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

TENNESSEE VALLEY AUTHORITY

DOCKET NO. 50-327

SEQUOYAH NUCLEAR PLANT, UNIT 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 159
License No. DPR-77

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment by Tennessee Valley Authority (the licensee) dated April 12, 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 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-77 is hereby amended to read as follows:

   (2) Technical Specifications

   The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 159 , 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 its date of issuance, to be implemented within 30 days.

FOR THE NUCLEAR REGULATORY COMMISSION

Frederick J. Hebdon, Director
Project Directorate II-4
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: July 9, 1992

ATTACHMENT TO LICENSE AMENDMENT NO. 159

FACILITY OPERATING LICENSE NO. DPR-77

DOCKET NO. 50-327

Revise the Appendix A Technical Specifications by removing the pages identified below and inserting the enclosed pages. The revised pages are identified by the captioned amendment number and contain marginal lines indicating the area of change.

REMOVE	INSERT
3/4 3-56	3/4 3-56
3/4 3-56a	3/4 3-56a
3/4 3-56b	3/4 3-56b
3/4 3-57	3/4 3-57
3/4 3-57a	3/4 3-57a
3/4 3-57b	3/4 3-57b
3/4 6-19	3/4 6-19
B3/4 3-3	B3/4 3-3
B3/4 3-3a	B3/4 3-3a
B3/4 6-3	B3/4 6-3
6-17	6-17

TABLE 3.3-10

ACCIDENT MONITORING INSTRUMENTATION

INSTRUMENT	TOTAL NO. OF CHANNELS	MINIMUM CHANNELS REQUIRED	ACTION
1. Reactor Coolant T_{Hot} (Wide Range) (Instrument Loops 68-001,-024,-043,-065)	4(1/RCS Loop)	4(1/RCS Loop)	1
2. Reactor Coolant T_{Cold} (Wide Range) (Instrument Loops 68-018,-041,-060,-083)	4(1/RCS Loop)	4(1/RCS Loop)	1
3. Containment Pressure (Wide Range) (Instrument Loops 30-310,-311)	2	2	1
4. Containment Pressure (Narrow Range) (Instrument Loops 30-044,-045)	2	2	1
5. Refueling Water Storage Tank Level (Instrument Loops 63-05[illegible],-051)	2	2	1
6. Reactor Coolant Pressure (Wide Range) (Instrument Loops 68-062,-066,-069)	3	3	2
7. Pressurizer Level (Wide Range) (Instrument Loops 68-320,-335,-339)	3	3	2
8. Steam Line Pressure (Instrument Loops 1-002A,-002B,-009A,-009B, -020A,-020B,-027A,-027B)	2/steam line	2/steam line	1
9. Steam Generator Level - (Wide Range) (Instrument Loops 3-043,-056,-098,-111)	4(1/steam generator)	4(1/steam generator)	1
10. Steam Generator Level - (Narrow Range) (Instrument Loops 3-039,-042,-052,-055, -094,-097,-107,-110)	2/steam generator	2/steam generator	1
11. Auxiliary Feedwater			
a. Flow Rate (Instrument Loops 3-163,-155,-147,-170)	1/steam generator	1/steam generator	5
b. Valve Position Indication (Instrument Loops 3-164,-164A,-172,-156, -156A,-173,-148,-148A -174,-171,-171A,-175)	3/steam generator	3/steam generator	5

TABLE 3.3-10 (Continued)

ACCIDENT MONITORING INSTRUMENTATION

INSTRUMENT	TOTAL NO. OF CHANNELS	MINIMUM CHANNELS REQUIRED	ACTION
12. Reactor Coolant System Subcooling Margin Monitor (Instrument Loops 94-101,-102)	2	2	1
13. Containment Water Level (Wide Range) (Instrument Loops 63-178,-179)	2	2	1
14. Incore Thermocouples	65		
a. Core Quadrant (1)		2(1/Train)	1
b. Core Quadrant (2)		2(1/Train)	1
c. Core Quadrant (3)		2(1/Train)	1
d. Core Quadrant (4)		2(1/Train)	1
15. Reactor Vessel Level Instrumentation	6		
a. Dynamic Range (Instrument Loops 68-367, 370)		2	1
b. Upper Range (Instrument Loops 68-368, 371)		2	1
c. Lower Range (Instrument Loops 68-369, 372)		2	1
16. Containment Area Radiation Monitors			
a. Upper Compartment (Instrument Loops 90-271,-272)	2	1	4
b. Lower Compartment (Instrument Loops 90-273,-274)	2	1	4

