

October 21, 1994

Docket
File

Mr. Robert E. Denton
Vice President - Nuclear Energy
Baltimore Gas and Electric Company
Calvert Cliffs Nuclear Power Plant
1650 Calvert Cliffs Parkway
Lusby, MD 20657-4702

SUBJECT: ISSUANCE OF AMENDMENTS FOR CALVERT CLIFFS NUCLEAR POWER PLANT,
UNIT NO. 1 (TAC NO. M90126) AND UNIT NO. 2 (TAC NO. M90127)

Dear Mr. Denton:

The Commission has issued the enclosed Amendment No.199 to Facility Operating License No. DPR-53 and Amendment No. 176 to Facility Operating License No. DPR-69 for the Calvert Cliffs Nuclear Power Plant, Unit Nos. 1 and 2, respectively. The amendments consist of changes to the Technical Specifications (TSs) in response to your application transmitted by letter dated August 4, 1994.

The amendments delete TSs 3/4.3.3.3, 6.9.2.b, 6.9.2.d, and Bases 3/4.3.3.3, which provide the requirements for the operation and testing of the seismic monitoring instrumentation, and relocates them to the Updated Final Safety Analysis Report and plant procedures.

A copy of the related Safety Evaluation is enclosed. A Notice of Issuance will be included in the Commission's next regular biweekly Federal Register notice.

Sincerely,
Original signed by
Daniel G. McDonald, Senior Project Manager
Project Directorate I-1
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Docket Nos. 50-317
and 50-318

- Enclosures: 1. Amendment No.199 to DPR-53
2. Amendment No.176 to DPR-69
3. Safety Evaluation

cc w/encls: See next page

*See previous concurrence

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DATED: October 21, 1994

AMENDMENT NO. 199 TO FACILITY OPERATING LICENSE NO. DPR-53-CALVERT CLIFFS
UNIT 1

AMENDMENT NO. 176 TO FACILITY OPERATING LICENSE NO. DPR-69-CALVERT CLIFFS
UNIT 2

Docket File

PUBLIC

PDI-1 Reading

S. Varga, 14/E/4

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L. Marsh

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OGC

D. Hagan, 3302 MNBB

C. Liang, 8/E/23

G. Hill (4), P1-22

C. Grimes, 11/F/23

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ACRS (10)

OPA

OC/LFDCB

PD plant-specific file

C. Cowgill, Region I

Others as required

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UNITED STATES
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

October 21, 1994

Mr. Robert E. Denton
Vice President - Nuclear Energy
Baltimore Gas and Electric Company
Calvert Cliffs Nuclear Power Plant
1650 Calvert Cliffs Parkway
Lusby, MD 20657-4702

SUBJECT: ISSUANCE OF AMENDMENTS FOR CALVERT CLIFFS NUCLEAR POWER PLANT,
UNIT NO. 1 (TAC NO. M90126) AND UNIT NO. 2 (TAC NO. M90127)

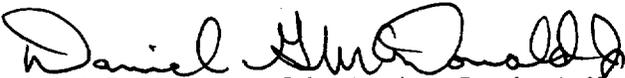
Dear Mr. Denton:

The Commission has issued the enclosed Amendment No.199 to Facility Operating License No. DPR-53 and Amendment No. 176 to Facility Operating License No. DPR-69 for the Calvert Cliffs Nuclear Power Plant, Unit Nos. 1 and 2, respectively. The amendments consist of changes to the Technical Specifications (TSs) in response to your application transmitted by letter dated August 4, 1994.

The amendments delete TSs 3/4.3.3.3, 6.9.2.b, 6.9.2.d, and Bases 3/4.3.3.3, which provide the requirements for the operation and testing of the seismic monitoring instrumentation, and relocates them to the Updated Final Safety Analysis Report and plant procedures.

A copy of the related Safety Evaluation is enclosed. A Notice of Issuance will be included in the Commission's next regular biweekly Federal Register notice.

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Daniel G. McDonald, Senior Project Manager
Project Directorate I-1
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Docket Nos. 50-317
and 50-318

Enclosures: 1. Amendment No. 199 to DPR-53
2. Amendment No. 176 to DPR-69
3. Safety Evaluation

cc w/encls: See next page

Mr. Robert E. Denton
Baltimore Gas & Electric Company

Calvert Cliffs Nuclear Power Plant
Unit Nos. 1 and 2

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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

BALTIMORE GAS AND ELECTRIC COMPANY

DOCKET NO. 50-317

CALVERT CLIFFS NUCLEAR POWER PLANT UNIT NO. 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 199
License No. DPR-53

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Baltimore Gas and Electric Company (the licensee) dated August 4, 1994, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act) and the Commission's rules and regulations set forth in 10 CFR Chapter I;
 - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
 - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
 - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
 - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.2. of Facility Operating License No. DPR-53 is hereby amended to read as follows:

2. Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 199, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of the date of its issuance and shall be implemented within 30 days.

FOR THE NUCLEAR REGULATORY COMMISSION



Ledyard B. Marsh, Director
Project Directorate I-1
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: October 21, 1994



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

BALTIMORE GAS AND ELECTRIC COMPANY

DOCKET NO. 50-318

CALVERT CLIFFS NUCLEAR POWER PLANT, UNIT NO. 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 176
License No. DPR-69

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Baltimore Gas and Electric Company (the licensee) dated August 4, 1994, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act) and the Commission's rules and regulations set forth in 10 CFR Chapter I;
 - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
 - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
 - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
 - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.2. of Facility Operating License No. DPR-69 is hereby amended to read as follows:

2. Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 176, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of the date of its issuance and shall be implemented within 30 days.

FOR THE NUCLEAR REGULATORY COMMISSION



Ledyard B. Marsh, Director
Project Directorate I-1
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: October 21, 1994

ATTACHMENT TO LICENSE AMENDMENTS

AMENDMENT NO. 199 FACILITY OPERATING LICENSE NO. DPR-53

AMENDMENT NO. 176 FACILITY OPERATING LICENSE NO. DPR-69

DOCKET NOS. 50-317 AND 50-318

Revise Appendix A as follows:

Remove Pages

DRP-53
IV
3/4 3-27 thru 3-29
3/4 3-30 thru 3-54
B 3/4 3-2
B 3/4 3-3 thru 3-4
6-26

DRP-69

IV
3/4 3-27 thru 3-29
3/4 3-30 thru 3-53
B 3/4 3-2
B 3/4 3-3 thru 3-4
6-26

Insert Pages

DRP-53
IV
-
3/4 3/27 thru 3-51*
B 3/4 3-2
B 3/4 3-3*
6-26

DRP-69

IV
-
3/4 3-27 thru 3-50*
B 3/4 3-2
B 3/4 3-3*
6-26

*Rollover pages - vertical line at amendment number indicating rollover page with no technical specification changes.

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3/4.3 INSTRUMENTATION

3/4.3.3 MONITORING INSTRUMENTATION

Meteorological Instrumentation

LIMITING CONDITION FOR OPERATION

3.3.3.4 The meteorological monitoring instrumentation channels shown in Table 3.3-8 shall be **OPERABLE**.

APPLICABILITY: At all times.

ACTION:

- a. With one or more required meteorological monitoring channels inoperable for more than 7 days, prepare and submit a Special Report to the Commission pursuant to Specification 6.9.2 within the next 10 days outlining the cause of the malfunction and the plans for restoring the channel(s) to **OPERABLE** status.
- b. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.3.3.4 Each of the above meteorological monitoring instrumentation channels shall be demonstrated **OPERABLE** by the performance of the **CHANNEL CHECK** and **CHANNEL CALIBRATION** operations at the frequencies shown in Table 4.3-5.

3/4.3 INSTRUMENTATION

TABLE 3.3-8

METEOROLOGICAL MONITORING INSTRUMENTATION

<u>INSTRUMENT</u>	<u>MINIMUM CHANNELS OPERABLE</u>
1. WIND SPEED	
a. Nominal Elev. 10M	1
b. Nominal Elev. 60M	1
2. WIND DIRECTION	
a. Nominal Elev. 10M	1
b. Nominal Elev. 60M	1
3. AIR TEMPERATURE - DELTA T (10M-60M)	1

3/4.3 INSTRUMENTATION

TABLE 4.3-5

METEOROLOGICAL MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

<u>INSTRUMENT</u>	<u>CHANNEL CHECK</u>	<u>CHANNEL CALIBRATION</u>
1. WIND SPEED		
a. Nominal Elev. 10M	D	SA
b. Nominal Elev. 60M	D	SA
2. WIND DIRECTION		
a. Nominal Elev. 10M	D	SA
b. Nominal Elev. 60M	D	SA
3. AIR TEMPERATURE - DELTA T (10M-60M)	D	SA

3/4.3 INSTRUMENTATION

3/4.3.3 MONITORING INSTRUMENTATION

Remote Shutdown Instrumentation

LIMITING CONDITION FOR OPERATION

3.3.3.5 The remote shutdown monitoring instrumentation channels shown in Table 3.3-9 shall be **OPERABLE** with readouts displayed external to the Control Room.

