

It's Time for Your Boiler Inspection

Introduction

You understand the importance of periodic boiler inspections for maintaining safe operation of your equipment, and we understand that these inspections can take up your valuable time. Taking a little time now to prepare can allow for a safer and more efficient inspection.

Preparation for External Boiler and Unfired Pressure Vessel Inspections

Safe Environment

Perform a pre-inspection of the space where the equipment is located in order to make sure that there are no hazards that would prevent the inspector from being able to safely perform a thorough inspection.

- Make sure that lights in the space are working and that the space is lit well enough to navigate around equipment and other obstructions safely.
- Ensure that the space is well ventilated.
- Remove any tripping hazards.
- Check for leaks, or oil or water on the floor that could indicate a leak.
- Check for uncovered electrical panels or junction boxes.

If you notice unsatisfactory conditions during your pre-inspection, share your findings with the inspector or service company. Repairs may be needed before an operating certificate can be issued.

Equipment Accessibility

It is important that the equipment to be inspected is physically accessible. If the equipment room is normally locked, ensure that someone will be available with a key to gain access. But keep in mind that an accessible room does not necessarily mean that the equipment inside that room is accessible. Please remove any objects stored around the equipment that might impede access to it so that a thorough inspection can be performed.

Documentation

Prepare documentation of service or repairs of the equipment and have it available for review during the inspection. Past service and repairs can give the inspector valuable insight on the condition of the equipment and can aid in the inspection.

Availability of Appropriate Personnel

The inspector may ask for equipment safety devices, such as safety relief valves and low water cutouts, to be tested during an external jurisdictional inspection. For this reason qualified personnel familiar with the operation of the equipment should be made available to accompany the inspector during the inspection. Also, the inspector may provide recommendations regarding conditions noted during the inspection. The availability of someone familiar with the equipment will make communication of recommendations easier and more effective.

Preparation for Internal Boiler Inspections

Some boilers require periodic internal inspections. Check with your boiler inspection service to determine if internal inspections are required. Pre-inspection activities must be performed by personnel properly trained on the boiler, auxiliary equipment, controls, and safety devices. All activities must follow applicable safety practices, such as lockout/tagout, confined space entry, and all other applicable safety procedures. You should document all your pre-inspection activities and present them to the inspector at the time of inspection. The following provides guidance for suggested pre-inspection activities.

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Pre-Outage Inspection

The purpose of the pre-outage inspection is to detect conditions requiring maintenance or investigation during the scheduled outage. Some conditions can be corrected prior to the inspection. For other problems, parts can be ordered and arrangements made with repair companies, so that outage time is minimized. This pre-outage inspection is done while the boiler and its auxiliaries are in operation.

In your pre-outage inspection, you should:

- Examine all water, steam, exhaust, and gas or oil piping for leaks.
- Look for any unusual conditions such as discoloration or hotspots on the boiler casing.
- Examine the safety relief valve for leaks, and make sure that the valve's data tag should be readable. The relief valve and low water cutout should be tested following the manufacturer's recommendations.
- Check the burner flame for proper color and shape.
- Examine auxiliary equipment such as pumps and fans for unusual noise or vibration.

Personnel Safety

Personnel should take safety precautions when preparing for the internal inspection. Precautions should include any applicable lockout/tagout and confined space entry procedures, and of donning applicable personal protective equipment in order to ensure compliance with all health and safety regulations.

Equipment Preparation

There are a number of specific preparations to be made if the equipment requiring internal inspection is a boiler:

- Allow the boiler to cool down to 150-200°F (65-90°C) before draining.
- When a boiler is in a battery with other operating boiler(s) and common blow down piping, secure the blow down piping of the operating boiler. The operating boiler's blow down valves must not be operated until the blow down valves on the shut down boiler are blanked off or closed and locked.
- The main header stop valve on the boiler to be inspected must be closed, padlocked, and tagged.
- Lock and tag the fuel supply and power.
- The feed water supply must be locked out and tagged.

Additional preparations for an air tank include:

- Ensure power to any compressor(s) supplying the tank is secured. Also, close, lock out and tag any valves supplying pressure to the tank.
- Bleed the tank from a bottom drain to ensure any condensation that has collected in the bottom of the tank is eliminated to allow a thorough inspection of all inner surfaces of the shell.

Documentation

Documenting equipment maintenance activities will greatly aid the Risk Control Consultant performing the inspection. Provide the inspector with the following documentation at time of inspection:

- Records of past outages
- Weld repair records
- Water treatment log
- Operating log

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Summary

When the boiler is properly prepared, the inspector can perform his/her job in an efficient and thorough manner to the benefit of all parties. Preparation and documentation are key to a thorough, efficient, and safe inspection.

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