



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

ENERGY OPERATIONS, INC.

DOCKET NO. 50-368

ARKANSAS NUCLEAR ONE, UNIT NO. 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 134
License No. NPF-6

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Entergy Operations, Inc. (the licensee) dated June 27, 1991 as supplemented December 20, 1991, 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 license 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. NPF-6 is hereby amended to read as follows:

2. Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 134, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. The license amendment is effective as of its date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



John T. Larkins, Director
Project Directorate IV-1
Division of Reactor Projects - III/IV/V
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: May 5, 1992

ATTACHMENT TO LICENSE AMENDMENT NO. 134

FACILITY OPERATING LICENSE NO. NPF-6

DOCKET NO. 50-368

Revise the following pages of the Appendix "A" Technical Specifications with the attached pages. The revised pages are identified by Amendment number and contain vertical lines indicating the area of change. The corresponding overleaf pages are also provided to maintain document completeness.

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3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS

3/4.0 APPLICABILITY

LIMITING CONDITION FOR OPERATION

3.0.1 Limiting Conditions for Operation and ACTION requirements shall be applicable during the OPERATIONAL MODES or other conditions specified for each specification.

3.0.2 Adherence to the requirements of the Limiting Condition for Operation and/or associated ACTION within the specified time interval shall constitute compliance with the specification. In the event the Limiting Condition for Operation is restored prior to expiration of the specified time interval, completion of the ACTION statement is not required.

3.0.3 In the event a Limiting Condition for Operation and/or associated ACTION requirements cannot be satisfied because of circumstances in excess of those addressed in the specification within 1 hour, action shall be initiated to place the unit in a MODE in which the specification does not apply by placing it, as applicable, in at least HOT STANDBY within 6 hours, in at least HOT SHUTDOWN within the next 6 hours, and in at least COLD SHUTDOWN within the following 24 hours unless corrective measures are completed that permit operation under the permissible ACTION statements for the specified time interval as measured from initial discovery or until the reactor is placed in a mode in which the specification is not applicable. Exceptions to these requirements shall be stated in the individual specification.

3.0.4 Entry into an OPERATIONAL MODE or other specified condition shall not be made when the conditions of the Limiting Condition for Operation are not met and the associated ACTION requires a shutdown if they are not met within a specified time interval. Entry into an OPERATIONAL MODE or other specified condition may be made in accordance with ACTION requirement when conformance to them permits continued operation of the facility for an unlimited period of time. This provision shall not prevent passage through or to OPERATIONAL MODES as required to comply with ACTION requirements. Exceptions to these requirements are stated in the individual specifications.

3.0.5 When a system, subsystem, train, component or device is determined to be inoperable solely because its emergency power source is inoperable, or solely because its normal power source is inoperable, it may be considered OPERABLE for the purpose of satisfying the requirements of its applicable Limiting Condition for Operation, provided: (1) its corresponding normal or emergency power source is OPERABLE; and (2) all of its redundant system(s), subsystem(s), train(s), component(s), and device(s) are OPERABLE, or likewise satisfy the requirements of this specification. Unless both conditions (1) and (2) are satisfied within 2 hours, ACTION shall be initiated to place the unit in a MODE in which the applicable Limiting Condition for Operation does not apply by placing it, as applicable, in at least HOT STANDBY within 6 hours, in at least HOT SHUTDOWN within the next 6 hours, and in at least COLD SHUTDOWN within the following 24 hours. This specification is not applicable in MODES 5 or 6.

APPLICABILITY

SURVEILLANCE REQUIREMENTS (Continued)

4.0.1 Surveillance Requirements shall be applicable during the OPERATIONAL MODES or other conditions specified for individual Limiting Conditions for Operation unless otherwise stated in an individual Surveillance Requirement.

4.0.2 Each Surveillance Requirement shall be performed within the specified surveillance interval with a maximum allowable extension not to exceed 25 percent of the specified surveillance interval.

4.0.3 Failure to perform a Surveillance Requirement within the allowed surveillance interval defined by Specification 4.0.2 shall constitute noncompliance with the OPERABILITY requirements for a Limiting Condition for Operation. The time limits of the ACTION requirements are applicable at the time it is identified that a Surveillance Requirement has not been performed. The time at which the ACTION is taken may be delayed for up to 24 hours to permit the completion of the surveillance when the allowable outage time limits of the ACTION requirements are less than 24 hours. Surveillance Requirements do not have to be performed on inoperable equipment.

4.0.4 Entry into an OPERATIONAL MODE or other specified applicability condition shall not be made unless the Surveillance Requirement(s) associated with the Limiting Condition for Operation have been performed within the stated surveillance interval or as otherwise specified. This provision shall not prevent passage through or to OPERATIONAL MODES as required to comply with ACTION requirements.

4.0.5 Surveillance Requirements for inservice inspection and testing of ASME Code Class 1, 2 and 3 components shall be applicable as follows:

- a. During the time period:
 1. From issuance of the Facility Operating License to the start of facility commercial operation, inservice testing of ASME Code Class 1, 2 and 3 pumps and valves shall be performed in accordance with Section XI of the ASME Boiler and Pressure Vessel Code 1974 Edition, and Addenda through Summer 1975, except where specific written relief has been granted by the Commission.
 2. Following start of facility commercial operation, inservice inspection of ASME Code Class 1, 2 and 3 components and inservice testing of ASME Code Class 1, 2 and 3 pumps and valves shall be performed in accordance with Section XI of the ASME Boiler and Pressure Vessel Code and applicable Addenda as required by 10 CFR 50, Section 50.55a(g), except where specific written relief has been granted by the Commission pursuant to 10 CFR 50, Section 50.55a(g)(6)(i).

INSTRUMENTATION

SURVEILLANCE REQUIREMENTS (Continued)

4.3.1.1.5 The Core Protection Calculator System shall be determined OPERABLE at least once per 12 hours by verifying that less than three auto restarts have occurred on each calculator during the past 12 hours.

4.3.1.1.6 The Core Protection Calculator System shall be subjected to a CHANNEL FUNCTIONAL TEST to verify OPERABILITY within 12 hours of receipt of a valid High CPC Room Temperature alarm.

TABLE 3.3-1

REACTOR PROTECTIVE INSTRUMENTATION

FUNCTIONAL UNIT	TOTAL NO. OF CHANNELS	CHANNELS TO TRIP	MINIMUM CHANNELS OPERABLE	APPLICABLE MODES	ACTION	
1. Manual Reactor Trip	2 sets of 2	1 set of 2	2 sets of 2	1, 2 and *	1	
2. Linear Power Level - High	4	2	3	1, 2	2	
3. Logarithmic Power Level-High						
a. Startup and Operating	4	2(a)(d)	3	2 and *	2	
b. Shutdown	4	0	2	3, 4, 5	3	
4. Pressurizer Pressure - High	4	2	3	1, 2	2	
5. Pressurizer Pressure - Low	4	2(b)	3	1, 2 and *	2	
6. Containment Pressure - High	4	2	3	1, 2	2	
7. Steam Generator Pressure - Low 4/SG		2/SG	3/SG	1, 2 and *	2	
8. Steam Generator Level - Low 4/SG		2/SG	3/SG	1, 2	2	
9. Local Power Density - High	4	2(c)(d)	3	1, 2	2	

TABLE 3.3-1 (Continued)

REACTOR PROTECTIVE INSTRUMENTATION

FUNCTIONAL UNIT	TOTAL NO. OF CHANNELS	CHANNELS TO TRIP	MINIMUM CHANNELS OPERABLE	APPLICABLE MODES	ACTION	
10. RFR - Low	4	2(c)(d)	3	1, 2	2	1
11. Steam Generator Level - High	4/SG	2/SG	3/SG	1, 2	2	1
12. Reactor Protection System Logic	4	2	4	1, 2 and *	4	
13. Reactor Trip Breakers	4(f)	2	4	1, 2 and *	4	
14. Core Protection Calculators	4	2(c)(d)	3	1, 2	2 and 6	1
15. CEA Calculators	2	1	2(e)	1, 2	5 and 6	1

TABLE 3.3-1 (Continued)

TABLE NOTATION

*With the protective system trip breakers in the closed position and the CEA drive system capable of CEA withdrawal.

- (a) Trip may be manually bypassed above $10^{-4}\%$ of RATED THERMAL POWER; bypass shall be automatically removed when THERMAL POWER is $\leq 10^{-4}\%$ of RATED THERMAL POWER.
- (b) Trip may be manually bypassed below 400 psia; bypass shall be automatically removed whenever pressurizer pressure is ≥ 500 psia.
- (c) Trip may be manually bypassed below $10^{-4}\%$ of RATED THERMAL POWER; bypass shall be automatically removed when THERMAL POWER is $\geq 10^{-4}\%$ of RATED THERMAL POWER. During testing pursuant to Special Test Exception 3.10.3, trip may be manually bypassed below 1% of RATED THERMAL POWER; bypass shall be automatically removed when THERMAL POWER is $\geq 1\%$ of RATED THERMAL POWER.
- (d) Trip may be bypassed during testing pursuant to Special Test Exception 3.10.3.
- (e) See Special Test Exception 3.10.2.
- (f) Each channel shall be comprised of two trip breakers; actual trip logic shall be one-out-of-two taken twice.

ACTION STATEMENTS

- ACTION 1 - With the number of channels OPERABLE one less than required by the Minimum Channels OPERABLE requirement, restore the inoperable channel to OPERABLE status within 48 hours or be in HOT STANDBY within the next 6 hours and/or open the protective system trip breakers.

