ENCLOSURE 1

TVA-SQN-TS-46
SEQUOYAH NUCLEAR PLANT

CHANGE NO. 1

CHANGES IN TABLE 3.2.1 FOR DNB PARAMETERS

TVA-SQN-TS-46

CHANGE NO. 1

SEQUOYAH NUCLEAR PLANT

PROPOSED TECHNICAL SPECIFICATIONS

TABLE 3.2-1

DNB PARAMETERS

	LIMITS	
PARAMETER	4 Loops In Operation	3 Loops in Operation**
Reactor Coolant System T_{avg}	$\leq$ 583°F	
Pressurizer Pressure	$\geq$ 2220 psia*	

* Limit not applicable during either a THERMAL POWER ramp in excess of 5% RATED THERMAL POWER per minute or a THERMAL POWER step in excess of 10% RATED THERMAL POWER, physics test, or performance of surveillance requirement 4.1.1.3.b.

**Limits pending NRC approval of 3 loop operation.

TABLE 3.2-1

DNB PARAMETERS

PARAMETER	LIMITS	
	4 Loops In Operation	3 Loops In Operation
Reactor Coolant System T_{avg}	≤ 583°F	**
Pressurizer Pressure	≥ 2220 psia*	**

* Limit not applicable during either a THERMAL POWER ramp in excess of 5% of RATED THERMAL POWER per minute or a THERMAL POWER step in excess of 10% of RATED THERMAL POWER, physics test, or performance of surveillance requirement 4.1.1.3.b.

**Limits pending NRC approval of 3 loop operation.

TVA-SQN-TS-46
CHANGE NO. 1

JUSTIFICATION PROPOSED TECHNICAL SPECIFICATIONS

During the power coefficient measurement (physics test) and during the performance of surveillance requirement (S/R) 4.1.1.3.b, maintaining pressurizer pressure greater than or equal to 2220 psia has been very difficult. Measurement of the moderator temperature coefficient (MTC) required by S/R 4.1.1.3.b has a high probability of violating the departure from nucleate boiling (DNB) parameters specified by technical specification (T/S) 3.25. S/R 4.1.1.3.b has been performed twice and has narrowly missed a violation of the DNB parameters. The test is made difficult by the competing effects of cooling down the system to measure MTC and yet maintain the system pressure above the DNB limit specified by T/S 3.2.5.

The reactor coolant system T_{avg} must be dropped a minimum of 4-6°F below the T_{avg} for an accurate measurement. The associated drop in pressurizer level results in a downswing of pressurizer pressure and 2220 psia is difficult to maintain. Allowing the pressure to fall during the MTC measurement will not compromise DNB considerations because the overtemperature delta-T trip will still provide core protection for all combinations of pressure and coolant temperatures.

The requested change has been evaluated pursuant to 10 CFR 50.92 and no significant hazards considerations are involved because the change does not:

1) Involve an increase in the probability or consequences of an accident previously evaluated.

   Based on the fact that this type of transient has already been analyzed and because a relaxation of the DNB pressure limit is already allowed for other transients such as step and ramp power changes, the change does not involve an increase in the probability or consequence of an accident previously evaluated.

2) Create the possibility of a new or different kind of accident from any accident previously evaluated.

   Based on the fact that this type of transient has been previously analyzed and is within the scope of those documented within the FSAR, this change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

3) Involve a reduction in the margin of safety.

Allowing the pressure to fall below the value specified in T/S 3.25 during the MTC measurement will not compromise DNB considerations because the overtemperature delta-T trip will still provide core protection for all combinations of pressure and coolant temperatures. Based on the above fact, as well as items (1) and (2), the change does not involve a reduction in the margin of safety.

ENCLOSURE 2

TVA-SQN-TS-46
SEQUOYAH NUCLEAR PLANT

CHANGE NO. 2

REVISION TO THE HYDROGEN IGNITER SURVEILLANCE
TEST REQUIREMENT, 4.6.4.3.b

TVA-SQN-TS-46

CHANGE NO. 2

SEQUOYAH NUCLEAR PLANT

PROPOSED TECHNICAL SPECIFICATIONS

HYDROGEN MITIGATION SYSTEM

LIMITING CONDITION FOR OPERATION

3.6.4.3 The primary containment hydrogen mitigation system shall be operable.

APPLICABILITY: MODES 1 and 2.

