

STANDARD OPERATING PROCEDURE FOR SHUTDOWN APPROVAL

Shutdown of Transmission elements involves power outage/restrictions of power to the end user and consumers of DISCOM. At present shutdown is being applied, processed and approved in Line Clearance Outage module of SAMAST. Many a times, it has been felt that shutdown of transmission elements is required to be categorised on the basis of its nature. Consent of field officials of Discom is taken by concerned transmission utility before applying the shutdown. Higher authorities of BSPTCL with NBPDC and SBPDCL is required to be appraised before approval of shutdown when outage is for longer period or involves outage of grid. For detailed procedure of shutdown, there was requirement of a Standard Operating Procedure (SOP)

A. Approving authority for different types of Shutdown:-

Sl. No.	Shutdown Category	S/D Requisition time	Power Interruption	Duration	Approving Authority
1.	Breakdown	On real time			Shift Charge Engineer shall issue restoration/earthing code and then charging code after work completion.
2.	Emergency Shutdown	On real time			Shift Charge Engineer. If required, Shift Charge Engineer may coordinate with ESE SLDC /CE(SO).
3.	Proactive Shutdown	All shutdown shall be applied by 12:00 hrs of the working day on D-5 working days basis where D is the actual date of Shutdown.	Yes	Up to 06 hrs.	Director (Operations), BSPTCL
				More than 06 hours	Managing Director (BSPTCL)
			No	Up to 03hrs.	ESE (SLDC)
				More than 03 hours	Chief Engineer (System Operation)
4.	Planned Shutdown		Yes	Up to 06 hrs.	Director (Operations), BSPTCL
				More than 06 hours	Managing Director (BSPTCL)
			No	Up to 03hrs.	ESE (SLDC)
				More than 03 hours	Chief Engineer (System Operation)

B. Types of Shutdown

1. Breakdown:-

1.1 Condition/Nature of Shutdown:-

Damage /Failure of Transmission Element – Bursting of CT, PT & LA, Failure of Breaker, Isolator, Insulators, Transformer, Hardware fittings of conductor, Jumper snapping, Tower collapse, Snapping of conductor.

1.2 Information to SLDC:-

Concern field official shall intimate immediately to SLDC as well as higher official via Line Clearance Outage Module, Telephonic as well as on WhatsApp Group.

In the above situation Shift Charge Engineer shall issue code to facilitate the Shutdown to carry out the restoration work and after getting clearance from the concern field official charging code shall be issued.

2. Emergency Shutdown

2.1 Condition/Nature of Shutdown:-

2.1.1 Visual Red Hot of any transmission system elements:-

In this event concern field official shall apply for emergency shutdown in LC outage module with picture of detected Red Hot Spot.

2.1.2 Smoke detection

In this event concern field official shall apply for emergency shutdown in LC outage module with relevant picture of smoke detection from CT, PT, Transformers etc.

2.1.3 Tripping of many Transmission elements at a time

If tripping of many transmission elements occurs at a time at any sub-station, then concern field official in coordination with T&C and CRITL shall apply the shutdown request to rectify the fault.

2.1.4 DC Failure

In case of any issue in DC voltage of the substation or malfunction of relay due to unbalance DC voltage, shutdown of affected lines /transformers must be applied immediately.

2.1.5 Tower bent

In the event of Tower bent due to cyclone, missing tower members, damage of stub, then restoration work shall be started immediately on emergency basis.

2.1.6 Safety Clearance issue

For rectification of low ground clearance, phase to phase clearance, One line to other line clearance as specified by IEGC/CBIP.

2.1.7 Shutdown for safety reason

If any line goes under breakdown / shutdown, then the other circuit of same line or any other adjacent lines / bays required to be shutdown for safety reason.

2.1.8 Damage of tower foundation

If the foundation of any tower got damaged due to any reasons (viz. soil erosion, flood etc.)

2.1.9 Tap Changing of Transformer

To maintain the voltage profile in specified range.

2.1.10 OPGW/Earth Wire Failure

In case of OPGW/Earth wire failure, shutdown request may be applied for respective line.

2.1.11 Problem in isolator, melting of isolator tips(male/female) etc

In case of melting of isolator tips(male/female), Non -operation of isolator due to electrical & mechanical fault, replacement of burnt motor of isolator.

2.1.12 Problem in closing/opening coil of breaker

In case of failure of tripping/closing coil of breaker defective coil shall be replaced on emergency basis.

2.1.13

Any other kind of shutdown not mentioned above required for healthy & reliable operation of the system.

2.2 Minimum time required for applying Shutdown:-

Concern field official shall apply emergency shutdown through LC Outage module on Real Time Basis.

3. Proactive Shutdown

3.1 Condition/Nature of Shutdown:-

3.1.1 Testing/Retrofitting of Relays

For testing activity of Relays by T&C / CRITL team and for replacement /retrofitting of any relays.

