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

Dated: 31st December, 2025

सेवा में/ To,

संलग्न सूची के अनुसार/ As per list attached

विषय: दूरसंचार, स्काडा और टेलीमेटरी उप-समिति की 29 वीं बैठक।
Subject: 29th meeting of Telecommunication, SCADA & Telemetry Sub-Committee-reg.

उत्तर क्षेत्रीय विद्युत समिति की दूरसंचार,स्काडा और टेलीमेटरी **(**टेस्ट**)** उप-समिति की 29 वीं बैठक दिनांक **2**7.11.2025 को 11:00 बजे **सम्मेलन कक्ष**, एन**.**आर**.**पी**.**सी, **नई दिल्ली** में आयोजित की गई। बैठक का कार्यवृत इस पत्र क साथ संलग्न है । यह उत्तर क्षेत्रीय विद्युत समिति की वेबसाइट **(**Northern Regional Power Committee) पर भी उपलब्ध हैं ।

29th meeting of Telecommunication, SCADA & Telemetry (TeST) Sub-Committee of NRPC was held on 27.11.2025 at 11:00 am in conference room, NRPC, New Delhi. Minutes of the meeting are enclosed herewith. The same are also available on NRPC website at Northern Regional Power Committee.

भवदीय
Digitally signed by Anzum Parwej
Date: 31-12-2025 13:25:31
(अंजुम परवेज)/ (Anzum Parwej)
अधीक्षण अभियंता /Superintending Engineer

Contents

Minutes of
29th Meeting of Telecommunication, SCADA & Telemetry (TeST) Sub- Committee

1 Confirmation of Minutes

1.1 28th meeting of TeST sub-committee was held on 23.07.2025 and the minutes were issued on 28.08.2025. Following amendments were requested by PSTCL vide email dated 24.11.2025 in the minutes of 28th TeST meeting, and were agreed to:

Agenda	Minutes of 28th TeST meeting	Amendment Accepted
14. Non- Installation of OPGW on LILO Portion of 400kV Koldam-Ludhiana Line at Ropar by M/S Indigrid	14.2 Indigrid stated that it was informed about the LILO portion only after the completion of the main line. It further clarified that the scope awarded by CTU included only the mainline. PSTCL referred to the PG–Jalandhar line case, where POWERGRID had laid OPGW on the LILO portion as well, and requested Indigrid to do the same. Towards the scope required for PSTCL will be borne by PSTCL. PrKTCL will discount the cost associated with PSTCL scope while claiming tariff before CERC. At the same time PSTCL is required to release the amount claimed by PrKTCL for such installation of OPGW on PSTCL scope in advance.	14.2 Indigrid clarified that the scope awarded by CTU included only the mainline. PSTCL referred to the PG–Jalandhar line case, where POWERGRID had laid OPGW on the LILO portion as well, and requested Indigrid to do the same. Towards the scope required for PSTCL will be borne by PSTCL. PrKTCL will deduct the cost associated with PSTCL scope while claiming tariff before CERC. At the same time PSTCL is required to release the amount claimed by PrKTCL for such installation of OPGW on PSTCL scope in advance.

Decision of the forum:

- Sub-committee confirmed the minutes.

2 J&K Telemetry Issues (Agenda by NRLDC)

2.1 NRPC representative apprised that real-time telemetry data from Jammu & Kashmir remains unavailable at both J&K-SLDC and NRLDC.

2.2 POWERGRID representative stated that old RTUs have become obsolete, and RTUs are now being installed under ULDC Phase-III, 65 out of 72 RTUs have already been dispatched, and installation is in progress across multiple substations. POWERGRID also stated that OPGW and communication equipment for some locations, except the DC power

supply, are being installed under PMRP, while DC power supply is covered under ULDC Phase-III.

2.3 MS, NRPC emphasised that co-ordination should be ensured by POWERGRID under both schemes. NRLDC also enquired if J&K connectivity will be established once ULDC Phase-III is completed.

2.4 POWERGRID informed that, under the OPGW rollout for J&K, existing vendors are no longer willing to continue at the earlier prices, and therefore a fresh contract is being tendered & the remaining OPGW work is expected to be completed within 6–7 months. Until OPGW connectivity is fully operational, alternate communication options, including GPRS and other services, will be explored so that connectivity with ULDC Phase-III is ensured by March 26.

2.5 MS, NRPC emphasized that both POWERGRID and J&K must accelerate the remaining OPGW laying and RTU replacement to avoid further delay, as the issue has been pending for a considerable period.

Decision of the forum:

- POWERGRID to expedite installation of OPGW to ensure connectivity of J&K. Until OPGW connectivity is fully operational, POWERGRID to explore alternate communication options, including GPRS and other services, so that connectivity with ULDC Phase-III is in matching timeframe i.e., March 26. POWERGRID to ensure OPGW installation by June 2026.

(Action: POWERGRID)

3 Redundant RTU Communication for Main / Backup RLDC (Agenda by NRLDC)

3.1 NRPC representative apprised that, presently, SCADA data channels are reporting in main and backup mode (1+1) with one main channel to RLDC and one backup channel to Backup RLDC. As deliberated in the meetings held among POWERGRID, Grid-India, CTU and CEA dated 09.05.2023 and 27.06.2023, it has been finalized that to increase the redundancy in the system, 2 main and 2 backup channels should report to RLDCs as well as back up RLDCs considering the criticality of real time grid operations by the RLDCs.

3.2 NRLDC highlighted that many substations still have spare ports, including 30 substations with Synergy RTUs with available free ports. These should be configured to achieve 2+2 redundancy without waiting for hardware upgrades.

3.3 POWERGRID noted that RTUs currently operate in master-slave mode, and if the master RTU hangs, manual intervention is needed to switch to backup. Automatic switching will be available only after the ULDC-III SCADA implementation.

3.4 NRLDC mentioned past efforts at Ballabhgarh with POWERGRID and Synergy to configure the 4th channel, which is now reporting successfully through four channels, though manual switching is still required. NRLDC reiterated the need to configure all available spare ports across substations to ensure redundancy.

3.5 IndiGrid repeated its request for treating all additional scope in TBCB projects under Change in Law, as currently there is no provision of “change of scope” under TBCB projects. MS, NRPC again advised entities to approach CERC on this matter.

3.6 CTU representative mentioned that consolidated scheme is not required as this is a matter of compliance. Entities may carry out implementation themselves based on the list provided by NRLDC.

3.7 It was also noted that in SRPC, similar practice being followed for ensuring this. It was further discussed that, NRLDC has the list of SCADA data of stations reporting over single/ dual channels and the same may be provided in the TeST meeting agenda for monitoring the compliances for dual reporting implementation, with a detailed remarks column.

3.8 MS, NRPC asked NRLDC to provide a complete list of currently reporting channels to respective entities, including the 30 Synergy RTUs. Based on this, respective entities must take timely action to ensure redundancy. POWERGRID is to begin configuration of the spare ports of remaining 29 Synergy RTUs.

Decision of the forum:

- NRLDC to provide a complete list of RTUs where SCADA data channels are not reporting in main and backup mode (1+1) with one main channel to RLDC and one backup channel to Backup RLDC, to respective entities. (Action: NRLDC)
- All entities shall ensure redundancy in communication for both the Main and Backup RLDC for their respective stations as per list provided by NRLDC. (Action: All Entities)
- POWERGRID to begin configuration of ports in Synergy RTUs so that 2 main and 2 backup channels report to RLDCs as well as back up RLDCs with available free ports. (Action: POWERGRID)

4 Display of DC/Schedule of Generating Stations in SCADA Display (Agenda by NRLDC)

4.1 Representative from NRLDC apprised the agenda regarding display of DC/Schedule of Generating Stations in SCADA Display and asked states about the present status of integration. After deliberation, the inputs received from states was:

Sl. No.	State	Status	Remarks & Timelines
1	Punjab	Available	After the NCIIPC visit in Sept 2025, the integration path has been rerouted through the firewall for cyber-security compliance. Expected timeline: 4–6 weeks
2	Haryana	Available	SAMAST is getting implemented; schedule & DC is expected to get integrated within next 1 months.
3	Uttarakhand	Not Available	SAMAST has been implemented and the firewall delivered. Expected to be completed within 2 months' timeframe.
4	Jammu & Kashmir	Not Available	Integration not yet started; proposal for SAMAST has been submitted for management approval. State generators except Baglihar are being covered under ULDC Phase -III. For Baglihar, it is to be taken up separately on priority with JKSPDC, to be completed within one month.

MS, NRPC asked the states to expedite the integration process.

Decision of the forum:

- Punjab, Haryana, Uttarakhand and J&K to complete integration within mentioned timelines.