TABLE 3.3-3

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION

FUNCTIONAL UNIT	TOTAL NO. OF CHANNELS	CHANNELS TO TRIP	MINIMUM CHANNELS OPERABLE	APPLICABLE MODES	ACTION
1. SAFETY INJECTION (SIAS)					
a. Manual (Trip Buttons)	2 sets of 2	1 set of 2	2 sets of 2	1, 2, 3, 4	8
b. Containment Pressure - High	4	2	3	1, 2, 3	9
c. Pressurizer Pressure - Low	4	2	3	1, 2, 3(e)	9
2. CONTAINMENT SPRAY (CSAS)					
a. Manual (Trip Buttons)	2 sets of 2	1 set of 2	2 sets of 2	1, 2, 3, 4	8
b. Containment Pressure -- High - High	4	2(b)	3	1, 2, 3	10
3. CONTAINMENT ISOLATION (CIAS)					
a. Manual (Trip Buttons)	2 sets of 2	1 set of 2	2 sets of 2	1, 2, 3, 4	8
b. Containment Pressure - High	4	2	3	1, 2, 3	9

TABLE 3.3-3 (Continued)

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION

FUNCTIONAL UNIT	TOTAL NO. OF CHANNEL	CHANNELS TO TRIP	MINIMUM CHANNELS OPERABLE	APPLICABLE MODES	ACTION	
4. MAIN STEAM AND FEEDWATER ISOLATION (MSIS)						
a. Manual (Trip Buttons)	2 sets of 2	1 set of 2	2 sets of 2	1, 2, 3, 4	8	
b. Steam Generator Pressure - Low	4/steam generator	2/steam generator	3/steam generator	1, 2, 3	9	
5. CONTAINMENT COOLING (CCAS)						
a. Manual (Trip Buttons)	2 sets of 2	1 set of 2	2 sets of 2	1, 2, 3, 4	8	
b. Containment Pressure - High	4	2	3	1, 2, 3	9	
c. Pressurizer Pressure - Low	4	2	3	1, 2, 3(a)	9	
6. RECIRCULATION (RAS)						
a. Manual (TRIP Buttons)(c)	2 sets of 2 per train	1 set of 2 per train	2 sets of 2 per train	1, 2, 3, 4	8	
b. Refueling Water Tank - Low	4	2	3	1, 2, 3	9	

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
7. LOSS OF POWER					
a. 4.16 kv Emergency Bus Undervoltage (Loss of Voltage)	2/Bus	1/Bus	2/Bus	1, 2, 3	8
b. 460 volt Emergency Bus Undervoltage (Degraded Voltage)	1/Bus	1/Bus	1/Bus	1, 2, 3	8
8. EMERGENCY FEEDWATER (EFAS)					
a. Manual (Trip Buttons)	2 sets of 2 per S/G	1 set of 2 per S/G	2 sets of 2 per S/G	1, 2, 3, 4	8
b. SG Level and Pressure (A/B) - Low and AP (A/B) - High	4/SG	2/SG	3/SG	1, 2, 3, 4	9
c. SG Level (A/B) - Low and No S/G Pressure - Low Trip (A/B)	4/SG	2/SG	3/SG	1, 2, 3, 4	9

TABLE 3.3-3 (Continued)

TABLE NOTATION

- (a) Trip function may be bypassed in this MODE when pressurizer pressure is below 400 psia; bypass shall be automatically removed when pressurizer pressure is \geq 500 psia.
- (b) An SIAS signal is first necessary to enable CSAS logic.
- (c) Remote manual not provided for RAS. These are local manuals at each ESF auxiliary relay cabinet.

ACTION STATEMENTS

- ACTION 8 - With the number of OPERABLE channels one less than the Total Number of Channels, restore the inoperable channel to OPERABLE status within 48 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
- ACTION 9 - With the number of OPERABLE channels one less than the Total Number of Channels, operation may proceed provided the following conditions are satisfied:
 - a. The inoperable channel is placed in either the bypassed or tripped condition within 1 hour. For the purposes of testing and maintenance, the inoperable channel may be bypassed for up to 48 hours from time of initial loss of OPERABILITY; however, inoperable channel shall then be either restored to OPERABLE status or placed in the tripped condition.
 - b. Within one hour, all functional logic units receiving an input from the inoperable channel are also placed in the same condition (either bypassed or tripped, as applicable) as that required by a. above for the inoperable channel.
 - c. The Minimum Channels OPERABLE requirement is met; however, one additional channel may be bypassed for up to 48 hour while performing tests and maintenance on that channel provided the other inoperable channel is placed in the tripped condition.

TABLE 4.3-2 (Continued)

TABLE NOTATION

- (1) The logic circuits shall be tested manually at least once per 31 days.

INSTRUMENTATION

3/4.3.3 MONITORING INSTRUMENTATION

RADIATION MONITORING INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.3.3.1 The radiation monitoring instrumentation channels shown in Table 3.3-6 shall be OPERABLE with their alarm/trip setpoints within the specified limits.

APPLICABILITY: As shown in Table 3.3-6.

ACTION:

- a. With a radiation monitoring channel alarm/trip setpoint exceeding the value shown in Table 3.3-6, adjust the setpoint to within the limit within 4 hours or declare the channel inoperable.
- b. With one or more radiation monitoring channels inoperable, take the ACTION shown in Table 3.3-6.
- c. The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.3.3.1 Each radiation monitoring instrumentation channel shall be demonstrated OPERABLE by the performance of the CHANNEL CHECK, CHANNEL CALIBRATION and CHANNEL FUNCTIONAL TEST operations during the modes and at the frequencies shown in Table 4.3-3.

TABLE 4.3-3

RADIATION MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

<u>INSTRUMENT</u>	<u>CHANNEL CHECK</u>	<u>CHANNEL CALIBRATION</u>	<u>CHANNEL FUNCTIONAL TEST</u>	<u>MODES IN WHICH SURVEILLANCE REQUIRED</u>
1. AREA MONITORS				
a. Spent Fuel Pool Area Monitor	S	P	M	Note 1
b. Containment High Range	S	R Note 4	M	1, 2, 3, & 4
2. PROCESS MONITORS				
a. Containment				
i. Gaseous Activity				
a) Purge & Exhaust Isolation	Note 2	R	Note 3	5 & 6
b) RCS Leakage Detection	S	R	M	1, 2, 3, & 4
ii. Particulate Activity				
a) RCS Leakage Detection	S	R	M	1, 2, 3, & 4
b. Control Room Ventilation Intake Duct Monitor	S	R	M	ALL MODES

Note 1 - With fuel in the spent fuel pool or building.

Note 2 - Within 8 hours prior to initiating containment purge operations and at least once per 12 hours during containment purge operations.

Note 3 - Within 31 days prior to initiating containment purge operations and at least once per 31 days during containment purge operations.

Note 4 - Acceptable criteria for calibration are provided in Table II.F.1-2 of NUREG-0737.

INSTRUMENTATION

INCORE DETECTORS

LIMITING CONDITION FOR OPERATION

3.3.3.2 The incore detection system shall be OPERABLE with:

- a. At least 75% of all incore detectors with at least one incore detector in each quadrant at each level, and
- b. At least 75% of all incore detector locations, and
- c. Sufficient operable incore detectors to perform at least six tilt estimates with at least one tilt estimate at each of three levels.

An OPERABLE incore detector location shall consist of a fuel assembly containing either a fixed detector string with a minimum of three OPERABLE rhodium detectors or an OPERABLE movable incore detector capable of mapping the location.

A tilt estimate can be made from two sets of symmetric pairs of incore detectors. Two sets of symmetric pairs of incore detectors are formed by two pairs of diagonally opposite symmetric incore detectors, one incore detector per quadrant.

APPLICABILITY: When the incore detection system is used for monitoring the AZIMUTHAL POWER TILT, radial peaking factors, local power density or DNB margin.

ACTION:

With the incore detection system inoperable, do not use the system for the above applicable monitoring or calibration functions. The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.3.3.2 The incore detection system shall be demonstrated OPERABLE:

- a. By performance of a CHANNEL CHECK within 24 hours prior to its use and at least once per 7 days thereafter when required for monitoring the AZIMUTHAL POWER TILT, radial peaking factors, local power density or DNB margin.
- b. At least once per 18 months by performance of a CHANNEL CALIBRATION operation which exempts the neutron detectors but includes all electronic components. The neutron detectors shall be calibrated prior to installation in the reactor core.

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INSTRUMENTATION

SEISMIC INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.3.3.3 The seismic monitoring instrumentation shown in Table 3.3-7 shall be OPERABLE.

APPLICABILITY: At all times.

ACTION:

- a. With one or more seismic monitoring instruments inoperable for more than 30 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 instrument(s) to OPERABLE status.
- b. The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.3.3.3.1 Each of the above seismic monitoring instruments shall be demonstrated OPERABLE by the performance of the CHANNEL CHECK, CHANNEL CALIBRATION and CHANNEL FUNCTIONAL TEST operations at the frequencies shown in Table 4.3-4.

4.3.3.3.2 Each of the above seismic monitoring instruments actuated during a seismic event shall be restored to OPERABLE status within 24 hours and a CHANNEL CALIBRATION performed within 5 days following the seismic event. Data shall be retrieved from actuated instruments and analyzed to determine the magnitude of the vibratory ground motion. A Special Report shall be prepared and submitted to the Commission pursuant to Specification 6.9.2 within 10 days describing the magnitude, frequency spectrum and resultant effect upon facility features important to safety.

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 Specification 3.0.3 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.

