September 9, 19

Docket Nos. 50-327/328

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OSP Rdg.

Mr. S. A. White
Senior Vice President, Nuclear Power
Tennessee Valley Authority
6N 38A Lookout Place
1101 Market Street
Chattanooga, Tennessee 37402-2801

Dear Mr. White:

SUBJECT: ADDITION OF FIVE MOTOR-OPERATED VALVES TO REPLACE CHECK VALVES (TAC R00364 AND R00365) (TS 88-01) - SEQUOYAH NUCLEAR PLANT, UNITS 1 AND 2

The Commission has issued the enclosed Amendment No. 82 to Facility Operating License No. DPR-77 and Amendment No. 73 to Facility Operating License No. DPR-79 for the Sequoyah Nuclear Plant, Units 1 and 2, respectively. These amendments are in response to your application dated June 13, 1988.

This amendment revises Table 3.6-2, Containment Isolation Valves, of the Sequoyah Units 1 and 2 Technical Specifications (TS). The revisions are to add five motor-operated valves (MOVs) to the table. These MOVs are replacing check valves as containment isolation valves. The amendment also adds a note to Table 3.3-5, "Engineered Safety Features Response Times," to reflect that the response times of these MOVs,when they are actuated by a Phase B containment isolation signal, are slightly longer than other containment isolation valves.

A copy of the Safety Evaluation is also enclosed. Notice of Issuance will be included in the Commission's Bi-Weekly Federal Register Notice.

Sincerely,

Original signed by

Suzanne Black, Assistant Director
for Projects
TVA Projects Division
Office of Special Projects

Enclosures:
1. Amendment No. 82 to License No. DPR-77
2. Amendment No. 73 to License No. DPR-79
3. Safety Evaluation

cc w/enclosures:
See next page

OSP:TVA/LA
MSimms
8/19/88

OSP:TVA/PM
JDonohew:as
8/19/88

OGC
SHLewis
8/26/88

TVA:D/P
SBlack
9/2/88

No legal objection.
See corrections/questions on paperclipped pages. CPI

DF01
1/1

cc:
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Dr. Henry Myers, Science Advisor
Committee on Interior
and Insular Affairs
U.S. House of Representatives
Washington, D.C. 20515

Tennessee Valley Authority
Rockville Office
11921 Rockville Pike
Suite 402
Rockville, Maryland 20852

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. 82
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 June 13, 1988, 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.

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PDR ADOCK 05000327
P PDC

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. 82, 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.

FOR THE NUCLEAR REGULATORY COMMISSION

Suzanne Black

Suzanne Black, Assistant Director
for Projects
TVA Projects Division
Office of Special Projects

Attachment:
Changes to the Technical
Specifications

Date of Issuance: September 9, 1988

ATTACHMENT TO LICENSE AMENDMENT NO. 82

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. Overleaf pages* are provided to maintain document completeness.

REMOVE	INSERT
3/4 3-31	3/4 3-31
3/4 3-32	3/4 3-32*
3/4 3-33	3/4 3-33*
3/4 3-33a	3/4 3-33a
3/4 6-21	3/4 6-21
3/4 6-22	3/4 6-22
3/4 6-23	3/4 6-23
3/4 6-24	3/4 6-24*

TABLE 3.3-5 (Continued)

ENGINEERED SAFETY FEATURES RESPONSE TIMES

INITIATING SIGNAL AND FUNCTION	RESPONSE TIME IN SECONDS
6. Steam Flow in Two Steam Lines-High Coincident with Steam Line Pressure-Low	
a. Safety Injection (ECCS)	$\leq$ 28.0(7)/28.0(1)
b. Reactor Trip (from SI)	$\leq$ 3.0
c. Feedwater Isolation	$\leq$ 8.0(2)
d. Containment Isolation-Phase "A"(3)	$\leq$ 18.0(8)/28.0(9)
e. Containment Ventilation Isolation	Not Applicable
f. Auxiliary Feedwater Pumps	$\leq$ 60(11)
g. Essential Raw Cooling Water System	$\leq$ 65.0(8)/75.0(9)
h. Steam Line Isolation	$\leq$ 8.0
i. Emergency Gas Treatment System	$\leq$ 38.0(9)
7. Containment Pressure--High-High	
a. Containment Spray	$\leq$ 208(9)
b. Containment Isolation-Phase "B"(12)	$\leq$ 65(8)/75(9)
c. Steam Line Isolation	$\leq$ 7.0
d. Containment Air Return Fan	$\geq$ 540.0 and $\leq$ 660
8. Steam Generator Water Level--High-High	
a. Turbine Trip	$\leq$ 2.5
b. Feedwater Isolation	$\leq$ 11.0(2)
9. Main Steam Generator Water Level - Low-Low	
a. Motor-driven Auxiliary Feedwater Pumps(4)	$\leq$ 60.0
b. Turbine-driven Auxiliary Feedwater Pumps(5)(11)	$\leq$ 60.0

