRID				Schedule awaited		Not conducted in 2024-25 also. SPS. SPS may be kept with revised logic (logic based on the loading)
16	SPS for Transformers at Maharanibagh (PG) substation	POWERGRID				conducted	Apr-25	Mock test report received
17	SPS for Transformers at Mandola (PG) substation	POWERGRID				conducted	Apr-25	Mock test report received
18	SPS for Transformers at Bamnauli (DTL) Substation	DTL				Schedule awaited		Not conducted in 2024-25 also. SPS. SPS of 400/220kV Bamnauli was taken out after charging of 4th ICT, will be rewired and taken into service at the earliest.
19	SPS for Transformers at Moradabad (UPPTCL) Substation	Uttar Pradesh			20-04-2024	conducted	02-04-2025	Mock test report pending
20	SPS for Transformers at Muradnagar (UPPTCL) Substation	UPPTCL			27-03-2025	Mar-26		
21	SPS for Transformers at Muzaffarnagar (UPPTCL) Substation	UPPTCL			27-03-2025	Mar-26		
22	SPS for Transformers at Greater Noida (UPPTCL) Substation	UPPTCL				SPS Unhealthy		SPS Unhealthy; SPS may be kept with revised logic (logic based on the loading)
23	SPS for Transformers at Agra (UPPTCL) Substation	UPPTCL			21-03-2025	Schedule awaited		
24	SPS for Transformers at 400kV Sarojininagar (UPPTCL) Substation	UPPTCL			15-05-2024	conducted	23-07-2025	Mock test report received
25	SPS for Transformers at 220kV Sarojininagar (UPPTCL) Substation	UPPTCL			06-06-2024	conducted	23-07-2025	Mock test report received
26	SPS for Transformers at 400kV Unnao (UPPTCL) Substation	UPPTCL			19-05-2023	SPS made healthy on 27.05.2025	27.05.2025	Mock test report received
27	SPS for Transformers at 400kV Sultanpur (UPPTCL) Substation	UPPTCL				SPS made healthy on 05.05.2025		Mock test report pending

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

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; aeoprotection@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

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

adani

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with
Goodness

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f t i y /AdaniOnline

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/ETC/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
(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
उपप्रोपावर 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 05/08/24

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 Substation, 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.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	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

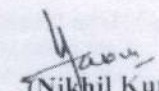
(A). In Maximum Load Condition :-

(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

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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 <controlroomslcdc@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;

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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" <controlroomslcdc@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" <xenmpccshr@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			

ULDC network for SPS Mundra-Mohindergarh 500kV HVDC

Sumeet Sharma <Sumeet.Sharma@adani.com>

Thu 4/10/2025 5:42 PM

To: nkmeena@powergrid.in <nkmeena@powergrid.in>;

Cc: Deepak Kumar <deepak.kr@grid-india.in>; seo-nrpc <seo-nrpc@nic.in>; Mahavir Prasad Singh (महावीर प्रसाद सिंह) <mahavir@grid-india.in>; Somara Lakra (सोमारा लाकरा) <somara.lakra@grid-india.in>; Afak Pothiwala <afak.pothiwala@adani.com>; Nihar Raj <nihar.raj@adani.com>; Milan Popat <Milan.Popat@adani.com>; Abhishek Kumar Singh <Abhishekk.Singh@adani.com>; Abhishek Kukreja <Abhishek.Kukreja@adani.com>; Sunil Kumar Raval <Sunil.Raval@adani.com>; Naman Vyas <Namany.Vyas@adani.com>; Namandeep Matta <Namandeep.Matta@adani.com>;

 1 attachments (323 KB)

20250408 ULDC discussion..pdf;

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Dear Meena ji,

Kindly accept my sincere thanks for the courtesy extended during our meeting on 08-Apr-25 with regards to the subject requirements.

I also express my thanks on the confirmation from your end with regards to availability of the 'EI' links between Mohindergarh and respective locations where the SPS commands are being extended. Kindly find attached the list discussed and agreed, for our reference.

Looking forward to your continued support and cooperation during the execution of this activity.

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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SPS Protection scheme for Mohindergarh-Mundra HVDC Transmisison System

Sr. No.	Load Station	Equipment Make	Tripping command Station	Equipment Make	Remarks	Comments
1	Mohindergarh	Tejas	Bhiwani BBMB	Tejas		
2	Mohindergarh	Tejas	Hissar PG	Tejas		
3	Mohindergarh	Tejas	Bahadurgarh- PG	Tejas		
4	Mohindergarh	Tejas	HVPNL Charki Dadri	Fibrehome	HVPNL Network	Inter-Patching at nearest Tejas Site
5	Mohindergarh	Tejas	Gobindgarh PSTCL	Fibrehome	PSTCL Network	Inter-Patching at nearest Tejas Site
6	Mohindergarh	Tejas	Lalokalan PSTCL	Fibrehome	PSTCL Network	Inter-Patching at nearest Tejas Site
7	Mohindergarh	Tejas	Malerkotla PSTCL	Fibrehome	PSTCL Network	Inter-Patching at nearest Tejas Site
8	Mohindergarh	Tejas	Alwar	Tejas		
9	Mohindergarh	Tejas	Ratangarh	Fibrehome	New Tejas equipment is being installed within 3 months	
10	Mohindergarh	Tejas	Bhilwada	Tejas		
11	Mohindergarh	Tejas	Merta City	Fibrehome	New Tejas equipment is being installed within 3 months	
12	Mohindergarh	Tejas	Samli - UPPTCL	Fibrehome	UPPTCL Network	Inter-Patching at nearest Tejas Site
13	Mohindergarh	Tejas	Bamnauli	Tejas		
14	Mohindergarh	Tejas	Mondola PG	Tejas		

Ref No. : ATIL_NRPC_SPS-NR_20250410_1

10-Apr-25

To,
The Deputy General Manager (Grid-Operations)
Northern Region Load Dispatch Center
18-A, Shaheed Jeet Singh Marg
Katwaria Sarai
New Delhi, 110016

Ref: Your letter # NRLDC/TS-15, dated 02-Apr-25

Subject: Corrective action for healthiness of +/- 500kV HVDC Mundra-Mohindergarh SPS

Sir,

We acknowledge the receipt of your letter mentioned in the reference above with regards to ensuring the healthiness of the SPS scheme implemented in 2012 during commissioning of the subject HVDC link.

It is to be noted that the systems and components installed at the commissioning time have lived their life and are now declared obsolete by the partner who has commissioned this system. Also the ULDC network which had been used to provide the E1 communication for the DTPCs to execute the commands and provide the required relief, has also undergone changes impacting the communication between the DTPCs. We are in discussion with ULDC for allocation of necessary links between the locations.

In order to make the scheme operational again in full, we had ordered a survey of the scheme by the original systems provider who have reverted with their observations and recommendations for upgrading the systems by the latest one. This upgrade requires activities from basics i.e. Designing, Manufacturing, Testing, transporting, installation, configuration and final field testing. We have initiated the internal approval for placing necessary orders to the partner for execution under RTM. We expect that complete execution of this activity in totality shall take 4-5 months in collaboration with all the stake holders from respective utilities and ULDC team.

We assure you of our best efforts towards comprehensive and timely completion of this scheme at the earliest and seek your guidance and support for necessary coordination between the respective stake holders during this process.

Regards


Sumeet Sharma
Head Automation, Communication and OT-Cyber
Adani Transmission (India) Ltd.

RE: Status of Corrective actions for healthiness of 500kV Mundra-Mahindergarh SPS

Sumeet Sharma <Sumeet.Sharma@adani.com>

Wed 7/30/2025 6:54 PM

To:NRLDC SO 2 <nrlldcso2@grid-india.in>;