TABLE 3.3-8

METEOROLOGICAL MONITORING INSTRUMENTATION

<u>INSTRUMENT</u>	<u>LOCATION</u>	<u>MINIMUM CHANNELS OPERABLE</u>
1. WIND SPEED		
a. Nominal Elev. 540'		1
b. Nominal Elev. 394'		1
2. WIND DIRECTION		
a. Nominal Elev. 540'		1
b. Nominal Elev. 394'		1
3. AIR TEMPERATURE - DELTA T		
a. Nominal Elev. 394' to 540'		1

INSTRUMENTATION

CHLORINE DETECTION SYSTEMS

LIMITING CONDITION FOR OPERATION

3.3.3.7 Two independent chlorine detection systems, with their alarm/trip setpoints adjusted to actuate at a chlorine concentration of ≤ 5 ppm, shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

- a. With one chlorine detection system inoperable, restore the inoperable detection system to OPERABLE status within 7 days or within the next 6 hours initiate and maintain operation of the control room emergency ventilation system in the recirculation mode of operation.
- b. With no chlorine detection system OPERABLE, within 1 hour initiate and maintain operation of the control room emergency ventilation system in the recirculation mode of operation.

SURVEILLANCE REQUIREMENTS

4.3.3.7 Each chlorine detection system shall be demonstrated OPERABLE by performance of a CHANNEL CHECK at least once per 12 hours, a CHANNEL FUNCTIONAL TEST at least once per 31 days and a CHANNEL CALIBRATION at least once per 18 months.

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.

APPLICABILITY: During releases via this pathway.

ACTION:

- a. With the following gaseous effluent monitoring instrumentation channels alarm/trip setpoint less conservative than required by the above specification, immediately suspend the release of radioactive gaseous effluents monitored by the affected channel.
 1. Waste Gas Holdup System Noble Gas Activity Monitor. (during periods of gaseous releases.)
 2. Containment Purge and Ventilation System Noble Gas Activity Monitor. (during periods of containment building PURGE.)
- b. With less than the minimum number of monitoring instrumentation channels OPERABLE, take the action shown in Table 3.3-12.
- c. Return the instruments to OPERABLE status within 30 days or, in lieu of any other report, explain in the next Semiannual Radioactive Effluent Release Report why the inoperability was not corrected.
- d. The provisions of Specifications 3.0.3 and 4.0.4 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 at the frequencies shown in Table 4.3-12.

TABLE 3.3-12

RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION

<u>INSTRUMENT</u>	<u>MINIMUM CHANNELS OPERABLE</u>	<u>APPLICABILITY</u>	<u>PARAMETER</u>	<u>ACTION</u>
1. Waste Gas Holdup System				
a. Noble Gas Activity Monitor (provides alarm and automatic termination of release)	1	"	Radioactivity	25
b. Effluent System Flow Monitor	1	"	System Flow	26
2. Containment Purge and Ventilation System				
a. Noble Gas Activity Monitor	1	"	Radioactivity	27,29
b. Iodine Sampler Cartridge	1	"	Verify Presence of Cartridge	28
c. Particulate Sampler Filter	1	"	Verify Presence of Filter	28
d. Effluent System Flow Monitor	1	"	System Flow	26
e. Sampler Flow Monitor	1	"	Sampler Flow	26

TABLE 4.3-12 (Continued)

TABLE NOTATION

- *During releases via this pathway.
- **A SOURCE CHECK is not required if the background activity is greater than the activity of the check source.
- (1) During Containment Building ventilation operations.
- (2) Verify presence of cartridge or filter only.

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.

APPLICABILITY: During releases via this pathway.

ACTION:

- a. With a radioactive liquid effluent monitoring instrumentation channel alarm/trip setpoint less conservative than required by the above specification, immediately suspend the release of radioactive liquid effluents monitored by the affected channel, until the set point is changed to an acceptable conservative value.
- b. With less than the minimum number of monitoring instrumentation channels OPERABLE, take the action shown in Table 3.3-13.
- c. Return the instruments to OPERABLE status within 30 days or, in lieu of any other report, explain in the next Semiannual Radioactive Effluent Release Report why the inoperability was not corrected.
- d. The provisions of Specifications 3.0.3 and 4.0.4 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 at the frequencies shown in Table 4.3-13.

REACTOR COOLANT SYSTEM

PRESSURIZER

LIMITING CONDITION FOR OPERATION

3.4.9.2 The pressurizer temperature shall be limited to:

- a. A maximum heatup of 200°F in any one hour period, and
- b. A maximum cooldown of 200°F in any one hour period.

APPLICABILITY: At all times.

ACTION:

With the pressurizer temperature limits in excess of any of the above limits, restore the temperature to within the limits within 30 minutes; perform an engineering evaluation to determine the effects of the out-of-limit condition on the fracture toughness properties of the pressurizer; determine that the pressurizer remains acceptable for continued operation or be in at least HOT STANDBY within the next 6 hours and reduce the pressurizer pressure to less than 500 psig within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.4.9.2 The pressurizer temperatures shall be determined to be within the limits at least once per 30 minutes during system heatup or cooldown.

REACTOR COOLANT SYSTEM

3/4.4.10 STRUCTURAL INTEGRITY

ASME CODE CLASS 1, 2 AND 3 COMPONENTS

LIMITING CONDITION FOR OPERATION

3.4.10.1 The structural integrity of ASME Code Class 1, 2 and 3 components shall be maintained in accordance with Specification 4.4.10.1.

APPLICABILITY: ALL MODES

ACTION:

- a. With the structural integrity of any ASME Code Class 1 component(s) not conforming to the above requirements, restore the structural integrity of the affected component(s) to within its limit or isolate the affected component(s) prior to increasing the Reactor Coolant System temperature more than 50°F above the minimum temperature required by NDT considerations.
- b. With the structural integrity of any ASME Code Class 2 component(s) not conforming to the above requirements, restore the structural integrity of the affected component(s) to within its limit or isolate the affected component(s) prior to increasing the Reactor Coolant System temperature above 200°F.
- c. With the structural integrity of any ASME Code Class 3 component(s) not conforming to the above requirements, restore the structural integrity of the affected component to within its limit or isolate the affected component from service.

SURVEILLANCE REQUIREMENTS

4.4.10.1 In addition to the requirements of Specification 4.0.5, each Reactor Coolant Pump flywheel shall be inspected per the recommendations of Regulatory Position C.4.b of Regulatory Guide 1.14, Revision 1, August 1975.

CONTAINMENT SYSTEMS

3/4.6.3 CONTAINMENT ISOLATION VALVES

LIMITING CONDITION FOR OPERATION

3.6.3.1 The containment isolation valves specified in Table 3.6-1 shall be OPERABLE with isolation times as shown in Table 3.6-1.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

With one or more of the isolation valve(s) specified in Table 3.6-1 inoperable, maintain at least one isolation valve OPERABLE in each affected penetration that is open and either:

- a. Restore the inoperable valve(s) to OPERABLE status within 4 hours, or
- b. Isolate each affected penetration within 4 hours by use of at least one deactivated automatic valve secured in the isolation position, or
- c. Isolate the affected penetration within 4 hours by use of at least one closed manual valve or blind flange; or
- d. Be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.6.3.1.1 The isolation valves specified in Table 3.6-1 shall be demonstrated OPERABLE prior to returning the valve to service after maintenance, repair or replacement work is performed on the valve or its associated actuator, control or power circuit by performance of a cycling test and verification of isolation time.

3/4.7 PLANT SYSTEMS

3/4.7.1 TURBINE CYCLE

SAFETY VALVES

LIMITING CONDITION FOR OPERATION

3.7.1.1 All main steam line code safety valves shall be OPERABLE with lift settings as specified in Table 3.7-5.

APPLICABILITY: MODES 1, 2 and 3*.

ACTION:

- a. With both reactor coolant loops and associated steam generators in operation and with one or more main steam line code safety valves inoperable, operation in MODES 1, 2, and 3 may proceed provided, that within 4 hours, either the inoperable valve is restored to OPERABLE status or the Linear Power Level-High trip setpoint is reduced per Table 3.7-1; otherwise, be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
- b. With one reactor coolant loop and associated steam generator in operation and with one or more main steam line code safety valves associated with the operating steam generator inoperable, operation in MODES 1, 2 and 3 may proceed provided:
 1. That at least 2 main steam line code safety valves on the non-operating steam generator are OPERABLE, and
 2. That within 4 hours, either the inoperable valve is restored to OPERABLE status or the Linear Power Level-High trip setpoint is reduced per Table 3.7-2; otherwise be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.7.1.1 No additional Surveillance Requirements other than those required by Specification 4.0.5.

*Except that during hydrostatic testing in Mode 3, eight of the main steam line code safety valves may be gagged and two (one on each header) may be reset for the duration of the test to allow the required pressure for the test to be attained. The Reactor Trip Breakers shall be open for the duration of the test.

TABLE 3.7-1

MAXIMUM ALLOWABLE LINEAR POWER LEVEL-HIGH TRIP SETPOINT WITH INOPERABLE
STEAM LINE SAFETY VALVES DURING OPERATION WITH BOTH STEAM GENERATORS

<u>Maximum Number of Inoperable Safety Valves on Any Operating Steam Generator</u>	<u>Maximum Allowable Linear Power Level-High Trip Setpoint (Percent of RATED THERMAL POWER)</u>
1	99.5
2	74.0
3	48.6

PLANT SYSTEMS

3/4.7.9 SEALED SOURCE CONTAMINATION

LIMITING CONDITION FOR OPERATION

3.7.9.1 Each sealed source containing radioactive material either in excess of 100 microcuries of beta and/or gamma emitting material or 5 microcuries of alpha emitting material shall be free of ≥ 0.005 microcuries of removable contamination.

