PSE&G

Public Service Electric and Gas Company P.O. Box 236 Hancocks Bridge, New Jersey 08038

Nuclear Department

Ref: LCR-83-14

September 21, 1984

Director of Nuclear Reactor Regulation
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Attention: Mr. Steven A. Varga, Chief
Operations Reactors Branch 1
Division of Licensing

Gentlemen:

REQUEST FOR AMENDMENT
FACILITY OPERATING LICENSES
UNIT NOS. 1 AND 2
SALEM GENERATING STATION
DOCKET NOS. 50-272 AND 50-311

In accordance with the Atomic Energy Act of 1954, as amended and the regulations thereunder, we hereby transmit copies of our request for amendment and our analyses of the changes to Facility Operating Licenses DPR-70 and DPR-75 for Salem Generating Station, Unit Nos. 1 and 2.

This amendment request consists of a revision to Technical Specifications, Appendix A, sections regarding Accident Monitoring Instrumentation and Radiation Monitoring Instrumentation.

In accordance with the fee requirements of 10CRF170.21, a check in the amount of $150.00 is enclosed.

Pursuant to the requirements of 10CFR50.91, a copy of this request for amendment has been sent to the State of New Jersey as indicated below.

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PDR ADOCK 05000272
P PDR

A001 3/40 w/check for $150.00 #0191496

This submittal includes three (3) signed originals and forty (40) copies.

Sincerely,

E. A. Liden
Manager - Nuclear
Licensing and Regulation

Enclosure

C Mr. Donald C. Fischer
Licensing Project Manager

Mr. James Linville
Senior Resident Inspector

Mr. Frank Cosolito, Acting Chief
Bureau of Radiation Protection
Department of Environmental Protection
380 Scotch Road
Trenton, New Jersey 08628

Honorable Charles M. Oberly, III
Attorney General of the State of Delaware
Department of Justice
820 North French Street
Wilmington, Delaware 19801

Ref: LCR-83-14

STATE OF NEW JERSEY)
) ss: COUNTY OF SALEM
COUNTY OF SALEM)

RICHARD A. UDERITZ, being duly sworn according to law deposes and says:

I am a Vice President of Public Service Electric and Gas Company, and as such, I find the matters set forth in our Request for Amendment dated September 21, 1984, are true to the best of my knowledge, information and belief.

RICHARD A. UDERITZ

Subscribed and sworn to before me
this 28th day of September, 1984

Donna G. Hitchner
Notary Public of New Jersey

DONNA G. HITCHNER
NOTARY PUBLIC OF NEW JERSEY
My Commission Expires March 24, 1987

My Commission expires on

PROPOSED CHANGE
TECHNICAL SPECIFICATIONS
SALEM UNITS 1 AND 2

DESCRIPTION OF CHANGE

To respond to NUREG-0737 requirements, make the following changes:

Add Noble Gas Effluent Monitors and Containment high range Area Monitors to Specification 3.3.3.6, Radiation Monitoring Instrumentation tables. Remove from Unit No. 1 only, item 2.a.3 Fixed Filter Iodine Monitor from Tables 3.3-6 and 4.3-6.

The format and ACTION STATEMENTS of Technical Specification 3.3.3.7, Accident Monitoring Instrumentation, for Salem Unit No. 2 should be modified to agree with the format and ACTION STATEMENTS used on Unit No. 1. Limiting Conditions for Operation and Surveillance Requirements for accident monitoring instrumentation should be included in Tables 3.3-11a, 3.3-11b, and 4.3-11 for both units.

REASON FOR CHANGE

These proposed changes will add specifications for accident and radiation monitoring to provide assurance that the monitoring equipment installed at the facility is operated and maintained within acceptable limits. This proposed change is the result of a review of NUREG-0737 Technical Specifications guidance provided in NRC Generic Letter 83-37 and an additional request (Varga to Uderitz, dated November 17, 1983) for Technical Specifications for ICCI equipment. The Noble Gas Effluent Monitors and Containment high range Area Monitors are added to ensure that the monitors, installed in compliance with NUREG 0737 requirements, are operable in the appropriate MODES and receive proper surveillance attention.

The specifications for containment atmosphere radiation instrumentation in Tables 3.3-3 and 3.3-4 have been replaced by cross-references to the applicable specifications of Tables 3.3-6 and 4.3-6 with the purpose of eliminating duplication and assuring consistency in the requirements applicable to the containment noble gas monitor (R12A) and the containment air particulate activity monitor (R11A). Specifications for the containment iodine sampler (R12B) have been deleted, acknowledging that the sampling medium is a cumulative sampler (charcoal cartridge) unsuitable of providing direct correlation to atmosphere concentration and therefore inappropriate for safety system actuation.

The original intent of the purge and exhaust isolation function of the containment atmosphere radioactive instrumentation as specified in Tables 3.3-3 and 3.3-4 was to provide isolation of any containment purges during plant operation (modes 1,2,3 and 4) in the event of increased airborne radioactivity representative of an abnormal condition. However, per Specification 3.6.1.7 (as revised by Amendment #41), the containment purge supply and exhaust isolation valves shall be closed during modes 1,2,3 and 4 (valves immobilized in shut position with control air to valve operators isolated and tagged out of service).

The proposed revisions to the containment radiation monitoring instrumentation address its dual function: 1) providing the safety function of containment isolation at early indication of abnormal conditions during refueling; and 2) serving as an effluent monitor during periods of allowable containment purge and pressure/vacuum relief with alarm/trip setpoints to ensure maximum release rates are not exceeded.

As proposed by this amendment request the intended safety function of the containment radiation monitoring instruments (specifically, R12A and R11A) are appropriately addressed in Tables 3.3-6 and 4.3-3. Per Table 3.3-6 (as proposed), R12A and R11A will provide containment isolation at 2 x background during mode 6 in the event of increased containment airborne activity, indicative of an abnormal condition (e.g., fuel handling accident).

Also, as proposed by this amendment request, and addressed in Tables 3.3-13 and 4.3-13 (and cross-referenced in Table 3.3-6), the containment noble gas monitor (R12A) may function as an effluent monitor for containment purges during mode 5 and for pressure/vacuum reliefs during modes 1,2,3,4 and 5. The alarm/trip setpoint of R12A when functioning as an effluent monitor is established per Specification 3.3.3.9 so as to ensure the dose rate at the site boundary does not exceed 500 mrem/year during the release (i.e., implementation of the Maximum Permissible Concentrations (MPC) as specified in 10 CFR 20, Appendix B, Table II, Column 1).

The removal of the Fixed Filter Iodine (FFI) monitor from Tables 3.3-6 and 4.3-6 on Unit No. 1 is consistent with Unit No. 2 Technical Specifications and with Westinghouse PWR Standard Technical Specifications.

Technical Specifications issued with Unit No. 2 Facility Operating License and those provided as guidance in Generic Letter 83-27 do not take into consideration acceptable alternate plant Accident Monitoring Instrumentation capabilities as was done on Unit No. 1 Technical Specifications. The existing

format used on Unit 1 Accident Monitoring was used for this change. This format provides ACTION STATEMENTS for certain monitoring capabilities for which alternate methods of monitoring have been evaluated and approved by NRC in NUREG-0517, Safety Evaluation Report, Supplements 4 and 5 for Salem Unit 2 and in Amendment 39 to the Unit No. 1 license.