Cc:NARESH BHANDARI <ms-nrpc@nic.in>; seo-nrpc <seo-nrpc@nic.in>; Manoj Kumar Agarwal (मनोज कुमार अग्रवाल) <mkagarwal@grid-india.in>; S Usha (एस उषा) <susha@grid-india.in>; Sunil Kumar Raval <Sunil.Raval@adani.com>; Namandeep Matta <Namandeep.Matta@adani.com>; Kali Charan Sahu <Kalicharan.Sahu@adani.com>; RAVINDRA ATALE <Ravindra.Atale@adani.com>; Nihar Raj <nihar.raj@adani.com>; Milan Popat <Milan.Popat@adani.com>; Abhishek Kukreja <Abhishek.Kukreja@adani.com>; Naman Vyas <Namany.Vyas@adani.com>; Abhishek Kumar Singh <Abhishekk.Singh@adani.com>; Nikhil Singh <Nikhil.Singh1@adani.com>; Narendra Kumar Ojha <Narendran.Ojha@adani.com>; Afak Pothiawala <afak.pothiawala@adani.com>; Mahesh M. Mehendale (महेश एम. मेहंदले) <mehendale@grid-india.in>; Somara Lakra (सोमारा लाकरा) <somara.lakra@grid-india.in>; Mahavir Prasad Singh (महावीर प्रसाद सिंह) <mahavir@grid-india.in>; Sugata Bhattacharya (सुगता भट्टाचार्या) <sugata@grid-india.in>; Deepak Kumar <deepak.kr@grid-india.in>; aen.com <xen.prot.alwar@rvpn.co.in>; m.alwar@rvpn.co.in <m.alwar@rvpn.co.in>; aen.mpt&s.rtg@rvpn.co.in <aen.mpt&s.rtg@rvpn.co.in>; aen.comm.ratangarh@rvpn.co.in <aen.comm.ratangarh@rvpn.co.in>; aen.subsldc.bhl@rvpn.co.in <aen.subsldc.bhl@rvpn.co.in>; xen.mpts.bhl@rvpn.co.in <xen.mpts.bhl@rvpn.co.in>; aen.prot.mertacity@RVPN.CO.IN <aen.prot.mertacity@RVPN.CO.IN>; aen.comm.merta@RVPN.CO.IN <aen.comm.merta@RVPN.CO.IN>; nainwal@powergrid.in <nainwal@powergrid.in>; vinaykumargupta@powergrid.in <vinaykumargupta@powergrid.in>; ravindra_kumar@powergrid.in <ravindra_kumar@powergrid.in>; smahajan1999@powergrid.in <smahajan1999@powergrid.in>; rkagrawal83@powergrid.in <rkagrawal83@powergrid.in>; dharmendrameena@powergrid.in <dharmendrameena@powergrid.in>; vineet@powergrid.in <vineet@powergrid.in>; bhakalramjash@powergrid.in <bhakalramjash@powergrid.in>; dhanonda400kv@gmail.com <dhanonda400kv@gmail.com>; sse220kvlulaahir@hvpn.org.in <sse220kvlulaahir@hvpn.org.in>; sse220kvrwr@hvpn.org.in <sse220kvrwr@hvpn.org.in>; sse132kvdadri@hvpn.org.in <sse132kvdadri@hvpn.org.in>; ae-220kvg1-mgg@pstcl.org <ae-220kvg1-mgg@pstcl.org>; sse-pm-lalton@pstcl.org <sse-pm-lalton@pstcl.org>; sse-pm-mlrk@pstcl.org <sse-pm-mlrk@pstcl.org>; eeetdshamli@upptcl.org <eeetdshamli@upptcl.org>; ee400mrd2@upptcl.org <ee400mrd2@upptcl.org>; aeProtection@upslcd.org <aeProtection@upslcd.org>; ase-sldcop@pstcl.org <ase-sldcop@pstcl.org>; bl.gujar@dtl.gov.in <bl.gujar@dtl.gov.in>; ce.ld@rvpn.co.in <ce.ld@rvpn.co.in>; ce-sldc <ce-sldc@pstcl.org>; dtldata@yahoo.co.in <dtldata@yahoo.co.in>; dtlscheduling@gmail.com <dtlscheduling@gmail.com>; eesldccontrol@upslcd.org <eesldccontrol@upslcd.org>; ldrvpn1@rvpn.co.in <ldrvpn1@rvpn.co.in>; ldshutdown@gmail.com <ldshutdown@gmail.com>; ldshutdown@rvpn.co.in <ldshutdown@rvpn.co.in>; paritosh.joshi@dtl.gov.in <paritosh.joshi@dtl.gov.in>; pccont@bbmb.nic.in <pccont@bbmb.nic.in>; pc-sldcop@pstcl.org <pc-sldcop@pstcl.org>; rajbir-walia79@yahoo.com <rajbir-walia79@yahoo.com>; rtamc.nr1@powergrid.in <rtamc.nr1@powergrid.in>; pankaj.jha@powergrid.in <pankaj.jha@powergrid.in>; neerajk@powergrid.in <neerajk@powergrid.in>; se.mpts.udr@rvpn.co.in <se.mpts.udr@rvpn.co.in>; se.prot.engg@rvpn.co.in <se.prot.engg@rvpn.co.in>; se.sold@rvpn.co.in <se.sold@rvpn.co.in>; sera@upslcd.org <sera@upslcd.org>; sesc@upslcd.org <sesc@upslcd.org>; sesldcop@hvpn.org <sesldcop@hvpn.org>; se-sldcop <se-sldcop@pstcl.org>; setncmrt@upptcl.org <setncmrt@upptcl.org>; sldcdata@gmail.com <sldcdata@gmail.com>; sldcharyanacr@gmail.com <sldcharyanacr@gmail.com>; sldcmintoroad@gmail.com <sldcmintoroad@gmail.com>; system.uppcl@gmail.com <system.uppcl@gmail.com>; xenemtcbhpp2@bbmb.nic.in <xenemtcbhpp2@bbmb.nic.in>; xenmpccggn@hvpn.org <xenmpccggn@hvpn.org>; xenplgss@hvpn.org <xenplgss@hvpn.org>; nrlldc_hods_tech <nrlldc_hods_tech@grid-india.in>; Rahul Shukla (राहुल शुक्ला) <rahulshukla@grid-india.in>;

****Warning****

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Dear Sir,

I hope this message finds you well. I'm writing to provide you with an update on the actions for the healthiness of the 500kV Mundra-Mahindergarh SPS.

We are pleased to inform you that the order has been placed with our partner for the procurement and development of the scheme on new devices. Here is the timeline for the upcoming broader steps which has evolved based on discussions held with them-

a) The system is expected to be ready by the partner and complete the Factory Acceptance Test (FAT) by 15th September 2025.

- b) Following the FAT, the material will be shipped to various sites and installed by 30th October 2025. We seek your support for necessary directions to concerned constituents to ensure the material is kept in a safe and secure area till commissioning at original location.
- c) Implementation of the communication channel with the assistance of ULDC is also scheduled for completion parallelly by 30th October 2025.
- d) Testing of the installation and wiring will be carried out by 15th November 2025. The same shall require support from respective site representatives.
- e) Testing of the communication link between Mahindergarh and other locations is planned for completion by 30th November 2025.
- f) Finally, the testing of the SPS scheme is expected to be completed by 31st December 2025.

We understand the importance of this project and will do our utmost to expedite the process to the maximum extent possible and shall seek your guidance and support for necessary alignment of efforts required with respective stake holders and facilitators.

Thank you for your attention and understanding.

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

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

Sent: Thursday, July 24, 2025 11:16 AM

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

Cc: NARESH BHANDARI <ms-nrpc@nic.in>; seo-nrpc <seo-nrpc@nic.in>; Manoj Kumar Agarwal (मनोज कुमार अग्रवाल) <mkagarwal@grid-india.in>; susha <susha@grid-india.in>; Sunil Kumar Raval <Sunil.Raval@adani.com>; Namandeep Matta <Namandeep.Matta@adani.com>; Kali Charan Sahu <Kalicharan.Sahu@adani.com>; RAVINDRA ATALE <Ravindra.Atale@adani.com>; Nihar Raj <nihar.raj@adani.com>; Milan Popat <Milan.Popat@adani.com>; Abhishek Kukreja <Abhishek.Kukreja@adani.com>; Naman Vyas <Namany.Vyas@adani.com>; Abhishek Kumar Singh <Abhishekk.Singh@adani.com>; Nikhil Singh <Nikhil.Singh1@adani.com>; Narendra Kumar Ojha <Narendran.Ojha@adani.com>; Afak Pothiwala <afak.pothiwala@adani.com>; Mahesh M. Mehendale (महेश एम. मेहंदले) <mehendale@grid-india.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>; aen.com <xen.prot.alwar@rvpn.co.in>; 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; aeoprotection@upslcd.org; ase-sldcop@pstcl.org; bl.gujar@dtl.gov.in; ce.ld@rvpn.co.in; ce-sldc <ce-sldc@pstcl.org>; dtldata@yahoo.co.in; dtlscheduling@gmail.com; eesldccontrol@upslcd.org; ldrvpnl@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 <se-sldcop@pstcl.org>; 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; nrlcd_hods_tech <nrlcd_hods_tech@grid-india.in>; Rahul Shukla (राहुल शुक्ला) <rahulshukla@grid-india.in>

Subject: Status of Corrective actions for healthiness of 500kV Mundra-Mahindergarh SPS

***CAUTION:** This mail has originated from outside Adani. Please exercise caution with links and attachments.*

Sir,

The agenda regarding corrective actions for healthiness of 500kV Mundra-Mahindergarh SPS was discussed in 61st PSC meeting held on 26.06.2025. During the meeting, ADANI representative informed that work order will be released by 1st week of July 2025 to the vendor / OEM and expected timeline for completion of work is by the end of October 2025.

In view of above, it is requested to confirm whether work order to OEM has been placed or not. Further, as discussed in PSC meeting, it is also requested to share the status of actions taken and planned to be taken along with the timeline to NRPC & NRLDC weekly or fortnight basis.

