THE NATIONAL BOARD OF BOILER AND PRESSURE VESSEL INSPECTORS

What Should You Do Before Starting Boilers After Summer Lay-Up?

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With the fall heating season coming upon us, it is a good time to reconsider steps that need to be taken prior to starting boilers after a lay-up period. While this list is not all-inclusive, it can serve as a guide for those responsible for boiler operation.

Before a boiler is placed in operation, boiler operators and other responsible personnel and/or supervisors, must check over the entire system and carefully review operating procedures.

Operating Manuals

All manufacturers of boilers and fuel burning systems supply operating manuals with their equipment. Unfortunately, many boiler rooms do not have manuals and operating instructions available. These manuals have either been lost or misplaced. It is the responsibility of the responsible supervisor to obtain these publications **and see that they are read, understood, followed and available in the boiler room.**

Maintenance During Summer Lay-Up

The summer shutdown period is a good time to accomplish necessary boiler and fuel burning system preventive maintenance. A suggested check list of such maintenance follows:

- Drain and flush the boiler, open all handholes and manholes, clean and remove soot and scale from the firesides. Examine the boiler for damage and corrosion.
- Have the boiler inspected by an authorized inspector, as required.
- Install new gaskets, replace all handhole and manhole covers, refill boiler and perform a hydrostatic test, if required.
- Institute a suitable boiler water treatment program to reduce scale buildup and corrosion.
- Have the fuel burning equipment cleaned and adjusted by a competent service technician. Verify operation of all operating and limit controls, interlocks and gages. Have the technician disassemble the low water cutoff and water feeding devices, clean, recondition and reassemble them. Have the technician leak test all fuel safety shutoff valves.

- Lubricate all mechanical equipment such as fans and pumps, verify motor rotation.
- Check all boiler piping for leaks and missing insulation.
- Make sure provision is made for establishing and keeping a boiler log.

Start-up Checks

Immediately prior to boiler start-up perform the following:

- Check that all ventilation and combustion air openings and louvers are clean and free of debris.
- Verify boiler water level.
- Check that all stack dampers are open.
- Examine the boiler furnace for foreign material.
- Check the furnace and flue passes for fuel accumulation.
- Make sure the manual fuel valves are open.

Normal Start-up

After completing the start-up checks, close the operating switch and commence the normal starting sequence. The following list suggests a typical starting sequence:

- operating controls closed
- interlocks (safety controls) closed
- start fans and purge the boiler
- purge requirements met
- energize igniter
- prove ignition flame within 10 seconds
- energize main fuel valve(s)
- establish and monitor main flame
- deenergize ignition, main flame proven
- release firing rate (combustion) control to demand
- normal operation

This starting sequence should be carefully observed to make sure that all steps are normal. Readings on flame signal strength meters (if fitted) should be observed and recorded in the boiler log.

A normal shutdown should be initiated by opening the manual burner switch. After the post purge has been completed, check the furnace for flame cutoff and make sure there is no residual flame in the furnace. Have fuel safety shutoff valves repaired or replaced if required.

Additional guidance can be found in the boiler operating manuals and in ASME CSD -1, Controls and Safety Devices for Automatically Fired Boilers, or in the National Fire Protection Association's NFPA 8500 standards on prevention of boiler furnace explosions.

Editor's note: Some *ASME Boiler and Pressure Vessel Code* requirements may have changed because of

advances in material technology and/or actual experience. The reader is cautioned to refer to the latest edition and addenda of the *ASME Boiler and Pressure Vessel Code* for current requirements.