

2.5.4 Information Systems Important to Safety

2.5.4.1 Design Description

The PSMS and PCMS provide plant operators with the information systems important to safety for: (1) assessing plant conditions and safety system performance, and making decisions related to plant responses to abnormal events; and (2) preplanned manual operator actions related to accident mitigation. The information systems important to safety also provide the necessary information from which appropriate actions can be taken to mitigate the consequences of the AOOs.

The information important to safety includes the following:

- Post accident monitoring (PAM)
- Bypassed and inoperable status indication (BISI)
- Plant annunciators (alarms)
- Safety parameter displays system (SPDS)
- Information and control for credited manual operator actions

~~The necessary information important to safety is available for the display at the following facilities:~~

- ~~• Main control room (MCR)~~
- ~~• Remote shutdown room (RSR)~~
- ~~• Technical support center (TSC)~~
- ~~• Emergency operations facility (EOF)~~

~~Controls for credited manual operator actions are available in the MCR.~~

~~Figure 2.5.4-1 shows the configuration of the PSMS and PCMS for implementation of the information systems important to safety. The PSMS redundancy, independence, testability, qualification, quality and life cycle descriptions of Subsection 2.5.1 are also applicable to the information systems important to safety within the PSMS. The PCMS redundancy, qualification and quality descriptions applicable to the information systems important to safety are as described in Subsection 2.5.5.~~

The PAM variables are identified in Table 2.5.4-1, and the alarms for the credited manual actions are identified in Table 2.5.4-3.

1. PAM variables as identified in Table 2.5.4-1, BISI, SPDS information, and plant alarms for credited manual actions as identified in Table 2.5.4-3, for information systems important to safety, are provided on safety and non-safety HSI equipment at the MCR, RSR, TSC, and EOF, as shown in Figure 2.5.4-1.

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3. The field instrumentation for the PAM variables identified in Table 2.5.4-1 that is subjected to a harsh environment can withstand the environmental conditions that would exist before, during, and following a design basis accident without loss of safety function for the time required to perform the safety function.

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2.5.4.2 Inspections, Tests, Analyses, and Acceptance Criteria

Table 2.5.4-2 describes the ITAAC for the information systems important to safety.

Table 2.5.4-1 Post Accident Monitoring Variables

Reactor Coolant Hot Leg Temperature (Wide Range)
Reactor Coolant Cold Leg Temperature (Wide Range)
Reactor Coolant Pressure
Degrees of Subcooling
Pressurizer Water Level
Steam Generator Water Level (Wide Range)
Steam Generator Water Level (Narrow Range)
Main Steam Line Pressure
Emergency Feedwater Flow
Wide Range Neutron Flux
Core Exit Temperature
Containment Pressure
Reactor Vessel Water Level
Containment Isolation Valve Position (Excluding Check Valves)
Refueling Water Storage Pit Water Level (Wide Range)
Refueling Water Storage Pit Water Level (Narrow Range)
Emergency Feedwater Pit Water Level
Containment High Range Area Radiation

Table 2.5.4-2 Information Systems Important to Safety Inspections, Tests, Analyses, and Acceptance Criteria

