

**सामान्य आउटेज योजना प्रक्रिया**  
**Common Outage Planning Procedure**

**दक्षिण क्षेत्रीय विद्युत समिति**  
**Southern Regional Power Committee**

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# Southern Regional Power Committee (SRPC)

## Common Outage Planning Procedure of Southern Region

### I. Background

Maintenance of grid elements shall be carried out by the respective users, transmission licensees, STUs and CTU in accordance with the provisions of the Central Electricity Authority (Grid Standards) Regulations, 2010.

Central Electricity Regulatory Commission (Indian Electricity Grid Code) Regulations, 2023. Operating Code: Regulation No. 32(4) stipulate that envisages “To facilitate coordinated planned outages of grid elements, a common outage planning procedure shall be formulated by each RPC in consultation with the NLDC, concerned RLDC and concerned users.

The timeline for Outage Planning Process shall be as follows:

Activity	Agency	Cut-off date
Submission of proposed outage plan for the next financial year to RPC with the earliest start date and latest finishing date	STUs, transmission licensees, generating stations and other entities directly connected to ISTS	31 <sup>st</sup> October
Submission of LGBR of the control area to RPC for both peak and off-peak scenarios	SLDC	31 <sup>st</sup> October
Publishing draft LGBR and draft outage plan of regional grid for next financial year on the concerned RPC's website for inviting suggestions, comments, objections of stakeholders.	RPC	30 <sup>th</sup> November
Publishing final LGBR and final outage plan of regional grid for next financial year on the concerned RPC's website	RPC	31 <sup>st</sup> December

### II. Introduction

- (i) Outage planning shall be prepared for the grid elements in a coordinated and optimal manner keeping in view the system operating conditions and grid security. The coordinated generation and transmission outage plan for the national and regional grid shall take into consideration all the available generation resources, demand estimates, transmission constraints, and factor in water for irrigation requirements, if any. To optimize the transmission outages of the national and regional grids, to avoid grid operation getting adversely affected and to maintain system security standards, the outage plan shall also take into account the generation outage schedule and the transmission outage schedule.
- (ii) Annual outage plan of grid elements under regional control area and identified important grid elements identified under sub-clause (b) of clause (2) of Regulation 29 of IEGC regulations, shall be prepared in advance for the financial year by the RPCs in consultation with the users, respective SLDCs, RLDCs and NLDC and reviewed before every

quarter and every month.

- (iii) Annual outage plan shall be prepared in such a manner as to minimize the overall downtime, particularly where multiple entities are involved in the outage of any grid element(s).
- (iv) The outage plan of hydro generation plants, REGS and ESS and its associated evacuation network shall be prepared with a view to extracting maximum generation from these sources. Example: Outage of wind generator may be planned during lean wind season. Outage of solar generator, if required, may be planned during the rainy season. Outage of hydro generator may be planned during the lean water season.
- (v) Protection relay related outages, auto-re-closure outages and SPS testing outages shall be planned on a monthly basis with the prior permission of SRPC, which shall consult SRLDC & NLDC.
- (vi) The procedure aims to streamline the process of outage coordination between SLDCs, Grid-India (SRDLC/NLDC), SRPC and Transmission Licensees and Generators.
- (vii) As outage planning is an important part of operational planning, multi-layered checks would help in ensuring reliability of the power system. These checks need to be at the following levels:
  - ❖ Due diligence between the agencies involved in the transmission asset maintenance through bilateral discussion.
  - ❖ Operation Coordination Sub-Committee of SRPC (Outage Coordination Group)
  - ❖ Off-line simulations and planning at SLDC, SRLDC/NLDC level
  - ❖ Real time check at SLDC, SRLDC/NLDC level
- (viii) Outages in the transmission network could either be on account of planned maintenance activities or construction related activities or any emergency conditions arising in the field.
- (ix) Maintenance of grid elements shall be carried out by the respective users in accordance with the provisions of the CEA Grid Standards. Outage of any element which is causing or likely to cause danger to the grid or sub-optimal operation of the grid shall be monitored by the concerned RLDC. RLDC shall report such outages (emergency/forced/beyond planned) to RPC and RPC shall issue suitable instructions to restore such elements in a specified time period.