ACTION:

With one train of hydrogen mitigation system inoperable, restore the inoperable train to OPERABLE status within 7 days or increase the surveillance interval of S.R. 4.6.4.3(a) from 92 days to 7 days on the operable train until the inoperable train is returned to OPERABLE status.

SURVEILLANCE REQUIREMENTS

4.6.4.3 The hydrogen mitigation system shall be demonstrated OPERABLE:

a. At least once per 92 days by energizing the supply breakers and verifying that at least 66 of 68 igniters are energized.*

b. At least once per 18 months by verifying the temperatures of at least a 10% sample of the igniters are a minimum of 1700°F. For each igniter found inoperable during this verification, an additional sample of at least 10% of all the igniters shall be temperature tested until no more inoperable igniters are found or all igniters have been verified OPERABLE.

*Inoperable igniters must not be on corresponding redundant circuits which provide coverage for the same region.

LIMITING CONDITION FOR OPERATION

3.6.4.3 The primary containment hydrogen mitigation system shall be operable.

APPLICABILITY: MODES 1 and 2.

ACTION:

With one train of hydrogen mitigation system inoperable, restore the inoperable train to OPERABLE status within 7 days or increase the surveillance interval of S.R. 4.6.4.3(a) from 92 days to 7 days on the operable train until the inoperable train is returned to OPERABLE status.

SURVEILLANCE REQUIREMENTS

4.6.4.3 The hydrogen mitigation system shall be demonstrated OPERABLE:

a. At least once per 92 days by energizing the supply breakers and verifying that at least 66 of 68 igniters are energized.*

b. At least once per 18 months by verifying the temperatures of at least a 10% sample of the igniters are a minimum of 1700°F. For each igniter found inoperable during this verification, an additional sample of at least 10% of all the igniters shall be temperature tested until no more inoperable igniters are found or all igniters have been verified OPERABLE.

*Inoperable igniters must not be on corresponding redundant circuits which provide coverage for the same region.

TVA-SQN-TS-46
CHANGE NO. 2

JUSTIFICATION FOR PROPOSED TECHNICAL SPECIFICATION

A large percentage of the igniters cannot easily be surface temperature tested because of physical constraints, such as those located in the upper compartment of containment and because of ALARA considerations, such as those located in the lower compartment of containment. The additional costs and the additional radiation exposure to perform 100-percent surface temperture testing of the igniters is not acceptable.

We believe that a surface temperature test every 18 months for all of the igniters is not necessary to verify operability. As stated in the technical specifications for Sequoyah unit 1, each 92 days, the igniters are energized to ensure circuit continuity. As stated in supplement 6 of the Sequoyah Nuclear Plant Safety Evaluation Report (SQN SSER 6), during energization current and voltage readings will be taken and compared to baseline current and voltage levels taken during preoperational testing. These readings will indicate whether each circuit is supplying sufficient power to produce acceptable igniter surface temperatures. Additionally, in order to ensure that the baseline circuit power (voltage times current) surface temperature correlation doesn't change over the service life of the igniters, a surface temperature test every 18 months will be conducted on a 10-percent sample of the igniters. This data will also provide for more accurate projections of the service life of the igniters under normal containment conditions.

The requested change has been evaluated pursuant to 10 CFR 50.92 and no significant hazards considerations are involved because the change does not:

1) Involve an increase in the probability or consequences of an accident previously evaluated.

   Based on the fact that the proposed surveillance will provide adequate verification of operability there is not an increase in the probability or consequences of an accident previously evaluated.

2) Create the possibility of a new or different kind of accident from any accident previously evaluated.

   Based on the fact that the proposed surveillance will provide verification of operability, the change does not create the possibility for an accident different from previously evaluated.

3) Involve a reduction in the margin of safety.

Based on the fact that the system will still be verified to be operable, the change does not involve a reduction in the margin of safety.

