

2.4.5 Priority and Actuator Control System

1.0 Description

The priority and actuator control system (PACS) is a safety-related system.

The PACS has the following safety related functions:

- Prioritizes actuation requests from I&C systems.
- Performs essential equipment protection.
- Performs drive actuation.
- Performs drive monitoring.

2.0 Arrangement

2.1 The PACS equipment is located as listed in Table 2.4.5-1—Priority and Actuator Control System Equipment.

2.2 Physical separation exists between the four divisions of the PACS.

3.0 Mechanical Design Features

3.1 Equipment identified as Seismic Category I in Table 2.4.5-1 can withstand seismic design basis loads without loss of safety function.

4.0 I&C Design Features, Displays and Controls

4.1 The order of priority of automatic functions performed by PACS is listed from highest to lowest:

- Safety-related I&C functions.
- Non-safety related I&C functions.

4.2 Electrical isolation is provided on connections between the PACS and the non-safety I&C systems.

4.3 The PACS equipment classified as Class 1E in Table 2.4.5-1 can perform its safety function when subjected to electromagnetic interference (EMI), radio-frequency interference (RFI), electrostatic discharges (ESD), and power surges.

5.0 Electrical Power Design Features

5.1 The components identified as Class 1E in Table 2.4.5-1 are powered from the Class 1E division as listed in Table 2.4.5-1 in a normal or alternate feed condition.

6.0 System Inspections, Tests, Analyses, and Acceptance Criteria

Table 2.4.5-2 lists the PACS ITAAC.

Table 2.4.5-1—Priority and Actuator Control System Equipment

Equipment Description	Equipment Tag Number ⁽¹⁾	Equipment Location	Seismic Class	IEEE Class 1E⁽²⁾
Priority and Actuator Control System Division 1 Cabinets	30CLE6	Safeguard Building 1	I	1 ^N 2 ^A
Priority and Actuator Control System Division 2 Cabinets	30CLF6	Safeguard Building 2	I	2 ^N 1 ^A
Priority and Actuator Control System Division 3 Cabinets	30CLG6	Safeguard Building 3	I	3 ^N 4 ^A
Priority and Actuator Control System Division 4 Cabinets	30CLH6	Safeguard Building 4	I	4 ^N 3 ^A

- 1) Equipment Tag numbers are provided for information and are not part of the design certification.
- 2) ^N denotes the division the component is normally powered from. ^A denotes the division the component is powered from when alternate feed is implemented.

**Table 2.4.5-2—Priority and Actuator Control System ITAAC
(2 Sheets)**

Commitment Wording		Inspections, Tests, Analyses	Acceptance Criteria
2.1	The PACS equipment is located as listed in Table 2.4.5-1.	Inspections will be performed of the location of the PACS equipment.	The equipment listed in Table 2.4.5-1 is located as listed in Table 2.4.5-1.
2.2	Physical separation exists between the four divisions of the PACS.	Inspections will be performed to verify that the divisions of the PACS are located in separate Safeguard Buildings.	The four divisions of the PACS are located in separate buildings.
3.1	Equipment identified as Seismic Category I in Table 2.4.5-1 can withstand seismic design basis loads without loss of safety function.	<p>a. Type tests, analyses or a combination of type tests and analyses will be performed on the equipment listed as Seismic Category I in Table 2.4.5-1 using analytical assumptions, or under conditions, which bound the Seismic Category I design requirements.</p> <p>b. Inspections will be performed of the as-installed Seismic Category I equipment listed in Table 2.4.5-1 to verify that the equipment including anchorage is installed as specified on the construction drawings.</p>	<p>a. Tests/analysis reports exist and conclude that the equipment listed as Seismic Category I in Table 2.4.5-1 can withstand seismic design basis loads without loss of safety function.</p> <p>b. Inspection reports exist and conclude that the as-installed Seismic Category I equipment listed in Table 2.4.5-1 including anchorage is installed as specified on the construction drawings.</p>
4.1	<p>The order of priority of automatic functions performed by PACS is listed from highest to lowest:</p> <ul style="list-style-type: none"> • Safety related I&C functions • Non-safety related I&C functions 	Operational tests will be performed using test signals to verify the order of priority of automatic functions performed by PACS.	<p>The order of priority of automatic functions performed by PACS is listed from highest to lowest:</p> <ul style="list-style-type: none"> • Safety related I&C functions • Non-safety related I&C functions

**Table 2.4.5-2—Priority and Actuator Control System ITAAC
(2 Sheets)**

	Commitment Wording	Inspections, Tests, Analyses	Acceptance Criteria
4.2	Electrical isolation is provided on connections between the PACS and the non-safety I&C systems.	<ul style="list-style-type: none"> a. Analyses will be performed to determine the test specification for electrical isolation devices on connections between the PACS and the non safety I&C systems. b. Type tests, analyses, or a combination of type tests and analyses will be performed on the electrical isolation devices between the PACS and the non safety I&C systems. c. Inspections will be performed on all connections between the PACS and the non safety I&C systems. 	<ul style="list-style-type: none"> 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 PACS and the non safety I&C systems. b. A report exists and concludes that the Class 1E isolation devices used between the PACS and the non safety I&C systems prevent the propagation of credible electrical faults. c. Class 1E electrical isolation devices exist on all connections between the PACS and the non safety I&C systems.
4.3	The PACS equipment classified as Class 1E in Table 2.4.5-1 can perform its safety function when subjected to EMI, RFI, ESD, and power surges.	Type tests, tests, analyses or a combination of these will be performed for the Class 1E equipment listed in Table 2.4.5-1.	A report exists and concludes that the equipment listed as Class 1E in Table 2.4.5-1 can perform its safety function when subjected to EMI, RFI, ESD, and power surges.
5.1	The components identified as Class 1E in Table 2.4.5-1 are powered from the Class 1E division as listed in Table 2.4.5-1 in a normal or alternate feed condition.	<ul style="list-style-type: none"> a. Testing will be performed for components identified as Class 1E in Table 2.4.5-1 by providing a test signal in each normally aligned division. b. Testing will be performed for components identified as Class 1E in Table 2.4.5-1 by providing a test signal in each division with the alternate feed aligned to the divisional pair. 	<ul style="list-style-type: none"> a. The test signal provided in the normally aligned division is present at the respective Class 1E components identified in Table 2.4.5-1. b. The test signal provided in each division with the alternate feed aligned to the divisional pair is present at the respective Class 1E components identified in Table 2.4.5-1.