

TABLE 3.3-6

RADIATION MONITORING INSTRUMENTATION

<u>INSTRUMENT</u>	<u>MINIMUM CHANNELS OPERABLE</u>	<u>APPLICABLE MODES</u>	<u>ALARM/TRIP SETPOINT</u>	<u>MEASUREMENT RANGE</u>	<u>ACTION</u>
1. AREA MONITORS					
a. Containment					
i. Purge & Exhaust Isolation	3	6	≤ 220 mr/hr	$10^{-1} - 10^4$ mr/hr	16
b. Containment Area High Range	2	1, 2, 3, & 4	≤ 10 R/hr	$1 - 10^8$ R/hr	30
2. PROCESS MONITORS					
a. Containment					
i. Gaseous Activity					
a) RCS Leakage Detection	1	1, 2, 3, & 4	Not Applicable	$1 - 10^6$ cpm	14
ii. Particulate Activity					
a) RCS Leakage Detection	1	1, 2, 3, & 4	Not Applicable	$1 - 10^6$ cpm	14
Noble Gas b. Noble Gas Effluent Monitors					
i. Main Vent Wide Range	1	1, 2, 3, & 4	*	10^{-7} to 10^{+5} μ Ci/cc	30
NOISE GAS					
W) JODINE SAMPLER	1	1, 2, 3, & 4	Not Applicable	Not Applicable	30
C) PARTICULATE SAMPLER	1	1, 2, 3, & 4	Not Applicable	Not Applicable	30

*Alarm setpoint to be specified in a controlled document (e.g., setpoint control manual)

TABLE 4.3-3

RADIATION MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

<u>INSTRUMENT</u>	<u>CHANNEL CHECK</u>	<u>CHANNEL CALIBRATION</u>	<u>CHANNEL FUNCTIONAL TEST</u>	<u>MODES IN WHICH SURVEILLANCE REQUIRED</u>
1. AREA MONITORS				
a. Containment				
i. Purge & Exhaust Isolation	S	R	M	6
b. Containment Area High Range	S	R	M	1, 2, 3, & 4
2. PROCESS MONITORS				
a. Containment				
i. Gaseous Activity				
a) RCS Leakage Detection	S	R	M	1, 2, 3, & 4
ii. Particulate Activity				
a) RCS Leakage Detection	S	R	M	1, 2, 3, & 4
Noble Gas				
b. Noble Gas Effluent Monitor				
i. Main Vent Wide Range	S	R	M	1, 2, 3, & 4
a) NOBLE GAS				
b) IODINE SAMPLER	M	Not Applicable	Not Applicable	1, 2, 3, & 4
c) PARTICULATE SAMPLER	M	Not Applicable	Not Applicable	1, 2, 3, & 4

PLANT SYSTEMS

3/4 7.13 POST-ACCIDENT SAMPLING

LIMITING CONDITION FOR OPERATION

3.7.13 The post-accident sampling system shall be OPERABLE and capable of processing samples from all of the below listed points:

- a. RCS sample via hot leg
- b. RCS sample via low pressure safety injection, and
- c. Containment sump sample via low pressure safety injection.

APPLICABILITY: MODES 1, 2, and 3.

ACTION:

- a. With the operability of the post-accident sampling system less than the LIMITING CONDITION FOR OPERATION specified above, within 72 hours initiate the preplanned alternate method of processing specified sample(s), and either:
 1. Restore the system to OPERABLE status within 7 days, or
 2. Prepare and submit a Special Report to the Commission pursuant to Specification 6.9.2 within 30 days following the event, outlining the action taken, the cause of the inoperability, and the plans and schedule for restoring the system to OPERABLE status.
- b. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.7.13 The post-accident sampling system shall be demonstrated OPERABLE at least once per six (6) months by comparing the results of a RCS sample analyzed by laboratory techniques with the results analyzed by the below listed analyzing equipment:

1. Boron Analyzer
2. Hydrogen and Oxygen Analyzer
3. pH Analyzer
4. Liquid Radioisotopic Analyzer.

INSTRUMENTATION

BASES

by the individual channels and 2) the alarm or automatic action is initiated when the radiation level trip setpoint is exceeded.

