



भारत सरकार
Government of India
विद्युत मंत्रालय
Ministry of Power
पूर्वी क्षेत्रीय विद्युत समिति

Eastern Regional Power Committee

14, गोल्फ क्लब रोड, टालीगंज, कोलकाता-700033
14 Golf Club Road, Tollygunj, Kolkata-700033



वसुधैव कुटुम्बकम्
ONE EARTH - ONE FAMILY - ONE FUTURE

Tel. No.: 033-24239651, 24239658 FAX No.: 033-24239652, 24239653 Web: www.erpc.gov.in

NO. ERPC/Op/SCADA/2023/ 542

DATE: 13.07.2023

सेवा में / To,

संलग्न सूची के अनुसार /As per list enclosed.

विषय : पूर्वी क्षेत्र के संचार व्यवस्था पर 25.05.2023 को आयोजित विशेष बैठक का कार्यवृत्त ।

Sub: Minutes of Special Meeting on communication system of ER held on 25.05.2023

महोदय/Sir,

पूर्वी क्षेत्र के संचार व्यवस्था पर 25.05.2023(गुरुवार) को 10:30 बजे पूर्वाह्न में पूर्वी क्षेत्रीय विद्युत समिति, कोलकाता के सम्मेलन कक्ष में आयोजित विशेष बैठक का कार्यवृत्त पू.क्षे.वि.स. की वेबसाइट (<http://www.erpc.gov.in/>) पर उपलब्ध है। कृपया देखें।

Please find the minutes of the **Special meeting on communication system of ER held on 25.05.2023(Thursday) at 10:30 AM at ERPC Conference Hall, Kolkata** available at ERPC website (<http://www.erpc.gov.in/>).

यदि कोई अवलोकन हो, तो कृपया इस कार्यालय को यथाशीघ्र भेजा जाए।

Observations, if any, may please be forwarded to this office at the earliest.

यह सदस्य सचिव, पू. क्षे. वि. स. के अनुमोदन से जारी किया जाता है।

This issues with approval of Member Secretary, ERPC.

भवदीय / Yours faithfully,

अलीक
13. VII. 23

(ए. दे / A. De)

कार्यपालक अभियंता (संचालन)

Executive Engineer(Operation)

LIST OF ADDRESSES:

1. CHIEF ENGINEER (ULDC), BSPTCL, PATNA, (FAX NO. 0612-2504557/2504937)
2. DY. GENERAL MANAGER, (ULDC), JUSNL, RANCHI (FAX NO. -0651 -2490486/2490863)
3. CHIEF GENERAL MANAGER, (TELECOM), OPTCL, BHUBANESWAR (FAX NO.0674-2748509)
4. GENERAL MANAGER, TTPS, TALCHER, (FAX NO. 06760-243212)
5. CHIEF ENGINEER, CLD, WBSETCL, HOWRAH, (FAX NO. 033-26886232)
6. CHIEF ENGINEER, COMMUNICATION, WBSETCL, SALT LAKE (FAX NO.: 033-23591955)
7. CHIEF ENGINEER, SLDC, DVC, HOWRAH (FAX NO. 033-2688-5094)
8. ADDL.CHIEF ENGINEER, SLDC, POWER DEPT., GOVT. OF SIKKIM, GANGTOK, (FAX NO. 03592-228186/201148/202284)
9. CHIEF ENGINEER, SLDC, DVC, MAITHON
10. EXECUTIVE DIRECTOR, ERLDC, POSOCO, KOLKATA, (FAX NO. 033-2423-5809)
11. GENERAL MANAGER, FSTPP, NTPC, FARAKKA, (FAX NO. 03512-224214/226085/226124)
12. GENERAL MANAGER, KhSTPP, NTPC, KAHALGAON (FAX NO.06429-226082)
13. GENERAL MANAGER, TSTPP, NTPC, TALCHER, (FAX NO. 06760-249053)
14. EXECUTIVE DIRECTOR, POWERGRID, ER-II, KOLKATA(Fax no: 033-23572827)
15. EXECUTIVE DIRECTOR, POWERGRID, ER-I, PATNA, (FAX NO.0612-2531192)
16. EXECUTIVE DIRECTOR, POWERGRID, ODISHA PROJECTS, SAHID NAGAR, BHUBANESWAR - 751 007
17. EXECUTIVE DIRECTOR (O&M), NHPC, FARIDABAD (FAX No.:0129-2272413)
18. GENERAL MANAGER, TEESTA -V POWER STATION, NHPC, SINGTAM, EAST SIKKIM (FAX 03592 - 247377)
19. CHIEF ENGINEER, RANGIT POWER STATION, NHPC, P.O. RANGIT NAGAR, SOUTH SIKKIM (FAX NO.03595-259268)
20. PLANT HEAD, ADHUNIK POWER & NATUARAL RESOURCES, JHARKHAND (FAX NO.: 0657-6628440)
21. AGM (OPERATION), MAITHON POWER LTD, DHANBAD (FAX: 08860004758)
22. GENERAL MANAGER (O&M), NHPC LTD, FARIDABAD, FAX: 0129-2272413
23. ASSOCIATE VICE PRESIDENT, GMR KEL, BHUBANESWAR-751007. (FAX NO: 0674-2572794)
24. SHRI D. P. BHAGAVA, CHIEF CONSULTANT (O&M), TEESTA URJA LIMITED, NEW DELHI -110 001(FAX:011 -46529744)
25. SHRI BRAJESH KUMAR PANDE, PLANT HEAD, JITPL. (FAX:011 -26139256-65)
26. CEO, SNEHA KINETIC POWER PROJECTS PVT. LTD. #31 – A, NATIONAL HIGHWAY, BEHIND SNOD BUILDING, DEORALI, GANGTOK, SIKKIM-737102.
27. PLANT HEAD, CHUZACHEN HYDRO ELECTRIC PROJECT, GATI INFRASTRUCTURE PVT LTD, LOWER BERING KARABARI, PAKYONG, EAST SIKKIM, 737106
28. ED, DANS ENERGY PVT. LTD, 5TH FLOOR, BUILDING NO.8, TOWER-C, DLF CYBER CITY, PHASE-II, GURGAON-122002.
29. GENERAL MANAGER, STPP, NTPC, BARH.
30. DY. GENERAL MANAGER (OS), NTPC, ER-LL, N-17/2, 3-5 FLOORS, OLIC BUILDING, NEAR UNION BANK, NAYAPALLI, BHUBANESWAR, ODISHA 751012.
31. ADDITIONAL GENERAL MANAGER (OS), NTPC OFFICE COMPLEX, ER1 HQ, SHASTRI NAGAR, PATNA, BIHAR 800029
32. CHIEF ENGINEER (COMMUNICATION), DVC TOWER, CIT SCHEME VII M, ULTADANGA, KOLKATA, WEST BENGAL 700067.
33. AGM (EEMG), NABINAGAR POWER GENERATING COMPANY LTD, SHIVANPUR, P.O.-ANKORHA DIST.-AURANGABAD, STATE – BIHAR PIN -824 303
34. GENERAL MANAGER, DARBHANGA-MOTIHARI TRANSMISSION COMPANY LTD.,A-26/03,MOHAN COOPERATIVE INDUSTRIAL ESTATE,MATHURA ROAD,NEW DELHI 110044.
35. AGM (EEMG) BHARTIYA RAIL BIJLEE COMPANY LIMITED, NABINAGAR, H-TYPE OFFICE PO-PIROUTA, P.S.-KHAIRA, DISTT-AURANGABAD, BIHAR-824 303,
36. DIRECTOR (OPERATION), ODISHA POWER GENERATION CORPORATION LTD. IB THERMAL POWER STATION, BANHARPALLI, DISTRICT- JHASUGUDA ODHISA—768234

