3/4.6 CONTAINMENT SYSTEMS

3/4.6.1 PRIMARY CONTAINMENT

CONTAINMENT INTEGRITY

LIMITING CONDITION FOR OPERATION

3.6.1.1 Primary CONTAINMENT INTEGRITY shall be maintained.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

Without primary CONTAINMENT INTEGRITY, restore CONTAINMENT INTEGRITY within one hour or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.6.1.1 Primary CONTAINMENT INTEGRITY shall be demonstrated:

a. At least once per 31 days by verifying that all penetrations* not capable of being closed by OPERABLE containment automatic isolation valves and required to be closed during accident conditions are closed by valves, blind flanges, or deactivated automatic valves secured in their positions, except for valves that are open under administrative control as permitted by Specification 3.6.3. R16 R207

b. By verifying that each containment air lock is in compliance with the requirements of Specification 3.6.1.3. R134

c. Perform required visual examinations and leakage rate testing at P_a in accordance with ~~10 CFR 50, Appendix J, as modified by approved exemptions. The maximum allowable leakage rate, L_a, is 0.25% of containment air weight per day at the calculated peak containment pressure P_a, 12 psig.~~ the Containment Leakage Rate Testing Program. R180

*Except valves, blind flanges, and deactivated automatic valves which are located inside the annulus or containment or the main steam valve vaults and are locked, sealed or otherwise secured in the closed position. These penetrations shall be verified closed during each COLD SHUTDOWN except that such verification need not be performed more often than once per 92 days.

June 13, 1995

CONTAINMENT SYSTEMS

SECONDARY CONTAINMENT BYPASS LEAKAGE

LIMITING CONDITION FOR OPERATION

3.6.1.2 Secondary Containment bypass leakage rates shall be limited to a combined bypass leakage rate of less than or equal to 0.25 L_a for all penetrations that are secondary containment BYPASS LEAKAGE PATHS TO THE AUXILIARY BUILDING when pressurized to P_a.* R207 R180

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

With the combined bypass leakage rate exceeding 0.25 L_a for BYPASS LEAKAGE PATHS TO THE AUXILIARY BUILDING, restore the combined bypass leakage rate from BYPASS LEAKAGE PATHS TO THE AUXILIARY BUILDING to less than or equal to 0.25 L_a within 4 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

* Enter the ACTION of LCO 3.6.1.1, "Primary Containment" when Secondary Containment Bypass Leakage results in exceeding the overall containment leakage rate acceptance criteria.

June 13, 1995

in accordance with the Containment Leakage Rate Test program,

CONTAINMENT SYSTEMS

SECONDARY CONTAINMENT BYPASS LEAKAGE

R180

SURVEILLANCE REQUIREMENTS

R180

4.6.1.2 The secondary containment bypass leakage rates shall be demonstrated:

a. The combined bypass leakage rate to the auxiliary building shall be determined to be less than or equal to 0.25 L_a by applicable Type B and C tests at least once per 24 months except for penetrations which are not individually testable; penetrations not individually testable shall be determined to have no detectable leakage when tested with soap bubbles while the containment is pressurized to P_a (12 psig) during each Type A test.*

b. Leakage from isolation valves that are sealed with fluid from a seal system may be excluded, subject to the provisions of Appendix J, Section III.C.3, when determining the combined leakage rate provided the seal system and valves are pressurized to at least 1.10 P_a (13.2 psig) and the seal system capacity is adequate to maintain system pressure (or fluid head for the containment spray system and RHR spray system valves at penetrations 48A, 48B, 49A and 49B) for at least 30 days.

c. The provisions of Specification 4.0.2 are not applicable.

*Results shall be evaluated against the acceptance criteria of Specification 4.6.1.1.c in accordance with 10 CFR 50, Appendix J, as modified by approved exemptions.

LIMITING CONDITION FOR OPERATION

3.6.1.3 Each containment air lock shall be OPERABLE* with:

a. Both doors closed except when the air lock is being used for normal transit entry and exit through the containment, then at least one air lock door shall be closed, and

~~b. An overall air lock leakage rate of less than or equal to 0.05 L_a at P_a, 12 psig.~~

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

a. With one containment air lock door inoperable:

1. Maintain at least the OPERABLE air lock door closed and either restore the inoperable air lock door to OPERABLE status within 24 hours or lock the OPERABLE air lock door closed.

2. Operation may then continue until performance of the next required overall air lock leakage test provided that the OPERABLE air lock door is verified to be locked closed at least once per 31 days.

3. Otherwise, be in at least HOT STANDBY within the next six hours and in COLD SHUTDOWN within the following 30 hours.

4. The provisions of Specification 3.0.4 are not applicable.

b. With the containment air lock inoperable, except as the result of an inoperable air lock door, maintain at least one air lock door closed; restore the inoperable air lock to OPERABLE status within 24 hours or be in at least HOT STANDBY within the next six hours and in COLD SHUTDOWN within the following 30 hours.

R16

* 1. An inoperable air lock door does not invalidate the previous successful performance of the overall air lock leakage test

2. Enter the ACTION of LCO 3.6.1.1., "Primary Containment" when air lock leakage results in exceeding the overall containment leakage rate acceptance criteria.

MAR 25 1982

By verifying leakage rates in accordance with the Containment Leakage Rate Test Program

SURVEILLANCE REQUIREMENTS

4.6.1.3 Each containment air lock shall be demonstrated OPERABLE:

a. After each opening, except when the air lock is being used for multiple entries, then at least once per 72 hours, by verifying seal leakage less than or equal to 0.01 L_a as determined by precision flow measurements when measured for at least two minutes with the volume between the door seals at a pressure greater than or equal to 6 psig, R52

b. By conducting an overall air lock leakage test at not less than P_a (12 psig) and by verifying the overall air lock leakage rate is within the limit of Specification 3.6.1.3.b and the results evaluated in accordance with 10 CFR 50, Appendix J, as modified by approved exemptions:# R180

1. At least once per six months, and

2. Prior to establishing CONTAINMENT INTEGRITY if opened when CONTAINMENT INTEGRITY was not required when maintenance has been performed on the air lock that could affect the air lock sealing capability.*

(b) c. At least once per 6 months by verifying that only one door in each air lock can be opened at a time.

#The provisions of Specification 4.0.2 are not applicable.

*Exemption to Appendix "J" of 10 CFR 50.

CONTAINMENT VESSEL STRUCTURAL INTEGRITY

LIMITING CONDITION FOR OPERATION

3.6.1.6 The structural integrity of the containment vessel shall be maintained at a level consistent with the acceptance criteria in Specification 4.6.1.6.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

With the structural integrity of the containment vessel not conforming to the above requirements, restore the structural integrity to within the limits prior to increasing the Reactor Coolant System temperature above 200°F.

