

Digital Instrumentation and Controls (I&C)

Instrumentation and controls (I&C) systems that use digital devices in safety systems make extensive use of advanced technology (i.e., equipment and design practices that are expected to be significantly and functionally different from current designs). These designs include, but are not limited to, the use of microprocessors, digital systems and displays, fiber optics, multiplexing, and different isolation techniques to achieve the needed independence and redundancy.

The deployment of digital technology in nuclear facilities has the potential to improve safety and operational performance. The NRC is committed to the licensing of digital technology in safety system applications. The digital I&C area continues to evolve as the technology changes and the NRC continues to refine its regulatory approach. The NRC is actively working to find solutions to technical challenges that affect licensing of digital systems for both operating and new reactors and at other nuclear facilities. In anticipation of future licensing activities, the NRC is building its infrastructure by developing guidance and staff resources. The NRC will continue to interact with external stakeholders, other government agencies, and international regulators on the regulation of digital technology.

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