~~INSERT~~ ~~(X)~~

3/4.3.3.2 INCORE DETECTORS

The OPERABILITY of the incore detectors with the specified minimum complement of equipment ensures that the measurements obtained from use of this system accurately represent the spatial neutron flux distribution of the reactor core.

3/4.3.3.3 SEISMIC INSTRUMENTATION

The OPERABILITY of the seismic instrumentation ensures that sufficient capability is available to promptly determine the magnitude of a seismic event and evaluate the response of those features important to safety. This capability is required to permit comparison of the measured response to that used in the design basis for the facility and is consistent with the recommendations of Regulatory Guide 1.12, "Instrumentation for Earthquakes", April 1974.

3/4.3.3.4. METEOROLOGICAL INSTRUMENTATION

The OPERABILITY of the meteorological instrumentation ensures that sufficient meteorological data is available for estimating potential radiation doses to the public as a result of routine or accidental release of radioactive materials to the atmosphere. This capability is required to evaluate the need for initiating protective measures to protect the health and safety of the public and is consistent with the recommendations of Regulatory Guide 1.23 "Onsite Meteorological Programs", February 1972.

3/4.3.3.5 REMOTE SHUTDOWN INSTRUMENTATION

The OPERABILITY of the remote shutdown instrumentation ensures that sufficient capability is available to permit shutdown and maintenance of HOT STANDBY of the facility from locations outside of the control room. This capability is required in the event control room habitability is lost and is consistent with General Design Criteria 19 of 10 CFR 50.

INSTRUMENTATION

BASES

3/4.3.3.6 POST-ACCIDENT INSTRUMENTATION

The OPERABILITY of the post-accident instrumentation ensures that sufficient information is available on selected plant parameters to monitor and assess these variables following an accident. This capability is consistent with the recommendations of Regulatory Guide 1.97, "Instrumentation for Light-Water-Cooled Nuclear Plants to Assess Plant Conditions During and Following an Accident," December 1975, and NUREG-0578, "TMI-2 Lessons Learned Task Force Status Report and Short-Term Recommendations."

3/4.3.3.7 FIRE DETECTION INSTRUMENTATION

OPERABILITY of the fire detection instrumentation ensures that adequate warning capability is available for the prompt detection of fires. This capability is required in order to detect and locate fires in their early stages. Prompt detection of fires will reduce the potential for damage to safety related equipment and is an integral element in the overall facility fire protection program.

In the event that a portion of the fire detection instrumentation is inoperable, the establishment of frequent fire patrols in the affected areas is required to provide detection capability until the inoperable instrumentation is restored to operability.

3/4.3.3.8 RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION IODINE AND PARTICULATE SAMPLER

The OPERABILITY of the Iodine and Particulate Sampler ensures that Iodine and Particulate samples can be obtained for analysis during and following an accident. The surveillance requirements ensure a high degree of availability.

IODINE AND PARTICULATE
The samplers were installed to meet the requirements of NUREG-0737 Item II.F.1. The sampler's operation was not assumed in any accident analysis.

PLANT SYSTEMS

BASES

3/4.7.12 PENETRATION FIRE BARRIERS

The functional integrity of the penetration fire barriers ensures that fires will be confined or adequately retarded from spreading to adjacent portions of the facility. This design feature minimizes the possibility of a single fire rapidly involving several areas of the facility prior to detection and extinguishment. The penetration fire barriers are a passive element in the facility fire protection program and are subject to periodic inspections.

During periods of time when the barriers are not functional, a continuous fire watch is required to be maintained in the vicinity of the affected barrier until the barrier is restored to functional status.