14 गोल्फ क्लब रोड, टॉलीगंज, कोलकाता - 700 033 | 14 Golf Club Road, Tollygunge, Kolkata – 700 033.

Tele: 24239657, 24239651, 24239650. Fax: 24239652, 24239653. www.erpc.gov.in, Email: mserpc-power@nic.in

37. RUDRESHA MV, MANAGING DIRECTOR, PROJECT DELIVERY, OSI DIGITAL GRID SOLUTIONS, UNIT NO. 29, LOWER GROUND FLOOR, INTERNATIONAL TECH PARK BANGALORE(ITPB), WHITEFIELD, BANGALORE 560066
38. SHRI ANISH RAJGOPAL, DIRECTOR, M/S CHEMTROLS INDUSTRIES PRIVATE LIMITED, AMAR HILL, SAKI VIHAR ROAD, POWAI, MUMBAI – 400 072

Minutes of special meeting held on 25th May 2023 at ERPC Kolkata

List of participants is attached at **Annexure-A**.

Member Secretary, ERPC chaired the meeting. He welcomed all the participants in the meeting.

At the outset, a brief presentation was delivered by Shri L. Murali Krishna, Sr. DGM – ERLDC & Shri Santanu Rudrapal, CM- POWERGRID jointly on integration of Joda-Ramchandrapur Tie OPGW Link and Commissioning of Patna – Kishanganj OPGW Link. It was presented that two links had been commissioned that are a) Joda – Ramchandrapur link that was commissioned on 08/05/2023 and integrated with existing system on 23.05.2023 b) Patna- Kishanganj link that is commissioned and integrated on 17/05/2023.

He further added that Kishanganj- Patna link is proposed to improve redundancy of network. He also proposed list of other interstate links which can be commissioned to improve redundancy.

BSPTCL representative informed that instead of proposed interstate link 132k V Lalmatia-Kahalgaon, 400 k V Patna - Patratu link may be commissioned as 400 k V link will have more reliability than 132 k V link and for commissioning of this link, Biharsharif -Tenughat link is only required to be commissioned as Biharsharif- Patna and Tenughat- Patratu link is already existing.

Member Secretary, ERPC advised all the utilities to go through list of proposed interstate links and share their observation/views to ERPC/ERLDC and then he asked DD(Operation), ERPC to take up the agenda.

1. Communication Outage Coordination Meeting

- i. Outage procedure.
- ii. Periodicity of the Communication Outage Coordination meetings.
- iii. Regular monitoring of Approved v/s Aailed outages of communication links and equipments.
- iv. Communication outage portal.
- v. Data-base with monthly outage hours in respect of communication links.
- vi. Percentage (%) availability in communication system.

Deliberation in the meeting

ERPC representative has informed that as per CERC (Communication system for inter-state transmission of electricity) regulations 2017, RPC Secretariat shall be responsible for outage planning for communication system in its region and RPC Secretariat shall process outage

planning such that uninterrupted communication system is ensured. Subsequently, a draft procedure for outage planning of communication system in Eastern Region has been prepared by ERPC which is attached in **Annexure-1**.

