

BI 19-02
CO Detector

Statement of Need: ECS Consulting, LLC requests the Board of Boiler Rules provide an interpretation on the installation requirements for Carbon Monoxide (CO) detectors related to boiler operations in the state of Tennessee.

Background: In the current edition of the National Board Inspection Code (NBIC) there has been an addition to Part 1 (Installation), more specifically, Section 1.6.9 (Carbon Monoxide (CO) Detector/Alarm) that requires the installation of CO detectors “*The owner or user shall install a carbon monoxide (CO) detector/alarm in equipment rooms where fuel fired boilers and/or fuel fired pressure vessels are located in accordance with the authority having Jurisdiction.*”

Inquiry (1): Is it required to have a CO detector/alarm in a boiler room or space containing a boiler that has a fuel firing energy input of $\geq 100,000$ BTU/hr

Reply (1): Yes

Inquiry (2): If Inquiry (1) is “Yes”, does this requirement include both high-pressure and low-pressure boilers?

Reply (2): Yes

Inquiry (3): If Inquiry (1) is “Yes”, are unfired steam/water boilers utilizing the fired fuel waste heat combustion gases (e.g., Heat Recovery Steam Generator) as its energy source required so?

Reply (3): Yes

Inquiry (4): Is it required to have a CO detector where the boiler room, or space where a boiler is installed, possesses a upper space mechanical ventilation system that either continuously operates or electrically tied to operate whenever the boiler(s) in the space are firing?

Reply (4): Yes

Inquiry (5): Is it allowable to install the CO detector anywhere within the boiler room or space where a boiler is installed?

Reply (5): No; CO detectors shall be installed no lower than five (5) feet above the lowest space in a boiler room or space containing a fuel fired boiler.

Inquiry (6): Is it required for the CO detector to be hard-wired electrically?

Reply (6): No

Inquiry (7): Is it required for the CO detector to have two means of power source?

Reply (7): No

Inquiry (8): Is it required for the detector to be dedicated for CO detection only?

Reply (8): No; A multipurpose CO detector/alarm may be used.

Inquiry (9): Is it allowed for additional control and safety devices on the boiler that monitor combustion gas O₂ levels, to ensure complete combustion (e.g., O₂ trim, etc.), be accepted as the CO detector for the boiler room or space where the boiler is installed?

Reply (9): No

Inquiry (10): Is there a requirement for the decibel level the audible alarm must emit?

Reply (10): Yes, the decibel level must exceed to the normal operation decibel level of the boiler room or space where the boiler is located.