



PHARMA DEVILS

ENGINEERING DEPARTMENT

STANDARD OPERATING PROCEDURE

Department: Engineering	SOP No.:
Title: Preventive Maintenance of UPS System	Effective Date:
Supersedes: Nil	Review Date:
Issue Date:	Page No.:

1.0 Revision History

Rev. No.	Details of changes	Reason for change
00	NIL	NEW SOP

2.0 Objective

2.1 The Objective of this SOP is to describe the procedure for preventive maintenance of preventive maintenance of UPS-System.

3.0 Scope

3.1 This SOP is applicable for the preventive maintenance of UPS-System. Installed in plant

4.0 RESPONSIBILITY:

4.1 The Maintenance Operator shall be responsible:

4.1.1 To carry out preventive maintenance of equipment.

4.1.2 To report any deviation and/or deficiency observed during preventive maintenance.

4.1.3 To maintain the record of all checks.

4.2 The Maintenance Engineer shall be responsible:

4.2.1 To get the preventive maintenance done as per annual maintenance planner.

4.2.2 To check the preventive maintenance activity is carried out and deviations and/or Deficiencies are complied as per requirement.

5.0 Accountability

Head –Engineering Services

6.0 PROCEDURE:

6.1 PRIMARY CHECKS:

6.1.1 Before starting check the condition of battery for the charging status. Charge it if required.



PHARMA DEVILS

ENGINEERING DEPARTMENT

STANDARD OPERATING PROCEDURE

Department: Engineering	SOP No.:
Title: Preventive Maintenance of UPS System	Effective Date:
Supersedes: Nil	Review Date:
Issue Date:	Page No.:

6.2 MONTHLY PREVENTIVE MAINTENANCE ACTIVITIES:

- 6.2.1 Check for sign of overheating and de-lamination of power component. Replace it, if required.
- 6.2.2 Check all battery connection for tightness. Rectify it, if required.
- 6.2.3 Check the input voltage. It should be between 405 – 425 volts.
- 6.2.4 Check the input frequency. It should be 49 – 51 Hz.
- 6.2.5 Check the output voltage. It should be 230 volts.
- 6.2.6 Switch 'off' the input and check that the battery is taking care of the entire load.
- 6.2.7 Maintain the record of all checks in checklist.

6.3 SIX MONTHLY PREVENTIVE MAINTENANCE ACTIVITIES:

- 6.3.1 Carry out the detailed inspection of following components.
 - 6.3.1.1 Check the electrolytic capacitor for leakage or buckling.
 - 6.3.1.2 Check the printed circuit board for cleanliness and integrity of the circuit board. Replace it, if any sign of deterioration are found.
 - 6.3.1.3 Check the magnetic component for overheating. Replace it, if required.
 - 6.3.1.4 Check the battery for physical deterioration and sign of deformation. Replace it, if required.
 - 6.3.1.5 Check the individual cell voltage. It should be 12 ± 0.5 volts.
- 6.3.2 Thoroughly clean the inner side of UPS using dry duster.
- 6.3.3 Maintain the record of all checks in checklist. (Annexure-2)

7.0 ANNEXURES:

- Annexure-1 : Monthly Preventive Maintenance Checklist for UPS-System.
- Annexure-2 : Monthly Preventive Maintenance Checklist for UPS-System

8.0 References (S)

Nil

9.0 Glossary

- EP : Engg. Preventive Maintenance
- UPS : Uninterrupted power supply



PHARMA DEVILS

ENGINEERING DEPARTMENT

STANDARD OPERATING PROCEDURE

Department: Engineering	SOP No.:
Title: Preventive Maintenance of UPS System	Effective Date:
Supersedes: Nil	Review Date:
Issue Date:	Page No.:

ANNEXURE-01

Monthly Preventive Maintenance Checklist for UPS-System

EQUIPMENT CODE:	LOCATION:	MONTH:
------------------------	------------------	---------------

S.No.	DESCRIPTION	OBSERVATIONS/ REMARKS
1.	Check for sign of overheating and de-lamination of power component. Replace it, if required.	
2.	Check all battery connection for tightness. Rectify it, if required.	
3.	Check the input voltage. It should be between 405 – 425 volts.	
4.	Check the input frequency. It should be 49 – 51 Hz.	
5.	Check the output voltage. It should be 230 volts.	
6.	Switch 'off' the input power supply to the battery of UPS-system and check that,	
	All the connected load of the respective UPS-system are in operation without any power failure (Uninterrupted Power supply).	
	UPS remains in operation for 20 – 30 minutes on battery without input power supply to the battery.	
7.	Switch 'on' the input power supply to battery of UPS-system.	

Done by: (Operator)		Done on:	
Checked by: (Engineer)		Next due on:	
Verified by: (Concerned Department)			

FREQUENCY :- MONTHLY PREVENTIVE MAINTENANCE

CAUTION: BEFORE CARRYING OUT PREVENTIVE MAINTENANCE, SWITCH OFF THE MAINS, REMOVE FUSE AND DISPLAY THE UNDER MAINTENANCE BOARD.



PHARMA DEVILS

ENGINEERING DEPARTMENT

STANDARD OPERATING PROCEDURE

Department: Engineering	SOP No.:
Title: Preventive Maintenance of UPS System	Effective Date:
Supersedes: Nil	Review Date:
Issue Date:	Page No.:

Annexure-02
Monthly Preventive Maintenance Checklist for UPS-System

EQUIPMENT CODE:	LOCATION:	MONTH:
------------------------	------------------	---------------

S.No.	DESCRIPTION	OBSERVATIONS/ REMARKS
1.	Check the electrolytic capacitor for leakage or buckling.	
2.	Check the printed circuit board for cleanliness and integrity of the circuit board. Replace it, if any sign of deterioration are found.	
3.	Check the magnetic component for overheating. Replace it, if required.	
4.	Check the battery for physical deterioration and sign of deformation. Replace it, if required.	
5.	Check the individual cell voltage. It should be 12 ± 0.5 volts.	
6.	Thoroughly clean the inner side of UPS using dry duster.	

Done by: (Operator)		Done on:	
Checked by: (Engineer)		Next due on:	
Verified by: (Concerned Department)			

FREQUENCY :- SIX MONTHLY PREVENTIVE MAINTENANCE

CAUTION: BEFORE CARRYING OUT PREVENTIVE MAINTENANCE, SWITCH OFF THE MAINS, REMOVE FUSE AND DISPLAY THE UNDER MAINTENANCE BOARD.