सादर धन्यवाद/ Thanks & Regards

दीपक कुमार / Deepak Kumar

प्रणाली संचालन-II/ System Operation-II

उ०क्षे०भा०प्रे०के०/ NRLDC

ग्रिड कंट्रोलर ऑफ इंडिया लिमिटेड/ Grid Controller of India Limited

Formerly known as

पोसोको / POSOCO



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

Sent: Tuesday, June 24, 2025 3:39 PM

To: NRLDC SO 2

Cc: NARESH BHANDARI; seo-nrpc; Manoj Kumar Agarwal (मनोज कुमार अग्रवाल); S Usha (एस उषा); Sunil Kumar Raval; Namandeep Matta; Kali Charan Sahu; RAVINDRA ATALE; Nihar Raj; Milan Popat; Abhishek Kukreja; Naman Vyas; Abhishek Kumar Singh; Nikhil Singh; Narendra Kumar Ojha; Afak Pothiawala; Mahesh M. Mehendale (महेश एम. मेहंदले); Somara Lakra (सोमारा लाकरा); Mahavir Prasad Singh (महावीर प्रसाद सिंह); Sudipto Sarkar (सुदिप्तो सरकार); Sugata Bhattacharya (सुगाता भट्टाचार्या); Deepak Kumar; 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; ghanonda400kv@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; aeprotection@upslldc.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@upslldc.org; ldrvpn1@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@upslldc.org; sesc@upslldc.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; nrlcdc_hods_tech

Subject: RE: NRLDC Letter regarding Corrective action for healthiness of 500kV Mundra-Mahindergarh SPS

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Dear Sir,

With reference to the trailing email we would like to inform you that the negotiations and the scope discussions have been completed with the partner and the necessary formalities for processing the order is in progress. We expect the order to be released by 30th-Jun-25. Further in parallel we have also put-up the issue in the 232nd OCC meeting for approval of the scheme on add-cap basis.

We regret the time taken in this process, however will expedite the further process to meet the expectation of putting the scheme back in service.

Regards,

Sumeet Sharma

Head- Automation, Communications & OT-Cyber Technology

Adani Energy Solutions Limited.(Grid Division)

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

From: NRLDC SO 2 <nrlcdcso2@grid-india.in>

Sent: Wednesday, June 18, 2025 11:43 AM

To: Sumeet Sharma <Sumeet.Sharma@adani.com>; Sunil Kumar Raval <Sunil.Raval@adani.com>; Namandeep Matta <Namandeep.Matta@adani.com>; Kali Charan Sahu <Kalicharan.Sahu@adani.com>; RAVINDRA ATALE <Ravindra.Atale@adani.com>; Nihar Raj <nihar.raj@adani.com>; Milan Popat <Milan.Popat@adani.com>; Abhishek Kukreja <Abhishek.Kukreja@adani.com>; Naman Vyas <Namany.Vyas@adani.com>; Abhishek Kumar Singh <Abhishekk.Singh@adani.com>; Nikhil Singh <Nikhil.Singh1@adani.com>; Narendra Kumar Ojha <Narendran.Ojha@adani.com>; Afak Pothiawala <afak.pothiawala@adani.com>

Cc: NARESH BHANDARI <ms-nrpc@nic.in>; seo-nrpc <seo-nrpc@nic.in>; Manoj Kumar Agarwal (मनोज कुमार अग्रवाल) <mkagarwal@grid-india.in>; susha <susha@grid-india.in>; Mahesh M. Mehendale (महेश एम. मेहंदले) <mehendale@grid-india.in>; somara.lakra <somara.lakra@grid-india.in>; Mahavir Prasad Singh (महावीर प्रसाद सिंह) <mahavir@grid-india.in>; Sudipto Sarkar (सुदिप्तो सरकार) <ssarkar@grid-india.in>; Sugata Bhattacharya (सुगाता भट्टाचार्या) <sugata@grid-india.in>; deepak.kr <deepak.kr@grid-india.in>; aen.com <xen.prot.alwar@rvpn.co.in>; 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; ghanonda400kv@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; aeprotection@upslcdc.org; ase-sldcop@pstcl.org; bl.gujar@dtl.gov.in; ce.ld@rvpn.co.in; ce-sldc@pstcl.org; dtldata@yahoo.co.in; dtlscheduling@gmail.com; eesldccontrol@upslcdc.org; ldrvpnl@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@pstcl.org; 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; nrlcd_hods_tech@grid-india.in

Subject: Re: NRLDC Letter regarding Corrective action for healthiness of 500kV Mundra-Mahindergarh SPS

***CAUTION:** This mail has originated from outside Adani. Please exercise caution with links and attachments.*

Sir,

In reference of the NRLDC communication dated 02.04.2025 it is requested to provide the present status regarding corrective actions for healthiness of 500kV Mundra-Mahindergarh SPS.

The agenda in this regard is under discussion since 51st PSC meeting held in July 2024. During last PSC meeting (60th PSC meeting held on 26.05.2025), ADANI representative informed that internal approval has been taken for placing the order for corrective actions and order will be released to vendor by end of May 2025. It was also informed that actions have been expedited and SPS of HVDC Mundra-Mahindergarh will be restored by the end of August 2025.

In view of above, it is requested to share the present status of corrective action. As discussed during 60th PSC meeting, weekly update on the corrective actions and action planned may be shared to NRLDC / NRPC so that necessary coordination with state counterpart may also be done for smooth coordination and actions.

सादर धन्यवाद/ Thanks & Regards

दीपक कुमार / Deepak Kumar

प्रणाली संचालन-II/ System Operation-II

उ०क्षे०भा०प्रे०के०/ NRLDC

ग्रिड कंट्रोलर ऑफ इंडिया लिमिटेड/ Grid Controller of India Limited
Formerly known as

पोसोको / POSOCO





From: NRLDC SO 2

Sent: Wednesday, April 2, 2025 3:11:51 PM

To: Sumeet.Sharma@adani.com; Sunil Kumar Raval; Namandeep Matta; Kali Charan Sahu; RAVINDRA ATALE; Nihar Raj; Milan Popat; Abhishek Kukreja; Naman Vyas; Abhishek Kumar Singh; Nikhil Singh; Narendra Kumar Ojha; afak.pothiawala@adani.com

Cc: NARESH BHANDARI; seo-nrpc; Manoj Kumar Agarwal (मनोज कुमार अग्रवाल); S Usha (एस उषा); Mahesh M. Mehendale (महेश एम. मेहंदले); Somara Lakra (सोमारा लाकरा); Mahavir Prasad Singh (महावीर प्रसाद सिंह); Sudipto Sarkar (सुदिप्तो सरकार); Sugata Bhattacharya (सुगाता भट्टाचार्या); Deepak Kumar; 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; ghanonda400kv@gmail.com; sse220kvlulaahir@hvpn.org.in; sse220kvrwr@hvpn.org.in; sse132kvdadri@hvpn.org.in; ae-220kv1-mgg@pstcl.org; sse-pm-lalton@pstcl.org; sse-pm-mlrk@pstcl.org; eeetdshamli@upptcl.org; ee400mrd2@upptcl.org; aeprotection@upsldc.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@upsldc.org; ldrvpn1@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@upsldc.org; sesc@upsldc.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; nrlldc_hods_tech

Subject: NRLDC Letter regarding Corrective action for healthiness of 500kV Mundra-Mahindergarh SPS

Sir,

Please find the attached NRLDC Letter dt 02-04-2025 regarding Corrective action for healthiness of 500kV Mundra-Mahindergarh SPS.

सादर धन्यवाद/ Thanks & Regards

प्रणाली संचालन-II/ System Operation-II

उ०क्ष०भा०प्रे०के०/ NRLDC

ग्रिड कंट्रोलर ऑफ इंडिया लिमिटेड/ Grid Controller of India Limited
Formerly known as

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RE: Status of Corrective actions for healthiness of 500kV Mundra-Mahindergarh SPS

Mon 9/15/2025 8:16 PM

Inbox

To: NRLDC SO 2 <nrlcdcso2@grid-india.in>;