TABLE 3.3-5 (Continued)

ENGINEERED SAFETY FEATURES RESPONSE TIMES

INITIATING SIGNAL AND FUNCTION	RESPONSE TIME IN SECONDS
10. Station Blackout	
a. Auxiliary Feedwater Pumps	$\leq 60^{(11)}$
11. Trip of Main Feedwater Pumps	
a. Auxiliary Feedwater Pumps	$\leq 60^{(11)}$
12. Loss of Power	
a. 6.9 kv Shutdown Board - Degraded Voltage or Loss of Voltage	$\leq 10^{(10)}$
13. RWST Level-Low Coincident with Containment Sump Level-High and Safety Injection	
a. Automatic Switchover to Containment Sump	≤ 250
14. Containment Purge Air Exhaust Radioactivity - High	
a. Containment Ventilation Isolation	$\leq 10^{(6)}$
15. Containment Gas Monitor Radioactivity High	
a. Containment Ventilation Isolation	$\leq 10^{(6)}$
16. Containment Particulate Activity High	
a. Containment Ventilation Isolation	$\leq 10^{(6)}$

TABLE 3.3-5 (Continued)

TABLE NOTATION

(1) Diesel generator starting and sequence loading delays included. Response time limit includes opening of valves to establish SI path and attainment of discharge pressure for centrifugal charging pumps, SI and RHR pumps.

(2) Using air operated valve

(3) The following valves are exceptions to the response times shown in the table and will have the values listed in seconds for the initiating signals and function indicated:

Valves: FCV-26-240, -243
Response times:
2.d. 21(8)/ 31(9)
3.d. 22(8)
4.d. 21(8)/ 31(9)
5.d. 24(8)/ 34(9)
6.d. 21(8)/31(9)

Valves: FCV-61-96, -97, -110, -122, -191, -192, -193, -194
Response times:

2.d. 31(8)
3.d. 32(8)
4.d. 31(8)
5.d. 34(8)
6.d. 31(8)

Valve: FCV-70-143
Response times:
2.d. 61(8)/71(9)
3.d. 62(8)
4.d. 61(8)/71(9)
5.d. 64(8)/74(9)
6.d. 61(8)/71(9)

(4) On 2/3 any Steam Generator

(5) On 2/3 in 2/4 Steam Generator

(6) Radiation detectors for Containment Ventilation Isolation may be excluded from Response Time Testing.

(7) Diesel generator starting and sequence loading delays not included. Offsite power available. Response time limit includes opening and closing of valves to establish SI path and attainment of discharge pressure for centrifugal charging pumps.

(8) Diesel generator starting and sequence loading delays not included. Response time limit includes operating time of valves.

(9) Diesel Generator starting and sequence loading delays included. Response time limit includes operating time of valves.

TABLE 3.3-5 (Continued)

TABLE NOTATION

(10) The response time for loss of voltage is measured from the time voltage is lost until the time full voltage is restored by the diesel. The response time for degraded voltage is measured from the time the load shedding signal is generated, either from the degraded voltage or the SI enable timer, to the time full voltage is restored by the diesel. The response time of the timers is covered by the requirements on their setpoints.

(11) The provisions of Specification 4.0.4 are not applicable for entry into MODE 3 for the turbine-driven Auxiliary Feedwater Pump.

(12) The following valves are exceptions to the response times shown in the Table and will have the values listed in seconds for the initiating signals and the function indicated:

Valves: FCV-67-89, -90, -105, -106
Response times: 7.b, 75(8)/85(9)

Valve: FCV-70-141
Response times: 7.b, 70(8)/80(9)

