Michigan Department of Labor and Economic Growth
Bureau of Fire Services

Fire Marshal Bulletin – 10

Boiler Inspections

Improper or inadequate boiler operating and maintenance procedures are not uncommon and may, to a great extent, be due to a lack of information and knowledge. The department has had experience where low-water controls for boilers have failed. When this occurs, the boiler can overheat resulting in creating a dangerous condition. The following information is intended to create an awareness regarding boiler operation and maintenance procedures so as to reduce the threat to life safety.

Definitions: (As used in Act 290 of 1965)

1. "Boiler" means a closed vessel in which water is heated, steam is generated, steam is superheated, or a combination thereof, under pressure or vacuum by the application of heat from combustible fuels, electricity, or nuclear energy. Boiler does not include facilities of an integral part of a continuous processing unit but does include a fired unit for heating or vaporizing liquids other than water, if the unit is separate from a processing system and is complete within itself.
2. "Power boiler" means a closed vessel in which steam or other vapor is generated at a pressure of more than 15 p.s.i.g. by the direct application of heat.
3. "High pressure, high temperature water boiler" means a water heating boiler operating at pressure exceeding 160 p.s.i.g. or temperatures exceeding 250 degrees Fahrenheit.
4. "Low pressure boiler" means a steam boiler operated at pressures not exceeding 15 p.s.i.g., or a hot water heating boiler operated at pressures not exceeding 160 p.s.i.g. or temperatures not exceeding 250 degrees Fahrenheit.

Boiler Types:

1. Fire Tube: Fire in tubes, water around tubes.

   Generally for low pressure usage. (Dry Cleaners, Schools, etc.)

2. Water Tube:Water in the tubes, fire in the fire box.

   High pressure usage. (Industrial, Hospital)

3. Cast Iron: Low pressure

   30# water pressure; 5# steam pressure (Residential Use, Small Business)

Inspection Frequency:
Inspections by boiler inspectors per Rule 57 of Act 290 of Public Acts of 1965, as follows:

1. High pressure, power and process boilers are required to be inspected annually.
2. Low pressure boilers and hot water supply boilers that are 200,000 BTU's are required to be inspected bi-annually.

Special Concerns:
The Bureau of Construction Codes Boiler Division and the Bureau of Fire Services (BFS) of the Department of Labor & Economic Growth advise the following items should be checked, but are not all inclusive:

1. Current Boiler Certification and/or Tag. A certificate of certification should be on the wall; tag on boiler.
2. Low Water Shutoff. Resident or owner should be aware of proper maintenance. If not, the insurance company or Boiler Division should be contacted.
3. Pressure Gauge. Usually marked to read within a safe area. Is it in the acceptable area?
4. Pressure Relief Valve. Must be on the boiler. Must have a tag to show the relieving capacity which should be greater than the relief capacity required by the boiler. Valve should not be leaking or corroded shut.
5. Temperature Gauge. Usually marked to read within a safe area. Is it in the acceptable area?
6. General Condition. Check for evidence of:

   (a) Rust, corrosion

   (b) Deteriorating piping

   (c) Signs of leakage

7. Fuel feed lines. Check for proper application and general condition.
8. Combustion Air. Is sufficient combustion air provided? Are there tell-tale signs that indicate a lack of combustion air?

If you have any questions regarding this bulletin, please contact the BFS, Fire Safety Plan Review Division at (517) 241-8847.

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