SIGNIFICANT HAZARDS EVALUATION

A review of the TMI items for which Technical Specifications changes are required by the NRC shows that:

1. The proposed changes to Technical Specifications are associated with specific design changes to the facility. For each design change (DCR) adding equipment required to satisfy a NUREG-0737 item, an Engineering Safety Evaluation was completed in accordance with 10CFR 50.59. Each of these Safety Evaluations indicated that no Unreviewed Safety Ouestion was involved with the change.

2. The Unit No. 2 Accident Monitoring Instrumentation Technical Specification modifications were worded to agree with Unit No. 1 Technical Specifications which have been previously reviewed and found acceptable by the NRC. The additional requirements for ICCI equipment on both Salem units are worded to agree with the intent of the guidance provided in NRC Generic Letter 83-27, dated November 1, 1983.

3. Where the proposed Technical Specification change varies from the guidance provided by NRC Generic Letter 83-27, regarding Containment Wide Range Water Level, a new ACTION (7) is introduced to provide for continued operations with one of the two W.R. instruments INOPERABLE until the next CHANNEL CALIBRATION, which must be done during MODE 5, COLD SHUTDOWN. This variance is necessary due to the physical design relationship of the containment sump and the level detectors. The removal of the containment sump screen to repair a containment water level instrument would render the containment sump and, consequently, the entire ECCS (recirculation mode) INOPERABLE, requiring plant shutdown within one hour. This action, resulting from only one wide range containment water level instrument out of service, would result in a plant shutdown within one hour while redundant containment water level indication is still available for post accident information.

Given the similarity of the two units and the fact that all design changes associated with the proposed Technical Specification modifications involve no Unreviewed Safety Question or were previously reviewed by the NRC and found acceptable, with the exception of item 3 above, the proposed Technical Specifications changes are deemed to involve no significant hazards consideration. The new specifications requested constitute addition of limitations and surveillance requirements to existing specifications and thereby conform to example (ii) provided by NRC in 48FR14870 as guidance concerning the application of standards for a No Significant Hazards determination.

UNIT 1

TABLE 3.3-3 (Continued)

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION

FUNCTIONAL UNIT	TOTAL NO. OF CHANNELS	CHANNELS TO TRIP	MINIMUM CHANNELS OPERABLE	APPLICABLE MODES	ACTION
b. Phase "B" Isolation					
1) Manual	2 sets of 2	1 set of 2	2 sets of 2	1, 2, 3, 4	18
2) Automatic Actuation Logic	2	1	2	1, 2, 3, 4	13
3) Containment Pressure--High-High	4	2	3	1, 2, 3	16
c. Purge and Exhaust Isolation					
1) Manual	2	1	2	1, 2, 3, 4	17
2) Containment Atmosphere Radioactivity-High		per table 3.3-6			
4. STEAM LINE ISOLATION					
a. Manual	1/steam line	1/steam line	1/operating steam line	1, 2, 3	18
b. Automatic Actuation Logic	2	1	2	1, 2, 3	13
c. Containment Pressure--High-High	4	2	3	1, 2, 3	16

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TABLE 3.3-4 (Continued)

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION TRIP SETPOINTS

FUNCTIONAL UNIT	TRIP SETPOINT	ALLOWABLE VALUES
2. Containment Atmosphere Gaseous Radioactivity	per Table 3.3-6	
4. STEAM LINE ISOLATION		
a. Manual	Not Applicable	Not Applicable
b. Automatic Actuation Logic	Not Applicable	Not Applicable
c. Containment Pressure--High-High	$\leq$ 23.5 psig	$\leq$ 24 psig
d. Steam Flow in Two Steam Lines -- High Coincident with T_{avg} -- low-low or Steam Line Pressure--low	$\leq$ A function defined as follows: A Δp corresponding to 40% of full steam flow betweem 0% and 20% load and then a Δp increasing linearly to a Δp corresponding to 110% of full steam flow at full load $T_{avg} \geq$ 543°F $\geq$ 500 psig steam line pressure	$\leq$ A function defined as follows: A Δp corresponding to 44% of full steam flow between 0% and 20% load and then a Δp increasing linearly to a Δp corresponding to 111.5% of full steam flow at full load $T_{avg} \geq$ 541°F $\geq$ 480 psig steam line pressure

TABLE 4.3-2 (Continued)

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION
SURVEILLANCE REQUIREMENTS

FUNCTIONAL UNIT	CHANNELS CHECKS	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST	MODES IN WHICH SURVEILLANCE REQUIRED
3. CONTAINMENT ISOLATION				
a. Phase "A" Isolation				
1) Manual	N.A.	N.A.	R	1, 2, 3, 4
2) From Safety Injection Automatic Actuation Logic	N.A.	N.A.	M(2)	1, 2, 3, 4
b. Phase "B" Isolation				
1) Manual	N.A.	N.A.	R	1, 2, 3, 4
2) Automatic Actuation Logic	N.A.	N.A.	M(2)	1, 2, 3, 4
3) Containment Pressure--High-High	S	R	M(3)	1, 2, 3
c. Containment Ventilation Isolation				
1) Manual	N.A.	N.A.	R	1, 2, 3, 4
2) Automatic Actuation Logic	N.A.	N.A.	M(2)	1, 2, 3, 4
3) Containment Radioactivity -- High	per table 4.3-3			

TABLE 3.3-6

RADIATION MONITORING INSTRUMENTATION

INSTRUMENT	MINIMUM CHANNELS OPERABLE	APPLICABLE MODES	ALARM/TRIP SETPOINT	MEASUREMENT RANGE	ACTION
1. AREA MONITORS					
a. Fuel Storage Area - R5/R9	1	*	$\leq$ 15 mR/hr	10^{-1} - 10^{4} mR/hr	19
b. Containment Area - R44	2	1, 2, 3 & 4	$\leq 10^{3}$ R/hr	1 - 10^{7} R/hr	23
2. PROCESS MONITORS					
a. Containment					
1) Gaseous Activity					
a) Purge & Pressure - Vacuum Relief Isolation - R12a	1#	6 and 1, 2, 3, 4 & 5	$\leq$ 2 x background per Specification 3.3.3.9	10^{1} - 10^{6} cpm	22 & 23
b) RCS Leakage Detection - R12a		1, 2, 3 & 4	N/A	10^{1} - 10^{6} cpm	20
2) Air Particulate Activity					
a) Purge & Pressure - Vacuum Relief Isolation - R11a	1	6	$\leq$ 2 x background	10^{1} - 10^{6} cpm	22
b) RCS Leakage Detection - R11a		1, 2, 3 & 4	N/A	10^{1} - 10^{6} cpm	20
b. Noble Gas Effluent Monitors					
1) Medium Range Auxiliary Building Exhaust System (Plant Vent) - R45B	1	1, 2, 3 & 4	$\leq 3.0 \times 10^{-2}$ uCi/cm^3 (Alarm only)	10^{-3} - 10^{1} uCi/cm^3	23
2) High Range Auxiliary Building Exhaust System (Plant Vent) - R45C	1	1, 2, 3 & 4	$\leq 1.0 \times 10^{2}$ uCi/cm^3 (Alarm only)	10-1 - 10^{5} uCi/cm^3	23

*With fuel in the storage pool or building.
#The unit vent sampling monitor (R-41c) may also function in this capacity when the purge/pressure-vacuum relief isolation valves are open.