### **III. Objective**

- i. To finalize the following Outage Plan on Annual basis:
  - a) Outage planning of Generating units of SR
  - b) Outage planning of Transmission line and Elements
- ii. The planned outages shall be discussed in Operation Coordination Sub-Committee(OCC) meeting of SRPC and availed based on the actual grid conditions

- iii. **Mid Review:** The outage coordination meeting to discuss the outages of transmission lines and elements proposed for the next month is regularly held during the beginning of second week every month and the proposals related to construction works, which could not be planned in the Outage Coordination meeting are reviewed in the Mid Review as an additional opportunity to the Transmission Entities.
- iv. **Post OCC Category (PNOCC):** Under exceptional cases such as construction activities or urgent nature of works outage shall be proposed by indenting agency through outage portal for maximum of two days to SRLDC and SRLDC would take decision appropriately in consultation/ under intimation to SRPC/SLDCs.
- v. **Emergency Category:** For attending emergency nature of works, indenting agency shall send the proposal directly to SRLDC control room and shutdown may be facilitated based on the grid conditions in co-ordination with NLDC, SLDC & SRPC or under intimation to SRPC.

#### IV. Scope

The procedure is applicable to SRLDC, NLDC, SLDCs STUs, Generating utilities, Transmission licensees. It would be applicable once the Annual outage plan is finalized by **31<sup>st</sup> December** of each year for the next financial year by SRPC.

#### V. Applicability

- (i) The procedure is applicable to important grid elements published by RLDCs/NLDC.
- (ii) To be applicable to other grid elements like bus, bays and other elements as mandated in CEA Regulations.
- (iii) The Important Grid elements would include the following :
  - a) All Trans-national Transmission Lines
  - b) All Inter Regional Transmission Lines
  - c) All HVDC Transmission Lines and HVDC elements including Poles & Back-to-back Blocks
  - d) All 400 kV and above AC Transmission Lines
  - e) All 220 kV AC Transmission lines belonging to ISTS Licensees and ISGS and all transmission lines emanating from ISGS and ISTS substations irrespective of voltage level
  - f) All 400 kV and above Inter connecting transformers (ICTs), Bus Reactors, Filter Banks, Bus Series Reactor and FACTS Devices connected at 400 kV and above voltage level along with all bays associated with these elements.
  - g) All natural ISTS lines.
  - h) 220 kV and above Transmission elements feeding loads of a strategic/sensitive nature (This List may be decided in consultation with all the utilities)
  - i) All generating units of Southern Region

## **VI. Procedure for planning outage of generating units.**

- (i) Generating stations of the Southern Region would submit proposed outage plan for the next financial year to SRPC Secretariat by 31<sup>st</sup> of October in the prescribed format.
- (ii) The data shall include the dates, nature of maintenance work planned whether mandatory or otherwise, duration of outage and related information.
- (iii) Draft outage plan of generating units for next financial year would be published on the SRPC's website for inviting suggestions, comments, and objections of stakeholders by 30<sup>th</sup> November.
- (iv) Final outage plan of generating units for next financial year on the SRPC's website by 31<sup>st</sup> December.
- (v) All generating stations shall follow the annual outage plan. If any deviation is required, the same will be allowed with the prior permission of the beneficiaries and in consultation with SRLDC/NLDC.
- (vi) The annual outage plan shall be reviewed in monthly Meetings of Operation Coordination Sub-Committee of SRPC on a monthly and quarterly basis in coordination with all the parties concerned, and adjustments or additions of new outages shall be made wherever necessary.

## **VII. Procedure for Planning Outage of Transmission lines and Elements**

### **A. Annual Outage Plan:**

- i. STUs, transmission licensees and other entities directly connected to ISTS of the Southern Region would submit proposed outage plan for the next financial year to SRPC Secretariat by 31<sup>st</sup> of October in the prescribed format
- ii. The data shall include the dates, nature of maintenance work planned whether mandatory or otherwise, duration of outage and related information.
- iii. Draft outage plan of transmission lines and equipment for next financial year would be published on the SRPC's website for inviting suggestions, comments, and objections of stakeholders by 30<sup>th</sup> November.
- iv. Final outage plan of transmission lines and equipment for next financial year on the SRPC's website by 31<sup>st</sup> December.