He also informed that in order to plan monthly outages of interstate communication links, ISTS links used for interstate communication and equipment, the concerned entity should nominate a Nodal Officer/Alternate Nodal Officer and provide their details such as designation, mobile number, email ID, etc., to ERPC/ERLDC. The Nodal Officer/Alternate Nodal Officer will interact internally and serve as the single point of contact for outage planning with ERPC/ERLDC.

He further added that outage proposal of the communication equipment/links shall be submitted in the prescribed format by 8th of every month to ERPC/ERLDC only in format attached as **Annexure COP-I & COP-II**. The type of services (viz. data, voice, protection etc.) being affected/ not affected may also be mentioned in the format. After receiving request of outages from all utilities, ERPC will consolidate the list of outage proposals received from various Users/ Owners of the communication equipment/links and publish the list by 15th of every month.

He further informed that a meeting will be conducted during the 2nd or 3rd week of each month to discuss and approve / dispose the proposed list of outages pertaining to communication links/ equipment of the next month. The date of the meeting will be communicated during the 1st week of the month. Subsequently, the final approved list of communication equipment (**COA-I & COA-II**) will be published by ERPC within 3 days from the date of the meeting. He also informed that communication outages affecting other regions would be coordinated by ERLDC through NLDC.

Regarding emergency outages requirement of communication link/ equipment, he informed that utility may directly apply to ERLDC on D-2 basis.

Representative of Powergrid pointed out that emergency shutdown may be applied on D-3 basis and there may be a timeline for confirmation of approval/rejection by ERLDC.

So, it was agreed that for emergency outages requirement of communication link/ equipment, utility may directly apply to ERLDC on D-3 basis and confirmation of approval/ rejection will be provided on D-2 basis by ERLDC considering 24 hrs processing window.

ERPC representative informed that it is further planned to develop a communication outage portal to streamline the process of outage planning. This portal will allow utilities to submit outage proposals for the month, and the status of various communication links and equipment will be accessible to all. Respective utilities will be responsible for submitting their proposals through this portal. In response to this, the ERLDC representative stated that they expect to develop the portal internally within a timeframe of 3-4 months. However, if they encounter any difficulties during the development process, they are prepared to hire an external agency to assist with the creation of the portal.

ERPC representative further stated that for any interface node, wideband node and communication network, maximum outages of 16 hrs can be given on monthly basis and of 48 hrs on annually basis.

2. Communication Audits of Substations

- i. Identification of Critical Substations for Communication Audits.
- ii. Monitoring and ensuring the compliance of recommendations of Communication Audits.
- iii. Preparation of Annual Communication Audit Reports and submission of the report to CERC.

Deliberation in the meeting

ERPC representative informed that in compliance with CERC (Communication system for inter-state transmission of electricity) regulations 2017, communication audit procedure had been prepared. The same was approved in 43rd ERPC Meeting. There are some amendments made in the procedure and the same are listed below:

SL No	Existing Clause	Amended Clause
1	4.1 A Communication System Audit Sub-Group comprising one member each from ERPC, ERLDC, CEA and One of the Eastern Region SLDCs shall be constituted by ERPC Secretariat with the approval of Member Secretary, ERPC. The subgroup may co-opt any other member from any organization for facilitating the activities of the sub-group.	4.1 A Communication System Audit Sub-Group comprising one member each from ERPC, ERLDC, Powergrid and One of the Eastern Region SLDCs shall be constituted by ERPC Secretariat with the approval of Member Secretary, ERPC. The sub-group may co-opt any other member from any organization for facilitating the activities of the sub-group. Further, consultation from CEA can be taken, if required. The Audit team shall be formed excluding the member for the Organization/Utility whose system is to be Audited.
2	4.2 ERPC Secretariat may also engage a third party for carrying out Audit Activities.	Omitted
3	4.5 The Audit would include but not limited to following aspects: a) Availability of communication channels. f) Audit of all newly commissioned communication equipment within six months of its commissioning.	4.4. The Audit would include but not limited to following aspects: a) Availability of communication channels. f) Audit of all newly commissioned communication equipment within six months of its commissioning. g) Completion of 3rd party Cyber Security Audits h) Network traffic w.r.t capacity. i) Spare availability, replenishment

		<p>etc</p> <p>j) Any other parameters as agreed by the Communication Sub Group.</p>
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The amended procedure is attached at **Annexure-2**

ERPC representative further informed that subgroup will scrutinize the information received at ERPC Secretariat and further nodes for physical verification will be finalized based on the scrutiny of information. Subsequently Phase II of audit will be carried out which involves physical visit to listed substations as per Phase I of audit. For Phase II of audit also audit committee will be formed that will include one member each from ERPC, ERLDC and SLDCs of Eastern Region. However, team shall be formed excluding the member for the Organization/Utility whose system is to be audited.

Member Secretary, ERPC advised all utilities to share nominations (2 nos) from each SLDCs for communication system audit. He further added that audit may be started from important S/s of Powergrid like Subhashgram from the month of July'2023.

3. Installation of UNMS remote console at ERLDC:

A meeting was held on 05.04.2023 among CEA, CTU, POWERGRID and Grid -India to discuss for installation of UNMS remote console at RLDC, for supervision of communication system of ISTS, ISGS, IPP, STU etc. to ensure adequate availability of real time data at ERLDC as per regulations of 7.5 of Communication system for ISTS regulations 2017.

