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Transducer and Transmitter Installation for Nuclear Safety Applications

Approved 11 November 2019

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1 Scope

This document covers the installation of transducers for nuclear safety-related applications.

2 Purpose

This document establishes requirements and recommendations for the installation of transducers and auxiliary equipment for nuclear applications outside of the main reactor vessel.

3 Definitions and terminology

ISA-51.1-1979 (R1993) is the basic reference for terms not defined herein. ISA-37.1-1975 (R1982) is the reference for terms not included in ISA-51.1-1979 (R1993).

3.1

auxiliary equipment

separate devices, such as field-mounted power supplies, that are appended to the basic transducer and are located in the same general area as the transducer. Equipment located away from the transducer (such as control-board-mounted controllers and rack-mounted power supplies) is not included in the definition as used in this document.

3.2

Code

refers to the ASME Boiler and Pressure Vessel Code, Section III and other sections required to implement the requirements of Section III.

3.3

code class

the applicability of the Code, determined through consideration of pressure boundary integrity.

3.4

EMI

electromagnetic interference

3.5

in-line

transducers exposed directly to the process fluid in piping, vessels, equipment, or the main flow paths of fluid systems.

3.6

nuclear safety related

that which is essential to:

- a) emergency reactor shutdown,
- b) containment isolation,
- c) reactor core cooling,
- d) containment or reactor heat removal,
- e) prevention or mitigation of a significant release of radioactive material to the environment,
- f) maintaining safe shutdown conditions, or
- g) providing reasonable assurance that a nuclear power plant can be operated without undue risk to health and safety of the public.