APPLICABILITY: **MODES 1, 2 and 3.**

ACTION:

- a. With the number of **OPERABLE** remote shutdown monitoring channels less than required by Table 3.3-9, either restore the inoperable channel to **OPERABLE** status within 30 days, or be in **HOT SHUTDOWN** within the next 12 hours.
- b. The provisions of Specification 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.3.3.5 Each remote shutdown monitoring instrumentation channel shall be demonstrated **OPERABLE** by performance of the **CHANNEL CHECK** and **CHANNEL CALIBRATION** operations at the frequencies shown in Table 4.3-6.

TABLE 3.3-9**REMOTE SHUTDOWN MONITORING INSTRUMENTATION**

<u>INSTRUMENT</u>	<u>READOUT LOCATION</u>	<u>MEASUREMENT RANGE</u>	<u>MINIMUM CHANNELS OPERABLE</u>
1. Wide Range Neutron Flux	1C43*	0.1 cps-200% power*	1*
2. Reactor Trip Breaker Indication	Cable Spreading Room	OPEN-CLOSE	1/trip breaker
3. Reactor Coolant Cold Leg Temperature	1C43	212-705°F	1
4. Pressurizer Pressure	1C43	0-4000 psia	1
5. Pressurizer Level	1C43	0-360 inches	1
6. Steam Generator Pressure	1C43	0-1200 psig	1/steam generator
7. Steam Generator Level	1C43	-401 to +63.5 inches	1/steam generator

* When the 1C43 instrumentation is inoperable, the wide range neutron flux monitors located in the auxiliary feedwater pump room may be utilized to meet this requirement. During the period when the instruments are utilized to meet the above requirement, they will be subject to the surveillance requirements of Table 4.3-6.

3/4.3 INSTRUMENTATION

TABLE 4.3-6

REMOTE SHUTDOWN MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

<u>INSTRUMENT</u>	<u>CHANNEL CHECK</u>	<u>CHANNEL CALIBRATION</u>
1. Wide Range Neutron Flux	M	NA
2. Reactor Trip Breaker Indication	M	NA
3. Reactor Coolant Cold Leg Temperature	M	R
4. Pressurizer Pressure	M	R
5. Pressurizer Level	M	R
6. Steam Generator Level (Wide Range)	M	R
7. Steam Generator Pressure	M	R

3/4.3 INSTRUMENTATION

3/4.3.3 MONITORING INSTRUMENTATION

Post-Accident Instrumentation

LIMITING CONDITION FOR OPERATION

3.3.3.6 The post-accident monitoring instrumentation channels shown in Table 3.3-10 shall be **OPERABLE**.

APPLICABILITY: **MODES 1, 2 and 3.**

ACTION:

- a. As shown in Table 3.3-10.
- b. The provisions of Specification 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.3.3.6 Each post-accident monitoring instrumentation channel shall be demonstrated **OPERABLE** by performance of the **CHANNEL CHECK** and **CHANNEL CALIBRATION** operations at the frequencies shown in Table 4.3-10.

TABLE 3.3-10**POST-ACCIDENT MONITORING INSTRUMENTATION**

<u>INSTRUMENT</u>	<u>MINIMUM CHANNELS OPERABLE</u>	<u>ACTION</u>
1. Containment Pressure	2	31
2. Wide Range Logarithmic Neutron Flux Monitor	2	31
3. Reactor Coolant Outlet Temperature	2	31
4. Pressurizer Pressure	2	31
5. Pressurizer Level	2	31
6. Steam Generator Pressure	2/steam generator	31
7. Steam Generator Level (Wide Range)	2/steam generator	31
8. Auxiliary Feedwater Flow Rate	2/steam generator	31
9. RCS Subcooled Margin Monitor	1	31
10. PORV/Safety Valve Acoustic Flow Monitoring	1/valve	31
11. PORV Solenoid Power Indication	1/valve	31
12. Feedwater Flow	2	31
13. Containment Water Level (Wide Range)	2	32, 33
14. Reactor Vessel Water Level	2*	34, 35
15. Core Exit Thermocouple System	2 locations/core quadrant	31

* A channel has eight sensors in a probe. A channel is **OPERABLE** if four or more sensors, one or more in the upper three and three or more in the lower five, are **OPERABLE**.

TABLE 3.3-10 (Continued)

ACTION STATEMENTS

- ACTION 31 -** With the number of **OPERABLE** post-accident monitoring channels less than required by Table 3.3-10, either restore the inoperable channel to **OPERABLE** status within 30 days or be in **HOT SHUTDOWN** within the next 12 hours.
- ACTION 32 -** With the number of **OPERABLE** post-accident monitoring channels one less than the Minimum Channels **OPERABLE** requirement in Table 3.3-10, operation may proceed provided the inoperable channel is restored to **OPERABLE** status at the next outage of sufficient duration.
- ACTION 33 -** With the number of **OPERABLE** post-accident monitoring channels two less than required by Table 3.3-10, either restore one inoperable channel to **OPERABLE** status within 30 days or be in **HOT SHUTDOWN** within the next 12 hours.
- ACTION 34 -** With the number of **OPERABLE** post-accident monitoring channels one less than the Minimum Channels **OPERABLE** requirement in Table 3.3-10, either restore the system to **OPERABLE** status within 7 days if repairs are feasible without shutting down or prepare and submit a Special Report to the Commission pursuant to Specification 6.9.2 within 30 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.
- ACTION 35 -** With the number of **OPERABLE** channels two less than required by Table 3.3-10, either restore the inoperable channel(s) to **OPERABLE** status within 48 hours if repairs are feasible without shutting down or:
1. Initiate an alternate method of monitoring for core and Reactor Coolant System voiding;
 2. Prepare and submit a Special Report to the Commission pursuant to Specification 6.9.2 within 30 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; and
 3. Restore the system to **OPERABLE** status at the next scheduled refueling.

TABLE 4.3-10**POST-ACCIDENT MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS**

<u>INSTRUMENT</u>	<u>CHANNEL CHECK</u>	<u>CHANNEL CALIBRATION</u>
1. Containment Pressure	M	R
2. Wide Range Logarithmic Neutron Flux Monitor	M	NA
3. Reactor Coolant Outlet Temperature	M	R
4. Pressurizer Pressure	M	R
5. Pressurizer Level	M	R
6. Steam Generator Pressure	M	R
7. Steam Generator Level (Wide Range)	M	R
8. Auxiliary Feedwater Flow Rate	M	R
9. RCS Subcooled Margin Monitor	M	R
10. PORV/Safety Valve Acoustic Monitor	NA	R
11. PORV Solenoid Power Indication	NA	NA
12. Feedwater Flow	M	R
13. Containment Water Level (Wide Range)	M	R
14. Reactor Vessel Water level	M	NA
15. Core Exit Thermocouple System	M	R*

* The performance of a CHANNEL CALIBRATION operation exempts the Core Exit Thermocouple but includes all electronic components. The Core Exit Thermocouple shall be calibrated prior to installation in the reactor core.

3/4.3 INSTRUMENTATION

3/4.3.3 MONITORING INSTRUMENTATION

Fire Detection Instrumentation

LIMITING CONDITION FOR OPERATION

3.3.3.7 As a minimum, the fire detection instrumentation for each fire detection zone shown in Table 3.3-11 shall be **OPERABLE**.

APPLICABILITY: Whenever equipment in that fire detection zone is required to be **OPERABLE**.

ACTION: With one or more of the fire detection instrument(s) shown in Table 3.3-11 inoperable:

- a. Within 1 hour establish a fire watch patrol to inspect the zone(s) with the inoperable instrument(s) at least once per hour, unless the instrument(s) is located inside the containment, then inspect the containment at least once per 8 hours or monitor the containment air temperature at least once per hour at the locations listed in Specification 4.6.1.5; or unless the instrument(s) is located in fire detection zones equipped with automatic wet pipe sprinkler systems alarmed and supervised to the Control Room, then within 1 hour and at least per 24 hours thereafter, inspect the zone(s) with inoperable instruments and verify that the Automatic Sprinkler System, including the water flow alarm and supervisory system, is **OPERABLE** by **CHANNEL FUNCTIONAL TEST**.
- b. Restore the inoperable instrument(s) to **OPERABLE** status within 14 days or prepare and submit a Special Report to the Commission pursuant to Specification 6.9.2 within the next 30 days outlining the action taken, the cause of the inoperability and the plans and schedule for restoring the instrument(s) to **OPERABLE** status.
- c. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.3.3.7.1 At least once per 6 months, at least 25% of the above required fire detection instruments which are accessible during plant operation shall be demonstrated **OPERABLE** by performance of a **CHANNEL FUNCTIONAL TEST**. Detectors selected for testing shall be selected on a rotating basis such

3/4.3 INSTRUMENTATION

SURVEILLANCE REQUIREMENTS (Continued)

that all detectors will be tested over a two year period. If in any detection zone there are less than four detectors, at least one different detector in that zone shall be tested every six months. For each detector found inoperable during functional testing, at least an additional 10% of all detectors or 10 detectors, whichever is less, shall also be tested. Fire detectors which are inaccessible during plant operation shall be demonstrated **OPERABLE** by the performance of a **CHANNEL FUNCTIONAL TEST** during each **COLD SHUTDOWN** exceeding 24 hours unless performed during the previous six months.