TABLE 3.3-10 (Continued)

ACCIDENT MONITORING INSTRUMENTATION

INSTRUMENT	TOTAL NO. OF CHANNELS	MINIMUM CHANNELS REQUIRED	ACTION
17. Neutron Flux			
a. Source Range (Instrument Loops 92-5001,-5002)	2	2#	1
b. Intermediate Range (Instrument Loops 92-5003,-5004)	2	2	1
18. ERCW to AFW Valve Position			
a) Motor Driven Pumps (Instrument Loops 3-116A, -116B, -126A, -126B)	1/Train/Pump (2 Valves/Train)	1/Train/Pump (2 Valves/Train)	1
b) Turbine Driven Pumps (Instrument Loops 3-136A, -136B, -179A, -179B)	2 Trains (2 Valves/Train)	2 Trains (2 Valves/Train)	1
19. Containment Isolation Valve Position (Panels TR-A XX-55-6K & TR-B XX-55-6L)	1/Valve	1/Valve##	3

#Source Range outputs may be disabled above the P-6 (Block of Source Range Reactor Trip) setpoint.

##Not required for isolation valves that are closed and deactivated.

TABLE 3.3-10 (Continued)

ACTION STATEMENTS

ACTION 1 - NOTE: Also refer to the applicable action requirements from Tables 3.3-1 and 3.3-3, and LCO 3.3.3.5 since they may contain more restrictive actions.

a. With the number of channels one less than the minimum channels required, restore the inoperable channel to OPERABLE status within 30 days or be in at least HOT STANDBY within the next 6 hours, and in HOT SHUTDOWN within the next 6 hours.

b. With the number of channels two less than the minimum channels required, restore at least one inoperable channel to OPERABLE status within 7 days, or be in HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the next 6 hours.

c. The provisions of Specification 3.0.4 are not applicable.

ACTION 2 - NOTE: Also refer to the applicable action requirements from Tables 3.3-1 since it may contain more restrictive actions.

a. With the number of channels one less than the minimum channels required, restore the inoperable channel to OPERABLE status within 30 days or be in at least HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the next 6 hours.

b. With the number of channels two less than the minimum channels required, restore at least one inoperable channel to OPERABLE status within 7 days or be in at least HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the next 6 hours.

c. With the number of channels three less than the minimum channels required, restore one channel to OPERABLE status within 48 hours or be in at least HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the next 6 hours.

d. The provisions of Specification 3.0.4 are not applicable.

ACTION 3 - NOTE: Also refer to the applicable action requirements from LCO 3.6.3 since it may contain more restrictive actions.

a. With the accident monitoring indication for one of the penetration inboard or outboard valve(s) inoperable, restore the inoperable valve(s) accident indication to OPERABLE status within 30 days, or isolate each affected penetration within 30 days by use of at least one deactivated automatic valve secured in the isolated position, or isolate each

TABLE 3.3-10 (Continued)

ACTION STATEMENTS

(Continued)

affected penetration within 30 days by use of at least one closed manual valve or blind flange, or be in at least HOT STANDBY within the next 6 hours and HOT SHUTDOWN within the next 6 hours.

b. With the accident monitoring indication for both an inboard and outboard valve(s) on the same penetration inoperable, restore at least the inboard or outboard inoperable valve(s) indication to OPERABLE status within 7 days, or isolate each affected penetration within 7 days by use of at least one deactivated automatic valve secured in the isolated position, or isolate each affected penetration within 7 days by use of at least one closed manual valve or blind flange, or be in at least HOT STANDBY within the next 6 hours and HOT SHUTDOWN within the next 6 hours.

c. The provisions of Specification 3.0.4 are not applicable.

On a penetration where accident indication is declared INOPERABLE on a valve but on the opposite side of the penetration an accident indication valve does not exist (such as with a closed system or a check valve), only ACTION 3(a) must be entered. However, valves FCV-63-158 & -172 are both inboard penetration valves, but if both valves have inoperable accident indication, ACTION 3(b) must be entered until at least one of the valve's accident indication is restored to OPERABLE status. Valves FCV-30-46 & VLV-30-571, FCV-30-47 & VLV-30-572, and FCV-30-48 & VLV-30-573 are all outboard penetration valves, but if both valves have inoperable accident indication, ACTION 3(b) must be entered until at least one of the valve's accident indication is restored to OPERABLE status.

