Table 3.2-11

INSTRUMENTATION WHICH PROVIDES SURVEILLANCE INFORMATION

Ref. No. (a)		Instrument (b)	Required Operable Instrument Channels	Type and Range	Action	Remarks
1		Reactor Water Level (GE/MAC)	1	Recorder	(c)	(d)
			2	Indicator 0 to 60"	(c)	(d)
2		Shroud Water Level	1	Recorder	(c)	(d)
			1	Indicator -317" to -17"	(c)	(d)
3		Reactor Pressure	1	Recorder	(c)	(d)
			2	Indicator 0 to 1200 psig	(c)	(d)
4		Drywell Pressure	2	Recorder -5 to +80 psig	(c)	(d)
5		Drywell Temperature	2	Recorder 0 to 500°F	(c)	(d)
6		Suppression Chamber Air Temperature	2	Recorder 0 to 500°F	(c)	(d)
7		Suppression Chamber Water Temperature	2	Recorder 0 to 250°F	(c)	(d)
8		Suppression Chamber Water Level	2	Indicator 0 to 300"	(c)	(d)
			2	Recorder 0 to 30"	(c)(e)	(d)
9		Suppression Chamber Pressure	2	Recorder -5 to +80 psig	(c)	(d)
10		Rod Position Information System (RPIS)	1	28 Volt Indicating Lights	(c)	(d)
11		Hydrogen and Oxygen Analyzer	1	Recorder 0 to 52	(c)	(d)
12		Post LOCA Radiation Monitoring System	1	Recorder	(c)	(d)
				Indicator 1 to 10^6 R/hr	(c)	(d)
13	a)	Safety/Relief Valve Position Primary Indicator	1	Pressure Switch 4-100 psig	(f)	
	b)	Safety/Relief Valve Position Secondary Indicator	1	Temperature element 0-600°F	(f)	

Table 4.2-11

Check and Calibration Minimum Frequency for Instrumentation
Which Provides Surveillance Information

Ref. No. (a)	Instrument	Instrument Check Minimum Frequency (b)	Instrument Calibration Minimum Frequency (c)
1	Reactor Water Level (GE/MAC)	Each shift	Every 6 months
2	Shroud Water Level	Each shift	Every 6 months
3	Reactor Pressure	Each shift	Every 6 months
4	Drywell Pressure	Each shift	Every 6 months
5	Drywell Temperature	Each shift	Every 6 months
6	Suppression Chamber Air Temperature	Each shift	Every 6 months
7	Suppression Chamber Water Temperature	Each shift	Every 6 months
8	Suppression Chamber Water Level	Each shift	Every 6 months
9	Suppression Chamber Pressure	Each shift	Every 6 months
10	Rod Position Information System (RPIS)	Each shift	N/A
11	Hydrogen and Oxygen Analyzer	Each shift	Every 6 months
12	Post LOCA Radiation	Each shift	Every 6 months
13	a) Safety/Relief Valve Position Primary Indicator	Monthly	Every 18 months
	b) Safety/Relief Valve Position Secondary Indicator	Monthly	Every 18 months

3.7.A.6.c. H_2 and O_2 Analyzer

Whenever the reactor is in power operation, there shall be at least one CAD System H_2 and O_2 analyzer serving the primary containment. If one H_2 and O_2 analyzer is inoperable, the reactor may remain in operation for a period not to exceed seven days.

d. Post-LOCA Repressurization Limit
The maximum post-LOCA primary containment repressurization limit allowable using the CAD System shall be 30 psig. Venting via the SGTS to the main stack must be initiated at 30 psig following the initial post-LOCA pressure peak.

4.7.A.6.c. H_2 and O_2 Analyzer

Instrumentation surveillance is listed in Table 4.2-11.

7. Shutdown Requirements

If Specification 3.7.A cannot be met, an orderly shutdown shall be initiated and the reactor shall be brought to Hot Shutdown within 12 hours and shall be in the Cold Shutdown condition within the following 24 hours.