ENCLOSURE 3

TVA-SQN-TS-46
SEQUOYAH NUCLEAR PLANT

CHANGE NO. 3

REVISION OF TABLE 3.6.2 FOR OPERABILITY
OF CONTAINMENT ISOLATION VALVES

TVA-SQN-TS-46

CHANGE NO. 3

SEQUOYAH NUCLEAR PLANT

PROPOSED TECHNICAL SPECIFICATIONS

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. FCV-1-181	SG Blow Dn	15*
6. FCV-1-182	SG Blow Dn	15*
7. FCV-1-183	SG Blow Dn	15*
8. FCV-1-184	SG Blow Dn	15*
9. FCV-31C-222	CW-Inst Room Clrs	10*
10. FCV-31C-223	CW-Inst Room Clrs	10*
11. FCV-31C-224	CW-Inst Room Clrs	10*
12. FCV-31C-225	CW-Inst Room Clrs	10*
13. FCV-31C-229	CW-Inst Room Clrs	10*
14. FCV-31C-230	CW-Inst Room Clrs	10*
15. FCV-31C-231	CW-Inst Room Clrs	10*
16. FCV-31C-232	CW-Inst Room Clrs	10*
17. FCV-43-22	Sample RC Outlet Hdrs	10*
18. FCV-43-23	Sample RC Outlet Hdrs	10*
19. FCV-43-55	SG Blow Dn Sample Line	10*
20. FCV-43-58	SG Blow Dn Sample Line	10*
21. FCV-43-61	SG Blow Dn Sample Line	10*
22. FCV-43-64	SG Blow Dn Sample Line	10*
23. FCV-61-96	Gylcol Inlet to Floor Cooler	30*
24. FCV-61-97	Gylcol Inlet to Floor Cooler	30*
25. FCV-61-110	Gylcol Outlet to Floor Cooler	30*
26. FCV-61-122	Gylcol Outlet to Floor Cooler	30*
27. FCV-61-191	Ice Condenser - Gylcol In	30*
28. FCV-61-192	Ice Condenser - Gylcol In	30*
29. FCV-61-193	Ice Condenser - Gylcol Out	30*
30. FCV-61-194	Ice Condenser - Gylcol Out	30*
31. FCV-62-61	RCP Seals	10

TABLE 3.6-2 (Continued)

CONTAINMENT ISOLATION VALVES

VALVE NUMBER		FUNCTION	MAXIMUM ISOLATION TIME (Seconds)
A.	PHASE "A" ISOLATION (Cont.)		
32.	FCV-62-63	RCP Seals	10
33.	FCV-62-72	Letdown Line	10*
34.	FCV-62-73	Letdown Line	10*
35.	FCV-62-74	Letdown Line	10*
36.	FCV-62-77	Letdown Line	20
37.	FCV-63-23	Accum to Hold Up Tank	10*
38.	FCV-63-64	WDS N_2 to Accum	10*
39.	FCV-63-71	Accum to Hold Up Tank	10*
40.	FCV-63-84	Accum to Hold Up Tank	10*
41.	FCV-68-305	WDS N_2 to PRT	10*
42.	FCV-68-307	PRT to Gas Analyzer	10*
43.	FCV-68-308	PRT to Gas Analyzer	10*
44.	FCV-70-85	CCS from Excess Lt Dn Hx	10*
45.	FCV-70-143	CCS to Excess Lt Dn Hx	60*
46.	FCV-77-9	RCDT Pump Disch	10*
47.	FCV-77-10	RCDT Pump Disch	10*
48.	FCV-77-16	RCDT to Gas Analyzer	10*
49.	FCV-77-17	RCDT to Gas Analyzer	10*
50.	FCV-77-18	RCDT and PRT to V H	10*
51.	FCV-77-19	RCDT and PRT to V H	10*
52.	FCV-77-20	N_2 to RCDT	10*
53.	FCV-77-127	Floor Sump Pump Disch	10*
54.	FCV-77-128	Floor Sump Pump Disch	10*
55.	FCV-81-12	Primary Water Makeup	10*
56.	FCV-87-7	UHI Test Line	10*
57.	FCV-87-8	UHI Test Line	10*
58.	FCV-87-9	UHI Test Line	10*
59.	FCV-87-10	UHI Test Line	10*
60.	FCV-87-11	UHI Test Line	10*
61.	FCV-26-240	Fire Protection Isol.	20
62.	FCV-26-243	Fire Protection Isol.	20