APPLICABILITY: At all times.

ACTION:

- a. Each sealed source with removable contamination in excess of the above limit shall be immediately withdrawn from use and:
 1. Either decontaminated and repaired, or
 2. Disposed of in accordance with Commission Regulations.
- b. The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.7.9.1.1 Test Requirements - Each sealed source shall be tested for leakage and/or contamination by:

- a. The licensee, or
- b. Other persons specifically authorized by the Commission or an Agreement State.

The test method shall have a detection sensitivity of at least 0.005 microcuries per test sample.

4.7.9.1.2 Test Frequencies - Each category of sealed sources (excluding startup sources and fission detectors previously subjected to core flux) shall be tested at the frequencies described below.

- a. Sources in use - At least once per six months for all sealed sources containing radioactive material:

PLANT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

1. With a half-life greater than 30 days (excluding Hydrogen 3), and
 2. In any form other than gas.
- b. Stored sources not in use - Each sealed source and fission detector shall be tested prior to use or transfer to another licensee unless tested within the previous six months. Sealed sources and fission detectors transferred without a certificate indicating the last test date shall be tested prior to being placed into use.
 - c. Startup sources and fission detectors - Each sealed startup source and fission detector shall be tested within 31 days prior to being subjected to core flux or installed in the core and following repair or maintenance to the source or detector.
 - d. Source installed in the Boronometer - This sealed source shall be tested for leakage at least once per 18 months.
- 4.7.9.1.3 Reports - A report shall be prepared and submitted to the Commission on an annual basis if sealed source or fission detector leakage tests reveal the presence of ≥ 0.005 microcuries of removable contamination.

ELECTRICAL POWER SYSTEMS

CONTAINMENT PENETRATION CONDUCTOR OVERCURRENT PROTECTIVE DEVICES

LIMITING CONDITION FOR OPERATION

3.8.2.5 All containment penetration conductor overcurrent protective devices shown in Table 3.8-1 shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

With one or more of the containment penetration conductor overcurrent protective devices shown in Table 3.8-1 inoperable:

- a. De-energize the circuit(s) by tripping the associated backup circuit breaker within 72 hours and verifying the backup circuit breaker to be tripped at least once per 7 days thereafter, or
- b. Be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.8.2.5 All containment penetration conductor overcurrent protective devices shown in Table 3.8-1 shall be demonstrated OPERABLE in accordance with the manufacturers' recommendations:

- a. At least once per 18 months:
 1. For at least one 6.9 kv reactor coolant pump circuit, such that all reactor coolant pump circuits are demonstrated OPERABLE at least once per 72 months, by performance of:
 - (a) A CHANNEL CALIBRATION of the associated protective relays, and
 - (b) An integrated system functional test which includes simulated automatic actuation of the system and verifying that each relay and associated circuit breakers and control circuits function as designed.

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

2. For molded case circuit breakers, by performance of a functional test of a least one circuit breaker of each type, such that all circuit breakers of each type are demonstrated OPERABLE at least once per $N \times 18$ months, where N is the number of circuit breakers of each type. The functional test shall consist of injecting a current input at the specified setpoint to the circuit breaker and verifying that the circuit breaker functions as designed. If any circuit breaker fails to function as designed, all other circuit breakers of that type shall be tested.
- b. At least once per 60 months by subjecting each circuit breaker to an inspection and preventive maintenance in accordance with procedures prepared in conjunction with its manufacturer's recommendations.

REFUELING OPERATIONS

SPENT FUEL POOL WATER LEVEL

LIMITING CONDITION FOR OPERATION

3.9.10 At least 23 feet of water shall be maintained over the top of irradiated fuel assemblies seated in the storage racks.

APPLICABILITY: Whenever irradiated fuel assemblies are in the spent fuel pool.

ACTION:

With the requirement of the specification not satisfied, suspend all movement of fuel assemblies and crane operations with loads in the spent fuel pool areas and restore the water level to within its limit within 4 hours. The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.9.10 The water level in the spent fuel pool shall be determined to be at least its minimum required depth at least once per 7 days when irradiated fuel assemblies are in the spent fuel pool.

REFUELING OPERATIONS

FUEL HANDLING AREA VENTILATION SYSTEM

LIMITING CONDITION FOR OPERATION

3.9.11 The fuel handling area ventilation system shall be operating and discharging through the HEPA filters and charcoal adsorbers.

APPLICABILITY: Whenever irradiated fuel is being moved in the storage pool and during crane operation with loads over the storage pool.

ACTION:

- a. With the fuel handling area ventilation system not operating, suspend all operations involving movement of fuel within the spent fuel pool or crane operation with loads over the spent fuel pool until the fuel handling area ventilation system is restored to operation.
- b. The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.9.11.1 The fuel handling area ventilation system shall be determined to be in operation and discharging through the HEPA filters and charcoal adsorbers at least once per 12 hours.

4.9.11.2 The fuel handling area ventilation system shall be demonstrated OPERABLE at the following frequencies when irradiated fuel is in the storage pool:

- a. At least once per 18 months or (1) after any structural maintenance on the HEPA filter or charcoal adsorber housings, or (2) following painting, fire or chemical release in any ventilation zone communicating with the system by:
 1. Verifying that the ventilation system satisfies the in-place testing acceptance criteria and uses the test procedures of Regulatory Positions C.5.a, C.5.c and C.5.d of Regulatory Guide 1.52, Revision 2, March 1978, and the system flow rate is 39,700 cfm \pm 10%.

3/4.11 RADIOACTIVE EFFLUENTS

3/4.11.1 LIQUID EFFLUENTS

LIMITING CONDITION FOR OPERATION

3.11.1.1 The concentration of radioactive material released from the site in liquid effluents to the discharge canal shall be limited to the concentrations specified in 10 CFR Part 20, Appendix B, Table II, Column 2 for radionuclides other than dissolved or entrained noble gases. For dissolved or entrained noble gases, the concentration released shall be limited to 2×10^{-6} - $\mu\text{Ci/ml}$.

APPLICABILITY: At all times.

ACTION:

- a. With the concentration of radioactive material released exceeding the above limits, immediately initiate actions to restore concentrations to within the above limits. Provide notification to the Commission within 24 hours and in lieu of any other report, submit a Special Report pursuant to Specification 6.9.2.h within 30 days.
- b. The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.11.1.1.1 Radioactive liquid wastes shall be sampled and analyzed according to the sampling and analyses program of Table 4.11-1.

4.11.1.1.2 The results of the radioactivity analyses shall be used in accordance with the methods in the ODCM to assure that the concentrations at the point of release are maintained within the limits of Specification 3.11.1.1.

TABLE 4.11-1

RADIOACTIVE LIQUID WASTE SAMPLING AND ANALYSES PROGRAM

Liquid Release Type	Sampling Frequency	Minimum Analyses Frequency	Type of Activity Analyses	Lower Limit of Detection (LLD) (uCi/m ³) (a)
A. Batch Waste Release (d)	P Each Batch	P Each Batch	γ isotopic ^(e)	5 x 10 ⁻⁷ (b)
			I-131	1 x 10 ⁻⁶
	P One Batch/M	M	Dissolved and Entrained Gases (Gamma Emitters)	1 x 10 ⁻⁵
	P Each Batch	M Composite	H-3	1 x 10 ⁻⁹
	P Each Batch	Q Composite	Gross Alpha Sr-89, Sr-90 Fe-55	1 x 10 ⁻⁷ 5 x 10 ⁻⁸ 1 x 10 ⁻⁶

TABLE NOTATION

- a. The LLD is the smallest concentration of radioactive material in a sample that will be detected with 95% probability with 5% probability of falsely concluding that a blank observation represents a "real" signal.

For a particular measurement system (which may include radiochemical separation):

$$LLD = \frac{4.66 s_b}{E \cdot V \cdot 2.22 \cdot Y \cdot \exp(-\lambda \Delta t)}$$

Where:

LLD is the lower limit of detection as defined above (as picocurie per unit mass or volume).

s_b is the standard deviation of the background counting rate or of the counting rate of a blank sample as appropriate (as counts per minute).

E is the counting efficiency (as counts per transformation).

TABLE 4.11-1 (Continued)

V is the sample size (in units of mass or volume).

2.22 is the number of transformations per minute per picocurie.

Y is the fractional radiochemical yield (when applicable).

λ is the radioactive decay constant for the particular radionuclide, and

Δt is the elapsed time between midpoint of sample collection and time of counting (for plant effluents, not environmental samples).

Typical values of E, V, Y, and Δt shall be used in the calculation.

It should be recognized that the LLD is an a priori (before the fact) limit representing the capability of a measurement system and not an a posteriori (after the fact) limit for a particular measurement.

- b. For certain mixtures of gamma emitters, it may not be possible to measure radionuclides in concentrations near their sensitivity limits when other nuclides are present in the sample in much greater concentrations. Under these circumstances, it will be more appropriate to calculate the concentration of such radionuclides using observed ratios with those radionuclides which are measurable.
- c. A composite sample is one in which the quantity of liquid sampled is proportional to the quantity of liquid waste discharged and in which the method of sampling employed results in a specimen which is representative of the liquids released.
- d. A batch release is the discharge of liquid wastes of a discrete volume. Prior to sampling, each batch shall be isolated and mixed to assure representative sampling.
- e. The principal gamma emitters for which the LLD specification will apply are exclusively the following radionuclides: Mn54, Fe59, Co58, Co60, Zn65, Mo99, Cs134, Cs137, Ce141, and Ce144. This list does not mean that only these nuclides are to be detected and reported. Other peaks which are measurable and identifiable, together with the above nuclides, shall also be identified and reported. Nuclides which are below the LLD for the analyses should not be reported as being present at the LLD level. When unusual circumstances result in LLD's higher than required, the reasons shall be documented in the Semiannual Radioactive Effluent Release Report.

