

NB10-1101
Part 2 2.2.10.7
SG Inspection General
Inspector's Responsibility for Boiler Control's

2.2.10.7 Verification of Controls and Other Safety Devices

Establishing proper operation and maintenance of controls and safety devices is essential to safe boiler operation. Owner/Users are responsible for establishing and implementing management programs which will ensure such action is taken. In addition, any repairs to controls and safety devices must only be made by qualified individuals or organizations. Documentation of compliance with these management systems and repairs is an essential element of demonstrating the effectiveness of such systems.

- a) Verify that the burner is labeled and listed by a recognized testing agency, that piping and wiring diagrams exist, that commissioning tests have been conducted and that a contractor/manufacturer's installation report has been completed and is available for review.
- b) Verify that the Owner/User has established function tests, inspection requirements, maintenance and testing of all controls and safety devices in accordance with manufacturer's recommendations. Verify that these activities are conducted at assigned intervals in accordance with a written procedure, that non-conformances which impact continued safe operation of the boiler are corrected, and that the results are properly documented. These activities shall be conducted at a frequency recommended by the manufacturer or the frequency required by the jurisdiction. Where no frequencies are recommended or prescribed, the activity should be conducted at least annually.

Where allowed by the jurisdiction, Performance Evaluation may be used to increase or decrease the frequencies based on document review and approval by an appropriate engineer.

- c) Verify that combustion air is supplied to the boiler room as per NBIC Part 1.
- d) Verify that a manually operated remote boiler emergency stop button exists at each boiler room exit door, when required by the jurisdiction.
- e) Verify that low water and flow controls and protective devices are provided, when required by the jurisdiction as follows:

1. All steam boilers have at least two low water fuel cutoffs or equivalent protection to prevent startup and to cut off the fuel prior to loss of water level in the sight glass. Where required by the code of construction or jurisdictional requirements, low water protection with manual reset shall be provided.
 2. All hot water heating or supply boilers have a low water cutoff device that is located to protect the boiler from a low water condition. Manual reset shall be provided.
 3. All electric boilers are protected from a low water condition either by construction or a low water cutoff/flow switch.
 4. All forced flow circulation boilers should have a flow sensing device installed that will shut the burner down on a loss of flow.
- f) Verify that steam pressure and temperature controls and protective devices are provided as follows:
1. All steam boiler systems have one operating steam pressure control and one high steam pressure limit control
 2. All hot water boiler systems have one operating water temperature control and a high temperature limit control.
 3. Where required by the code of construction or jurisdictional requirements, the high steam pressure or high temperature limit control shall be of the manual reset type.
- g) Verify that any repair, alteration, or replacement of a control or safety device complies with the following:
1. The requirements of the original installation code or jurisdiction, as appropriate.
 2. The work is conducted by trained and qualified individuals with any additional certification as required by the jurisdiction.
 3. The work is documented.