Cc: NARESH BHANDARI <ms-nrpc@nic.in>; seo-nrpc <seo-nrpc@nic.in>; Manoj Kumar Agarwal (मनोज कुमार अग्रवाल) <mkagarwal@grid-india.in>; S Usha (एस उषा) <susha@grid-india.in>; Sunil Kumar Raval <Sunil.Raval@adani.com>; Namandeep Matta <Namandeep.Matta@adani.com>; Kali Charan Sahu <Kalicharan.Sahu@adani.com>; RAVINDRA ATALE <Ravindra.Atale@adani.com>; Nihar Raj <nihar.raj@adani.com>; Milan Popat <Milan.Popat@adani.com>; Abhishek Kukreja <Abhishek.Kukreja@adani.com>; Naman Vyas <Namany.Vyas@adani.com>; Abhishek Kumar Singh <Abhishekk.Singh@adani.com>; Nikhil Singh <Nikhil.Singh1@adani.com>; Narendra Kumar Ojha <Narendran.Ojha@adani.com>; Afak Pothiawala <afak.pothiawala@adani.com>; Mahesh M. Mehendale (महेश एम. मेहंदले) <mehendale@grid-india.in>; Somara Lakra (सोमारा लाकरा) <somara.lakra@grid-india.in>; Mahavir Prasad Singh (महावीर प्रसाद सिंह) <mahavir@grid-india.in>; Sugata Bhattacharya (सुगता भट्टाचार्या) <sugata@grid-india.in>; Deepak Kumar <deepak.kr@grid-india.in>; aen.com <xen.prot.alwar@rvpn.co.in>; m.alwar@rvpn.co.in <m.alwar@rvpn.co.in>; aen.mpt&s.rtg@rvpn.co.in <aen.mpt&s.rtg@rvpn.co.in>; aen.comm.ratargarh@rvpn.co.in <aen.comm.ratargarh@rvpn.co.in>; aen.subsldc.bhl@rvpn.co.in <aen.subsldc.bhl@rvpn.co.in>; xen.mpts.bhl@rvpn.co.in <xen.mpts.bhl@rvpn.co.in>; aen.prot.mertacity@RVPN.CO.IN <aen.prot.mertacity@RVPN.CO.IN>; aen.comm.merta@RVPN.CO.IN <aen.comm.merta@RVPN.CO.IN>; nainwal@powergrid.in <nainwal@powergrid.in>; vinaykumargupta@powergrid.in <vinaykumargupta@powergrid.in>; ravindra_kumar@powergrid.in <ravindra_kumar@powergrid.in>; smahajan1999@powergrid.in <smahajan1999@powergrid.in>; rkagrawal83@powergrid.in <rkagrawal83@powergrid.in>; dharmendrameena@powergrid.in <dharmendrameena@powergrid.in>; vineet@powergrid.in <vineet@powergrid.in>; bhakalramjash@powergrid.in <bhakalramjash@powergrid.in>; dhanonda400kv@gmail.com <dhanonda400kv@gmail.com>; sse220kvlulaahir@hvpn.org.in <sse220kvlulaahir@hvpn.org.in>; sse220kvrwr@hvpn.org.in <sse220kvrwr@hvpn.org.in>; sse132kvdadri@hvpn.org.in <sse132kvdadri@hvpn.org.in>; ae-220kvg1-mgg@pstcl.org <ae-220kvg1-mgg@pstcl.org>; sse-pm-lalton@pstcl.org <sse-pm-lalton@pstcl.org>; sse-pm-mlrk@pstcl.org <sse-pm-mlrk@pstcl.org>; eeetdshamli@upptcl.org <eeetdshamli@upptcl.org>; ee400mrd2@upptcl.org <ee400mrd2@upptcl.org>; aeProtection@upslcd.org <aeProtection@upslcd.org>; ase-sldcop@pstcl.org <ase-sldcop@pstcl.org>; bl.gujar@dtl.gov.in <bl.gujar@dtl.gov.in>; ce.ld@rvpn.co.in <ce.ld@rvpn.co.in>; ce-sldc <ce-sldc@pstcl.org>; dtldata@yahoo.co.in <dtldata@yahoo.co.in>; dtlscheduling@gmail.com <dtlscheduling@gmail.com>; eesldccontrol@upslcd.org <eesldccontrol@upslcd.org>; ldrvpn1@rvpn.co.in <ldrvpn1@rvpn.co.in>; ldshutdown@gmail.com <ldshutdown@gmail.com>; ldshutdown@rvpn.co.in <ldshutdown@rvpn.co.in>; paritosh.joshi@dtl.gov.in <paritosh.joshi@dtl.gov.in>; pccont@bbmb.nic.in <pccont@bbmb.nic.in>; pc-sldcop@pstcl.org <pc-sldcop@pstcl.org>; rajbir-walia79@yahoo.com <rajbir-walia79@yahoo.com>; rtamc.nr1@powergrid.in <rtamc.nr1@powergrid.in>; pankaj.jha@powergrid.in <pankaj.jha@powergrid.in>; neerajk@powergrid.in <neerajk@powergrid.in>; se.mpts.udr@rvpn.co.in <se.mpts.udr@rvpn.co.in>; se.prot.engg@rvpn.co.in <se.prot.engg@rvpn.co.in>; se.sold@rvpn.co.in <se.sold@rvpn.co.in>; sera@upslcd.org <sera@upslcd.org>; sesc@upslcd.org <sesc@upslcd.org>; sesldcop@hvpn.org <sesldcop@hvpn.org>; se-sldcop <se-sldcop@pstcl.org>; setncmrt@upptcl.org <setncmrt@upptcl.org>; sldcdata@gmail.com <sldcdata@gmail.com>; sldcharyanacr@gmail.com <sldcharyanacr@gmail.com>; sldcmintoroad@gmail.com <sldcmintoroad@gmail.com>; system.uppcl@gmail.com <system.uppcl@gmail.com>; xenemtcbhpp2@bbmb.nic.in <xenemtcbhpp2@bbmb.nic.in>; xenmpccggn@hvpn.org <xenmpccggn@hvpn.org>; xenplgss@hvpn.org <xenplgss@hvpn.org>; nrlcdc_hods_tech <nrlcdc_hods_tech@grid-india.in>; Rahul Shukla (राहुल शुक्ला) <rahulshukla@grid-india.in>;

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Dear Sir,

Please find the present status as on 15-Sep-25 as below-

- a. Hardware expected to be received by the partner by this week.(20-Sep-25)
- b. FAT expected to be carried out within this month.(31-Sep-25)

The Dispatch and site activities shall be planned based on FAT punch point closures.

Regards

Sumeet Sharma

From: NRLDC SO 2 <nrlcdcso2@grid-india.in>**Sent:** Wednesday, September 10, 2025 5:00 PM**To:** Sumeet Sharma <Sumeet.Sharma@adani.com>

Cc: NARESH BHANDARI <ms-nrpc@nic.in>; seo-nrpc <seo-nrpc@nic.in>; Manoj Kumar Agarwal (मनोज कुमार अग्रवाल) <mkagarwal@grid-india.in>; susha <susha@grid-india.in>; Sunil Kumar Raval <Sunil.Raval@adani.com>; Namandeep Matta <Namandeep.Matta@adani.com>; Kali Charan Sahu <Kalicharan.Sahu@adani.com>; RAVINDRA ATALE <Ravindra.Atale@adani.com>; Nihar Raj <nihar.raj@adani.com>; Milan Popat <Milan.Popat@adani.com>; Abhishek Kukreja <Abhishek.Kukreja@adani.com>; Naman Vyas <Namany.Vyas@adani.com>; Abhishek Kumar Singh <Abhishekk.Singh@adani.com>; Nikhil Singh <Nikhil.Singh1@adani.com>; Narendra Kumar Ojha <Narendran.Ojha@adani.com>; Afak Pothiwala <afak.pothiwala@adani.com>; Mahesh M. Mehendale (महेश एम. मेहंदले) <mehendale@grid-india.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>; aen.com <xen.prot.alwar@rvpn.co.in>; 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; aeProtection@upsldc.org; ase-sldcop@pstcl.org; bl.gujar@dtl.gov.in; ce.ld@rvpn.co.in; ce-sldc <ce-sldc@pstcl.org>; dtldata@yahoo.co.in; dtlscheduling@gmail.com; eesldccontrol@upsldc.org; ldrvpnl@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@upsldc.org; sesc@upsldc.org; sesldcop@hvpn.org; se-sldcop <se-sldcop@pstcl.org>; 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; nrlcdc_hods_tech <nrlcdc_hods_tech@grid-india.in>; Rahul Shukla (राहुल शुक्ला) <rahulshukla@grid-india.in>

Subject: Re: Status of Corrective actions for healthiness of 500kV Mundra-Mahindergarh SPS

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Sir,

During discussion on agenda "Corrective action for healthiness of 500kV Mundra-Mahindergarh SPS" in 62nd PSC meeting, PSC forum requested ADANI to share the weekly update on status of remedial actions.

Kindly share the update in this regard.

सादर धन्यवाद/ Thanks & Regards

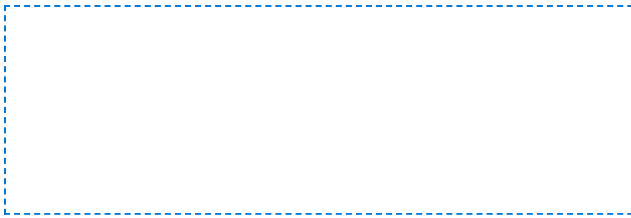
प्रणाली संचालन-II/ System Operation-II

उ०क्षे०भा०प्रे०के०/ NRLDC

ग्रिड कंट्रोलर ऑफ इंडिया लिमिटेड/ Grid Controller of India Limited

Formerly known as

पोसोको / POSOCO



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

Sent: Wednesday, July 30, 2025 6:54 PM

To: NRLDC SO 2

Cc: NARESH BHANDARI; seo-nrpc; Manoj Kumar Agarwal (मनोज कुमार अग्रवाल); S Usha (एस उषा); Sunil Kumar Raval; Namandeep Matta; Kali Charan Sahu; RAVINDRA ATALE; Nihar Raj; Milan Popat; Abhishek Kukreja; Naman Vyas; Abhishek Kumar Singh; Nikhil Singh; Narendra Kumar Ojha; Afak Pothiawala; Mahesh M. Mehendale (महेश एम. मेहंदले); Somara Lakra (सोमारा लाकरा); Mahavir Prasad Singh (महावीर प्रसाद सिंह); Sugata Bhattacharya (सुगाता भट्टाचार्या); Deepak Kumar; 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; ghanonda400kv@gmail.com; sse220kvlulaahir@hvpn.org.in; sse220kvrwr@hvpn.org.in; sse132kvdadri@hvpn.org.in; ae-220kv1-mgg@pstcl.org; sse-pm-lalton@pstcl.org; sse-pm-mlrk@pstcl.org; eeetdshamli@upptcl.org; ee400mrd2@upptcl.org; aeprotection@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; ldrvpn@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; nrlcdc_hods_tech; Rahul Shukla (राहुल शुक्ला)

Subject: RE: Status of Corrective actions for healthiness of 500kV Mundra-Mahindergarh SPS

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Dear Sir,

I hope this message finds you well. I'm writing to provide you with an update on the actions for the healthiness of the 500kV Mundra-Mahindergarh SPS.