(Action: Punjab, Haryana, Uttarakhand, J&K)

5 Non-availability of Real-Time data from PTCUL (Agenda by NRLDC)

5.1 NRPC representative apprised regarding the non-availability of telemetry data from PTCUL stations. They emphasized the urgent need for integration of RTUs at SLDCs to ensure reliable real-time data availability.

5.2 MS, NRPC asked PTCUL about the present status of integration.

5.3 PTCUL representative informed that the proposal is still pending with PSDF and a review meeting is scheduled next month.

5.4 MS, NRPC again expressed serious concern over the continued delays.

Decision of the forum:

- PTCUL to take up the matter with PSDF on priority. (Action: PTCUL)

6 Non-Reliable Telemetry from RRVPN Sub-stations (Agenda by NRLDC)

6.1 NRLDC apprised issue regarding non-availability of reliable data from RRVPNL stations and RRVPN was requested to share update for RTU/SAS upgradation.

6.2 Representative from RRVPNL informed that the tendering process for the 22 SAS stations has been completed, and the selected vendor has been given 140 days for installation. For the replacement of 132 obsolete RTUs, only one bid was received. Accordingly, the bid submission deadline has been extended to 12 December 2025. The work is now expected to be completed by March 2026.

6.3 Member Secretary, NRPC advised RRVPNL to strictly follow the revised timelines.

Decision of the forum:

- RRVPN to expedite the integration process and complete work of 22 SAS stations and replacement of 132 obsolete RTUs by March 2026. (Action: RRVPN)

7 Non-availability of Telemetry from HVPNL Sub-stations (Agenda by NRLDC)

7.1 Representative from NRPC informed about non-availability of telemetry data from J&K stations and requested concerned to expedite the process for integration of RTUs at SLDCs.

7.2 Representative from HVPNL further mentioned that SAS maintenance comes under their communication team and the absence of an AMC is causing delays in resolving such cases. POWERGRID informed the forum that they maintain substation-wise rate contracts with vendors for timely support. Member Secretary, NRPC, advised HVPNL to obtain a copy of the rate contract from POWERGRID and consider implementing a similar mechanism to address AMC-related delays and expedite restoration of telemetry.

7.3 NRLDC presented a consolidated summary of the current telemetry status of circuit breakers across all control areas for 765 kV, 400 kV and 220 kV substations. The objective of presenting this summary was to bring the forum's attention to the fact that, despite SAS/RTU systems being operational and reporting, a significant number of elements/points across several substations remain unreliable or unavailable.

CB Availability Control Area wise at NRLDC*

Control Area	765 kV		400 kV		220 kV		Total	% Availability Nov 2025	% Availability March 2022
	Total	Unavailable	Total	Unavailable	Total	Unavailable			
CENTRE	469	25	2470	310	1660	255	4599	**87.17%**	85.74%
UPPTCL	185	42	906	228	1966	609	3057	**71.25%**	71.69%
RRVPNL	51	20	580	164	1494	499	2125	**67.86%**	70.77%
PSTCL	0	0	193	57	850	475	1043	**48.99%**	68.76%
HVPNL	0	0	128	31	1008	364	1136	**65.23%**	67.26%
JKPDD	0	0	12	12	148	148	160	**0.00%**	0.00%
PTCUL	0	0	47	35	146	72	193	**44.56%**	30.46%
HPSEBL	0	0	45	2	190	33	235	**85.11%**	80.25%
BBMB	0	0	33	13	228	22	261	**86.59%**	93.49%
DTL	0	0	110	37	529	158	639	**69.48%**	82.98%

*Figures displayed are as per CBs modelled at NRLDC SCADA

7.4 Representative from UPSLDC asked that a complete list of all the circuit breakers included in the summary be shared with them so they can verify the data at their end.

7.5 Member Secretary, NRPC, expressed serious concern over the low availability indicated in the summary and asked NRLDC to circulate the complete list of circuit breakers to all

concerned entities for reference and verification. All utilities were asked to examine the discrepancies, take corrective action, and resolve the pending telemetry issues at the earliest.

Decision of the forum:

- HVPNL was advised to implement rate contract with vendors for AMC similar to POWERGRID to address AMC-related delays and expedite restoration of telemetry. (Action: HVPNL)
- NRLDC to circulate the complete list of current telemetry status of circuit breakers to all concerned entities. (Action: NRLDC)

- All utilities were asked to examine the discrepancies as per NRLDC provided list, take corrective action, and resolve the pending telemetry issues at the earliest. (Action: All utilities)

8 Communication channel redundancy/ Telemetry Issues to NRLDC(Agenda by NRLDC)

8.1 NRLDC apprised that there are Communication channel redundancy/ Telemetry issues to NRLDC in various stations of NR where RTUs are still reporting to NRLDC on single channel.

8.2 Representatives from various entities provided updates on the status of the RTUs and following are still pending.

Sl. No.	Name of RTU	Owner	Remarks/Updates
1	KISHANGANGA	NHPC	Hardware and software have been upgraded, but compatibility issues persist. Being taken up with BHEL, resolution may take about one month.
2	PARBATI-2	NHPC	Parbati-Koldam section of around 68 kms. to be done in hilly terrain on live-line conditions. Basic issue being faced is identification of vendors for which independent competitive bidding needs to be done before filing expenditure in CERC. To be completed by Indigrid by Jan'26. Terminal equipment procurement by POWERGRID is under process; tender has been placed.
3	PARBATI-3	NHPC	Basic issue being faced is identification of vendors for which independent competitive bidding needs to be done before filing expenditure in CERC. To be completed by Indigrid by Jan'26.

Sl. No.	Name of RTU	Owner	Remarks/Updates
			Terminal equipment procurement by POWERGRID is under process; tender has been placed.
4	SALAL	NHPC	Creation of "communication loop" being faced. Can be issue related to Fibre to Ethernet Converter. Heavy rains delayed restoration of OPGW; the link was restored in November. NHPC, with support from POWERGRID and NRLDC, will resolve the issue.
5	Budhil	IPP	No representative from GreenCo was present. Issue remains pending.
6	Bhiwadi HVDC	POWERGRID	Second gateway Faulty for which upgradation required through M/s Siemens (Germany) as the same is a proprietary system. The matter has been escalated for price negotiations. Related petition before CERC for additional capitalization is pending. Target completion: June 2026.
7	Bhiwadi 400 101	POWERGRID	RTU is faulty. POWERGRID is coordinating with GE for restoration, expected by December 2025.
8	Patiala	POWERGRID	Main Gateway is faulty. A new gateway is being procured. Expected by March 2026.
9	Jhajjar	IPP	POWERGRID informed the communication path is healthy; gateway configuration needs to be checked.
10	Shree Cement	Shree Cement	Currently reporting on PLCC. POWERGRID is laying fiber; expected completion: June 2026.
11	Chamera 3	NHPC	NHPC, with support from NRLDC, will rectify the issue.

Decision of the forum:

- Entities to resolve the issues as per the timelines mentioned in the table.

(Action: Concerned entities)

9 Inconsistent Real-Time Data from Tanda NTPC Station (Agenda by UPSLDC)

9.1 UPSLDC informed that real-time data from Tanda NTPC is not updating consistently, with refresh intervals varying from a few minutes to several hours.

9.2 POWERGRID stated that the issue appears to be related to communication link instability. They further mentioned that the frequent outage of AGC data from Tanda NTPC to NRLDC was also discussed in the 28th TeST Meeting, wherein it was clarified that the fiber network is healthy, but issues exist in the Fibcom equipment owned by UPPTCL.

9.3 UPPTCL reported a problem with the battery charger of NTPC at the site. He added that the communication path is healthy, but the SAS system is experiencing frequent hang-ups.

9.4 NTPC stated that the FIBCOM FOTE owned by UPPTCL is frequently hanging. UPPTCL, however, informed that the 220 V DC supply often trips, and the converted 48 V DC supply to the FOTE frequently drops below the required level. NTPC reiterated that there is no issue with the station supply and requested UPPTCL to depute a team for a joint inspection.

9.5 It was also suggested that an additional 48 V DCPS may be provided at Tanda NTPC to resolve the issue, if necessary.

9.6 MS, NRPC noted that issues may be originating from both sides, equipment-related concerns on the UPPTCL side and charger-related concerns on the NTPC side. Accordingly, a joint survey was recommended to identify the root cause.

Decision of the forum:

- NTPC and UPPTCL shall conduct a site survey at Tanda NTPC to identify the exact cause of the real-time data inconsistencies and communication outages. Based on the findings, an action plan may be prepared and corrective actions shall be implemented at the earliest.