RADIOACTIVE EFFLUENTS

DOSE

LIMITING CONDITION FOR OPERATION

3.11.1.2 The dose commitment to a MEMBER OF THE PUBLIC from radioactive materials in liquid effluents released from ANO-2 to the discharge canal shall be limited:

- a. During any calendar quarter to less than or equal to 1.5 mrem to the total body and to less than or equal to 5 mrem to any organ, and
- b. During any calendar year to less than or equal to 3 mrem to the total body and to less than or equal to 10 mrem to any organ.

APPLICABILITY: At all times.

ACTION:

- a. With the calculated dose from the release of radioactive materials in liquid effluents exceeding any of the above limits, in lieu of any other report submit a Special Report pursuant to Specification 6.9.2.h within 30 days.
- b. The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.11.1.2 Dose Calculations. Cumulative dose contributions from liquid effluents shall be determined in accordance with the ODCM at least once per 31 days.

RADIOACTIVE EFFLUENTS

LIQUID RADWASTE TREATMENT

LIMITING CONDITION FOR OPERATION

3.11.1.3 The LIQUID RADWASTE TREATMENT SYSTEM shall be used to reduce the radioactive materials in liquid wastes prior to their discharge when the projected doses due to the liquid effluent, from ANO-2 to the discharge canal, would exceed .18 mrem to the total body or .625 mrem to any organ in any calendar quarter.

APPLICABILITY: At all times.

ACTION:

- a. With radioactive liquid waste being discharged without treatment and in excess of the above limits, in lieu of any other report, submit a Special Report pursuant to Specification 6.9.2.h within 30 days.
- b. The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.11.1.3.1 Doses due to liquid releases shall be projected at least once per 31 days in accordance with the ODCM.

RADIOACTIVE EFFLUENTS

LIQUID HOLDUP TANKS*

LIMITING CONDITION FOR OPERATION

3.11.1.4 The quantity of radioactive material contained in each unprotected outside temporary radioactive liquid storage tank shall be limited to less than or equal to 10 curies, excluding tritium and dissolved or entrained noble gases.

APPLICABILITY: At all times.

ACTION:

- a. With the quantity of radioactive material exceeding the above limit, immediately suspend all additions of radioactive material to the affected tank and within 48 hours reduce the tank contents to within the limit.
- b. The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.11.1.4 The quantity of radioactive material contained in each unprotected outside temporary radioactive liquid storage tank shall be determined to be within the above limit by analyzing a representative sample of the contents of the tank at least once per 7 days when radioactive materials are being added to the tank.

*Tanks included in this specification are those outdoor temporary tanks that do not have 1) liners, dikes or walls capable of holding the tank contents, or 2) tank overflows and surrounding area drains connected to the LIQUID RADWASTE TREATMENT SYSTEM.

RADIOACTIVE EFFLUENTS

3/4.11.2 GASEOUS EFFLUENTS

DOSE RATE

LIMITING CONDITION FOR OPERATION

3.11.2.1 The dose rate due to radioactive materials released in gaseous effluents from the site to UNRESTRICTED AREAS (see Figure 5.1-3) shall be limited to the following:

- a. For noble gases: Less than or equal to the 500 mrem/yr to the total body and less than or equal to 3000 mrem/yr to the skin.
- b. For iodine-131, for tritium and for all radionuclides in particulate form with half lives greater than 8 days: Less than or equal to 1500 mrem/yr to any organ.

During periods of containment purging the dose rate may be averaged over a one hour interval.

APPLICABILITY: At all times.

ACTION:

- a. With the dose rate(s) exceeding the above limits, without delay restore the release rate to comply with the above limit(s).
- b. The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.11.2.1.1 The dose rate due to noble gases in gaseous effluents shall be determined to be within the above limits in accordance with the methods and procedures of the ODCM.

4.11.2.1.2 The dose rate due to iodine-131, tritium, and all radionuclides in particulate form with half-lives greater than 8 days in gaseous effluents shall be determined to be within the above limits in accordance with the methods and procedures of the ODCM by obtaining representative samples and performing analyses in accordance with the sampling and analysis program specified in Table 4.11-2.

TABLE 4.11-2

RADIOACTIVE GASES: WASTE SAMPLING AND ANALYSES PROGRAM

Gaseous Release Type	Sampling Frequency	Minimum Analyses Frequency	Type of Activity Analyses	Lower Limit of Detection (LLD) (uCi/ml)
A. Waste Gas Storage Tank	P Each Tank Grab Sample	P Each Tank	Principal Gamma Emitters (b)	1×10^{-4} (q)
B. Reactor Bldg. Purge	P Each Purge Grab Sample	P Each Purge	Principal Gamma Emitters (b) H-3	1×10^{-4} (q) 1×10^{-6}
C. Unit Vents (Auxiliary Bldg. Ext.) (Spent Fuel Pool Area Ventilation) (Rx Bldg. Ventilation) (Radonisle Area Ventilation) (Low-Level Radwaste Storage Building) (RWAC Exhaust Ventilation)	H (c) (d) Grab Sample Continuous (e) Continuous (e) Continuous (e)	M J (f) Charcoal Sample M (f) Particulate Sample M Particulate Sample Q Composite Particulate Sample	Principal Gamma Emitters (b) H-3 I-131 Principal Gamma Emitters (b) (I-131, Others) Gross alpha	1×10^{-4} (q) 1×10^{-6} 1×10^{-12} 1×10^{-11} 1×10^{-11}
	Continuous (e)		Sr-89, Sr-90	1×10^{-11}
	Continuous (e)		Moble Gases Gross Beta or Gamma	1×10^{-6} (Re-133 equiv.)

TABLE 4.11.2 (Continued)

TABLE NOTATION

- a. The Lower Limit of Detection (LLD) is defined in Table Notation a. of Table 4.11-1 of Specification 3.11.1.1.
- b. The principal gamma emitters for which the LLD specification will apply are exclusively the following radionuclides: Kr-87, Kr-88, Xe-133, Xe-133m, Xe-135, and Xe-138 for gaseous emissions and Mn-54, Fe-59, Co-58, Co-60, Zn-65, Mo-99, Cs-134, Cs-137, Ce-141 and Ce-144 for particulate emissions. This list does not mean that only these nuclides are to be detected and reported. Other peaks which are measurable and identifiable, together with the above nuclides, shall also be identified and reported. Nuclides which are below the LLD for the analyses should not be reported as being present at the LLD level for that nuclide. When unusual circumstances result in LLD's higher than required, the reasons shall be documented in the Semiannual Radioactive Effluent Release Report.
- c. Tritium grab samples shall be taken from the Reactor Building ventilation exhaust at least once per 24 hours when the refueling canal is flooded.
- d. Tritium grab samples shall be taken at least once per 7 days from the ventilation exhaust from the spent fuel area, whenever spent fuel is in the spent fuel pool.
- e. The ratio of the sample flow rate to the sampled stream flow rate shall be known for the time period covered by each dose or dose rate calculation made in accordance with Specification 3.11.2.1, 3.11.2.2, and 3.11.2.3.
- f. Samples shall be changed at least once per 7 days and analyses shall be completed within 48 hours after changing (or after removal from the sampler).
- g. For certain radionuclides with low gamma yield or low energies, or for certain radionuclide mixtures, it may not be possible to measure radionuclides in concentrations near the LLD. Under these circumstances, the LLD may be increased inversely proportional to the magnitude of the gamma yield (i.e., $1 \times E^{-4}/I$, where I is the photon abundance expressed as a decimal fraction), but in no case shall the LLD, as calculated in this manner for a specific radionuclide, be greater than 10% of the MPC value specified in 10 CFR 20, Appendix B, Table II, Column I.

RADIOACTIVE EFFLUENTS

DOSE - NOBLE GASES

LIMITING CONDITION FOR OPERATION

3.11.2.2 The dose due to noble gases released in gaseous effluents from ANO-2 to UNRESTRICTED AREAS (See Figure 5.1-3) shall be:

- a. During any calendar quarter, less than or equal to 5 mrad for gamma radiation and less than or equal to 10 mrad for beta radiation, and
- b. During any calendar year, less than or equal to 10 mrad for gamma radiation and less than or equal to 20 mrad for beta radiation.

APPLICABILITY: At all times.

ACTION:

- a. With the calculated dose from radioactive noble gases in gaseous effluents exceeding any of the above limits, in lieu of any other report, submit a Special Report pursuant to Specification 6.9.2.h within 30 days
- b. The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.11.2.2 Dose Calculations. Cumulative dose contributions for noble gases for the current calendar quarter and current calendar year shall be determined in accordance with the ODCM at least once per 31 days.

RADIOACTIVE EFFLUENTS

DOSE - IODINE-131, TRITIUM, AND RADIONUCLIDES IN PARTICULATE FORM

LIMITING CONDITION FOR OPERATION

3.11.2.3 The dose to a MEMBER OF THE PUBLIC from iodine-131, from tritium, and from all radionuclides in particulate form with half-lives greater than 8 days in gaseous effluents released from ANO-2 to UNRESTRICTED AREAS (see Figure 5.1-3) shall be:

- a. During any calendar quarter, less than or equal to 7.5 mrems to any organ, and
- b. During any calendar year, less than or equal to 15 mrems to any organ.

APPLICABILITY: At all times.