3.1.2 Tree pruning

For pruning of Tree nearby of Transmission lines to avoid tripping. In this event concern field official shall apply for proactive shutdown in LC outage module with picture.

3.1.3 Thermo-vision report

In case of temperature detected critically high in Thermo-vision report. In this event concern field official shall apply for proactive shutdown in LC outage module with report.

3.1.4 ABT meter commissioning

For commissioning of ABT meter in any bay under ongoing projects and for replacement of defective ABT meter.

3.1.5 Re-sagging

If sag of conductor goes beyond the permissible limit due to any reason then Re-sagging of conductor is required.

3.1.6 Preparation of Festivals, VIP Movement, Election etc.

For checking healthiness of CT, PT, LA and Relay coordination in view of upcoming Festivals, VIP Movement, Election etc.

3.1.7 Removal of Nest from Switchyard & Towers

For removal of Nest from Switchyard & Towers to avoid any mishappening.

3.1.8 Metering related issue

If there is any mismatch of energy is observed by field official or energy accounting team of SLDC or ERLDC.

3.1.9 Conductor repairing of Transmission line/GSS

If few strand of conductor of Transmission lines/GSS found damaged /broken, then corrective action may be planned under this category.

3.1.10

Any other kind of shutdown not mentioned above required for healthy & reliable operation of the system.

3.2 Minimum time required for applying Shutdown:-

- (a) All shutdown shall be applied by 12:00 hrs of the working day on D-5 basis where D is the actual date of Shutdown.
- (b) SLDC shall approve the shutdown minimum 24 hrs. prior to scheduled time.
- (c) Shutdown shall be availed by applicant only after getting switching code from SLDC control room as per HEGC/BEGC grid code.

4 Planned Shutdown

4.1 Condition/Nature of Shutdown

4.1.1 Project related works

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Any shutdown (Transmission Lines, Bays, Main Bus, Transfer Bus, Jack Bus, Transformers) required for ongoing projects works activity.

4.1.2 Winter Maintenance

For yearly maintenance of all transmission element of GSS & its associated lines during the period of November to February.

During this maintenance activity Jumper Tightening of Transmission lines and Overhauling /Oil Filtration of Transformers shall also be carried out.

4.1.3 Tower top patrolling

If tower top patrolling is suggested by T&C/CRITL for identification of puncture insulator, shutdown request may be planned accordingly.

4.1.4 Activity related to First Time Charging

All activity related to First Time charging like jumper connection, shutdown of Bus may be planned under this category.

4.1.5 Replacement /upgradation of any elements

Shutdown of any transmission elements required for Replacement/Augmentation/Up-gradation may be planned under this category.

4.1.6 Repair, Erection of damage towers/bent towers/tower leg

Repairing and erection in case of damage towers/bent towers/tower leg may be planned under this category.

4.1.7

Any other kind of shutdown not mentioned above required for healthy & reliable operation of the system.

4.2. Minimum time required for applying Shutdown:-

(a) All shutdown shall be applied by 12:00 hrs of the working day on D-5 basis where D is the actual date of Shutdown.

(b) SLDC shall approve the shutdown minimum 24 hrs. prior to scheduled time.

(c) Shutdown shall be availed by applicant only after getting switching code from SLDC control room as per IEGC/BEGC grid code.

5 Inter state related shutdown

In this type of shutdown, standard operating procedure of ERLDC/ERPC shall be followed.

C. Requirement of Paper Notice/ Consent of DISCOM / Information to local administration:-

Sl. No.	Shutdown Category	Power Interruption	Shutdown Duration	Paper Notice/ Newspaper Publication	DISCO M Consent	Information to Local Administration
1.	Emergency Shutdown	Yes	Up to 03hrs.	No	Yes	Yes
			Up to 06 hrs.			
			More than 06 hours			
		No	Up to 03hrs.		No	No
			Up to 06 hrs.			
			More than 06 hours			

2.	Proactive Shutdown	Yes	Up to 03hrs.	Yes. (Newspaper Publication)	Yes	Yes
			Up to 06 hrs.			
		More than 06 hours up to 01 day				
		More than 01 day				
		No	Up to 03hrs.	No	No	No
			Up to 06 hrs.			
			More than 06 hours up to 01 day			
			More than 01 day			
3.	Planned Shutdown	Yes	Up to 03hrs.	Yes. (Paper Notice & Newspaper Publication on daily basis)	Yes	Yes
			Up to 06 hrs.			
		More than 06 hours up to 01 day				
		More than 01 day				
		No	Up to 03hrs.	No	No	No
			Up to 06 hrs.			
			More than 06 hours up to 01 day			
			More than 01 day			

- D. Monthly online/offline meeting may be conveyed on 4th Thursday of every month with all Field ESE, Transmission Circle, in presence of Director (Operations), BSPTCL/SBPDCL/NBPDCL for discussion and approval of Planned Shutdown.
- E. In case of outage either Breakdown or Shutdown, all maintenance activity of associated elements must be carried out as a opportunity shutdown.

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