We are pleased to inform you that the order has been placed with our partner for the procurement and development of the scheme on new devices. Here is the timeline for the upcoming broader steps which has evolved based on discussions held with them-

- a) The system is expected to be ready by the partner and complete the Factory Acceptance Test (FAT) by 15th September 2025.
- b) Following the FAT, the material will be shipped to various sites and installed by 30th October 2025. We seek your support for necessary directions to concerned constituents to ensure the material is kept in a safe and secure area till commissioning at original location.
- c) Implementation of the communication channel with the assistance of ULDC is also scheduled for completion parallelly by 30th October 2025.
- d) Testing of the installation and wiring will be carried out by 15th November 2025. The same shall require support from respective site representatives.
- e) Testing of the communication link between Mahindergarh and other locations is planned for completion by 30th November 2025.
- f) Finally, the testing of the SPS scheme is expected to be completed by 31st December 2025.

We understand the importance of this project and will do our utmost to expedite the process to the maximum extent possible and shall seek your guidance and support for necessary alignment of efforts required with respective stake holders and facilitators.

Thank you for your attention and understanding.

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

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

Sent: Thursday, July 24, 2025 11:16 AM

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

Cc: NARESH BHANDARI <ms-nrpc@nic.in>; seo-nrpc <seo-nrpc@nic.in>; Manoj Kumar Agarwal (मनोज कुमार अग्रवाल) <mkagarwal@grid-india.in>; susha <susha@grid-india.in>; Sunil Kumar Raval <Sunil.Raval@adani.com>; Namandeep Matta <Namandeep.Matta@adani.com>; Kali Charan Sahu <Kalicharan.Sahu@adani.com>; RAVINDRA ATALE <Ravindra.Atale@adani.com>; Nihar Raj <nihar.raj@adani.com>; Milan Popat <Milan.Popat@adani.com>; Abhishek Kukreja <Abhishek.Kukreja@adani.com>; Naman Vyas <Namany.Vyas@adani.com>; Abhishek Kumar Singh <Abhishekk.Singh@adani.com>; Nikhil Singh <Nikhil.Singh1@adani.com>; Narendra Kumar Ojha <Narendran.Ojha@adani.com>; Afak Pothiwala <afak.pothiwala@adani.com>; Mahesh M. Mehendale (महेश एम. मेहंदले) <mehendale@grid-india.in>; somara.lakra <somara.lakra@grid-india.in>; Mahavir Prasad Singh (महावीर प्रसाद सिंह) <mahavir@grid-india.in>; Sugata Bhattacharya (सुगाता भट्टाचार्या) <sugata@grid-india.in>; deepak.kr <deepak.kr@grid-india.in>; aen.com <xen.prot.alwar@rvpn.co.in>; m.alwar@rvpn.co.in; aen.mpt&s.rtg@rvpn.co.in; aen.comm.ratangarh@rvpn.co.in; aen.subslcd.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;
ghanonda400kv@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; aeprotection@upslcd.org; ase-sldcop@pstcl.org; bl.gujar@dtl.gov.in; ce.ld@rvpn.co.in; ce-sldc<ce-sldc@pstcl.org>; dtldata@yahoo.co.in; dtlscheduling@gmail.com; eesldccontrol@upslcd.org; ldrvpnl@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<se-sldcop@pstcl.org>; 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; nrlc_hods_tech<nrlc_hods_tech@grid-india.in>; Rahul Shukla (राहुल शुक्ला) <rahulshukla@grid-india.in>

Subject: Status of Corrective actions for healthiness of 500kV Mundra-Mahindergarh SPS

***CAUTION:** This mail has originated from outside Adani. Please exercise caution with links and attachments.*

Sir,

The agenda regarding corrective actions for healthiness of 500kV Mundra-Mahindergarh SPS was discussed in 61st PSC meeting held on 26.06.2025. During the meeting, ADANI representative informed that work order will be released by 1st week of July 2025 to the vendor / OEM and expected timeline for completion of work is by the end of October 2025.

In view of above, it is requested to confirm whether work order to OEM has been placed or not. Further, as discussed in PSC meeting, it is also requested to share the status of actions taken and planned to be taken along with the timeline to NRLDC & NRDC weekly or fortnight basis.

सादर धन्यवाद/ Thanks & Regards

दीपक कुमार / Deepak Kumar

प्रणाली संचालन-II/ System Operation-II

उ०क्षे०भा०प्रे०के०/ NRLDC

ग्रिड कंट्रोलर ऑफ इंडिया लिमिटेड/ Grid Controller of India Limited
Formerly known as

पोसोको / POSOCO





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

Sent: Tuesday, June 24, 2025 3:39 PM

To: NRLDC SO 2

Cc: NARESH BHANDARI; seo-nrpc; Manoj Kumar Agarwal (मनोज कुमार अग्रवाल); S Usha (एस उषा); Sunil Kumar Raval; Namandeep Matta; Kali Charan Sahu; RAVINDRA ATALE; Nihar Raj; Milan Popat; Abhishek Kukreja; Naman Vyas; Abhishek Kumar Singh; Nikhil Singh; Narendra Kumar Ojha; Afak Pothiwala; Mahesh M. Mehendale (महेश एम. मेहंदले); Somara Lakra (सोमारा लाकरा); Mahavir Prasad Singh (महावीर प्रसाद सिंह); Sudipto Sarkar (सुदिप्तो सरकार); Sugata Bhattacharya (सुगाता भट्टाचार्या); Deepak Kumar; aen.com; m.alwar@rvpn.co.in; aen.mpt&s.rtg@rvpn.co.in; aen.comm.ratangarh@rvpn.co.in; aen.subslcd.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; ghanonda400kv@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; aeprotection@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; ldrvpn1@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; nrldc_hods_tech

Subject: RE: NRLDC Letter regarding Corrective action for healthiness of 500kV Mundra-Mahindergarh SPS

****Warning****

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Malware/ Viruses can be easily transmitted via email.

Dear Sir,

With reference to the trailing email we would like to inform you that the negotiations and the scope discussions have been completed with the partner and the necessary formalities for processing the order is in progress. We expect the order to be released by 30th-Jun-25. Further in parallel we have also put-up the issue in the 232nd OCC meeting for approval of the scheme on add-cap basis.

We regret the time taken in this process, however will expedite the further process to meet the expectation of putting the scheme back in service.

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

From: NRLDC SO 2 <nrlcdcso2@grid-india.in>

Sent: Wednesday, June 18, 2025 11:43 AM

To: Sumeet Sharma <Sumeet.Sharma@adani.com>; Sunil Kumar Raval <Sunil.Raval@adani.com>; Namandeep Matta <Namandeep.Matta@adani.com>; Kali Charan Sahu <Kalicharan.Sahu@adani.com>; RAVINDRA ATALE <Ravindra.Atale@adani.com>; Nihar Raj <nihar.raj@adani.com>; Milan Popat <Milan.Popat@adani.com>; Abhishek Kukreja <Abhishek.Kukreja@adani.com>; Naman Vyas <Namany.Vyas@adani.com>; Abhishek Kumar Singh <Abhishekk.Singh@adani.com>; Nikhil Singh <Nikhil.Singh1@adani.com>; Narendra Kumar Ojha <Narendran.Ojha@adani.com>; Afak Pothiwala <afak.pothiwala@adani.com>

Cc: NARESH BHANDARI <ms-nrpc@nic.in>; seo-nrpc <seo-nrpc@nic.in>; Manoj Kumar Agarwal (मनोज कुमार अग्रवाल) <mkagarwal@grid-india.in>; susha <susha@grid-india.in>; Mahesh M. Mehendale (महेश एम. मेहंदले) <mehendale@grid-india.in>; somara.lakra <somara.lakra@grid-india.in>; Mahavir Prasad Singh (महावीर प्रसाद सिंह) <mahavir@grid-india.in>; Sudipto Sarkar (सुदिप्तो सरकार) <ssarkar@grid-india.in>; Sugata Bhattacharya (सुगाता भट्टाचार्या) <sugata@grid-india.in>; deepak.kr <deepak.kr@grid-india.in>; aen.com <xen.prot.alwar@rvpn.co.in>; 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; ghanonda400kv@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; aeprotection@upslcd.org; ase-sldcop@pstcl.org; bl.gujar@dtl.gov.in; ce.ld@rvpn.co.in; ce-sldc@pstcl.org; dtldata@yahoo.co.in; dtlscheduling@gmail.com; eesldccontrol@upslcd.org; ldrvpnl@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@pstcl.org; 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; nrlcd_hods_tech <nrlcd_hods_tech@grid-india.in>

Subject: Re: NRLDC Letter regarding Corrective action for healthiness of 500kV Mundra-Mahindergarh SPS

***CAUTION:** This mail has originated from outside Adani. Please exercise caution with links and attachments.*

Sir,

In reference of the NRLDC communication dated 02.04.2025 it is requested to provide the present status regarding corrective actions for healthiness of 500kV Mundra-Mahindergarh SPS.

The agenda in this regard is under discussion since 51st PSC meeting held in July 2024. During last PSC meeting (60th PSC meeting held on 26.05.2025), ADANI representative informed that internal approval has been taken for placing the order for corrective actions and order will be released to vendor by end of May 2025. It was also informed that actions have been expedited and SPS of HVDC Mundra-Mahindergarh will be restored by the end of August 2025.