SURVEILLANCE REQUIREMENTS

4.6.1.6 The structural integrity of the containment vessel shall be determined during ~~the~~ shutdown ~~for each Type A containment leakage rate test (Specification 4.6.1.1.c)~~ by a visual inspection of the exposed accessible interior and exterior surfaces of the vessel. This inspection shall be performed ~~prior to the Type A containment leakage rate test~~ to verify no apparent changes in appearance of the surfaces or other abnormal degradation. Any abnormal degradation of the containment vessel detected during the above required inspections shall be reported to the Commission pursuant to Specification 6.6.1. R180 R40

in accordance with the Containment Leakage Rate Test Program

LIMITING CONDITION FOR OPERATION

3.6.1.9 One pair (one purge supply line and one purge exhaust line) of containment purge system lines may be open; the containment purge supply and exhaust isolation valves in all other containment purge lines shall be closed. Operation with purge supply or exhaust isolation valves open for either purging or venting shall be limited to less than or equal to 1000 hours per 365 days. The 365 day cumulative time period will begin every January 1. R22

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTION:

a. With a purge supply or exhaust isolation valve open in excess of the above cumulative limit, or with more than one pair of containment purge system lines open, close the isolation valve(s) in the purge line(s) within one hour or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. R124

b. With a containment purge supply and/or exhaust isolation valve having a measured leakage rate in excess of 0.05 L_a, restore the inoperable valve to OPERABLE status within 24 hours, otherwise be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. R124

SURVEILLANCE REQUIREMENTS

4.6.1.9.1 The position of the containment purge supply and exhaust isolation valves shall be determined at least once per 31 days.

4.6.1.9.2 The cumulative time that the purge supply and exhaust isolation valves are open over a 365 day period shall be determined at least once per 7 days.

4.6.1.9.3 At least once per 3 months, each containment purge supply and exhaust isolation valve shall be demonstrated OPERABLE by verifying that the measured leakage rate is less than or equal to 0.05 L_a.* R180

Enter the ACTION of LCO 3.6.1.1, "Primary Containment" when purge valve leakage results in exceeding the overall containment leakage rate acceptance criteria.

*Results shall be evaluated against the acceptance criteria of Specification 4.6.1.1.c in accordance with 10 CFR 50, Appendix J, as modified by approved exemptions. R180

3/4.6.3 CONTAINMENT ISOLATION VALVES

LIMITING CONDITION FOR OPERATION

R207

3.6.3 Each containment isolation valve shall be OPERABLE.*

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

R207

a. With one or more of the isolation valve(s), except containment vacuum relief isolation valve(s), inoperable, maintain at least one isolation valve OPERABLE in each affected penetration that is open and either:

R201

1. Restore the inoperable valve(s) to OPERABLE status within 4 hours, or

2. Isolate each affected penetration within 4 hours by use of at least one deactivated automatic valve secured in the isolation position, or

3. Isolate each affected penetration within 4 hours by use of at least one closed manual valve or blind flange; or

4. Be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

R207

b. With one or more containment vacuum relief isolation valve(s) inoperable, the valve(s) must be returned to OPERABLE status within 72 hours, or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

R207

c. The provisions of Specification 3.0.4 do not apply.

SURVEILLANCE REQUIREMENTS

R207

4.6.3.1 Deleted

2. Enter the ACTION of LCO 3.6.1.1, "Primary Containment" when Containment isolation valve leakage results in exceeding the overall containment leakage rate acceptance criteria.

1.

R207

*Penetration flow path(s) may be unisolated intermittently under administrative controls.

the Containment Leakage Rate Test Program

BASES

3/4.6.1 PRIMARY CONTAINMENT

R180

The safety design basis for primary containment is that the containment must withstand the pressures and temperatures of the limiting design basis accident (DBA) without exceeding the design leakage rates.

The DBAs that result in a challenge to containment OPERABILITY from high pressures and temperatures are a loss of coolant accident (LOCA), a steam line break, and a rod ejection accident (REA). In addition, release of significant fission product radioactivity within containment can occur from a LOCA or REA. In the DBA analyses, it is assumed that the containment is OPERABLE such that, for the DBAs involving release of fission product radioactivity, release to the environment is controlled by the rate of containment leakage. This leakage rate limitation will limit the site boundary radiation doses to within the limits of 10 CFR 100 during accident conditions. The containment was designed with an allowable leakage rate of 0.25 percent of containment air weight per day. This leakage rate, used in the evaluation of offsite doses resulting from accidents, is defined in ~~10 CFR 50, Appendix J~~, as L_a: the maximum allowable containment leakage rate at the calculated peak containment internal pressure (P_a) resulting from the limiting DBA. The allowable leakage rate represented by L_a forms the basis for the acceptance criteria imposed on all containment leakage rate testing. L_a is assumed to be 0.25 percent per day in the safety analysis at P_a = 12.0 psig. As an added conservatism, the measured overall integrated leakage rate is further limited to less than or equal to 0.75 L_a during performance of the periodic tests to account for possible degradation of the containment leakage barriers between tests.

Primary containment INTEGRITY or operability is maintained by limiting leakage to within the acceptance criteria of ~~10 CFR 50, Appendix J~~.

Individual leakage rates specified for the containment air lock (LCO 3.6.1.3), purge valves (LCO 3.6.1.9) and secondary bypass leakage (LCO 3.6.1.2) are not specifically part of the acceptance criteria of 10 CFR 50, Appendix J. Therefore, leakage rates exceeding these individual limits do not result in the primary containment being inoperable unless the leakage, when combined with other Type B and C test leakages, exceeds the acceptance criteria of Appendix J.

3/4.6.1.2 SECONDARY CONTAINMENT BYPASS LEAKAGE

The safety design basis for containment leakage assumes that 75 percent of the leakage from the primary containment enters the shield building annulus for filtration by the emergency gas treatment system. The remaining 25 percent of the primary containment leakage, which is considered to be bypassed to the auxiliary building, is assumed to exhaust directly to the atmosphere without filtration during the first 5 minutes of the accident. After 5 minutes, any bypass leakage to the auxiliary building is filtered by the auxiliary building gas treatment system. A tabulation of potential secondary containment bypass

the Containment Leakage Rate Test Program

R20

leakage paths to the auxiliary building is provided in ~~plant procedures~~. Restricting the leakage through the bypass leakage paths to 0.25 L_a provides assurance that the leakage fraction assumptions used in the evaluation of site boundary radiation doses remain valid. | R180

3/4.6.1.3 CONTAINMENT AIR LOCKS

The limitations on closure and leak rate for the containment air locks are required to meet the restrictions on CONTAINMENT INTEGRITY and containment leak rate. Surveillance testing of the air lock seals provide assurance that the overall air lock leakage will not become excessive due to seal damage during the intervals between air lock leakage tests.

3/4.6.1.4 INTERNAL PRESSURE

The limitations on containment internal pressure ensure that 1) the containment structure is prevented from exceeding its design negative pressure differential with respect to the annulus atmosphere of 0.5 psig and 2) the containment peak pressure does not exceed the maximum allowable internal pressure of 12 psig during LOCA conditions. | BR

3/4.6.1.5 AIR TEMPERATURE

The limitations on containment average air temperature ensure that 1) the containment air mass is limited to an initial mass sufficiently low to prevent exceeding the maximum allowable internal pressure during LOCA conditions and 2) the ambient air temperature does not exceed that temperature allowable for the continuous duty rating specified for equipment and instrumentation located within containment. | BR

The containment pressure transient is sensitive to the initially contained air mass during a LOCA. The contained air mass increases with decreasing temperature. The lower temperature limits of 100°F for the lower compartment, 85°F for the upper compartment, and 60°F when less than or equal to 5% of RATED THERMAL POWER will limit the peak pressure to an acceptable value. The upper temperature limit influences the peak accident temperature slightly during a LOCA; however, this limit is based primarily upon equipment protection and anticipated operating conditions. Both the upper and lower temperature limits are consistent with the parameters used in the accident analyses. | BR

3/4.6.1.6 CONTAINMENT VESSEL STRUCTURAL INTEGRITY

This limitation ensures that the structural integrity of the containment steel vessel will be maintained comparable to the original design standards for the life of the facility. Structural integrity is required to ensure that the vessel will withstand the maximum pressure of 12 psig in the event of a LOCA. (R)visual inspections in ~~conjunction with Type A leakage tests is~~ are sufficient to demonstrate this capability. | BR

Periodic

accordance with the Containment Leakage Rate Test program

6) Limitations on the operability and use of the liquid and gaseous effluent treatment systems to ensure that the appropriate portions of these systems are used to reduce releases of radioactivity when the projected doses in a 31-day period would exceed 2 percent of the guidelines for the annual dose or dose commitment conforming to Appendix I to 10 CFR Part 50, R152

7) Limitations on the dose rate resulting from radioactive material released in gaseous effluents from the site to areas at or beyond the SITE BOUNDARY SHALL BE LIMITED to the following: R178

   1. For noble gases: Less than or equal to a dose rate of 500 mrem/yr to the total body and less than or equal to a dose rate of 3000 mrem/yr to the skin, and

   2. For Iodine-131, Iodine-133, tritium, and for all radionuclides in particulate form with half-lives greater than 8 days: Less than or equal to a dose rate of 1500 mrem/year to any organ.