### **B. Monthly Outage Plan:**

- i. Indenting Agency: The agency which gives the requisition for outage of any transmission element shall be called Indenting Agency. Any of the following may request for outage of any transmission elements:
  - a) Transmission Licensees / State Transmission Utilities
  - b) Generating Utilities
- ii. Indenting Agency shall submit the proposed shutdown for the next calendar month latest by 3<sup>rd</sup> day of the current month to SRPC via SRLDC outage portal.

- iii. In case of shutdown of inter-regional lines and intra-regional lines affecting the transfer capability of any inter regional corridor, the Indenting agency shall submit the shutdown proposal in both the concerned RPCs.

SRPC shall ensure to send the list of Inter regional outages to NLDC/concerned RPC by 5<sup>th</sup> of every month. Intra-regional lines affecting the TTC/ATC of Interregional corridor would be furnished by SRLDC to NLDC by 5<sup>th</sup> day of the month.

- iv. The indenting agency may do an internal screening of its outage plan centrally to avoid multiple outages in the same corridor simultaneously. Bilateral discussion between the agencies involved may also be done to minimize outage duration before submitting the outage plan to SRPC.
- v. SRPC shall compile all the received proposals and circulate to SLDCs/SRLDC by 6<sup>th</sup> day of every month.
- vi. SRLDC shall study the impact of these outages and furnish to SRPC Secretariat.
- vii. Shutdown of Bays of 400 kV & below lines are to be availed through PNOCC on D-10 to D-3 days or on D-1 day under emergency category. Bays and A/R would be applied through PNOCC only (D-3) and not on emergency basis (D-1) for outage period not exceeding more than 2 days.
- viii. **Mid Review:** The outage proposal shall be submitted through the outage portal by indenting agency. The window will open **from 17<sup>th</sup> to 20<sup>th</sup> of every month** for construction activities (ROW/Proximity) or urgent nature of works outages to be availed in next month. The proposals with SRPC comments would be circulated to SLDCs/SRLDC by 22<sup>nd</sup> and SLDCs & SRLDC would revert back by 24<sup>th</sup>. If no comments received by the stipulated date, then it would be treated as concurred. The list of approved/rejected proposals would be issued/uploaded by 25<sup>th</sup>.
- ix. **Procedure for PNOCC:** Under exceptional cases such as construction activities or urgent nature of works, outage shall be proposed by indenting agency to SRLDC on D-5 basis. In case of inter-regional (IR)/intra-regional transmission elements affecting IR TTC/ATC on D-5 basis. SRLDC would also consult respective SLDCs/SRPC/RLDC/NLDC before approval on D-4.

#### **B1) Procedure for discussing outages in OCC meeting:**

- i. Member of OCC shall analyze the impact of these outages and based on their recommendations, SRPC shall discuss proposed outages in the OCC meeting and prepare a list of transmission outages with the precautions to be taken.
- ii. While approving the shutdowns it shall be ensured that outages in the same corridor shall not be approved simultaneously. It also need to be ensured that all other concerned entities should also complete their work during the shutdown period so as multiple shutdown of same element for work by multiple agencies are avoided. The multiple outages of the transmission element for the same work during the year may also be avoided.
- iii. Any transmission element approved by OCC may be allowed to be re-scheduled by SRLDC in the same month for which it was approved considering the grid scenario

and genuineness of deferment by indenting agency. After getting approval from SRLDC, the indenting agency would reschedule the outage in PNOCC category.

- iv. All the Members of Operation Coordination Sub-Committee of SRPC to ensure participation in OCCM (Outage Co- ordination), otherwise it will be treated as deemed concurred.
- v. SRPC Secretariat shall send the list of approved transmission outages to SLDCs/SRLDC/NLDC within 3 (three) days of the OCC meeting and preferably latest by 16<sup>th</sup> of the month. The same shall also be made available on SRLDC Outage Portal and SRPCwebsite.
- vi. Any shutdown proposal which requires approval of two RPCs shall be considered approved only if it is approved in both the forums of RPCs.