In view of above, it is requested to share the present status of corrective action. As discussed during 60th PSC meeting, weekly update on the corrective actions and action planned may be shared to NRLDC / NRPC so that necessary coordination with state counterpart may also be done for smooth coordination and actions.

सादर धन्यवाद/ Thanks & Regards

दीपक कुमार / Deepak Kumar

प्रणाली संचालन-II/ System Operation-II

उ०क्षे०भा०प्रे०के०/ NRLDC

ग्रिड कंट्रोलर ऑफ इंडिया लिमिटेड/ Grid Controller of India Limited
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ग्रिड-इंडिया
GRID-INDIA



From: NRLDC SO 2

Sent: Wednesday, April 2, 2025 3:11:51 PM

To: Sumeet.Sharma@adani.com; Sunil Kumar Raval; Namandeep Matta; Kali Charan Sahu; RAVINDRA ATALE; Nihar Raj; Milan Popat; Abhishek Kukreja; Naman Vyas; Abhishek Kumar Singh; Nikhil Singh; Narendra Kumar Ojha; afak.pothiawala@adani.com

Cc: NARESH BHANDARI; seo-nrpc; Manoj Kumar Agarwal (मनोज कुमार अग्रवाल); S Usha (एस उषा); Mahesh M. Mehendale (महेश एम. मेहंदले); Somara Lakra (सोमारा लाकरा); Mahavir Prasad Singh (महावीर प्रसाद सिंह); Sudipto Sarkar (सुदिप्तो सरकार); Sugata Bhattacharya (सुगाता भट्टाचार्या); Deepak Kumar; 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; ghanonda400kv@gmail.com; sse220kvlulaahir@hvpn.org.in; sse220kvrwr@hvpn.org.in; sse132kvdadri@hvpn.org.in;

ae-220kv1-mgg@pstcl.org; sse-pm-lalton@pstcl.org; sse-pm-mlrk@pstcl.org; eeetdshamli@upptcl.org; ee400mrd2@upptcl.org; aeprotection@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; ldrvpn1@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.uppl@gmail.com; xenemtcbhpp2@bbmb.nic.in; xenmpccggn@hvpn.org; xenplgss@hvpn.org; nrlc_hods_tech

Subject: NRLDC Letter regarding Corrective action for healthiness of 500kV Mundra-Mahindergarh SPS

Sir,

Please find the attached NRLDC Letter dt 02-04-2025 regarding Corrective action for healthiness of 500kV Mundra-Mahindergarh SPS.

सादर धन्यवाद/ Thanks & Regards

प्रणाली संचालन-II/ System Operation-II

उ०क्षे०भा०प्रे०के०/ NRLDC

ग्रिड कंट्रोलर ऑफ इंडिया लिमिटेड/ Grid Controller of India Limited
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S. No	Name of the Line	Circuit ID	Proposed Over Voltage protection setting by Committee								Status of Implementation (Yes / NO)	Modified Over Voltage protection setting(if any)								Remarks for modification required / done										
			End I				End II					End I				End II														
			stage I pick up(%)	time (s)	stage II pick up(%)	time (s)	stage I pick up(%)	time (s)	stage II pick up(%)	time (s)		stage I pick up(%)	time (s)	stage II pick up(%)	time (s)															
1. 765kV Transmission Line																														
A. POWERGRID																			Confirmation received from POWERGRID(NR-1) only											
1	Agra-Aligarh	1	108	5	150	0.1	108	5	150	0.1																				
2	Agra-Fatehpur	1	107	5	150	0.1	107	5	150	0.1																				
3	Agra-Fatehpur	2	108	9	150	0.1	108	9	150	0.1																				
4	Agra-Gwalior IR	1	108	5	150	0.1	108	5	150	0.1																				
5	Agra-Gwalior IR	2	109	9	150	0.1	109	9	150	0.1																				
6	Agra-Jhatikara	1	106	5	140	0.1	106	5	140	0.1	108	6	140	0.1	106	5	140	0.1	On request of POWERGRID(NR-3) after tripping of line on OV two(02) number of times.											
7	Ajmer(PG)-Bhadla_2(PG)	1	109	8	140	0.1	109	8	140	0.1																				
8	Ajmer(PG)-Bhadla_2(PG)	2	110	15	140	0.1	110	15	140	0.1																				
9	Ajmer(PG)-Chittorgarh(PG)	1	110	9	140	0.1	110	9	140	0.1																				
10	Ajmer(PG)-Chittorgarh(PG)	2	110	15	140	0.1	110	15	140	0.1																				
11	Ajmer(PG)-Phagi(RS)	1	108	7	140	0.1	108	7	140	0																				
12	Ajmer(PG)-Phagi(RS)	2	110	12	140	0.1	110	12	140	0																				
13	Aligarh(PG)- Sikar_2(PSTL)	1	108	5	150	0.1	108	5	140	0.1																				
14	Aligarh(PG)- Sikar_2(PSTL)	2	108	9	150	0.1	108	9	140	0.1																				
15	Aligarh-Gr.Noida	1	109	7	150	0.1	109	7	140	0.1																				
16	Balia-Gaya IR	1	108	7	150	0.1	108	7	150	0.1																				
17	Balia-Lucknow_2(PG)	1	108	9	150	0.1	108	9	150	0.1																				
18	Bhadla_II(PG)-Sikar_2(PG)	1	109	6	150	0.1	109	6	150	0.1																				
19	Bhadla_II(PG)-Sikar_2(PG)	2	110	15	150	0.1	110	15	150	0.1																				
20	Bhiwani-Jhatikara	1	109	10	140	0.1	109	10	140	0.1																				
21	Bhiwani-Meerut	1	109	7	140	0.1	109	7	140	0.1																				
22	Bhiwani-Phagi	1	109	5	140	0.1	109	5	140	0																				
23	Bhiwani-Phagi	2	109	7	140	0.1	109	7	140	0																				
24	Bikaner(PG) - Bhadla(PG)	1	109	8	140	0.1	109	8	140	0.1																				
25	Bikaner(PG) - Bhadla(PG)	2	110	15	140	0.1	110	15	140	0.1																				
26	Bikaner(PG)-Bhadla_2(PG)	1	108	7	140	0.1	108	7	140	0.1																				
27	Bikaner(PG)-Bhadla_2(PG)	2	110	15	140	0.1	110	15	140	0.1																				
28	Bikaner(PG)-Moga	1	108	5	140	0.1	108	5	140	0.1																				
29	Bikaner(PG)-Moga	2	110	13	140	0.1	110	13	140	0.1																				
30	Chittorgarh(PG)-Banaskantha IR	1	110	9	140	0.1	110	9	140	0.1																				
31	Chittorgarh(PG)-Banaskantha IR	2	110	15	140	0.1	110	15	140	0.1																				
32	Fatehpur- Sasaram IR	1	108	5	150	0.1	108	5	150	0.1																				
33	Fatehpur_2(PG)-Bhadla_2(PG)	1	109	9	140	0.1	109	9	140	0.1																				
34	Fatehpur_2(PG)-Bhadla_2(PG)	2	110	15	140	0.1	110	15	140	0.1																				
35	Fatehpur_2(PG)-Bhadla_2(PG)	3	107	5	140	0.1	107	5	140	0.1																				
36	Fatehpur_2(PG)-Bhadla_2(PG)	4	108	8	140	0.1	108	8	140	0.1																				
37	Jhatikara-Aligarh	1	107	7	140	0.1	107	7	150	0.1																				
38	Jhatikara(PG)-Khetri(PKTSL)	1	108	5	140	0.1	108	5	140	0.1																				
39	Jhatikara(PG)-Khetri(PKTSL)	2	109	6	140	0.1	109	6	140	0.1																				
40	Kanpur(GS)-Aligarh	1	109	9	150	0.1	109	9	150	0.1																				
41	Lucknow_2(PG)-Bareilly_2(PG)	1	109	5	150	0.1	109	5	150	0.1																				
42	Meerut-G. Noida	1	109	7	140	0.1	109	7	140	0.1																				
43	Meerut-Koteshwar(PG)	1	107	7	140	0.1	107	7	140	0.1																				
44	Meerut-Koteshwar(PG)	2	109	9	140	0.1	109	9	140	0.1																				
45	Moga-Bhiwani(PG)	1	109	5	140	0.1	109	5	140	0.1																				
46	Moga-Meerut	1	108	5	140	0.1	108	5	140	0.1																				
47	Orai-Aligarh	1	107	5	150	0.1	107	5	150	0.1																				
48	Orai-Aligarh	2	108	7	150	0.1	108	7	150	0.1																				
49	Orai-Jabalpur IR	1	107	5	150	0.1	107	5	150	0.1																				
50	Orai-Jabalpur IR	2	109	5	150	0.1	109	5	150	0.1																				
51	Orai-Satna IR	1	108	5	150	0.1	108	5	150	0.1																				
52	Orai-Gwalior IR	1	108	6	150	0.1	108	6	150	0.1																				
53	Phagi-Gwalior IR	1	110	5	140	0.1	110	5	140	0.1	109	5	140	0.1	109	5	140	0.1	On request of RVPNL & POWERGRID(NR-1) for incorporating voltage grading											
54	Phagi-Gwalior IR	2	110	7	140	0.1	110	7	140	0.1	110	12	140	0.1	110	12	140	0.1												
55	Varanasi-Balia	1	109	5	150	0.1	109	5	150	0.1																				
56	Varanasi-Fatehpur	1	109	5	150	0.1	109	5	150	0.1																				
57	Varanasi-Gaya IR	1	108	5	150	0.1	108	5	150	0.1																				
58	Varanasi-Gaya IR	2	109	9	150	0.1	109	9	150	0.1																				
59	Varanasi-Kanpur	1	108	5	150	0.1	108	5	150	0.1																				
60	Varanasi-Kanpur	2	110	5	150	0.1	110	5	150	0.1																				
61	Varanasi-Vindhyachal Pooling	1	108	5	150	0.1	108	5	150	0.1																				
62	Varanasi-Vindhyachal Pooling	2	109	9	150	0.1	109	9	150	0.1																				
B. Adani Transmission India Ltd. (ATIL) (BKTL, FBTL)																														
1	Bikaner(PG)-Khetri(PKTSL)	1	109	9	140	0.1	109	9	140	0.1																				
2	Bikaner(PG)-Khetri(PKTSL)	2	110	15	140	0.1	110	15	140	0.1																				
3	Fatehgarh_II(PG)-Bhadla(PG)	1	108	6	140	0.1	108	6	140	0.1																				
4	Fatehgarh_II(PG)-Bhadla(PG)	2	110	12	140	0.1	110	12	140	0.1																				
C. UPPTCL																														
1	Agra Fatehabad-Ghatampur	1	108	7	140	0.1	108	7	140	0.1	Y																			
2	Agra Fatehabad-Gr. Noida	1	109	5	140	0.1	109	5	140	0.1	Y																			
3	Anpara C-Anpara D	1	108	5	140	0.1	108	5	140	0.1	Y																			
4	Anpara C-Unnao	1	109	5	140	0.1	110	7	140	0.1	Y																			
5	Anpara D-Obra_C	1	110	7	140	0.1	110	7	140	0.1	Y																			
6	Bara-Mainpuri	2	108	7	140	0.1	108	7	140	0.1	Y																			
7	Ghatampur-Rampur_PRSTL	1	109	5	140	0.1	109	5	140	0.1	Y																			
8	Hapur(UP)-Meerut_PMSTL	1	110	7	140	0.1	110	7	140	0.1	Y																			
9	Hapur(UP)-Rampur_PRSTL	1	108	5	140	0.1	108	5	140	0.1	Y																			
10	Hapur-Mainpuri	1	109	7	140	0.1	109	7	140	0.1	Y																			
11	Jawaharpur-Gr.NOIDA	1	110	5	140	0.1	110	5	140	0.1	Y																			
12	Lalitpur - Agra Fatehabad	1	108	5	140																									