4.3.3.7.2 The NFPA Code 72D Class B supervised circuits supervision associated with the detector alarms of each of the above required fire detection instruments shall be demonstrated **OPERABLE** at least once per 6 months.

4.3.3.7.3 The non-supervised circuits, associated with detector alarms, between the instrument and the Control Room shall be demonstrated **OPERABLE** at least once per 31 days.

3/4.3 INSTRUMENTATION

TABLE 3.3-11

**FIRE DETECTION INSTRUMENTS
UNIT 1**

<u>ROOM/AREA AUX BLDG.</u>	<u>INSTRUMENT LOCATION</u>	<u>MINIMUM INSTRUMENTS OPERABLE*</u>		
		<u>HEAT</u>	<u>FLAME</u>	<u>SMOKE</u>
100/103/ 104/116 110	Corridors - Elev (-)10"-0" Coolant Waste Rec & Mon. Tk Pp Rm			5 2
111 112/114 113	Waste Processing Control Rm Coolant Waste Rec Tank Misc. Waste Receiver Tank Room		4	1 1
115 118/122 119/123	Charging Pump Room ECCS Pump Room ECCS Pump Room			3 7 7
200/202 209/210 212/219 207/208	Corridors, & Corridors & Corridors Waste Gas Equip Rm			13 3
216 217 218 220 221/326 222 223 224 225 226 227/316 228 301/304/300	Reactor Coolant Make-up Pumps Boric Acid Tank & Pump Room Volume Control Tank Room Degasifier Pump Room West Piping Penetration Room Hot Instrument Shop Hot Machine Shop East Piping Area Rad Exhaust Vent Equip Rm Service Water Pump Rm East Piping Penetration Rm Component Cooling Pump Rm Battery Room & Corridor		2 3 3	1 2 1 1 3 2 4 10 4 6 5 8 3

* Detection instruments located within the containment are not required to be **OPERABLE** during the performance of Type A Containment Leakage Rate Tests.

3/4.3 INSTRUMENTATION

TABLE 3.3-11 (Continued)

**FIRE DETECTION INSTRUMENTS
UNIT 1**

ROOM/AREA AUX BLDG.	INSTRUMENT LOCATION	MINIMUM INSTRUMENTS OPERABLE*		
		HEAT	FLAME	SMOKE
306/1C	Cable Spreading Rm & Cable Chase**	2		10
308	N/S Corridor			6
315	Main Steam Piping Area			6
317	Switchgear Room, Elev 27'-0"***			6
318	Purge Air Supply Room			2
319/325	West Passage and Vestibule			6
320	Spent Fuel Heat Exchanger Room			3
323	Passage 27' Valve Alley & Filter Rm			3
324	Letdown Heat Exchanger Rm			1
Elev. 27'-0"	Switchgear Vent Duct	1		
1A	Cable Chase 1A			1
1B	Cable Chase 1B			1
405	Control Room			6
410	N/S Corridor			4
417/418	Solid Waste Processing		2	3
413/419/420	Cask and Equip Loading Area &			
424/425/426	Cask and Equip Loading Area		3	22
421	Diesel Generator No. (12)**	2		
422	Diesel Generator No. (11)**	2		
423	West Electrical Pen Rm			3
428	East Piping Area			7
429	East Electrical Pen Rm			3
430	Switchgear Room Elev 45'-0"***			8
439	Refueling Water Tank Pump Rm			2
441	Spent Resin Metering Tank Rm			1
Elev 45'-0"	Switchgear Vent Duct	1		

* Detection instruments located within the containment are not required to be OPERABLE during the performance of Type A Containment Leakage Rate Tests.

** Detectors which automatically actuate Fire Suppression Systems.

3/4.3 INSTRUMENTATION

TABLE 3.3-11 (Continued)

**FIRE DETECTION INSTRUMENTS
UNIT 1**

<u>ROOM/AREA</u>	<u>INSTRUMENT LOCATION</u>	<u>MINIMUM INSTRUMENTS OPERABLE*</u>		
		<u>HEAT</u>	<u>FLAME</u>	<u>SMOKE</u>
<u>AUX BLDG.</u>				
Elev 69'-0"	Control Room Vent Duct "A"			1
Elev 69'-0"	Cable Spreading Room Vent Duct			1
512	Control Room HVAC Equipment			4
586/588/589/590	Radiation Chemistry Area,			
592/593	Radiation Chemistry Area,			
595/596/597	Radiation Chemistry Area,			
587	Frisker Area,			
591	Clothing Disposal, and			
523/594	Corridors			20
520	Spent Fuel Pool Area Vent Equip Rm			2
524	Main Plant Exhaust Equip Rm			8
525	Cntmt Access Area			3
529	Electrical Equip. Room			3
530/531/533	Spent Fuel Pool Area		5	17
536/537	Misc Waste Evaporator & Equip Rm			3
Elev 83'-0"	Cable Tunnel			4
603	Auxiliary Feedwater Pump Rm			2
<u>Containment Bldg.</u>				
U-1	RCP Bay East*	16		
U-1	RCP Bay West*	16		
U-1	East Electric Pen Area*	***		
U-1	West Electric Pen Area*	***		
<u>Intake Structure</u>	Elev 3'-0" Unit 1 Side			24

* Detection instruments located within the containment are not required to be OPERABLE during the performance of Type A Containment Leakage Rate Tests.

*** Monitored by four protecto wires.

3/4.3 INSTRUMENTATION

3/4.3.3 MONITORING INSTRUMENTATION

Radioactive Gaseous Effluent Monitoring Instrumentation

LIMITING CONDITION FOR OPERATION

3.3.3.9 The radioactive gaseous effluent monitoring instrumentation channels shown in Table 3.3-12 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 and adjusted in accordance with the methodology and parameters in the ODCM.

APPLICABILITY: As shown in Table 3.3-12.

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 3.3-12. Exert best efforts to return the instruments to **OPERABLE** status within 30 days and, if unsuccessful, explain in the next Semiannual Radioactive Effluent Release Report why the inoperability was not corrected in a timely manner.
- c. The provisions of Specifications 3.0.3 and 3.0.4 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 4.3-11.

TABLE 3.3-12

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 - Providing Alarm and Automatic Termination of Release	1	*	35
b. Effluent System Flow Rate Measuring Device	1	*	36
2. MAIN VENT SYSTEM			
a. Noble Gas Activity Monitor	1	*	37
b. Iodine Sampler	1	*	38
c. Particulate Sampler	1	*	38

3/4.3 INSTRUMENTATION

TABLE 3.3-12 (Continued)

TABLE NOTATION

* At all times.

ACTION STATEMENTS

- ACTION 35 -** 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:
- a. Using the main vent monitor as a backup and recording RMS readings every 15 minutes during the release, or
 - b. Provided that prior to initiating the release, at least two independent samples of the tank's contents are analyzed, and at least two technically qualified members of the Facility Staff independently verify the release rate calculations and two qualified operators verify the discharge valve lineup.
- Otherwise, suspend release of radioactive effluents via this pathway.
- 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 the flow rate is estimated at least once per 4 hours.
- ACTION 37 -** With the number of channels **OPERABLE** less than required by the Minimum Channels **OPERABLE** requirement, effluent releases via this pathway may continue provided either (1) grab samples are taken and analyzed for gross activity at least once per 24 hours, or (2) an equivalent monitor is provided.
- ACTION 38 -** With the number of channels **OPERABLE** less than required by the Minimum Channels **OPERABLE** requirement, effluent releases via the affected pathway may continue provided samples are continuously collected as required in Table 4.11-2 with auxiliary sampling equipment.

TABLE 4.3-11

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 - Providing Alarm and Automatic Termination of Release	P	P	R ⁽³⁾	SA ⁽¹⁾	*
b. Effluent System Flow Rate Measuring Device	D ⁽⁴⁾	NA	R	NA	*
2. MAIN VENT SYSTEM					
a. Noble Gas Activity Monitor	D	M	R ⁽³⁾	SA ⁽²⁾	*
b. Iodine Sampler	W	NA	NA	NA	*
c. Particulate Sampler	W	NA	NA	NA	*

3/4.3 INSTRUMENTATION

TABLE 4.3-11 (Continued)

TABLE NOTATION

- * At all times other than when the line is valved out and locked.
- (1) The **CHANNEL FUNCTIONAL TEST** shall also demonstrate the automatic isolation of this pathway and/or Control Room alarm annunciation occurs if the appropriate following condition(s) exists:
1. Instrument indicates measure levels above the alarm/trip setpoint.
 2. Circuit failure.
 3. Instrument indicates a downscale failure.
- (2) The **CHANNEL FUNCTIONAL TEST** shall also demonstrate that Control Room alarm annunciation occurs if any of the following conditions exists:
1. Instrument indicates measured levels above the alarm setpoint.
 2. Circuit failure.
 3. Instrument indicates a downscale failure.
- (3) The initial **CHANNEL CALIBRATION** shall be performed using one or more of the reference standards traceable to the National Bureau of Standards or using standards that have been obtained from suppliers that participate in measurement assurance activities with NBS. These standards shall permit calibrating the system within its intended range of energy and measurement range. For subsequent **CHANNEL CALIBRATION**, sources that have been related to the initial calibration can be used.
- (4) The **CHANNEL CHECK** shall consist of verifying indication of flow during periods of release and shall be made at least once per 24 hours on days on which effluent releases are made.

