



SUBJECT OPERATION OF STILLs & DEIONIZERS
Process Specification

SUPERSEDED DATE

This specification initially applies to Lancaster Powerhouse operations in supplying W60A and W7K waters for settling fluorescent screens.

The following requirements and precautions apply when reference is made to this specification on material specifications. See S.N. 33-W-60(W60A) and 33-W-7(W7K).

1. The water must be free of heavy metals, particularly copper. The other metals should not exceed slight traces.
 - a. The still shall not be operated over apparent capacity of 175 gph. each. See S.N. 34-17-16F (Barnstead Still Operation).
 - b. Flow gauges or other adequate means of measuring the flow of each still shall be installed at the powerhouse.
 - c. Flow shall be checked weekly and kept within limit.
 - d. Color test for copper shall be made by powerhouse staff per S.N. 33-W-7(W7K). This test shall be applied to the effluent of each still once weekly or at any time when the group produces positive test for copper.
 - e. The pumps used to handle distilled water shall be of stainless steel - present design appears to be adequate - and shall be operated as indicated by the manufacturer's instructions.
 - f. The tanks used for water storage shall be examined for signs of sedimentation whenever it may be suspected and at not less than two month intervals.
 - g. The deionizer shall not be operated over capacity of 100 gph. and shall be subject to the tests for copper, heavy metals and oxidizable organic matter. See S.N. 33-W-60 (W60A).
 - h. The deionized water shall be delivered to pipeline through 35 micron S.S. filters. These filters shall be washed every 6 months per S.N. 34-17-16E.
2. Resistivity of distilled and deionized water shall be maintained per S.N. 33-W-60 and S.N. 33-W-7 (W60A and W7K).
 - a. The resistivity meters shall be calibrated to a standard instrument at weekly intervals.
 - b. The volume and frequency of diversion of still effluent by the Solubridge controller should be checked by observation at weekly intervals. When this drainage exceeds 50 gph. the still shall be carefully checked for causes of contamination and corrected.
3. Distilled and deionized water shall be delivered to Bulb Prep. service at not over 32°C.(90°F.) nor under 24°C.(75°F.). See S.N. 33-W-60 and S.N. 33-W-7 (W60A and W7K).
 - a. Thermometers should be installed in the still and deionizer effluent lines so that temperatures can be recorded at least hourly.
 - b. Thermometers should be installed in the condenser coolant water lines so that the condensers can be properly operated.
 - c. A heat exchanger shall be installed, to cool water beyond the apparent capacity of still condensers and coolers and equipped with an adequate temperature indicator controller and with thermometers on the input and output sides of the coolant lines so that the heat exchanger can be operated efficiently.

(Cont. on p. 2)

7-4912-20-61 PCL12003-121/bw



3. Distilled and deionized water shall be delivered to Bulb Prep. service at not over 32°C.(90°F.) nor under 24°C.(75°F.). See S.N. 33-W-60 and S.N. 33-W-7 (W60A and W7K). (Cont.)
 - d. The heat exchanger and controls shall be applicable to heating water from the deionizer.
 - e. The operation of the heat exchanger shall be checked hourly.
 - f. Storage of distilled water shall be checked and logged hourly so that production rate for the following hour can be properly determined.
 - g. When stored distilled water falls below 1000 gal., Settling Room Foreman shall be informed.
4. The distilled or deionized water shall be supplied to the Settling Room cooled by the 20T compressor which can supply 400 gph. at approximately 10°C.(50°F.) and 200 gph. at approximately 21°C.(70°F.).
 - a. The operation of the 20T compressor shall be checked hourly and the regulator gauge and thermometer readings logged hourly.
 - b. A pressure controlled valve shall be installed to maintain correct amount of water in the expansion tank. The system shall be checked weekly for excessive water and air leakage.
 - c. The system shall be checked weekly for Freon leakage.
 - d. The space housing the compressor shall be force ventilated and neatly vented so that it can be kept at operable temperature.
5. The pressure of water delivered to the Settling Room shall be not less than 10 psi.
6. The Powerhouse shall call the Settling Room Foreman when the Deionizer is changed from "Run" to "Regenerate" or from "Regenerate" to "Run". This call shall be logged and shall be made sufficiently before time for change to permit foreman to have full notice.

In conclusion, the Powerhouse shall advise the Settling Room Foreman immediately upon discovery of any abnormal condition of distilled water, deionized water or High Pressure Air or the equipment used to supply these services.

ENGINEERING SECTION
STANDARDIZING

SCALE—

DIMENSIONS IN

UNLESS OTHERWISE SHOWN.

DIMENSIONS SHOWN WITHOUT TOLERANCES ARE DESIGN CENTERS

7-4912-20-61

PCL12003-121JR

* CHANGE
** ADDITION
*** DELETION

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12/26 P1