TABLE 3.3-6 (CONTINUED)

RADIATION MONITORING INSTRUMENTATION

INSTRUMENT	MINIMUM CHANNELS OPERABLE	APPLICABLE MODES	ALARM/TRIP SETPOINT	MEASUREMENT RANGE	ACTION
2. PROCESS MONITORS					
b. Noble Gas Effluent Monitors					
3) Main Steamline Discharge (Safety Valves and Atmospheric Steam Dumps) - R46	1/ MS Line	1, 2, 3 & 4	< 10 mR/hr (alarm only)	1 - 10^4 mR/hr	22
4) Condenser Exhaust System - R15	1	1, 2, 3 & 4	< 1.27 x 10^4 cpm (alarm only)	1 - 10^6 cpm	23

TABLE 3.3-6 (Continued)

TABLE NOTATION

ACTION 19 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, perform area surveys of the monitored area with portable monitoring instrumentation at least once per 24 hours.

ACTION 20 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, comply with the ACTION requirements of Specification 3.4.6.1.

ACTION 22 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, comply with the ACTION requirements of Specification 3.9.9.

ACTION 23 - With the number of OPERABLE Channels less than required by the Minimum Channels OPERABLE requirements, initiate the preplanned alternate method of monitoring the appropriate parameter(s), within 72 hours, and:

1) either restore the inoperable Channel(s) to OPERABLE status within 7 days of the event, or

2) prepare and submit a Special Report to the Commission pursuant to Specification 6.9.2 within 14 days following the event outlining the action taken, the cause of the inoperability and the plans and schedule for restoring the system to OPERABLE status.

TABLE 4.3-3

RADIATION MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

INSTRUMENT	CHANNELS CHECKS	SOURCE CHECKS	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST	MODES IN WHICH SURVEILLANCE REQUIRED
1. AREA MONITORS					
a. Fuel Storage Area - R5/R9	S	M	R	Q	*
b. Containment Area - R44	S	M	R	Q	1, 2, 3 & 4
2. PROCESS MONITORS					
a. Containment Monitors					
1) Gaseous Activity					
a) Purge & Pressure Vacuum Relief Isolation - R12a	S	M	R	Q	1, 2, 3, 4, 5 &
b) RCS Leakage Detection - R12a	S	M	R	Q	1, 2, 3 & 4
2) Air Particulate Activity					
a) Purge & Pressure - Vacuum Relief Isolation - R11a	S	M	R	Q	1, 2, 3, 4 & 6
b) RCS Leakage Detection - R11a	S	M	R	Q	1, 2, 3 & 4
b. Noble Gas Effluent Monitors					
1) Medium Range Auxiliary Building Exhaust System (plant vent) - R45B	S	M	R	Q	1, 2, 3 & 4
2) High Range Auxiliary Building Exhaust System (plant vent) - R45C	S	M	R	Q	1, 2, 3 & 4

*With fuel in the storage pool or building.

TABLE 4.3-3 (CONTINUED)

RADIATION MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

INSTRUMENT	CHANNELS CHECKS	SOURCE CHECKS	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST	MODES IN WHICH SURVEILLANCE REQUIRED
2. PROCESS MONITORS					
b. Noble Gas Effluent Monitors					
3) Main Steamline Discharge (Safety valves & atmospheric dumps) - R46	S	M	R	Q	1, 2, 3 & 4
4) Condenser Exh. Sys. - R15	S	M	R	Q	1, 2, 3 & 4

INSTRUMENTATION

ACCIDENT MONITORING INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.3.3.7 The accident monitoring instrumentation channels shown in Table 3.3-11a and Table 3.3-11b shall be operable.

APPLICABILITY: MODES 1, 2, and 3.

ACTION:

a. As shown in Table 3.3-11a and Table 3.3-11b.

b. The provisions of Specification 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.3.3.7 Each accident monitoring instrumentation channel shall be demonstrated OPERABLE by performance of the CHANNEL CHECK AND CHANNEL CALIBRATION operations at the frequencies shown in Table 4.3-11.

TABLE 3.3-11a

ACCIDENT MONITORING INSTRUMENTATION

	INSTRUMENT	TOTAL NO. OF CHANNELS	REQUIRED NO. OF CHANNELS	ACTION
1.	Reactor Coolant Outlet Temperature - T_{HOT} (Wide Range)	4 (1/loop)	2	1
2.	Reactor Coolant Inlet Temperature - T_{COLD} (Wide Range)	4 (1/loop)	2	
3.	Reactor Coolant Pressure (Wide Range)	2	2	1
4.	Pressurizer Water Level	3 (hot)	2	1
5.	Steam Line Pressure	3/Steam Generator	2/Steam Generator	1
6.	Steam Generator Water Level (Narrow Range)	3/Steam Generator	2/Steam Generator	1
7.	Steam Generator Water Level (Wide Range)	4/(1/Steam Generator)	4 (1/Steam Generator)	1
8.	Refueling Water Storage Tank Water Level	2	2	1
9.	Boric Acid Tank Solution Level	2 (1/tank)	2 (1/tank)	3
10.	Auxiliary Feedwater Flow Rate	4 (1/Steam Generator)	4 (1/Steam Generator)	4
11.	Reactor Coolant System Subcooling Margin Monitor	2*	2*	5
12.	PORV Position Indicator	2/valve**	2/valve**	1

TABLE 3.3-11a (CONTINUED)

ACCIDENT MONITORING INSTRUMENTATION

	INSTRUMENT	TOTAL NO. OF CHANNELS	REQUIRED NO. OF CHANNELS	ACTION
13.	PORV Block Valve Position Indicator	2/valve**	2/valve**	1
14.	Pressurizer Safety Valve Position Indicator	2/valve**	2/valve**	1
15.	Containment Pressure - Narrow Range	4	2	1
16.	Containment Pressure - Wide Range	2	2	7
17.	Containment Water Level - Wide Range	2	2	7
18.	Core Exit Thermocouples	65	4/core quadrant	1

(*) Total number of channels is considered to be two (2) with one (1) of the channels being manual calculation by licensed control room personnel using data from OPERABLE wide range Reactor Coolant Pressure and Temperature along with Steam Tables as described in ACTION 5.

(**) Total number of channels is considered to be two (2) with one (1) of the channels being any one (1) of the following alternate means of determining PORV, PORV Block, or Safety Valve position: Tailpipe Temperatures for the valves, Pressurizer Relief Tank Temperature Pressurizer Relief Tank Level Operable.