3/4.3 INSTRUMENTATION

3/4.3.3 MONITORING INSTRUMENTATION

Radioactive Liquid Effluent Monitoring Instrumentation

LIMITING CONDITION FOR OPERATION

3.3.3.10 The radioactive liquid 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 3.11.1.1 are not exceeded. The alarm/trip setpoints of these channels shall be determined and adjusted in accordance with the methodology and parameters in the **OFFSITE DOSE CALCULATION MANUAL (ODCM)**.

APPLICABILITY: At all times.

ACTION:

- a. With a radioactive liquid effluent monitoring instrumentation channel alarm/trip setpoint less conservative than required by the above Specification, without delay suspend the release of radioactive liquid 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 liquid effluent monitoring instrumentation channels **OPERABLE**, take the **ACTION** shown in Table 3.3-13. Exert best efforts to return the instruments to **OPERABLE** status within 30 days and, if unsuccessful, explain in the next Semiannual Radioactive Effluent Release Report why the inoperability was not corrected in a timely manner.
- c. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.3.3.10 Each radioactive liquid 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 4.3-12.

3/4.3 INSTRUMENTATION

TABLE 3.3-13

RADIOACTIVE LIQUID EFFLUENT MONITORING INSTRUMENTATION

<u>INSTRUMENT</u>	<u>MINIMUM CHANNELS OPERABLE</u>	<u>ACTION</u>
1. GROSS RADIOACTIVITY MONITORS PROVIDING ALARM AND AUTOMATIC TERMINATION OF RELEASE		
a. Liquid Radwaste Effluent Line	1	28
b. Steam Generator Blowdown Effluent Line	1	29
2. FLOW RATE MEASUREMENT DEVICES		
a. Liquid Radwaste Effluent Line	1	30
b. Steam Generator Blowdown Effluent Line	1	30

3/4.3 INSTRUMENTATION

TABLE 3.3-13 (Continued)

ACTION STATEMENTS

- ACTION 28 -** With the number of channels **OPERABLE** less than required by the Minimum Channels **OPERABLE** requirement, effluent releases may continue provided that prior to initiating a release:
- a. At least two independent samples are analyzed in accordance with Specification 4.11.1.1.1, and
 - b. At least two technically qualified members of the Facility Staff independently verify the release rate calculations and two qualified operators verify the discharge valve line up.
- ACTION 29 -** 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 analyzed for gross radioactivity (beta or gamma) at the lower limit of detection defined in Table 4.11-1:
- a. At least once per 12 hours when the specific activity of the secondary coolant is greater than 0.01 microcurie/gram **DOSE EQUIVALENT I-131**.
 - b. At least once per 48 hours when the specific activity of the secondary coolant is less than or equal to 0.01 microcurie/gram **DOSE EQUIVALENT I-131**.
- ACTION 30 -** 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 during actual releases. Pump performance curves may be used to estimate flow.

TABLE 4.3-12

RADIOACTIVE LIQUID 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>
1. GROSS RADIOACTIVITY MONITORS PROVIDING ALARM AND AUTOMATIC TERMINATION OF RELEASE				
a. Liquid Radwaste Effluent Line	D	P	R ⁽²⁾	SA ⁽¹⁾
b. Steam Generator Blowdown Effluent Line	D	P	R ⁽²⁾	SA ⁽¹⁾
2. FLOW RATE MEASUREMENT DEVICES				
a. Liquid Radwaste Effluent Line	D ⁽³⁾	NA	R	NA
b. Steam Generator Blowdown Effluent Line	D ⁽³⁾	NA	R	NA

3/4.3 INSTRUMENTATION

TABLE 4.3-12 (Continued)

TABLE NOTATION

- (1) The **CHANNEL FUNCTIONAL TEST** shall also demonstrate that automatic isolation of this pathway and/or Control Room alarm annunciation occur if the appropriate following condition(s) exists:
 1. Instrument indicates measured levels above the alarm/trip setpoint.
 2. Circuit failure.
 3. Instrument indicates a downscale failure.
- (2) The initial **CHANNEL CALIBRATION** shall be performed using one or more of the reference standards traceable to the National Bureau of Standards or using standards that have been obtained from suppliers that participate in measurement assurance activities with NBS. These standards shall permit calibrating the system within its intended range of energy and measurement range. For subsequent **CHANNEL CALIBRATION**, sources that have been related to the initial calibration can be used.
- (3) **CHANNEL CHECK** shall consist of verifying indication of flow during periods of release. **CHANNEL CHECK** shall be made at least once per 24 hours on days on which effluent releases are made.

3/4.3 INSTRUMENTATION

BASES

3/4.3.3.4 Meteorological Instrumentation

The **OPERABILITY** of the meteorological instrumentation ensures that sufficient meteorological data is available for estimating potential radiation doses to the public as a result of routine or accidental release of radioactive materials to the atmosphere. This capability is required to evaluate the need for initiating protective measures to protect the health and safety of the public and is consistent with the recommendations of Regulatory Guide 1.23 "Onsite Meteorological Programs," February 1972, as supplemented by Supplement 1 to NUREG-0737.

3/4.3.3.5 Remote Shutdown Instrumentation

The **OPERABILITY** of the remote shutdown instrumentation ensures that sufficient capability is available to permit shutdown and maintenance of **HOT STANDBY** of the facility from locations outside of the Control Room. This capability is required in the event Control Room habitability is lost and is consistent with General Design Criteria 19 of 10 CFR Part 50.

3/4.3.3.6 Post-Accident Instrumentation

The **OPERABILITY** of the post-accident instrumentation ensures that sufficient information is available on selected plant parameters to monitor and assess these variables following an accident. This capability is consistent with the recommendations of Regulatory Guide 1.97, "Instrumentation for Light-Water-Cooled Nuclear Plants to Assess Plant Conditions During and Following an Accident," December 1975, and NUREG-0578, "TMI-2 Lessons Learned Task Force Status Report and Short-Term Recommendations."

The Subcooled Margin Monitor (SMM), the Heated Junction Thermocouple (HJTC), and the Core Exit Thermocouples (CET) comprise the Inadequate Core Cooling (ICC) instrumentation required by Item II.F.2 NUREG-0737, the Post TMI-2 Action Plan. The function of the ICC instrumentation is to enhance the ability of the plant operator to diagnose the approach to, and recovery from, ICC. Additionally, they aid in tracking reactor coolant inventory. These instruments are included in the Technical Specifications at the request of NRC Generic Letter 83-37. These instruments are not required by the accident analysis, nor to bring the plant to **HOT STANDBY** or **COLD SHUTDOWN**.

3/4.3 INSTRUMENTATION

BASES

In the event more than four sensors in a Reactor Vessel Level channel are inoperable, repairs may only be possible during an extended **COLD SHUTDOWN**. This is because the sensors are accessible only after the plant has been cooled down and drained, and the missile shield has been moved. If only one channel is inoperable, it should be restored to **OPERABLE** status in accordance with the schedule outlined in a Special Report. If both channels are inoperable, the system shall be restored to **OPERABLE** status in the next refueling outage.

3/4.3.3.7 Fire Detection Instrumentation

OPERABILITY of the fire detection instrumentation ensures that adequate warning capability is available for the prompt detection of fires. This capability is required in order to detect and locate fires in their early stages. Prompt detection of fires will reduce the potential for damage to safety related equipment and is an integral element in the overall facility fire protection program.

In the event that a portion of the fire detection instrumentation is inoperable, the establishment of frequent fire patrols in the affected areas is required to provide detection capability until the inoperable instrumentation is restored to **OPERABILITY**.

3/4.3.3.9 Radioactive Gaseous Effluent Monitoring Instrumentation

The radioactive gaseous effluent instrumentation is provided to monitor and control, as applicable, the releases of radioactive materials in gaseous effluents during actual or potential releases of gaseous effluents. The alarm/trip setpoints for these instruments shall be calculated and adjusted in accordance with the methodology and parameters in the ODCM to ensure that the alarm/trip will occur prior to exceeding the limits of Specification 3.11.2.1.a based on average annual X/Q. The **OPERABILITY** and use of this instrumentation is consistent with the requirements of General Design Criteria 60, 63, and 64 of Appendix A to 10 CFR Part 50.

3/4.3.3.10 Radioactive Liquid Effluent Monitoring Instrumentation

The radioactive liquid effluent instrumentation is provided to monitor and control, as applicable, the releases of radioactive materials in liquid effluents during actual or potential releases of liquid effluents. The alarm/trip setpoints for these instruments shall be calculated and adjusted in accordance with the methodology and parameters in the ODCM to ensure that the alarm/trip will occur prior to exceeding the limits of 10 CFR Part 20. The **OPERABILITY** and use of this instrumentation is consistent with the requirements of General Design Criteria 60, 63, and 64 of Appendix A to 10 CFR Part 50.