(Action: NTPC and UPPTCL)

10 Intermittent Telemetry Data from ICTs at Meerut (PG) Substation (Agenda by UPSLDC)

10.1 UPSLDC informed that intermittency in real-time telemetry data of ICTs at Meerut (PG) substation has been observed for a prolonged period.

10.2 MS, NRPC enquired since when the issue is occurring. UPSLDC responded that the problem has persisted for the past six months.

10.3 POWERGRID stated that they had taken data from NRLDC for the past three months, and as per the information received, the data became zero only once. NRLDC informed that data for the past three months has largely been satisfactory, except for one instance in October when the data value was zero.

10.4 UPSLDC mentioned that data often freezes and becomes suspect.

10.5 SE, NRPC stated that the data may be monitored further, and noted the improvement reported by NRLDC.

10.6 NRLDC requested UPSLDC to immediately inform them in case any zero-data instance occurs so that the issue can be promptly investigated and resolved.

Decision of the forum:

- UPSLDC and NRLDC shall continue to monitor the telemetry data and coordinate to ensure correct data reporting. (Action: UPSLDC and NRLDC)

11 Requirement for Additional VOIP SIP Numbers (Agenda by NRLDC)

11.1 NRLDC apprised that existing SIP numbers at NRLDC have been fully utilized, making it impossible to configure any new substations or plants. NRLDC had requested POWERGRID to coordinate with M/s Orange for the allocation of additional SIP extension numbers to ensure seamless VOIP communication.

11.2 POWERGRID responded that they have configured and tested additional SIP phones successfully at HVPNL and RVPNL. NRLDC informed that only 20 VoIP numbers had been made available through the SLDC Rajasthan Orange server, all of which have now been consumed. POWERGRID stated that additional numbers would be arranged through either the SLDC Rajasthan or SLDC Haryana Orange servers.

11.3 SE, NRPC, advised NRLDC to coordinate with POWERGRID for allocation of the required

11.4 MS, NRPC stated that the matter may be closed, since solution has been provided.

Decision of the forum:

- The forum agreed to close the agenda item based on the confirmation provided by POWERGRID and NRLDC.

12 GE N60 model PMUs in the Phasor Data Concentrators (PDCs) is causing multiple operational challenges. (Agenda by NRLDC)

12.1 NRLDC apprised that the N60 model is causing multiple functional problems, which were also observed by SRLDC and WRLDC. Forum reviewed the persistent issues associated with GE N60 model PMUs that are affecting reliable operation of the Phasor Data Concentrators (PDCs).

12.2 NRLDC requested that new integrations of N60 PMUs be avoided until the configuration and compatibility problems are resolved.

12.3 POWERGRID informed that these concerns have also come to their attention and that they have already taken up the matter with the OEM. They requested a period of 3–4 months to work toward a resolution.

12.4 NRLDC further expressed that the proposed timeline is long and may impact upcoming integration of several new substations and renewable plants, and the ongoing issues with the N60 model could significantly affect data availability and reliability. Until the OEM provides a solution, the forum was requested to refrain from adding new N60 PMUs to the system.

12.5 Member Secretary, NRPC, advised POWERGRID to explore all available options and pursue the matter with the OEM on priority to expedite the resolution.

Decision of the forum:

- POWERGRID to take up the matter with GE and resolve the issue at the earliest and communicate the forum accordingly. (Action: POWERGRID)

13 Furnishing of inputs for maintaining database of fiber uses as Fiber sharing (Agenda by CTU)

13.1 CTU explained the agenda to the forum that as per “Comprehensive guidelines for the usage and sharing of fiber cores of Optical Ground Wire (OPGW)/ Under Ground Fiber Optic (UGFO) Cable for power system applications” 2025. As per clause no. 7 of said guidelines, “CTU for ISTS/ STUs for In-STS shall maintain a comprehensive database of fibers of OPGW installed on transmission lines”. CTU in the 28th NRPC TeST meeting held on 23.07.2025 and 9th NR CPM meeting held on 19.08.2025 requested all the TSPs to provide the details as per the format shared by CTU. Only Resonia (erstwhile Sterlite

Power) and Indigrid has provided the data, and all other TSPs are requested to expedite providing inputs as per format attached at **Annexure-I.**

13.2 CTU also informed that a portal for the fibre database management is to be developed in the N-UNMS project as finalized in the 15th NPC and 27th NCT held on 14.11.24 and 06.02.2025 respectively. In this database, STU fibres database also to be included. STUs can also view and manage their fibre database through this portal. In view of this, STUs are also requested to provide the fibre database in the format.

13.3 HPPTCL representative mentioned that HPPTCL has requested BBMB for sharing of fibers in 220 KC D/C Bhakra-Jamalpur Transmission line (owned by BBMB), under Fiber Sharing Guidelines for construction of 220/132 kV AIS Substation. He further enquired if the fiber sharing guidelines is applicable to BBMB.

13.4 SE, NRPC mentioned that as per clause 4 of Fiber sharing Guidelines,

"Fibers essential for grid operations are spared free of cost, irrespective of whether they are required for Intra-State (InSTS) or Inter-State (ISTS) communication needs.

Entities to spare healthy fibers, within the limits stipulated in the Allocation Requirements, whenever grid needs arise".

13.5 MS, NRPC also mentioned that guidelines are applicable to all TSPs, STUs as well as BBMB.

Decision of the forum:

- All the TSPs and STUs to provide the details as requested by CTU for comprehensive database preparation as per the format attached at **Annexure-I**

(Action: All TSPs and STUs)

14 Nomination of Nodal officers for coordination with Regional Network Monitoring Team of UNMS (Agenda by CTU)

14.1 CTU explained the agenda that as per clause 4.1.1 of procedure for maintenance and testing of communication system issued by CERC.

Quote

Communication system owner/user shall identify Nodal officer(s) who shall be responsible for maintenance of the communication system in their respective area/ system. The Nodal officer shall be single point coordinator, responsible for maintenance of communication system and co-ordination with national/ regional NMT team of CTU. Details of Nodal Officer (name, designation, company name, address, contact details email, mobile no.) to be given to NMT team of CTU.

Unquote

14.2 CTU also informed the forum that in the 27th, 28th TeST meetings of NRPC and 9th NR CPM meeting, all entities (including RLDC/SLDCs/TSPs/Gencos) were requested to send the details of the nodal officers for coordination with NMT of NR UNMS. UPPTCL, RRVPNL, HPPTCL, DTL and NRLDC have provided details of nodal officers to NMT. All the remaining entities are requested to provide the details of the nodal officers at the earliest.

14.3 MS, NRPC asked CTU/ NMT regarding methodology for coordination with RE/IPPs for this purpose as these are not members of this Forum. CTU stated that they shall put up this agenda in the JCC (Joint coordination committee) meeting of CTU where most of the RE

developers are present. For remaining such as IPPs CTU shall send a communication in this regard.

14.4 MS, NRPC also suggested that common mail ids should be provided by each entity instead of individual employee ids so that after transfer / superannuation of employees, email ids need not to be changed. MS, NRPC also asked remaining entities to provide the details at the earliest.

Decision of the forum:

- All the members/ constituents to nominate nodal officer for coordination in their organization and share the details with NMT and CTU.

(Action: Concerned entities)

15 Latest Power maps (132 kV and above) and Fiber Optic maps of STU network (Agenda by CTU)

15.1 CTU representative informed that power maps and fiber optic maps of STUs are frequently required during the planning of ISTS communication schemes and while preparing connection agreements. In the absence of this information, there are delays in providing inputs and coordinating with concerned utilities.

15.2 CTU stated that for the planning process of ISTS Communication Schemes, many times STUs fibre network and power maps need to be referred as comprehensive planning is required. Further at the time of connection agreement preparation, this information is required at CTU end. In the absence of data it takes longer time to collect the input with the concerned utilities.

15.3 HPPTCL stated that they have OPGW map updated till 2023 and agreed to share the same.

15.4 UPPTCL stated that their Power map is available on the official UPPTCL website and same can be taken for planning purpose. Further their fiber optic map is under updation, CTU stated that they can provide the fiber optic map which is currently available after update same may be provided again.

15.5 HVPNL agreed to share the Fiber / Power maps as requested by CTU.

15.6 MS, NRPC asked all the STUs to share the Latest available Power maps (132 kV and above) and Fiber Optic maps of STU network with CTU.

Decision of the forum:

- All the STUs to share the Latest available Power maps (132 kV and above) and Fiber Optic maps of STU network with CTU.

(Action: STUs)

16 Updated Status of schemes approved in various NCT (Agenda by CTU)

16.1 CTU representative stated that in 28th TeST meeting, POWERGRID had provided inputs regarding the communication schemes approved in NCT. Further, the respective Implementing Agencies/TSP were requested to provide current status of these schemes. The current status is attached at **Annexure-II**.

