

RADIOACTIVE EFFLUENTS

EXPLOSIVE GAS MIXTURE (Hydrogen rich systems not designed to withstand a hydrogen explosion)

LIMITING CONDITION FOR OPERATION

3.11.2.5B The concentration of oxygen in the waste gas holdup system shall be limited to less than or equal to 2% by volume whenever the hydrogen concentration exceeds 4% by volume.

APPLICABILITY: At all times.

ACTION:

- a. With the concentration of oxygen in the waste gas holdup system greater than 2% by volume but less than or equal to 4% by volume, reduce the oxygen concentration to the above limits within 48 hours.
- b. With the concentration of oxygen in the waste gas holdup system greater than 4% by volume and the hydrogen concentration greater than 2% by volume, immediately suspend all additions of waste gases to the system and reduce the concentration of oxygen to less than or equal to 2% by volume within 48 hours.
- c. Paragraphs of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.11.2.5B The concentrations of hydrogen and oxygen in the waste gas holdup system shall be determined to be within the above limits by continuously monitoring the waste gases in the waste gas holdup system with the hydrogen and oxygen monitors required OPERABLE by Table 3.3-13 of Specification 3.3.3.10.

TABLE C.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 (<i>Providing Alarm And Automatic Termination Of Release</i>)	(1)	*	35
b. Iodine Sampler	(1)	*	41
c. Particulate Sampler	(1)	*	41
d. Effluent System Flow Rate Measuring Device	(1)	*	36
e. Sampler Flow Rate Measuring Device	(1)	*	36
2A. WASTE GAS HOLDUP SYSTEM EXPLOSIVE GAS MONITORING SYSTEM (for systems designed to withstand the effects of a hydrogen explosion)			
a. Hydrogen Monitor	(1)	**	39
b. Hydrogen or Oxygen Monitor	(1)	**	39
2B. WASTE GAS HOLDUP SYSTEM EXPLOSIVE GAS MONITORING SYSTEM (for systems not designed to withstand the effects of a hydrogen explosion)			
a. Hydrogen Monitor	(2)	**	40
b. Hydrogen or Oxygen Monitor	(2)	**	40

TABLE 3.3-13 (Continued)

RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION

<u>INSTRUMENT</u>	<u>MINIMUM CHANNELS OPERABLE</u>	<u>APPLICABILITY</u>	<u>ACTION</u>
3. CONDENSER EVACUATION SYSTEM			
a. Noble Gas Activity Monitor	(1)	*	37
b. Iodine Sampler	(1)	*	41
c. Particulate Sampler	(1)	*	41
d. Flow Rate Monitor	(1)	*	36
e. Sampler Flow Rate Monitor	(1)	*	36
4. VENT HEADER SYSTEM			
a. Noble Gas Activity Monitor (<i>Providing Alarm And Automatic Termination Of Release</i>)	(1)	*	37 (38)
b. Iodine Sampler	(1)	*	41
c. Particulate Sampler	(1)	*	41
d. Flow Rate Monitor	(1)	*	36
e. Sampler Flow Rate Monitor	(1)	*	36
5. CONTAINMENT PURGE SYSTEM			
a. Noble Gas Activity Monitor (<i>Providing Alarm And Automatic Termination Of Release</i>)	(1)	*	38
b. Iodine Sampler	(1)	*	41
c. Particulate Sampler	(1)	*	41

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TABLE 3.2-13 (continued)

RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION

<u>INSTRUMENT</u>	<u>MINIMUM CHANNELS OPERABLE</u>	<u>APPLICABILITY</u>	<u>ACTION</u>
5. CONTAINMENT PURGE SYSTEM (Continued)			
e. Flow Rate Monitor	(1)	*	36
f. Sampler Flow Rate Monitor	(1)	*	36
6. AUXILIARY BUILDING VENTILATION SYSTEM			
a. Noble Gas Activity Monitor	(1)	*	37
b. Iodine Sampler	(1)	*	41
c. Particulate Sampler	(1)	*	41
d. Flow Rate Monitor	(1)	*	36
e. Sampler Flow Rate Monitor	(1)	*	36
7. FUEL STORAGE AREA VENTILATION SYSTEM			
a. Noble Gas Activity Monitor (<i>Providing Alarm And Automatic Termination Of Release</i>)	(1)	*	37
b. Iodine Sampler	(1)	*	41
c. Particulate Sampler	(1)	*	41
d. Flow Rate Monitor	(1)	*	36
e. Sampler Flow Rate Monitor	(1)	*	36

