TABLE 4.3.7.12-1

RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

INSTRUMENT	CHANNEL CHECK	SOURCE CHECK	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST	MODES IN WHICH SURVEILLANCE IS REQUIRED
1. Main Condenser Offgas Post-Treatment Radiation Monitor					
a. Gross gamma detector alarm and automatic isolation of the offgas system outlet and drain valves	D	D	R(2)	Q(1)	*
2. Main Condenser Offgas Pre-Treatment Radiation Monitor					
a. Gamma sensitive ion chamber located upstream of holdup line	D	M	R(2)	Q(1)	**
3. Main Plant Release Monitor					
a. Noble Gas Activity Monitor					
1) Low Range	D	M	R(2)	Q(1)	*
2) Intermediate Range	D	M	R(2)	Q~~(1)~~ 7	*
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. Turbine Building Ventilation Exhaust Monitor					
a. Noble Gas Activity Monitor					
1) Low Range	D	M	R(2)	Q(1)	*
2) Intermediate Range	D	M	R(2)	Q~~(1)~~ 7	*
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

INSTRUMENT	CHANNEL CHECK	SOURCE CHECK	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST	MODES IN WHICH SURVEILLANCE IS REQUIRED
5. Radwaste Building Ventilation Exhaust					
a. Noble Gas Activity Monitor					
1) Low Range	D	M	R(2)	Q(1)	*
2) Intermediate Range	D	M	R(2)	~~Q(1)~~ 7	*
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 Measurement Device	D(4)	N.A.	R(6)	Q(5)	*
e. Sampler Flow Rate Monitor	D	N.A.	R	Q	*
6. Main Condenser Offgas Treatment System Explosive Gas Monitoring System					
a. Hydrogen Monitor	D	N.A.	Q(3)	M	**

TABLE 4.3.7.12-1 (Continued)

TABLE NOTATIONS

*At all times.

**During main condenser offgas treatment system operation.

(1) The CHANNEL FUNCTIONAL TEST shall also demonstrate that control room alarm annunciation occurs if any of the following conditions exists:

a. Instrument indicates measured levels above the alarm setpoint.

b. Circuit failure.

c. Instrument controls not set in operate mode.

(2) The initial CHANNEL CALIBRATION shall be performed using one or more reference radioactive standards traceable to the National Bureau of Standards (NBS) or using standards that have been obtained from suppliers that participate in measurement assurance activities with NBS. These standards shall permit calibrating the system over its intended range of energy and measurement range. Subsequent CHANNEL CALIBRATION shall be performed using the initial radioactive standards or other standards of equivalent quality or radioactive sources that have been related to the initial calibration.

(3) The CHANNEL CALIBRATION shall include the use of standard gas samples containing a nominal:

a. 0.0 volume percent hydrogen, balance nitrogen, and

b. 2.0 volume percent hydrogen, balance nitrogen.

(4) The CHANNEL CHECK shall be performed by comparing computer readings or comparing each fan's local amperage reading.

(5) The CHANNEL FUNCTIONAL TEST shall be performed by measurement of the phase currents for each fan.

(6) The CHANNEL CALIBRATION shall be performed by using a flow measurement device to determine the fan current to flow relationship.

(7) For the CHANNEL FUNCTIONAL TEST on the intermediate range noble gas activity monitors, demonstrate that circuit failures or instrument controls when set in the OFF position produce control room alarm annunciation.

SURVEILLANCE REQUIREMENTS

4.4.3.2.1 The reactor coolant system leakage shall be demonstrated to be within each of the above limits by:

a. Monitoring the primary containment atmospheric particulate and gaseous radioactivity at least once per 12 hours,

b. Monitoring the primary containment sump flow rate at least once per 12 hours,

c. Monitoring the reactor vessel head flange leak detection system at least once per 24 hours.

4.4.3.2.2 Each reactor coolant system pressure isolation valve specified in Table 3.4.3.2-1 shall be demonstrated OPERABLE by leak testing pursuant to Specification 4.0.5 and verifying the leakage of each valve to be within the specified limit:

a. At least once per 18 months.

b. Prior to entering HOT SHUTDOWN whenever the plant has been in COLD SHUTDOWN for 72 hours or more and if leakage testing has not been performed in the previous 9 months.

b. ~~c.~~ Prior to returning the valve to service following maintenance, repair or replacement work on the valve which could affect its leakage rate.

d. Within 24 hours following valve actuation due to automatic or manual action or flow through the valve.