In the meeting POWERGRID said that remote console is not envisaged in the present project. They requested approval for the same by the RPC/NCT before June 23 to take up procurement of the console through amendment.

Deliberation in the meeting

ERPC representative informed that as per deliberation in the meeting conducted by NCT on 12.05.2023, NCT had approved for installation of UNMS display monitor at ERLDC. He further added that a remote console for UNMS is also required to be installed at ERPC for checking healthiness of communication links on real time that will help in communication outage planning.

MS, ERPC advised Powergrid to install UNMS remote console at ERPC and display monitor for UNMS at ERLDC.

4. Dual reporting of RTU , PMU, VOIP , AMR etc application on dual channel to RLDC and Back-up RLDC

The above issue was deliberated in meeting among the participants and requested for clarification of cited issue from CEA.

In this regard, CEA intimated that "To ensure redundancy with route diversity, each communication channel (working path) planned for the users shall be provided with alternate

channel (protection path) in different routes i.e. the working path and protection path should be resource disjoint. For last mile connectivity to load dispatch centres (s) additional redundancy in different route may be considered. In case of failure of the working path, the protection path shall be available for the required communication services. "

Therefore, dual redundancy may be planned for both main and back -up load dispatch centres.

Subsequently another meeting was organized by the CTU on 09.05.23 for further discussion for planning of dual redundancy and implementation of same for existing system by installation of additional equipment /cards etc for ISTS system.

ERLDC mentioned that as per regulations, communication terminal equipment (SDH/PDH) is also required to be in dual mode for redundancy of system to ensure the CEA guideline as mentioned above . Hence CTU may discuss and plan accordingly in a consolidated manner to ensure channel redundancy and equipment redundancy together on regional basis.

Deliberation in the meeting

ERLDC representative intimated that for implementation of dual redundancy for data and voice to ERLDC on existing system, detailed study is required regarding architecture of present communication system, details of the available free channels in each node and corresponding cumulative effect on last mile terminal equipment at ERLDC and compatibility of hardware vs software of communication equipment at each node. Accordingly, A detailed discussion is required on regional basis among ERPC, CTU, RLDC & POWERGRID. Same will be put up for discussion in upcoming Test/ ISTS Communication planning meetings.

5. ISMS audit for communication system of Eastern Region

It was deliberated that:

- (i) The Responsible Entity shall implement Information Security Management System (ISMS) covering all its Critical Systems.*
- (ii) Communication System shall also be included while conducting Cyber Security Audits.*



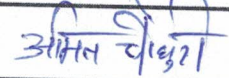

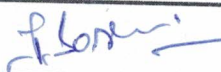
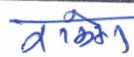



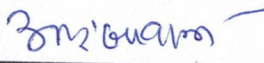

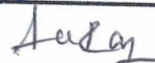


The meeting ended with a vote of thanks.

Participants in Special meeting to discuss communication system related issues of ER

Venue: ERPC Conference Hall, Kolkata

Time: 10:30 hrs

Date: 25.05.2023(Thursday)

Sl No	Name	Designation/ Organization	Contact Number	Email	Signature
1	Shri N.S. Mondal	Member Secretary, ERPC	9958389967	mserpc-power@gov.in	
2	Shri R. Sutradhar	Executive Director, ERLDC			
3	Amarvish Mellick	C GM CM of ERMC	9436302720	amarvish.mellick@grid-india.in	
4	Amit Choudhury	Manager, ERLDC	8944834926	akchoudhury@grid-india.in	
5	ANJAN KR. DAS	GM, POWERGRID, Kolkata	9434740029	anjandas@powergrid.in	
6	Pradhan Sosen	DCM (Comm.), SLDC, DVC Howrah	9494745903	pradhan.sosen@vce.gov.in	
7	Rakesh K. Singh	Jr. Engineer, ERLDC	7488990294	rksing@grid-india.in	
8	Sanjeev Kumar Jha	Executive Trainee	8802024694	skjha@grid-india.in	
9	Santanu Rudrapal	CM (ULDC), POWERGRID	9934735848	santanu.rudrapal@powergrid.in	
10	L. Murali	Sr. Engg, ULDC, Grid	983133772	lmurali@grid-india.in	
11	ROSHAN JAISWAL	ENGINEER, ERLDC	9007184569	rojaiswal@grid-india.in	
12	S.K. Mustari	GM, Telecom, OPTCL	9438907466	tel.s.kmustari@optcl.co.in	
13	Soumyakanti Ray	Sr GM (TIC), OPTCL	9438907477	tel.skray@optcl.co.in	
14	Shobhana Kumari	DGM (SCADA), JUSNL	9431623292	shobhanasee@gmail.com	
15	Arunish Kumar	Sr. Manager (ULDC), JUSNL	9955165070	uldc.jusnl@gmail.com	



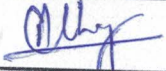
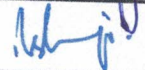


"Coming together is a beginning, staying together is progress, and working together is success." –Henry Ford

Participants in Special meeting to discuss communication system related issues of ER

Venue: ERPC Conference Hall, Kolkata

Time: 10:30 hrs

Date: 25.05.2023(Thursday)