TABLE 3.3.7.12-1

RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION

<u>INSTRUMENT</u>	<u>MINIMUM CHANNELS OPERABLE</u>	<u>APPLICABILITY</u>	<u>ACTION</u>
1. MAIN CONDENSER OFFGAS TREATMENT SYSTEM EFFLUENT MONITORING SYSTEM			
a. Noble Gas Activity Monitor <i>Providing Alarm And Automatic Termination Of Release</i>	(1)	*	123
b. Iodine Sampler	(1)	*	127
c. Particulate Sampler	(1)	*	127
d. Effluent System Flow Rate Measuring Device	(1)	*	122
e. Sampler Flow Rate Measuring Device	(1)	*	122
2A. MAIN CONDENSER OFFGAS TREATMENT SYSTEM EXPLOSIVE GAS MONITORING SYSTEM (for systems designed to withstand the effects of a hydrogen explosion)			
a. Hydrogen Monitor	(1)	**	125
b. Hydrogen or Oxygen Monitor	(1)	**	125
2B. MAIN CONDENSER OFFGAS TREATMENT SYSTEM EXPLOSIVE GAS MONITORING SYSTEM (for systems not designed to withstand the effects of a hydrogen explosion)			
a. Hydrogen Monitor	(2)	**	126
b. Hydrogen or Oxygen Monitor	(2)	**	126

TABLE 3.3.7.12-1

RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION

<u>INSTRUMENT</u>	<u>MINIMUM CHANNELS OPERABLE</u>	<u>APPLICABILITY</u>	<u>ACTION</u>
3. REACTOR BLDG. VENTILATION/PURGE MONITORING SYSTEM			
a. Noble Gas Activity Monitor (<i>Providing Alarm And Automatic Termination Of Release</i>)	(1)	*	124
b. Iodine Sampler	(1)	*	127
c. Particulate Sampler	(1)	*	127
d. Effluent System Flow Rate Monitor	(1)	*	122
e. Sampler Flow Rate Monitor	(1)	*	122
4. MAIN STACK MONITORING SYSTEM			
a. Noble Gas Activity Monitor (<i>Providing Alarm And Automatic Termination Of Release</i>)	(1)	*	123 (124)
b. Iodine Sampler	(1)	*	127
c. Particulate Sampler	(1)	*	127
d. Effluent System Flow Rate Monitor	(1)	*	122
e. Sampler Flow Rate Monitor	(1)	*	122
5. TURBINE BLDG. VENTILATION MONITORING SYSTEM			
a. Noble Gas Activity Monitor	(1)	*	123
b. Iodine Sampler	(1)	*	127
c. Particulate Sampler	(1)	*	127

TABLE 3.3.7.12-1 (Continued)

RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION

	<u>INSTRUMENT</u>	<u>MINIMUM CHANNELS OPERABLE</u>	<u>APPLICABILITY</u>	<u>ACTION</u>
5.	TURBINE BLDG. VENTILATION MONITORING SYSTEM (Continued)			
	e. Effluent System Flow Rate Monitor	(1)	*	122
	f. Sampler Flow Rate Monitor	(1)	*	122
6.	AUXILIARY BUILDING VENTILATION MONITORING SYSTEM			
	a. Noble Gas Activity Monitor	(1)	*	123
	b. Iodine Sampler	(1)	*	127
	c. Particulate Sampler	(1)	*	127
	d. Flow Rate Monitor	(1)	*	122
	e. Sampler Flow Rate Monitor	(1)	*	122
7.	FUEL STORAGE AREA VENTILATION MONITORING SYSTEM			
	a. Noble Gas Activity Monitor (<i>Providing Alarm And Automatic Termination Of Releases</i>)	(1)	*	123
	b. Iodine Sampler	(1)	*	127
	c. Particulate Sampler	(1)	*	127
	d. Flow Rate Monitor	(1)	*	122
	e. Sampler Flow Rate Monitor	(1)	*	122