TABLE 3.6-2 (Continued)

CONTAINMENT ISOLATION VALVES

VALVE NUMBER	FUNCTION	MAXIMUM ISOLATION TIME (Seconds)
A. PHASE "A" ISOLATION (Cont.)		
62. FCV-43-2	Sample Przr Steam Space	10*
63. FCV-43-3	Sample Przr Steam Space	10*
64. FCV-43-11	Sample Przr Liquid	10*
65. FCV-43-12	Sample Przr Liquid	10*
66. FCV-43-34	Accum Sample	5 *
67. FCV-43-35	Accum Sample	5 *
68. FCV-43-75	Boron Analyzer	5 *
69. FCV-43-77	Boron Analyzer	5 *
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-67-91	ERCW - LWR Cmpt Clrs	60*
8. FCV-67-95	ERCW - LWR Cmpt Clrs	60*
9. FCV-67-96	ERCW - LWR Cmpt Clrs	60*
10. FCV-67-99	ERCW - LWR Cmpt Clrs	60*
11. FCV-67-103	ERCW - LWR Cmpt Clrs	60*
12. FCV-67-104	ERCW - LWR Cmpt Clrs	60*
13. FCV-67-107	ERCW - LWR Cmpt Clrs	60*
14. FCV-67-111	ERCW - LWR Cmpt Clrs	60*
15. FCV-67-112	ERCW - LWR Cmpt Clrs	60*
16. FCV-67-130	ERCW - Up Cmpt Clrs	60*
17. FCV-67-131	ERCW - Up Cmpt Clrs	60*
18. FCV-67-133	ERCW - Up Cmpt Clrs	60*
19. FCV-67-134	ERCW - Up Cmpt Clrs	60*
20. 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.)		
21.	FCV-67-139	ERCW - Up Cmpt Clrs	60*
22.	FCV-67-141	ERCW - Up Cmpt Clrs	60*
23.	FCV-67-142	ERCW - Up Cmpt Clrs	60*
24.	FCV-67-295	ERCW - Up Cmpt Clrs	60*
25.	FCV-67-296	ERCW - Up Cmpt Clrs	60*
26.	FCV-67-297	ERCW - Up Cmpt Clrs	60*
27.	FCV-67-298	ERCW - Up Cmpt Clrs	60*
28.	FCV-70-87	RCP Thermal Barrier Ret	60
29.	FCV-70-89	CCS from RCP Oil Coolers	60
30.	FCV-70-90	RCP Thermal Barrier Ret	60
31.	FCV-70-92	CCS from RCP Oil Coolers	60
32.	FCV-70-134	To RCP Thermal Barriers	60
33.	FCV-70-140	CCS to RCP Oil Coolers	60
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 LWR Compt Air Mon	5*
27.	FCV-90-114	Cntmt Bldg LWR Compt Air Mon	5*
28.	FCV-90-115	Cntmt Bldg LWR Compt Air Mon	5*
29.	FCV-90-116	Cntmt Bldg LWR Compt Air Mon	5*
30.	FCV-90-117	Cntmt Bldg LWR 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

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.	FCV-1-181	SG Blow Dn	15*
6.	FCV-1-182	SG Blow Dn	15*
7.	FCV-1-183	SG Blow Dn	15*
8.	FCV-1-184	SG Blow Dn	15*
9.	FCV-31C-222	CW-Inst Room Clrs	10*
10.	FCV-31C-223	CW-Inst Room Clrs	10*
11.	FCV-31C-224	CW-Inst Room Clrs	10*
12.	FCV-31C-225	CW-Inst Room Clrs	10*
13.	FCV-31C-229	CW-Inst Room Clrs	10*
14.	FCV-31C-230	CW-Inst Room Clrs	10*
15.	FCV-31C-231	CW-Inst Room Clrs	10*
16.	FCV-31C-232	CW-Inst Room Clrs	10*
17.	FCV-43-22	Sample RC Outlet Hdrs	10*
18.	FCV-43-23	Sample RC Outlet Hdrs	10*
19.	FCV-43-55	SG Blow Dn Sample Line	10*
20.	FCV-43-58	SG Blow Dn Sample Line	10*
21.	FCV-43-61	SG Blow Dn Sample Line	10*
22.	FCV-43-64	SG Blow Dn Sample Line	10*
23.	FCV-61-96	Gylcol Inlet to Floor Cooler	30*
24.	FCV-61-97	Gylcol Inlet to Floor Cooler	30*
25.	FCV-61-110	Gylcol Outlet to Floor Cooler	30*
26.	FCV-61-122	Gylcol Outlet to Floor Cooler	30*
27.	FCV-61-191	Ice Condenser - Gylcol In	30*
28.	FCV-61-192	Ice Condenser - Gylcol In	30*
29.	FCV-61-193	Ice Condenser - Gylcol Out	30*
30.	FCV-61-194	Ice Condenser - Gylcol Out	30*
31.	FCV-62-61	RCP Seals	10