Sl No	Name	Designation/ Organization	Contact Number	Email	Signature
16	B. MADHU	Add. E. Coord. WBSETCL	9434910076	bsrajit_madh@ yako.co.in	
17	Deepak Kri Jha	C.E. (Telecom) OP&W	7763818222	telecom@bsptcl-bihar. gov.in	
18	A.K. Chandhary	CE (System Operations)	7763817705	so.dept@bsptcl-bihar. gov.in	
19	RAJDEEP BHATTACHARJEE	RE, BSPTCL,	9830380689	rekollosphcl@gmail.com	
20	KUMAR SATYAM	Assistant Director, ERPC	7355225072	satyam.24365@gov.in	
21	A. De	Deputy Director	9681932906	alix.erpc@gov.in	
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"Coming together is a beginning, staying together is progress, and working together is success." –Henry Ford

Eastern Regional Power Committee, Kolkata**Draft Procedure on Outage Planning for Communication System–ER****1. Introduction:**

The communication needs of the power sector have amplified significantly with the increase in the size and complexity of the grid. Communication is also a key pre-requisite for the efficient monitoring, operation and control of power system. Communication systems are vital to facilitate secure, reliable and economic operation of the grid. For integrated operation of the Grid, uninterrupted availability of the real time data of various Power System elements assumes utmost importance.

To facilitate this Central Electricity Regulatory Commission had notified Communication System for Inter-State Transmission of Electricity, Regulations, and 2017 which came in force w.e.f. 01.07.2017.

2. Regulatory Provisions with respect to Outage Planning for Communication System:

2.1 The following provisions of Central Electricity Regulatory Commission (Communication System for inter-State transmission of electricity) Regulations, 2017 merit attention:

.....

2(i) (f) "Communication Channel" means a dedicated virtual path configured from one users' node to another user's node, either directly or through intermediary node(s) to facilitate voice, video and data communication and tele-protection system.

2(i) (g) "Communication network" means an interconnection of communication nodes through a combination of media, either directly or through intermediary node(s);

2(i) (h) "Communication system" is a collection of individual communication networks, communication media, relaying stations, tributary stations, terminal equipment usually capable of inter-connection and inter-operation to form an integrated communication backbone for power sector. It also includes

existing communication system of Inter State Transmission System, Satellite and Radio Communication System and their auxiliary power supply system, etc. used for regulation of inter State and intra-State transmission of electricity;

.....

9. Periodic Testing of the Communication System:

- (i) All users that have provided the communication systems shall facilitate for periodic testing of the communication system in accordance with procedure for maintenance and testing to be prepared by CTU within 60 days of notification of Regulations and approved by Commission.*
- (ii) Testing process for communication network security should also be included even for third party system if exists in accordance with procedure for maintenance and testing to be prepared by CTU and approved by Commission.*

2.2 The following provisions of Central Electricity Authority (Technical Standards for Communication System in Power System Operations) Regulations, 2020 notified on 27.02.2020 merit attention:

.....

7. Reliability:

- (1) Total outage period shall be less than sixteen hours on monthly basis each for interface node, wideband node and communication network.*
- (2) The total outages in a rolling twelve months assessment period shall be less than forty-eight hours.*
- (3) The communication system shall be designed to ensure adequate redundancy.*

.....

8. Design and planning:

-
- (5) User shall ensure centralized monitoring or management of its communication network and shall provide necessary facilities for configuration, identification of fault and generation of various reports on*

availability of the communication system.

(6) User shall be responsible for planning, design, implementation, secured operation and maintenance of its own communication infrastructure to be interfaced with the communication system.

.....

21. *Training:*

(1) Specialized training shall be provided to the persons manning the centralized monitoring center and to the field support staff to ensure quick fault detection and restoration of the communication system.

(2) Training shall be provided to the maintenance persons on all communication equipment for its operation and maintenance.

3. Objective:

3.1 Regulation 7.3 of Central Electricity Regulatory Commission (Communication System for inter-State transmission of electricity) Regulations, 2017 states
7.3 Role of National Power Committee (NPC) and Regional Power Committee (RPC):

.....

(iv) The RPC Secretariat shall be responsible for outage planning for communication system in its region. RPC Secretariat shall process outage planning such that uninterrupted communication system is ensured.

.....

3.1.1 Regulation 10 Central Electricity Authority (Technical Standards for Communication System in Power System Operations) Regulations, 2020 notified on 27.02.2020 states

10. Outage planning: Monthly outage shall be planned and got approved by the owner of communication equipment in the concerned regional power committee, as per detailed procedure finalized by the respective regional power committee.

3.2 The objective of this Procedure on Outage Planning of communication System is to carry out outage planning for communication system in ER such that

uninterrupted communication system is ensured. Monthly outage of Communication Equipment/system shall be planned and get approved by the owner of communication equipment / link.

4. Scope and applicability:

4.1 The scope and applicability as per Central Electricity Regulatory Commission (Communication System for inter-State transmission of electricity) Regulations, 2017 is given below:

.....

5. Scope and Applicability:

(i) These regulations shall apply to the communication infrastructure to be used for data communication and tele-protection for the power system at National, Regional and inter-State level and shall also include the power system at the State level till appropriate regulation on Communication is framed by the respective State Electricity Regulatory Commissions.

(ii) All Users, SLDCs, RLDCs, NLDC, CEA, CTU, STUs, RPCs, REMC, FSP and Power Exchanges shall abide by the principles and procedure as applicable to them in accordance with these regulations.