TABLE 4.3-13

RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

<u>INSTRUMENT</u>	<u>CHANNEL CHECK</u>	<u>SOURCE CHECK</u>	<u>CHANNEL CALIBRATION</u>	<u>CHANNEL FUNCTIONAL TEST</u>	<u>MODES IN WHICH SURVEILLANCE REQUIRED</u>
1. WASTE GAS HOLDUP SYSTEM					
a. Noble Gas Activity Monitor <i>(Providing Alarm And Automatic Termination Of Release)</i>	P	P	R(3)	Q(1)	*
b. Iodine Sampler	W	N.A.	N.A.	N.A.	*
c. Particulate Sampler	W	N.A.	N.A.	N.A.	*
d. Flow Rate Monitor	P	N.A.	R	Q	*
e. Sampler Flow Rate Monitor	D	N.A.	R	Q	*
2. WASTE GAS HOLDUP SYSTEM EXPLOSIVE GAS MONITORING SYSTEM					
a. Hydrogen Monitor	D	N/A	Q(4)	M	**
b. Hydrogen Monitor (alternate)	D	N/A	Q(4)	M	**
c. Oxygen Monitor	D	N/A	Q(5)	M	**
d. Oxygen Monitor (alternate)	D	N.A.	Q(5)	M	**

TABLE 4.3-13 (Continued)

RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

<u>INSTRUMENT</u>	<u>CHANNEL CHECK</u>	<u>SOURCE CHECK</u>	<u>CHANNEL CALIBRATION</u>	<u>CHANNEL FUNCTIONAL TEST</u>	<u>MODES IN WHICH SURVEILLANCE REQUIRED</u>
3. CONDENSER EVACUATION SYSTEM					
a. Noble Gas Activity Monitor	D	M	R(3)	Q(2)	*
b. Iodine Sampler	W	N.A.	N.A.	N.A.	*
c. Particulate Sampler	W	N.A.	N.A.	N.A.	*
d. Flow Rate Monitor	D	N.A.	R	Q	*
e. Sampler Flow Rate Monitor	D	N.A.	R	Q	*
4. VENT HEADER SYSTEM					
a. Noble Gas Activity Monitor (Providing Alarm And Automatic Termination Of Release)	D	M	R(3)	Q(2)	*
b. Iodine Sampler	W	N.A.	N.A.	N.A.	*
c. Particulate Sampler	W	N.A.	N.A.	N.A.	*
d. Flow Rate Monitor	D	N.A.	R	Q	*
e. Sampler Flow Rate Monitor	D	N.A.	R	Q	*

TABLE 4.3-13 (Continued)

RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

<u>INSTRUMENT</u>	<u>CHANNEL CHECK</u>	<u>SOURCE CHECK</u>	<u>CHANNEL CALIBRATION</u>	<u>CHANNEL FUNCTIONAL TEST</u>	<u>MODES IN WHICH SURVEILLANCE REQUIRED</u>
5. CONTAINMENT PURGE SYSTEM					
a. Noble Gas Activity Monitor <i>Providing Alarm And Automatic Termination of Release</i>	D	P	R(3)	Q(1)	*
b. Iodine Sampler	W	N.A.	N.A.	N.A.	*
c. Particulate Sampler	W	N.A.	N.A.	N.A.	*
d. Flow Rate Monitor	D	N.A.	R	Q	*
e. Sampler Flow Rate Monitor	D	N.A.	R	Q	*
6. AUXILIARY BUILDING VENTILATION SYSTEM					
a. Noble Gas Activity Monitor	D	M	R(3)	Q(2)	*
b. Iodine Sampler	W	N.A.	N.A.	N.A.	*
c. Particulate Sampler	W	N.A.	N.A.	N.A.	*
d. Flow Rate Monitor	D	N.A.	R	Q	*
e. Sampler Flow Rate Monitor	D	N.A.	R	Q	*
7. FUEL STORAGE AREA VENTILATION SYSTEM					
a. Noble Gas Activity Monitor <i>(Providing Alarm And Automatic Termination of Release)</i>	D	M	R(3)	Q(2)	*
b. Iodine Sampler	W	N.A.	N.A.	N.A.	*
c. Particulate Sampler	W	N.A.	N.A.	N.A.	*