TABLE 3.6-2 (Continued)
CONTAINMENT ISOLATION VALVES

VALVE NUMBER		FUNCTION	MAXIMUM ISOLATION TIME (Seconds)
A. PHASE "A" ISOLATION (Cont.)			
61.	FCV-77-19	RCDT and PRT to V H	10*
62.	FCV-77-20	N_2 to RCDT	10*
63	FCV-77-127	Floor Sump Pump Disch	10*
64.	FCV-77-128	Floor Sump Pump Disch	10*
65.	FCV-81-12	Primary Water Makeup	10*
66.	FCV-87-7	UHI Test Line	10*
67.	FCV-87-8	UHI Test Line	10*
68.	FCV-87-9	UHI Test Line	10*
69.	FCV-87-10	UHI Test Line	10*
70.	FCV-87-11	UHI Test Line	10*
B. PHASE "B" ISOLATION			
1.	FCV-32-80	Control Air Supply	10
2.	FCV-32-102	Control Air Supply	10
3.	FCV-32-110	Control Air Supply	10
4.	FCV-67-83	ERCW - LWR Cmpt Clrs	60*
5.	FCV-67-87	ERCW - LWR Cmpt Clrs	60*
6.	FCV-67-88	ERCW - LWR Cmpt Clrs	60*
7.	FCV-67-89**	ERCW - LWR Cmpt Clrs	70*
8.	FCV-67-90**	ERCW - LWR Cmpt Clrs	70*
9.	FCV-67-91	ERCW - LWR Cmpt Clrs	60*
10.	FCV-67-95	ERCW - LWR Cmpt Clrs	60*
11.	FCV-67-96	ERCW - LWR Cmpt Clrs	60*
12.	FCV-67-99	ERCW - LWR Cmpt Clrs	60*
13.	FCV-67-103	ERCW - LWR Cmpt Clrs	60*
14.	FCV-67-104	ERCW - LWR Cmpt Clrs	60*
15.	FCV-67-105**	ERCW - LWR Cmpt Clrs	70*
16.	FCV-67-106**	ERCW - LWR Cmpt Clrs	70*
17.	FCV-67-107	ERCW - LWR Cmpt Clrs	60*
18.	FCV-67-111	ERCW - LWR Cmpt Clrs	60*
19.	FCV-67-112	ERCW - LWR Cmpt Clrs	60*
20.	FCV-67-130	ERCW - Up Cmpt Clrs	60*
21.	FCV-67-131	ERCW - Up Cmpt Clrs	60*
22.	FCV-67-133	ERCW - Up Cmpt Clrs	60*
23.	FCV-67-134	ERCW - Up Cmpt Clrs	60*
24.	FCV-67-138	ERCW - Up Cmpt Clrs	60*

TABLE 3.6-2 (Continued)

CONTAINMENT ISOLATION VALVES

VALVE NUMBER		FUNCTION	MAXIMUM ISOLATION TIME (Seconds)
B. PHASE "B" ISOLATION (Cont.)			
25.	FCV-67-139	ERCW - Up Cmpt Clrs	60*
26.	FCV-67-141	ERCW - Up Cmpt Clrs	60*
27.	FCV-67-142	ERCW - Up Cmpt Clrs	60*
28.	FCV-67-295	ERCW - Up Cmpt Clrs	60*
29.	FCV-67-296	ERCW - Up Cmpt Clrs	60*
30.	FCV-67-297	ERCW - Up Cmpt Clrs	60*
31.	FCV-67-298	ERCW - Up Cmpt Clrs	60*
32.	FCV-70-87	RCP Thermal Barrier Ret	60
33.	FCV-70-89	CCS from RCP Oil Coolers	60
34.	FCV-70-90	RCP Thermal Barrier Ret	60
35.	FCV-70-92	CCS from RCP Oil Coolers	60
36.	FCV-70-134	To RCP Thermal Barriers	60
37.	FCV-70-140	CCS to RCP Oil Coolers	60
38.	FCV-70-141**	CCS to RCP Oil Coolers	65
C. PHASE "A" CONTAINMENT VENT ISOLATION			
1.	FCV-30-7	Upper Compt Purge Air Supply	4*
2.	FCV-30-8	Upper Compt Purge Air Supply	4*
3.	FCV-30-9	Upper Compt Purge Air Supply	4*
4.	FCV-30-10	Upper Compt Purge Air Supply	4*
5.	FCV-30-14	Lower Compt Purge Air Supply	4*
6.	FCV-30-15	Lower Compt Purge Air Supply	4*
7.	FCV-30-16	Lower Compt Purge Air Supply	4*
8.	FCV-30-17	Lower Compt Purge Air Supply	4*
9.	FCV-30-19	Inst Room Purge Air Supply	4*
10.	FCV-30-20	Inst Room Purge Air Supply	4*
11.	FCV-30-37	Lower Compt Pressure Relief	4*
12.	FCV-30-40	Lower Compt Pressure Relief	4*

TABLE 3.6-2 (Continued)