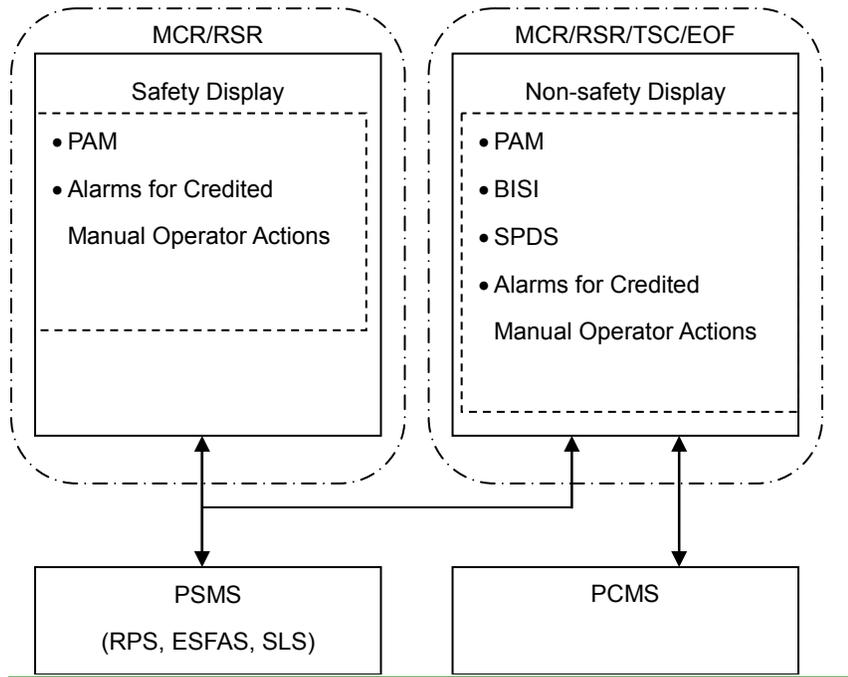
Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
<p>1. <u>PAM variables as identified in Table 2.5.4-1, BISI, SPDS information, and plant alarms for credited manual actions as identified in Table 2.5.4-3, for information systems important to safety, are provided on safety and non-safety HSI equipment at operations support facilities, including the MCR, RSR, TSC, and EOF, as shown in Figure 2.5.4-1. Information systems important to safety (PAM, BISI, alarms, SPDS) are appropriately displayed and alarmed in the MCR, RSR, TSC and EOF, as appropriate.</u></p>	<p>1. <u>An inspection A test</u> will be performed of the MCR, RSR, TSC and EOF facilities to demonstrate alarm, display and control capabilities for retrievability of alarms and displays for information systems important to safety.</p>	<p>1. <u>Displays for PAM variables identified in Table 2.5.4-1, BISI, SPDS, and plant alarms for credited manual actions as identified in Table 2.5.4-3, for information systems important to safety, are available</u> can be retrieved on non-safety HSI equipment The as-built information systems important to safety (PAM, BISI, alarms, SPDS) are appropriately displayed and alarmed in the as-built MCR, RSR, TSC and EOF, as appropriate as shown in Figure 2.5.4-1. Displays for PAM variables as identified in Table 2.5.4-1 and alarms for credited manual actions as identified in Table 2.5.4-3, for information systems important to safety, can be retrieved on safety HSI equipment in the as-built MCR and RSR, as shown in Figure 2.5.4-1.</p>
<p>2. Information and controls for credited manual operator actions are provided in the MCR.</p>	<p>2. A test of the as-built PSMS and PCMS will be performed.</p>	<p>2. The information and controls for credited manual operator actions are provided in the as-built MCR.</p>
<p>3. The field instrumentation for the PAM variables identified in Table 2.5.4-1 as being that is qualified for <u>subjected to</u> a harsh environment is designed to can withstand the environmental conditions that would exist before, during, and following a design basis event <u>accident</u> without loss of safety function for the time required to perform the safety function.</p>	<p>3.i Type tests, and/or analyses, <u>or a combination of type tests and analyses using the design environmental conditions, or under conditions which bound the design environmental conditions,</u> will be performed on the field instrumentation for the PAM variables <u>identified in Table 2.5.4-1</u> located in a <u>that is subjected to a</u> harsh environment.</p>	<p>3.i <u>A report exists and The results of the type tests, and/or analyses</u> concludes that the field instrumentation for the PAM variables identified in Table 2.5.4-1 as being that is <u>subjected to qualified for</u> a harsh environment can withstand the environmental conditions that would exist before, during, and following a design basis accident <u>event</u> without loss of safety function for the time required to perform the safety function.</p>

	<p>3.ii Inspections will be performed on of the as-built field instrumentation <u>for the PAM variables identified in Table 2.5.4-1 that is subjected to a harsh environment</u>, and the associated wiring, cables, and terminations located in a harsh environment.</p>	<p>3.ii The as-built field instrumentation and the associated wiring, cables, and terminations <u>for the PAM variables</u> identified in Table 2.5.4-1 as being that are <u>qualified for</u> subjected to a harsh environment are bounded by type tests and/or analyses, or a combination of <u>type tests and analyses</u>.</p>
<p>4. The functional arrangement of the information systems important to safety is as described in the Design Description and as shown in Figure 2.5.4-1.</p>	<p>4. An inspection of the as-built information systems important to safety will be performed.</p>	<p>4. The as-built information systems important to safety conform to the functional arrangement as described in the Design Description and as shown in Figure 2.5.4-1.</p>

Table 2.5.4-3 Alarms for Credited Manual Actions

<u>Control Rod Insertion Limit Alarm</u>
<u>High Source Range Neutron Flux Alarm</u>
<u>High Pressurizer Water Level Alarm</u>
<u>Main Steam Line Radiation (N-16) Alarm</u>
<u>Low Pressurizer Water Level against Program Water Level Alarm</u>
<u>Containment High Range Area Radiation Alarm</u>
<u>Low Volume Control Tank Water Level Alarm</u>

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Note: Controls for credited manual operator actions are available in the MCR.

Figure 2.5.4-1 Configuration of the PSMS and PCMS for Information Systems Important to Safety