

2.9.4 Sampling Activity Monitoring System

Design Description

1.0 System Description

The sampling activity monitoring system (SAMS) provides the following safety-related function:

- Provides a radioactivity indication that initiates isolation of the main control room (MCR) ventilation intake.

The SAMS provides the following non-safety-related function:

- Provides ventilation stack radiation monitoring indication in the MCR and remote shutdown station (RSS).
- Supports reactor coolant pressure boundary (RCPB) leakage detection.

2.0 Arrangement

2.1 The functional arrangement of the SAMS is as described in the Design Description of Section 2.9.4, Tables 2.9.4-1—Sampling Activity Monitoring System Equipment Mechanical Design and 2.9.4-2—Sampling Activity Monitoring System Equipment I&C and Electrical Design, and as shown on Figure 2.9.4-1—Sampling Activity Monitoring System Functional Arrangement (safety-related portion).

2.2 Deleted.

3.0 Mechanical Design Features

3.1 Equipment identified as Seismic Category I in Table 2.9.4-1 can withstand seismic design basis loads without a loss of safety function(s).

4.0 I&C Design Features, Displays and Controls

4.1 Deleted.

4.2 Displays listed in Table 2.9.4-1 are indicated on the PICS operator workstations in the MCR.

4.3 Deleted.

5.0 Electrical Power Design Features

5.1 Equipment designated as Class 1E in Table 2.9.4-2 are powered from a Class 1E division in a normal or alternate feed condition.

6.0 Equipment and System Performance

6.1 Deleted.

Inspections, Tests, Analyses, and Acceptance Criteria

Table 2.9.4-3—lists the sampling activity monitoring system ITAAC.

Table 2.9.4-1—SAMS Equipment Mechanical Design

Description	Tag Number ⁽¹⁾	Location	Function	Seismic Category
Vent Stack Radiation Monitors (R-4)	30KLN70CR001 30KLN70CR071 30KLN70CR072 30KLN70CR031 30KLN70CR032	Vent Stack	Indicate Radioactivity Levels	Non-Seismic
Vent Stack Radiation Monitors (R-5)	30KLN90CR001 30KLN90CR002	Vent Stack	Indicate Radioactivity Levels	Non-Seismic
Vent Stack Radiation Monitors (R-6)	30KLN95CR001 30KLN95CR002	Vent Stack	Indicate Radioactivity Levels	II
Reactor Building Radiation Monitors (R-10)	30KLN05CR001 30KLN05CR031 30KLN05CR071	Reactor Building	Indicate Radioactivity Levels	I

1. Equipment tag numbers are provided for information only and are not part of the certified design.

Table 2.9.4-2—SAMS Equipment I&C and Electrical Design

Description	Tag Number ⁽¹⁾	Location	IEEE Class 1E Source
Vent Stack Radiation Monitors (R-4)	30KLL70CR001 30KLL70CR071 30KLL70CR072 30KLL70CR031 30KLL70CR032	Vent Stack	No
Vent Stack Radiation Monitors (R-5)	30KLL90CR001 30KLL90CR002	Vent Stack	No
Vent Stack Radiation Monitors (R-6)	30KLL95CR001 30KLL95CR002	Vent Stack	Yes
Reactor Building Radiation Monitors (R-10)	30KLL05CR001 30KLL05CR031 30KLL05CR071	Reactor Building	No

1. Equipment tag numbers are provided for information only and are not part of the certified design.

**Table 2.9.4-3—Sampling Activity Monitoring System ITAAC
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Commitment Wording		Inspections, Tests, Analyses	Acceptance Criteria
2.1	The functional arrangement of the SAMS is as described in the Design Description of Section 2.9.4, Tables 2.9.4-1 and 2.9.4-2, and as shown on Figure 2.9.4-1 (safety-related portion).	An inspection of the as-built SAMS functional arrangement will be performed.	The SAMS conforms to the functional arrangement as described in the Design Description of Section 2.9.4, Tables 2.9.4-1 and 2.9.4-2, and as shown on Figure 2.9.4-1 (safety-related portion).
2.2	Deleted.	Deleted.	Deleted.
3.1	Equipment identified as Seismic Category I in Table 2.9.4-1 can withstand seismic design basis loads without a loss of safety function(s).	<p>a. Type tests, analyses, or a combination of type tests and analyses will be performed on the equipment identified as Seismic Category I in Table 2.9.4-1 using analytical assumptions, or under conditions, which bound the Seismic Category I design requirements.</p> <p>b. An inspection will be performed of the as-built equipment identified as Seismic Category I in Table 2.9.4-1 to verify that the equipment, including anchorage, are installed in a condition bounded by the tested or analyzed condition.</p>	<p>a. Test/analysis reports conclude that the equipment identified as Seismic Category I in Table 2.9.4-1 can withstand seismic design basis loads without a loss of safety function(s).</p> <p>b. Inspection reports conclude that the equipment identified as Seismic Category I in Table 2.9.4-1, including anchorage, are installed in a condition bounded by the tested or analyzed condition.</p>
4.1	Deleted.	Deleted.	Deleted.
4.2	Displays listed in Table 2.9.4-1 are indicated on the PICS operator workstations in the MCR.	Tests will be performed to verify that the displays listed in Table 2.9.4-1 are indicated on the PICS operator workstations in the MCR.	Displays listed in Table 2.9.4-1 are indicated on the PICS operator workstations in the MCR.
4.3	Deleted.	Deleted.	Deleted.

**Table 2.9.4-3—Sampling Activity Monitoring System ITAAC
Sheet 2 of 2**

Commitment Wording		Inspections, Tests, Analyses	Acceptance Criteria
5.1	Equipment designated as Class 1E in Table 2.9.4-2 are powered from a Class 1E division in a normal or alternate feed condition.	<p>a. Testing will be performed by providing a test input signal in each normally aligned division.</p> <p>b. Testing will be performed by providing a test input signal in each division with the alternate feed aligned to the divisional pair.</p>	<p>a. The test input signal provided in the normally aligned division is present at the respective Class 1E equipment identified in Table 2.9.4-2.</p> <p>b. The test input signal provided in each division with the alternate feed aligned to the divisional pair is present at the respective Class 1E equipment identified in Table 2.9.4-2.</p>
6.1	Deleted.	Deleted.	Deleted.