8) Limitations on the annual and quarterly air doses resulting from noble gases released in gaseous effluents from each unit to areas beyond the SITE BOUNDARY conforming to Appendix I to 10 CFR Part 50, R152

9) Limitations on the annual and quarterly doses to a MEMBER OF THE PUBLIC from Iodine-131, Iodine-133, tritium, and all radionuclides in particulate form with half-lives greater than 8 days in gaseous effluents released from each unit to areas beyond the SITE BOUNDARY conforming to Appendix I to 10 CFR Part 50, and

10) Limitations on the annual dose or dose commitment to any MEMBER OF THE PUBLIC due to releases of radioactivity and to radiation from uranium fuel cycle sources conforming to 40 CFR Part 190.

g. Radiological Environmental Monitoring Program

A program shall be provided to moritor the radiation and radionuclides in the environs of the plant. The program shall provide (1) representative measurements of radioactivity in the highest potential exposure pathways, and (2) verification of the accuracy of the effluent monitoring program and modeling of environmental exposure pathways. The program shall (1) be contained in the ODCM, (2) conform to the guidance of Appendix I to 10 CFR Part 50, and (3) include the following:

1) Monitoring, sampling, analysis, and reporting of radiation and radionuclides in the environment in accordance with the methodology and parameters in the ODCM,

2) A Land Use Census to ensure that changes in the use of areas at and beyond the SITE BOUNDARY are identified and that modifications to the monitoring program are made if required by the results of this census, and

3) Participation in a Interlaboratory Comparison Program to ensure that independent checks on the precision and accuracy of the measurements of radioactive materials in environmental sample matrices are performed as part of the quality assurance program for environmental monitoring.

INSERT A →

Insert A

h. Containment Leakage Rate Testing Program

A program shall be established to implement the leakage rate testing of the containment as required by 10 CFR 50.54(o) and 10 CFR 50 Appendix J, Option B, as modified by approved exemptions. Visual examination and testing, including test intervals and extensions, shall be in accordance with Regulatory Guide (RG) 1.163, "Performance-Based Containment Leak-Test Program," dated September 1995 with exceptions provided in the site implementing instructions.

The peak calculated containment internal pressure for the design basis loss of coolant accident, P_a, is 12.0 psig.

The maximum allowable containment leakage rate, L_a, at P_a, is 0.25% of the primary containment air weight per day.

Leakage rate acceptance criteria are:

a. Containment overall leakage rate acceptance criterion is $\leq$ 1.0 L_a. During the first unit startup following testing in accordance with this program, the leakage rate acceptance criteria are $\leq$ 0.60 L_a for the combined Type B and Type C tests, and $\leq$ 0.75 L_a for Type A tests;

b. Air lock testing acceptance criteria are:

   1) Overall air lock leakage rate is $\leq$ 0.05 L_a when tested at $\geq$ P_a.

   2) For each door, leakage rate is $\leq$ 0.01 L_a when pressurized to $\geq$ 6 psig for at least two minutes.

The provisions of SR 4.0.2 do not apply to the test frequencies specified in the Containment Leakage Rate Testing Program.

The provisions of SR 4.0.3 are applicable to the Containment Leakage Rate Testing Program.

3/4.6 CONTAINMENT SYSTEMS

3/4.6.1 PRIMARY CONTAINMENT

CONTAINMENT INTEGRITY

LIMITING CONDITION FOR OPERATION

3.6.1.1 Primary CONTAINMENT INTEGRITY shall be maintained.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

Without primary CONTAINMENT INTEGRITY, restore CONTAINMENT INTEGRITY within one hour or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.6.1.1 Primary CONTAINMENT INTEGRITY shall be demonstrated:

a. At least once per 31 days by verifying that all penetrations* not capable of being closed by OPERABLE containment automatic isolation valves and required to be closed during accident conditions are closed by valves, blind flanges, or deactivated automatic valves secured in their positions, except for valves that are open under administrative control as permitted by Specification 3.6.3. R193

b. By verifying that each containment air lock is in compliance with the requirements of Specification 3.6.1.3. R117

c. Perform required visual examinations and leakage rate testing at P_a in accordance with ~~10 CFR 50, Appendix J, as modified by approved exemptions. The maximum allowable leakage rate, L_a, is 0.25% of containment air weight per day at the calculated peak containment pressure P_a, 12 psig.~~ the Containment Leakage Rate Testing Program. R167

*Except valves, blind flanges, and deactivated automatic valves which are located inside the annulus or containment or the main steam valve vaults and are locked, sealed or otherwise secured in the closed position. These penetrations shall be verified closed during each COLD SHUTDOWN except that such verification need not be performed more often than once per 92 days. R183

SECONDARY CONTAINMENT BYPASS LEAKAGE

LIMITING CONDITION FOR OPERATION

3.6.1.2 Secondary Containment bypass leakage rates shall be limited to a combined bypass leakage rate of less than or equal to 0.25 L_a for all penetrations that are secondary containment BYPASS LEAKAGE PATHS TO THE AUXILIARY BUILDING when pressurized to P_a. * R193

APPLICABILITY: MODES 1, 2, 3 and 4. R167

ACTION:

With the combined bypass leakage rate exceeding 0.25 L_a for BYPASS LEAKAGE PATHS TO THE AUXILIARY BUILDING, restore the combined bypass leakage rate from BYPASS LEAKAGE PATHS TO THE AUXILIARY BUILDING to less than or equal to 0.25 L_a within 4 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

* Enter the ACTION of LCO 3.6.1.1, "Primary Containment" when Secondary Containment Bypass Leakage results in exceeding the overall containment leakage rate acceptance criteria.

in accordance with the Containment Leakage Rate Test program,

R167

SURVEILLANCE REQUIREMENTS

R167

4.6.1.2 The secondary containment bypass leakage rates shall be demonstrated:

a. The combined bypass leakage rate to the auxiliary building shall be determined to be less than or equal to 0.25 L_a by applicable Type B and C tests at least once per 24 months except for penetrations which are not individually testable; penetrations not individually testable shall be determined to have no detectable leakage when tested with soap bubbles while the containment is pressurized to P_a, (12 psig) during each Type A test.*

b. Leakage from isolation valves that are sealed with fluid from a seal system may be excluded, subject to the provisions of Appendix J, Section III.C.3, when determining the combined leakage rate provided the seal system and valves are pressurized to at least 1.10 P_a (13.2 psig) and the seal system capacity is adequate to maintain system pressure (or fluid head for the containment spray system and RHR spray system valves at penetrations 48A, 48B, 49A and 49B) for at least 30 days.

c. The provisions of Specification 4.0.2 are not applicable.