ACTION:

- a. With the calculated annual release of iodine-131, tritium, and radionuclides in particulate form with half-lives greater than 8 days, in gaseous effluents exceeding any of the above limits, in lieu of any other report, submit a Special Report pursuant to Specification 6.1.2.h within 30 days.
- b. The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.11.2.3 Dose Calculations. Cumulative dose contributions for the current calendar quarter and current calendar year for iodine-131, tritium, and radionuclides in particulate form with half-lives greater than 8 days shall be determined in accordance with the ODCM at least once per 31 days.

RADIOACTIVE EFFLUENTS

GASEOUS RADWASTE TREATMENT

LIMITING CONDITION FOR OPERATION

3.11.2.4 The VENTILATION EXHAUST TREATMENT SYSTEMS shall be used to reduce radioactive materials in gaseous waste prior to their discharge when the projected gaseous effluent doses from ANO-2 to UNRESTRICTED AREAS (see Figure 5.1-3) would exceed .625 mrad for gamma radiation and 1.25 mrad for beta radiation in any calendar quarter; or when the projected doses due to iodine-131, tritium, and radionuclides in particulate form with half-lives greater than 8 days would exceed 1.0 mrem to any organ over a calendar quarter.

APPLICABILITY: At all times.

ACTION:

- a. With gaseous waste being discharged without treatment and in excess of the above limits, in lieu of any other report, submit a Special Report pursuant to Specification 6.9.2.h within 30 days.
- b. The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.11.2.4.1 Doses due to gaseous releases from the site shall be projected at least once per 31 days in accordance with the ODCM.

RADIOACTIVE EFFLUENTS

GASEOUS RADWASTE TREATMENT

LIMITING CONDITION FOR OPERATION

3.11.2.5 When degasifying the reactor coolant system, the GASEOUS RADWASTE TREATMENT SYSTEM shall be used to reduce radioactive material in gaseous waste prior to their discharge when the projected gaseous effluent doses for ANO-2 to UNRESTRICTED AREAS (see Figure 5.1-3) would exceed .625 mrad for gamma radiation and 1.25 mrad for beta radiation in any calendar quarter.

APPLICABILITY: At all times.

ACTION:

- a. With gaseous waste being discharged without treatment and in excess of the above limits, in lieu of any other report, submit a Special Report pursuant to Specification 6.9.2.h within 30 days.
- b. The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.11.2.5.1 Doses due to gaseous releases from the site shall be projected at least once per 31 days in accordance with the ODCM.

RADIOACTIVE EFFLUENTS

GAS STORAGE TANKS

LIMITING CONDITION FOR OPERATION

3.11.2.6 The quantity of radioactivity contained in each gas storage tank shall be limited to less than or equal to 300,000 curies noble gases (considered as Xe-133).

APPLICABILITY: At all times.

ACTION:

- a. With the quantity of radioactive material in any gas storage tank exceeding the above limit, immediately suspend all additions of radioactive material to the tank and within 48 hours reduce the tank contents to within the limit.
- b. The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.11.2.6 The quantity of radioactive material contained in each gas storage tank shall be determined to be within the above limit at least once per 24 hours when radioactive materials are being added to the tank and the reactor coolant activity exceeds the limits of Specification 3.4.8.

RADIOACTIVE EFFLUENTS

EXPLOSIVE GAS MIXTURE

LIMITING CONDITION FOR OPERATION

3.11.2.7 The concentration of the hydrogen/oxygen shall be limited in the waste gas storage tanks to Region "A" of Figure 3.11.1.

APPLICABILITY: At all times.

ACTION:

- a. When the concentration of hydrogen/oxygen in the waste gas storage tanks enters Region "B" of Figure 3.11.1, corrective action shall be taken to return the concentration values to Region "A" within 24 hours.
- b. The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.11.2.7 The concentration of hydrogen/oxygen in the waste gas holdup system shall be determined to be within the above limits, with the waste gas system in operation, by continuously monitoring with the hydrogen/oxygen monitors required OPERABLE by Table 3.11-3.

TABLE 3.11-3

RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION

<u>INSTRUMENT</u>	<u>MINIMUM CHANNELS OPERABLE</u>	<u>APPLICABILITY</u>	<u>ACTION</u>
1. Waste Gas Holdup System Explosive Gas Monitoring System			
a. Hydrogen monitor	(1)	*	(1)
b. Oxygen monitor	(1)	*	(1)

*During waste gas compressing operation (treatment for primary system off gases.)

ACTION 1 - With both channels inoperable, operation may continue provided grab samples are taken and analyzed 1) every 4 hours during degassing operations, and 2) daily during other operations. The analysis of these samples shall be completed within 8 hours of taking the sample.

RADIOACTIVE EFFLUENTS

3/4 11.3 TOTAL DOSE

LIMITING CONDITION FOR OPERATION

3.11.3 The calculated doses from the release of radioactive materials in liquid or gaseous effluents shall not exceed twice the limits of Specifications 3.11.1.2.a, 3.11.1.2.b, 3.11.2.2.a, 3.11.2.2.b, 3.11.2.3.a, or 3.11.2.3.b.

APPLICABILITY: At all times.

ACTION:

- a. With the calculated doses exceeding the above limits, prepare and submit a Special Report pursuant to 10 CFR Part 20.405c.
- b. If the limits of 40 CFR 190 have been exceeded, obtain a variance from the Commission to permit further releases in excess of 40 CFR 190 limits. A variance is granted until staff action on the request is complete.

SURVEILLANCE REQUIREMENTS

4.11.3. Dose Calculations. Cumulative dose contributions from liquid and gaseous effluents shall be determined in accordance with Specifications 4.11.1.2, 4.11.2.2, and 4.11.2.3, and in accordance with the ODCM.

RADIOACTIVE EFFLUENTS

3/4.11.4 SOLID RADIOACTIVE WASTE

LIMITING CONDITION FOR OPERATION

3.11.4 The solid radwaste system shall be used in accordance with a PROCESS CONTROL PROGRAM to process wet radioactive wastes to meet shipping and burial ground requirements.

APPLICABILITY: At all times.

ACTION:

- a. With the provisions of the PROCESS CONTROL PROGRAM not satisfied, suspend shipment of defectively processed or defectively packaged solid radioactive wastes from the site.
- b. The provisions of Specification 3-0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.11.4 Proper solidification of wet radioactive waste shall be verified in accordance with the surveillance requirements of the Process Control Program.

3/4.12 RADIOLOGICAL ENVIRONMENTAL MONITORING

3/4.12.1 MONITORING PROGRAM

LIMITING CONDITION FOR OPERATION

3.12.1 The radiological environmental monitoring samples shall be collected pursuant to Table 3.12-1 and shall be analyzed pursuant to the requirements of Table 3.12-1 and 3.12-2. The sample locations shall be shown in Table 4-1 in the ODCM.

APPLICABILITY: At all times.

ACTION:

- a. With the radiological environmental monitoring program not being conducted as specified in Table 3.12-1, prepare and submit to the Commission in the Annual Radiological Environmental Report a description of the reasons for not conducting the program as required and the plans for preventing a recurrence. (Deviations are permitted from the required sampling schedule if specimens are not obtainable due to hazardous conditions, seasonal unavailability, or to malfunction of sampling equipment. If the latter, every effort shall be made to complete corrective action prior to the end of the next sampling period).
- b. With the level of radioactivity as the result of plant effluents in an environmental sampling medium at one or more of the locations specified in Table 3.12-1 exceeding the limits of Table 3.12-3 when averaged over any calendar quarter, prepare and submit to the Commission, within 30 days from the end of the affected quarter, a Special Report which includes an evaluation of any release conditions, environmental factors or other aspects which caused the limits of Table 3.12-3 to be exceeded, and defines the actions taken to reduce radioactive effluents so that the potential annual dose to a member of the public is less than the calendar year limits of Specifications 3.11.1.2, 3.11.2.2 and 3.11.2.3. When more than one of the radionuclides in Table 3.12-3 are detected in the sampling medium, this Special Report shall be submitted if:

$$\frac{\text{Concentration (1)}}{\text{reporting level (1)}} + \frac{\text{Concentration (2)}}{\text{reporting level (2)}} + \dots \geq 1.0$$

When radionuclides other than those in Table 3.12-3 are detected and are the result of plant effluents, this Special Report shall be submitted if the potential annual dose to a MEMBER OF THE PUBLIC is equal to or greater than the calendar year limits of Specifications 3.11.1.2, 3.11.2.2 and 3.11.2.3. This Special Report is not required if the measured level of radioactivity was not the result of plant effluents, however, in such an event, the condition shall be reported and described in the Annual Radiological Environmental Report.

3/4.12 RADIOLOGICAL ENVIRONMENTAL MONITORING

LIMITING CONDITION FOR OPERATION (Continued)

- c. With milk or fresh leafy vegetable samples unavailable from any of the sample locations required by Table 3.12-1, identify locations for obtaining replacement samples and add them to the radiological environmental monitoring program within 30 days. The specific locations from which samples were unavailable may then be deleted from the monitoring program. Identify the causes of the unavailability of samples and identify the new location(s) for obtaining replacement samples in the next Semiannual Radioactive Effluent Release Report and also include in the report a revised table for the ODCM reflecting the new location(s).
- d. The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.12.1 The results of analyses performed on the radiological environmental monitoring samples shall be summarized in the Annual Radiological Environmental Report.