CONTAINMENT ISOLATION VALVES

VALVE NUMBER		FUNCTION	MAXIMUM ISOLATION TIME (Seconds)
C. PHASE "A" CONTAINMENT VENT ISOLATION (Cont.)			
13.	FCV-30-50	Upper Compt Purge Air Exh	4*
14.	FCV-30-51	Upper Compt Purge Air Exh	4*
15.	FCV-30-52	Upper Compt Purge Air Exh	4*
16.	FCV-30-53	Upper Compt Purge Air Exh	4*
17.	FCV-30-56	Lower Compt Purge Air Exh	4*
18.	FCV-30-57	Lower Compt Purge Air Exh	4*
19.	FCV-30-58	Inst Room Purge Air Exh	4*
20.	FCV-30-59	Inst Room Purge Air Exh	4*
21.	FCV-90-107	Cntmt Bldg LWR Compt Air Mon	5*
22.	FCV-90-108	Cntmt Bldg LWR Compt Air Mon	5*
23.	FCV-90-109	Cntmt Bldg LWR Compt Air Mon	5*
24.	FCV-90-110	Cntmt Bldg LWR Compt Air Mon	5*
25.	FCV-90-111	Cntmt Bldg LWR Compt Air Mon	5*
26.	FCV-90-113	Cntmt Bldg UPR Compt Air Mon	5*
27.	FCV-90-114	Cntmt Bldg UPR Compt Air Mon	5*
28.	FCV-90-115	Cntmt Bldg UPR Compt Air Mon	5*
29.	FCV-90-116	Cntmt Bldg UPR Compt Air Mon	5*
30.	FCV-90-117	Cntmt Bldg UPR Compt Air Mon	5*
D. OTHER			
1.	FCV-30-46	Vacuum Relief Isolation Valve	25
2.	FCV-30-47	Vacuum Relief Isolation Valve	25
3.	FCV-30-48	Vacuum Relief Isolation Valve	25

*Provisions of LCO 3.0.4 are not applicable if valve is secured in its isolated position with power removed and leakage limits of Surveillance Requirement 4.6.3.4 are satisfied.

#Provisions of LCO 3.0.4 are not applicable if valve is secured in its isolated position with power removed and either FCV-62-73 or FCV-62-74 is maintained operable.

**This valve is required after completion of the associated modification.

3/4.6.4 COMBUSTIBLE GAS CONTROL

HYDROGEN MONITORS

LIMITING CONDITION FOR OPERATION

3.6.4.1 Two independent containment hydrogen analyzers shall be OPERABLE.

APPLICABILITY: MODES 1 and 2.

ACTION:

With one hydrogen monitor inoperable, restore the inoperable monitor to OPERABLE status within 30 days or be in at least HOT STANDBY within the next 6 hours.

SURVEILLANCE REQUIREMENTS

4.6.4.1 Each hydrogen monitor shall be demonstrated OPERABLE by the performance of a CHANNEL CHECK at least once per 12 hours, a CHANNEL FUNCTIONAL TEST at least once per 31 days, and at least once per 92 days on a STAGGERED TEST BASIS by performing a CHANNEL CALIBRATION using sample gas containing:

a. One volume percent hydrogen, balance nitrogen.

b. Four volume percent hydrogen, balance nitrogen.

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. 73
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 June 13, 1988 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. 73, 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.

FOR THE NUCLEAR REGULATORY COMMISSION

Suzanne Black

Suzanne Black, Assistant Director
for Projects
TVA Projects Division
Office of Special Projects

Attachment:
Changes to the Technical
Specifications

Date of Issuance: September 9, 1988

ATTACHMENT TO LICENSE AMENDMENT NO. 73

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. Overleaf pages* are provided to maintain document completeness.

REMOVE	INSERT
3/4 3-31	3/4 3-31
3/4 3-32	3/4 3-32*
3/4 3-33	3/4 3-33*
3/4 3-33a	3/4 3-33a
3/4 6-21	3/4 6-21
3/4 6-22	3/4 6-22
3/4 6-23	3/4 6-23
3/4 6-24	3/4 6-24*

TABLE 3.3-5 (Continued)

ENGINEERED SAFETY FEATURES RESPONSE TIMES

INITIATING SIGNAL AND FUNCTION	RESPONSE TIME IN SECONDS
6. Steam Flow in Two Steam Lines-High Coincident with Steam Line Pressure-Low	
a. Safety Injection (ECCS)	$\leq$ 28.0(7)/28.0(1)
b. Reactor Trip (from SI)	$\leq$ 3.0
c. Feedwater Isolation	$\leq$ 8.0(2)
d. Containment Isolation-Phase "A"(3)	$\leq$ 18.0(8)/28.0(9)
e. Containment Ventilation Isolation	Not Applicable
f. Auxiliary Feedwater Pumps	$\leq$60(11)
g. Essential Raw Cooling Water System	$\leq$ 65.0(8)/75.0(9)
h. Steam Line Isolation	$\leq$ 8.0
i. Emergency Gas Treatment System	$\leq$38.0(9)
7. Containment Pressure--High-High	
a. Containment Spray	$\leq$ 208(9)
b. Containment Isolation-Phase "B"(12)	$\leq$ 65(8)/75(9)
c. Steam Line Isolation	$\leq$ 7.0
d. Containment Air Return Fan	$\geq$ 540.0 and $\leq$660
8. Steam Generator Water Level--High-High	
a. Turbine Trip	$\leq$ 2.5
b. Feedwater Isolation	$\leq$ 11.0(2)
9. Main Steam Generator Water Level - Low-Low	
a. Motor-driven Auxiliary Feedwater Pumps(4)	$\leq$ 60.0
b. Turbine-driven Auxiliary Feedwater Pumps(5)(11)	$\leq$ 60.0