*Results shall be evaluated against the acceptance criteria of Specification 4.6.1.1.c in accordance with 10 CFR 50, Appendix J, as modified by approved exemptions.

LIMITING CONDITION FOR OPERATION

3.6.1.3 Each containment air lock shall be OPERABLE with*

a. Both doors closed except when the air lock is being used for normal transit entry and exit through the containment, then at least one air lock door shall be closed.

~~b. An overall air lock leakage rate of less than or equal to 0.05 L_a at P_a, 12 psig.~~

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

a. With one containment air lock door inoperable:

1. Maintain at least the OPERABLE air lock door closed and either restore the inoperable air lock door to OPERABLE status within 24 hours or lock the OPERABLE air lock door closed.

2. Operation may then continue until performance of the next required overall air lock leakage test provided that the OPERABLE air lock door is verified to be locked closed at least once per 31 days.

3. Otherwise, be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

4. The provisions of Specification 3.0.4 are not applicable.

b. With the containment air lock inoperable, except as the result of an inoperable air lock door, maintain at least one air lock door closed; restore the inoperable air lock to OPERABLE status within 24 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

* 1. An inoperable air lock door does not invalidate the previous successful performance of the overall air lock leakage test

2. Enter the ACTION of LCO 3.6.1.1., "Primary Containment" when air lock leakage results in exceeding the overall containment leakage rate acceptance criteria.

By verifying leakage rates in accordance with the Containment Leakage Rate Test Program

SURVEILLANCE REQUIREMENTS

4.6.1.3 Each containment air lock shall be demonstrated OPERABLE:

a. After each opening, except when the air lock is being used for multiple entries, then at least once per 72 hours, by verifying seal leakage less than or equal to 0.01 L_a as determined by precision flow measurements when measured for at least two minutes with the volume between the door seals at a pressure greater than or equal to 6 psig. R40

b. By conducting an overall air lock leakage test at not less than P_a (12 psig) and by verifying the overall air lock leakage rate is within the limit of Specification 3.6.1.3.b and the results evaluated in accordance with 10 CFR 50, Appendix J, as modified by approved exemptions:# R167

1. At least once per six months, and

2. Prior to establishing CONTAINMENT INTEGRITY if opened when CONTAINMENT INTEGRITY was not required when maintenance has been performed on the air lock that could affect the air lock sealing capability.*

b → c. At least once per 6 months by verifying that only one door in each air lock can be opened at a time.

#The provisions of Specification 4.0.2 are not applicable.

*Exemption to Appendix "J" of 10 CFR 50.

CONTAINMENT VESSEL STRUCTURAL INTEGRITY

LIMITING CONDITION FOR OPERATION

3.6.1.6 The structural integrity of the containment vessel shall be maintained at a level consistent with the acceptance criteria in Specification 4.6.1.6.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

With the structural integrity of the containment vessel not conforming to the above requirements, restore the structural integrity to within the limits prior to increasing the Reactor Coolant System temperature above 200°F.

SURVEILLANCE REQUIREMENTS

4.6.1.6 The structural integrity of the containment vessel shall be determined during ~~the~~ shutdown ~~for each Type A containment leakage rate test (Specification 4.6.1.1.c)~~ by a visual inspection of the exposed accessible interior and exterior surfaces of the vessel. This inspection shall be performed ~~prior to the Type A containment leakage rate test~~ to verify no apparent changes in appearance of the surfaces or other abnormal degradation. Any abnormal degradation of the containment vessel detected during the above required inspections shall be reported to the Commission pursuant to Specification 6.6.1. R167 R28

in accordance with the Containment Leakage Rate Test program

LIMITING CONDITION FOR OPERATION

3.6.1.9 One pair (one purge supply line and one purge exhaust line) of containment purge system lines may be open; the containment purge supply and exhaust isolation valves in all other containment purge lines shall be closed. Operation with purge supply or exhaust isolation valves open for either purging or venting shall be limited to less than or equal to 1000 hours per 365 days. The 365 day cumulative time period will begin every January 1. | R9

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTION:

a. With a purge supply or exhaust isolation valve open in excess of the above cumulative limit, or with more than one pair of containment purge system lines open, close the isolation valve(s) in the purge line(s) within one hour or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. | R109

b. With a containment purge supply and/or exhaust isolation valve having a measured leakage rate in excess of 0.05 L_a, restore the inoperable valve to OPERABLE status within 24 hours, otherwise be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. | R109

SURVEILLANCE REQUIREMENTS

4.6.1.9.1 The position of the containment purge supply and exhaust isolation valves shall be determined at least once per 31 days.

4.6.1.9.2 The cumulative time that the purge supply and exhaust isolation valves are open over a 365 day period shall be determined at least once per 7 days. | R9

4.6.1.9.3 At least once per 3 months, each containment purge supply and exhaust isolation valve shall be demonstrated OPERABLE by verifying that the measured leakage rate is less than or equal to 0.05 L_a.* | R167

Enter the ACTION of LCO 3.6.1.1, "Primary Containment" when purge valve leakage results in exceeding the overall containment leakage rate acceptance criteria

*Results shall be evaluated against the acceptance criteria of Specification 4.6.1.1.c in accordance with 10 CFR 50, Appendix J, as modified by approved exemptions. | R167

3/4.6.3 CONTAINMENT ISOLATION VALVES

LIMITING CONDITION FOR OPERATION

R193

3.6.3 Each containment isolation valve shall be OPERABLE.*

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

R193

a. With one or more of the isolation valve(s), except containment vacuum relief isolation valve(s), inoperable, maintain at least one isolation valve OPERABLE in each affected penetration that is open and either:

R188

1. Restore the inoperable valve(s) to OPERABLE status within 4 hours, or

2. Isolate each affected penetration within 4 hours by use of at least one deactivated automatic valve secured in the isolation position, or

3. Isolate each affected penetration within 4 hours by use of at least one closed manual valve or blind flange; or

4. Be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

R193

b. With one or more containment vacuum relief isolation valve(s) inoperable, the valve(s) must be returned to OPERABLE status within 72 hours, or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

R188

R193

c. The provisions of Specification 3.0.4 do not apply.

SURVEILLANCE REQUIREMENTS

R193

4.6.3.1 Deleted

2. Enter the ACTION of LCO 3.6.1.1, "Primary Containment" when containment isolation valve leakage results in exceeding the overall containment leakage rate acceptance criteria.

(1)

R193

*Penetration flow path(s) may be unisolated intermittently under administrative controls.

the Containment Leakage Rate Test Program

BASES

3/4.6.1 PRIMARY CONTAINMENT

R167

The safety design basis for primary containment is that the containment must withstand the pressures and temperatures of the limiting design basis accident (DBA) without exceeding the design leakage rates.