6.0 ADMINISTRATIVE CONTROLS

- (c) Letter from Mr. G. C. Creel (BG&E) to NRC Document Control Desk, dated February 7, 1989, "Calvert Cliffs Nuclear Power Plant Unit No. 2; Docket 50-318, Request for Amendment, Unit 2 Ninth Cycle License Application"
 - (d) Letter from Mr. S. A. McNeil, Jr. (NRC) to Mr. G. C. Creel (BG&E), dated January 10, 1990, "Safety Evaluation Report Approving Unit 2 Cycle 9 License Application"
- c. The core operating limits shall be determined such that all applicable limits (e.g., fuel thermal mechanical limits, core thermal hydraulic limits, Emergency Core Cooling Systems (ECCS) limits, nuclear limits such as SDM, transient analysis limits, and accident analysis limits) of the safety analysis are met.
 - d. The COLR, including any mid-cycle revisions or supplements, shall be provided upon issuance for each reload cycle to the NRC.

SPECIAL REPORTS

6.9.2 Special reports shall be submitted to the Regional Administrator of the NRC Regional Office within the time period specified for each report. These reports shall be submitted covering the activities identified below pursuant to the requirements of the applicable reference specification:

- a. ECCS Actuation, Specifications 3.5.2 and 3.5.3.
- c. Inoperable Meteorological Instrumentation, Specification 3.3.3.4.
- e. Core Barrel Movement, Specification 3.4.11.
- f. Fire Detection Instrumentation, Specification 3.3.3.7.
- g. Fire Suppression Systems, Specifications 3.7.11.1, 3.7.11.2, 3.7.11.3, 3.7.11.4, and 3.7.11.5.
- h. Penetration Fire Barriers, Specification 3.7.12.
- i. Steam Generator Tube Inspection Results, Specification 4.4.5.5.a and c.
- j. Specific Activity of Primary Coolant, Specification 3.4.8.

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3/4.3 INSTRUMENTATION

3/4.3.3 MONITORING INSTRUMENTATION

Meteorological Instrumentation

LIMITING CONDITION FOR OPERATION

3.3.3.4 The meteorological monitoring instrumentation channels shown in Table 3.3-8 shall be **OPERABLE**.

APPLICABILITY: At all times.

ACTION:

- a. With one or more required meteorological monitoring channels inoperable for more than 7 days, prepare and submit a Special Report to the Commission pursuant to Specification 6.9.2 within the next 10 days outlining the cause of the malfunction and the plans for restoring the channel(s) to **OPERABLE** status.
- b. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.3.3.4 Each of the above meteorological monitoring instrumentation channels shall be demonstrated **OPERABLE** by the performance of the **CHANNEL CHECK** and **CHANNEL CALIBRATION** operations at the frequencies shown in Table 4.3-5.

3/4.3 INSTRUMENTATION

TABLE 3.3-8

METEOROLOGICAL MONITORING INSTRUMENTATION

<u>INSTRUMENT</u>	<u>MINIMUM CHANNELS OPERABLE</u>
1. WIND SPEED	
a. Nominal Elev. 10M	1
b. Nominal Elev. 60M	1
2. WIND DIRECTION	
a. Nominal Elev. 10M	1
b. Nominal Elev. 60M	1
3. AIR TEMPERATURE - DELTA T (10M-60M)	1

3/4.3 INSTRUMENTATION

TABLE 4.3-5

METEOROLOGICAL MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

<u>INSTRUMENT</u>	<u>CHANNEL CHECK</u>	<u>CHANNEL CALIBRATION</u>
1. WIND SPEED		
a. Nominal Elev. 10M	D	SA
b. Nominal Elev. 60M	D	SA
2. WIND DIRECTION		
a. Nominal Elev. 10M	D	SA
b. Nominal Elev. 60M	D	SA
3. AIR TEMPERATURE - DELTA T (10M-60M)	D	SA

3/4.3 INSTRUMENTATION

3/4.3.3 MONITORING INSTRUMENTATION

Remote Shutdown Instrumentation

LIMITING CONDITION FOR OPERATION

3.3.3.5 The remote shutdown monitoring instrumentation channels shown in Table 3.3-9 shall be **OPERABLE** with readouts displayed external to the Control Room.

APPLICABILITY: **MODES 1, 2 and 3.**

ACTION:

- a. With the number of **OPERABLE** remote shutdown monitoring channels less than required by Table 3.3-9, either restore the inoperable channel to **OPERABLE** status within 30 days, or be in **HOT SHUTDOWN** within the next 12 hours.
- b. The provisions of Specification 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.3.3.5 Each remote shutdown monitoring instrumentation channel shall be demonstrated **OPERABLE** by performance of the **CHANNEL CHECK** and **CHANNEL CALIBRATION** operations at the frequencies shown in Table 4.3-6.

TABLE 3.3-9

REMOTE SHUTDOWN MONITORING INSTRUMENTATION

<u>INSTRUMENT</u>	<u>READOUT LOCATION</u>	<u>MEASUREMENT RANGE</u>	<u>MINIMUM CHANNELS OPERABLE</u>
1. Wide Range Neutron Flux*	2C43	0.1 cps-200%	1
2. Reactor Trip Breaker Indication	Cable Spreading Room	OPEN-CLOSE	1/trip breaker
3. Reactor Coolant Cold Leg Temperature	2C43	212-705°F	1
4. Pressurizer Pressure	2C43	0-4000 psia	1
5. Pressurizer Level	2C43	0-360 inches	1
6. Steam Generator Pressure	2C43	0-1200 psig	1/steam generator
7. Steam Generator Level	2C43	-401 to +63.5 inches	1/steam generator

* When the 2C43 instrumentation is inoperable, the wide range neutron flux monitors located in the auxiliary feedwater pump room may be utilized to meet this requirement. During the period when the instruments are utilized to meet the above requirement, they will be subject to the surveillance requirements of Table 4.3-6.

3/4.3 INSTRUMENTATION

TABLE 4.3-6

REMOTE SHUTDOWN MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

<u>INSTRUMENT</u>	<u>CHANNEL CHECK</u>	<u>CHANNEL CALIBRATION</u>
1. Wide Range Neutron Flux	M	NA
2. Reactor Trip Breaker Indication	M	NA
3. Reactor Coolant Cold Leg Temperature	M	R
4. Pressurizer Pressure	M	R
5. Pressurizer Level	M	R
6. Steam Generator Level	M	R
7. Steam Generator Pressure	M	R

3/4.3 INSTRUMENTATION

3/4.3.3 MONITORING INSTRUMENTATION

Post-Accident Instrumentation

LIMITING CONDITION FOR OPERATION

3.3.3.6 The post-accident monitoring instrumentation channels shown in Table 3.3-10 shall be **OPERABLE**.

APPLICABILITY: **MODES 1, 2 and 3.**

ACTION:

- a. As shown in Table 3.3-10.
- b. The provisions of Specification 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.3.3.6 Each post-accident monitoring instrumentation channel shall be demonstrated **OPERABLE** by performance of the **CHANNEL CHECK** and **CHANNEL CALIBRATION** operations at the frequencies shown in Table 4.3-10.

TABLE 3.3-10**POST-ACCIDENT MONITORING INSTRUMENTATION**

<u>INSTRUMENT</u>	<u>MINIMUM CHANNELS OPERABLE</u>	<u>ACTION</u>
1. Containment Pressure	2	31
2. Wide Range Logarithmic Neutron Flux Monitor	2	31
3. Reactor Coolant Outlet Temperature	2	31
4. Pressurizer Pressure	2	31
5. Pressurizer Level	2	31
6. Steam Generator Pressure	2/steam generator	31
7. Steam Generator Level (Wide Range)	2/steam generator	31
8. Auxiliary Feedwater Flow Rate	2/steam generator	31
9. RCS Subcooled Margin Monitor	1	31
10. PORV/Safety Valve Acoustic Flow Monitoring	1/valve	31
11. PORV Solenoid Power Indication	1/valve	31
12. Feedwater Flow	2	31
13. Containment Water Level (Wide Range)	2	32, 33
14. Reactor Vessel Water Level	2*	34, 35
15. Core Exit Thermocouple System	2 locations/core quadrant	31

* A channel has eight sensors in a probe. A channel is **OPERABLE** if four or more sensors, one or more in the upper three and three or more in the lower five, are **OPERABLE**.

TABLE 3.3-10 (Continued)

ACTION STATEMENTS

- ACTION 31 -** With the number of **OPERABLE** post-accident monitoring channels less than required by Table 3.3-10, either restore the inoperable channel to **OPERABLE** status within 30 days or be in **HOT SHUTDOWN** within the next 12 hours.
- ACTION 32 -** With the number of **OPERABLE** post-accident monitoring channels one less than the Minimum Channels **OPERABLE** requirement in Table 3.3-10, operation may proceed provided the inoperable channel is restored to **OPERABLE** status at the next outage of sufficient duration.
- ACTION 33 -** With the number of **OPERABLE** post-accident monitoring channels two less than required by Table 3.3-10, either restore one inoperable channel to **OPERABLE** status within 30 days or be in **HOT SHUTDOWN** within the next 12 hours.
- ACTION 34 -** With the number of **OPERABLE** post-accident monitoring channels one less than the Minimum Channels **OPERABLE** requirement in Table 3.3-10, either restore the system to **OPERABLE** status within 7 days if repairs are feasible without shutting down or prepare and submit a Special Report to the Commission pursuant to Specification 6.9.2 within 30 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.
- ACTION 35 -** With the number of **OPERABLE** channels two less than required by Table 3.3-10, either restore the inoperable channel(s) to **OPERABLE** status within 48 hours if repairs are feasible without shutting down or:
1. Initiate an alternate method of monitoring for core and Reactor Coolant System voiding;
 2. Prepare and submit a Special Report to the Commission pursuant to Specification 6.9.2 within 30 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; and
 3. Restore the system to **OPERABLE** status at the next scheduled refueling.

