NAVSEA
STANDARD ITEM

FY-27

ITEM NO: 009-56
DATE: 01 OCT 2024
CATEGORY: II

1. SCOPE:

1.1 Title: Main Propulsion Boiler Wet Lay-Up; accomplish

2. REFERENCES:

2.1 S9086-GX-STM-020/CH-220, Boiler Water/Feedwater Test and Treatment

3. REQUIREMENTS:

3.1 Accomplish carbohydrazide wet lay-up of each boiler.

3.2 Notify the SUPERVISOR one day prior to lay-up of each boiler.

3.3 Provide the volume of water required to fill each boiler, superheater, economizer, and associated piping by consulting Table 220-22-11 of 2.1. Include an additional 500 gallons for reserve in the total amount required in Table 220-22-11 of 2.1. Water used for lay-up must conform to the following requirements:

CONSTITUENT or PROPERTY	REQUIREMENT
SHORE STEAM AND CONDENSED SHORE STEAM USED AS FEEDWATER	
pH	8.0 to 9.5
Conductivity	15 micromho/cm max
Dissolved Silica	0.2 ppm max
Hardness	0.10 epm max
Total Suspended Solids	0.10 ppm max
SHORE PROCESSED FEEDWATER (DEMINERALIZERS, REVERSE OSMOSIS)	
Conductivity	2.5 micromho/cm max (at point of delivery)
Silica	0.2 ppm max

3.3.1 The use of filming amines to control steam/steam condensate pH is prohibited.

3.3.2 Provide a pierside tank that will hold the quantity of feedwater required. The tank must be used to mix the carbohydrazide layup solution.

3.3.3 For each 2,000 gallons of feed quality water to be treated, one-gallon of 6.5 percent carbohydrazide and 1/2 quart of 40-percent morpholine must be used, in accordance with Paragraph 220-22 of 2.1.

3.3.3.1 Transfer the required amount of carbohydrazide and morpholine to a narrow mouthed polyethylene bottle as appropriate to the volume needed. Pour the carbohydrazide and morpholine into the tank.

3.3.3.2 Immediately fill the tank with feed quality water to the level calculated in 3.3.

3.3.4 Remove water from the boiler, superheater, and economizer. Close boiler drains and openings with the exception of steam drum, superheater, and economizer vents.

3.3.5 Immediately fill the boiler, including superheater and economizer, taking suction from the carbohydrazide lay-up solution treated tank.

3.3.5.1 While filling the boiler, close each vent in turn as the treated water overflows. After the boiler is filled as shown by an overflow from the highest vent, crack each lower vent in turn to ensure that there are no trapped air pockets.

3.4 Maintain positive pressure on each boiler, not to exceed 150 PSIG, using a head tank, or shore steam in accordance with Paragraph 220-1.1 of 2.1.

3.5 Determine the carbohydrazide concentration on the day each boiler is placed under lay-up and weekly thereafter.

3.5.1 Draw a sample through the boiler water sample line after allowing the boiler water to flow for 5 minutes to flush the line. Rinse the sample bottle with boiler water sample prior to filling. Allow the sample bottle to overflow before capping the bottle to eliminate trapped air.

3.5.1.1 Determine the carbohydrazide concentration immediately after sampling.

3.5.1.2 If the carbohydrazide concentration falls below 2.0 ppm, the layup is lost and the boiler must be dumped and retreated or changed to an authorized layup.

3.6 Drain the superheater and bring each boiler to operating level. Dispose of removed solution in accordance with local, state, and federal regulations.

3.6.1 Do not drain the solution to the bilge.

4. NOTES:

4.1 None.