TABLE 3.3-5 (Continued)

ENGINEERED SAFETY FEATURES RESPONSE TIMES

INITIATING SIGNAL AND FUNCTION	RESPONSE TIME IN SECONDS
10. Station Blackout	
a. Auxiliary Feedwater Pumps	$\leq 60^{(11)}$
11. Trip of Main Feedwater Pumps	
a. Auxiliary Feedwater Pumps	$\leq 60^{(11)}$
12. Loss of Power	
a. 6.9 kv Shutdown Board - Degraded Voltage or Loss of Voltage	$\leq 10^{(10)}$
13. RWST Level-Low Coincident with Containment Sump Level-High and Safety Injection	
a. Automatic Switchover to Containment Sump	≤ 250
14. Containment Purge Air Exhaust Radioactivity - High	
a. Containment Ventilation Isolation	$\leq 10^{(6)}$
15. Containment Gas Monitor Radioactivity High	
a. Containment Ventilation Isolation	$\leq 10^{(6)}$
16. Containment Particulate Activity High	
a. Containment Ventilation Isolation	$\leq 10^{(6)}$

TABLE 3.3-5 (Continued)

TABLE NOTATION

(1) Diesel generator starting and sequence loading delays included. Response time limit includes opening of valves to establish SI path and attainment of discharge pressure for centrifugal charging pumps, SI and RHR pumps.

(2) Using air operated valve

(3) The following valves are exceptions to the response times shown in the table and will have the values listed in seconds for the initiating signals and function indicated:

Valves: FCV-26-240, -243
Response times:
2.d. 21(8)/31(9)
3.d. 22(8)
4.d. 21(8)/31(9)
5.d. 24(8)/34(9)
6.d. 21(8)/31(9)

Valves: FCV61-96, -97, -110, -122, -191, -192, -193, -194
Response times

2.d. 31(8)
3.d. 32(8)
4.d. 31(8)
5.d. 34(8)
6.d. 31(8)

Valve: FCV-70-143
Response times:
2.d. 61(8)/71(9)
3.d. 62(8)
4.d. 61(8)/71(9)
5.d. 64(8)/74(9)
6.d. 61(8)/71(9)

(4) On 2/3 any Steam Generator

(5) On 2/3 in 2/4 Steam Generator

(6) Radiation detectors for Containment Ventilation Isolation may be excluded from Response Time Testing.

(7) Diesel generator starting and sequence loading delays not included. Offsite power available. Response time limit includes opening and closing of valves to establish SI path and attainment of discharge pressure for centrifugal charging pumps.

(8) Diesel generator starting and sequence loading delays not included. Response time limit includes operating time of valves.

(9) Diesel generator starting and sequence loading delays included. Response time limit includes operating time of valves.

TABLE 3.3-5 (Continued)

TABLE NOTATION

(10) The response time for loss of voltage is measured from the time voltage is lost until the time full voltage is restored by the diesel. The response time for degraded voltage is measured from the time the load shedding signal is generated, either from the degraded voltage or the SI enable timer, to the time full voltage is restored by the diesel. The response time of the timers is covered by the requirements on their setpoints.

(11) The provisions of Specification 4.0.4 are not applicable for entry into MODE 3 for the turbine-driven Auxiliary Feedwater Pump.

(12) The following valves are exceptions to the response times shown in the table and will have the values listed in seconds for the initiating signals and the function indicated:

Valves: FCV-67-89, -90, -105, -106
Response times: 7.b, 75(8)/85(9)

Valve: FCV-70-141
Response times: 7.b, 70(8)/80(9)

TABLE 3.6-2 (Continued)