TABLE 3.3-10 (Continued)

ACTION STATEMENTS
(Continued)

ACTION 4 - a. With the number of channels less than the minimum channels required, initiate an alternate method of monitoring containment area radiation within 72 hours and either restore the inoperable channel(s) to OPERABLE status within 30 days, or prepare and submit a special report to the Commission pursuant to Specification 6.9.2.1 within the next 14 days that provides actions taken, cause of the inoperability, and plans and schedule for restoring the channels to OPERABLE status.

b. The provisions of Specification 3.0.4 are not applicable.

ACTION 5 - NOTE: Also refer to the applicable action requirements from LCO 3.3.3.5 since it may contain more restrictive actions.

a. With the number of channels on one or more steam generators less than the minimum channels required for either flow rate or valve position, restore the inoperable channel to OPERABLE status within 30 days or be in at least HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the next 6 hours.

b. With the number of channels on one or more steam generators less than the minimum channels required for flow rate and valve position, restore the inoperable channel(s) to OPERABLE status within 7 days or be in at least HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the next 6 hours.

c. The provisions of Specification 3.0.4 are not applicable.

TABLE 3.6-2

CONTAINMENT ISOLATION VALVES

VALVE NUMBER		FUNCTION	MAXIMUM ISOLATION TIME (Seconds)
A.	PHASE "A" ISOLATION		
1.	FCV-1-7	SG Blow Dn	10*
2.	FCV-1-14	SG Blow Dn	10*
3.	FCV-1-25	SG Blow Dn	10*
4.	FCV-1-32	SG Blow Dn	10*
5.	Deleted		
6.	Deleted		
7.	Deleted		
8.	Deleted		
9.	FCV-26-240	Fire Protection isol.	20
10.	FCV-26-243	Fire Protection isol.	20
11.	FSV-30-134	Cntmt Bldg Press Trans Sense Line	4*
12.	FSV-30-135	Cntmt Bldg Press Trans Sense Line	4*
13.	FCV-31C-222	CW-Inst Room Clrs	10*
14.	FCV-31C-223	CW-Inst Room Clrs	10*
15.	FCV-31C-224	CW-Inst Room Clrs	10*
16.	FCV-31C-225	CW-Inst Room Clrs	10*
17.	FCV-31C-229	CW-Inst Room Clrs	10*
18.	FCV-31C-230	CW-Inst Room Clrs	10*
19.	FCV-31C-231	CW-Inst Room Clrs	10*
20.	FCV-31C-232	CW-Inst Room Clrs	10*
21.	FSV-43-2	Sample Przr Steam Space	10*
22.	FSV-43-3	Sample Przr Steam Space	10*
23.	FSV-43-11	Sample Przr Liquid	10*
24.	FSV-43-12	Sample Przr Liquid	10*
25.	FSV-43-22	Sample RC Outlet Hdrs	10*
26.	FSV-43-23	Sample RC Outlet Hdrs	10*
27.	FSV-43-34	Accum Sample	5*
28.	FSV-43-35	Accum Sample	5*
29.	FSV-43-55	SG Blow Dn Sample Line	10*

design basis for the facility to determine if plant shutdown is required pursuant to Appendix "A" of 10 CFR Part 100. All specified measurement ranges represent the minimum ranges of the instruments. This instrumentation is consistent with the recommendations of Regulatory Guide 1.12, "Instrumentation for Earthquakes," April 1974.

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.

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 and the potential capability for subsequent cold shutdown 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 Criterion 19 of 10 CFR 50.

3/4.3.3.6 CHLORINE DETECTION SYSTEMS

This specification deleted.

3/4.3.3.7 ACCIDENT MONITORING INSTRUMENTATION

The OPERABILITY of the accident monitoring 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, Revision 2, "Instrumentation for Light-Water-Cooled Nuclear Power Plants to Assess Plant Conditions During and Following an Accident," December 1980.

The postaccident monitoring instrumentation limiting condition for operation provides the requirement of Type A and Category 1 monitors that provide information required by the control room operators to:

- Permit the operator to take preplanned manual actions to accomplish safe plant shutdown.
- Determine whether systems important to safety are performing their intended functions.

ACCIDENT MONITORING INSTRUMENTATION (Continued)

- Provide information to the operators that will enable them to determine the likelihood of a gross breach of the barriers to radioactivity release and to determine if a gross breach of a barrier has occurred.

