



Maintenance and Water Treatment for Your Process Boiler

Risk Solutions

Hartford Steam Boiler
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Introduction

Every year Hartford Steam Boiler (HSB) investigates numerous boiler failures. The principal causes of boiler failures are overheating due to low-water level, scale deposits on the waterside surfaces, and corrosion. The main reasons for these failures are poor or non-existent water treatment and little or no preventive maintenance.

Water level

Boiler controls are used to monitor what is happening inside the boiler. Daily and weekly checks of controls can help your process boiler operate safely and reliably. Gage glasses must be clean to indicate the level of water inside the boiler.

Low-water controls are designed and installed to minimize overheating to boiler parts. Low-water cutoffs are designed to shut down the burner equipment if the water level falls below a specific point.

Periodic draining and testing of the low-water cut-off and gage glass will increase the reliability of these controls. Draining the water chamber of the low-water cut-off removes sludge and sediment as well as simulating a low-water condition to shutdown the burner.

Pressure

Steam gages let the operator know what the boiler and steam pressure is in the boiler. Inaccurate or broken steam gages must be replaced. Safety valves are designed to lift in the event the boiler pressure reaches the safety valve set point. Properly setting and operating safety valves will prevent a boiler from exploding due to an overpressure condition.

Make up

Question: How much water in the steam system is lost for production?

Question: How much water is lost through leaking packing, fittings, and piping?

Question: What is the quality of water being added to the steam system?

Feedwater controls and water treatment programs are essential to boiler operation. The make-up water and condensate return must be treated to remove scale and sludge producing elements.

Scale

Scale deposits adhering to waterside surfaces will insulate boiler steel and cause overheating. Scale deposits will also cause the boiler to operate inefficiently by using more fuel to produce the steam than required, resulting in higher fuel costs.

Cost

- Even if boiler insurance is available, the deductible will still account for expensive out-of-pocket costs.
- Welded repairs and tube replacement are expensive and will include boiler and production downtime.
- Having insurance may be of little comfort when your boiler is down and customers are waiting for service.
- In addition, if you are trying to run a business, your customers or employees may not be too happy to hear that the system is down from minor maintenance oversights.

HSB help

- Boiler operators must have a working knowledge of the controls and how the controls affect the operation of the boiler.
- Boiler logs and maintenance procedures vary with boiler type (firetube or watertube).
- Boiler logs and information regarding Boiler Operation and Maintenance Seminars are available through your local HSB inspector.
- Your HSB inspector may be able to also assist you to find a reliable local concern to look after your boiler and water treatment requirements.
- Remember process boilers require reliable operating controls, a water treatment program and knowledgeable operators.
- Your process boiler is a very important part of your production process. If you take care of it, your boiler will take care of you.
- Please give us a call! We are ready to assist you.

Our advice is intended to complement the equipment manufacturers' recommendations not replace them. If you have doubts about any particular procedure, contact your equipment service representative.