



Title: Cleaning & Sanitization of Purified Water System

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1.0 OBJECTIVE:

To lay down a procedure for Cleaning & Sanitization of Purified Water System.

2.0 SCOPE:

This SOP is applicable for Cleaning & Sanitization of Purified Water System.

3.0 RESPONSIBILITY:

Officer / Executive – Engineering

4.0 ACCOUNTABILITY:

Head – Engineering

5.0 DEFINITION:

Purified water is water that has been mechanically filtered or processed to remove impurities and make it suitable for use. Distilled water has been the most common form of purified water, but, water is more frequently purified by other processes including capacitive deionization, reverse osmosis, carbon filtering, microfiltration, ultrafiltration, ultraviolet oxidation, or electrodeionization.

6.0 PROCEDURE:

6.1 SANITIZATION:

- 6.1.1** Drain the Purified Water from the Storage Tank as well as from the Loop System by opening the respective Diaphragm Valves.
- 6.1.2** Close the Bottom Drain Valve and User Point Valve
- 6.1.3** Select Sanitization Mode in the concerned PLC of SCADA System.
- 6.1.4** The START and STOP button shall appear on screen.
- 6.1.5** Select the START button.
- 6.1.6** Fill the Tank with half quantity of Purified Water.
- 6.1.7** The Boiler Steam Line in Jacket valve shall open, with 1 kg/cm² Pressure.
- 6.1.8** The temperature of Purified Water inside the Tank shall raise up to 85°C ± 2°C.
- 6.1.9** Hot water in Loop Line shall circulate for minimum for 2 hour.



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- 6.1.10 Open the entire User Point Valve and allow the water to Drain Out minimum for 2 minutes for removal of Stagnate Water.
- 6.1.11 Close the User Point Valve. Drain out the remaining water inside the tank by opening its Bottom Drain Valve.
- 6.1.12 Start the Purified Water plant.
- 6.1.13 Flush out the Tank and Loop Line by collecting and circulating 300 liters of Purified Water.
- 6.1.14 Open the Bottom Drain Valve of Purified Water Storage Tank as well as the entire outlet in Purified Water Recirculation Loop and allow all the water to drain out. Repeat flush out 2 to 3 times.
- 6.1.15 Fill the Tank with freshly collected Purified Water.
- 6.1.16 Start the Purified Water Plant again and start collecting the Fresh Purified Water in Purified Water Storage Tank.
- 6.1.17 Fill up to the capacity of the tank or up to the requirement of the production Consumption.
- 6.1.18 Ensure that the sufficient volume of Purified Water is available to avoid the dry running of the pump.
- 6.1.19 Ensure that the Outlet Valve of the Tank is open.
- 6.1.20 Switch “ON” the Starter to Start the Pump. The pump starts circulating the Purified Water.
- 6.1.21 Check for the, Tank level, temperature, Conductivity and Flow Rate of the Return Line.
- 6.1.22 Ensure that the UV Lamp is “ON” and working satisfactorily in the Supply Line.
- 6.1.23 Distribute the Purified Water to the point of use for process application.
- 6.1.24 Keep the circulation “ON” always for avoiding stagnancy of Purified Water at any point.
- 6.1.25 Intimate to QC lab for collecting water sample and testing of water for analysis and water sample is an equal parameter, after approval from QC fills the tank.
- 6.1.26 If QC results not within acceptance criteria then repeat the step 6.1.14 till get the satisfactory result.
- 6.1.27 **FREQUENCY:** Once in a Monthly \pm 5 Days.
- 6.1.28 Record the Details in **Annexure-I**, Titled “**Sanitization Record of Purified Water System**,
Note: Switch ‘OFF’ the Selector Switch when sanitization of the system takes place.

6.2 CLEANING:

- 6.2.1 The Outer Surface of Purified Water Storage Tank is cleaned with 0.2% Liquid Detergent Solution. {20 gram liquid detergent added 1000 ml of purified water = 0.2% solution prepared}



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6.2.2 The Detergent Solution is removed with Lint Free mop and subsequent washing with Purified Water

6.2.3 FREQUENCY: Weekly or Whenever Required.

6.2.4 Record the Details in **Annexure-II**, Titled “**Cleaning Record of Purified Water Tank**”.

7.0 ABBREVIATIONS:

SOP	Standard Operating Procedure
No.	Number
QA	Quality Assurance
PLC	Programmable Logic Control
SCADA	System Control and Data Acquisition
UV	Ultra Violet
PW	Purified Water
Ltd.	Limited
kg	Kilogram
cm	Centimeter

8.0 ANNEXURES:

ANNEXURE No.	TITLE OF ANNEXURE	FORMAT No.
Annexure-I	Sanitization Record of Purified Water System	
Annexure-II	Cleaning Record of Purified Water Tank	

9.0 DISTRIBUTION:

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

10.0 REFERENCES:

Not Applicable



PHARMA DEVILS

ENGINEERING DEPARTMENT

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11.0 REVISION HISTORY:

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