### **B2) Approving Load Despatch Centre and Consenting Load Despatch Centre:**

- i. Approving Load Despatch Centre: The Load Despatch Centre responsible for approving any transmission outage shall be called Approving Load Despatch Centre.
- ii. Consenting Load Despatch Centre: The agency whose consent is required by Approving Load Despatch Centre for approving any outage shall be called Consenting Load Despatch Centre.
- iii. Once SRPC Secretariat issues the approved monthly outage plan, the responsibility of facilitating the outages lies with NLDC, SRLDC and SLDCs as follows:

SI No.	Type of Outage	Consenting Authority	Approving Authority
1	765kV or above lines	SRLDC	NLDC
2	Inter-regional lines	SRLDC	NLDC
3	HVDCs	SRLDC	NLDC
4	Intra-regional lines affecting transfer capability of inter- regional corridor	Concerned SLDC & SRLDC	NLDC
5	Intra-regional lines not covered under SI Nos1,2,3,4.	Concerned SLDC	SRLDC
6	Lines having impact on major generating station(having major shareholders in other Regions)	Concerned RLDC & NLDC	SRLDC

### **B3) Procedure for approval of outage on D-3 basis:**

- i. Planned Outages which have been approved in the OCC meeting of SRPC shall be considered for approval by SRLDC/NLDC on D-3 basis. If an outage is to be availed on say 10<sup>th</sup> of the month, the indenting agency punch its readiness in the outage portal of SRLDC, from 10:00 hrs/06th to 10:00 hrs/07th of the month. This practice is necessary to realize the seriousness and readiness of the agency which indented

the outage request in the first place as it is observed that many outages are not availed as per the monthly schedule. In case the request for transmission element outage is not received within the timeline prescribed above, it will be assumed that the indenting agency is not availing the outage.

- ii. In case the owner is not availing the OCC approved outage, the same shall be punched in Web Outage portal / intimated to the SRLDC from 10:00 hrs of D-4 to 10:00 hrs of D-3"
- iii. Planned Outages which are approved in OCC meeting shall only be considered for approval on D-3 basis and priority shall be given to OCC approved outages.

**B4) Approval of Outage where Approving Authority is NLDC:**

- i. SRLDC shall forward the request for shutdown along with their consent and observation to NLDC with clear observations regarding possible constraints /contingency plan and consent including study results by 10.00 hours of D-2 day. SRLDC would obtain NLDC observations /consent/reservations by 18.00hours of D-2.
- ii. NLDC shall approve the outage along with the clear precautions/measures to be observed during the shutdown and inform all concerned RLDCs.
- iii. The proposed outages shall be reviewed on day ahead basis depending upon the systemconditions and the outages shall be approved/refused latest by 1200 Hrs of D-1 day.
- iv. In case the outage is approved precautions/measures to be observed during the shutdown shall be stated. In case of refusal, clear reasons shall be stated by the SRLDC/NLDC.
- v. Outages impacting the transfer capability of more than one Control Area/Corridor shall not be allowedsimultaneously.
- vi. The following time schedule would be followed:

Sl No	Activity	Day & Time
1	Request of shutdown from Indenting agency to SRLDC.	10:00 hrs/ D-4 to 10:00hrs/D-3
2	Forwarding request of shutdown requiring NLDC approval from SRLDC to NLDC (along with the recommendations and study result)	10:00 hrs/D-3 to 10:00 hrs/D-2
3	Comments of NLDC	18:00 hrs/D-2
4	Approval or Rejection of Request	12:00 hrs /D-1

**B5) Approval of Outage where Approving Authority is SRLDC:**

- i. In case the indenting agency is a state entity, the request for transmission element outage shall be submitted to respective State Load Despatch Centre (SLDC). SLDC shall forward the request for shutdown along with their consent and observations in web portal to SRLDC.