17 Establishment of Redundant Communication Network for Centre Sector and RRVPNL (Agenda by POWERGRID)

17.1 POWERGRID apprised that for establishment of redundant Communication Network for Central Sector and RRVPNL in Rajasthan, a scheme was approved in 58th NRPC meeting

wherein 3 pairs of OPGW fibres are to be spared from existing RRVPNL network for establishment of redundant communication network for RTU/PMU/SCADA applications data reporting at Jaipur SLDC and NRLDC/NLDC.

17.2 POWERGRID further informed that presently, all the communication equipment as envisaged for the establishment of subject redundant communication have been installed at site. For commissioning / establishment of network, spare fibers are required and for shifting of Ratangarh repeater OPGW laying works are to be carried out on Ratangarh-Suratgarh line. However, spare fibers are yet to be allocated due to which work has not been completed yet.

17.3 MS, NRPC enquired whether RRVPNL has leased its fibres and also sought details on the availability of spare fibres in the links requested by POWERGRID for sharing. RRVPNL informed that the team handling communication matters is a separate, and the required information will be provided after getting details from them.

17.4 POWERGRID further highlighted that the scheme approved in the 58th NRPC meeting based on the agreement of sharing of fibres by RRVPNL. Due to non-availability of shared fibres, the installed equipment is currently not serving any purpose, he further mentioned that approx. Rs 8.0 Cr has been incurred on equipment and not able to commission the equipment.

17.5 In reference to CEA Fiber sharing guidelines Clause no 4, regarding Sharing Scenarios and fiber-sharing arrangements across different transmission line ownership scenarios etc. CTU stated that there is a variation in fiber sharing scenario in the 58th NRPC and 29th NRPC TeST. The same needs further deliberation for ascertaining the requirement to finalize the desired communication scheme.

17.6 MS, NRPC stated that, as per the Guidelines on Fibre Sharing, fibre sharing is mandatory for grid requirements. RRVPNL shall share fibres as per the finalized scheme

Decision of the forum:

- A separate meeting shall be convened amongst NRPC, NRLDC, RRVPNL (STU), Rajasthan SLDC, CTU, POWERGRID and NMT to finalize the desired scheme.

(Action: NRPC Secretariat)

18 Scope of the Communication System Audit – when equipment is not owned be substation owner (Agenda by POWERGRID)

18.1 POWERGRID apprised that communication system audit has been commenced in Northern Region as per Standard Operating Procedure (SOP) for Communication Audit of Substations as issued by NPC in accordance with the Central Electricity Regulatory Commission (Communication System for Inter-State Transmission of Electricity) Regulations, 2017.

18.2 In this regard, POWERGRID highlighted that the scope of the Communication System Audit requires further deliberation due to the following scenarios:

- In certain generating stations, communication equipment is owned by POWERGRID/ULDC, while DC power supply, earthing, etc., are maintained by the generating station.
- Large substations such as Bhadla and Fatehgarh have multiple communication systems installed in kiosks or control rooms, owned by different entities.
- Instances where the OPGW owner is different from the equipment owner, such as in LILO portions (e.g., Fatehgarh-I – Bhadla-I LILOed at Fatehgarh-II).

18.3 SE, NRPC stated that substation owner shall be responsible for the communication audit, however required data shall be provided by respective owner of the Equipment/Asset.

18.4 MS, NRPC stated that coordinating with multiple entities for a single substation would be difficult. Therefore, the responsibility of providing all audit-related information and coordinating with other concerned entities shall rest with the substation owner.

18.5 POWERGRID stated that there are substations where multiple owners are there. MS, NRPC stated that in those cases, categorization may be done at the time of audit and further coordination with the concerned entities may be undertaken accordingly.

Decision of the forum:

- Forum agreed that the substation owner shall be responsible for providing audit-related information and coordinating with all relevant entities

19 Non-availability of Space, Building infrastructure, input power supply source for upgradation of SCADA/EMS Project (ULDC Phase-III) and Reliable communication network (Agenda by POWERGRID)

19.1 POWERGRID apprised that SCADA/EMS Upgradation Project (ULDC Phase-III) for Northern Region SLDCs and RLDC is being executed by POWERGRID through M/s GE Vernova.

19.2 It was discussed that POWERGRID is facing issue of Non-availability of Space, Building infrastructure, input power supply source at following control centers / sites :

S. No.	SLDC/RLDC	Main Control Centre	Backup Control Centre
1	NRLDC	**Location: New Delhi** 1. Control Center renovation under progress. 2. VPS supplied but installation on hold till finalization of site due to space constraint. NRLDC informed that main Control centre renovation will be completed by mid of December 2025. Subsequently VPS can be installed but UPS Cables are not supplied yet for power up of VPS. POWERGRID mentioned that power cables are being supplied.	**Location: Guwahati** 1. For installation of Battery Bank, NRLDC Backup Control Centre representative have to confirm load bearing capacity of false flooring or to provide base frame. 2. Minor civil works are also required – for earthing. NRLDC mentioned that backup site is ready for installation and mail has been shared with GE, they have to provide the base frame for UPS/Battery bank and earthing at Guwahati. and they have already been reminded regarding the same.
2	HP SLDC	**Location: Shimla** 1. Civil work to be done for UPS & Battery room. Battery installation can be commenced after removal of wall. Clearance is required. Representative from HPSLDC informed that both main and back up control centers have been ready last week, wall partition have been done, now GE can carry out UPS installation works.	**Location: Hamirpur** 1. Wall partition need to be placed for server room and UPS & ACDB room. 2. Not enough space in Battery room for installation of new equipment.
3	UP SLDC	**Location: Lucknow** 1. Server room expansion required for Server panels. 2. Route for cable raceway to be provided as per layout. 3. VPS dismantling plans / clearance to be shared by site or provide a separate space.	**Location: Modipuram** 1. ACDB system has been delivered, however installation works could not carry out due to pending civil work. UPSLDC may confirm the schedule for completion of civil work. Civil work related to Server room shall be completed on priority.

		Representative from UPSLDC stated that Server room expansion required for Server panel has been completed. Regarding VPS, GE have been asked for schedule time for downtime is required in replacing old one with new. POWERGRID stated that it will take 5-7 days for both dismantling and erection.	Representative from UPSLDC mentioned that server room is complete in Modipuram, Auxiliary Power supply room would be ready in 10 days.
4	DTL	**Location: Minto Road** 1. Battery installed. However, ACDB are not yet placed at the location as SMPS replacement is required. As ACDB is to be connected with the new SMPS so activity is on hold.	**Location: Bamnauli** 1. Building Renovation under progress. UPS, Battery & ACDB has been supplied. However, installation could not start due to unavailability of feeders at site, as electrical works are not yet completed. Further safety of supplied material may be ensured.
6	PTCUL	**Location: Dehradun** 1. Building is under construction. Representative from PTCUL informed that Ground floor and first floor will be ready by 31st December POWERGRID informed that dust free environment is required for commissioning of SCADA Servers, otherwise critical and costly servers might got damaged due to dusty environment as cooling fans may intake dust from construction site at other floors and in case any thing happened to servers, GE/OEM may not provide Warranty/ Guarantee, PTCUL may take care of these issues at site.	**Location: Kashipur** 1. VCS system has been supplied however clearance is to be provided by site for start of Installation activities.
7	HVPNL	**Location: Panipat** 1. Auxiliary equipment supplied & installed, however, due to heavy dust in the room relocation was requested. Installation drawing has been resubmitted. Approval awaited to start the activity. HVPNL informed that they were not aware of the issues and requested POWERGRID to coordinate and verify the issues submitted by GE with site and also share with sites timely.	
8	RRVPNL	**Location: Jaipur (Main)** 1. Site to initiate the dismantling of AC & fire alarms etc. therefore, VPS dismantling is also on hold. POWERGRID requested to expedite the readiness.	
		Location: Ratangarh (Sub-SLDC) 1. Repair of trenches required. RRVPNL representative informed that issue has been resolved.	
		Location: Jodhpur (Sub-SLDC) 1. Space is not available for hardware to be supplied. 2. Building is under construction. RRVPNL representative informed that building (civil work) would be completed by January 2026.	
9	PSTCL	**Location: Patiala** 1. As per the survey UPS, Battery & ACDB installation was planned for 1st floor, however as per the PSTCL request and re-survey by M/s GE, installation is now to be done on ground floor. PSTCL confirmed that there is no space constraint at their end. POWERGRID agreed.	