The provisions of Specification 4.0.4 are not applicable for entry into OPERATIONAL CONDITION 3.

4.4.3.2.3 The high/low pressure interface valve leakage pressure monitors shall be demonstrated OPERABLE with alarm setpoints per Table 3.4.3.2-2 by performance of a:

a. CHANNEL FUNCTIONAL TEST at least once per 31 days, and

b. CHANNEL CALIBRATION at least once per 18 months.

TABLE 3.6.3-1 (Continued)

PRIMARY CONTAINMENT ISOLATION VALVES

VALVE FUNCTION AND NUMBER	VALVE GROUP(a)	MAXIMUM ISOLATION TIME (Seconds)
a. Automatic Isolation Valves (Continued)		
Equipment Drain (Radioactive)	4	15
EDR-V-19 EDR-V-20		
Floor Drain (Radioactive)	4	15
FDR-V-3 FDR-V-4		
Fuel Pool Cooling/Suppression Pool Cleanup	4	35
FPC-V-153(f) FPC-V-154(f) FPC-V-156		
Reactor Recirculation Hydraulic Control(e)	4	~~5~~ 15
HY-V-17A,B HY-V-18A,B HY-V-19A,B HY-V-20A,B HY-V-33A,B HY-V-34A,B HY-V-35A,B HY-V-36A,B		
Traversing Incore Probe Valve	4	5
TIP-V-6,7,8,9,10 (Probe Line Ball Valves)		
TIP-V-11 (N_2 Gate Valve)		

TABLE 3.6.3-1 (Continued)

PRIMARY CONTAINMENT ISOLATION VALVES

VALVE FUNCTION AND NUMBER	VALVE GROUP(a)	MAXIMUM ISOLATION TIME (Seconds)
d. Other Containment Isolation Valves (Continued)		
Containment Purge System		
CSP-V-8		N.A.
CSP-V-9		4
CSP-V-10		N.A.
Reactor Recirculation (Seal Injection)		
RRC-V-13A,B		N.A.
RRC-V-16A,B		~~4~~ 15
Containment Instrument Air		
CIA-V-20		22
CIA-V-21		N.A.
CIA-V-30A,B		22
CIA-V-31A,B		N.A.
Containment Air Supply		
CAS-V-453		N.A.
Post-Accident Sampling System(c)		N.A.
PSR-V-X73-1		
PSR-V-X73-2		
PSR-V-X77A1		
PSR-V-X77A2		
PSR-V-X77A3		
PSR-V-X77A4		
PSR-V-X80-1		

SURVEILLANCE REQUIREMENTS

4.8.1.1.1 Each of the above required independent circuits between the offsite transmission network and the onsite Class 1E distribution system shall be:

a. Determined OPERABLE at least once per 7 days by verifying correct breaker alignments and indicated power availability, and

b. Demonstrated OPERABLE at least once per 18 months during shutdown by transferring, manually and automatically, unit power supply from the normal circuit to the alternate circuit.

4.8.1.1.2 Each of the above required diesel generators shall be demonstrated OPERABLE:

a. In accordance with the frequency specified in Table 4.8.1.1.2-1 on a STAGGERED TEST BASIS by:

1. Verifying the fuel level in the day fuel tank.

2. Verifying the fuel level in the fuel storage tank.

3. Verifying the fuel transfer pump starts and transfers fuel from the storage system to the day fuel tank.

4. Verifying the diesel starts from ambient condition and accelerates to at least 900 rpm (60 Hz) in less than or equal to 10 seconds* for DG-1 and DG-2 and 13 seconds* for DG-3. The generator voltage and frequency shall be 4160 ± 420 volts and 60 ± 3.0 Hz within 10 seconds* for DG-1 and DG-2 and 13 seconds* for DG-3 after the start signal. The diesel generator shall be started for this test by using one of the following signals:

a) Manual.
b) Simulated loss-of-offsite power by itself.
c) Simulated loss-of-offsite power in conjunction with an ESF actuation test signal.
d) An ESF actuation test signal by itself.