TABLE 3.6-2 (Continued)

CONTAINMENT ISOLATION VALVES

VALVE NUMBER		FUNCTION	MAXIMUM ISOLATION TIME (Seconds)
A.	PHASE "A" ISOLATION (Cont.)		
32.	FCV-62-63	RCP Seals	10
33.	FCV-62-72	Letdown Line	10*
34.	FCV-62-73	Letdown Line	10*
35.	FCV-62-74	Letdown Line	10*
36.	FCV-62-77	Letdown Line	20
37.	FCV-63-23	Accum to Hold Up Tank	10*
38.	FCV-63-64	WDS N_2 to Accum	10*
39.	FCV-63-71	Accum to Hold Up Tank	10*
40.	FCV-63-84	Accum to Hold Up Tank	10*
41.	FCV-68-305	WDS N_2 to PRT	10*
42.	FCV-68-307	PRT to Gas Analyzer	10*
43.	FCV-68-308	PRT to Gas Analyzer	10*
44.	FCV-70-85	CCS from Excess Lt Dn Hx	10*
45.	FCV-70-143	CCS to Excess Lt Dn Hx	60*
46.	FCV-77-9	RCDT Pump Disch	10*
47.	FCV-77-10	RCDT Pump Disch	10*
48.	FCV-77-16	RCDT to Gas Analyzer	10*
49.	FCV-77-17	RCDT to Gas Analyzer	10*
50.	FCV-77-18	RCDT and PRT to V H	10*
51.	FCV-77-19	RCDT and PRT to V H	10*
52.	FCV-77-20	N_2 to RCDT	10*
53.	FCV-77-127	Floor Sump Pump Disch	10*
54.	FCV-77-128	Floor Sump Pump Disch	10*
55.	FCV-81-12	Primary Water Makeup	10*
56.	FCV-87-7	UHI Test Line	10*
57.	FCV-87-8	UHI Test Line	10*
58.	FCV-87-9	UHI Test Line	10*
59.	FCV-87-10	UHI Test Line	10*
60.	FCV-87-11	UHI Test Line	10*
61.	FCV-26-240	Fire Protection Isol.	20
62.	FCV-26-243	Fire Protection Isol.	20

TABLE 3.6-2 (Continued)