For Sequoyah, the redundant channel capability for Auxiliary Feedwater (AFW) flow consists of a single AFW flow channel for each Steam Generator with the second channel consisting of three AFW valve position indicators (two level control valves for the motor driven AFW flowpath and one level control valve for the turbine driven AFW flowpath) for each steam generator. Two containment hydrogen monitoring channels are designated as accident monitoring instrumentation (Type A, Category 1) in accordance with Regulatory Guide 1.97. Operability and Surveillance Requirements for the purpose of accident monitoring is governed by Specification 3/4 6.4.1 for containment hydrogen monitors.

3/4.6.1.8 EMERGENCY GAS TREATMENT SYSTEM (EGTS)

The OPERABILITY of the EGTS cleanup subsystem ensures that during LOCA conditions, containment vessel leakage into the annulus will be filtered through the HEPA filters and charcoal adsorber trains prior to discharge to the atmosphere. This requirement is necessary to meet the assumptions used in the accident analyses and limit the site boundary radiation doses to within the limits of 10 CFR 100 during LOCA conditions. Cumulative operation of the system with the heaters on for 10 hours over a 31 day period is sufficient to reduce the buildup of moisture on the absorbers and HEPA filters. ANSI N510-1975 will be used as a procedural guide for surveillance testing.

3/4.6.1.9 CONTAINMENT VENTILATION SYSTEM

Use of the containment purge lines is restricted to only one pair (one supply line and one exhaust line) of purge system lines at a time to ensure that the site boundary dose guidelines of 10 CFR Part 100 would not be exceeded in the event of a loss of coolant accident during purging operations. The analysis of this accident assumed purging through the largest pair of lines (a 24 inch inlet line and a 24 inch outlet line), a pre-existing iodine spike in the reactor coolant and four second valve closure times.

3/4.6.2 DEPRESSURIZATION AND COOLING SYSTEMS

3/4.6.2.1 CONTAINMENT SPRAY SUBSYSTEMS

The OPERABILITY of the containment spray subsystems ensures that containment depressurization and cooling capability will be available in the event of a LOCA. The pressure reduction and resultant lower containment leakage rate are consistent with the assumptions used in the accident analyses.

3/4.6.2.2 CONTAINMENT COOLING FANS

The OPERABILITY of the lower containment vent coolers ensures that adequate heat removal capacity is available to provide long-term cooling following a non-LOCA event. Postaccident use of these coolers ensures containment temperatures remain within environmental qualification limits for all safety-related equipment required to remain functional.

3/4.6.3 CONTAINMENT ISOLATION VALVES

The valves identified in Table 3.6-2 are containment isolation valves as defined per 10 CFR 50. The operability of these containment isolation valves ensures that the containment atmosphere will be isolated from the outside environment in the event of a release of radioactive material to the containment atmosphere or pressurization of the containment. Containment isolation within the time limits specified ensures that the release of radioactive material to the environment will be consistent with the assumptions used in the analyses for a loss of coolant accident.

Additional valves have been identified as barrier valves, which in addition to the containment isolation valves discussed above, are a part of the accident monitoring instrumentation in Technical Specification 3/4.3.3.7 and are designated as Category 1 in accordance with Regulatory Guide 1.97, Revision 2, "Instrumentation for Light-Water-Cooled Nuclear Power Plants to Assess Plant Conditions During and Following an Accident," December 1980.

d. DELETED

e. Postaccident Sampling

A program which will ensure the capability to obtain and analyze reactor coolant, radioactive iodines and particulates in plant gaseous effluents, and containment atmosphere samples under accident conditions. The program shall include the following:

(i) Training of personnel,
(ii) Procedures for sampling and analysis,
(iii) Provisions for maintenance of sampling and analysis equipment.

f. Radioactive Effluent Controls Program

A program shall be provided conforming with 10 CFR 50.36a for the control of radioactive effluents and for maintaining the doses to MEMBERS OF THE PUBLIC from radioactive effluents as low as reasonably achievable. The program (1) shall be contained in the ODCM, (2) shall be implemented by operating procedures, and (3) shall include remedial actions to be taken whenever the program limits are exceeded. The program shall include the following elements:

1) Limitations on the operability of radioactive liquid and gaseous monitoring instrumentation including surveillance tests and set-point determination in accordance with the methodology in the ODCM,

2) Limitations on the concentrations of radioactive material released in liquid effluents to UNRESTRICTED AREAS conforming to 10 CFR Part 20, Appendix B, Table II, Column 2,