5. Verifying the diesel generator is synchronized, loaded to greater than or equal to 4400 kW for DG-1 and DG-2 and 2600 kW for DG-3 in less than or equal to 60 seconds*, and operates with these loads for at least 60 minutes.

6. Verifying the diesel generator is aligned to provide standby power to the associated emergency busses.

7. Verifying the pressure in all diesel generator air start receivers to be greater than or equal to 230 psig for DG-1 and DG-2 and 200 psig for DG-3.

b. At least once per 31 days and after each operation of the diesel where the period of operation was greater than or equal to 1 hour by checking for and removing accumulated water from the day fuel tanks.

*These diesel generator starts from ambient conditions shall be performed only once per 184 days in these surveillance tests and all other engine starts for the purpose of this surveillance testing ~~shall~~ may be preceded by an engine prelube period and/or other warmup procedures recommended by the manufacturer so that mechanical stress and wear on the diesel engine is minimized.

ELECTRICAL POWER SYSTEMS

DISTRIBUTION - SHUTDOWN

LIMITING CONDITION FOR OPERATION

3.8.3.2 As a minimum, the following power distribution system divisions shall be energized:

a. For A.C. power distribution, Division 1 or Division 2, and when the HPCS system is required to be OPERABLE, Division 3, with:

1. Division 1, consisting of:
   a) 4160-volt bus SM-7.
   b) 480-volt bus SL-71 and SL-73.
   c) 480-volt MCC's 7A, 7A-A, 7B, 7B-A, 7B-B, 7F.
   d) 480-volt Power Panel PP-7A-B.
   e) 120/208-volt 3Ø Power Panels PP-7A-G, PP-7A-A-A.
   f) 120/240-volt 1Ø Power Panels PP-7A-A, PP-7A-F, PP-7A-E, and PP-7A.

2. Division 2, consisting of:
   a) 4160-volt bus SM-8.
   b) 480-volt bus SL-81 and SL-83.
   c) 480-volt MCC's 8A, 8A-A, 8B, 8B-A, 8B-B, 8F.
   d) 480-volt Power Panel PP-8A-B.
   e) 120/208-volt 3Ø Power Panels PP-8A-G, PP-8A-A-A.
   f) 120/240-volt 1Ø Power Panels PP-8A-A, PP-8A-F, PP-8A-E, and PP-8A.

3. Division 3, consisting of:
   a) 4160-volt bus SM-4.
   b) 480-volt 3Ø Engine & Gen. Aux. loads Power Panel.
   c) 120/240-volt 1Ø Power Panel PP-4A.
   d) 480-volt 3Ø MCC 4A.

b. For D.C. power distribution, Division 1 or Division 2, and when the HPCS system is required to be OPERABLE, Division 3, with:

1. Division 1, consisting of:
   a) 125-volt D.C. Main Distribution Panel S1-1.
   b) 125-volt VDC Motor Control Center MC-S1-1D.
   c) 125-VDC Instr. and Control NSSS Bd. Distr. Panel DP-S1-1A.
   d) 125-VDC ~~Critical Swgs. &~~ Remote Shutdn. Distr. Pnl. DP-S1-1D.
   e) 125-VDC Diesel Gen. 1 Dist. Pnl. DP-S1-1E.
   f) 250-VDC Main Distribution Panel S2-1.
   g) 250-VDC Motor Control Center MC-S2-1A, Part A and Part B.
   h) ±24-VDC Power Panel DP-S0-A.
   i) 125-VDC Critical SWGR Dist. PNL DP-S1-1F

2. Division 2, consisting of:
   a) 125-volt D.C. Main Distribution Panel S1-2.
   b) 125-volt VDC Motor Control Center MC-S1-2D.
   c) 125-VDC Instr. and Control NSSS Distr. Panel DP-S1-2A.
   d) 125-VDC Critical Swgs. & Remote Shutdn. Distr. Pnl. DP-S1-2D.
   e) 125-VDC Diesel Gen. 2 Dist. Pnl. DP-S1-2E.
   f) ±24-VDC Power Panel DP-S0-B.