CONTAINMENT ISOLATION VALVES

VALVE NUMBER	FUNCTION	MAXIMUM ISOLATION TIME (Seconds)
A. PHASE "A" ISOLATION (Cont.)		
62. FCV-43-2	Sample Przr Steam Space	10*
63. FCV-43-3	Sample Przr Steam Space	10*
64. FCV-43-11	Sample Przr Liquid	10*
65. FCV-43-12	Sample Przr Liquid	10*
66. FCV-43-34	Accum Sample	5 *
67. FCV-43-35	Accum Sample	5 *
68. FCV-43-75	Boron Analyzer	5 *
69. FCV-43-77	Boron Analyzer	5 *
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-67-91	ERCW - LWR Cmpt Clrs	60*
8. FCV-67-95	ERCW - LWR Cmpt Clrs	60*
9. FCV-67-96	ERCW - LWR Cmpt Clrs	60*
10. FCV-67-99	ERCW - LWR Cmpt Clrs	60*
11. FCV-67-103	ERCW - LWR Cmpt Clrs	60*
12. FCV-67-104	ERCW - LWR Cmpt Clrs	60*
13. FCV-67-107	ERCW - LWR Cmpt Clrs	60*
14. FCV-67-111	ERCW - LWR Cmpt Clrs	60*
15. FCV-67-112	ERCW - LWR Cmpt Clrs	60*
16. FCV-67-130	ERCW - Up Cmpt Clrs	60*
17. FCV-67-131	ERCW - Up Cmpt Clrs	60*
18. FCV-67-133	ERCW - Up Cmpt Clrs	60*
19. FCV-67-134	ERCW - Up Cmpt Clrs	60*
20. 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.)		
21.	FCV-67-139	ERCW - Up Cmpt Clrs	60*
22.	FCV-67-141	ERCW - Up Cmpt Clrs	60*
23.	FCV-67-142	ERCW - Up Cmpt Clrs	60*
24.	FCV-67-295	ERCW - Up Cmpt Clrs	60*
25.	FCV-67-296	ERCW - Up Cmpt Clrs	60*
26.	FCV-67-297	ERCW - Up Cmpt Clrs	60*
27.	FCV-67-298	ERCW - Up Cmpt Clrs	60*
28.	FCV-70-87	RCP Thermal Barrier Ret	60
29.	FCV-70-89	CCS from RCP Oil Coolers	60
30.	FCV-70-90	RCP Thermal Barrier Ret	60
31.	FCV-70-92	CCS from RCP Oil Coolers	60
32.	FCV-70-134	To RCP Thermal Barriers	60
33.	FCV-70-140	CCS to RCP Oil Coolers	60
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 LWR Compt Air Mon	5*
27.	FCV-90-114	Cntmt Bldg LWR Compt Air Mon	5*
28.	FCV-90-115	Cntmt Bldg LWR Compt Air Mon	5*
29.	FCV-90-116	Cntmt Bldg LWR Compt Air Mon	5*
30.	FCV-90-117	Cntmt Bldg LWR 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

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CHANGE NO. 3

JUSTIFICATION FOR PROPOSED TECHNICAL SPECIFICATION

In a telephone conversation with the NRC on February 17, 1983, we discussed our interpretation of the definition of operability as related to the containment isolation valves. During the telephone conversation, the NRC agreed with our interpretation but suggested a submittal of a technical specification change. The valves noted in Table 3.6.2 will not preclude changes in the operational modes if the valves are secured in their isolated position. This change is needed because LCO-3/4.6.3 will not allow the plant to change modes for startup even though the containment isolation valves are performing their safety function. This change should be allowed because the valves noted in Table 3.6.2 will still perform their safety function even though secured in the isolated position.

The requested change has been evaluated pursuant to 10 CFR 50.92 and no significant hazards are involved because the change does not:

1) Involve an increase in the probability or consequences of an accident previously evaluated.

   The valves will be in the isolated position, with power removed. The operator can restore power to the valves from the vicinity of the control room after the initiation signal has been reset. Based on the above facts, the change does not involve an increase in the probability of an accident previously evaluated.

2) Create the possibility of a new or different kind of accident from any accident previously evaluated.

   Based on the fact that the valves will perform the safety function by being in the isolated position, no possibility exists for a new or different kind of accident from any accident previously evaluated.

3) Involve a reduction in the margin of safety.

   The new requirement will comply with the technical specification bases since the valves as noted in Table 3.6.2 can be closed before an accident. Therefore, the limits assumed in the safety analyses would not be exceeded. Therefore, the change does not involve a reduction in the margin of safety.

ENCLOSURE 4

TVA-SQN-TS-46
SEQUOYAH NUCLEAR PLANT

CHANGE NO. 4

REVISION OF THE OPERATIONAL LIMITS ASSOCIATED
WITH THE PRESSURIZER SPRAY NOZZLE

TVA-SQN-TS-46

CHANGE NO. 4

SEQUOYAH NUCLEAR PLANT

PROPOSED TECHNICAL SPECIFICATIONS

PRESSURIZER

LIMITING CONDITION FOR OPERATION

3.4.9.2 The pressurizer temperature shall be limited to:

a. A maximum heatup of 100°F in any one hour period,

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

c. A maximum spray water temperature differential of 560°F.