The DBAs that result in a challenge to containment OPERABILITY from high pressures and temperatures are a loss of coolant accident (LOCA), a steam line break, and a rod ejection accident (REA). In addition, release of significant fission product radioactivity within containment can occur from a LOCA or REA. In the DBA analyses, it is assumed that the containment is OPERABLE such that, for the DBAs involving release of fission product radioactivity, release to the environment is controlled by the rate of containment leakage. This leakage rate limitation will limit the site boundary radiation doses to within the limits of 10 CFR 100 during accident conditions. The containment was designed with an allowable leakage rate of 0.25 percent of containment air weight per day. This leakage rate, used in the evaluation of offsite doses resulting from accidents, is defined in ~~10 CFR 50, Appendix J~~, as L_a: the maximum allowable containment leakage rate at the calculated peak containment internal pressure (P_a) resulting from the limiting DBA. The allowable leakage rate represented by L_a forms the basis for the acceptance criteria imposed on all containment leakage rate testing. L_a is assumed to be 0.25 percent per day in the safety analysis at P_a = 12.0 psig. As an added conservatism, the measured overall integrated leakage rate is further limited to less than or equal to 0.75 L_a during performance of the periodic tests to account for possible degradation of the containment leakage barriers between tests.

Primary containment INTEGRITY or operability is maintained by limiting leakage to within the acceptance criteria of ~~10 CFR 50, Appendix J.~~

Individual leakage rates specified for the containment air lock (LCO 3.6.1.3), purge valves (LCO 3.6.1.9) and secondary bypass leakage (LCO 3.6.1.2) are not specifically part of the acceptance criteria of 10 CFR 50, Appendix J. Therefore, leakage rates exceeding these individual limits do not result in the primary containment being inoperable unless the leakage, when combined with other Type B and C test leakages, exceeds the acceptance criteria of Appendix J.

3/4.6.1.2 SECONDARY CONTAINMENT BYPASS LEAKAGE

The safety design basis for containment leakage assumes that 75 percent of the leakage from the primary containment enters the shield building annulus for filtration by the emergency gas treatment system. The remaining 25 percent of the primary containment leakage, which is considered to be bypassed to the auxiliary building, is assumed to exhaust directly to the atmosphere without filtration during the first 5 minutes of the accident. After 5 minutes, any bypass leakage to the auxiliary building is filtered by the auxiliary building gas treatment system. A tabulation of potential secondary containment bypass

R193

leakage paths to the auxiliary building is provided in ~~plant procedures.~~ the Containment Leakage Rate Test Program. Restricting the leakage through the bypass leakage paths to 0.25 L_a provides assurance that the leakage fraction assumptions used in the evaluation of site boundary radiation doses remain valid.

3/4.6.1.3 CONTAINMENT AIR LOCKS

The limitations on closure and leak rate for the containment air locks are required to meet the restrictions on CONTAINMENT INTEGRITY and containment leak rate. Surveillance testing of the air lock seals provide assurance that the overall air lock leakage will not become excessive due to seal damage during the intervals between air lock leakage tests.

3/4.6.1.4 INTERNAL PRESSURE

The limitations on containment internal pressure ensure that 1) the containment structure is prevented from exceeding its design negative pressure differential with respect to the annulus atmosphere of 0.5 psig and 2) the containment peak pressure does not exceed the maximum allowable internal pressure of 12 psig during LOCA conditions. BR

3/4.6.1.5 AIR TEMPERATURE

The limitations on containment average air temperature ensure that 1) the containment air mass is limited to an initial mass sufficiently low to prevent exceeding the maximum allowable internal pressure during LOCA conditions and 2) the ambient air temperature does not exceed that temperature allowable for the continuous duty rating specified for equipment and instrumentation located within containment. BR

The containment pressure transient is sensitive to the initially contained air mass during a LOCA. The contained air mass increases with decreasing temperature. The lower temperature limits of 100°F for the lower compartment, 85°F for the upper compartment, and 60°F when less than or equal to 5% of RATED THERMAL POWER will limit the peak pressure to an acceptable value. The upper temperature limit influences the peak accident temperature slightly during a LOCA; however, this limit is based primarily upon equipment protection and anticipated operating conditions. Both the upper and lower temperature limits are consistent with the parameters used in the accident analyses. BR

3/4.6.1.6 CONTAINMENT VESSEL STRUCTURAL INTEGRITY

This limitation ensures that the structural integrity of the containment steel vessel will be maintained comparable to the original design standards for the life of the facility. Structural integrity is required to ensure that the vessel will withstand the maximum pressure of 12 psig in the event of a LOCA. ~~A~~ Periodic visual inspection ~~in conjunction with Type A leakage tests is~~ are sufficient to demonstrate this capability. BR

~~in~~ accordance with the Containment Leakage Rate Test program

3) Participation in a Interlaboratory Comparison Program to ensure that independent checks on the precision and accuracy of the measurements of radioactive materials in environmental sample matrices are performed as part of the quality assurance program for environmental monitoring. R134

INSERT A

6.9 REPORTING REQUIREMENTS

ROUTINE REPORTS

6.9.1 In addition to the applicable reporting requirements of Title 10, Code of Federal Regulations, the following reports shall be submitted in accordance with 10 CFR 50.4. R64

STARTUP REPORT

6.9.1.1 A summary report of plant startup and power escalation testing shall be submitted following (1) receipt of an operating license, (2) amendment to the license involving a planned increase in power level, (3) installation of fuel that has a different design or has been manufactured by a different fuel supplier, and (4) modifications that may have significantly altered the nuclear, thermal, or hydraulic performance of the plant.

6.9.1.2 The startup report shall address each of the tests identified in the FSAR and shall include a description of the measured values of the operating conditions or characteristics obtained during the test program and a comparison of these values with design predictions and specifications. Any corrective actions that were required to obtain satisfactory operation shall also be described. Any additional specific details required in license conditions based on other commitments shall be included in this report.

6.9.1.3 Startup reports shall be submitted within (1) 90 days following completion of the startup test program, (2) 90 days following resumption or commencement of commercial power operation, or (3) 9 months following initial criticality, whichever is earliest. If the Startup Report does not cover all three events (i.e., initial criticality, completion of startup test program, and resumption or commencement of commercial power operation), supplementary reports shall be submitted at least every three months until all three events have been completed.

ENCLOSURE 1

PROPOSED TECHNICAL SPECIFICATION (TS) CHANGE

SEQUOYAH NUCLEAR PLANT (SQN) UNITS 1 AND 2

DOCKET NOS. 50-327 AND 50-328

(TVA-SQN-TS-95-24)

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Insert A

h. Containment Leakage Rate Testing Program

A program shall be established to implement the leakage rate testing of the containment as required by 10 CFR 50.54(o) and 10 CFR 50 Appendix J, Option B, as modified by approved exemptions. Visual examination and testing, including test intervals and extensions, shall be in accordance with Regulatory Guide (RG) 1.163, "Performance-Based Containment Leak-Test Program," dated September 1995 with exceptions provided in the site implementing instructions.

The peak calculated containment internal pressure for the design basis loss of coolant accident, P_a, is 12.0 psig.

The maximum allowable containment leakage rate, L_a, at P_a, is 0.25% of the primary containment air weight per day.

Leakage rate acceptance criteria are:

a. Containment overall leakage rate acceptance criterion is $\leq$ 1.0 L_a. During the first unit startup following testing in accordance with this program, the leakage rate acceptance criteria are $\leq$ 0.60 L_a for the combined Type B and Type C tests, and $\leq$ 0.75 L_a for Type A tests;

b. Air lock testing acceptance criteria are:

   1) Overall air lock leakage rate is $\leq$ 0.05 L_a when tested at $\geq$ P_a.

   2) For each door, leakage rate is $\leq$ 0.01 L_a when pressurized to $\geq$ 6 psig for at least two minutes.

The provisions of SR 4.0.2 do not apply to the test frequencies specified in the Containment Leakage Rate Testing Program.

The provisions of SR 4.0.3 are applicable to the Containment Leakage Rate Testing Program.