TABLE 3.3-11b

ACCIDENT MONITORING INSTRUMENTATION

	INSTRUMENT	TOTAL NO. OF CHANNELS	MINIMUM NO. OF CHANNELS	ACTION
1.	Reactor Coolant Outlet Temperature - T_{HOT} (Wide Range)	4 (1/loop)	1	2
2.	Reactor Coolant Inlet Temperature - T_{COLD} (Wide Range)	4 (1/loop)	1	2
3.	Reactor Coolant Pressure (Wide Range)	2	1	2
4.	Pressurizer Water Level	3 (hot)	1	2
5.	Steam Line Pressure	3/Steam Generator	1/Steam Generator	2
6.	Steam Generator Water Level (Narrow Range)	3/Steam Generator	1/Steam Generator	2
7.	Steam Generator Water Level (Wide Range)	4/(1/Steam Generator)	3 (1/Steam Generator)	2
8.	Refueling Water Storage Tank Water Level	2	1	2
9.	Boric Acid Tank Solution Level	2 (1/tank)	1 (1/tank)	3
10.	Auxiliary Feedwater Flow Rate	4 (1/Steam Generator)	3 (1/Steam Generator)	6
11.	Reactor Coolant System Subcooling Margin Monitor	2*	1	6
12.	PORV Position Indicator	2/valve**	1	2

TABLE 3.3-11b (CONTINUED)

ACCIDENT MONITORING INSTRUMENTATION

	INSTRUMENT	TOTAL NO. OF CHANNELS	MINIMUM NO. OF CHANNELS	ACTION
13.	PORV Block Valve Position Indicator	2/valve**	1	2
14.	Pressurizer Safety Valve Position Indicator	2/valve**	1	2
15.	Containment Pressure - Narrow Range	4	1	2
16.	Containment Pressure - Wide Range	2	1	2
17.	Containment Water Level - Wide Range	2	1	2
18.	Core Exit Thermocouples	65	2/core quadrant	2

(*) Total number of channels is considered to be two (2) with one (1) of the channels being manual calculation by licensed control room personnel using data from OPERABLE wide range Reactor Coolant Pressure and Temperature along with Steam Tables as described in ACTION 5.

(**) Total number of channels is considered to be two (2) with one (1) of the channels being any one (1) of the following alternate means of determining PORV, PORV Block, or Safety Valve position: Tailpipe Temperatures for the valves, Pressurizer Relief Tank Temperature Pressurizer Relief Tank Level Operable.

TABLE 3.3-11a & b (continued)

TABLE NOTATION

ACTION 1 With the number of OPERABLE accident monitoring channels less than the Required Number of Channels shown in Table 3.3-11a, restore the inoperable channel(s) to OPERABLE status within 7 days, or be in HOT SHUTDOWN within the next 12 hours.

ACTION 2 With the number of OPERABLE accident monitoring channels less than the MINIMUM Number of Channels shown in Table 3.3-11b, restore the inoperable channel(s) to OPERABLE status within 48 hours or be in HOT SHUTDOWN within the next 12 hours.

ACTION 3 With the number of OPERABLE channels one less than the Required Number of Channels shown in Table 3.3-11a, operation may proceed provided that the Boric Acid Tank associated with the remaining OPERABLE channel satisfies all requirements of Specification 3.1.2.8.a.

ACTION 4 With the number of OPERABLE channels one less than the Required Number of Channels shown in Table 3.3.11a, operations may proceed provided that an OPERABLE Steam Generator Wide Range Level channel is available as an alternate means of indication for the Steam Generator with no OPERATABLE Auxiliary Feedwater Flow Rate channel.

ACTION 5 With the number of OPERABLE channels less than the Required Number of Channels show in Table 3.3-11a, operation may proceed provided that Steam Tables are available in the Control Room and the following Required Channels shown in Table 3.3-11a are OPERABLE to provide an alternate means of calculating Reactor Coolant System subcooling margin:

a. Reactor Coolant Outlet Temperature - T_{HOT} (Wide Range)

b. Reactor Coolant Pressure (Wide Range)

TABLE 3.3-11a & b (continued)

TABLE NOTATION

ACTION 6 With the number of OPERABLE channels less than the Minimum Number of channels shown in Table 3.3-11b, restore the inoperable channel(s) to OPERABLE status within 7 days, or be in HOT SHUTDOWN within the next 12 hours.

ACTION 7 With the number of OPERABLE channels one less than the Required Number of Channels shown in Table 3.3-11a, operation may proceed until the next CHANNEL CALIBRATION (which shall be performed upon the next entry into MODE 5, COLD SHUTDOWN).

TABLE 4.3-11
SURVEILLANCE REQUIREMENTS FOR
ACCIDENT MONITORING INSTRUMENTATION

	INSTRUMENT	CHANNEL CHECKS	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST
1.	Reactor Coolant Outlet Temperature - T_{HOT} (Wide Range)	M	R	NA
2.	Reactor Coolant Inlet Temperature - T_{COLD} (Wide Range)	M	R	NA
3.	Reactor Coolant Pressure (Wide Range)	M	R	
4.	Pressurizer Water Level	M	R	NA
5.	Steam Line Pressure	M	R	NA
6.	Steam Generator Water Level (Narrow Range)	M	R	NA
7.	Steam Generator Water Level (Wide Range)	M	R	NA
8.	Refueling Water Storage Tank Water Level	M	R	NA
9.	Boric Acid Tank Solution Level	M	R	NA
10.	Auxiliary Feedwater Flow Rate	SU#	R	NA
11.	Reactor Coolant System Subcooling Margin Monitor	M	N/A*	NA

#Auxiliary Feedwater System is used on each startup and flow rate indication is verified at that time.

*The instruments used to develop RCS subcooling margin are calibrated on an 18 month cycle; the monitor will be compared quarterly with calculated subcooling margin for known input values.

TABLE 4.3-11 (CONTINUED)
SURVEILLANCE REQUIREMENTS FOR
ACCIDENT MONITORING INSTRUMENTATION

INSTRUMENT	CHANNEL CHECK	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST
12. PORV Position Indicator	M	NA	Q
13. PORV Block Valve Position Indicator	M	NA	Q
14. Pressurizer Safety Valve Position Indicator	M	NA	R
15. Containment Pressure - Narrow Range	M	NA	NA
16. Containment Pressure - Wide Range	M	R	NA
17. Containment Water Level - Wide Range	M	R	NA
18. Core Exit Thermocouples	M	R	NA

INSTRUMENTATION

RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.3.3.9 The radioactive gaseous effluent monitoring instrumentation channels shown in Table 3.3-13 shall be OPERABLE with their alarm/trip setpoints set to ensure that the limits of Specification 3.11.2.1 are not exceeded. The alarm/trip setpoints of these channels shall be determined in accordance with the (ODCM).

APPLICABILITY: As shown in Table 3.3-13

ACTION:

a. With a radioactive gaseous effluent monitoring instrumentation channel alarm/trip setpoint less conservative than required by the above specification, without delay suspend the release of radioactive gaseous effluents monitored by the affected channel or declare the channel inoperable or change the setpoint so it is acceptably conservative.

b. With less than the minimum number of radioactive gaseous effluent monitoring instrumentation channels OPERABLE, take the ACTION shown in Table 3.3-13. Exert best efforts to return the instrument to operable status within 30 days and, if unsuccessful, explain in the next semi-annual radioactive effluent release report why the inoperability was not corrected in a timely manner.

c. The provisions of Specifications 3.0.3, 3.0.4, and 6.9.1.9.b are not applicable.

SURVEILLANCE REQUIREMENTS

4.3.3.9 Each radioactive gaseous effluent monitoring instrumentation channel shall be demonstrated OPERABLE by performance of the CHANNEL CHECK, SOURCE CHECK, CHANNEL CALIBRATION, AND CHANNEL FUNCTIONAL TEST operations at the frequencies shown in Table 4.3-13.