RADIOLOGICAL ENVIRONMENTAL MONITORING

3/4.12.2 LAND USE CENSUS

LIMITING CONDITION FOR OPERATION

3.12.2 A land use census shall be conducted and shall identify the location of the nearest milk animal, the nearest residence, and the nearest garden* of greater than 500 square feet producing fresh leafy vegetables in each of the 16 meteorological sectors within a distance of five miles.

APPLICABILITY: At all times.

ACTION:

- a. With a land use census identifying a location(s) which yields a calculated dose commitment due to I-131, tritium, and radionuclides in particulate form greater than the values currently being calculated in Unit 2 Specification 4.11.2.3, submit location description in the Semiannual Radioactive Effluent Release Report per Specification 6.9.3.
- b. With a land use census identifying a location(s) which yields a calculated dose commitment (via the same exposure pathway) greater than at a location from which samples are currently being obtained in accordance with the Specification 3.12.1, identify the new location in the Semiannual Radioactive Effluent Release Report per Specification 6.9.3. The new location shall be added to the radiological environmental monitoring program within 30 days, if possible. The sampling location having the lowest calculated dose commitment (via the same exposure pathway) may be deleted from this monitoring program after October 31 of the year in which this land use census was conducted.
- c. The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.12.2 The land use census shall be conducted at least once per 12 months between the dates of June 1 and October 1 by door-to-door survey, serial survey, or by consulting local agricultural authorities. The results of the land use census shall be included in the Annual Radiological Environment Report.

*Broad Leaf vegetation sampling may be performed at the site boundary in the direction sector with the highest D/Q in lieu of the garden census.

RADIOLOGICAL ENVIRONMENTAL MONITORING

3/4.12.3 INTERLABORATORY COMPARISON PROGRAM

LIMITING CONDITION FOR OPERATION

3.12.3 Analyses shall be performed on radioactive materials supplied as part of the Interlaboratory Comparison Program which has been approved by NRC.

APPLICABILITY: At all times.

ACTION:

- a. With analyses not being performed as required above, report the corrective actions taken to prevent a recurrence to the Commission in the Annual Radiological Environmental Report.
- b. The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.12.3 The results of analyses performed as part of the above required Interlaboratory Comparison Program shall be included in the Annual Radiological Environmental Report.

3/4.0 APPLICABILITY

BASES

3.0.1 through 3.0.4 Establish the general requirements applicable to Limiting Conditions for Operation. These requirements are based on the requirements for Limiting Conditions for Operation stated in the Code of Federal Regulations, 10 CFR 50.36(c)(2):

"Limiting conditions for operation are the lowest functional capability or performance levels of equipment required for safe operation of the facility. When a limiting condition for operation of a nuclear reactor is not met, the licensee shall shutdown the reactor or follow any remedial ACTION permitted by the Technical Specification until the condition can be met."

3.0.1 Establishes the Applicability statement within each individual specification as the requirement for when (i.e., in which OPERATIONAL MODES or other specified conditions) conformance to the Limiting Conditions for Operation is required for safe operation of the facility. The ACTION requirements establish those remedial measures that must be taken within specified time limits when the requirements of a Limiting Condition for Operation are not met.

There are two basic types of ACTION requirements. The first specifies the remedial measures that permit continued operation of the facility which is not further restricted by the time limits of the ACTION requirements. In this case, conformance to the ACTION requirements provides an acceptable level of safety for unlimited continued operation as long as the ACTION requirements continue to be met. The second type of ACTION requirement specifies a time limit in which conformance to the conditions of the Limiting Condition for Operation must be met. This time limit is the allowable outage time to restore an inoperable system or component to OPERABLE status or for restoring parameters within specified limits. If these ACTIONS are not completed within the allowable outage time limits, a shutdown is required to place the facility in a mode or condition in which the specification no longer applies. It is not intended that the shutdown ACTION requirements be used as an operational convenience which permits (routine) voluntary removal of a system(s) or component(s) from service in lieu of other alternatives that would not result in redundant systems or components being inoperable.

BASES (continued)

The specified time limits of the ACTION requirements are applicable from the point in time it is identified that a Limiting Condition for Operation is not met. The time limits of the ACTION requirements are also applicable when a system or component is removed from service for surveillance testing or investigation of operational problems. Individual specifications may include a specified time limit for the completion of a Surveillance Requirement when equipment is removed from service. In this case, the allowable outage time limits of the ACTION requirements are applicable when this limit expires if the surveillance has not been completed. When a shutdown is required to comply with ACTION requirements, the plant may have entered a mode in which a new specification becomes applicable. In this case, the time limits of the ACTION requirements would apply from the point in time that the new specification becomes applicable if the requirements of the Limiting Condition for Operation are not met.

3.0.2 Establishes that noncompliance with a specification exists when the requirements of the Limiting Condition for Operation are not met and the associated ACTION requirements have not been implemented within the specified time interval. The purpose of this specification is to clarify that (1) implementation of the ACTION requirements within the specified time interval constitutes compliance with a specification and (2) completion of the remedial measures of the ACTION requirements is not required when compliance with a Limiting Condition for Operation is restored within the time interval specified in the associated ACTION requirements.

3.0.3 Establishes the shutdown ACTION requirements that must be implemented when a Limiting Condition for Operation is not met and the condition is not specifically addressed by the associated ACTION requirements. The purpose of this specification is to delineate the time limits for placing the unit in a safe shutdown mode when plant operation cannot be maintained within the limits for safe operation defined by the Limiting Conditions for Operation and its ACTION requirements. It is not intended to be used as an operational convenience which permits (routine) voluntary removal of redundant systems or components from service in lieu of other alternatives that would not result in redundant systems or components being inoperable. One hour is allowed to prepare for an orderly shutdown before initiating a change in plant operation. This time permits the operator to coordinate the reduction in electrical generation with the load dispatcher to ensure the stability and availability of the electrical grid. The time limits specified to reach lower modes of operation permit the shutdown to proceed in a controlled and orderly manner that is well within the specified maximum cooldown rate and within the cooldown capabilities of the facility assuming only the minimum required equipment is OPERABLE. This reduces thermal stresses on components of the primary coolant system and the potential for a plant upset that could challenge safety systems under conditions for which this specification applies.

BASES (continued)

If remedial measures permitting limited continued operation of the facility under the provisions of the ACTION requirements are completed, the shutdown may be terminated. The time limits of the ACTION requirements are applicable from the point in time there was a failure to meet a Limiting Condition for Operation. Therefore, the shutdown may be terminated if the ACTION requirements have been met or the time limits of the ACTION requirements have not expired, thus providing an allowance for the completion of the required ACTIONS.

The time limits of Specification 3.0.3 allow 37 hours for the plant to be in the COLD SHUTDOWN MODE condition when a shutdown is required during the POWER OPERATIONS MODE of operation. If the plant is in a lower mode of operation when a shutdown is required, the time limit for reaching the next lower mode of operation applies. However, if a lower mode of operation is reached in less time than allowed, the total allowable time to reach COLD SHUTDOWN or other applicable mode, is not reduced. For example, if HOT STANDBY is reached in 2 hours, the time allowed to reach HOT SHUTDOWN is the next 11 hours because the total time to reach HOT SHUTDOWN is not reduced from the allowable limit of 13 hours. Therefore, if remedial measures are completed that would permit a return to POWER OPERATION, a penalty is not incurred by having to reach a lower mode of operation in less than the total time allowed.

The same principle applies with regard to the allowable outage time limits of the ACTION requirements, if compliance with the ACTION requirements for one specification results in entry into a mode or condition of operation for another specification in which the requirements of the Limiting Condition for Operation are not met. If the new specification becomes applicable in less time than specified, the difference may be added to the allowable outage time limits of the second specification. However, the allowable outage time limits of ACTION requirements for a higher mode of operation may not be used to extend the allowable outage time that is applicable when a Limiting Condition for Operation is not met in a lower mode of operation.

The shutdown requirements of Specification 3.0.3 do not apply in modes 5 and 6, because the ACTION requirements of individual specifications define the remedial measures to be taken.

3.0.4 Establishes limitations on mode changes when a Limiting Condition for Operation is not met. It precludes placing the facility in a higher mode of operation when the requirements for a Limiting Condition for Operation are not met and continued non-compliance to these conditions would result in a shutdown to comply with the ACTION requirements if a change in modes were permitted. The purpose of this specification is to ensure that facility

BASES (continued)

operation is not initiated or that higher modes of operation are not entered when corrective ACTION is being taken to obtain compliance with a specification by restoring equipment to OPERABLE status or parameters to specified limits. Compliance with ACTION requirements that permit continued operation of the facility for an unlimited period of time provides an acceptable level of safety for continued operation without regard to the status of the plant before or after a mode change. Therefore, in this case, if the requirements for continued operation have been met in accordance with the requirements of the specification, then entry into that mode of operation is permissible. The provisions of this specification should not, however, be interpreted as endorsing the failure to exercise good practice in restoring systems or components to OPERABLE status before plant startup.

When a shutdown is required to comply with ACTION requirements, the provisions of Specification 3.0.4 do not apply because they would delay placing the facility in a lower mode of operation. For the purpose of compliance with this specification the term shutdown is defined as a required reduction in mode.

3.0.5 This specification delineates what additional conditions must be satisfied to permit operation to continue, consistent with the ACTION statements for power sources, when a normal or emergency power source is not OPERABLE. It specifically prohibits operation when one division is inoperable because its normal or emergency power source is inoperable and a system, subsystem, train, component or device in another division is inoperable for another reason.

The provisions of this specification permit the ACTION statements associated with individual systems, subsystems, trains, components, or devices to be consistent with the ACTION statements of the associated electrical power source. It allows operation to be governed by the time limits of the ACTION statement associated with the Limiting Condition for Operation for the normal or emergency power source, not the individual ACTION statements for each system, subsystem, train, component or device that is determined to be inoperable solely because of the inoperability of its normal or emergency power source.

