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TABLE 3.3-12

RADIOACTIVE LIQUID EFFLUENT MONITORING INSTRUMENTATION

<u>INSTRUMENT</u>	<u>MINIMUM CHANNELS OPERABLE</u>	<u>ACTION</u>
1. GROSS RADIOACTIVITY MONITORS PROVIDING ALARM AND AUTOMATIC TERMINATION OF RELEASE		
a. Liquid Radwaste Effluent Line - RM-L5 or RM L9	1	36 31
b. Nuclear (Processed Steam Generator) Blowdown Effluent Line RM-L X ⁷ or RML-9	1	32
c. Steam Generator Blowdown Effluent Line		
1. Unprocessed during Power Operation - RM-L10 or RM-L3	1	32
2. Unprocessed during Startup - RM-L3	1	32
d. Turbine Building Sump Effluent Line - RM-L8	1	33
2. FLOW RATE MEASUREMENT DEVICES*		
a. Liquid Radwaste Effluent Line - Tanks 1 and 2	1/tank	34
b. Penstocks Minimum Flow Interlock**	1	34
c. Condensate Demineralizer Effluent Line	1	34
c. Nuclear Blowdown Effluent Line	1	34
d. Steam Generator (Unprocessed) Blowdown Effluent Line		
3. TANK LEVEL INDICATING DEVICES		
a. Condensate Storage Tank	1	35

*Flow rate for the monitor RM-L9 is determined by adding flow rates for monitors RM-L5 and RM-L7.
 **Minimum dilution flow is assured by an interlock terminating liquid waste releases if minimum dilution flow is not available.

INSTRUMENTATION

TABLE 3.3-12 (Continued)

TABLE NOTATION

ACTION 36 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, effluent releases may continue for up to 14 days provided Liquid Waste Effluent Monitor RM-L9 is OPERABLE or prior to initiating a release:

- a. At least two independent samples are analyzed in accordance with Specification 4.11.1.1.3, and
- b. At least two technically qualified members of the facility staff independently verify the release rate calculations and discharge line valving.

Otherwise, suspend release of radioactive effluents via this pathway.

ACTION 37 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, effluent releases via this pathway may continue for up to 30 days provided Liquid Waste Effluent Monitor RM-L9 is OPERABLE or grab samples are analyzed for gross radioactivity (beta and gamma) at a limit of detection of at least 10^{-7} microcuries/gm:

- a. At least once per 8 hours when the specific activity of the secondary coolant is greater than 0.01 microcuries/gm DOSE EQUIVALENT I-131.
- b. At least once per 24 hours when the specific gravity of the secondary coolant is less than or equal to 0.01 microcuries/gm DOSE EQUIVALENT I-131.

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TABLE 4.3-8

RADIOACTIVE LIQUID EFFLUENT MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

<u>INSTRUMENT</u>	<u>CHANNEL CHECK</u>	<u>SOURCE CHECK</u>	<u>CHANNEL CALIBRATION</u>	<u>ANALOG CHANNEL OPERATIONAL TEST</u>
1. GROSS BETA OR GAMMA RADIOACTIVITY MONITORS PROVIDING ALARM AND AUTOMATIC TERMINATION OF RELEASE				
a. Liquid Radwaste Effluent Line - RM-L5, RM-L9	D	P	R(3)	Q(1)
b. Nuclear Blowdown Effluent Line - RM-L7, RM-L9	D	P	R(3)	Q(1)
c. Steam Generator Blowdown Effluent Line - RM-L3, RM-L10	D	M	R(3)	Q(1)
d. Turbine Building Sump Effluent Line - RM-L8	D	M	R(3)	Q(1)
2. FLOW RATE MEASUREMENT DEVICES				
a. Liquid Radwaste Effluent Line † RM-L5, RM-L9	D(4)	N.A.	R	Q
b. Penstocks Minimum Flow Interlock	D(4)	N.A.	R	Q
c. Condensate Demineralizer Effluent Line	D(4)	N.A.	R	Q
c. Nuclear Blowdown Effluent Line	D(4)	N.A.	R	Q
d. Steam Generator Blowdown Effluent Line - RM-L3, RM-L7, RM-L10	D(4)	N.A.	R	Q
3. TANK LEVEL INDICATING DEVICES				
a. Condensate Storage Tanks	D	N.A.	R	Q