TABLE 4.3-10

POST-ACCIDENT MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

<u>INSTRUMENT</u>	<u>CHANNEL CHECK</u>	<u>CHANNEL CALIBRATION</u>
1. Containment Pressure	M	R
2. Wide Range Logarithmic Neutron Flux Monitor	M	NA
3. Reactor Coolant Outlet Temperature	M	R
4. Pressurizer Pressure	M	R
5. Pressurizer Level	M	R
6. Steam Generator Pressure	M	R
7. Steam Generator Level (Wide Range)	M	R
8. Auxiliary Feedwater Flow Rate	M	R
9. RCS Subcooled Margin Monitor	M	R
10. PORV/Safety Valve Acoustic Monitor	NA	R
11. PORV Solenoid Power Indication	NA	NA
12. Feedwater Flow	M	R
13. Containment Water Level (Wide Range)	M	R
14. Reactor Vessel Water Level	M	NA
15. Core Exit Thermocouple System	M	R*

* The performance of a CHANNEL CALIBRATION operation exempts the Core Exit Thermocouple but includes all electronic components. The Core Exit Thermocouple shall be calibrated prior to installation in the reactor core.

3/4.3 INSTRUMENTATION

3/4.3.3 MONITORING INSTRUMENTATION

Fire Detection Instrumentation

LIMITING CONDITION FOR OPERATION

3.3.3.7 As a minimum, the fire detection instrumentation for each fire detection zone shown in Table 3.3-11 shall be **OPERABLE**.

APPLICABILITY: Whenever equipment in that fire detection zone is required to be **OPERABLE**.

ACTION: With one or more of the fire detection instrument(s) shown in Table 3.3-11 inoperable:

- a. Within 1 hour establish a fire watch patrol to inspect the zone(s) with the inoperable instrument(s) at least once per hour, unless the instrument(s) is located inside the containment, then inspect the containment at least once per 8 hours or monitor the containment air temperature at least once per hour at the locations listed in Specification 4.6.1.5; or unless the instrument(s) is located in fire detection zones equipped with automatic wet pipe sprinkler systems alarmed and supervised to the Control Room, then within 1 hour and at least per 24 hours thereafter, inspect the zone(s) with inoperable instruments and verify that the Automatic Sprinkler System, including the water flow alarm and supervisory system, is **OPERABLE** by **CHANNEL FUNCTIONAL TEST**.
- b. Restore the inoperable instrument(s) to **OPERABLE** status within 14 days or prepare and submit a Special Report to the Commission pursuant to Specification 6.9.2 within the next 30 days outlining the action taken, the cause of the inoperability and the plans and schedule for restoring the instrument(s) to **OPERABLE** status.
- c. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.3.3.7.1 At least once per 6 months, at least 25% of the above required fire detection instruments which are accessible during plant operation shall be demonstrated **OPERABLE** by performance of a **CHANNEL FUNCTIONAL TEST**. Detectors selected for testing shall be selected on a rotating basis such

3/4.3 INSTRUMENTATION

SURVEILLANCE REQUIREMENTS (Continued)

that all detectors will be tested over a two year period. If in any detection zone there are less than four detectors, at least one different detector in that zone shall be tested every six months. For each detector found inoperable during functional testing, at least an additional 10% of all detectors or 10 detectors, whichever is less, shall also be tested. Fire detectors which are inaccessible during plant operation shall be demonstrated **OPERABLE** by the performance of a **CHANNEL FUNCTIONAL TEST** during each **COLD SHUTDOWN** exceeding 24 hours unless performed during the previous six months.

4.3.3.7.2 The NFPA Code 72D Class B supervised circuits supervision associated with the detector alarms of each of the above required fire detection instruments shall be demonstrated **OPERABLE** at least once per 6 months.

4.3.3.7.3 The non-supervised circuits, associated with detector alarms, between the instrument and the Control Room shall be demonstrated **OPERABLE** at least once per 31 days.

3/4.3 INSTRUMENTATION

TABLE 3.3-11

**FIRE DETECTION INSTRUMENTS
UNIT 2**

<u>ROOM/AREA</u> <u>AUX BLDG.</u>	<u>INSTRUMENT LOCATION</u>	<u>MINIMUM INSTRUMENTS</u> <u>OPERABLE*</u>		
		<u>HEAT</u>	<u>FLAME</u>	<u>SMOKE</u>
101/120	ECCS Pump Room			7
102/121	ECCS Pump Room			7
105	Charging Pump Room			3
106	Misc Waste Monitor Tank			1
107/109	Coolant Waste Monitor Tank		4	
108	Pump Room-Elev (-)10'-0"			1
201	Component Cooling Pump Rm			9
203	East Piping Area			10
204	Rad Exhaust Vent, Equip Rm			4
205	Service Water Pump Rm		3	6
206/310	East Piping Pen Rm		3	5
211/321	West Piping Pen Rm		2	3
213	Degasifier Pump Rm			1
214	Volume Control Tank Rm			1
215	Boric Acid Tank & Pump Rm			2
216A	Reactor Coolant Make-up Pumps			2
302/2C	U2 Cable Spreading Rm & Cable Chase**	2		10
305/307/303	U2 Battery Rm & Corridor			3
309	Main Steam Piping Area			6
311	Switchgear Rm, Elev 27'-0"			6
312	Purge Air Supply Rm			2
322	Letdown Heat Exchanger Rm			1
Elev. 27'-0"	Switchgear Vent Duct	1		
2A	Cable Chase 2A			1
2B	Cable Chase 2B			1

* Detection instruments located within the containment are not required to be **OPERABLE** during the performance of Type A Containment Leakage Rate Tests.

** Detectors which automatically actuate Fire Suppression Systems.

3/4.3 INSTRUMENTATION

TABLE 3.3-11 (Continued)

**FIRE DETECTION INSTRUMENTS
UNIT 2**

<u>ROOM/AREA</u> <u>AUX BLDG.</u>	<u>INSTRUMENT LOCATION</u>	<u>MINIMUM INSTRUMENTS OPERABLE*</u>		
		<u>HEAT</u>	<u>FLAME</u>	<u>SMOKE</u>
407	Switchgear Rm, Elev 45'-0"***			8
408	East Piping Area			7
409	East Electrical Pen Rm			3
414	West Electrical Pen Rm			3
416	Diesel Generator No. (21)**	2		
440	Refueling Water Tank Pump Rm			2
Elev. 45'-0"	Switchgear Vent Duct	1		
526	Main Plant Exhaust Equip Rm			8
527	Containment Access			3
532	Electrical Equip Rm			3
Elev. 69'-0"	Cable Spreading Room Vent Duct			1
Elev. 83'-0"	Cable Tunnel			4
605	Auxiliary Feedwater Pump Rm			2
<u>Containment Bldg.</u>				
UNIT 2	RCP Bay East*	16		
UNIT 2	RCP Bay West*	16		
UNIT 2	East Electric Pen Area*	+		
UNIT 2	West Electric Pen Area*	+		
<u>Intake Structure Elev 3'-0" Unit 2 Side</u>				24

* Detection instruments located within the containment are not required to be OPERABLE during the performance of Type A Containment Leakage Rate Tests.

** Detectors which automatically actuate Fire Suppression Systems.

+ Monitored by four protecto wires.

3/4.3 INSTRUMENTATION

3/4.3.3 MONITORING INSTRUMENTATION

Radioactive Gaseous Effluent Monitoring Instrumentation

LIMITING CONDITION FOR OPERATION

3.3.3.9 The radioactive gaseous effluent monitoring instrumentation channels shown in Table 3.3-12 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 and adjusted in accordance with the methodology and parameters in the ODCM.

APPLICABILITY: As shown in Table 3.3-12.

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 3.3-12. Exert best efforts to return the instruments to **OPERABLE** status within 30 days and, if unsuccessful, explain in the next Semiannual Radioactive Effluent Release Report why the inoperability was not corrected in a timely manner.
- c. The provisions of Specifications 3.0.3 and 3.0.4 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 4.3-11.

TABLE 3.3-12RADIOACTIVE 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 - Providing Alarm and Automatic Termination of Release	1	*	35
b. Effluent System Flow Rate Measuring Device	1	*	36
2. MAIN VENT SYSTEM			
a. Noble Gas Activity Monitor	1	*	37
b. Iodine Sampler	1	*	38
c. Particulate Sampler	1	*	38

TABLE 3.3-12 (Continued)

TABLE NOTATION

* At all times.