3) Monitoring, sampling, and analysis of radioactive liquid and gaseous effluents in accordance with 10 CFR 20.106 and with the methodology and parameters in the ODCM,

4) Limitations on the annual and quarterly doses or dose commitment to a MEMBER OF THE PUBLIC from radioactive materials in liquid effluents released from each unit to UNRESTRICTED AREAS conforming to Appendix I to 10 CFR Part 50,

5) Determination of cumulative and projected dose contributions from radioactive effluents for the current calendar quarter and current calendar year in accordance with the methodology and parameters in the ODCM at least every 31 days,

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

TENNESSEE VALLEY AUTHORITY

DOCKET NO. 50-328

SEQUOYAH NUCLEAR PLANT, UNIT 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 149
License No. DPR-79

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment by Tennessee Valley Authority (the licensee) dated April 12, 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 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-79 is hereby amended to read as follows:

   (2) Technical Specifications

   The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 149, 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 its date of issuance, to be implemented within 30 days.

FOR THE NUCLEAR REGULATORY COMMISSION

Frederick J. Hebdon, Director
Project Directorate II-4
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: July 9, 1992

ATTACHMENT TO LICENSE AMENDMENT NO. 149

FACILITY OPERATING LICENSE NO. DPR-79

DOCKET NO. 50-328

Revise the Appendix A Technical Specifications by removing the pages identified below and inserting the enclosed pages. The revised pages are identified by the captioned amendment number and contain marginal lines indicating the area of change.

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TABLE 3.3-10

ACCIDENT MONITORING INSTRUMENTATION

INSTRUMENT	TOTAL NO. OF CHANNELS	MINIMUM CHANNELS REQUIRED	ACTION
1. Reactor Coolant T_{Hot} (Wide Range) (Instrument Loops 68-001,-024,-043,-065)	4(1/RCS Loop)	4(1/RCS Loop)	1
2. Reactor Coolant T_{Cold} (Wide Range) (Instrument Loops 68-018,-041,-060,-083)	4(1/RCS Loop)	4(1/RCS Loop)	1
3. Containment Pressure (Wide Range) (Instrument Loops 30-310,-311)	2	2	1
4. Containment Pressure (Narrow Range) (Instrument Loops 30-044,-045)	2	2	1
5. Refueling Water Storage Tank Level (Instrument Loops 63-050,-051)	2	2	1
6. Reactor Coolant Pressure (Wide Range) (Instrument Loops 68-062,-066,-069)	3	3	2
7. Pressurizer Level (Wide Range) (Instrument Loops 68-320,-335,-339)	3	3	2
8. Steam Line Pressure (Instrument Loops 1-002A,-002B,-009A,-009B, -020A,-020B,-027A,-027B)	2/steam line	2/steam line	1
9. Steam Generator Level - (Wide Range) (Instrument Loops 3-043,-056,-098,-111)	4(1/steam generator)	4(1/steam generator)	1
10. Steam Generator Level - (Narrow Range) (Instrument Loops 3-039,-042,-052,-055, -094,-097,-107,-110)	2/steam generator	2/steam generator	1
11. Auxiliary Feedwater			
a. Flow Rate (Instrument Loops 3-163,-155,-147,-170)	1/steam generator	1/steam generator	5
b. Valve Position Indication (Instrument Loops 3-164,-164A,-172,-156, -156A,-173,-148,-148A,-174,-171,-171A,-175)	3/steam generator	3/steam generator	5

TABLE 3.3-10 (Continued)

ACCIDENT MONITORING INSTRUMENTATION

INSTRUMENT	TOTAL NO. OF CHANNELS	MINIMUM CHANNELS REQUIRED	ACTION
12. Reactor Coolant System Subcooling Margin Monitor (Instrument Loops 94-101,-102)	2	2	1
13. Containment Water Level (Wide Range) (Instrument Loops 63-178,-179)	2	2	1
14. Incore Thermocouples	65		
a. Core Quadrant (1)		2(1/Train)	1
b. Core Quadrant (2)		2(1/Train)	1
c. Core Quadrant (3)		2(1/Train)	1
d. Core Quadrant (4)		2(1/Train)	1
15. Reactor Vessel Level Instrumentation	6		
a. Dynamic Range (Instrument Loops 68-367, 370)		2	1
b. Upper Range (Instrument Loops 68-368, 371)		2	1
c. Lower Range (Instrument Loops 68-369, 372)		2	1
16. Containment Area Radiation Monitors			
a. Upper Compartment (Instrument Loops 90-271,-272)	2	1	4
b. Lower Compartment (Instrument Loops 90-273,-274)	2	1	4

