

2.4.10 Process Information and Control System

1.0 Description

The process information and control system (PICS) is a digital human machine interface (HMI). It provides monitoring and control of plant systems. The PICS is non-safety related and is provided in both the main control room (MCR) and the remote shutdown station (RSS).

2.0 I&C Design Features

2.1 The system hardware and software in the PICS is diverse from the safety-related system hardware and software in the Safety Information and Control System (SICS).

2.2 The PICS system design is accomplished through a phased approach which includes the following (or equivalent) phases:

1. System Requirements Phase.
2. System Design Phase.
3. Software/Hardware Requirements Phase.
4. Software/Hardware Design Phase.
5. Software/Hardware Implementation Phase.
6. Software/Hardware Validation Phase.
7. System Integration Phase.
8. System Validation Phase.

2.3 Deleted.

2.4 Electrical isolation is provided on PICS connections between the RSS and the MCR.

2.5 The capability to transfer control of the PICS from the MCR to the RSS exists in a fire area separate from the MCR and allows transfer of control without entry into the MCR.

3.0 System Inspections, Tests, Analyses, and Acceptance Criteria

Table 2.4.10-1 lists the PICS ITAAC.

**Table 2.4.10-1—Process Information and Control System
ITAAC (3 Sheets)**

Commitment Wording		Inspections, Tests, Analyses	Acceptance Criteria
2.1	The system hardware and software in the PICS is diverse from the safety-related system hardware and software in the SICS.	An analysis will be performed to demonstrate that the system hardware and software in the PICS is diverse from the safety-related system hardware and software in the SICS.	A report exists and concludes that the system hardware and software in the PICS is diverse from the safety-related system hardware and software in the SICS.
2.2	<p>The PICS system design is accomplished through a phased approach which includes the following (or equivalent) phases:</p> <ol style="list-style-type: none"> 1) System Requirements Phase. 2) System Design Phase. 3) Software/Hardware Requirements Phase. 4) Software/Hardware Design Phase. 5) Software/Hardware Implementation Phase. 6) Software/Hardware Validation Phase. 7) System Integration Phase. 8) System Validation Phase. 	<ol style="list-style-type: none"> a. Analyses will be performed to verify that the outputs for the PICS system requirements phase conform to the requirements of that phase. {{DAC}} b. Analyses will be performed to verify that the outputs for the PICS system design phase conform to the requirements of that phase. {{DAC}} c. Analyses will be performed to verify that the outputs for the PICS software/hardware requirements phase conform to the requirements of that phase. {{DAC}} d. Analyses will be performed to verify that the outputs for the PICS software/hardware design phase conform to the requirements of that phase. {{DAC}} e. Analyses will be performed to verify that the outputs for the PICS software/hardware implementation phase conform to the requirements of that phase. 	<ol style="list-style-type: none"> a. A report exists and concludes that the outputs for the PICS system requirements phase conform to the requirements of that phase. {{DAC}} b. A report exists and concludes that the outputs for the PICS system design phase conform to the requirements of that phase. {{DAC}} c. A report exists and concludes that the outputs for the PICS software/hardware requirements phase conform to the requirements of that phase. {{DAC}} d. A report exists and concludes that the outputs for the PICS software/hardware design phase conform to the requirements of that phase. {{DAC}} e. A report exists and concludes that the outputs for the PICS software/hardware implementation phase conform to the requirements of that phase.

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Commitment Wording		Inspections, Tests, Analyses	Acceptance Criteria
		<p>f. Analyses will be performed to verify that the outputs for the PICS software/hardware validation phase conform to the requirements of that phase.</p> <p>g. Analyses will be performed to verify that the outputs for the PICS system integration phase conform to the requirements of that phase.</p> <p>h. Analyses will be performed to verify that the outputs for the PICS system validation phase conform to the requirements of that phase.</p>	<p>f. A report exists and concludes that the outputs for the PICS software/hardware validation phase conform to the requirements of that phase.</p> <p>g. A report exists and concludes that the outputs for the PICS system integration phase conform to the requirements of that phase.</p> <p>h. A report exists and concludes that the outputs for the PICS system validation phase conform to the requirements of that phase.</p>
2.3	Deleted.	Deleted.	Deleted.
2.4	Electrical isolation is provided on PICS connections between the RSS and the MCR.	<p>a. Analyses will be performed to determine the test specification for electrical isolation devices on connections between the RSS and the MCR for the PICS.</p> <p>b. Type tests, analyses, or a combination of type tests and analyses will be performed on the electrical isolation devices between the RSS and the MCR for the PICS.</p>	<p>a. A test plan exists that provides the test specification for determining whether a device is capable of preventing the propagation of credible electrical faults on connections between the RSS and the MCR for the PICS.</p> <p>b. A report exists and concludes that the isolation devices used between the RSS and the MCR for the PICS prevent the propagation of credible electrical faults.</p>
		<p>c. Inspections will be performed on connections between the RSS and the MCR for the PICS.</p>	<p>c. Electrical isolation devices exist on connections between the RSS and the MCR for the PICS.</p>

**Table 2.4.10-1—Process Information and Control System
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	Commitment Wording	Inspections, Tests, Analyses	Acceptance Criteria
2.5	<p>The capability to transfer control of the PICS from the MCR to the RSS exists in a fire area separate from the MCR and allows transfer of control without entry into the MCR.</p>	<p>a. Inspections will be performed to verify the existence of procedures.</p> <p>b. Tests will be performed to verify that control of the PICS can be transferred from the MCR to the RSS.</p> <p>c. An inspection will be performed to verify the existence of the PICS RSS transfer means in a fire area separate from the MCR.</p>	<p>a. A report exists and concludes that procedures exist for transfer of control of the PICS from the MCR to the RSS.</p> <p>b. A report exists and concludes that the test results confirm that control of the PICS can be transferred from the MCR to the RSS.</p> <p>c. Transfer means exist in a fire area separate from the MCR.</p>