19.3 States expressed concern regarding whether the new VPS would be compatible with the existing SCADA systems and requested POWERGRID to confirm the same. POWERGRID confirmed that the new VPS is of same make and it will work with the existing SCADA system. NRLDC further mentioned that, in addition to ensuring site readiness, POWERGRID should also focus on expediting the ULDC Phase-III project, as its implementation is already delayed.

19.4 POWERGRID stated that FAT for software and hardware going on, simplified FAT for HPSLDC and HVPNL has been completed. BBMB, PSTCL and DTL FAT shall be scheduled from 10/11th Dec' 2025. NRLDC and UP-SLDC/RRVPNL system will be delivered by December 2025 end. MS, NRPC stated that Project should be expedited to adhere to the timeline from both state and POWERGRID end.

Decision of the forum:

- POWERGRID to expedite ULDC Phase-III so that it may be completed by March 2026. (Action: POWERGRID)
- States to ensure all co-ordinated activities as per timeline.

(Action: State utilities)

20 Issues being faced by NMT Team for smooth operation of UNMS system (Agenda by POWERGRID)

S. No.	Issue/Challenge	Details/Remarks	Action Required	Discussion held in the TeST meeting
1	Pending Integration of Network Elements (NEs)	All NEs still not integrated due to lack of support from States/IPPs/ISTS owners and OEMs.	Due to it no consolidated data on total vs. integrated equipment in UNMS. States to update latest status and IPPs/TSPs to coordinate with OEMs and support integration.	States and IPPs/TSPs to coordinate with NMT to facilitate integration of balance communication nodes in to UNMS
2	Lack of Updated Network Details	No updated data on total vs. integrated equipment after new packages were awarded.	States to provide updated equipment/node data.	States to share respective details of total communication nodes
3	Nodal Officer Nomination	Need for a single point of contact from each State/IPPs/ISTS for coordination.	States to nominate nodal officers (DTL/ UP/ HP/ RVPNL have shared nodal persons)	Balance state and IPPs/TSPs to provide details of Nodal officer for coordination with NMT
4	JKPTCL Communication	Temporary setup (laptop with NMS) is	Permanent integration solution needed.	No response

	System Integration	unreliable and often goes offline.		
5	Power Supply Issue at Kashipur	UNMS system remains powered off due to unresolved power issues.	PTCUL to resolve power supply issue. Pending from long Time	PTCUL informed that new battery bank has been delivered and Power issue would be resolved in 01 week
6	Escalation Matrix for IPPS/TSPs	No escalation matrix available for outage resolution.	Still Pending	Balance states and IPPs/TSPs to share Escalation matrix for coordination with NMT

Decision of the forum:

- All constituents to nominate nodal officer for day-to-day operational activities, integration of all nodes (pending / upcoming) with UNMS and providing escalation matrix for intimation and resolution of outage issues.

(Action: All constituents)

21 Supply and installation Redundant Communication for Parbati Pooling (Banala) (PG), Parbati–II (NHPC) & Parbati–III (NHPC) – Status Review and Early Pursuance (Agenda by NHPC)

21.1 Representative from NHPC apprised the agenda regarding supply and installation Redundant Communication for Parbati Pooling (Banala) (PG), Parbati–II (NHPC) & Parbati–III (NHPC).

21.2 It was mentioned that work is jointly being done by POWERGRID and Indigrid.

21.3 NHPC apprised that in view of the fact that the implementation of the redundant communication scheme for Parbati Pooling (Banala), Parbati-II and Parbati-III has already been delayed by nearly year, the committee POWERGRID and INDIGRID may expedite the balance works on priority.

21.4 He further mentioned that given the severe geological constraints, frequent landslides, and recurring flood conditions in the Parbati valley, uninterrupted and reliable dual-source data transmission is critical for maintaining continuous telemetry and ensuring secure grid operation. The importance of OPGW telemetry and communication link was very much felt during heavy rains/flash floods in Parbati/Himachal region during Late Aug-2025 when other communication channels were constrained.

21.5 POWERGRID and Indigrid both mentioned that work would be completed by Jan'26.

21.6 MS, NRPC asked POWERGRID and Indigrid to work in co-ordination and expedite the integration.

Decision of the forum:

- POWERGRID and Indigrid to expedite and complete integration by January 2026. (Action: POWERGRID and Indigrid)

22 Delay in Execution of ULDC Phase-III Project (Agenda by UPSLDC)

22.1 NRLDC expressed concern that multiple project activities under ULDC Phase-III are lagging significantly from the approved L2 timelines. Around 40% FAT tests are still pending even though the scheduled completion was 27 June 2025. Only about 60% of the database preparation for network applications has been completed against the original L2 completion date of 28 April 2025. Major portion of database including mapping of historian points from ULDC Phase-II, RTU, AGC, DSA database is still pending.

22.2 NRLDC further informed that as per L2 schedule, SAT was to be completed by 29 November 2025. Revised timelines have not yet been shared by POWERGRID/GE Vernova.

22.3 UPSLDC & Haryana SLDC underlined that the AMC for the existing SCADA/EMS systems deployed under ULDC Phase-II at State SLDCs is valid only up to March 2026. UP SLDC further stated that the parallel operation of the ULDC Phase-III SCADA system should have been started by now, but revised dates and timelines have not been communicated and emphasized that the parallel-run activity should not be compromised due to delays in the overall project schedule.

22.4 NRLDC further highlighted that Phase-III implementation is already behind schedule and a situation may arise where extending the ULDC-II AMC becomes challenging, leaving Grid operations exposed to reliability risks. It may also attract observations and queries during audits.

22.5 POWERGRID informed that Simplified FAT for HPSLDC and HVPNL has been completed and materials are being dispatched. BBMB, PSTCL and DTL FAT are scheduled from 10/11th Dec' 2025. NRLDC, UP-SLDC/RRVPNL, PTCUL and JKPTCL System would be delivered by December 2025 end.

22.6 Member Secretary, NRPC, noted the delays and emphasized that POWERGRID/M/s GE Vernova to expedite all pending activities for timely implementation of ULDC Phase -III. And further advised SLDCs to provide the required space, building readiness, electrical power, and 48 V DC systems at the earliest.

Decision of the forum:

- POWERGRID to expedite ULDC Phase-III so that it may be completed by March 2026. (Action: POWERGRID)
- States to ensure all co-ordinated activities as per timeline.

(Action: State utilities)

23 Non-displaying of Dynamic Values on SLDC Haryana Website (related to ULDC Phase-II) (Agenda by HVPNL)

23.1 HVPNL apprised that any newly created data points in the SCADA system (analog values) either do not reflect on the website or display random/incorrect values. This issue has been highlighted to M/s Siemens multiple times. However, no solution has been provided so far, nor has the cause of the issue been provided by M/s Siemens. He further informed that Siemens is asking for separate server for this display. HVPNL further requested POWERGRID to take up the issue with SIEMENS to resolve it at the earliest.

Decision of the forum:

- POWERGRID to resolve the issue at the earliest. (Action: POWERGRID)

24 Expediting ULDC Phase-III project (Agenda by HVPNL)

Already discussed in Agenda No. 22

25 Issuance of MoM regarding IP confliction in ULDC Phase-III and IP detail for CFE server for BCC (Agenda by HVPNL)

25.1 HVPNL apprised that under ULDC Phase-III, HPSLDC and Haryana are establishing their own dedicated Backup Control Centres (BCCs). Due to the shared BCC setup in ULDC Phase-II, the CFE (Communication Front End) server IPs of both states are conflicting in the current Phase-III implementation.

25.2 A VC meeting was held on 21.05.2025 in which a common consensus was reached. It was decided that M/s PowerGrid would issue the Minutes of Meeting (MoM) and share the finalized CFE IP details for configuration in the upcoming RTU/SAS systems.

25.3 POWERGRID informed that testing was required which has been completed and solution has been achieved. He further informed that MoM would be issued within **two days**. It was also noted that a similar issue exists in the case of HP.

25.4 POWERGRID further informed that, to avoid IP conflicts, a comprehensive plan has been formulated and would be shared with all states.

Decision of the forum:

- POWERGRID to issue minutes at the earliest and share IP details with all states.

(Action: POWERGRID)

26 Regarding information in respect of ULDC Phase-III scheme (Agenda by BBMB)

26.1 POWERGRID apprised that in respect to ULDC Phase-III Scheme, Integrated FAT for NRLDC and SLDC system is going on. Almost 90% of tests have been successfully demonstrated and balance tests are being conducted at GE, Noida office. POWERGRID further informed that Simplified FAT for HPSLDC and HVPNL has been conducted and materials are being dispatched. For other states including BBMB Simplified FAT is conducting shortly.