ENCLOSURE 2

PROPOSED TECHNICAL SPECIFICATION (TS) CHANGE

SEQUOYAH NUCLEAR PLANT (SQN) UNITS 1 AND 2

DOCKET NOS. 50-327 AND 50-328

(TVA-SQN-TS-95-24)

DESCRIPTION AND JUSTIFICATION FOR

INCORPORATING OPTION B TO

10 CFR 50, APPENDIX J

Description of Change

TVA proposes to modify the Sequoyah Nuclear Plant (SQN) Units 1 and 2 technical specifications (TSs) to implement the revision to 10 CFR 50, Appendix J. The new Appendix J rule (Option B) provides a voluntary performance based testing option for containment leakage rate testing (CLRT). Option B CLRT requirements are based on system and component performance in lieu of compliance with the current prescriptive requirements. Option B provides flexibility to adopt cost-effective methods, including setting test intervals for implementing the safety objectives underlying the requirements of Appendix J. The proposed TS change is as follows:

General - The proposed change adopts less prescriptive and more performance oriented requirements within TSs. Detailed technical methods for visual examination, containment testing, and test intervals are incorporated into the SQN TS by reference to approved industry guidelines (i.e., RG 1.163, Performance-Based Containment Leakage-Test Program).

Type A Test Interval - The proposed change implements Option B, which includes an alternative approach to determine surveillance test intervals based on past performance. An extension of the Type A test interval from three tests in 10 years to one test in 10 years is allowed based on satisfactory performance of two previous tests. However, in accordance with guidance provided in Section C, Item 3 of RG 1.163, the visual examination of accessible interior and exterior surfaces of the containment system for structural problems should be conducted prior to initiating a Type A test and during two other refueling outages before the next Type A test if the interval for the Type A test has been extended to 10 years.

Type B and C Test Interval - For Type B and Type C local leakage rate tests, Option B allows licensees to extend the testing frequency on a plant-specific basis based on experience history of each component and established controls to ensure continued performance during the extended testing interval. The Type B test frequency can be extended up to a maximum of once per 120 months. In accordance with guidance provided in Section C, Item 2 of RG 1.163, test intervals greater than 60 months for Type C tested components is not presently endorsed by the NRC staff. Further, the interval for Type C tests for containment purge and vent valves can only be extended to once per 30 months.

Specific changes are described below.

1. TS Surveillance Requirement (SR) 4.6.1.1.c, TS page 3/4 6-1, currently reads:

   "Perform required visual examinations and leakage rate testing at P_a in accordance with 10 CFR 50, Appendix J, as modified by approved exemptions. The maximum allowable leakage rate, L_a is 0.25% of containment air weight per day at the calculated peak containment pressure P_a, 12 psig."

The proposed change reads as follows:

"Perform required visual examinations and leakage rate testing in accordance with the Containment Leakage Rate Testing Program."

2. A proposed change to TS 3.6.1.2, "Secondary Containment Bypass Leakage," on TS page 3/4 6-2 adds the following footnote:

   Enter the ACTION of LCO 3.6.1.1, "Primary Containment," when secondary containment bypass leakage results in exceeding the overall containment leakage rate acceptance criteria.

3. TS SR 4.6.1.2.c, "Secondary Containment Bypass Leakage," on TS page 3/4 6-3 currently contains the following footnote: "Results shall be evaluated against the acceptance criteria of Specification 4.6.1.1.c in accordance with 10 CFR 50, Appendix J, as modified by approved exemptions." The proposed change deletes this footnote.

4. TS LCO 3.6.1.3, "Containment Air Locks," on TS page 3/4 6-7, currently reads:

   "Each containment air locks shall be OPERABLE with:

   a. Both doors closed except when the air lock is being used for normal transit entry and exit through the containment, then at least one air lock door shall be closed, and

   b. An overall air lock leakage rate of less than or equal to 0.05 L_a at P_a, 12 psig."

   The proposed change deletes Item (b) from the LCO and relocates Item (b) to SQN's Containment Leakage Rate Test Program (newly proposed Specification 6.8.4.h). Item (a) of the LCO is reformatted to read as follows:

   "Each containment air lock shall be OPERABLE with both doors closed except when the air lock is being used for normal transit entry and exit through the containment, then at least one air lock door shall be closed."

   In addition to the above change, two footnotes are added for clarification of air lock operability. The proposed footnotes read as follows:

   a. An inoperable air lock door does not invalidate the previous successful performance of the overall air lock leakage test.

   b. Enter the ACTION of LCO 3.6.1.1, "Primary Containment," when air lock leakage results in exceeding the overall containment leakage rate acceptance criteria.

5. SR 4.6.1.3, TS page 3/4 6-8, currently reads:

"Each containment air lock shall be demonstrated OPERABLE:

a. After each opening, except when the air lock is being used for multiple entries, then at least once per 72 hours, by verifying seal leakage less than or equal to 0.01 L_a as determined by precision flow measurement when measured for at least two minutes with the volume between the door seals at a pressure greater than or equal to 6 psig,

b. By conducting an overall air lock leakage test at not less than P_a (12 psig) and by verifying the overall air lock leakage rate is within the limit of Specification 3.6.1.3.b and the results evaluated in accordance with 10 CFR 50, Appendix J, as modified by approved exceptions:#

   1. At least once per six months, and

   2. Prior to establishing CONTAINMENT INTEGRITY if opened when CONTAINMENT INTEGRITY was not required when maintenance has been performed on the air lock that could affect the air lock sealing capability.*

c. At least once per 6 months by verifying that only one door in each air lock can be opened at a time."

#The provisions of Specification 4.0.2 are not applicable.
*Exemption to Appendix "J" of 10 CFR 50.

The proposed change deletes SR 4.6.1.3.(a) and (b) above and relocates the details associated with these SRs into SQN's Containment Leakage Rate Test Program (newly proposed Specification 6.8.4.h). The proposed change also simplifies SR 4.6.1.3 to read as follows:

"Each containment air lock shall be demonstrated OPERABLE:

a. By verifying leakage rates in accordance with the Containment Leakage Rate Test Program.

b. At least once per 6 months by verifying that only one door in each air lock can be operated at a time."

In addition, SR 4.6.1.3(c) is renumbered as SR 4.6.1.3(b) and the two associated footnotes (# and *) are no longer applicable under the proposed change and are deleted.

6. SR 4.6.1.6, TS page 3/4 6-11, currently reads:

   "4.6.1.6 The structural integrity of the containment vessel shall be determined during the shutdown for each Type A containment leakage rate test (Specification 4.6.1.1.c) by a visual inspection of the exposed accessible interior and exterior surfaces of the vessel. This inspection shall be performed prior to the Type A containment leakage rate test to verify no apparent changes in appearance of the surfaces or other abnormal degradation. Any abnormal degradation of the containment vessel detected during the above required inspections shall be reported to the Commission pursuant to Specification 6.6.1."

   The proposed change revises SR 4.6.1.6 to read as follows:

   "4.6.1.6 The structural integrity of the containment vessel shall be determined during shutdown by a visual inspection of the exposed accessible interior and exterior surfaces of the vessel. This inspection shall be performed in accordance with the Containment Leakage Rate Test Program to verify no apparent changes in appearance of the surfaces or other abnormal degradation. Any abnormal degradation of the containment vessel detected during the above required inspections shall be reported to the Commission pursuant to Specification 6.6.1."

7. TS 3.6.1.9, "Containment Ventilation System," page 3/4 6-15, contains a footnote that reads:

   "Results shall be evaluated against the acceptance criteria of Specification 4.6.1.1.c in accordance with 10 CFR 50, Appendix J, as modified by approved exemptions."

