

TABLE 3.3-6  
RADIATION MONITORING INSTRUMENTATION

INSTRUMENT	MINIMUM CHANNELS OPERABLE	APPLICABLE MODES	ALARM/TRIP SETPOINT	MEASUREMENT RANGE	ACTION
1. AREA MONITORS					
a. Fuel Storage Area	1	*	≤ 15 mR/hr	10 <sup>-1</sup> - 10 <sup>4</sup> mR/hr	19
b. Containment Area	2	1,2,3&4	≤ 10 <sup>3</sup> R/hr	1 - 10 <sup>7</sup> R/hr	23
2. PROCESS MONITORS					
a. Containment					
1) Gaseous Activity					
a) Purge & Pressure - Vacuum Relief Isolation	1#	6 and	Set at less than or equal to 50% of the 10CFR20 concentration limits for gaseous effluents released to unrestricted areas.	10 <sup>1</sup> - 10 <sup>6</sup> cpm	22 & 23
b) RCS Leakage Detection	1	1,2,3&4	N/A	10 <sup>1</sup> - 10 <sup>6</sup> cpm	20
2) Air Particulate Activity					
a) Purge & Pressure - Vacuum Relief Isolation	1	6	≤ 2 x background	10 <sup>1</sup> - 10 <sup>6</sup> cpm	22
b) RCS Leakage Detection	1	1,2,3&4	N/A	10 <sup>1</sup> - 10 <sup>6</sup> cpm	20

\* With fuel in the storage pool or building.

# The plant vent noble gas monitor may also function in this capacity when the purge/pressure-vacuum relief isolation valves are open.

## INSTRUMENTATION

### BASES

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field sensors and signal processing equipment for these channels are assumed to operate within the allowances of these uncertainty magnitudes.

The surveillance requirements specified for these systems ensure that the overall system functional capability is maintained comparable to the original design standards. The periodic surveillance tests performed at the minimum frequencies are sufficient to demonstrate this capability. Specified surveillance intervals and surveillance and maintenance outage times have been determined in accordance with WCAP-10271, "Evaluation of Surveillance Frequencies and Out of Service Times for the Reactor Protection Instrumentation System," and Supplements to that report. Surveillance intervals and out of service times were determined based on maintaining an appropriate level of reliability of the Reactor Protection System and Engineered Safety Features instrumentation.

The measurement of response time at the specified frequencies provides assurance that the protective and ESF action function associated with each channel is completed within the time limit assumed in the accident analyses. No credit was taken in the analyses for those channels with response times indicated as not applicable.

Response time may be demonstrated by any series of sequential, overlapping or total channel test measurements provided that such tests demonstrate the total channel response time as defined. Sensor response time verification may be demonstrated by either 1) in place, onsite or offsite test measurements or 2) utilizing replacement sensors with certified response times.

### 3/4.3.3 MONITORING INSTRUMENTATION

#### 3/4.3.3.1 RADIATION MONITORING INSTRUMENTATION

The OPERABILITY of the radiation monitoring channels ensures that 1) the radiation levels are continually measured in the areas served by the individual channels and 2) the alarm or automatic action is initiated when the radiation level trip setpoint is exceeded.

The isolation alarm/trip setpoint for the Containment Purge and Pressure Relief system during MODE 6 is established to ensure that in the event of a fuel handling accident inside containment, prompt isolation will occur to ensure calculated offsite doses remain below 10CFR100 limits. Prompt isolation will also ensure that Control Room doses following a fuel handling accident will remain below GDC-19 limits. The alarm/trip setpoint value of Table 3.3-6 for the R12A while in Mode 6 will be established based upon isolating the Containment Purge and Pressure Relief System when containment gaseous activity levels reach 50% of the more conservative 10CFR20 concentration limits for release to unrestricted areas. These concentration limits are specified in 10CFR20, Appendix B, Table II, Column 1. A setpoint based on 50% of the 10CFR20 concentration limits will be low enough to ensure that prompt Containment Purge and Pressure Relief system isolation occurs during a fuel handling accident and high enough to prevent unnecessary Containment Purge and Pressure Relief system isolations caused by routine outage activities.

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INSTRUMENT	MINIMUM CHANNELS OPERABLE	APPLICABLE MODES	ALARM/TRIP SETPOINT	MEASUREMENT RANGE	ACTION
1. AREA MONITORS					
a. Fuel Storage Area	1	*	≤15 mR/hr	10 <sup>-1</sup> -10 <sup>4</sup> mR/hr	23
b. Containment Area	2	1,2,3&4	≤10 <sup>3</sup> R/hr	1-10 <sup>7</sup> R/hr	26
2. PROCESS MONITORS					
a. Containment					
1) Gaseous Activity					
a) Purge & Pressure - Vacuum Relief Isolation	1#	6 and	Set at less than or equal to 50% of the 10CFR20 the 10CFR20 concentration limits for gaseous effluents released to unrestricted areas.	10 <sup>1</sup> -10 <sup>6</sup> cpm	26
		1,2,3,4&5	per ODCM Control 3.3.3.9		
b) RCS Leakage Detection	1	1,2,3&4	N/A	10 <sup>1</sup> -10 <sup>6</sup> cpm	24
2) Air Particulate Activity					
a) Purge & Pressure - Vacuum Relief Isolation	1	6	≤2x background	10 <sup>1</sup> -10 <sup>6</sup> cpm	25
b) RCS Leakage Detection		1,2,3&4	N/A	10 <sup>1</sup> -10 <sup>6</sup> cpm	24

\* With fuel in the storage pool or building.

# The plant vent noble gas monitor may also function in this capacity when the purge/pressure-vacuum relief isolation valves are open.

## INSTRUMENTATION

### BASES

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these uncertainties are factored into the determination of each Trip Setpoint. All field sensors and signal processing equipment for these channels are assumed to operate within the allowances of these uncertainty magnitudes.

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