TABLE 3.3-13

RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION

INSTRUMENT	MINIMUM CHANNELS OPERABLE	APPLICABILITY	ACTION
1. WASTE GAS HOLDUP SYSTEM			
a. Noble Gas Activity Monitor - Providing Alarm and Automatic Termination of Release (1-R41C)	1	*	31
b. Oxygen Monitor	1	**	35
2. CONTAINMENT PURGE AND PRESSURE - VACUUM RELIEF			
a. Noble Gas Activity Monitor - Providing Alarm and Automatic Termination of Release (1-R41C or 1-R12A)	1	***	34
3. PLANT VENT HEADER SYSTEM#			
a. Noble Gas Activity Monitor (1-R16 or 1-R41C)	1	*	33
b. Iodine Sampler	1	*	36
c. Particulate Sampler	1	*	36
d. Flow Rate Monitor	1	*	32
e. Sampler Flow Rate Monitor	1	*	32

The following process streams are routed to the plant vent where they are effectively monitored by the instruments described:

(a) Condenser Air Removal System
(b) Auxiliary Building Ventilation System
(c) Fuel Handling Building Ventilation System
(d) Radwaste Area Ventilation System
(e) Containment Purges

Action item #34 applies to the purging of the containment only.

TABLE 3.3-13 (Continued)

TABLE NOTATION

ACTION 31 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, the contents of the tank(s) may be released to the environment provided that prior to initiating the release:

a. At least two independent samples of the tank's contents are analyzed, and

b. At least two technically qualified members of the Facility Staff independently verify the release rate calculations and discharge valving lineup;

Otherwise, suspend release of radioactive effluents via this pathway.

ACTION 32 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, effluent releases via this pathway may continue provided the flow rate is estimated at least once per 4 hours.

ACTION 33 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, effluent releases via this pathway may continue provided grab samples are taken at least once per 8 hours and these samples are analyzed for gross activity within 24 hours.

ACTION 34 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, immediately suspend PURGING of radioactive effluents via this pathway.

* At all times, other than when the line is valved out and locked.

** During waste gas holdup system operation.

*** During containment purges or containment pressure - vacuum reliefs.

TABLE 3.3-13 (Continued)

TABLE NOTATION

ACTION 35 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, operation of the waste gas holdup system may continue provided grab samples are collected at least once per 24 hours and analyzed within the following 4 hours.

ACTION 36 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, effluent releases via this pathway may continue provided samples are continuously collected with auxiliary sampling equipment as required in Table 4.11-2.

TABLE 4.3-13

RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

INSTRUMENT	CHANNELS OPERABLE	SOURCE CHECK	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST	MODES IN WHICH SURVEILLANCE REQUIRED
1. WASTE GAS HOLDUP SYSTEM					
a. Noble Gas Activity Monitor - Providing Alarm and Automatic Termination of Release (1-R41C)	P	P	R(3)	Q(1)	*
b. Oxygen Monitor	D	N.A.	Q(4)	M	**
2. CONTAINMENT PURGE AND PRESSURE - VACUUM RELIEF					
a. Noble Gas Activity Monitor - Providing Alarm and Automatic Termination of Release (1-R41C or 1-R12A)	P	P	R(3)	Q(1)	***
3. PLANT VENT HEADER SYSTEM#					
a. Noble Gas Activity Monitor (1-R16 or 1-R41C)	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	N.A.	*
e. Sampler Flow Rate Monitor	W	N.A.	R	N.A.	*

The following process streams are routed to the plant vent where they are effectively monitored by the instruments described:

(a) Condenser Air Removal System
(b) Auxiliary Building Ventilation System
(c) Fuel Handling Building Ventilation System
(d) Radwaste Area Ventilation System
(e) Containment Purges

TABLE 4.3-13 (Continued)

TABLE NOTATION

(1) The CHANNEL FUNCTIONAL TEST shall also demonstrate that automatic isolation of this pathway and control room alarm annunciation occurs if any of the following conditions exist:

1. Instrument indicates measured levels above the alarm/trip setpoint.

2. Circuit failure. (Loss of Power)

3. Instrument indicates a downscale failure. (Alarm Only)

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

1. Instrument indicates measured levels above the alarm/trip setpoint.

2. Circuit failure. (Loss of Power)

3. Instrument indicates a downscale failure.

4. Instrument controls not set in operate mode.

(3) The initial CHANNEL CALIBRATION was performed using appropriate liquid or gaseous calibration sources obtained from reputable suppliers. The activity of the calibration sources were reconfirmed using a multi-channel analyzer which was calibrated using one or more NBS standards.

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

1. One volume percent oxygen, balance nitrogen, and

2. Four volume percent oxygen, balance nitrogen.

* At all times
** During waste gas holdup system operation.
*** During containment purge or containment pressure - vacuum relief.

UNIT 2

TABLE 3.3-3 (Continued)

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION

FUNCTIONAL UNIT	TOTAL NO. OF CHANNELS	CHANNELS TO TRIP	MINIMUM CHANNELS OPERABLE	APPLICABLE MODES	ACTION
b. Phase "B" Isolation					
1) Manual	2 sets of 2	1 set of 2	2 sets of 2	1, 2, 3, 4	18
2) Automatic Actuation Logic	2	1	2	1, 2, 3, 4	13
3) Containment Pressure--High-High	4	2	3	1, 2, 3	16
c. Containment Ventilation Isolation					
1) Manual	2	1	2	1, 2, 3, 4	17
2) Automatic Actuation Logic	2	1	2	1, 2, 3, 4	13
3) Containment Atmosphere Gaseous Radioactivity-High		per table 3.3-6			
4. STEAM LINE ISOLATION					
a. Manual	2/steam line	1/steam line	1/operating steam line	1, 2, 3	21
b. Automatic Actuation logic	2	1	2	1, 2, 3	20
c. Containment Pressure--High-High	4	2	3	1, 2, 3	16

TABLE 3.3-4 (Continued)

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION TRIP SETPOINTS

FUNCTIONAL UNIT	TRIP SETPOINT	ALLOWABLE VALUES
2. Containment Atmosphere Gaseous Radioactivity	per Table 3.3-6	
4. STEAM LINE ISOLATION		
a. Manual	Not Applicable	Not Applicable
b. Automatic Actuation Logic	Not Applicable	Not Applicable
c. Containment Pressure--High-High	$\leq$ 23.5 psig	$\leq$ 24 psig
d. Steam Flow in Two Steam Lines -- High Coincident with T_{avg} -- low-low or Steam Line Pressure--low	$\leq$ A function defined as follows: A Δp corresponding to 40% of full steam flow betweem 0% and 20% load and then a Δp increasing linearly to a Δp corresponding to 110% of full steam flow at full load $T_{avg} \geq$ 543°F $\geq$ 500 psig steam line pressure	$\leq$ A function defined as follows: A Δp corresponding to 44% of full steam flow between 0% and 20% load and then a Δp increasing linearly to a Δp corresponding to 111.5% of full steam flow at full load $T_{avg} \geq$ 541°F $\geq$ 480 psig steam line pressure

TABLE 4.3-2 (Continued)

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION
SURVEILLANCE REQUIREMENTS