26.2 With regard to clause mentioned by BBMB, POWERGRID mentioned that all procedures are being followed up and if additional action is required from POWERGRID end, POWERGRID will definitely take it to meet contractual compliances including Section 2.3.6 of standard scope of Cyber Security Audit shared by CSIRT Power.

Decision of the forum:

- Members noted.

27 Regarding storage of Logs of URTDSM System (Agenda by BBMB)

27.1 Representative from NRPC apprised that, in the 28th TeST Meeting Minutes, it was informed by PowerGrid that the agenda has already been approved in the 54th TCC/79th NRPC meeting and they will award the Contract. However, keeping in view the guidelines of CERT-In, it is requested to provide the current status of the implementation of Contract for storage of logs of URTDSM system.

27.2 POWERGRID informed that the technical approval has been completed. The work order is expected to be issued within 15 days, and the implementation is likely to be completed within 2–3 months.

Decision of the forum:

- For information to sub-committee.

28 Communication System Audit (Agenda by NRPC Secretariate)

28.1 NRPC representative apprised that communication system audit has been commenced in northern region.

28.2 As per NPC-approved SOP, NRPC Secretariat vide Letter No. CEA-GO-17-14(16)/1/2024-NRPC dated 26.05.2025 sought nominations from NRLDC, POWERGRID, and SLDCs for formation of communication audit sub-group.

28.3 Subsequently, matter was discussed in the 28th TeST Meeting held on 23rd July 2025, wherein it was decided that the NRLDC may propose a list of substations for Phase-II physical audit, considering the 12 past year's communication system performance and other relevant operational parameters. It was also decided that communication audit Sub-Group meeting may be held to deliberate on NRLDC proposed list of substations and finalize substations for audit.

28.4 As decided in 28th TeST Meeting, the first Communication Audit Sub-Group meeting was held on 29.08.2025, during which seven substations were identified for physical audit based on inputs from NRLDC and discussions in the meeting. The details are as below:

S. No.	Location	Category	Data Availability Q1 (2025-26)	Remarks
1.	Singoli Bhatwari	Hydro Power Plant	74.04%	Low Data Availability
2.	Meerut	765/400 kV Substation	Meerut 400:- 96.35% Meerut 765:- 98.89%	Different Gateway Systems for 765kV & 400kV
3.	Ad hydro	Hydro Power Plant	96.81%	Low data availability
4.	Dadri	Thermal/Gas power plant	Gas:-99.97% Thermal:- 99.96%	Different Gateway Systems for Dadri thermal & Gas power plant
5.	Fatehgarh 2	765/400kV Substation	98.09%	RE Pooling substation
6.	Salal	Hydro Power Plant	99.50%	Backup is creating communication loop in the network
7.	Tehri	Hydro Power Plant	PSP:- 93.08% Tehri:- 96.69%	Different Gateway Systems for PSP & Tehri Hydro PSP is charged recently

28.5 Member Secretary, NRPC asked for the view of the members about the list of identified substations.

28.6 Members were of the view that Singoli Bhatwari may be removed from the list as the substation has limited communication infrastructure. SE, NRPC stated that data has been received from many sub-stations and after scrutiny new sub-stations can be added to the

list. Communication Audit Sub-Group to finalize more number of substations for communication audit for FY 2025-26.

- **Communication Audit – Status Updates**

28.7 NRPC representative informed that the first physical Communication Audit of Meerut Substation was conducted on 22.09.2025 by audit team comprising NRPC, NRLDC, and PTCUL. Audit observations were issued to POWERGRID; compliance is still awaited.

28.8 POWERGRID representative stated that the same would be submitted shortly.

28.9 NRPC representative informed that the second meeting of the Sub-Group was held on 06.11.2025 through VC, where audits of Tehri PSP and AD Hydro were planned during November and December 2025. Subsequently, the audit of Tehri PSP was carried out on 20.11.2025 by audit team comprising NRPC, NRLDC, and UPPTCL.

- **Major Observations from the Audits**

  NRPC representative mentioned following key observations from the recent audit of Meerut Substation, as noted below:

  - Absence of 2+2 Redundancy
  - Cyber Security Audit by Agency Not Completed
    POWERGRID agreed to submit the compliance report of the audit observations.

- **Pending Reports**

  NRPC representative stated that Communication Healthiness Reports for Dadri (NTPC) and Fatehgarh-II (POWERGRID) are still awaited. He further emphasized that the submission of these reports is essential for completing Phase-I scrutiny and for scheduling physical audits. It was informed that, as per SOP, audits are carried out in two phases:
  - Phase-I: Scrutiny of reports/documents
  - Phase-II: Physical verification of identified nodes

  NRPC representative also informed that Communication Healthiness Reports from 24 stations have been received from TSPs and GENCOs and circulated to the Sub-Group for examination. Sub-group will submit their comments for identifying nodes requiring physical verification. The consolidated scrutiny would be reviewed in the upcoming Communication Audit Sub-Group meeting.

  Decision of the forum:

  - Sub-committee noted.

29 Communication Outage Planning (Agenda by NRPC)

29.1 NRPC representative informed that monthly communication outage planning has been commenced from October 2025 as per the approved SOP. However, despite repeated intimation, no outage proposals or deviation reports have been received from any utility to date. NRLDC representative was requested to confirm whether any outages occurred during this period.

29.2 NRLDC representative clarified that, unlike transmission line outage planning, there is presently no formal process for planned communication outage planning and approval, and only forced outages occur in communication systems. It was further informed that during transmission line outages, a probable communication outage may also occur, and in such

cases, NRLDC ensures availability of an alternate communication path to maintain system connectivity.

29.3 Member Secretary, NRPC emphasized that planned communication activities—such as card upgrades, FOTE replacement, OPGW repair/maintenance associated with transmission line works—must be conducted in a coordinated manner to ensure the availability of alternate paths. Utilities were advised to take ownership and submit their monthly planned communication outage data in the prescribed format by 8th of every month to enable the approval after incorporating observations from NRLDC.

29.4 Monthly outage planning schedule is as follows:

- 1st working day of every month – NRPC Secretariat shall circulate an email requesting all entities to submit their communication system outage proposals.
- By 8th of every month – Entities to submit their outage requests in the prescribed format.
- NRPC Secretariat shall compile all received outage requests and forward them to NRLDC for their observations/input.
- Outage Planning Meeting for the communication system shall be conducted in the third week of every month to finalize the proposed outages.
- The proposed monthly outage plan shall be published on the NRPC website.
- Entities shall avail the approved outages in coordination with NRLDC.
- Deviation reports (if any) are to be submitted by 10th of the following month in the prescribed format.

29.5 NRLDC suggested that even if no outage requests are received, outage planning meeting may still be conducted to streamline the process. It was further mentioned that communication outages arising from transmission line outage planning may also be discussed in the meeting. Members agreed.

Decision of the forum:

- All entities to submit outage request (if any) to ensure communication system outage planning at NRPC Secretariate

AA1 Critical Outage of All Bhadla-2 PMUs for Several Months (Agenda by NRLDC)

AA.1.1 NRPC representative apprised regarding non-reporting of PMUs at Bhadla-2 substation to NRLDC for more than 6 months.

AA.1.2 NRLDC representative apprised that data is now reporting to NRLDC and this matter may be closed.

Decision of the forum:
The forum noted that the matter has been resolved.

AA2 Redundant Communication for 765/400/220kV Meerut GIS and 400/220kV Simbhavali Sub-stations (Agenda by POWERGRID)

AA.2.1 POWERGRID apprised that PMSTL has commissioned 765/400kV Meerut GIS and 400/220kV Simbhavali sub-stations under Intra-State Transmission Network. Both these substations are having redundancy issues, although fibers are also available.

AA.2.2 POWERGRID apprised that PMSTL has commissioned 765/400kV Meerut GIS and 400/220kV Simbhavali sub-stations under Intra-State Transmission Network. Both these substations are having redundancy issues, although OPGW network is available for redundancy.

AA.2.3 For redundancy of Simbhavali sub-station, connectivity with Simbhavali UPPTCL is present, however that it is down since 1 year from UPPTCL side. UPPTCL mentioned that link is up. POWERGRID requested UPPTCL to align Fibcom team to check and confirm the workability of link.

AA.2.4 POWERGRID further mentioned that for establishment of redundancy for both Meerut and Simbhavali, we can utilize LILO line OPGW of Hapur WUPPTCL Station which is LILO of 400kV Muradnagar-Moradabad transmission line. POWERGRID also informed that it has kept OPGW joint box during creation of LILO for WUPPTCL sub-station in 2017-18 which is currently not being utilized by WUPPTCL.