CONTAINMENT ISOLATION VALVES

VALVE NUMBER	FUNCTION	MAXIMUM ISOLATION TIME (Seconds)
A. PHASE "A" ISOLATION (Cont.)		
61. FCV-77-19	RCDT and PRT to V H	10*
62. FCV-77-20	N_2 to RCDT	10*
63. FCV-77-127	Floor Sump Pump Disch	10*
64. FCV-77-128	Floor Sump Pump Disch	10*
65. FCV-81-12	Primary Water Makeup	10*
66. FCV-87-7	UHI Test Line	10*
67. FCV-87-8	UHI Test Line	10*
68. FCV-87-9	UHI Test Line	10*
69. FCV-87-10	UHI Test Line	10*
70. FCV-87-11	UHI Test Line	10*
B. PHASE "B" ISOLATION		
1. FCV-32-81	Control Air Supply	10
2. FCV-32-103	Control Air Supply	10
3. FCV-32-111	Control Air Supply	10
4. FCV-67-83	ERCW - LWR Cmpt Clrs	60*
5. FCV-67-87	ERCW - LWR Cmpt Clrs	60*
6. FCV-67-88	ERCW - LWR Cmpt Clrs	60*
7. FCV-67-89**	ERCW - LWR Cmpt Clrs	70*
8. FCV-67-90**	ERCW - LWR Cmpt Clrs	70*
9. FCV-67-91	ERCW - LWR Cmpt Clrs	60*
10. FCV-67-95	ERCW - LWR Cmpt Clrs	60*
11. FCV-67-96	ERCW - LWR Cmpt Clrs	60*
12. FCV-67-99	ERCW - LWR Cmpt Clrs	60*
13. FCV-67-103	ERCW - LWR Cmpt Clrs	60*
14. FCV-67-104	ERCW - LWR Cmpt Clrs	60*
15. FCV-67-105**	ERCW - LWR Cmpt Clrs	70*
16. FCV-67-106**	ERCW - LWR Cmpt Clrs	70*
17. FCV-67-107	ERCW - LWR Cmpt Clrs	60*
18. FCV-67-111	ERCW - LWR Cmpt Clrs	60*
19. FCV-67-112	ERCW - LWR Cmpt Clrs	60*
20. FCV-67-130	ERCW - Up Cmpt Clrs	60*
21. FCV-67-131	ERCW - Up Cmpt Clrs	60*
22. FCV-67-133	ERCW - Up Cmpt Clrs	60*

TABLE 3.6-2 (Continued)

CONTAINMENT ISOLATION VALVES

VALVE NUMBER	FUNCTION	MAXIMUM ISOLATION TIME (Seconds)
B. PHASE "B" ISOLATION (Cont.)		
23. FCV-67-134	ERCW - Up Cmpt Clrs	60*
24. FCV-67-138	ERCW - Up Cmpt Clrs	60*
25. FCV-67-139	ERCW - Up Cmpt Clrs	60*
26. FCV-67-141	ERCW - Up Cmpt Clrs	60*
27. FCV-67-142	ERCW - Up Cmpt Clrs	60*
28. FCV-67-295	ERCW - Up Cmpt Clrs	60*
29. FCV-67-296	ERCW - Up Cmpt Clrs	60*
30. FCV-67-297	ERCW - Up Cmpt Clrs	60*
31. FCV-67-298	ERCW - Up Cmpt Clrs	60*
32. FCV-70-87	RCP Thermal Barrier Ret	60
33. FCV-70-89	CCS from RCP Oil Coolers	60
34. FCV-70-90	RCP Thermal Barrier Ret	60
35. FCV-70-92	CCS from RCP Oil Coolers	60
36. FCV-70-134	To RCP Thermal Barriers	60
37. FCV-70-140	CCS to RCP Oil Coolers	60
38. FCV-70-141**	CCS to RCP Oil Coolers	65
C. PHASE "A" CONTAINMENT VENT ISOLATION		
1. FCV-30-7	Upper Compt Purge Air Supply	4*
2. FCV-30-8	Upper Compt Purge Air Supply	4*
3. FCV-30-9	Upper Compt Purge Air Supply	4*
4. FCV-30-10	Upper Compt Purge Air Supply	4*
5. FCV-30-14	Lower Compt Purge Air Supply	4*
6. FCV-30-15	Lower Compt Purge Air Supply	4*
7. FCV-30-16	Lower Compt Purge Air Supply	4*
8. FCV-30-17	Lower Compt Purge Air Supply	4*
9. FCV-30-19	Inst Room Purge Air Supply	4*
10. FCV-30-20	Inst Room Purge Air Supply	4*
11. FCV-30-37	Lower Compt Pressure Relief	4*
12. FCV-30-40	Lower Compt Pressure Relief	4*