FUNCTIONAL UNIT	CHANNELS CHECKS	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST	MODES IN WHICH SURVEILLANCE REQUIRED
3. CONTAINMENT ISOLATION				
a. Phase "A" Isolation				
1) Manual	N.A.	N.A.	R	1, 2, 3, 4
2) From Safety Injection Automatic Actuation Logic	N.A.	N.A.	M(2)	1, 2, 3, 4
b. Phase "B" Isolation				
1) Manual	N.A.	N.A.	R	1, 2, 3, 4
2) Automatic Actuation Logic	N.A.	N.A.	M(2)	1, 2, 3, 4
3) Containment Pressure--High-High	S	R	M(3)	1, 2, 3
c. Containment Ventilation Isolation				
1) Manual	N.A.	N.A.	R	1, 2, 3, 4
2) Automatic Actuation Logic	N.A.	N.A.	M(2)	1, 2, 3, 4
3) Containment Radioactivity -- High	per table 4.3-3			

TABLE 3.3-6

RADIATION MONITORING INSTRUMENTATION

INSTRUMENT	MINIMUM CHANNELS OPERABLE	APPLICABLE MODES	ALARM/TRIP SETPOINT	MEASUREMENT RANGE	ACTION
1. AREA MONITORS					
a. Fuel Storage Area - R5/R9	1	*	$\leq$ 15 mR/hr	10^{-1} - 10^{4} mR/h r	23
b. Containment Area - R44	2	1, 2, 3 & 4	$\leq 10^{3}$ R/hr	1 - 10^{7} R/h r	26
2. PROCESS MONITORS					
a. Containment					
1) Gaseous Activity					
a) Purge & Pressure-Vacuum Relief Isolation - R12a	1#	6 and 1, 2, 3, 4 & 5	$\leq$ 2 x background per Specification 3.3.3.9	10^{1} - 10^{6} cpm	26
b) RCS Leakage Detection - R12a		1, 2, 3 & 4	N/A	10^{1} - 10^{6} cpm	24
2) Air Particulate Activity					
a) Purge & Pressure Vacuum Relief Isolation - R11a	1	6	$\leq$ 2 x background	10^{1} - 10^{6} cpm	25
b) RCS Leakage Detection - R11a		1, 2, 3 & 4	N/A	10^{1} - 10^{6} cpm	
b. Noble Gas Effluent Monitors					
1) Medium Range Auxiliary Building Exhaust System (Plant Vent) - R45B	1	1, 2, 3 & 4	$\leq 3.0 \times 10^{-2}$ uCi/cm^3 (Alarm only)	10^{-3} - 10^{1} uCi/cm^3	26
2) High Range Auxiliary Building Exhaust System (Plant Vent) - R45C	1	1, 2, 3 & 4	$\leq 1.0 \times 10^{2}$ uCi/cm^3 (Alarm only)	10^{-1} - 10^{5} uCi/cm^3	26

*With fuel in the storage pool or building.
#The unit vent sampling monitor (R-41c) may also function in this capacity when the purge/pressure-vacuum relief isolation valves are open.

TABLE 3.3-6 (CONTINUED)
RADIATION MONITORING INSTRUMENTATION

INSTRUMENT	MINIMUM CHANNELS OPERABLE	APPLICABLE MODES	ALARM/TRIP SETPOINT	MEASUREMENT RANGE	ACTION
2. PROCESS MONITORS					
b. Noble Gas Effluent Monitors					
3) Main Steamline Discharge (Safety Valves and Atmospheric Steam Dumps) - R46	1/ MS Line	1, 2, 3 & 4	10 mR/hr (alarm only)	1 - 10^4 mR/hr	26
4) Condenser Exhaust System - R15	1	1, 2, 3 & 4	$\leq$ 7.12 x 10^4 cpm (alarm only)	1 - 10^6 cpm	26

TABLE 3.3-6 (Continued)

TABLE NOTATION

ACTION 23 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, perform area surveys of the monitored area with portable monitoring instrumentation at least once per 24 hours.

ACTION 24 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, comply with the ACTION requirements of Specification 3.4.6.1.

ACTION 25 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, comply with the ACTION requirements of Specification 3.9.9.

ACTION 26 - With the number of OPERABLE Channels less than required by the Minimum Channels OPERABLE requirements, initiate the preplanned alternate method of monitoring the appropriate parameter(s), within 72 hours, and:

1) either restore the inoperable Channel(s) to OPERABLE status within 7 days of the event, or

2) prepare and submit a Special Report to the Commission pursuant to Specification 6.9.2 within 14 days following the event outlining the action taken, the cause of the inoperability and the plans and schedule for restoring the system to OPERABLE status.

TABLE 4.3-3

RADIATION MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

INSTRUMENT	CHANNELS CHECKS	SOURCE CHECKS	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST	MODES IN WHICH SURVEILLANCE REQUIRED
1. AREA MONITORS					
a. Fuel Storage Area - R5/R9	S	M	R	Q	*
b. Containment Area - R44	S	M	R	Q	1, 2, 3 & 4
2. PROCESS MONITORS					
a. Containment Monitors					
1) Gaseous Activity					
a) Purge & Pressure Vacuum Relief Isolation - R12a	S	M	R	Q	1, 2, 3, 4, 5 & 6
b) RCS Leakage Detection - R12a	S	M	R	Q	1, 2, 3 & 4
2) Air Particulate Activity					
a) Purge & Pressure - Vacuum Relief Isolation - R11a	S	M	R	Q	1, 2, 3, 4 & 6
b) RCS Leakage Detection - R11a	S	M	R	Q	1, 2, 3 & 4
b. Noble Gas Effluent Monitors					
1) Medium Range Auxiliary Building Exhaust System (plant vent) - R45B	S	M	R	Q	1, 2, 3 & 4
2) High Range Auxiliary Building Exhaust System (plant vent) - R45C	S	M	R	Q	1, 2, 3 & 4

*With fuel in the storage pool or building.

TABLE 4.3-3 (CONTINUED)

RADIATION MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

INSTRUMENT	CHANNELS CHECKS	SOURCE CHECKS	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST	MODES IN WHICH SURVEILLANCE REQUIRED
2. PROCESS MONITORS					
b. Noble Gas Effluent Monitors					
3) Main Steamline Discharge (Safety valves & atmospheric dumps) - R46	S	M	R	Q	1, 2, 3 & 4
4) Condenser Exh. Sys. - R15	S	M	R	Q	1, 2, 3 & 4

INSTRUMENTATION

ACCIDENT MONITORING INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.3.3.7 The accident monitoring instrumentation channels shown in Table 3.3-11a and Table 3.3-11b shall be operable.

APPLICABILITY: MODES 1, 2, and 3.

ACTION:

a. As shown in Table 3.3-11a and Table 3.3-11b.

b. The provisions of Specification 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.3.3.7 Each accident monitoring instrumentation channel shall be demonstrated OPERABLE by performance of the CHANNEL CHECK AND CHANNEL CALIBRATION operations at the frequencies shown in Table 4.3-11.