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4.2 The applicability as given in Central Electricity Authority (Technical Standards for Communication System in Power System Operations) Regulations, 2020 notified on 27.02.2020 is given below:

.....

3. Application: These regulations shall apply to all the users; National Load Despatch Centre, Regional Load Despatch Centres, State Load Despatch Centres, Load Despatch Centres of distribution licensee, Central Transmission Utility, State Transmission Utilities, Regional Power Committees, Renewable Energy Management Centres, forecasting service provider and power exchanges.

.....

4.3 All concerned entities stated above would coordinate with ERPC / ERLDC for outage planning of communication System.

4.4 Communication System Outage Planning will be limited to the following system:

- (i) ISTS Communication System including ISGS
- (ii) Intra-state Communication System being utilized for ISTS Communication
- (iii) ICCP links between Main & Backup RLDCs, Main & Backup SLDCs & Main & Backup NLDCs
- (iv) Inter-regional AGC links
- (v) Any other system agreed by the forum

4.5 Communication Equipment/link within the scope of the Procedure would include:

- (i) Optical Fibre links
- (ii) Any other link being used for ISTS communication
- (iii) ICCP links between Main & Backup RLDCs, Main & Backup SLDCs & Main & Backup NLDCs
- (iv) SDH & PDH
- (v) DCPC
- (vi) RTU & its CMU cards
- (vii) DTPCs
- (viii) Battery Banks and Charging Equipment
- (ix) EPABX
- (x) AMR
- (xi) PMU
- (xii) SPS
- (xiii) Any other equipment/link agreed by the forum

Note: PLCC would not be included, if the link is not used for SCADA Data.

5. Procedure on Monthly Outage Planning of Communication System-ER:

5.1 Each concerned Entity would nominate a Nodal Officer/ Alternate Nodal Officer along-with details to the ERPC/ERLDC along-with designation, mobile number; email ID etc. Nodal Officer/ Alternate Nodal Officer would interact internally and would be single point contact for outage planning with ERPC/ERLDC.

5.2 The outage proposal of the communication equipment/links shall be submitted

in the prescribed format via mail erpc.communication@gmail.com & erldccommunication@grid-india.in only (attached as Annexure: COP-I & COP-II). The type of services (viz. data, voice, protection etc.) being affected/ not affected may be mentioned in the format. If there is no interruption to any service, the precautions and actions (like redundant path) being taken to ensure data, voice etc availability may also be mentioned, which facilitates to avoid simultaneous outage for the same service/s.

- 5.3 Users / Owners of the communication equipments/links need to furnish their monthly outage proposal in respect of their equipments/links in the prescribed (in excel format only) by 8th of every month. Modification of this format is not allowed. However, suggestion for improving the format is solicited. Outage proposals not in the format or through Fax/PDF etc will be rejected. Once the Communication Outage Portal is developed, Users / Owners of the communication equipments/links need to furnish their monthly outage proposal through that portal only.
- 5.4 ERPC will consolidate the list of outage proposals received from various Users/ Owners of the communication equipments/links and publish the list by 15th of every month.
- 5.5 Communication outages affecting other regions would be coordinated by ERLDC through NLDC.
- 5.6 A meeting will be conducted every month during 2nd/3rd week of the month to discuss and approve / dispose the proposed list of outages pertaining to communication links/ equipment. The date of the meeting will be informed during the 1st week of the month.
- 5.7 The meeting for approving the communication outage will be termed as "Communication System Outage Planning Meeting for Eastern Region (COMER)" suffixed with the name of month during which period the outages are proposed. For example, for availing outage of communication equipment during

the month of June'2023, COMER-June 2023 will be held on the middle of May'2023.

- 5.8 In the meeting, the system constraints pertaining to the outage of communication equipments/links, if any, will be discussed and the outage proposals will be approved/ revised/ disposed. Therefore, all the Users/Owners of the communication equipments/links shall attend the meeting without fail including ERLDC.
- 5.9 The final approved list of communication equipments (COA-I & COA-II) will be published by ERPC after 3 days from the date of the meeting.
- 5.10 In case of any emergency outage requirement of communication equipments, Users/ Owners may directly apply to ERLDC on D-3 basis to the mail ID erldccommunication@grid-india.in with a copy to erpc.communication@gmail.com and confirmation of approval/ rejection will be provided on D-2 basis by ERLDC considering 24 hrs processing window.
- 5.11 Even though outages of communication equipments/links are approved in the meeting, concerned entities will also confirm availing of approved outages of communication equipments on D-3 day to erldccommunication@grid-india.in and erpc.communication@gmail.com or confirm the dropping of approved outages, if any, on the D-3 day. ERLDC control room may coordinate regarding this and shall forward the message to the affected parties.
- 5.12 After the communication outage application is put in place, the constituents will take code from ERLDC before availing the outage and before restoration.
- 5.13 All Users / Owners of the communication equipments/links will submit their deviation report by 10th of the month in respect of the outages of communication links/ equipments availed during the previous month as per the format attached at Annexure: DCOA-I & DCOA-II.