TABLE 3.6-2 (Continued)
CONTAINMENT ISOLATION VALVES

VALVE NUMBER	FUNCTION	MAXIMUM ISOLATION TIME (Seconds)
C. PHASE "A" CONTAINMENT VENT ISOLATION (Cont.)		
13. FCV-30-50	Upper Compt Purge Air Exh	4*
14. FCV-30-51	Upper Compt Purge Air Exh	4*
15. FCV-30-52	Upper Compt Purge Air Exh	4*
16. FCV-30-53	Upper Compt Purge Air Exh	4*
17. FCV-30-56	Lower Compt Purge Air Exh	4*
18. FCV-30-57	Lower Compt Purge Air Exh	4*
19. FCV-30-58	Inst Room Purge Air Exh	4*
20. FCV-30-59	Inst Room Purge Air Exh	4*
21. FCV-90-107	Cntmt Bldg LWR Compt Air Mon	5*
22. FCV-90-108	Cntmt Bldg LWR Compt Air Mon	5*
23. FCV-90-109	Cntmt Bldg LWR Compt Air Mon	5*
24. FCV-90-110	Cntmt Bldg LWR Compt Air Mon	5*
25. FCV-90-111	Cntmt Bldg LWR Compt Air Mon	5*
26. FCV-90-113	Cntmt Bldg UPR Compt Air Mon	5*
27. FCV-90-114	Cntmt Bldg UPR Compt Air Mon	5*
28. FCV-90-115	Cntmt Bldg UPR Compt Air Mon	5*
29. FCV-90-116	Cntmt Bldg UPR Compt Air Mon	5*
30. FCV-90-117	Cntmt Bldg UPR Compt Air Mon	5*
D. OTHER		
1. FCV-30-46	Vacuum Relief Isolation Valve	25
2. FCV-30-47	Vacuum Relief Isolation Valve	25
3. FCV-30-48	Vacuum Relief Isolation Valve	25

*Provisions of LCO 3.0.4 are not applicable if valve is secured in its isolated position with power removed and leakage limits of Surveillance Requirement 4.6.3.4 are satisfied..

#Provisions of LCO 3.0.4 are not applicable if valve is secured in its isolated position with power removed and either FCV-62-73 or FCV-62-74 is maintained operable.

**The valve is required after completion of the associated modification.

3/4.6.4 COMBUSTIBLE GAS CONTROL

HYDROGEN MONITORS

LIMITING CONDITION FOR OPERATION

3.6.4.1 Two independent containment hydrogen monitors shall be OPERABLE.

APPLICABILITY: MODES 1 and 2.

ACTION:

With one hydrogen monitor inoperable, restore the inoperable monitor to OPERABLE status within 30 days or be in at least HOT STANDBY within the next 6 hours.

SURVEILLANCE REQUIREMENTS

4.6.4.1 Each hydrogen monitor shall be demonstrated OPERABLE by the performance of a CHANNEL CHECK at least once per 12 hours, a CHANNEL FUNCTIONAL TEST at least once per 31 days, and at least once per 92 days on a STAGGERED TEST BASIS by performing a CHANNEL CALIBRATION using sample gas containing:

a. One volume percent hydrogen, balance nitrogen.

b. Four volume percent hydrogen, balance nitrogen.

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

SAFETY EVALUATION BY THE OFFICE OF SPECIAL PROJECTS

SUPPORTING AMENDMENT NO. 82 TO FACILITY OPERATING LICENSE NO. DPR-77

AND AMENDMENT NO. 73 TO FACILITY OPERATING LICENSE NO. DPR-79

TENNESSEE VALLEY AUTHORITY

SEQUOYAH NUCLEAR PLANT, UNITS 1 AND 2

DOCKET NOS. 50-327 AND 50-328

1.0 INTRODUCTION

By letter dated June 13, 1988, Tennessee Valley Authority (TVA) proposed changes to the Technical Specifications (TS) for Sequoyah, Units 1 and 2. TVA proposed adding five motor-operated butterfly valves (MOVs) to Table 3.6-2, "Containment Isolation Valves." Also, TVA proposed adding a note to Table 3.3-5, "Engineered Safety Features Response Times", Item 7.b, to reflect the response time of these motor-operated valves when actuated by a Phase B containment isolation signal. The five MOVs are being proposed to replace five check valves as containment isolation valves.

2.0 EVALUATION

TVA stated in its application that the five check valves 67-562A, -562B, -562C, -562D, and 70-692 have repeatedly failed containment leak rate testing in the "as-found" condition. The check valves 67-562A, -562B, -562C, and -562D are the inboard containment isolation valves for the essential raw cooling water (ERCW) supply headers to the lower containment. The lower compartment coolers, the reactor coolant pump (RCP) motor coolers, and the control rod drive ventilation coolers are supplied by these headers. Check valve 70-692 is the inboard containment isolation valve for the component cooling system (CCS) supply header to the RCP oil coolers.

The repeated failures of these check valves have been attributed by TVA to the physical location of the valves in system low points. This location exposes the check valves to a buildup of fine corrosion products and other material, which could prevent adequate seating of the check valves. TVA has proposed to replace these check valves with MOVs to ensure better leaktight isolation of the containment at these locations.

TVA stated that the MOVs will provide more reliable seating capability than the check valves because the MOVs' disks are pushed on to the valve seats by a mechanical force. TVA stated that bypass lines with pressure-relieving piston check valves will be installed around the new inboard MOVs. This is intended to relieve pressure between the inboard and outboard MOVs while the penetration is isolated.

