Title: Operation and Replacement of Ultra Violet Lamps in Purified Water Generation/Distribution System

SOP No.:		**Revision No.:**	00
Effective Date:		**Supersedes No.**	Nil
Review Date:		**Page No.**	1 of 5

1.0 OBJECTIVE:

To lay down a procedure for Operation and Replacement of Ultra Violet Lamps in purified water generation & distribution system.

2.0 SCOPE:

This SOP is applicable for Operation and Replacement of UV lamps in purified water generation & distribution system.

3.0 RESPONSIBILITY:

Operator /Officer /Executive Engineering

4.0 ACCOUNTABILITY:

Engineering – Head

5.0 ABBREVIATIONS:

ER	Engineering
UV	Ultra Violet
SOP	Standard Operating Procedure
NLT	Not Less Than
W/m^2	Watt per Meter Square

6.0 PROCEDURE:

6.1 PRECAUTIONS:

6.1.1 Ensure that power supply is in OFF condition from UV module prior to start the UV lamp replacement work.

6.1.2 Be careful while handling UV lamp. It should not break.

6.1.3 Care shall be taken to avoid the direct eye contact when UV remains in on condition.

6.2 OPERATION:

6.2.1 Operate UV system through respective control panel of purified water generation & distribution system.

6.2.2 After starting purified water generation / distribution system, check and ensure that UV system is working properly i.e.; burning hours and UV intensity is within limit.

6.2.3 Check and ensure that UV light intensity is NLT 15 W/m^2.

6.2.4 While taking reading of UV lamp burning hours check and ensure that usage hours of UV lamp should not exceed 11000 ± 1000 hours in distribution system.

6.2.5 While taking reading of UV lamp burning hours check and ensure that usage hours of UV lamp should not exceed 8000 ± 1000 hours in in purified water generation system.

6.2.6 During operation, if UV system gives alarm of low intensity (less than 15 W/m²) then verbally /IOM inform to user department as well as quality assurance and replace the UV lamp immediately. Stop the respective system for UV lamp replacement and after replacement of UV lamp, sanitization activity of distribution loop shall be carried out as per respective SOP.

6.2.7 Record the operational parameter reading (Burning Hours & UV lamp intensity) of UV system in **Annexure –I** titled as "UV Light Usage and Replacement Record".

6.3 REPLACEMENT PROCEDURE:

6.3.1 Before carrying out replacement activity, isolate the respective system from electrical side and ensure that respective system is in off condition.

6.3.2 Ensure that respective system (Purified Water Generation & Distribution system) also is in off condition.

6.3.3 During replacement activity, check and ensure that certificate of new UV lamp is available & specification of new UV lamp matches with existing UV lamp specification.

6.3.4 Insert safely new UV lamp in quartz glass to UV housing & connect the end terminal with connectors.

6.3.5 Check physical glow of UV lights after providing electrically supply.

6.3.6 If UV lamp does not glow then check the electrical connection again.

6.3.7 Note down the replacement in **Annexure-I** titled as "UV Lamp Usage and Replacement Record".

6.3.8 After completing replacement activity affix the dully filled status label as per **Annexure – II**.

6.3.9 Old tube to be disposed in scrap yard.

6.4 REPLACEMENT FREQUENCY:

6.4.1 UV Lamp shall be replaced before 8000 ± 1000 working Hours of usage which is installed in Purified water generation system.

6.4.2 UV Lamp shall be replaced before 11000 ± 1000 working Hours of usage which is installed in purified water distribution system.

6.4.3 If intensity of UV lamp will get reduce from 15W/m² then replace the UV lamp immediately and same shall be written under remark column.

7.0 ANNEXURES:

ANNEXURES NO.	TITLE OF ANNEXURE	FORMAT No.
Annexure-I	UV Lamp Usage And Replacement Record	
Annexure-II	Status Label	

ENCLOSURES: SOP Training Record

8.0 DISTRIBUTION:

- Controlled Copy No.01 Quality Assurance
- Controlled Copy No.02 Engineering
- Master Copy Quality Assurance

9.0 REFERENCES:

Not applicable.

10.0 REVISION HISTORY:

CHANGE HISTORY LOG

Revision No.	Change Control No.	Details of Changes	Reason for Change	Effective Date	Updated By

ANNEXURE – I
UV LIGHT USAGE AND REPLACEMENT RECORD

Area:-

Location: - **Frequency of Replacement:-**

Date	Pre Reading	Final Reading	Burning Hours	UV Intensity (NLT-15 W/m^2)	Replacement Done By	Done By Sign & Date	Reviewed By Sign & Date	Remark

ANNEXURE – II
STATUS LABEL

STATUS LABEL
EQUIPMENET ID:
UV LAMP REPLACEMENT FREQUENCY:
REPLACED ON:
REMARKS:
DONE BY (SIGN & DATE):
CHECKED BY (SIGN & DATE):