TABLE 3.3-11a

ACCIDENT MONITORING INSTRUMENTATION

	INSTRUMENT	TOTAL NO. OF CHANNELS	REQUIRED NO. OF CHANNELS	ACTION
1.	Reactor Coolant Outlet Temperature - T_{HOT} (Wide Range)	4 (1/loop)	2	1
2.	Reactor Coolant Inlet Temperature - T_{COLD} (Wide Range)	4 (1/loop)	2	
3.	Reactor Coolant Pressure (Wide Range)	2	2	1
4.	Pressurizer Water Level	3 (hot)	2	1
5.	Steam Line Pressure	3/Steam Generator	2/Steam Generator	1
6.	Steam Generator Water Level (Narrow Range)	3/Steam Generator	2/Steam Generator	1
7.	Steam Generator Water Level (Wide Range)	4/(1/Steam Generator)	4 (1/Steam Generator)	1
8.	Refueling Water Storage Tank Water Level	4	2	1
9.	Boric Acid Tank Solution Level	2 (1/tank)	2 (1/tank)	3
10.	Auxiliary Feedwater Flow Rate	4 (1/Steam Generator)	4 (1/Steam Generator)	4
11.	Reactor Coolant System Subcooling Margin Monitor	2*	2*	5
12.	PORV Position Indicator	2/valve**	2/valve**	1

TABLE 3.3-11a (CONTINUED)

ACCIDENT MONITORING INSTRUMENTATION

	INSTRUMENT	TOTAL NO. OF CHANNELS	REQUIRED NO. OF CHANNELS	ACTION
13.	PORV Block Valve Position Indicator	2/valve**	2/valve**	1
14.	Pressurizer Safety Valve Position Indicator	2/valve**	2/valve**	1
15.	Containment Pressure - Narrow Range	4	2	1
16.	Containment Pressure - Wide Range	2	2	7
17.	Containment Water Level - Wide Range	2	2	7
18.	Core Exit Thermocouples	65	4/core quadrant	1

(*) Total number of channels is considered to be two (2) with one (1) of the channels being manual calculation by licensed control room personnel using data from OPERABLE wide range Reactor Coolant Pressure and Temperature along with Steam Tables as described in ACTION 5.

(**) Total number of channels is considered to be two (2) with one (1) of the channels being any one (1) of the following alternate means of determining PORV, PORV Block, or Safety Valve position: Tailpipe Temperatures for the valves, Pressurizer Relief Tank Temperature, Pressurizer Relief Tank Level Operable.

TABLE 3.3-11b

ACCIDENT MONITORING INSTRUMENTATION

	INSTRUMENT	TOTAL NO. OF CHANNELS	MINIMUM NO. OF CHANNELS	ACTION
1.	Reactor Coolant Outlet Temperature - T_{HOT} (Wide Range)	4 (1/loop)	1	2
2.	Reactor Coolant Inlet Temperature - T_{COLD} (Wide Range)	4 (1/loop)	1	
3.	Reactor Coolant Pressure (Wide Range)	2	1	2
4.	Pressurizer Water Level	3 (hot)	1	2
5.	Steam Line Pressure	3/Steam Generator	1/Steam Generator	2
6.	Steam Generator Water Level (Narrow Range)	3/Steam Generator	1/Steam Generator	2
7.	Steam Generator Water Level (Wide Range)	4/(1/Steam Generator)	3 (1/Steam Generator)	2
8.	Refueling Water Storage Tank Water Level	4	1	2
9.	Boric Acid Tank Solution Level	2 (1/tank)	1 (1/tank)	3
10.	Auxiliary Feedwater Flow Rate	4 (1/Steam Generator)	3 (1/Steam Generator)	6
11.	Reactor Coolant System Subcooling Margin Monitor	2*	1	6
12.	PORV Position Indicator	2/valve**	1	2

TABLE 3.3-11b (CONTINUED)

ACCIDENT MONITORING INSTRUMENTATION

	INSTRUMENT	TOTAL NO. OF CHANNELS	MINIMUM NO. OF CHANNELS	ACTION
13.	PORV Block Valve Position Indicator	2/valve**	1	2
14.	Pressurizer Safety Valve Position Indicator	2/valve**	1	2
15.	Containment Pressure - Narrow Range	4	1	2
16.	Containment Pressure - Wide Range	2	1	2
17.	Containment Water Level - Wide Range	2	1	2
18.	Core Exit Thermocouples	65	2/core quadrant	2

(*) Total number of channels is considered to be two (2) with one (1) of the channels being manual calculation by licensed control room personnel using data from OPERABLE wide range Reactor Coolant Pressure and Temperature along with Steam Tables as described in ACTION 5.

(**) Total number of channels is considered to be two (2) with one (1) of the channels being any one (1) of the following alternate means of determining PORV, PORV Block, or Safety Valve position: Tailpipe Temperatures for the valves, Pressurizer Relief Tank Temperature Pressurizer Relief Tank Level Operable.

TABLE 3.3-11a & b (continued)

TABLE NOTATION

ACTION 1 With the number of OPERABLE accident monitoring channels less than the Required Number of Channels shown in Table 3.3-11a, restore the inoperable channel(s) to OPERABLE status within 7 days, or be in HOT SHUTDOWN within the next 12 hours.

ACTION 2 With the number of OPERABLE accident monitoring channels less than the MINIMUM Number of Channels shown in Table 3.3-11b, restore the inoperable channel(s) to OPERABLE status within 48 hours or be in HOT SHUTDOWN within the next 12 hours.

ACTION 3 With the number of OPERABLE channels one less than the Required Number of Channels shown in Table 3.3-11a, operation may proceed provided that the Boric Acid Tank associated with the remaining OPERABLE channel satisfies all requirements of Specification 3.1.2.8.a.

ACTION 4 With the number of OPERABLE channels one less than the Required Number of Channels shown in Table 3.3.11a, operations may proceed provided that an OPERABLE Steam Generator Wide Range Level channel is available as an alternate means of indication for the Steam Generator with no OPERATABLE Auxiliary Feedwater Flow Rate channel.

ACTION 5 With the number of OPERABLE channels less than the Required Number of Channels show in Table 3.3-11a, operation may proceed provided that Steam Tables are available in the Control Room and the following Required Channels shown in Table 3.3-11a are OPERABLE to provide an alternate means of calculating Reactor Coolant System subcooling margin:

a. Reactor Coolant Outlet Temperature - T_{HOT} (Wide Range)

b. Reactor Coolant Pressure (Wide Range)

TABLE 3.3-11a & b (continued)

TABLE NOTATION

ACTION 6 With the number of OPERABLE channels less than the Minimum Number of channels shown in Table 3.3-11b, restore the inoperable channel(s) to OPERABLE status within 7 days, or be in HOT SHUTDOWN within the next 12 hours.

ACTION 7 With the number of OPERABLE channels one less than the Required Number of Channels shown in Table 3.3-11a, operation may proceed until the next CHANNEL CALIBRATION (which shall be performed upon the next entry into MODE 5, COLD SHUTDOWN).

TABLE 4.3-11
SURVEILLANCE REQUIREMENTS FOR
ACCIDENT MONITORING INSTRUMENTATION

	INSTRUMENT	CHANNEL CHECKS	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST
1.	Reactor Coolant Outlet Temperature - T_{HOT} (Wide Range)	M	R	NA
2.	Reactor Coolant Inlet Temperature - T_{COLD} (Wide Range)	M	R	NA
3.	Reactor Coolant Pressure (Wide Range)	M	R	
4.	Pressurizer Water Level	M	R	NA
5.	Steam Line Pressure	M	R	NA
6.	Steam Generator Water Level (Narrow Range)	M	R	NA
7.	Steam Generator Water Level (Wide Range)	M	R	NA
8.	Refueling Water Storage Tank Water Level	M	R	NA
9.	Boric Acid Tank Solution Level	M	R	NA
10.	Auxiliary Feedwater Flow Rate	SU#	R	NA
11.	Reactor Coolant System Subcooling Margin Monitor	M	N/A*	NA

#Auxiliary Feedwater System is used on each startup and flow rate indication is verified at that time.

