

# **BOILER SHUT DOWN**



## **SHORT TERM:**

If you intend to shut your boiler down for a period not to exceed 3 days, you may simply turn off the power, close the valves and leave the water at the normal operating level without further preparation.

## **LONG TERM:**

If you intend to shut your boiler down for a period exceeding 3 days – up to 14 days, you should turn off the boiler, fill the boiler completely with water, close all the valves, and take no further steps of preparation.

*NOTE = For Short Term and Long Term situations – if there are other boilers connected in the system, precautions must be taken to ascertain that no bleed-over is taking place that would pressurize the idled boiler*

## **EXTENDED PERIOD – “SUMMER STORAGE”:**

For periods of shutdown beyond 14 days, you must consider either a “wet layup” or a “dry layup”.

## **WET LAY-UP**

To keep boilers free from rust, pitting and corrosion, while they are idle, AGI recommends the boiler be stored “wet”. Wet storage simply means filling the boiler completely with chemically treated water, closing all the valves, and carefully monitoring the quality of the water during the layup period.

THE SUCCESS OF ANY WET STORAGE METHOD DEPENDS LARGELY UPON ELIMINATING ALL AIR COMING IN CONTACT WITH ANY OF THE WATER SIDE WHILE MAINTAINING GOOD BOILER WATER INSIDE.

If a boiler is properly stored, it is a simple matter to put it “back on the line” when the heating season begins. Some boilers, of course, are in constant use throughout the year, but even these should be periodically drained, cleaned and inspected to insure continuous operation.

**If you are in an area subject to freezing temperatures, be sure to disconnect and drain all connecting lines.**

The following are suggested steps for storing the boiler during shutdown.

### **Shutdown and Drainage**

1. Shutdown all panel, burner, pump and control switches
2. Close all header valves
3. Close all return valves to boiler and water make-up
4. Close all oil lines
5. Let boiler cool down overnight
6. Open top try-cock (steam) or relief valve (hot water)
7. Open and remove manhole cover
8. Open blowdown valves and start draining and cleaning low water cut off by flushing at the same time
9. Using hose (full pressure), flush down waterside of boiler through manhole opening
10. Open wash out and thoroughly clean the plugs on mud legs, front and back.

### **Cleaning**

1. Remove all hand hole plates
2. Clean breech and chimney
3. Swing burner out and cover with canvas or cloth
4. Open all fire doors, front and back
5. Punch or scrape tubes (operator should wear mask)
6. Vacuum out soot, front and back of tube section
7. Using wire brush, scrape and clean firebox / chamber (operator should wear mask)
8. Replace water gauge glass. Clean pressure gauge glass, fire-eye, ignition, orifice, burner, cup, cone and oil line filters
9. Grease and oil all pump, fan and burner fittings
10. Check fuel oil level; add fuel oil additive and have all tanks filled to top for summer storage
11. Inspect boilers.

### **Storage**

1. Make all necessary repairs, replacements and painting
2. Close all hand holes, use new gaskets
3. Close all mud leg openings
4. Close blow down valves
5. Close try cock or pop-off valves
6. Close fireside of boiler, all openings
7. Connect burner, open oil lines and turn on all switches
8. Fill boiler to top with water adding required amount of water treatment and oxygen scavenger recommended by AGI
9. Fire boiler and heat water in boiler for 2 hours to remove trapped oxygen

# DRY LAY-UP

**MUST** drain all the water from the boiler, wash and flush as necessary to remove all sludge from water side, and use whatever method is available to COMPLETELY dry the water side of unit.

AGI Recommends using a **CORTEC- BOILER LIZARD** for dry storage.

It is designed to maintain proper environment for storage. It is important to seal the water side tightly from outside environment.

Before putting your boiler back into operation, be sure to check with your water treatment supplier to determine whether any changes in treatment are needed to compensate for changes in make-up water, operating conditions or other factors.

## Putting Boiler Back on the Line

1. Remove steel inspection piece, replace manhole cover using new gasket
2. Run hydrostatic test to check for leaks
3. Drop water in boiler to proper operating level by blowing down
4. Check safety devices and controls
5. Drop water level below operation level to check low water cutoff
6. Return water to operating level
7. Open all header valves and return lines
8. Open makeup water valve. If automatic or bypass, open top try cock, fire boiler to clear all trapped air and oxygen
9. Then close and continue regular routine heating operations

## Equipment and Tools Needed to Prepare for Inspection and Storage of Boilers

1. 50 ft garden hose
2. Adjustable wrench to fit manhole, wash out plugs and hand plates
3. Gaskets to fit all openings
4. Work gloves
5. Tube cleaning rod with correct brush size
6. Soot scrapers and long handled wire brush
7. Ladder (size by height of boiler)
8. Industrial vacuum with attachments
9. 3 ft of wire, and a clean piece of steel
10. Lube oil and oil can
11. Soot protector mask
12. Lube grease and grease gun
13. Glass cleaner, clean rags and steel wool pads
14. 3 empty trash cans (20 gal) per boiler.