Annexure -COP I

List of outages of Communication Links, proposed to avail during the month of June, 2021

Dated :

COMER VC Date :

A Details of Communication Links (Point to Point) proposed :

1	2	3	4	5	6	7	8	9	10	11	12	13
SL	Name of Requesting Agency	Description of Link	Source	Destination	Channel Routing/Alternate channel status	Ownership/Cordinating agencies	Reason for availing outage & Precautions / actions being taken to ensure communication system availability	Outage proposed from	Outage proposed upto	Total hours of outage proposed now	Approved ? (Y/N)	RPC Remarks
1	Example	Data/Voice, PLCC - OFC	Thirubuvanai	Pondy SCC	Thirubuvanai – Villianur 230 – Pondy SCC	PED, Puducherry	Preventive Maintenance. 110KV Thirubuvanai power flow data would be available from Villianur 230KV RTU	07-Jan-21, 10:00	07-Jan-21, 13:00	03:00		

- Name of communication links/ channels
- 1.OF links
 - 2.Any other link being used
 3. ICCP links
 - 4.Any other link

Annexure - COP II

List of outages of Communication Equipment, proposed to avail during the month of June, 2021

Dated :

B Details of Communication Equipment proposed :

Communication VC Date :

SL	Name of Requesting Agency	Name of the communication equipment	Location of the Equipment / Name of Station	Name of the Channel / Path / directions affected	Alternate Channel / Path available (Furnish details)	Ownership/Coordinating agencies	Reason for availing outage and precautions / actions being taken to ensure communication system availability	Outage proposed from	Outage proposed upto	Total hours of outage proposed now	Approved ? (Y/N)	RPC Remarks
1	2	3	4	5	6	7	8	9	10	11	12	13
1	Example	PLCC, ABB, ETL41, TK1 SPS protection trip	Thingalore 230 kV SS	Ingur 230 kV SS	No	TANTRANSCO	Maintenance work	20-Jan-21, 10:00	20-Jan-21, 14:00	04:00		

Name of Communication links/channels

1. SDH & PDH
2. DCPC
3. RTU & its CMU Cards
4. DCPCs
5. Battery banks and Charging equipment
6. EPBAX
7. Any other equipment

Communication Audit Procedure for Eastern Regional Inter-State

Communication System

1. Introduction

- 1.1. This procedure has been prepared in compliance to Central Electricity Regulatory Commission (Communication System for inter-State transmission of electricity) Regulations, 2017. As per clause 10 of the Regulation, RPC shall conduct annual audit of the communication system annually as per the procedure finalized in the forum of the concerned RPC. It also mandates that RPC Secretariat shall issue necessary instructions to all stakeholders to comply with the audit requirements within the time stipulated by the RPC Secretariat based on the audit report. An Annual Report on the audit carried out by respective RPC is to be submitted to the Commission within one month of closing of the financial year.
- 1.2. "Communication system" is a collection of individual communication networks, communication media, relaying stations, tributary stations, terminal equipment usually capable of inter-connection and inter-operation to form an integrated communication backbone for power sector. It also includes existing communication system of Inter State Transmission System, Satellite and Radio Communication System and their auxiliary power supply system, etc. used for regulation of inter-State and intra-State transmission of electricity.
- 1.3. "User" means a person such as a Generating Company including Captive Generating Plant, RE Generator, Transmission Licensee [other than the Central Transmission Utility (CTU) and State Transmission Utility (STU)] , Distribution Licensee, a Bulk Consumer, whose electrical system is connected to the ISTS or the intra-State transmission system.
- 1.4. "Control Centre" means NLDC or RLDC or REMC or SLDC or Area LDC or Sub-LDC or DISCOM LDC including main and backup as applicable.

1.5. Words and expressions used in this procedure shall have the meanings assigned to them in the Act or Regulations by CERC.

2. Scope

2.1 This procedure shall be applicable to all Users of the communication infrastructure to be used for data & voice communication, tele -protection and other applications in line with the guidelines issued by CEA for the power system in Eastern Region at Regional, inter-State and State level.

2.2 All Users, Control Centres and other concerned agencies shall abide by the procedures as applicable to them.

2.3 The Audit should be carried out at Regional, inter-State and intra-state level incidental to inter-state transmission of electricity and shall be carried out by audit team constituted by ERPC.

2.4 ERPC Secretariat shall issue necessary instructions to all stakeholders to comply with the audit requirements, as per relevant CERC and CEA Regulations, within the stipulated time.

2.5 The Audit for the communication infrastructure at intra-state level in line with this Procedure shall be carried out by respective SLDC. SLDC may seek assistance of other stake holders or any other third party for the audit. SLDC shall issue necessary instructions to all stakeholders to comply with the audit requirements as per relevant CERC and CEA Regulations, within the stipulated time.

3. Audit Procedure

- 3.1. The Audit would be conducted in two phases. In first phase scrutiny of the reports, documents etc. In the second phase physical verification shall be carried out.
- 3.2. Each User, using inter-state transmission or the intra-state transmission incidental to inter-state, shall submit the detailed report to ERPC Secretariat and ERLDC, as per prescribed format on half yearly basis. The detailed report shall be submitted by 15th October for the period April-September and by 15th April for the period October-March of the respective year. This report shall be considered as self-certificate regarding availability and healthiness of the Communication system of respective user.
- 3.3. Each concerned User shall submit Report by 15th October for the period April-September and by 15th April for the period October-March of periodic testing of the communication system in accordance with procedure for maintenance and testing prepared by CTU to ERPC Secretariat and ERLDC.
- 3.4. In respect of intra-state users, SLDC shall submit half yearly reports, to ERPC Secretariat and ERLDC, by 15th October for the period April-September and by 15th April for the period October-March of the respective year.
- 3.5. Outage report of all the channels (including Network Management System, PLCC etc) report for a month shall be submitted by the Users to ERLDC and respective SLDCs, on monthly basis, by 7th day of the next month. ERLDC and SLDCs after verifying the NMS data shall submit report to ERPC Secretariat by 15th day.
- 3.6. All users and Control Centers shall get the third-party cyber security audits done from a Cert-in certified vendor in compliance to Regulation 13 (iii) of Central Electricity Regulatory Commission (Communication System for inter-State

transmission of electricity) Regulations, 2017. The detailed report of the Cyber Security Audit shall be submitted by 15th April for the previous financial Year.