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 structural integrity 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

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

4.4.9.2.2 Any occurrence of spray operation with a differential temperature greater than 320°F shall be recorded for evaluation of the cyclic limits in table 5.7.1.

LIMITING CONDITION FOR OPERATION

3.4.9.2 The pressurizer temperature shall be limited to:

a. A maximum heatup of 100°F in any one hour period,

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

c. A maximum spray water temperature differential of 560°F.

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 structural integrity 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

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

4.4.9.2.2 Any occurrence of spray operation with a differential temperature greater than 320°F shall be recorded for evaluation of the cyclic limits in table 5.7.1.

TABLE 5.7-1

COMPONENT CYCLIC OR TRANSIENT LIMITS

COMPONENT	CYCLIC OR TRANSIENT LIMIT	DESIGN CYCLE OR TRANSIENT
Reactor Coolant System	200 heatup cycles at ≤ 100°F/hr and 200 cooldown cycles at ≤ 100°F/hr.	Heatup cycle - T_{avg} from ≤ 200°F to ≥ 550°F. Cooldown cycle - T_{avg} from ≥ 550°F to ≤ 200°F.
	200 pressurizer cooldown cycles at ≤ 200°F/hr.	Pressurizer cooldown cycle temperatures from ≥ 650°F to ≤ 200°F.
	80 loss of load cycles, without immediate turbine or reactor trip.	≥ 15% of RATED THERMAL POWER to 0% of RATED THERMAL POWER.
	40 cycles of loss of offsite A.C. electrical power.	Loss of offsite A.C. electrical power source supplying the onsite ESF Electrical System.
	80 cycles of loss of flow in one reactor coolant loop.	Loss of only one reactor coolant pump.
	400 reactor trip cycles.	100% to 0% of RATED THERMAL POWER.
	12 spray actuation cycles	Spray water temperature differential > 320°F and ≤ 560° F.
	50 leak tests.	Pressurized to 2485 psig.
	5 hydrostatic pressure tests.	Pressurized to 3105 psig.
Secondary System	5 hydrostatic pressure tests.	Pressurized to 1330 psig.

TABLE 5.7-1

COMPONENT CYCLIC OR TRANSIENT LIMITS

COMPONENT	CYCLIC OR TRANSIENT LIMIT	DESIGN CYCLE OR TRANSIENT
Reactor Coolant System	200 heatup cycles at $\leq$ 100°F/hr and 200 cooldown cycles at $\leq$ 100°F/hr.	Heatup cycle - T_{avg} from $\leq$ 200°F to $\geq$ 550°F. Cooldown cycle - T_{avg} from $\geq$ 550°F to $\leq$ 200°F.
	200 pressurizer cooldown cycles at $\leq$ 200°F/hr.	Pressurizer cooldown cycle temperatures from $\geq$ 650°F to $\leq$ 200°F.
	80 loss of load cycles, without immediate turbine or reactor trip.	$\geq$ 15% of RATED THERMAL POWER to 0% of RATED THERMAL POWER.
	40 cycles of loss of offsite A.C. electrical power.	Loss of offsite A.C. electrical power source supplying the onsite ESF Electrical System.
	80 cycles of loss of flow in one reactor coolant loop.	Loss of only one reactor coolant pump.
	400 reactor trip cycles.	100% to 0% of RATED THERMAL POWER.
	12 spray actuation cycles	Spray water temperature differential > 320°F and $\leq$ 560°F.
	50 leak tests.	Pressurized to 2485 psig.
	5 hydrostatic pressure tests.	Pressurized to 3105 psig.
Secondary System	5 hydrostatic pressure tests.	Pressurized to 1330 psig.

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CHANGE NO. 4

JUSTIFICATION FOR PROPOSED TECHNICAL SPECIFICATION CHANGE

TVA has reviewed the INPO report on the steam generator tube rupture events at Oconee and Ginna (reference 1). One of the operational problems identified in the mitigation of the Ginna tube rupture event was the existence of administrative controls that prohibited the use of auxiliary spray. The administrative controls required that the differential temperature between the spray water and the pressurizer vapor be less than 320°F for auxiliary spray system operation. The basis for this temperature limit was to avoid or limit thermal shock to the spray nozzle. Sequoyah has a similar administrative limit on spray water differential temperature in order to comply with technical specification 3.4.9.2.c.