   The propose change deletes this footnote and replaces it with the following:

   "Enter the ACTION of LCO 3.6.1.1, "Primary Containment," when purge valve leakage results in exceeding the overall containment leakage rate acceptance criteria."

8. The proposed change to TS 3.6.3, "Containment Isolation Valves," on TS page 3/4 6-17 adds the following footnote:

   "Enter the ACTION of LCO 3.6.1.1, "Primary Containment," when containment isolation valve leakage results in exceeding the overall containment leakage rate acceptance criteria."

9. TVA's proposed TS change includes changes to TS Bases Section 3/4 6.1, "Primary Containment," and Bases Section 3/4.6.1.6, "Containment Vessel Structural Integrity." These Bases changes replace current references to 10 CFR 50, Appendix J with the Containment Leakage Rate Test Program. In addition, information is deleted to reflect the proposed changes to the TS sections discussed above.

10. Administrative Controls, Section 6.8, "Procedures and Programs," TS page 6-18 is revised under the proposed change to include requirements of a new program entitled Containment Leakage Rate Test Program (Section 6.8.4, Item h). The programmatic requirements implement 10 CFR 50, Appendix J, Option B, and requires that visual examination and testing in accordance with RG 1.163, "Performance-Based Containment Leak-Test Program," dated September 1995.

    Information associated with SQN's leakage rate acceptance criteria L_a and P_a is also provided.

Reason for Change

TVA is revising TSs to implement the recent revision to 10 CFR 50, Appendix J, Leakage Rate Testing of Containment of Light Water Cooled Nuclear Power Plants. Currently, CLRT is performed in accordance with the prescriptive requirements of Option A to 10 CFR 50, Appendix J. Option A specifies containment leak-rate test requirements, including the types of tests required. In addition, for each type of test, Appendix J discusses leakage acceptance criteria, test methodology, frequency of testing, and reporting requirements. The Option A details of Appendix J are currently contained in the SQN TSs.

NRC amended the regulations to provide an Option B to the existing Appendix J. Option B is a performance based approach to Appendix J leakage testing requirements. This option allows licensees with good performance history to reduce the Type A testing frequency from three tests in 10 years to one test in 10 years. For Type B and Type C tests, Option B allows licensees to reduce testing frequency on a plant specific basis based on experience history of each component, and established controls to ensure continued performance during the extended testing interval. Additionally, Option B allows utilities to remove the prescriptive details from the TSs. Therefore, TVA is revising the SQN TSs to comply with the performance based approach provided in the revision to 10 CFR 50, Appendix J.

The proposed change is a cost beneficial licensing action. Approval of this TS amendment will allow an immediate cost savings of approximately $500,000. This cost savings is associated with eliminating performance of a Type A test during the upcoming Unit 2 Cycle 7 refueling outage. The long-term cost savings for implementing Option B to 10 CFR 50, Appendix J is estimated at five million dollars over the 25-year plant life for both units.

Justification for Changes

The function of SQN's steel containment vessel is to isolate and contain fission products released from the reactor coolant system following a design basis accident and to confine the postulated release of radioactive material. The safety design basis

for containment is that it must withstand the pressures and temperatures of the limiting design basis accident without exceeding the design leakage rate. Periodic testing of the leak tightness of containment, as well as individual penetrations and valves, is necessary to assure that the assumed release rate in SQN's safety analysis is conservative.

In general, TVA's proposed license amendment revises SQN TSs to implement the recently promulgated 10 CFR 50, Appendix J, Option B. Prior to this rulemaking, NRC performed a review of current regulatory requirements in an effort to relax or eliminate requirements that are marginal to safety and yet impose significant regulatory burden on licensees. Reactor containment leak testing was identified as an area where NRC determined that a change to the regulations was warranted.

As discussed in the final regulatory impact analysis, for the revised rule, the primary consideration in implementing the performance based leakage rate testing requirements of Appendix J, Option B, is that changes will have at most only a marginal impact on safety. The results of the present analysis confirm the previous observations of insensitivity of population risks from severe reactor accidents to containment leakage rates. This analysis includes comparisons of the predicted reactor accident risks as a function of containment leakage rate with the NRC's safety goals. The calculated risks are well below the safety goals for all the reactors considered even at assumed containment leakage rates 100-fold above current requirements.

The risk to both the general population and the most exposed members of the public were analyzed. Based on a detailed examination of the results of the Probabilistic Risk Assessments (PRAs) for the five plants evaluated in NUREG-1150 (NRC90), the Technical Support Document (TSD) found that leakage rates as high as 100 times those currently permitted by the licensees' TSs would not increase the containment contribution to risk from severe accidents more than approximately one percent. This increase is marginal to safety. In addition, a change in the allowable leakage rate is estimated to have a negligible impact on occupational radiation exposure.

For Type A tests, specific changes in test frequency are recommended based on risk considerations. For Type B and C tests, analyses indicate the viability of reducing the frequency of testing.

Type A Tests - Reducing the frequency of Type A tests (integrated leak rate tests [ILRTs]) from the current three every 10 years to one every 10 years was found to lead to an imperceptible increase in risk. The estimated increase in risk is very small because ILRTs identify only a few potential containment leakage paths that cannot be identified by Type B and C testing, and the leaks that have been found by Type A tests have been only marginally above existing requirements. Given the insensitivity of risk to containment leakage rate and the small fraction of leakage paths detected solely by Type A testing, increasing the interval between integrated leakage rate tests is possible with minimal impact on public risk.

Type B Tests - Reducing the frequency of Type B testing of electrical penetrations should be possible with marginal impact on risk, based on findings that leakages through these penetrations are both infrequent and small (on the order of one percent of the total allowable leakage rate). As the performance history of Type B electrical penetrations shows no instances where leakage was more than a small fraction of the current allowable leakage rate, changing the frequency of testing to coincide with the schedule for ILRTs is not estimated to result in any change in public radiation exposure.

Type C Tests - The considerable majority of leakage paths are identified by local leak rate tests (LLRTs) of containment isolation valves (Type C tests). Based on the model of component failure with time, it has been found that performance-based alternatives to current LLRT requirements are feasible without significant risk impacts. For Type C tests, the population risk for a performance-based testing schedule would increase overall accident risk by about 2.2 percent per year. This increase is marginal to safety.

TVA's proposed change reflects a programmatic approach for implementing the containment leakage rate requirements within SQN TSs. The current TS details associated with visual examination and testing, test intervals, and containment leakage rate acceptance criteria, are relocated to the administrative control section of SQN TSs. Implementation of 10 CFR 50, Appendix J, Option B, is provided in a newly proposed TS Section 6.8.4.h, which is entitled, "Containment Leakage Rate Test (CLRT) Program."

Implementation of SQN's CLRT program will be based on Regulatory Guide (RG) 1.163, "Performance-Based Containment Leak Test Program," dated September 1995. RG 1.163 endorses NEI 94-01, Industry Guide Line for Implementing Performance-Based Option of 10 CFR 50, Appendix J." NEI 94-01 provides methods acceptable to the NRC staff for complying with the provisions of Option B.