~~3/4.7.13 POST-ACCIDENT SAMPLING SYSTEM~~

~~The OPERABILITY of the Post-Accident Sampling System ensures the capability to obtain and analyze reactor coolant and containment atmosphere samples during and following an accident. The surveillance requirements ensure a high degree of availability.~~

~~The Post-Accident Sampling System was installed to meet the requirements of NUREG-0737 Item II.8.3. The system's operation was not assumed in any accident analysis.~~

ADMINISTRATIVE CONTROLS

6.15 IODINE MONITORING

The licensee shall implement a program* which will ensure the capability to accurately determine the airborne iodine concentration in vital areas under accident conditions. This program shall include the following:

1. Training of personnel,
2. Procedures for monitoring, and
3. Provisions for maintenance of sampling and analysis equipment.

6.16 POSTACCIDENT SAMPLING

The licensee shall implement a program* which will ensure the capability to obtain and analyze reactor coolant, and radioactive iodines and particulates in plant gaseous effluents under accident conditions. The program shall include the following:

1. Training of personnel,
2. Procedures for sampling and analysis, and
3. Provisions for maintenance of sampling and analysis equipment.

* It is acceptable if the licensee maintains details of the program in licensee maintained and controlled documents.

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INSTRUMENT	MINIMUM CHANNELS OPERABLE	APPLICABLE MODES	ALARM/TRIP SETPOINT	MEASUREMENT RANGE	ACTION
1. AREA MONITORS					
a. Containment					
i. Purge & Exhaust Isolation	3	6	≤ 220 mr/hr	$10^{-4} - 10^4$ mr/hr	16
b. Containment Area High Range	2	1, 2, 3 & 4	≤ 10 R/hr	$1 - 10^8$ R/hr	30
2. PROCESS MONITORS					
a. Containment					
i. Gaseous Activity					
a) RCS Leakage Detection	1	1, 2, 3 & 4	Not Applicable	$10^1 - 10^6$ cpm	14
ii. Particulate Activity					
a) RCS Leakage Detection	1	1, 2, 3 & 4	Not Applicable	$10^1 - 10^6$ cpm	14
b. Noble Gas Effluent Monitors					
i. Main Vent Wide Range	1	1, 2, 3 & 4	*	10^{-7} to 10^5 uCi/cc	30
a) NOBLE GAS	1	1, 2, 3 & 4	Not Applicable	Not Applicable	30
b) IODINE SAMPLER	1	1, 2, 3 & 4	Not Applicable	Not Applicable	30
c) PARTICULATE SAMPLER	1	1, 2, 3 & 4	Not Applicable	Not Applicable	30

*Alarm setpoint to be specified in a controlled document (e.g., setpoint control manual).

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a) RCS Leakage Detection	S	R	M	1, 2, 3, & 4
Noble Gas				
b. Noble Gas Effluent Monitors				
i. Main Vent Wide Range	S	R	M	1, 2, 3, & 4
a) NOBLE GAS	via	Not Applicable	Not Applicable	1, 2, 3, & 4
b) IODINE SAMPLER	via	Not Applicable	Not Applicable	1, 2, 3, & 4
c) PARTICULATE SAMPLER	via	Not Applicable	Not Applicable	1, 2, 3, & 4

PLANT SYSTEMS

3/4.7.13 POST-ACCIDENT SAMPLING

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APPLICABILITY: MODES 1, 2, and 3.

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The OPERABILITY of the Post-Accident Sampling System ensures the capability to obtain and analyze reactor coolant and containment atmosphere samples during and following an accident. The Surveillance Requirements ensure a high degree of availability.

The Post-Accident Sampling System was installed to meet the requirements of NUREG-0737 Item II.8.3. The system's operation was not assumed in any accident analysis.

INSTRUMENTATION

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by the individual channels and 2) the alarm or automatic action is initiated when the radiation level trip setpoint is exceeded.

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^{IODINE AND PARTICULATE}
The sampler was installed to meet the requirements of NUREG-0737 Item 11.F.1. The sampler's operation was not assumed in any accident analysis.

ADMINISTRATIVE CONTROLS

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