We have reviewed the basis for this technical specification, and it appears to be inconsistent with the component cyclic or transient limits specified in table 5.7.1 of the technical specifications and the Sequoyah pressurizer stress reports (references 2, 3, and 4). Normal operation, upset conditions, and test conditions have been analyzed. The spray differential temperature of 320°F is associated with nozzle usage cycles caused by normal operation during plant heatups and cooldowns. A maximum differential temperature of 560°F was used for the upset condition cycles caused by auxiliary spray operation. Table 5.7.1 of the technical specifications recognizes this fact and allows 10 inadvertent spray cycles with a differential temperature greater than 320°F. Actually, 12 cycles with a differential temperature of 560°F were analyzed in the Sequoyah pressurizer stress reports.

Changes to technical specification 3.4.9.2.c and its associated surveillance requirement are proposed to clarify the operational limits on the pressurizer spray nozzle. This will permit operation of the auxiliary spray during emergency conditions without violating the technical specifications. The proposed change to specification 3.4.9.2.c recognizes the fact that upper limit on spray differential temperature is 560°F. Surveillance requirement 4.4.9.2 has been rewritten to require determination of the spray differential temperature before operation of the auxiliary spray system. In addition, the spray differential temperature will be recorded whenever it exceeds 320°F. This will permit calculation of the actual nozzle usage factor for spray operation cycles with differential temperature greater than 320°F but less than 560°F. The requirement to check auxiliary spray differential temprature every 12 hours has been deleted because the important consideration for nozzle shock is the differential temperature at the initiation of the spray. The proposed surveillance requirement 4.4.9.2.2 requires this determination.

Changes to table 5.7.1 are proposed to clarify the operational limits on the pressurizer spray nozzle. The 12 cycles of auxiliary spray operation with a differential temperature of 560°F were evaluated in the Sequoyah pressurizer stress reports. Table 5.7.1 has been revised to recognize that up to 12 cycles with differential temperatures of 560°F are allowed. This change also recognizes that any spray operation above 320°F affects the nozzle in the same manner as auxiliary spray. Spray operation above 320°F but less than 560°F will be counted as a cycle and the operational conditions recorded. Actual nozzle usage factors will be calculated at a future date to account for the fact that operation with a lower differential temperature has a lesser effect than operation with a higher differential temperature. The number of remaining cycles would be revised as a result of these analyses.

The requested change has been evaluated pursuant to 10 CFR 50.92 and no significant hazards considerations are involved because the change does not:

1) Involve an increase in the probability or consequences of an accident previously evaluated.

   Because the proposed changes are bounded by the analyses performed for the pressurizer spray nozzle and documented in the pressurizer stress report, there is no increase in the probability of an accident previously evaluated.

2) Create the possibility of a new or different kind of accident from any accident previously evaluated.

   Because the proposed changes are bounded by the analyses performed for the pressurizer spray nozzle and documented in the pressurizer stress report, there is no possibility of a new or different kind of accident from those previously evaluated.

3) Involve a reduction in the margin of safety.

   Because the change corrects an inconsistency between specification 3.4.9.2 and Table 5.7.1 regarding the operational limits on the pressurizer spray nozzle, the changes does not involve a reduction in the margin of safety.

References

1. Institute of Nuclear Power Operations. 'Analysis of Steam Generator Tube Rupture Events at Oconee and Ginna,' INPO Report INPO 83-030, INPO, Atlanta, Georgia, November 1982.

2. Watson, T. C., '51 Series Fabricated Head Pressurizer Spray Nozzle Analysis,' WTD-SM-74-092, Westinghouse Electric Corporation, Tampa, Florida, August 1974.

3. Fernandez, R. E. and Flury, R. L., '51 Series Cast Head Pressurizer Spray Nozzle Analysis,' WTD-SM-74-047, Westinghouse Electric Corporation, Tampa, Florida, June 1974.

4. Woehr, R. N. and Bassett, J. B., 'Update of the TVA/TEN 84 Series Pressurizer Stress Report to E-Spec Addendum 677234 Revision 4,' WTD-SM-77-005, Westinghouse Electric Corporation, Tampa, Florida, January 1977.