- ii. In all other cases, the request for transmission element outage shall be submitted to SRLDC.
- iii. SRLDC shall study the impact of proposed outages and approve /refuse the outage latest by 1200 Hrs of D-1 day. A copy of the approval / refusal shall also be sent to NLDC (for 400 kV and above lines).
- iv. In case the outage is approved precautions/measures to be observed during the shutdown shall be stated. In case of refusal, clear reasons shall be stated by the SLDCs/SRLDC
- v. Outages in the same Control Area/Corridor shall not be approved simultaneously shall be rescheduled accordingly. Proposal of such rejected shutdowns to be applied in web portal by utility from 10:00 hrs/D-4 to 10:00 hrs/D-3 of rescheduled date within approved month only in consultation with SRLDC "

**B6) Approval of Outage where Approving Authority is SLDC:**

- i. SLDC shall study the impact of proposed outages on the system and approve the outage latest by 1200 Hrs of D-1 day. A copy of the approval / refusal list shall also be sent to RLDC through E-mail."
- ii. Outages in the same corridor shall not be approved simultaneously and shall be rescheduled accordingly.

**Note:**

- 1) In case of any system constraint or any other reason, approving authority may decline the proposed outage by giving the reasons for the same and tentative dates for the shutdown.
- 2) In case, any approved outage is not availed/ not allowed in real time, the same may not be allowed again in that month. In such a scenario, indenting agency shall be required to submit afresh proposal in the next OCC outage coordination meeting.
- 3) A list of all approved outages for the next day must be available in the SRLDC/NLDC control room by 1200 hours with a copy of the study results and special precautions, if any. This would be studied by the night shift engineers so that the outage can be facilitated the next day morning.

**VIII. Approval of Emergency Outages**

- i. All outages which are not approved in the OCC meeting but having impact on human and equipment safety shall be considered under Emergency Outage category.
- ii. The request for emergency outage shall be submitted SRLDC along with the details like nature of emergency, impacts due to emergency situation, reasons and associated facts for not considering in the outage planning process.
- iii. Emergency outages shall be allowed subject to system conditions and its severity. In this case, if required, planned outage may be deferred, if possible.
- iv. Emergency outages shall be allowed immediately or within the short possible time, based on the severity of the emergency and system condition on instance to instance basis.

## IX. Availing Outages in Real Time

- i. The agencies involved shall ensure availing of outages as per the approved schedule time.
- ii. On the day of outage, the outage availing agency shall seek the code for availing outage from SRLDC/NLDC (wherever applicable). The agencies involved shall endeavor to avail the outage within 15 minutes of availing the code but not later than 60 minutes. In case, due to any contingency, the outage could not be availed within 60 minutes, a fresh code needs to be obtained by all concerned agencies stating the reason there of. Record of scheduled and actual time of outage and restoration shall be maintained at SRLDC/NLDC.
- iii. SRLDCs shall prepare a monthly statement of scheduled and actual time of outage and restoration and forward the same to SRPC latest by 05<sup>th</sup> day of the next month with a copy to NLDC.
- iv. SLDCs/Transmission Licensee/Utility shall prepare a monthly statement of scheduled and actual time of outage and restoration and forward the same to SRPC latest by 05<sup>th</sup> day of the next month with a copy to SRLDC.
- v. Each user shall obtain the final clearance from NLDC or the concerned RLDC, prior to the planned outage of any grid element. The clearance shall also be obtained from SLDC for a grid element of the State Control areas.
- vi. In case of grid disturbances, system isolation, partial black-out in a State or any other event in the system that may have an adverse impact on the system security due to a proposed outage,
  - (i) NLDC, RLDC or SLDC, as the case may be, shall have the authority to defer the planned outage;
  - (ii) SLDC, RLDC or NLDC, as the case may be, before giving clearance of the planned outage may conduct studies again.
- vii. As any deviation in the outage from the schedule can affect other planned outages as well as affect reliability and electricity markets, indenting agency must strictly adhere to the shutdown timings. The monthly statement of Approved vs Actual outage would be furnished by SRLDC and discussed in monthly OCC for better planning or coordination by requesting agencies. Suggested format is given below ( Table- A & Table- B):

