

NAVSEA
STANDARD ITEM

FY-21

ITEM NO: 009-38
DATE: 01 OCT 2018
CATEGORY: II

1. SCOPE:

1.1 Title: Boiler, Catapult Accumulator and Reboiler Dry Lay-up;
accomplish

2. REFERENCES:

- 2.1 S9086-GY-STM-010/CH-221, Boilers
- 2.2 S9587-B1-MMA-010, Catapult Steam Support Systems for CV/CVN Class Ships
- 2.3 525-7270424, Steam Accumulator Dehumidification
- 2.4 0989-036-0000, CVN 68 Class Steam Plant Manual (CONFIDENTIAL)
- 2.5 S9534-AD-MMA-010, Steam Reboiler

3. REQUIREMENTS:

3.1 Boiler: Prepare boiler for dry lay-up in accordance with Paragraph 221-2.3.3 of 2.1.

3.1.1 Fill or drain water in steam drum to a level below the bottom of the manhole.

3.1.2 Inject 10 pounds of sodium nitrite for each 1,000 gallons of boiler water in a slurry solution to the water in the boiler using table 221-2-1 of 2.1 for guidance.

3.1.2.1 If boiler is pressurized, inject sodium nitrite after pressure drops to 100 PSIG or less.

3.1.3 Fill the steam drum to bring water level to the top of the gauge glass using water conforming to the following requirements:

<u>CONSTITUENT</u> or <u>PROPERTY</u>	<u>REQUIREMENT</u>
pH	5.8 to 8.0
Conductivity	2.5 micromho/cm (at point of delivery)
Dissolved Silica	0.2 ppm (0.2 mg/L) max
Hardness	0.10 epm (0.10 meg/L) max

3.1.3.1 Prevent water level from carrying the solution over into the superheater.

3.1.4 Empty boiler of water and chemicals by pumping at the hose connection in the bottom blow line. The bottom blow, superheater drain, drum vent, and economizer drain valves must be open during pumping.

3.1.4.1 Do not drain the solution to the bilge.

3.1.5 Remove each drum manhole plate and header handhole plate from boiler.

3.1.5.1 Do not remove seal welded handhole plates.

3.1.6 Blow out horizontal tubes with clean air to remove any water. Dry remaining solution from water walls, economizers, superheater headers, steam and water drums.

3.1.7 Circulate heated air with positive flow through the firesides and watersides, as long as the boiler is in a dry lay-up condition, in accordance with Paragraph 221-2.3.3.1 of 2.1. (See Note 4.1)

3.1.7.1 Introduce and exhaust heated air in accordance with Table 221-2-2 and Table 221-2-3 of 2.1.

3.2 Catapult Accumulator, Drain Accumulator: Open manway access, dry out and remove standing water in accordance with Paragraph 5.5.1 of 2.2.

3.2.1 Install temporary closures (FME) in accordance with Paragraph 5.5.3 of 2.2.

3.2.2 Provide source of heated air to the accumulator through the manway opening in accordance with Paragraph 5.4.4 of 2.2.

3.2.3 Introduce heated air through a 4.0 inch hose penetrating the temporary manhole cover in accordance with Table 221-2-3 of 2.1, Unit Type IV.

3.2.3.1 Manufacture manway cover in accordance with details 10-E through 15-E of 2.3.

3.2.4 Accomplish dehumidified air lay-up in accordance with 2.2, using 2.3 for guidance.

3.3 Reboiler Shell Side, Drain Reboiler: Accomplish dry lay-up in accordance with 2.4 and Chapter 3 of 2.5.

3.3.1 Open manway access, conduct feed water wash down of the tube bundle and internal areas of the shell with high pressure water lance in accordance with Chapter 3 of 2.5.

3.3.2 Dry out and remove standing water.

3.3.3 Manufacture and install a plexiglass cover to seal the manway opening, using details 10-E through 15-E of 2.3 for guidance. Cover must have a 4.0 inch hole in the middle to allow penetration of air vent duct (supply) and 4 each 0.75 inch holes for air exhaust points in accordance with Chapter 3 of 2.5.

3.3.4 Introduce heated air through a 4.0 inch hose penetrating the temporary manhole cover in accordance with Table 221-2-3 of 2.1, Unit Type I.

3.3.5 Install vent ducting hose (supply) from outlet of the heater through the manway cover to the conical section (rear) of the Reboiler and align air exit points by opening drum vent valve RB-V280 and Bottom Blow valves RB-V105A/105B/108 in accordance with Chapter 3 of 2.5.

(V) "INSPECT BOILER, ACCUMULATOR AND REBOILER LAY-UP"

3.4 Inspect the boiler, accumulator and reboiler daily and at the end of each work shift and ensure dry lay-up conditions are maintained in accordance with Paragraphs 221-2.4.6.2 and 221-2.4.6.3 of 2.1.

3.5 Remove and dispose of spent chemicals and solutions in accordance with federal, state, and local laws, codes, ordinances, and regulations.

4. NOTES:

4.1 For ships using chelant treatment, the use of sodium nitrite prior to placing boiler on hot air or desiccant lay-up is prohibited unless the ship is in a CNO Availability.

4.2 Catapult accumulator and reboiler requirements apply to CVN only.

4.3 Aluminum material may be used to manufacture manway covers when authorized by the SUPERVISOR.