ACTION STATEMENTS

- ACTION 35 -** 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:
- a. Using the main vent monitor as a backup and recording RMS readings every 15 minutes during the release, or
 - b. Provided that prior to initiating the release, at least two independent samples of the tank's contents are analyzed, and at least two technically qualified members of the Facility Staff independently verify the release rate calculations and two qualified operators verify the discharge valve lineup.

Otherwise, suspend release of radioactive effluents via this pathway.

- 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 the flow rate is estimated at least once per 4 hours.
- ACTION 37 -** With the number of channels **OPERABLE** less than required by the Minimum Channels **OPERABLE** requirement, effluent releases via this pathway may continue provided either (1) grab samples are taken and analyzed for gross activity at least once per 24 hours, or (2) an equivalent monitor is provided.
- ACTION 38 -** With the number of channels **OPERABLE** less than required by the Minimum Channels **OPERABLE** requirement, effluent releases via the affected pathway may continue provided samples are continuously collected as required in Table 4.11-2 with auxiliary sampling equipment.

TABLE 4.3-11

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 - Providing Alarm and Automatic Termination of Release	P	P	R ⁽³⁾	SA ⁽¹⁾	*
b. Effluent System Flow Rate Measuring Device	D ⁽⁴⁾	NA	R	NA	*
2. MAIN VENT SYSTEM					
a. Noble Gas Activity Monitor	D	M	R ⁽³⁾	SA ⁽²⁾	*
b. Iodine Sampler	W	NA	NA	NA	*
c. Particulate Sampler	W	NA	NA	NA	*

3/4.3 INSTRUMENTATION

TABLE 4.3-11 (Continued)

TABLE NOTATION

- * At all times other than when the line is valved out and locked.
- (1) The **CHANNEL FUNCTIONAL TEST** shall also demonstrate the automatic isolation of this pathway and/or Control Room alarm annunciation occurs if the appropriate following condition(s) exists:
1. Instrument indicates measure levels above the alarm/trip setpoint.
 2. Circuit failure.
 3. Instrument indicates a downscale failure.
- (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 setpoint.
 2. Circuit failure.
 3. Instrument indicates a downscale failure.
- (3) The initial **CHANNEL CALIBRATION** shall be performed using one or more of the reference standards traceable to the National Bureau of Standards or using standards that have been obtained from suppliers that participate in measurement assurance activities with NBS. These standards shall permit calibrating the system within its intended range of energy and measurement range. For subsequent **CHANNEL CALIBRATION**, sources that have been related to the initial calibration can be used.
- (4) The **CHANNEL CHECK** shall consist of verifying indication of flow during periods of release and shall be made at least once per 24 hours on days on which effluent releases are made.

3/4.3 INSTRUMENTATION

3/4.3.3 MONITORING INSTRUMENTATION

Radioactive Liquid Effluent Monitoring Instrumentation

LIMITING CONDITION FOR OPERATION

3.3.3.10 The radioactive liquid 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 3.11.1.1 are not exceeded. The alarm/trip setpoints of these channels shall be determined and adjusted in accordance with the methodology and parameters in the **OFFSITE DOSE CALCULATION MANUAL (ODCM)**.

APPLICABILITY: At all times.

ACTION:

- a. With a radioactive liquid effluent monitoring instrumentation channel alarm/trip setpoint less conservative than required by the above Specification, without delay suspend the release of radioactive liquid 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 liquid effluent monitoring instrumentation channels **OPERABLE**, take the **ACTION** shown in Table 3.3-13. Exert best efforts to return the instruments to **OPERABLE** status within 30 days and, if unsuccessful, explain in the next Semiannual Radioactive Effluent Release Report why the inoperability was not corrected in a timely manner.
- c. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.3.3.10 Each radioactive liquid 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 4.3-12.

3/4.3 INSTRUMENTATION

TABLE 3.3-13

RADIOACTIVE LIQUID EFFLUENT MONITORING INSTRUMENTATION

<u>INSTRUMENT</u>	<u>MINIMUM CHANNELS OPERABLE</u>	<u>ACTION</u>
1. GROSS RADIOACTIVITY MONITORS PROVIDING ALARM AND AUTOMATIC TERMINATION OF RELEASE		
a. Liquid Radwaste Effluent Line	1	28
b. Steam Generator Blowdown Effluent Line	1	29
2. FLOW RATE MEASUREMENT DEVICES		
a. Liquid Radwaste Effluent Line	1	30
b. Steam Generator Blowdown Effluent Line	1	30

TABLE 3.3-13 (Continued)

ACTION STATEMENTS

- ACTION 28 -** With the number of channels **OPERABLE** less than required by the Minimum Channels **OPERABLE** requirement, effluent releases may continue provided that prior to initiating a release:
- a. At least two independent samples are analyzed in accordance with Specification 4.11.1.1.1, and
 - b. At least two technically qualified members of the Facility Staff independently verify the release rate calculations and two qualified operators verify the discharge valve line up.
- ACTION 29 -** 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 analyzed for gross radioactivity (beta or gamma) at the lower limit of detection defined in Table 4.11-1:
- a. At least once per 12 hours when the specific activity of the secondary coolant is greater than 0.01 microcurie/gram **DOSE EQUIVALENT I-131**.
 - b. At least once per 48 hours when the specific activity of the secondary coolant is less than or equal to 0.01 microcurie/gram **DOSE EQUIVALENT I-131**.
- ACTION 30 -** 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 during actual releases. Pump performance curves may be used to estimate flow.

TABLE 4.3-12

RADIOACTIVE LIQUID EFFLUENT MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

<u>INSTRUMENT</u>	<u>CHANNEL CHECK</u>	<u>SOURCE CHECK</u>	<u>CHANNEL CALIBRATION</u>	<u>FUNCTIONAL TEST</u>
1. GROSS RADIOACTIVITY MONITORS PROVIDING ALARM AND AUTOMATIC TERMINATION OF RELEASE				
a. Liquid Radwaste Effluent Line	D	P	R ⁽²⁾	SA ⁽¹⁾
b. Steam Generator Blowdown Effluent Line	D	P	R ⁽²⁾	SA ⁽¹⁾
2. FLOW RATE MEASUREMENT DEVICES				
a. Liquid Radwaste Effluent Line	D ⁽³⁾	NA	R	NA
b. Steam Generator Blowdown Effluent Line	D ⁽³⁾	NA	R	NA

TABLE 4.3-12 (Continued)

TABLE NOTATION

- (1) The **CHANNEL FUNCTIONAL TEST** shall also demonstrate that automatic isolation of this pathway and/or Control Room alarm annunciation occur if the appropriate following condition(s) exist:
 1. Instrument indicates measured levels above the alarm/trip setpoint.
 2. Circuit failure.
 3. Instrument indicates a downscale failure.
- (2) The initial **CHANNEL CALIBRATION** shall be performed using one or more of the reference standards traceable to the National Bureau of Standards or using standards that have been obtained from suppliers that participate in measurement assurance activities with NBS. These standards shall permit calibrating the system within its intended range of energy and measurement range. For subsequent **CHANNEL CALIBRATION**, sources that have been related to the initial calibration can be used.
- (3) **CHANNEL CHECK** shall consist of verifying indication of flow during periods of release. **CHANNEL CHECK** shall be made at least once per 24 hours on days on which effluent releases are made.

3/4.3 INSTRUMENTATION

BASES

3/4.3.3.4 Meteorological Instrumentation

The **OPERABILITY** of the meteorological instrumentation ensures that sufficient meteorological data is available for estimating potential radiation doses to the public as a result of routine or accidental release of radioactive materials to the atmosphere. This capability is required to evaluate the need for initiating protective measures to protect the health and safety of the public and is consistent with the recommendations of Regulatory Guide 1.23, "Onsite Meteorological Programs," February 1972, as supplemented by Supplement 1 to NUREG-0737.

3/4.3.3.5 Remote Shutdown Instrumentation

The **OPERABILITY** of the remote shutdown instrumentation ensures that sufficient capability is available to permit shutdown and maintenance of **HOT STANDBY** of the facility from locations outside of the Control Room. This capability is required in the event Control Room habitability is lost and is consistent with General Design Criteria 19 of 10 CFR Part 50.

3/4.3.3.6 Post-Accident Instrumentation

The **OPERABILITY** of the post-accident instrumentation ensures that sufficient information is available on selected plant parameters to monitor and assess these variables following an accident. This capability is consistent with the recommendations of Regulatory Guide 1.97, "Instrumentation for Light-Water-Cooled Nuclear Plants to Assess Plant Conditions During and Following an Accident," December 1975, and NUREG-0578, "TMI-2 Lessons Learned Task Force Status Report and Short-Term Recommendations."

The Subcooled Margin Monitor (SMM), the Heated Junction Thermocouple (HJTC), and the Core Exit Thermocouples (CET) comprise the Inadequate Core Cooling (ICC) instrumentation required by Item II.F.2 NUREG-0737, the Post TMI-2 Action Plan. The function of the ICC instrumentation is to enhance the ability of the plant operator to diagnose the approach to, and recovery from, ICC. Additionally, they aid in tracking reactor coolant inventory. These instruments are included in the Technical Specifications at the request of NRC Generic Letter 83-37. These instruments are not required by the accident analysis, nor to bring the plant to **HOT STANDBY** or **COLD SHUTDOWN**.

