

TABLE 3.21-2

RADIOACTIVE GASEOUS PROCESS AND 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 (RM-A7)	1	***	25
b. Effluent System Flow Rate Measuring Device (FT-123)	1	***	26
2. Waste Gas Holdup System Explosive Gas Monitoring System			
a. Hydrogen Monitor	2	* *	30
b. Oxygen Monitor	2	* *	30

TABLE 3.21-2
(Continued)

TABLE NOTATION

*At all times

**During waste gas holdup system operation.

***Operability is not required when discharges are positively controlled through the closure of WDG-V47, and RM-A8 and FT-151 are operable.

ACTION 25 With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, the contents of the tank may be released to the environment for up to 14 days provided that prior to initiating the release:

1. At least two independent samples of the tank's contents are analyzed, and
2. At least two technically qualified members of the Unit staff independently verify the release rate calculations and verify the discharge valve lineup.
3. The Operation and Maintenance Director Unit 1 shall approve each release.

Otherwise, suspend release of radioactive effluent via this pathway.

ACTION 26 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 28 days provided the flow rate is estimated at least once per 4 hours.

ACTION 27 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 28 days provided grab samples are taken at least once per 8 hours and these samples are analyzed for gross activity within 24 hours. (See also Specification 3.5.1 Table 3.5-1, Item 3.f).

ACTION 30 1. With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement a grab sample shall be collected and analyzed for the inoperable gas channel(s) at least once per 24 hours. With both channels inoperable a grab sample shall be collected and analyzed for the inoperable gas channels(s):

(a) at least once per 4 hours during degassing operations.

(b) at least once per 24 hours during other operations (e.g. Feed and Bleed).

2. If the inoperable gas channel(s) is not restored to service within 14 days, a special report shall be submitted to the Regional Administrator of the NRC Region I Office and a copy to the Director, Office of Inspection and Enforcement within 30 days of declaring the channel(s) inoperable. The report shall describe (a) the cause of the monitor inoperability, (b) action being taken to restore the instrument to service, and (c) action to be taken to prevent recurrence.

TABLE 3.21-2
(Continued)

TABLE NOTATION

ACTION 31 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 28 days, provided, that within four hours after the channel has been declared inoperable, samples are continuously collected with auxiliary sampling equipment.

RADIOACTIVE EFFLUENTS

EXPLOSIVE GAS MIXTURE

LIMITING CONDITIONS FOR OPERATION

3.22.2.5 The concentration of oxygen in the Waste Gas Holdup System shall be limited to less than or equal to 2% by volume whenever the concentration of hydrogen in the Waste Gas Holdup System is greater than or equal to 4% by volume.

APPLICABILITY: At all times.

ACTION: Whenever the concentration of hydrogen in the Waste Gas Holdup System is greater than or equal to 4% by volume, and:

- a. The concentration of oxygen in the Waste Gas Holdup System is greater than 2% by volume, but less than 4% by volume, without delay begin to reduce the oxygen concentration to within its limit.
- b. The concentration of oxygen in the Waste Gas Holdup System is greater than or equal to 4% by volume, immediately suspend additions of waste gas to the Waste Gas Holdup System and without delay begin to reduce the oxygen concentration to within its limit.

BASES:

Based on experimental data*, lower limits of flammability for hydrogen is 5% and for oxygen is 5% by volume. Therefore, if the concentration of either gas is kept below its lower limit, the other gas may be present in higher amounts without the danger of an explosive mixture. Maintaining the concentrations of hydrogen and oxygen such that an explosive mixture does not occur in the waste gas holdup system provides assurance that the release of radioactive materials will be controlled in conformance with the requirements of General Design Criterion 60 of Appendix A to 10 CFR 50.

*Bulletin 503, Bureau of Mines; Limits of Flammability of Gases and Vapors.

TABLE 4.21-2

RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

<u>INSTRUMENT</u>	<u>CHANNEL CHECK</u>	<u>SOURCE CHECK</u>	<u>CHANNEL CALIBRATION</u>	<u>CHANNEL TEST</u>	<u>APPLICABILITY</u>
1. Waste Gas Holdup System					
a. Noble Gas Activity Monitor (RM-A7)	P	P	R(3)	Q(1)	***
b. System Effluent Flow Rate Measuring Device (FT-123)	P	N/A	R	Q	***
2. Waste Gas Holdup System Explosive Gas Monitoring System					
a. Hydrogen Monitor	D	N/A	Q(4)	M	**
b. Oxygen Monitor	D	N/A	Q(5)	M	**

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