TABLE 3.3-10 (Continued)

ACCIDENT MONITORING INSTRUMENTATION

INSTRUMENT	TOTAL NO. OF CHANNELS	MINIMUM CHANNELS REQUIRED	ACTION
17. Neutron Flux			
a. Source Range (Instrument Loops 92-5001,-5002)	2	2#	1
b. Intermediate Range (Instrument Loops 92-5003,-5004)	2	2	1
18. [illegible]W to AFW Valve Position			
a) Motor Driven Pumps (Instrument Loops 3-116A, -116B, -126A, -126B)	1/Train/Pump (2 Valves/Train)	1/Train/Pump (2 Valves/Train)	1
b) Turbine Driven Pump (Instrument Loops 3-136A, -136B, -179A, -179B)	2 Trains (2 Valves/Train)	2 Trains (2 Valves/Train)	1
19. Containment Isolation Valve Position (Panels TR-A XX-55-6K & TR-B XX-55-6L)	1/Valve	1/Valve##	3

#Source Range outputs may be disabled above the P-6 (Block of Source Range Reactor Trip) setpoint.

##Not required for isolation valves that are closed and deactivated.

TABLE 3.3-10 (Continued)

ACTION STATEMENTS

ACTION 1 - NOTE: Also refer to the applicable action requirements from Tables 3.3-1 and 3.3-3, and LCO 3.3.3.5 since they may contain more restrictive actions.

a. With the number of channels one less than the minimum channels required, restore the inoperable channel to OPERABLE status within 30 days or be in at least HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the next 6 hours.

b. With the number of channels two less than the minimum channels required, restore at least one inoperable channel to OPERABLE status within 7 days or be in HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the next 6 hours.

c. The provisions of Specification 3.0.4 are not applicable.

ACTION 2 - NOTE: Also refer to the applicable action requirements from Tables 3.3-1 since it may contain more restrictive actions.

a. With the number of channels one less than the minimum channels required, restore the inoperable channel to OPERABLE status within 30 days or be in at least HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the next 6 hours.

b. With the number of channels two less than the minimum channels required, restore at least one inoperable channel to OPERABLE status within 7 days or be in at least HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the next 6 hours.

c. With the number of channels three less than the minimum channels required, restore one channel to OPERABLE status within 48 hours or be in at least HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the next 6 hours.

d. The provisions of Specification 3.0.4 are not applicable.

ACTION 3 - NOTE: Also refer to the applicable action requirements from LCO 3.6.3 since it may contain more restrictive actions.

a. With the accident monitoring indication for one of the penetration inboard or outboard valve(s) inoperable, restore the inoperable valve(s) accident indication to OPERABLE status within 30 days, or isolate each affected penetration within 30 days by use of at least one deactivated automatic valve secured in the isolated position, or isolate each

ACTION STATEMENTS

(Continued)

affected penetration within 30 days by use of at least one closed manual valve or blind flange, or be in at least HOT STANDBY within the next 6 hours and HOT SHUTDOWN within the next 6 hours.

b. With the accident monitoring indication for both an inboard and outboard valve(s) on the same penetration inoperable, restore at least the inboard or outboard inoperable valve(s) indication to OPERABLE status within 7 days, or isolate each affected penetration within 7 days by use of at least one deactivated automatic valve secured in the isolated position, or isolate each affected penetration within 7 days by use of at least one closed manual valve or blind flange, or be in at least HOT STANDBY within the next 6 hours and HOT SHUTDOWN within the next 6 hours.

c. The provisions of Specification 3.0.4 are not applicable.

On a penetration where accident indication is declared INOPERABLE on a valve but on the opposite side of the penetration an accident indication valve does not exist (such as with a closed system or a check valve), only ACTION 3(a) must be entered. However, valves FCV-63-158 & -172 are both inboard penetration valves, but if both valves have inoperable accident indication, ACTION 3(b) must be entered until at least one of the valve's accident indication is restored to OPERABLE status. Valves FCV-30-46 & VLV-30-571, FCV-30-47 & VLV-30-572, and FCV-30-48 & VLV-30-573 are all outboard penetration valves, but if both valves have inoperable accident indication, ACTION 3(b) must be entered until at least one of the valve's accident indication is restored to OPERABLE status.