SQN's newly proposed CLRT program recognizes one exception to RG 1.163 (NEI 94-01). The exception is associated with statements in NEI 94-01 that could lead to misinterpretations associated with Type B and Type C test results and Containment operability. NEI 94-01 (Section 8.0, page 7 and Section 10.2, page 14) states: "The combined as-found leakage rates determined on a MNPLR (minimum path leakage rate) basis for all penetrations shall be less than 0.60 L_a at all times when containment integrity is required." This statement could be interpreted as a second leakage rate acceptance criteria of 0.60 L_a for containment integrity that is in addition to the existing overall containment leakage limit of 1.0 L_a. The creation of a second limitation leads to confusion and creates the potential for misinterpretations with regard to containment operability. TVA takes exception to this criteria since current TS leakage criteria for containment operability is based on a 1.0 L_a limit. SQN's CLRT

program maintains a running total of the overall containment leakage (including the Type B and Type C leakage). SQN's CLRT program contains provisions for evaluating as-found leakage rates in excess of 0.60 L_a on a MXPLR basis when containment integrity is required. The evaluation ensures that SQN's overall containment leakage rate does not exceed 1.0 L_a. TVA will include the exception to RG 1.163 in the site implementing instructions.

In addition to the single exception from RG 1.163, TVA has included within the SQN TS (CLRT program) a definition for P_a, L_a, and a description of the leakage rate acceptance criteria. The leakage rate acceptance criteria is outlined as follows:

Area	Acceptance Criteria
a. Containment overall leakage rate	$\leq$ 1.0 L_a
Combined Type B and Type C tests	$\leq$ 0.60 L_a
Type A tests	$\leq$ 0.75 L_a
b. Air Lock	
1. Overall leakage rate	0.05 L_a when tested at $\geq$ P_a
2. Door seal leakage rate	0.01 L_a when pressurized to $\geq$6 psig for at least two minutes

Under TVA's proposed change, the leakage rate acceptance criteria listed above are relocated from the individual LCOs or SRs to SQN's administrative control section (Section 6.8.4.h). This is justified based on the fact that the leakage criteria remains unchanged and is retained in the TS SRs through references to the CLRT program.

It should be noted that two SQN TSs (3.6.1.2 - Secondary Containment Bypass Leakage and 3.6.1.9 - Containment Ventilation System) contain SRs that govern leakage limits for SQN's secondary containment bypass leakage paths (0.25 L_a) and purge valves (0.05 L_a). Under TVA's proposed change, the leakage limits and surveillance test requirements are being retained in their current form to ensure that these leakage limits continue to be satisfied within their associated SRs. A minor change is proposed for SR 4.6.1.2.a to remove a 24-month frequency for determining that combined bypass leakage is less than or equal to 0.25 L_a. The 24-month frequency requirement is considered to be prescriptive and is relocated within the Containment Leakage Rate Test Program.

SQN's bypass leakage and purge valve specifications contain a footnote that states:

"Results shall be evaluated against the acceptance criteria of Specification 4.6.1.1.c in accordance with 10 CFR 50, Appendix J, as modified by approved exemptions."

This footnote provides a means of evaluating leakage test results from bypass leakage paths and purge valves to ensure the overall containment leakage rate limit of 1.0 L_a. is satisfied. TVA's proposed change deletes the current footnote language and replaces it with the following:

1. Secondary Containment Bypass Leakage

   "Enter the ACTION of LCO 3.6.1.1, "Primary Containment," when Secondary Containment Bypass Leakage results in exceeding the overall containment leakage limit of 1.0 L_a."

2. Containment Ventilation System (Purge Valve Leakage)

   "Enter the ACTION of LCO 3.6.1.1, "Primary Containment", when purge valve leakage results in exceeding the overall containment leakage limit of 1.0 L_a."

The newly proposed change to these footnotes accomplishes the same goal by ensuring that leakage test results (bypass and purge valves) are evaluated against the overall containment leakage limit of 1.0 L_a. The proposed change to these footnotes is consistent with standard TS language (refer to note 4 from LCO 3.6.3 of Revision 1 to NUREG-1431) and establishes a reference to the ACTION requirements of LCO 3.6.1.1 for containment operability (i.e., integrity).

In addition to the change described above, similar footnotes have been added to SQN's airlock and containment isolation valve specifications (TS 3.6.1.3 and 3.6.3, respectively). This proposed change is consistent with STS requirements (refer to note 3 from LCO 3.6.2 [Airlocks] and note 4 from LCO 3.6.3 [Containment Isolation Valves]) and ensures that containment leakage results from these pathways are considered for overall containment operability.

TVA's incorporation of a second footnote within SQN LCO 3.6.1.3, Containment Air Locks, states:

"An inoperable air lock does not invalidate the previous successful performance of the overall air lock leakage test."

This proposed footnote is consistent with SR 3.6.1.2.1 of Revision 1 to the BWR-4 Improved Standard Technical Specifications. This note is considered reasonable since either air lock door is capable of providing a fission product barrier in the event of a design basis accident. Failure of the air lock interlock mechanism is an example of a condition that would not affect the leak-tight integrity of the doors. Additionally, seal leakage from a single door would not affect the integrity of the second air lock door or invalidate previous overall air lock leakage test results.

Environmental Impact Evaluation

The proposed change does not involve an unreviewed environmental question because operation of SQN Units 1 and 2 in accordance with this change would not:

1. Result in a significant increase in any adverse environmental impact previously evaluated in the Final Environmental Statement (FES) as modified by NRC's testimony to the Atomic Safety and Licensing Board, supplements to the FES, environmental impact appraisals, or decisions of the Atomic Safety and Licensing Board.

2. Result in a significant change in effluents or power levels.

3. Result in matters not previously reviewed in the licensing basis for SQN that may have a significant environmental impact.

ENCLOSURE 3

PROPOSED TECHNICAL SPECIFICATION CHANGE

SEQUOYAH NUCLEAR PLANT (SQN) UNITS 1 AND 2

DOCKET NOS. 50-327 AND 50-328

(TVA-SQN-TS-95-24)

DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATION

Significant Hazards Evaluation

TVA has evaluated the proposed technical specification (TS) change and has determined that it does not represent a significant hazards consideration based on criteria established in 10 CFR 50.92(c). Operation of Sequoyah Nuclear Plant (SQN) in accordance with the proposed amendment will not:

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

   The proposed amendment to SQN TSs is in accordance with Option B to 10 CFR 50, Appendix J. The proposed amendment adds a voluntary performance based option for containment leak rate testing. The changes being proposed do not affect the precursor for any accident or transient analyzed in Chapter 15 of SQN Updated Final Safety Analysis Report. The proposed change does not increase the total allowable primary containment leakage rate. The proposed change does not reflect a revision to the physical design and/or operation of the plant. Therefore, operation of the facility, in accordance with the proposed change, does not significantly affect the probability or consequences of an accident previously evaluated.

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

   The proposed amendment to SQN TSs is in accordance with the new performance-based option (Option B) to 10 CFR 50, Appendix J. The changes being proposed will not change the physical plant or the modes of operation defined in the facility license. The proposed changes do not increase the total allowable primary containment leakage rate. The changes do not involve the addition or modification of equipment, nor do they alter the design or operation of plant systems. Therefore, operation of the facility in accordance with the proposed change does not create the possibility of a new or different kind of accident from any previously evaluated.

3. Involve a significant reduction in a margin of safety.

   The proposed change to SQN TSs is in accordance with the new option to 10 CFR 50, Appendix J. The proposed option is formulated to adopt performance-based approaches. This option removes the current prescriptive details from the TS. The proposed changes do not affect plant safety analyses or change the physical design or operation of the plant. The proposed change does not increase the total allowable primary containment leakage rate. Therefore, operation of the facility, in accordance with the proposed change, does not involve a significant reduction in the margin of safety.