AA.2.5 MS, NRPC asked whether WUPPTCL agrees with the proposal of POWERGRID.

AA.2.6 Representative from WUPPTCL mentioned that OPGW cable has been laid on the LILO portion. POWERGRID requested for arranging 4 fibers for connectivity between Hapur and Muradnagar/Muradnagar for establishment of redundant network. WUPPTCL agreed and asked for email from POWERGRID regarding the proposal and requested forum to support for their network as well. POWERGRID enquired about the specific support required for Grid Operation Data Reporting and assured that ULDC network services will be provided. WUPPTCL requested E1/Ethernet network service on UPPTCL network for redundant data reporting at SLDC, for that UPPTCL agreed.

AA.2.7 MS, NRPC also asked CTU views for this agenda. CTU stated that both of these stations are constructed under Intra-State Network scheme therefore POWERGRID and UPPTCL may jointly review the requirement and coordinate to provide redundant communication.

Decision of the forum:

- POWERGRID to share requirement with WUPPTCL. (Action: POWERGRID)

AA3 Regarding OPGW connectivity to Baglihar HEP (Agenda by JKSPDC)

AA.3.1 JKSPDC apprised that POWERGRID is currently replacing OPGW on the Kishenpur–New Wanpoh and Wagoora lines. Kishenpur–New Wanpoh line has LILO at Baglihar HEP, and JKSPDC requested installation of OPGW on the LILO portion along with the necessary equipment at Baglihar. JKSPDC further informed that Baglihar HEP is also directly connected to Kishenpur through separate transmission line, and OPGW may additionally be laid on this section for redundancy purpose.

AA.3.2 POWERGRID stated that the work can be undertaken for the state sector, with billing done directly to J&K. The ownership of the assets would be with J&K.

AA.3.3 CTU stated that the ongoing OPGW installation on the said transmission scheme shall be reviewed and subsequently the requirement shall be finalized for laying OPGW on the LILO portion by JKSPDC. CTU also mentioned that the arrangement could be executed under bilateral tariff.

AA.3.4 Forum agreed to the proposal from a technical perspective.

AA.3.7 MS, NRPC advised that JKSPDC may place this agenda before NRPC with inputs of POWERGRID and CTU.

Decision of the forum:

- A separate meeting to be convened amongst NRPC, NRLDC, J&K (SLDC), JKSPDC, CTU, POWERGRID and NMT. Accordingly, JKSPDC to take up agenda to NRPC with detailed scheme with inputs of POWERGRID and CTU.

(Action: NRPC Secretariat)

AA4 Implementation of Process Bus technology in Substations (Agenda by NRPC Secretariate)

AA.4.1 NRPC representative apprised that in Agenda Item 3 of the 53rd TCC and 78th NRPC meeting, POWERGRID submitted proposal seeking approval of costs under Add Cap (tariff block 2024–29) for implementing Process Bus in equipment that has not yet completed its 25-year useful life at the Ballabgarh, Mandola, Hissar, Meerut, and Prayagraj (Allahabad) substations.

AA.4.2 As recorded in the minutes, the forum decided that the agenda should first be deliberated from a technical perspective in the upcoming TeST meeting, and thereafter be taken up in the next NPC meeting.

AA.4.3 POWERGRID proposed that this matter may be taken to Protection Sub Committee as process bus technology is part of SAS which is part of substation.

AA.4.4 Members agreed.

Decision of the forum:

- Matter to be taken to Protection Sub Committee for deliberation.

(Action: NRPC Secretariat)

List of Participants of 29th TeST Sub-Committee Meeting held on 27th November, 2025

NRPC

1. Smt. Rishika Sharan, Member Secretary
2. Sh. Anzum Parwej, Superintending Engineer
3. Sh. Ravi Kant, Executive Engineer (Communication & Services)
4. Smt. Priyanka Patel, Chief Manager, (POWERGRID), NRPC
5. Amit Kumar, Assistant Manager (NHPC), NRPC

CEA

6. Akshaya Kumar Gupta, PCD Division, CEA

CTUIL

7. Nutan Mishra, Sr General Manager
8. Sh. T. P. Verma, Deputy General Manager
9. Sh. Rajiv Sogani, Executive Engineer

NRLDC

10. Sh. Ashok Kumar, General Manager
11. Sh. Sumit Kumar, Deputy Manager

INDIGRID

12. Sh. Lokendra Singh Ranawat, Head Regulatory
13. Narinder Singh, Manager

POWERGRID

14. Sh. Arun Kr. Singh, Chief General Manager (GA&C)
15. Sh. Furkan Siddiqui, Deputy General Manager (GA&C)
16. Sh. Narendra Kumar Meena, Deputy General Manager
17. Sh. Anoop Kumar Verma, Deputy General Manager (UNMS)

BBMB

18. Sh. Gurpreet Singh, Deputy Director, LD

DTL

19. Sh. S.S. Mann, Manager

20. Sh. Jaspal Singh, Deputy Manager

HPSLDC

21. Sh. Sanjay Ranot, Senior Executive Engineer

HPPTCL

22. Virender Kumar, Deputy General Manager
23. Sh. Abhishek Puri, Assistant Engineer

HPSEBL

24. Smt. Ambika Sharma, Sr. Executive Engineer

HVPNL

25. Sh. Sushil Kumar, Superintending Engineer
26. Sh. Sukh Pal, Executive Engineer
27. Sh. Anshu Jain, Assistant Engineer

NHPC LTD.

28. Sh. Vivek Kumar, Group Senior Manager

PSTCL

29. Sh. Er. Mandeep Micky, Senior Executive Engineer
30. Surinder Loomba Superintending Engineer, PBSLDC
31. Rajshree Vaidya, Assistant Engineer, PBSLDC

PTCUL

32. Sh. Arun Kumar Gupta, Executive Engineer
33. Sh. Pradeep Kumar, Executive Engineer
34. Sh. Er. Hare Ram, Assistant Engineer

RRVPNL

35. Sh. Rajiv Sogani, Executive Engineer

RRVUN

36. Sh. S. K. Garg, Superintending Engineer

UPSLDC

37. Amit Narain, Superintending Engineer
38. Sh. Ashok Kumar, Executive Engineer

UPPTCL

39. Sh. Deepak Gupta, Assistant Engineer

JKSPDC

40. Sh. Sunil Bhardwaj, Assistant Engineer

JKPTCL

41. Sh. Ehtisham Ali Andrabi, Executive Engineer
42. Vishal Chowhan, Assistant Executive Engineer

THDCIL

43. Smt. Vinita Harsh, Deputy General Manager

WUPPTCL

44. Sh. G. P. Karna

Sr. No	OPGW line & circuit name	Name of TBCB/RTM Owner of OPGW	Region	Year of Commissioning	Total number of OPGW fiber cores (24/48/96 etc) (a)	Number of cores utilized for grid applications (b)	Spare cores reserved for grid applications (c)	Number of fiber cores already being sharedwith other entity for grid application.(d)	Name of the grid entity to which fibers shared for grid applications i.e. (d).	Lease period for sharing of fibers i.e.(d) for grid applications	Number of cores leased on a commercial basis (e)	Name of entity to which fibers shared for non-grid applications i.e. (e) on commercial basis	Lease period for sharing of fibers on commercial basis	Out of order/Damaged fibers(f)	Remaining/ unallocated ((A-(B+C+D+E+F))

Annexure-II

Status of communication schemes agreed in various NCT

S. No.	Name of the Scheme	Implementing Agency	Implementation schedule	FOTE (No.)	OPGW (Km.)	Cost (Cr.)	Constraint Faced	Status update by TSP
Schemes approved in 33rd NCT, awarded through OM Letter dtd. 26.09.2025								
1	Redundant communication for Narora Atomic Power Plant (NPCIL) (NAPP)	POWERGRID	24 months from date of allocation	2	88	6.45		Tendering is being done for implementation of the scheme.
2	Redundant communication for Saharanpur S/s (PG)	POWERGRID	12 months from date of allocation	5		2.1		Tendering is being done for implementation of the scheme.
3	Redundant communication for Manesar S/s	POWERGRID	24 months from date of allocation		30	2.1		Tendering is being done for implementation of the scheme.
Schemes approved in 30th NCT, awarded through OM Letter dtd. 25.06.2025								
4	OPGW installation on existing 400 kV Sikar (PG) – Agra (PG) D/c line (owned by PG) which is proposed to be LILOed at 400 kV GSS Kumher (RRVPN)	POWERGRID	Matching time frame with transmission scheme of "LILO of one circuit of 400kV Sikar – Agra D/c (Quad Moose) line at 400 kV GSS Kumher	3	386	26.49		Tendering done, Site survey has been completed for finalization of exact route length for OPGW cable manufacturing.