For example, Specification 3.8.1.1 requires in part that two emergency diesel generators be OPERABLE. The ACTION statement provides for a 72 hour out-of-service time when one emergency diesel generator is not OPERABLE. If the definition of OPERABLE were applied without consideration of Specification 3.0.5, all systems, subsystems, trains, components, and devices supplied by the inoperable emergency power source would also be inoperable. This would dictate invoking the applicable ACTION statements for each of the applicable Limiting Conditions for Operation. However, the provisions of Specification 3.0.5 permit the time limits for continued operation to be consistent with the ACTION statement for the inoperable

APPLICABILITY

BASES (Continued)

emergency diesel generator instead, provided the other specified conditions are satisfied. In this case, this would mean that the corresponding normal power source must be OPERABLE, and all redundant systems, subsystems, trains, components, and devices must be OPERABLE, or otherwise satisfy Specification 3.0.5 (i.e., be capable of performing their design function and have at least one normal or one emergency power source OPERABLE). If they are not satisfied, action is required in accordance with this specification.

As a further example, Specification 3.8.1.1 requires in part that two physically independent circuits between the offsite transmission network and the onsite Class 1E distribution system be OPERABLE. The ACTION statement provides a 24 hour out-of-service time when both required offsite circuits are not OPERABLE. If the definition of OPERABLE were applied without consideration of Specification 3.0.5, all systems, subsystems, trains, components and devices supplied by the inoperable normal power sources, both of the offsite circuits, would also be inoperable. This would dictate invoking the applicable ACTION statements for each of the applicable LCOs. However, the provisions of Specification 3.0.5 permit the time limits for continued operation to be consistent with the ACTION statement for the inoperable normal power sources instead, provided the other specified conditions are satisfied. In this case, this would mean that for one division the emergency power source must be OPERABLE (as need be the components supplied by the emergency power source) and all redundant systems, subsystems, trains, components and devices in the other division must be OPERABLE, or likewise satisfy Specification 3.0.5 (i.e., be capable of performing their design functions and have an emergency power source OPERABLE). In other words, both emergency power sources must be OPERABLE and all redundant systems, subsystems, trains, components and devices in both divisions must also be OPERABLE. If these conditions are not satisfied, action is required in accordance with this specification.

In MODES 5 or 6, Specification 3.0.5 is not applicable, and thus the individual ACTION statements for each applicable Limiting Condition for Operation in these MODES must be adhered to.

APPLICABILITY

BASES

4.0.1 through 4.0.5 establish the general requirements applicable to Surveillance Requirements. These requirements are based on the Surveillance Requirements stated in the Code of Federal Regulations, 10CFR 50.36(c)(3):

"Surveillance Requirements are requirements relating to test, calibration, or inspection to ensure that the necessary quality of systems and components is maintained, that facility operation will be within safety limits, and that the limiting conditions of operation will be met."

4.0.1 establishes the requirement that surveillances must be performed during the OPERATIONAL MODES or other conditions for which the requirements of the Limiting Conditions for Operation apply unless otherwise stated in an individual Surveillance Requirement. The purpose of this specification is to ensure that surveillances are performed to verify the operational status of systems and components and that parameters are within specified limits to ensure safe operation of the facility when the plant is in a mode or other specified condition for which the associated Limiting Conditions for Operation are applicable. Surveillance Requirements do not have to be performed when the facility is in an OPERATIONAL MODE for which the requirements of the associated Limiting Condition for Operation do not apply unless otherwise specified. The Surveillance Requirements associated with a Special Test Exception are only applicable when the Special Test Exception is used as an allowable exception to the requirements of a specification.

4.0.2 establishes the limit for which the specified time interval for Surveillance Requirements may be extended. It permits an allowable extension of the normal surveillance interval to facilitate surveillance scheduling and consideration of plant operating conditions that may not be suitable for conducting the surveillance; e.g., transient conditions or other ongoing surveillance or maintenance activities. It also provides flexibility to accommodate the length of a fuel cycle for surveillances that are performed at each refueling outage and are specified with an 18-month surveillance interval. It is not intended that this provision be used repeatedly as a convenience to extend surveillance intervals beyond that specified for surveillances that are not performed during refueling outages. The licitation of Specification 4.0.2 is based on engineering judgement and the recognition that the most probable result of any particular surveillance being performed is the verification of conformance with the Surveillance Requirements. This provision is sufficient to ensure that the reliability ensured through surveillance activities is not significantly degraded beyond that obtained from the specified surveillance intervals.

BASES (continued)

4.0.3 establishes the failure to perform a Surveillance Requirement within the allowed surveillance interval, defined by the provisions of Specification 4.0.2, as a condition that constitutes a failure to meet the OPERABILITY requirements for a Limiting Condition for Operation. Under the provisions of this specification, systems and components are assumed to be OPERABLE when Surveillance Requirements have been satisfactorily performed within the specified time interval. However, nothing in this provision is to be construed as implying that systems or components are OPERABLE when they are found or known to be inoperable although still meeting the Surveillance Requirements. This specification also clarifies that the ACTION requirements are applicable when Surveillance Requirements have not been completed within the allowed surveillance interval and that the time limits of the ACTION requirements apply from the point in time it is identified that a surveillance has not been performed and not at the time that the allowed surveillance interval was exceeded. Completion of the Surveillance Requirements within the allowable outage time limits of the ACTION requirements restores compliance with the requirements of Specification 4.0.3. However, this does not negate the fact that the failure to have performed the surveillance within the allowed surveillance interval, defined by the provisions of Specification 4.0.2 was a violation of the OPERABILITY requirements of a Limiting Condition for Operation that is subject to enforcement action. Further, the failure to perform a surveillance within the provisions of Specification 4.0.2 is a violation of a Technical Specification requirement and is, therefore, a reportable event under the requirements of 10CFR 50.73(a)(2)(i)(B) because it is a condition prohibited by the plant's Technical Specifications.

If the allowable outage time limits of the ACTION requirements are less than 24 hours or a shutdown is required to comply with ACTION requirements, e.g., Specification 3.0.3, a 24-hour allowance is provided to permit a delay in implementing the ACTION requirements. This provides an adequate time limit to complete Surveillance Requirements that have not been performed. The purpose of this allowance is to permit the completion of a surveillance before a shutdown is required to comply with ACTION requirements or before other remedial measures would be required that may preclude completion of a surveillance. The basis for this allowance includes consideration for plant conditions, adequate planning, availability of personnel, the time required to perform the surveillance, and the safety significance of the delay in completing the required surveillance. This provision also provides a time limit for the completion of Surveillance Requirements that become applicable as a consequence of mode changes imposed by ACTION requirements and for completing Surveillance Requirements that are applicable when an exception to the requirements of Specification 4.0.4 is allowed. If a surveillance is not completed within the 24-hour allowance, the time limits of the ACTION requirements are applicable at that time. When a surveillance is performed within the 24-hour allowance and the Surveillance Requirements are not met, the time limits of the ACTION requirements are applicable at the time that the surveillance is terminated. If the ACTION requirements are greater than 24 hours, sufficient time exists to complete the surveillance.

EASES (continued)

Surveillance Requirements do not have to be performed on inoperable equipment because the ACTION requirements define the remedial measures that apply. However, the Surveillance Requirements have to be met to demonstrate that inoperable equipment has been restored to OPERABLE status.

4.0.4 establishes the requirement that all applicable surveillances must be met before entry into an OPERATIONAL MODE or other condition of operation specified in the Applicability statement. The purpose of this specification is to ensure that system and component OPERABILITY requirements or parameter limits are met before entry into a mode or condition for which these systems and components ensure safe operation of the facility. This provision applies to changes in OPERATIONAL MODES or other specified conditions associated with plant shutdown as well as startup.

Under the provisions of this specification, the applicable Surveillance Requirements must be performed within the specified surveillance interval to ensure that the Limiting Conditions for Operation are met during initial plant startup or following a plant outage.

When a shutdown is required to comply with ACTION requirements, the provision of Specification 4.0.4 do not apply because this would delay placing the facility in a lower mode of operation.

4.0.5 establishes the requirement that inservice inspection of ASME Code Class 1,2, and 3 components and inservice testing of ASME Code Class 1,2, and 3 pumps and valves shall be performed in accordance with a periodically updated version of Section XI of the ASME Boiler and Pressure Vessel Code and Addenda as required by 10 CFR 50.55a. These requirements apply except when relief has been provided in writing by the Commission.

This specification includes a clarification of the frequencies for performing the inservice inspection and testing activities required by Section XI of the ASME Boiler and Pressure Vessel Code and applicable Addenda. This clarification is provided to ensure consistency in surveillance intervals throughout Technical Specifications and to remove any ambiguities relative to the frequencies for performing the required inservice inspection and testing activities.

Under the terms of this specification, the more restrictive requirements of the Technical Specifications take precedence over the ASME Boiler and Pressure Vessel Code and applicable Addenda. The requirements of Specification 4.0.4 to perform surveillance activities before entry into an OPERATIONAL MODE or other specified applicability condition takes precedence over the ASME Boiler and Pressure Vessel Code provision which allows pumps and valves to be tested up to one week after return to normal operation. And for example, the Technical Specification definition of OPERABLE does not allow a grace period before a device, that is not capable of performing its specified function, is declared inoperable and takes precedence over the ASME Boiler and Pressure Vessel Code provision which allows a valve to be incapable of performing its specified function for up to 24 hours before being declared inoperable.