**Table-A**

Sl. No.	Name of Utility	No. of outages planned in OCC	No. of planned outages in Mid Review	Total planned outages	Number of outages Approved (OCC & Mid Review}	Number of outages availed	Availed vs Approved (%)
		(a)	(b)	(c)=(a+b)	(d)	(e)	(f) = (e/d)
1	Utility-1						
2	Utility-2						

Note: SRLDC allowed rescheduled approved outages wrt OCC approved would be considered as availed

**Table- B**

Sl No.	Name of Utility	No of outages Approved in PNOCC	Outages Approved Emergency	Unplanned Outages	Total
		(a)	(b)	(c)	(d) = (a)+(b)+(c)
1	Utility-1				
2	Utility-2				

**X. Restoration of Outages/Normalization**

- i. All effort shall be made by the Indenting agency to normalize the shut down within approved time period so that the transmission element is normalized within the approved time period.
- ii. On completion of the outage work, the outage availing agency shall seek the code for normalization of elements from SRLDC. The agencies involved shall endeavor to normalize the outage within 15 minutes of availing the code but not later than 30 minutes. In case, due to any contingency, the normalization could not be done within 30 minutes, a fresh code needs to be obtained by all concerned agencies stating the reason thereof.
- iii. In case of extension of a shutdown, the Indenting agency would furnish the reasons of extension, and expected normalization time to SRLDC/SLDC at least two hours before the scheduled normalization time.
- iv. In case shutdown is extended beyond one day, then utility should approach for consent/approval with proper reason and justification of delay to SLDC/SRLDC/NLDC with a copy to SRPC. SLDC/SRLDC/NLDC would take appropriate decision considering the grid situation.
- v. Under such circumstances SLDCs/ SRLDC/NLDC shall review the impact of such delay on the shutdown already approved transmission system and would reserve the right to review for according/cancellation of the shutdown.
- vi. In case of repeated delay in normalization of outages by any agency, the same shall be reported by SLDCs/SRLDC/NLDC to SRPC.

**XI. Request for charging new elements**

- i. Owner of the transmission asset shall submit the request for probable charging of new elements with a copy of energisation study for the next calendar month latest by 3<sup>rd</sup> day of the current month to the SRPC Secretariat and SRLDC.
- ii. SRLDC shall study the impact of charging of new elements and based on its recommendations, SRPC shall discuss the requests for charging new elements in the OCC meeting and prepare a list of new elements to be charged during the next calendar month along with the precautions to be taken. SRPC shall send the list of new elements

to be charged within 3 days of the OCC meeting and latest by 18<sup>th</sup> of the month. The same shall also be displayed on SRPC website.

- iii. The owner of the new transmission element shall inform the concerned SLDC / SRLDC / NLDC about the charging of the element at least 3 days in advance subject to completion of FTC requirements.
- iv. SLDCs / SRLDC / NLDC shall study the charging of all 400 kV and above new elements and prepare charging instructions which shall be forwarded to the asset owner along with the study results with a copy to NLDC/SRPC. The charging instruction will be issued by CTU/STU.

## **XII. Remarks**

- i. The annual outage plan shall be reviewed by SRPC on a monthly and quarterly basis in coordination with all the parties concerned, and adjustments or additions of new outages shall be made wherever necessary.
- ii. All users, CTU and STUs, licensees shall follow the annual outage plan. If any deviation is required, the same shall be allowed only with the prior permission of SRPC, which shall consult SRLDC and NLDC.
- iii. Each user shall obtain the final clearance from SRLDC/NLDC, prior to the planned outage of any grid element. The clearance shall also be obtained from SLDC for a grid element of the State Control areas.
- iv. In case of grid disturbances, system isolation, partial black-out in a State or any other event in the system that may have an adverse impact on the system security due to a proposed outage,
  - a) NLDC, SRLDC or concerned SLDC, as the case may be, shall have the authority to defer the planned outage;
  - b) SLDC (concerned), SRLDC or NLDC, as the case may be, before giving clearance of the planned outage may conduct studies again.

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