			(6.5 ckm) along with 80 MVAR, 420 kV switchable line reactor at Kumher end of Sikar – Kumher 400 kV section"					
5	OPGW installation on existing 220 kVChittorgarh (RVPN)-RAPP B (NPCIL) D/c Line (owned by PG) which is proposed to be LILOed at RVPNs 220 kV GSS Begun (Chittorgarh)	POWERGRID	Matching time frame with transmission scheme of "LILO of 220 kV Chittorgarh-RAPP B D/c Lines at RVPNs proposed 220 kV GSS Begun (Chittorgarh)"	2	130	8.55		Tendering done, Site survey has been completed for finalization of exact route length for OPGW cable manufacturing.
Schemes approved in 27th NCT, awarded through OM Letter dtd. 24.02.2025								
6	OPGW installation on existing 765 kV Fatehpur-Varanasi S/c & 765 kV Fatehpur-Sasaram S/c Lines which are proposed to be LILO at New Prayagraj (ISTS)	POWERGRID	24 months from the date of allocation or with matching timeframe of the transmission project "Interregional (NR- WR) Transmission System	2	579	33.24		**Awarded to M/s Advait, Design and BOQ approval in progress**

			strengthening to relieve the loading of 765 kV Vindhyachal-Varanasi D/c line" whichever is earlier					
Schemes approved in 26th NCT, awarded through OM Letter dtd. 30.01.2025								
7	Redundant Communication for Salal (NHPC) station	POWERGRID	18 months from the date of allocation		62	3.41		**Awarded to M/s Advait, Design and BOQ approval in progress.**
Schemes approved in 22nd NCT, awarded through OM Letter dtd. 02.09.2024								
8	Optical fiber connectivity for NLDC new building August Kranti Marg, New Delhi	POWERGRID	02.03.2026 (Revised in 26th NCT)	3	35	7.2		**For Interim arrangement for fibre connectivity upto NLDC building has been completed. Communication Equipment and 48V DCPS have been installed and commissioned. Connectivity is pending at Grid-India end (NLDC) due to delay in building infra**

								readiness. **For permanent arrangement, OFC laying started, however major delay due to non-availability of permission from CPWD for earth cutting and digging.**

Schemes approved in 20th NCT, awarded through OM letter dtd. 15.07.2024								
9	Supply and installation of 24 Fibre OPGW on PKTCL lines for providing redundant communication for Parbati Pooling (Banala) (PG) S/s, Parbati-II (NHPC) & Parbati-III (NHPC) stations	PKTCL	18 months from the date of allocation		88.635	5.31		**To be completed by January 2026**

10	Supply and installation of 24 Fibre OPGW & FOTE to providing redundant communication for Parbati Pooling (Banala) (PG) S/s, Parbati-II (NHPC) & Parbati-III (NHPC) stations	POWERGRID	18 months from the date of allocation (with matching schedule with Scheme 4)	4	0.783	1.24		**To be completed by January 2026**
11	Redundant Communication for Chamera-III (NHPC) & Budhil (GreenCo) using 3 pairs of fibers sharing from HPPTCL network.	POWERGRID	18 months from the date of allocation	1	0	0.3		**Work order issued, shall be completed as per the time schedule. Equipment is being supplied. Expected to complete by Jan 2026**
Schemes approved in 19th NCT, awarded through OM letter dtd. 29.05.2024								
12	OPGW installation on existing 400 kV Kota – Merta line which is LILOed at Shri Cement & proposed to be LILOed at 765/400 kV Beawar (ISTS) S/s	POWERGRID	24 months from the date of allocation	3	311	18.5		**Work order issued. It will be completed as per the time schedule in May 2026.**
13	Supply and Installation of 12 nos. FOTE and additional ethernet (125 nos.) cards for existing FOTE in view of resource disjoint and critical locations.	POWERGRID	12 months from the date of allocation	12	0	5.2		**All works completed except one equipment at DTL SLDC. It will be completed commissioning of DTL's 48V DC Power Supply (at present existing DCPS are working on**

								full load). **Time Assessment in DPR was incorrect as per Scope of work.** **Delayed due to actual time required being more.** **MS, NRPC advised POWERGRID to provide their inputs with correct assessment through a letter to CTU regarding the delay so that it may be taken into consideration.**
14	Supply and Installation of 11 nos. FOTE Equipment at Backup SLDCs in NR & Backup NRLDC.	POWERGRID	12 months from the date of allocation	11	0	3.3		**All works completed except two equipment installation at DTL, Bamnauli control centre due to ongoing renovation works. (DTL representative was not present for comments)**

15	Supply and installation of OPGW on 400kV Fatehgarh I (Adani) - Fatehgarh-II (PG) line (6.5 kms), (Fatehgarh-I Adani) –Bhadla(PG) line LILOed at Fatehgarh-II) as redundant communication for Fatehgarh-I (Adani)	Adani Transmission Ltd.	18 months from the date of allocation	0	6.5	0.325		**OPGW work completed on 400kV Fatehgarh I (Adani) - Fatehgarh-II (PG) line (6.5 kms)**
16	OPGW installation on 765kV Agra (PG) -Fatehpur (PG) D/c line may be considered as a separate scheme in matching timeframe of Ph-IV (Part-4:3.5GW) scheme	POWERGRID	24 months from the date of allocation	2	335	16.5		**Work order issued. It will be completed as per the time schedule in May 2026. 188 Kms completed out of 335 Kms.**
17	OPGW installation on existing 400 kV Kurukshetra - Malerkotla line. Part-A	NRSSXXXI (B) Transmission Ltd (Sekura)	18 months from the date of allocation		140	9		**As on 31st Aug 25, Work complete. Supply of Equipment and commissioning will be done in first week of December 2025.**

18	Communication Equipment (FOTE) installation on existing 400 kV Kurukshetra - Malerkotla line at both ends. Part-B	POWERGRID	18 months from the date of allocation (with matching time frame of OPGW on 400 kV Kurukshetra - Malerkotla transmission line)	2		0.6		**Work order issued. It will be completed as per the time schedule.**
Schemes Modified/approved in 16th NCT, awarded through OM letter dtd. 03.01.2024								
19	Supply and Installation of OPGW on 400kV Kishenpur-Wagoora line.	POWERGRID	21.11.2026 (Revised in 26th NCT)	2	183	9.15		**Work order issued, It will be completed as per the time Schedule in Nov 2026.**
20	Supply and Installation of OPGW on 400kV Agra-Ballabhgarh line.	POWERGRID	21.05.2026 (Revised in 26th NCT)	2	181	9.05		**OPGW Installation works completed for 181 Kms out of 183 Kms. Will be completed in Dec 2025.**

Schemes approved in 11th NCT, awarded through OM letter dtd. 16.02.2023								
21	OPGW installation on existing 400 kV Jallandhar (PG) – Kurukshetra (PG) line which is to be LILOed at 400 kV Dhanansu (PSTCL)	POWERGRID	10.01.2027 (Revised in 26th NCT)	2	229	10.3		**Work order issued, It will be completed as per the time schedule**
22	Supply and Installation of OPGW on existing 400 kV Koldam- Ludhiana (PG) line which is to be LILOed at 400 kV Ropar (PSTCL)	Indigrid	Implementation timeframe of 18 months	2	150	6.7		**Work completed.**
23	Redundant communication System for Bhinmal (PG) and Kankroli (PG) ISTS stations	POWERGRID	21.05.2026 (Revised in 26th NCT)	8	5	2.55		**Work order issued, All equipment supplied and powered up, however RRVPNL is reluctant in providing fibres to commission the links.**
24	OPGW installation on 220 kV Anta (NTPC) - Bhilwara Line	POWERGRID	Implementation timeframe of 18 months	2	187	9.35		**Work completed.**

Schemes approved in 9th NCT, awarded through OM letter dtd. 15.11.2022								
25	Transmission lines which are to be provided with OPGW alongwith necessary accessories and FOTE are mentioned as under · 765kV S/c Jaipur (Phagi) (RVPNL) – Gwalior line (312 km) (Ckt-1 is proposed) (to be LILOed at Dausa) · 400kV D/c Agra – Jaipur (South) (PG) line (254 km) (to be LILOed at Dausa)	POWERGRID	21.11.2026 (Revised in 26th NCT)		312 254	28.5		**OPGW installation works going on** **Around 240 out of 310 Kms (Phagi-Gwalior line) is completed. Not getting non-auto permit as one or the other circuit is in shutdown.** **Also, Due to Fog the work can't be continued.** **Therefore, work will be started after Feb 2026.** **Will be completed in Dec'2025**