- 3.7. ERPC Secretariat may ask any other information required for Audit of the Communication system in addition to these periodic reports.

4. Phase-I Audit: Scrutiny of the Information

- 4.1. A Communication System Audit Sub-Group comprising one member each from ERPC, ERLDC, Powergrid and One of the Eastern Region SLDCs shall be constituted by ERPC Secretariat with the approval of Member Secretary, ERPC. The sub-group may co-opt any other member from any organization for facilitating the activities of the sub-group. Further, consultation from CEA can be taken, if required. The Audit team shall be formed excluding the member for the Organization/Utility whose system is to be Audited.
- 4.2. The Communication System Audit Sub-group shall scrutinize the information received in ERPC Secretariat as mentioned in Clause 3 of this procedure. The Sub-group may also ask any additional information necessary for its activities. All the users, ERLDC, SLDCs shall provide the information to the sub-group on priority with the stipulated time period.
- 4.3. The sub-group shall also identify the nodes for physical inspection based on the scrutiny of the information.
- 4.4. The Audit would include but not limited to following aspects:
- a) Availability of communication channels. The outage reason needs to be clearly specified whether it is on account of the concerned entity or on account of any other entity, force majeure etc. The list of communication channels would be finalized by Communication System Sub Group in consultation with other stakeholders.
 - b) Availability of terminal equipment. The outage reason needs to be clearly specified whether it is on account of the concerned entity or on account

of any other entity, force majeure etc. The list of terminal equipment would be finalized by Communication System Sub Group. Part outage like failure of specific cards etc. would also be furnished along-with reasons.

- c) Availability of Auxiliary System e.g. Battery Charger, Battery bank, sufficient cooling equipment etc.
- d) Compliance of CERC and CEA Regulations and the procedures under these Regulations.
- e) Completion of periodic testing of the communication system in accordance with procedure for maintenance and testing prepared by CTU.
- f) Audit of all newly commissioned communication equipment within six months of its commissioning.
- g) Completion of 3rd party Cyber Security Audits
- h) Network traffic w.r.t capacity.
- i) Spare availability, replenishment etc
- j) Any other parameters as agreed by the Communication Sub Group.

5. Phase-II Audit: Physical Verification

- 5.1. Based on the recommendations of the sub-group Audit committee (s) shall be constituted and the physical inspection Audit plan shall be prepared by ERPC Secretariat.
- 5.2. Audit Committee (s) shall be formed on regional basis.
- 5.3. Audit shall be carried out in a planned manner as included in this document by a team of three auditors. The audit committee shall comprise of one representative from the ERPC Secretariat, one representative from ERLDC and one representative from any of the Utilities or SLDCs of Eastern Region. The Audit team shall be formed excluding the member for the Organization/Utility whose system is to be Audited. The Audit Committee may co-opt any other member from any organization for facilitating the activities of the committee.

- 5.4. Once the plan is finalized, minimum 3 days advance notice shall be served to the concerned Auditee intimating the detailed plan so that availability of required testing equipment and the required documents is ensured by Auditee and is made available to the Audit committee during the site visit.
- 5.5. Member Secretary, ERPC may decide on any additional nodes/locations for physical inspection if a location is very critical in view of performance of the communication network at any time of the year.
- 5.6. The Scope of the physical verification shall include but not limited to the following:
- a) Available communication Network for its redundancy
 - b) Availability of channel redundancy for all the functions for which it is configured
 - c) Communication equipment (hardware and software configuration) of all the nodes including repeater stations for its recommended performance.
 - d) Documentation of the configuration of the respective site and its updation.
 - e) Fibre layout / usage of fibre / Availability of dark fibre and its healthiness.
 - f) Cable Schedule and identification / tagging.
 - g) Healthiness of Auxiliary supply including the healthiness of Battery backup.
 - h) Healthiness of Earthing / Earth protection for communication system.
 - i) Availability of sufficient cooling equipment at the User's premises to maintain the stipulated temperature for the communication equipment.
- 5.7. Audit Committee (s) shall submit report including recommendations for action on deficiencies, if any, found during the inspection, within 15 days from the date of inspection to Member Secretary, ERPC. After approval of MS, ERPC, the report would be communicated to the Auditee for compliance.

6. Audit Compliance Monitoring

ERPC secretariat, Communication Sub Group, ERLDC and SLDC would monitor the compliance of audit observations as applicable. The Audit outcome and the compliance of Audit recommendations shall be put up to TeST Sub-committee, TCC and ERPC for deliberations.

7. Approval and Review of the Procedure

7.1. This procedure shall be made effective after approval of TCC and ERPC.

7.2. This procedure shall be reviewed based on the feedback received by ERPC Secretariat.

7.3. Any amendment in the procedure shall be made effective only after approval of TCC and ERPC.