TVA, in its application, discussed the quality of the MOVs. It stated that the isolation configuration conforms to the requirements of 10 CFR 50, Appendix A,

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General Design Criteria 54 and 56. The motor operators for the new valves are environmentally qualified for harsh environmental conditions. The valve operator motors receive electrical power from their respective class 1E 480-V systems. Calculations have been performed by TVA to demonstrate that the addition of these valve operators to the onsite power system does not have a detrimental impact on diesel generator loading.

Because the new MOVs perform an active safety-related function, the intent of Regulatory Guide (RG) 1.106, "Thermal Overload Protection for Electric Motors on Motor-Operated Valves," is met through bypassing the thermal overload heater elements permanently. MOV degradation is detected by the inclusion of the new MOVs in periodic maintenance programs, including MOV analysis and test system (MOVATS) programs. This approach to meeting the intent of RG 1.106 was found to be acceptable by the staff in a letter to TVA dated October 22, 1987.

The new inboard MOVs receive both automatic and remote-manual signals. The valves will automatically isolate on a Phase B containment isolation signal. This is consistent with the other ERCW and CCS containment isolation MOVs already installed in these lines. Remote-manual control is available in the main control room. Hand switches and valve position indicating lights are located on the ERCW panel for the ERCW MOVs and on the CCS panel for the CCS MOV. Backup control and transfer switches are located at the 480-V reactor MOV boards.

The ERCW valves have a maximum allowable stroke time of 70 seconds, which is 10 seconds longer than the maximum allowable stroke times for the other ERCW containment isolation valves listed in Table 3.6-2. Similarly, the CCS valve has a maximum stroke time of 65 seconds, which is 5 seconds longer than the other CCS valves receiving the Phase B isolation signal. TVA proposed the note for item 7.b of Table 3.3-5 to acknowledge these additional seconds of valve closure time for these MOVs. The note clarifies that the response time for these MOVs is slighly longer than other isolation valves.

For both the ERCW and CCS valves, TVA stated that 5 seconds is added to the maximum valve closure time for signal generation to obtain the response time when diesel generator starting and sequence loading delays are not included. An additional 10 seconds is added to this value to obtain the response time when diesel generator delays are included.

TVA has determined and the staff agrees that the few additional seconds of valve closure time does not significantly increase the probability of releasing radioactive material from containment during a postulated loss-of-coolant accident (LOCA). Radioactivity could only be released to the environment if all of the following conditions occured:

1. A LOCA has progressed to the point of fuel damage, with fission products released to the containment atmosphere.

2. A second passive failure involving the breaking and draining of the cooling water piping has occurred. The draining of the piping would require the degradation of the water supply because these valves are located on supply headers to containment. This scenario is beyond design basis.

3. The outboard containment isolation MOV fails to isolate.

4. Radioactive material must migrate into and through the ERCW and CCS which are filled water systems.

The ERCW and CCS are closed, water filled systems. They do not communicate directly to the containment atmosphere, reactor coolant system or the environment.

The footnote, in Table 3.6-2 associated with the single asterick in the maximum isolation time, concerning the applicability of Specification 3.0.4 is proposed to be applied to the ERCW valves. This is consistent with the other containment isolation valves on these lines and other ERCW lines that penetrate containment and consistent with the Westinghouse Standard Technical Specifications. The proposed application of the footnote to the ERCW valves is consistent also with the Action required if these valves are inoperable. This is acceptable to the staff.

The installation of the new valves is currently scheduled before restart for Unit 1 and during the next refueling outage for Unit 2. The addition of the footnote to the Table 3.6-2 (indicating that the new valves are not required until their associated modifications are completed) prevents an unplanned outage if the license amendment is approved before the valves are added during an outage of sufficient duration.

The purpose of the proposed TS change is to replace five check valves used as containment isolation valves by the motor-operated butterfly valves to provide more reliable isolation capabilities. Also, a note will be added to Table 3.3-5, "Engineered Safety Features Response Times," Item 7.b, to reflect that the response times of these valves, when actuated by a Phase B containment isolation signal, are slightly longer than other containment isolation valves. The staff has reviewed the submittal and, based on the above, concludes that the changes are acceptable.

3.0 ENVIRONMENTAL CONSIDERATION

These amendments involve a change to a requirement with respect to the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20. The staff has determined that the amendments involve no significant increase in the amounts and no significant change in the types of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that these amendments involve no significant hazards consideration and there has been no

public comment on such finding. Accordingly, the amendments meet the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement nor environmental assessment need be prepared in connection with the issuance of these amendments.

4.0 CONCLUSION

We have concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, and (2) such activities will be conducted in compliance with the Commission's regulations, and the issuance of these amendments will not be inimical to the common defense and security nor to the health and safety of the public.

Principal Contributor: B. K. Singh, J. N. Donohew

Dated: September 9, 1988