TABLE 3.3-10 (Continued)

ACTION STATEMENTS
(Continued)

ACTION 4 - a. With the number of channels less than the minimum channels required, initiate an alternate method of monitoring containment area radiation within 72 hours and either restore the inoperable channel(s) to OPERABLE status within 30 days, or prepare and submit a special report to the Commission pursuant to Specification 6.9.2.1 within the next 14 days that provides actions taken, cause of the inoperability, and plans and schedule for restoring the channels to OPERABLE status.

b. The provisions of Specification 3.0.4 are not applicable.

ACTION 5 - NOTE: Also refer to the applicable action requirements from LCO 3.3.3.5 since it may contain more restrictive actions.

a. With the number of channels on one or more steam generators less than the minimum channels required for either flow rate or valve position, restore the inoperable channel to OPERABLE status within 30 days or be in at least HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the next 6 hours.

b. With the number of channels on one or more steam generators less than the minimum channels required for flow rate and valve position, restore the inoperable channel(s) to OPERABLE status within 7 days or be in at least HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the next 6 hours.

c. The provisions of Specification 3.0.4 are not applicable.

TABLE 3.6-2

CONTAINMENT ISOLATION VALVES

VALVE NUMBER	FUNCTION	MAXIMUM ISOLATION TIME (Seconds)
A. PHASE "A" ISOLATION		
1. FCV-1-7	SG Blow Dn	10*
2. FCV-1-14	SG Blow Dn	10*
3. FCV-1-25	SG Blow Dn	10*
4. FCV-1-32	SG Blow Dn	10*
5. DELETED		
6. DELETED		
7. DELETED		
8. DELETED		
9. FCV-26-240	Fire Protection Isol.	20
10. FCV-26-243	Fire Protection Isol.	20
11. FCV-30-134	Cntmt Bldg Press Trans Sense Line	4*
12. FCV-30-135	Cntmt Bldg Press Trans Sense Line	4*
13. FCV-31C-222	CW-Inst Room Clrs	10*
14. FCV-31C-223	CW-Inst Room Clrs	10*
15. FCV-31C-224	CW-Inst Room Clrs	10*
16. FCV-31C-225	CW-Inst Room Clrs	10*
17. FCV-31C-229	CW-Inst Room Clrs	10*
18. FCV-31C-230	CW-Inst Room Clrs	10*
19. FCV-31C-231	CW-Inst Room Clrs	10*
20. FCV-31C-232	CW-Inst Room Clrs	10*
21. FSV-43-2	Sample Przr Steam Space	10*
22. FCV-43-3	Sample Przr Steam Space	10*
23. FSV-43-11	Sample Przr Liquid	10*
24. FCV-43-12	Sample Przr Liquid	10*
25. FSV-43-22	Sample RC Outlet Hdrs	10*
26. FCV-43-23	Sample RC Outlet Hdrs	10*
27. FSV-43-34	Accum Sample	5*
28. FCV-43-35	Accum Sample	5*
29. FSV-43-55	SG Blow Dn Sample Line	10*
30. FSV-43-58	SG Blow Dn Sample Line	10*

3/4.3.3.3 SEISMIC INSTRUMENTATION (Continued)

design basis for the facility to determine if plant shutdown is required pursuant to Appendix "A" of 10 CFR Part 100. All specified measurement ranges represent the minimum ranges of the instruments. The instrumentation is consistent with the recommendations of Regulatory Guide 1.12, "Instrumentation for Earthquakes," April 1974.

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.

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 and the potential capability for subsequent cold shutdown 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 Criterion 19 of 10 CFR 50.

3/4.3.3.6 CHLORINE DETECTION SYSTEMS

This specification deleted.

3/4.3.3.7 ACCIDENT MONITORING INSTRUMENTATION

The OPERABILITY of the accident monitoring 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, Revision 2, "Instrumentation for Light-Water-Cooled Nuclear Power Plants to Assess Plant Conditions During and Following an Accident," December 1980.

The postaccident monitoring instrumentation limiting condition for operation provides the requirement of Type A and Category 1 monitors that provide information required by the control room operators to:

- Permit the operator to take preplanned manual actions to accomplish safe plant shutdown.

ACCIDENT MONITORING INSTRUMENTATION (Continued)

- Determine whether systems important to safety are performing their intended functions.

- Provide information to the operators that will enable them to determine the likelihood of a gross breach of the barriers to radioactivity release and to determine if a gross breach of a barrier has occurred.