3/4.3 INSTRUMENTATION

BASES

In the event more than four sensors in a Reactor Vessel Level channel are inoperable, repairs may only be possible during an extended **COLD SHUTDOWN**. This is because the sensors are accessible only after the plant has been cooled down and drained, and the missile shield has been moved. If only one channel is inoperable, it should be restored to **OPERABLE** status in accordance with the schedule outlined in a Special Report. If both channels are inoperable, the system shall be restored to **OPERABLE** status in the next refueling outage.

3/4.3.3.7 Fire Detection Instrumentation

OPERABILITY of the fire detection instrumentation ensures that adequate warning capability is available for the prompt detection of fires. This capability is required in order to detect and locate fires in their early stages. Prompt detection of fires will reduce the potential for damage to safety related equipment and is an integral element in the overall facility fire protection program.

In the event that a portion of the fire detection instrumentation is inoperable, the establishment of frequent fire patrols in the affected areas is required to provide detection capability until the inoperable instrumentation is restored to **OPERABILITY**.

3/4.3.3.9 Radioactive Gaseous Effluent Monitoring Instrumentation

The radioactive gaseous effluent instrumentation is provided to monitor and control, as applicable, the releases of radioactive materials in gaseous effluents during actual or potential releases of gaseous effluents. The alarm/trip setpoints for these instruments shall be calculated and adjusted in accordance with the methodology and parameters in the **ODCM** to ensure that the alarm/trip will occur prior to exceeding the limits of Specification 3.11.2.1.a based on average annual X/Q. The **OPERABILITY** and use of this instrumentation is consistent with the requirements of 10 CFR Part 50, Appendix A, General Design Criteria 60, 63, and 64.

3/4.3.3.10 Radioactive Liquid Effluent Monitoring Instrumentation

The radioactive liquid effluent instrumentation is provided to monitor and control, as applicable, the releases of radioactive materials in liquid effluents during actual or potential releases of liquid effluents. The alarm/trip setpoints for these instruments shall be calculated and adjusted in accordance with the methodology and parameters in the **ODCM** to ensure that the alarm/trip will occur prior to exceeding the limits of 10 CFR Part 20. The **OPERABILITY** and use of this instrumentation is consistent with the requirements of 10 CFR Part 50, Appendix A, General Design Criteria 60, 63, and 64.

6.0 ADMINISTRATIVE CONTROLS

- (c) Letter from Mr. G. C. Creel (BG&E) to NRC Document Control Desk, dated February 7, 1989, "Calvert Cliffs Nuclear Power Plant Unit No. 2; Docket 50-318, Request for Amendment, Unit 2 Ninth Cycle License Application"
 - (d) Letter from Mr. S. A. McNeil, Jr. (NRC) to Mr. G. C. Creel (BG&E), dated January 10, 1990, "Safety Evaluation Report Approving Unit 2 Cycle 9 License Application"
- c. The core operating limits shall be determined such that all applicable limits (e.g., fuel thermal mechanical limits, core thermal hydraulic limits, Emergency Core Cooling Systems (ECCS) limits, nuclear limits such as SDM, transient analysis limits, and accident analysis limits) of the safety analysis are met.
 - d. The COLR, including any mid-cycle revisions or supplements, shall be provided upon issuance for each reload cycle to the NRC.

SPECIAL REPORTS

6.9.2 Special reports shall be submitted to the Regional Administrator of the NRC Regional Office within the time period specified for each report. These reports shall be submitted covering the activities identified below pursuant to the requirements of the applicable reference specification:

- a. ECCS Actuation, Specifications 3.5.2 and 3.5.3.
- b. Core Barrel Movement, Specification 3.4.11.
- c. Inoperable Meteorological Instrumentation, Specification 3.3.3.4.
- d. Fire Detection Instrumentation, Specification 3.3.3.7.
- e. Fire Suppression Systems, Specifications 3.7.11.1, 3.7.11.2, 3.7.11.3, 3.7.11.4, and 3.7.11.5.
- f. Penetration Fire Barriers, Specification 3.7.12.
- g. Steam Generator Tube Inspection Results, Specification 4.4.5.5.a and c.
- h. Specific Activity of Primary Coolant, Specification 3.4.8.
- i. Containment Structural Integrity, Specification 4.6.1.6.



UNITED STATES
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 199 TO FACILITY OPERATING LICENSE NO. DPR-53
AND AMENDMENT NO. 176 TO FACILITY OPERATING LICENSE NO. DPR-69
BALTIMORE GAS AND ELECTRIC COMPANY
CALVERT CLIFFS NUCLEAR POWER PLANT, UNIT NOS. 1 AND 2
DOCKET NOS. 50-317 AND 50-318

1.0 INTRODUCTION

By letter dated August 4, 1994, the Baltimore Gas and Electric Company (the licensee) submitted a request for changes to the Calvert Cliffs Nuclear Power Plant, Unit Nos. 1 and 2, Technical Specifications (TSs). The proposed changes would delete the requirements related to seismic monitoring instrumentation from the TSs and relocate them to the Updated Final Safety Analysis Report (USFSAR) and plant procedures. The requirements of these TSs, however, will still be maintained and controlled pursuant to the plant procedures and 10 CFR 50.59, "Changes, tests, and experiments."

2.0 EVALUATION

Section 50.36 of Title 10 of the Code of Federal Regulations established the regulatory requirements related to the content of TSs. The rule requires that TSs include items in specific categories, including safety limits, limiting conditions for operation, and surveillance requirements; however, the rule does not specify the particular requirements to be included in a plant's TSs. The NRC developed criteria, as described in the "Final Policy Statement on Technical Specifications Improvements for Nuclear Power Reactors" (58 FR 39132), to determine which of the design conditions and associated surveillances need to be located in the TSs "to obviate the possibility of an abnormal situation or event giving rise to an immediate threat to the public health and safety." Briefly, those criteria are: (1) detection of abnormal degradation of the reactor coolant pressure boundary, (2) boundary conditions for design-basis accidents and transients, (3) primary success paths to prevent or mitigate design-basis accidents and transients, and (4) functions determined to be important to risk or operating experience. The Commission's final policy statement acknowledged that its implementation may result in the relocation of existing technical specification requirements to licensee controlled documents and programs.

Appendix A to 10 CFR Part 100 requires that seismic monitoring instrumentation be provided to promptly determine the magnitude of a seismic event and evaluate the response of those features important to safety. This capability

is required to allow for a comparison of the measured response to that used in the design basis for the unit. Comparison of such data is needed to:

- (1) determine whether the plant can continue to be operated safely and
- (2) permit such timely action as may be appropriate. However, these components are not factored into accident analyses at Calvert Cliffs nor do they affect the margin of safety of the plant. Seismic instrumentation does not actuate any protective equipment or play any direct role in the mitigation of an accident. The capability of the plant to withstand a seismic event or other design-basis accident is determined by the initial design and construction of systems, structures, and components. The instrumentation is used to alert operators to the seismic event and evaluate the plant response. Therefore, requirements related to the seismic monitoring instrumentation do not satisfy any of the above final policy statement criteria and need not be included in the TSs. In addition, the proposed amendment does not involve a change in the manner in which the plant will be operated, maintained, or tested. The requirements described in the affected TSs will be maintained and any subsequent changes to the plant procedures or the UFSAR related to these instruments will be made in accordance with the requirements of 10 CFR 50.59.

On this basis, the staff concludes that TSs 3/4.3.3.3, 6.9.2.b, 6.9.2.d, and Bases 3/4.3.3.3, which are related to seismic monitoring instrumentation, do not need to be controlled by TS; future changes to these requirements are adequately controlled by 10 CFR 50.59. Should the licensee's determination conclude that an unreviewed safety question is involved, due to either:

- (1) an increase in the probability or consequences of accidents or malfunctions of equipment important to safety, (2) the creation of a possibility for an accident or malfunction of a different type than any evaluated previously, or (3) a reduction in the margin of safety, as defined in the basis for any TSs, NRC approval and a license amendment would be required prior to implementation of the change. NRC inspection and enforcement programs also enable the staff to monitor facility changes and licensee adherence to updated final safety analysis report commitments and to take any remedial action that may be appropriate.

The staff has concluded, therefore, that relocation of the requirements related to seismic monitoring instrumentation (TSs 3/4.3.3.3, 6.9.2.b, and 6.9.2.d and Bases 3/4.3.3.3) is acceptable because: (1) their inclusion in TSs is not specifically required by 10 CFR 50.36 or other regulations, (2) these requirements are not required to avert an immediate threat to the public health and safety, and (3) changes that are deemed to involve an unreviewed safety question will require prior NRC approval in accordance with 10 CFR 50.59(c).

3.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Maryland State official was notified of the proposed issuance of the amendments. The State official had no comments.

4.0 ENVIRONMENTAL CONSIDERATION

The amendments change a requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and changes surveillance requirements. The NRC staff has determined that the amendments involve no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendments involve no significant hazards consideration, and there has been no public comment on such finding (59 FR 47165). Accordingly, the amendments meet the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b) no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendments.

5.0 CONCLUSION

The Commission has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendments will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributor: J. Harold

Date: October 21, 1994