

## Standby boiler layup procedure

**Layup conditions:** The boiler may not exceed 10 days in this layup. After 10 days, any sludge accumulation will pose higher risks of corrosion in the bottom header (mud drum). Please consult and perform proper wet layup procedures for boilers that require longer than 10 days in shut down conditions. Dry layup or long term wet layup are necessary for shutdowns and storage of more than 1 month.

1. Take water samples from the boiler to measure internal pH level (Must be 12.0-12.4).
2. If pH range is below recommendation at the time of shutdown, continue to cycle up the boiler until the desired pH is reached (staying within boiler water guidelines) or perform the official wet layup procedure. The addition of a pH booster/caustic boiler chemical such as Boilermate® 7200P into the feed water tank during regular operation may be recommended.
3. Press the "Operation ON/OFF" button on the control panel and turn the boiler off. Boiler should be in "DISABLE".
4. After the target pH is confirmed and boiler is turned off, close the valves to isolate the boiler from the steam, vacuum breaker and feedwater inlet during negative pressure conditions: steam outlet -> boiler makeup/feedwater valve -> vacuum breaker.

\*note – must add a manual valve on the vacuum breaker as this does not come standard

## Bringing boiler back online

Open the valve on the vacuum breaker. This will allow the negative pressure within the boiler to return to atmospheric conditions.

Open the remaining valves necessary to operate the boiler (i.e. steam valve and feed water valve).

- Before performing a blow down with a negatively pressurized boiler, open the vacuum breaker valve.

## < Parts to Check >

Keeping a spare of the following parts on-site is recommended:

1. Water Level Probes (Cut to length)
2. Conductivity Probe
3. Pressure Gauge
4. High Limit Pressure Switch
5. Stand-by Pressure Switch
6. Blow Down Ball Valve
7. Surface Blow Down Solenoid Valve
8. Vacuum Breaker

**< Caution >**

Potentially flammable gases may accumulate in the boiler when volatile layup chemicals are added. Please keep any source of ignition away from boiler openings. (Miura boiler water treatment chemicals are non-volatile)

1. Use protective equipment (Safety glasses, rubber gloves, etc.) when handling chemicals or objects with high temperature. It may lead to injuries such as burns or blindness.
  - a. Please rinse the chemical away with water when chemical becomes in contact with the skin.
  - b. If the chemical splashes into your eyes, immediately rinse with water and consult with a doctor
  - c. If an irritation occurs after handling the chemical, there may be chemical residue on your clothes.
  - d. Vaporized, lay up chemical is flammable and should be kept away from open flame.
2. Do not peer into the inspection port or the tubing attached during processes involving chemical, as caustic chemical may splash.
  - a. Use a bucket to collect all chemical coming out of the inspection port during the refill process if caustic is added with the inspection port open.
3. The water drained after this process may be highly caustic. Notify the customer and review local regulations before draining the boiler.

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