

Southern Regional Power Committee, Bengaluru

Procedure on Outage Planning for Communication System -SR

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, 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 :

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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 ;*

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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 :

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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.*

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8. *Design and planning :*

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- (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.***

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21. *Training :*

- (1) *Specialised training shall be provided to the persons manning the centralised 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) :*

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- (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.*

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- 3.2 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 finalised by the respective regional power committee.*

- 3.3 The objective of this Procedure on Outage Planning of communication System is to carry out outage planning for communication system in SR such that uninterrupted communication system is ensured. Monthly outage of Communication

Equipment/system shall be planned and got 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 :

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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 :

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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.*

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- 4.3 All concerned entities stated above would coordinate with SRPC / SRLDC for outage planning of communication System.

- 4.4 Communication Outage Coordination will be limited to the following system :

- (i) ISTS Communication System including ISGS
- (ii) Intra-state Communication System being utilised for ISTS Communication
- (iii) Any other system agreed by the forum

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

- (i) Optic Fibre links
- (ii) Any other link being used for ISTS communication
- (iii) ICCP links between Main & Backup RLDCs, Main & Backup SLDCs & Main & Backup NLDC
- (iv) VC links between LDCs
- (v) Inter regional AGC links
- (vi) SPS Links
- (vii) Tele-Protection
- (viii) AMR
- (ix) SDH & PDH

- (x) DCPC
- (xi) RTU
- (xii) DTPCs
- (viii) Battery Banks and Charging Equipment
- (ix) EPABX
- (x) 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 – SR :

- (i) **Each concerned Entity would nominate Nodal Officer/ Alternate Nodal Officer** along-with details to the Outage Planning of Communication System group along-with designation, Mobile number, email ID, Phone number etc. Nodal Officer / Alternate Nodal Officer would interact internally and would be single point contact for outage planning with SRPC / SRLDC.
- (ii) The outage proposal of the communication equipment shall be **submitted in the prescribed format** by mail only (attached as **Annexure – COA1 & COA2**). The type of services (viz. data, voice, protection etc.) being affected / not affected may also be mentioned under col No.8 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 would also be mentioned in col No.8, which facilitates to avoid simultaneous outage for the same service(s).
- (iii) Users / Owners of the communication equipment will furnish their monthly outage proposal in respect of their equipment through the software for Outage Planning of Communication System, which will be considered to be developed by SRLDC for the usage by SRLDC, SRPC & Users / Owners of the communication equipments.
- (iv) Till the software application is developed by SRLDC, the Users / Owners of the communication equipments will furnish their monthly outage proposal in respect of their equipments in the prescribed (in excel format only). 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.
- (v) **RPC will consolidate the list of outage proposals** received from various Users / Owners of the communication equipments and release the list by 15th of every month.
- (vi) **Communication outages affecting other regions would be coordinated by SRLDC through NLDC.**
- (vii) **A meeting will be conducted every month during the middle of month** normally through VC to discuss and approve / dispose the proposed list of outages pertaining to communication links / equipments. **The date of VC will be informed by mail during the 1st week of the month.**
- (viii) **A communication System Google Group has already been made in the name of SR-Communication-System@Googlegroups.com** and the Nodal Officers who are dealing the communication system have been added in the group. This group is managed by SRPC from srpc.communication@gmail.com. All the Users / Owners of the

communication equipments are requested to regularly watch this group and get their mail IDs updated through SRPC, in case of change in mail IDs. All the correspondence will be made through this Google Group only. **Communication related issues would be addressed to srpc.communication@gmail.com**

- (ix) The VC for approving the communication outage will be termed as **“Communication Equipment Outage Co-ordination Meeting-SR (COMSR)”** suffixed with the name of MONTH during which period the outages are proposed.

*For example, for availing outage of communication equipments during the month of October, 2020, **COMSR-October2020** will be held on the middle of September, 2020.*

- (ix) In the VC, the system constraints pertaining to the outage of communication equipments, if any, will be discussed and the outage proposals will be approved / revised / disposed in the VC. Therefore, all the Users / Owners of the communication equipments shall attend the VC without fail including SRLDC. It is requested that the Nodal Officers who do not have VC facility may join in the nearby VC available with State SLDC / PGCIL.
- (x) **The final approved list of communication equipments will be released by SRPC after the VC is completed ie by 2 days from the date of VC.**
- (xi) **In case of any emergency outage requirement of communication equipments, Users / Owners may directly apply to SRLDC on D-1 basis to their mail ID srldscada@posoco.in and srldccr@posoco.in**
- (xii) Even though outages of communication equipments are approved in the VC, Concerned entities will also confirm availing of approved outages or dropping of the approved outages of communication equipments / links on **D-3 day** to srldscada@posoco.in & srldccr@posoco.in.
- (xiii) After the communication outage application is put in place, the **Constituents will take code from SRLDC** before availing the planned outage and before restoration. In the interim period, SRLDC may take appropriate call.
- (xiv) All Users / Owners of the communication equipments **will submit their deviation report by 10th of the month** to srpc.communication@gmail.com & srldscada@posoco.in in respect of the outages of communication links / equipments availed during the previous month as per the format attached as **Annexure – COD1 & COD2**.
- (xv) All Users / Owners of the communication equipments **will submit their report on planned / forced / other outage of communication links / equipments along with the above said deviation report** to srpc.communication@gmail.com & srldscada@posoco.in as per the format attached as **Annexure – COD3 & COD4**.