3. Division 3, consisting of 125-volt D.C. HPCS distribution panel.

REFUELING OPERATIONS

3/4.9.2 INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.9.2 At least 2 source range monitor* (SRM) channels shall be OPERABLE and inserted to the normal operating level with:

~~a. Continuous visual indication in the control room,~~

~~b. At least one with audible indication in the control room.~~

delete

alarm

a. One of the required SRM detectors located in the quadrant where CORE ALTERATIONS are being performed and the other required SRM detector located in an adjacent quadrant, and

b. The "shorting links" removed from the RPS circuitry prior to and during the time any control rod is withdrawn# and shutdown margin demonstrations are in progress.

APPLICABILITY: OPERATIONAL CONDITION 5.

ACTION:

With the requirements of the above specification not satisfied, immediately suspend all operations involving CORE ALTERATIONS** and insert all insertable control rods.

SURVEILLANCE REQUIREMENTS

4.9.2 Each of the above required SRM channels shall be demonstrated OPERABLE by:

a. At least once per 12 hours:

1. Performance of a CHANNEL CHECK,
2. Verifying the detectors are inserted to the normal operating level, and
3. During CORE ALTERATIONS, verifying that the detector of an OPERABLE SRM channel is located in the core quadrant where CORE ALTERATIONS are being performed and another is located in an adjacent quadrant.

*The use of special movable detectors during CORE ALTERATIONS in place of the normal SRM nuclear detectors is permissible as long as these special detectors are connected to the normal SRM circuits.

**Except movement of IRM, SRM or special movable detectors.

#Not required for control rods removed per Specification 3.9.10.1 and 3.9.10.2.

6.2.3 NUCLEAR SAFETY ASSURANCE GROUP (NSAG)

FUNCTION

6.2.3.1 The NSAG shall function to examine unit operating characteristics, NRC issuances, industry advisories, Licensee Event Reports, and other sources of unit design and operating experience information, including units of similar design, which may indicate areas for improving unit safety. The NSAG shall make detailed recommendations for revised procedures, equipment and modifications, maintenance activities, operations activities, or other means of improving unit safety to the Director of Licensing and Assurance.

COMPOSITION

6.2.3.2 The NSAG shall be composed of at least five, dedicated, full-time engineers, a minimum of three located on site and two at the home office. Each shall have a bachelor's degree in engineering or related science and at least 2 years professional level experience in his field, at least 1 year of which experience shall be in the nuclear field. or qualifications meeting ANS 3.1 Draft Revision dated March 13, 1981, Section 4.2 or 4.4, or equivalent, as described in Section 4.1

RESPONSIBILITIES

6.2.3.3 The NSAG shall be responsible for maintaining surveillance of unit activities to provide independent verification* that these activities are performed correctly and that human errors are reduced as much as practical.

RECORDS

6.2.3.4 Records of activities performed by the NSAG shall be prepared, maintained, and forwarded each calendar month to the Director of Licensing and Assurance.

6.2.4 SHIFT TECHNICAL ADVISOR

6.2.4.1 The Shift Technical Advisor shall provide advisory technical support to the Shift Manager in the areas of thermal hydraulics, reactor engineering, and plant analysis with regard to the safe operation of the unit. The Shift Technical Advisor shall have a bachelor's degree or equivalent in a scientific or engineering discipline and shall have received specific training in the response and analysis of the unit for transients and accidents, and in unit design and layout, including the capabilities of instrumentation and controls in the control room.

6.3 UNIT STAFF QUALIFICATIONS

6.3.1 Each member of the unit staff shall meet or exceed the minimum qualifications of ANSI/ANS N18.1-1971 for comparable positions, except for the Health Physics/ Chemistry Manager who shall meet or exceed the qualifications of Regulatory Guide 1.8, Revision 1-R, May 1977. The licensed Operators and Senior Operators shall also meet or exceed the minimum qualifications of the supplemental requirements specified in Sections A and C of Enclosure 1 of the March 28, 1980 NRC letter to all licensees.

*Not responsible for sign-off function.