B. Standby Gas Treatment System

1. Operability Requirements

A minimum of three (2 of 2 in Unit 1 and 1 of 2 in Unit 2) of the four independent standby gas treatment system trains shall be operable at all times when Unit 1 secondary containment integrity is required.

With one of the Unit 1 standby gas treatment systems inoperable, for any reason, Unit 1 reactor operation and fuel handling and/or handling of casks in the vicinity of the spent fuel pools is permissible for a period of seven (7) days provided that all active components in the remaining standby gas treatment systems in each unit shall be demonstrated to be operable within 4 hours, and daily thereafter.

B. Standby Gas Treatment System

1. Surveillance When System Operable

At least once per operating cycle, not to exceed 18 months, the following conditions shall be demonstrated:

a. Pressure drop across the combined HEPA filters and charcoal absorber banks is less than 6 inches of water at the system design flow rate (+10%, -0%).

b. Operability of inlet heater at rated power when tested in accordance with ANSI N510-1975.

c. Air distribution is uniform within 20% across the filter train when tested in accordance with ANSI N510-1975.

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3.7.A.7. Shutdown Requirements

Bases for shutdown requirements are discussed above in conjunction with the individual requirements for primary containment integrity.

B. Standby Gas Treatment System

The standby gas treatment systems are designed to filter and exhaust the Unit 1 secondary containment atmosphere to the off-gas stack during secondary containment isolation conditions, with a minimum release of radioactive materials from these areas, to the environs. The Unit 1 standby gas treatment system fans are designed to automatically start upon receipt of a high radiation signal from either the Unit 1 or Unit 2 refueling floor ventilation exhaust duct monitors or the Unit 1 reactor building ventilation exhaust duct monitors, or upon receipt of a signal from the Unit 1 primary containment isolation system. The Unit 2 standby gas treatment system fans are designed to automatically start, to assist the Unit 1 fans to exhaust the Unit 1 secondary containment atmosphere upon receipt of a high radiation signal from either the Unit 1 or Unit 2 refueling floor ventilation exhaust duct monitors or the Unit 1 reactor building ventilation exhaust duct monitors, or upon receipt of a signal from the Unit 1 primary containment isolation system. In addition, the systems may also be started manually, from the Main Control Room.

In the case of the Unit 1 standby gas treatment system, upon receipt of any of the isolation signals, both fans start, isolation dampers open and each fan draws air from the isolated Unit 1 secondary containment.

In the case of the Unit 2 standby gas treatment system, upon receipt of an isolation signal from the Unit 1 primary containment isolation system, reactor building ventilation exhaust duct monitors, or the Unit 1 or Unit 2 refueling floor ventilation exhaust duct monitors, both fans start, fan supply and discharge dampers open, and the fans draw air from the isolated Unit 1 secondary containment.

Once the SGTS systems have been initiated automatically, the operator may place any one of the Unit 1 and Unit 2 trains in the standby mode provided the remaining train in each unit is operable. Should a failure occur in the remaining operating trains, resulting in air flow reduction below a preset value, the standby systems will restart automatically.

As a minimum for operation, one of the two Unit 1 standby gas treatment trains and one of the two Unit 2 standby gas treatment trains is required to achieve the design differential pressure, given the design building infiltration rate. Once this design differential pressure is achieved, any leakage past the secondary containment boundary shall be inleakage.

A detailed discussion of the standby gas treatment systems may be found in Section 5.3.3.3 of the Unit 1 FSAR, and in Section 6.2.3 of the Unit 2 FSAR.

Any one of the four filter trains has sufficient absorption capacity to provide for cleanup of the Unit 1 secondary containment atmosphere following containment isolation. Any one of the four available standby gas treatment trains may be considered an installed spare. Therefore, with one of the standby gas treatment trains in each unit inoperable, there is no immediate threat to the Unit 1 containment system performance, and reactor operation or fuel handling operations may continue while repairs are being made. Should either or both of the remaining standby gas treatment trains be found to be inoperable, the Unit 1 plant should be placed in a condition that does not require a standby gas treatment system.