TABLE 3.3-13

RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION

<u>INSTRUMENT</u>	<u>MINIMUM CHANNELS OPERABLE</u>	<u>APPLICABILITY</u>	<u>ACTION</u>
1. WASTE GAS HOLDUP SYSTEM			
a. Noble Gas Activity Monitor - Providing Alarm and Automatic Termination of Release RM-A10 or RM-A3	1	*	38
2. WASTE GAS HOLDUP SYSTEM EXPLOSIVE GAS MONITORING SYSTEM			
a. Oxygen Monitor/Recombiner	2	**	44
b. Hydrogen Monitor/Recombiner	1	**	42
3. MAIN PLANT VENT EXHAUST SYSTEM			
a. Noble Gas Activity Monitor - Providing Alarm and Automatic Termination of Release from Waste Gas Holdup System RM-A3	1	*	40
b. Iodine Sampler	1	*	43
c. Particulate Sampler	1	*	39 43
d. Flow Rate Measuring Device	1	*	39
e. Sampler Flow Rate Measuring Device	1	*	39

RADIOACTIVE GASEOUS WASTE MONITORING AND SAMPLING AND ANALYSIS PROGRAM

Gaseous Release Type	Sampling Frequency	Minimum Analysis Frequency	Type of Activity Analysis	Lower Limit of Detection (LLD)($\mu\text{Ci/ml}$) ^a
A. Waste Gas Storage Tank	P Each Tank Grab Sample	P Each Tank	Principal Gamma Emitters ^g	1×10^{-4}
B1 Reactor Building -36" Purge Line -6" Purge Line	P Each Purge ^{b,c}	P Each Purge ^b	Principal Gamma Emitters ^g	1×10^{-4}
			H-3	1×10^{-6}
B2 Reactor Building -6" Purge Line (if continuous)	M ^b Grab Sample	M ^b	Principal Gamma Emitters ^g	1×10^{-4}
			H-3	1×10^{-6}
C. Main Plant Vent	M ^{b,e} Grab Sample	M ^b	Principal Gamma Emitters ^g	1×10^{-4}
			H-3	1×10^{-6}
D.1. Reactor Building Purge	Continuous Sampler ^f	W ^d Charcoal Sample	I-131	1×10^{-12}
			I-133	1×10^{-10}
2. Main Plant Vent	Continuous Sampler ^f	W ^d Particulate Sample	Principal Gamma Emitters ^g	1×10^{-11}
			I-131, others	
			Gross Alpha	1×10^{-11}
			Composite Particulate Sample	
Continuous Sampler ^f	M Composite Particulate Sample	Q Composite Particulate Sample	Sr-89, Sr-90	1×10^{-11}
Continuous Monitor ^f		Noble Gas Monitor	Noble Gases Gross Beta	2×10^{-6}

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RADIOACTIVE EFFLUENTS

GAS STORAGE TANKS

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LIMITING CONDITION FOR OPERATION

3.11.2.6 The quantity of radioactivity contained in each gas storage tank shall be limited to less than or equal to ~~60,000~~^{160,000} curies noble gases (considered as Xe-133).

APPLICABILITY: At all times.

ACTION:

- a. With the quantity of radioactive material in any gas storage tank exceeding the above limit, immediately suspend all additions of radioactive material to the tank and within 48 hours reduce the tank contents to within the limit.
- b. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.11.2.6 The quantity of radioactive material contained in each gas storage tank shall be determined to be within the above limit at least once per 24 hours when radioactive materials are being added to the tank.

Table 3.12-1 (continued)

Exposure Pathway and/or Sample	Minimum Number of Sample Locations and Criteria for Selection	Sampling and Collection Frequency	Type and Frequency of Analysis
INGESTION			
VII. Milk ² (8)	<p>A Samples from milking animals in 3 locations within 5 km distant having the highest dose potential. If there are none then, 1 sample from milking animals in each of 3 areas between 5 to 8 km distant where doses are calculated to be greater than 1 mrem per year.</p> <p>B 1 Control sample to be taken at the location of a dairy > 20 miles distant and not in the most prevalent wind direction.(1)</p> <p>C 1 Indicator grass (forage) sample to be taken at one of the locations beyond but as close to the exclusion boundary as practicable where the highest offsite sectoral ground level concentrations are anticipated.(1)</p>	<p>Semi-monthly when animals are on pasture, (6) monthly other times.(3)</p> <p>Monthly when available.(3)</p>	<p>Gamma isotopic and I-131 analysis semi-monthly (6) animals are on pasture; monthly (3) at other times.</p> <p>Gamma Isotopic.</p>

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