20	Allahabad-Fatehpur	1	111	6	150	0.1	111	6	150	0.1																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							

148	Gorakhpur-Muzaffarpur IR	2	112	6	150	0.1	112	6	150	0.1																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							

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9	Jharkha(PG)-Mundka(DV)	2	112	6	150	0.1	112	6	150	0.1	Yes								
10	Mendolera(PG)-Maharanimbagh(PG)	1	110	5	150	0.1	110	5	150	0.1	Yes								
11	Mandola(PG)-Maharanimbagh(PG)	2	112	6	150	0.1	112	6	150	0.1	Yes								
12	Bawana-Mundka	1	110	5	150	0.1	110	5	150	0.1	Yes								
13	Bawana-Mundka	2	112	6	150	0.1	112	6	150	0.1	Yes								
I. PDD (J&K)																			
1	Baglihar-Kishenpur	1	110	5	150	0.1	110	5	150	0.1									
2	Baglihar-Kishenpur	2	111	6	150	0.1	111	6	150	0.1									
3	Baglihar-Kishenpur	3	112	7	150	0.1	112	7	150	0.1									
4	New Wanpoh-Baglihar(JK)	1	111	6	150	0.1	111	6	150	0.1									
J. PSTCL (Punjab)																			
1	Behman Jassa Singh-HMEL	1	110	5	150	0.1	110	5	150	0.1	Yes								
2	Behman Jassa Singh-HMEL	2	112	6	150	0.1	112	6	150	0.1	Yes								
3	Behman Jassa Singh-Moga	1	112	6	150	0.1	112	6	150	0.1	Yes(Behman Jass)								
4	Makhu-Amritsar	1	110	5	150	0.1	110	5	150	0.1	Yes(Makhu)								
5	Makhu-Amritsar	2	112	6	150	0.1	112	6	150	0.1	Yes(Makhu)								
6	Makhu-Mukatsar	1	110	5	150	0.1	110	5	150	0.1	Yes								
7	Makhu-Mukatsar	2	112	6	150	0.1	112	6	150	0.1	Yes(Makhu)								
8	Nakodar-Makhu	1	110	5	150	0.1	110	5	150	0.1	Yes								
9	Nakodar-Makhu	2	112	6	150	0.1	112	6	150	0.1	Yes(Makhu)								
10	Nakodar-Moga	1	110	5	150	0.1	110	5	150	0.1	Yes(Nakodar)								
11	Rajpura-Rajpura TPS	1	110	5	150	0.1	110	5	150	0.1	Yes								
12	Rajpura-Dhuri	1	110	5	150	0.1	110	5	150	0.1	Yes								
13	Rajpura-Rajpura TPS	2	112	6	150	0.1	112	6	150	0.1	Need to be reviewed	115	5	150	0.1	115	5	150	0.1
14	Rajpura-Dhuri	2	112	6	150	0.1	112	6	150	0.1	Yes(Rajpura)								
15	Rajpura TPS-Nakodar	1	110	5	140	0.1	110	5	150	0.1	Need to be reviewed	112	6	140	0.1	112	6	150	0.1
16	Rajpura TPS-Nakodar	2	112	6	140	0.1	112	6	150	0.1	Need to be reviewed	110	3	140	0.1	110	3	150	0.1
17	Talwandi Sabo-Dhuri	1	110	5	140	0.1	110	5	150	0.1	Yes(Dhuri)								
18	Talwandi Sabo-Dhuri	2	112	6	140	0.1	112	6	150	0.1									
19	Talwandi Sabo-Behman-Jassa	1	111	6	140	0.1	111	6	150	0.1	Yes(Behman Jass)								
21	Talwandi Sabo-Nakodar	1	112	6	140	0.1	112	6	150	0.1									
22	Talwandi Sabo-Mukatsar	1	110	5	140	0.1	110	5	150	0.1	Yes(Muktsar)								
23	Talwandi Sabo-Mukatsar	2	112	6	140	0.1	112	6	150	0.1									
K. PTCUL (Uttarakhand)																			
1	Muradabad-Kashipur	1	110	5	150	0.1	110	5	150	0.1									
2	Rishikesh-Nehtaur	1	110	5	140	0.1	110	5	140	0.1									
3	Kashipur-Nehtaur	1	110	5	140	0.1	112	6	140	0.1									
4	Roorkee-Muzaffarnagar	1	110	5	150	0.1	110	5	150	0.1									
5	Roorkee-Rishikesh	1	112	6	150	0.1	112	6	140	0.1									
6	Srinagar-Alakhnanda (GVK)	1	110	5	150	0.1	110	5	140	0.1									
7	Srinagar-Alakhnanda (GVK)	2	112	6	150	0.1	112	6	140	0.1									
L. HPPTCL																			
1	Chamba(PG)-Kuthar(JSW)	1	110	5	150	0.1	110	5	150	0.1	Y								
2	Kuthar(JSW)-Lahai(HP)	2	112	6	150	0.1	112	6	150	0.1	Y				111	6	150	0.1	
2	Chamba(PG)-Lahai(HP)	2	112	6	150	0.1	112	6	150	0.1	Y				112	7	150	0.1	Revised, HPPTCL may implement
M. BMB																			
1	Bhiwani-Rajpura	1	111	6	150	0.1	111	6	150	0.1									
2	Dehar-Rajpura	1	112	6	150	0.1	112	6	140	0.1									
3	Dehar-Panchkula	1	110	5	150	0.1	110	5	150	0.1									
4	Panchkula-Panipat	1	111	6	150	0.1	111	6	150	0.1									
N. INDIGRID																			
1	Amargarh-Samba	1	110	5	150	0.1	110	5	150	0.1									
2	Amargarh-Samba	2	111	6	150	0.1	111	6	150	0.1									
3	Jalandhar-Samba	1	110	5	150	0.1	110	5	150	0.1									
4	Jalandhar-Samba	2	112	6	150	0.1	112	6	150	0.1									
5	Koldam-Parbati Pooling Banala	2	112	6	150	0.1	112	6	150	0.1									
6	Kudhiana-Koldam	1	110	5	150	0.1	110	5	150	0.1									
7	Koldam-Ropar	1	112	6	140	0.1	112	6	140	0.1									
8	Parbati Pool Banala-Nallagarh	1	110	5	150	0.1	110	5	150	0.1									
9	Parbati-II- Parbati Pooling Banala	2	112	5	150	0.1	112	6	150	0.1									
10	Parbati-III- Parbati Pooling Banala	2	112	6	150	0.1	112	6	150	0.1									
11	Prithala(GPTL)-Kadarpur	1	110	5	150	0.1	110	5	140	0.1									
12	Prithala(GPTL)-Kadarpur	2	112	6	150	0.1	112	6	140	0.1									
13	Prithala(GPTL)-Allgarh(PG)	1	110	5	150	0.1	110	5	150	0.1									
14	Prithala(GPTL)-Allgarh(PG)	2	112	6	150	0.1	112	6	150	0.1									
15	RAPCC-Shujalpur-IR	1	110	5	150	0.1	110	5	140	0.1									
16	RAPCC-Shujalpur-IR	2	112	6	150	0.1	112	6	140	0.1									
17	Ropar(PS)-Ludhiana(PG)	1	112	6	150	0.1	112	6	150	0.1									
18	Sainj(HP)-Parbati II	1	110	5	140	0.1	110	5	140	0.1									
19	Sainj(HP)-Parbati III	1	110	5	140	0.1	110	5	140	0.1									
20	Sohna Road(GPTL)-Kadarpur	1	110	5	150	0.1	110	5	140	0.1									
21	Sohna Road(GPTL)-Kadarpur	2	112	6	150	0.1	112	6	140	0.1									
O. NTPC																			
1	Dadri(NT)-Loni Road/ Harsh Vihar	1	110	5	140	0.1	110	5	140	0.1									
2	Dadri(NT)-Loni Road/ Harsh Vihar	2	112	6	140	0.1	112	6	140	0.1									
P. NRSS36																			
1	Babai(RS)-Bhiwani(PG)	1	110	5	150	0.1	110	5	150	0.1	YES								
2	Babai(RS)-Bhiwani(PG)	2	112	6	150	0.1	112	6	150	0.1	YES								
3	Babai(RS)-Neemrana(PG)	1	110	5	150	0.1	110	5	150	0.1	YES								
4	Babai(RS)-Sikar(PG)	1	112	6	150	0.1	112	6	150	0.1	No, Presently end 1 set on 110% instead of 112% and directed to implemented as per NRPC	111	6	150	0.1			Babai end setting may be revised to 111%with 6 sec.	
Q. NRSSXXX(B) (Sekura Energy)																			
1	Amritsar-Malerkotla	1	110	5	150	0.1	110	5	150	0.1									
2	Amritsar-Malerkotla	2	112	6	150	0.1	112	6	150	0.1									
3	Kurukshetra-Malerkotla	1	110	5	150	0.1	110	5	150	0.1									
4	Kurukshetra-Malerkotla	2	112	6	150	0.1	112	6	150	0.1									
R. RENEW Power Limited																			
1	Bikaner(PG) - Bikaner (ReNew)	1	110	5	150	0.1	110	5	150	0.1									
1	Renew SuryaRavi SL_BKN_PG-Bikaner RENEW Solar	1	110	5	150	0.1	110	5	150	0.1									
S. Azure																			
1	Bikaner(PG)-Azure43 PSS	1	110	5	150	0.1	110	5	150	0.1									
2	Azure43 PSS-Azure43 RSS	1	110	5	150	0.1	110	5	150	0.1									
T. ADPL																			
1	Bikaner(PG)-Avada	1	110	5	150	0.1	110	5	150	0.1									
U. AYANA																			
1	Ayana-ARP3PL	1	110	5	150	0.1	110	5	150	0.1									
2	Bikaner(PG)-Ayana	1	110	5	150	0.1	110	5	150	0.1									
V. ADANI GREEN																			
1	AGE2SL-Bhadla2(PG)	1	110	5	150	0.1	110	5	150	0.1									
2	AREPRL-Fatehgarh Pooling	1	110	5	150	0.1	110	5	150	0.1									
3	AREPRL-Fatehgarh Pooling	2	112	6	150	0.1	112	6	150	0.1									
W. NTPC GREEN																			
1	Bhadla_2 (PG)-Kolayat Solar NTPC_1	1	110	5	150	0.1	110	5	150	0.1									
2	Kolayat Solar NTPC_1 Kolayat Solar NTPC_2	1	110	5	150	0.1	110	5	150	0.1									
X. ACME																			
1	Fatehgarh Pooling(FBTL)-ACME Deoghar	1	110	5	150	0.1	110	5	150	0.1									
Y. SJVNGEL																			
1	400W SJVNG_GEL_SL_BKN2-Bikaner_2 (BTS1)	1	110	5	150	0.1	110	5	150	0.1									