TABLE 4.3.7.12-1

RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

<u>INSTRUMENT</u>	<u>CHANNEL CHECK</u>	<u>SOURCE CHECK</u>	<u>CHANNEL CALIBRATION</u>	<u>CHANNEL FUNCTIONAL TEST</u>	<u>MODES IN WHICH SURVEILLANCE REQUIRED</u>
1. MAIN CONDENSER OFFGAS TREATMENT SYSTEM EFFLUENT MONITORING SYSTEM					
a. Noble Gas Activity Monitor <i>Providing Alarm And Automatic Termination Of Release</i>	D	P	R(3)	Q(1)	*
b. Iodine Sampler	W	N.A.	N.A.	N.A.	*
c. Particulate Sampler	W	N.A.	N.A.	N.A.	*
d. Flow Rate Monitor	D	N.A.	R	Q	*
e. Sampler Flow Rate Monitor	D	N.A.	R	Q	*
2. MAIN CONDENSER OFFGAS TREATMENT SYSTEM EXPLOSIVE GAS MONITORING SYSTEM					
a. Hydrogen Monitor	D	N/A	Q(4)	M	**
b. Hydrogen Monitor (alternate)	D	N/A	Q(4)	M	**
c. Oxygen Monitor	D	N/A	Q(5)	M	**
d. Oxygen Monitor (alternate)	D	N.A.	Q(5)	M	**

TABLE 4.3.7.12-1 (Continued)

RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

<u>INSTRUMENT</u>	<u>CHANNEL CHECK</u>	<u>SOURCE CHECK</u>	<u>CHANNEL CALIBRATION</u>	<u>CHANNEL FUNCTIONAL TEST</u>	<u>MODES IN WHICH SURVEILLANCE REQUIRED</u>
3. REACTOR BLDG. VENTILATION/PURGE MONITORING SYSTEM					
a. Noble Gas Activity Monitor (<i>Providing Alarm And Automatic Termination Of Release</i>)	D	M	R(3)	Q(1)	*
b. Iodine Sampler	W	N.A.	N.A.	N.A.	*
c. Particulate Sampler	W	N.A.	N.A.	N.A.	*
d. Effluent System Flow Rate Monitor	D	N.A.	R	Q	*
e. Sampler Flow Rate Monitor	D	N.A.	R	Q	*
4. MAIN STACK MONITORING SYSTEM					
a. Noble Gas Activity Monitor (<i>Providing Alarm And Automatic Termination Of Release</i>)	D	M	R(3)	Q(2)	*
b. Iodine Sampler	W	N.A.	N.A.	N.A.	*
c. Particulate Sampler	W	N.A.	N.A.	N.A.	*
d. Effluent System Flow Rate Monitor	D	N.A.	R	Q	*
e. Sampler Flow Rate Monitor	D	N.A.	R	Q	*

TABLE 4.3.7.12-1 (Continued)

RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

<u>INSTRUMENT</u>	<u>CHANNEL CHECK</u>	<u>SOURCE CHECK</u>	<u>CHANNEL CALIBRATION</u>	<u>CHANNEL FUNCTIONAL TEST</u>	<u>MODES IN WHICH SURVEILLANCE REQUIRED</u>
7. FUEL STORAGE AREA VENTILATION MONITORING SYSTEM					
a. Noble Gas Activity Monitor (<i>Providing D Alarm And Automatic Termination of Release</i>)		M	R(3)	Q(2)	*
b. Iodine Sampler	W	N.A.	N.A.	N.A.	*
c. Particulate Sampler	W	N.A.	N.A.	N.A.	*
d. Flow Rate Monitor	D	N.A.	R	Q	*
e. Sampler Flow Rate Monitor	D	N.A.	R	Q	*
8. RADWASTE AREA VENTILATION MONITORING SYSTEM					
a. Noble Gas Activity Monitor	D	M	R(3)	Q(2)	*
b. Iodine Sampler	W	N.A.	N.A.	N.A.	*
c. Particulate Sampler	W	N.A.	N.A.	N.A.	*
d. Flow Rate Monitor	D	N.A.	R	Q	*
e. Sampler Flow Rate Monitor	D	N.A.	R	Q	*