*The instruments used to develop RCS subcooling margin are calibrated on an 18 month cycle; the monitor will be compared quarterly with calculated subcooling margin for known input values.

TABLE 4.3-11 (CONTINUED)
SURVEILLANCE REQUIREMENTS FOR
ACCIDENT MONITORING INSTRUMENTATION

	INSTRUMENT	CHANNEL CHECK	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST
12.	PORV Position Indicator	M	NA	Q
13.	PORV Block Valve Position Indicator	M	NA	Q
14.	Pressurizer Safety Valve Position Indicator	M	NA	R
15.	Containment Pressure - Narrow Range	M	NA	NA
16.	Containment Pressure - Wide Range	M	R	NA
17.	Containment Water Level - Wide Range	M	R	NA
18.	Core Exit Thermocouples	M	R	NA

INSTRUMENTATION

RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.3.3.9 The radioactive gaseous effluent monitoring instrumentation channels shown in Table 3.3-13 shall be OPERABLE with their alarm/trip setpoints set to ensure that the limits of Specification 3.11.2.1 are not exceeded. The alarm/trip setpoints of these channels shall be determined in accordance with the (ODCM).

APPLICABILITY: As shown in Table 3.3-13

ACTION:

a. With a radioactive gaseous effluent monitoring instrumentation channel alarm/trip setpoint less conservative than required by the above specification, without delay suspend the release of radioactive gaseous effluents monitored by the affected channel or declare the channel inoperable or change the setpoint so it is acceptably conservative.

b. With less than the minimum number of radioactive gaseous effluent monitoring instrumentation channels OPERABLE, take the ACTION shown in Table 3.3-13. Exert best efforts to return the instrument to operable status within 30 days and, if unsuccessful, explain in the next semi-annual radioactive effluent release report why the inoperability was not corrected in a timely manner.

c. The provisions of Specifications 3.0.3, 3.0.4, and 6.9.1.9.b are not applicable.

SURVEILLANCE REQUIREMENTS

4.3.3.9 Each radioactive gaseous effluent monitoring instrumentation channel shall be demonstrated OPERABLE by performance of the CHANNEL CHECK, SOURCE CHECK, CHANNEL CALIBRATION, AND CHANNEL FUNCTIONAL TEST operations at the frequencies shown in Table 4.3-13.

TABLE 3.3-13

RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION

INSTRUMENT	MINIMUM CHANNELS OPERABLE	APPLICABILITY	ACTION
1. WASTE GAS HOLDUP SYSTEM			
a. Noble Gas Activity Monitor - Providing Alarm and Automatic Termination of Release (2-R41C)	1	*	31
b. Oxygen Monitor	1	**	35
2. CONTAINMENT PURGE AND PRESSURE - VACUUM RELIEF			
a. Noble Gas Activity Monitor - Providing Alarm and Automatic Termination of Release (2-R41C or 2-R12A)	1	***	34
3. PLANT VENT HEADER SYSTEM#			
a. Noble Gas Activity Monitor (2-R16 or 2-R41C)	1	*	33
b. Iodine Sampler	1	*	36
c. Particulate Sampler	1	*	36
d. Flow Rate Monitor	1	*	32
e. Sampler Flow Rate Monitor	1	*	32

The following process streams are routed to the plant vent where they are effectively monitored by the instruments described:

(a) Condenser Air Removal System
(b) Auxiliary Building Ventilation System
(c) Fuel Handling Building Ventilation System
(d) Radwaste Area Ventilation System
(e) Containment Purges

Action item #34 applies to the purging of the containment only.

TABLE 3.3-13 (Continued)

TABLE NOTATION

ACTION 31 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, the contents of the tank(s) may be released to the environment provided that prior to initiating the release:

a. At least two independent samples of the tank's contents are analyzed, and

b. At least two technically qualified members of the Facility Staff independently verify the release rate calculations and discharge valving lineup;

Otherwise, suspend release of radioactive effluents via this pathway.

ACTION 32 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, effluent releases via this pathway may continue provided the flow rate is estimated at least once per 4 hours.

ACTION 33 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, effluent releases via this pathway may continue provided grab samples are taken at least once per 8 hours and these samples are analyzed for gross activity within 24 hours.

ACTION 34 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, immediately suspend PURGING of radioactive effluents via this pathway.

* At all times, other than when the line is valved out and locked.

** During waste gas holdup system operation.

*** During containment purges or containment pressure - vacuum reliefs.

TABLE 3.3-13 (Continued)

TABLE NOTATION

ACTION 35 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, operation of the waste gas holdup system may continue provided grab samples are collected at least once per 24 hours and analyzed within the following 4 hours.

ACTION 36 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, effluent releases via this pathway may continue provided samples are continuously collected with auxiliary sampling equipment as required in Table 4.11-2.

TABLE 4.3-13

RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

INSTRUMENT	CHANNELS OPERABLE	SOURCE CHECK	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST	MODES IN WHIC SURVEILLANCE REQUIRED
1. WASTE GAS HOLDUP SYSTEM					
a. Noble Gas Activity Monitor - Providing Alarm and Automatic Termination of Release (2-R41C)	P	P	R(3)	Q(1)	*
b. Oxygen Monitor	D	N.A.	Q(4)	M	**
2. CONTAINMENT PURGE AND PRESSURE - VACUUM RELIEF					
a. Noble Gas Activity Monitor - Providing Alarm and Automatic Termination of Release (2-R41C or 2-R12A)	P	P	R(3)	Q(1)	***
3. PLANT VENT HEADER SYSTEM#					
a. Noble Gas Activity Monitor (2-R16 or 2-R41C)	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	N.A.	*
e. Sampler Flow Rate Monitor	W	N.A.	R	N.A.	*

The following process streams are routed to the plant vent where they are effectively monitored by the instruments described:

(a) Condenser Air Removal System
(b) Auxiliary Building Ventilation System
(c) Fuel Handling Building Ventilation System
(d) Radwaste Area Ventilation System
(e) Containment Purges

TABLE 4.3-13 (Continued)

TABLE NOTATION

(1) The CHANNEL FUNCTIONAL TEST shall also demonstrate that automatic isolation of this pathway and control room alarm annunciation occurs if any of the following conditions exist:

1. Instrument indicates measured levels above the alarm/trip setpoint.

2. Circuit failure. (Loss of Power)

3. Instrument indicates a downscale failure. (Alarm Only)

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

1. Instrument indicates measured levels above the alarm/trip setpoint.

2. Circuit failure. (Loss of Power)

3. Instrument indicates a downscale failure.

4. Instrument controls not set in operate mode.

(3) The initial CHANNEL CALIBRATION was performed using appropriate liquid or gaseous calibration sources obtained from reputable suppliers. The activity of the calibration sources were reconfirmed using a multi-channel analyzer which was calibrated using one or more NBS standards.

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

1. One volume percent oxygen, balance nitrogen, and

2. Four volume percent oxygen, balance nitrogen.

* At all times
** During waste gas holdup system operation..
*** During containment purge or containment pressure - vacuum reliefs.