For Sequoyah, the redundant channel capability for Auxiliary Feedwater (AFW) flow consists of a single AFW flow channel for each Steam Generator with the second channel consisting of three AFW valve position indicators (two level control valves for the motor driven AFW flowpath and one level control valve for the turbine drive AFW flowpath) for each steam generator. Two containment hydrogen monitoring channels are designated as accident monitoring instrumentation (Type A, Category 1) in accordance with Regulatory Guide 1.97. Operability and Surveillance Requirements for the purpose of accident monitoring is governed by Specification 3/4.6.4.1 for containment hydrogen monitors.

3/4.6.1.8 EMERGENCY GAS TREATMENT SYSTEM (EGTS)

The OPERABILITY of the EGTS cleanup subsystem ensures that during LOCA conditions, containment vessel leakage into the annulus will be filtered through the HEPA filters and charcoal adsorber trains prior to discharge to the atmosphere. This requirement is necessary to meet the assumptions used in the accident analyses and limit the site boundary radiation doses to within the limits of 10 CFR 100 during LOCA conditions. Cumulative operation of the system with the heaters on for 10 hours over a 31 day period is sufficient to reduce the buildup of moisture on the absorbers and HEPA filters. ANSI N510-1975 will be used as a procedural guide for surveillance testing.

3/4.6.1.9 CONTAINMENT VENTILATION SYSTEM

Use of the containment purge lines is restricted to only one pair (one supply line and one exhaust line) of purge system lines at a time to ensure that the site boundary dose guidelines of 10 CFR Part 100 would not be exceeded in the event of a loss of coolant accident during purging operations. The analysis of this accident assumed purging through the largest pair of lines (a 24 inch inlet line and a 24 inch outlet line), a pre-existing iodine spike in the reactor coolant and four second valve closure times.

3/4.6.2 DEPRESSURIZATION AND COOLING SYSTEMS

3/4.6.2.1 CONTAINMENT SPRAY SUBSYSTEMS

The OPERABILITY of the containment spray subsystems ensures that containment depressurization and cooling capability will be available in the event of a LOCA. The pressure reduction and resultant lower containment leakage rate are consistent with the assumptions used in the accident analyses.

3/4.6.2.2 CONTAINMENT COOLING FANS

The OPERABILITY of the lower containment vent coolers ensures that adequate heat removal capacity is available to provide long-term cooling following a non-LOCA event. Postaccident use of these coolers ensures containment temperatures remain within environmental qualification limits for all safety-related equipment required to remain functional.

3/4.6.3 CONTAINMENT ISOLATION VALVES

The valves identified in Table 3.6-2 are containment isolation valves as defined per 10 CFR 50. The operability of these containment isolation valves ensures that the containment atmosphere will be isolated from the outside environment in the event of a release of radioactive material to the containment atmosphere or pressurization of the containment. Containment isolation within the time limits specified ensures that the release of radioactive material to the environment will be consistent with the assumptions used in the analyses for a loss of coolant accident.

Additional valves have been identified as barrier valves, which in addition to the containment isolation valves discussed above, are a part of the accident monitoring instrumentation in Technical Specification 3/4.3.3.7 and are designated as Category 1 in accordance with Regulatory Guide 1.97, Revision 2, "Instrumentation for Light-Water-Cooled Nuclear Power Plants to Assess Plant Conditions During and Following an Accident," December 1980.

b. In-Plant Radiation Monitoring

A program which will ensure the capability to accurately determine the airborne iodine concentrations in vital areas under accident conditions. This program shall include the following:

(i) Training of personnel,

(ii) Procedures for monitoring, and

(iii) Provisions for maintenance of sampling and analysis equipment.

c. Secondary Water Chemistry

A program for monitoring of secondary water chemistry to inhibit steam generator tube degradation. This program shall include:

(i) Identification of a sampling schedule for the critical variables and control points for these variables,

(ii) Identification of the procedures used to measure the values of the critical variables,

(iii) Identification of process sampling points,

(iv) Procedures for the recording and management of data,

(v) Procedures defining corrective actions for off-control point chemistry conditions,

(vi) Procedures identifying (a) the authority responsible for the interpretation of the data; and (b) the sequence and timing of administrative events required to initiate corrective action, and

(vii) Monitoring of the condensate at the discharge of the condensate pumps for evidence of condenser in-leakage. When condenser in-leakage is confirmed, the leak shall be repaired, plugged, or isolated.

d. Deleted