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

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

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

S.No	Station	Location	Owner	Unit No	Capacity MW	Outage		Revival		Reason(s)
						Date	Time	Date	Time	
1	Parbati III HEP	HP	NHPC	4	130	19-06-2025	23:25	02-07-2025	13:12	Turbine Bearing Temperature High
2	URI HPS	J&K	NHPC	1	120	20-07-2025	21:06	20-07-2025	21:14	Turbine Bearing Temperature High
3	URI HPS	J&K	NHPC	1	120	20-07-2025	22:01	20-07-2025	22:44	Turbine Bearing Temperature High
4	Parbati II HEP	HP	NHPC	2	200	03-08-2025	01:21	03-08-2025	02:27	Turbine Bearing Temperature High
5	Parbati II HEP	HP	NHPC	2	200	03-08-2025	22:41	04-08-2025	18:45	Turbine Bearing Temperature High
6	URI HPS	J&K	NHPC	4	120	04-08-2025	09:56	04-08-2025	10:03	Turbine Bearing Temperature High
7	Parbati II HEP	HP	NHPC	2	200	04-08-2025	19:57	04-08-2025	20:32	Turbine Bearing Temperature High
8	Uri-II HPS	J&K	NHPC	4	60	05-08-2025	04:44	05-08-2025	05:04	Turbine Bearing Temperature High
9	URI HPS	J&K	NHPC	4	120	20-08-2025	10:57	20-08-2025	11:39	Turbine Bearing Temperature High
10	URI HPS	J&K	NHPC	1	120	20-08-2025	11:23	20-08-2025	11:30	Turbine Bearing Temperature High
11	Chamera I HPS	HP	NHPC	1	180	21-08-2025	14:08	21-08-2025	16:42	Turbine Bearing Temperature High
12	Parbati III HEP	HP	NHPC	3	130	22-08-2025	03:34	22-08-2025	04:16	Turbine Bearing Temperature High
13	Parbati III HEP	HP	NHPC	2	130	24-08-2025	21:42	24-08-2025	22:16	Turbine Bearing Temperature High
14	Kishenganga	J&K	NHPC	1	110	26-08-2025	18:35	26-08-2025	19:43	Turbine Bearing Temperature High
15	Chamera I HPS	HP	NHPC	3	180	28-08-2025	03:21	28-08-2025	06:11	Turbine Bearing Temperature High
16	Parbati II HEP	HP	NHPC	1	200	28-08-2025	21:42	28-08-2025	23:01	Turbine Bearing Temperature High
17	Parbati III HEP	HP	NHPC	2	130	29-08-2025	12:01	29-08-2025	13:41	Turbine Bearing Temperature High
18	Chamera II HPS	HP	NHPC	3	100	29-08-2025	19:39	04-09-2025	18:44	Turbine Bearing Temperature High
19	Chamera I HPS	HP	NHPC	3	180	30-08-2025	10:57	30-08-2025	17:16	Turbine Bearing Temperature High
20	Chamera II HPS	HP	NHPC	3	100	04-09-2025	18:45	04-09-2025	19:32	Turbine Bearing Temperature High
21	Chamera II HPS	HP	NHPC	3	100	04-09-2025	19:48	18-09-2025	18:13	Turbine Bearing Temperature High
22	Parbati III HEP	HP	NHPC	4	130	10-09-2025	14:54	10-09-2025	15:23	Turbine Bearing Temperature High
23	Tanakpur HPS	HP	NHPC	1	31.42	11-09-2025	11:02	11-09-2025	12:30	Turbine Bearing Temperature High
24	Tanakpur HPS	HP	NHPC	1	31.42	11-09-2025	12:31	15-09-2025	00:51	Turbine Bearing Temperature High
25	Chamera I HPS	HP	NHPC	3	180	12-09-2025	10:03	12-09-2025	10:36	Turbine Bearing Temperature High
26	Parbati III HEP	HP	NHPC	3	130	12-09-2025	15:07	12-09-2025	17:21	Turbine Bearing Temperature High
27	URI HPS	J&K	NHPC	2	120	14-09-2025	09:39	14-09-2025	10:08	Turbine Bearing Temperature High
28	Chamera I HPS	HP	NHPC	3	180	15-09-2025	05:54	15-09-2025	06:28	Turbine Bearing Temperature High
29	Chamera I HPS	HP	NHPC	3	180	16-09-2025	02:27	16-09-2025	02:57	Turbine Bearing Temperature High
30	Chamera I HPS	HP	NHPC	3	180	17-09-2025	12:47	17-09-2025	13:19	Turbine Bearing Temperature High
31	Chamera I HPS	HP	NHPC	3	180	18-09-2025	01:38	18-09-2025	02:10	Turbine Bearing Temperature High
32	Chamera I HPS	HP	NHPC	3	180	18-09-2025	04:55	18-09-2025	05:24	Turbine Bearing Temperature High
33	Chamera I HPS	HP	NHPC	1	180	19-09-2025	01:00	19-09-2025	07:57	Turbine Bearing Temperature High
34	Chamera I HPS	HP	NHPC	1	180	19-09-2025	17:25	19-09-2025	18:46	Turbine Bearing Temperature High