NO CHANGES TO THIS PAGE; FOR INFORMATION ONLY

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 1 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 as provided in Table 3.6-2 of Specification 3.6.3;

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

c. After each closing of each penetration subject to Type B testing, except the containment air locks, if opened following a Type A or B test, by leak rate testing the seal with gas at a pressure not less than P_a, 14.68 psig, and verifying that when the measured leakage rate for these seals is added to the leakage rates determined pursuant to Specification 4.6.1.2d. for all other Type B and C penetrations, the combined leakage rate is less than to 0.60 L_a.

* Except valves, blind flanges, and deactivated automatic valves which are located inside the annulus or the containment 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.

CONTAINMENT LEAKAGE

LIMITING CONDITION FOR OPERATION

3.6.1.2 Containment leakage rates shall be limited to:

a. An overall integrated leakage rate of~~s~~

~~1)~~ Less than or equal to L_a, 0.30% by weight of the containment air per 24 hours at P_a, 14.68 psig. ~~or~~

~~2) (Unit 1) Less than or equal to L_t, 0.122% by weight of the containment air per 24 hours at a reduced pressure of P_t, 7.34 psig.~~

b. A combined leakage rate of less than 0.60 L_a for all penetrations and valves subject to Type B and C tests, when pressurized to P_a, and

c. A combined bypass leakage rate of less than 0.07 L_a for all penetrations identified in Table 3.6-1 as secondary containment bypass leakage paths when pressurized to P_a.

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

ACTION:

With: (a) the measured overall integrated containment leakage rate exceeding 0.75 L_a ~~or 0.75 L_t, as applicable,~~ or (b) the measured combined leakage rate for all penetrations and valves subject to Types B and C tests exceeding 0.60 L_a, or (c) the combined bypass leakage rate exceeding 0.07 L_a, restore the overall integrated leakage rate to less than 0.75 L_a ~~or less than 0.75 L_t, as applicable,~~ and the combined leakage rate for all penetrations and valves subject to Type B and C tests to less than 0.60 L_a, and the combined bypass leakage rate to less than 0.07 L_a prior to increasing the Reactor Coolant System temperature above 200°F.

SURVEILLANCE REQUIREMENTS

4.6.1.2 The containment leakage rates shall be demonstrated IN ACCORDANCE WITH A at ~~the following~~ test schedule ~~and shall be~~ determined in conformance with ~~the criteria specified in~~ Appendix J of 10 CFR Part 50 using the methods and provisions of ~~ANSI N45.4-1972 or the mass-plot method;~~ REGULATORY GUIDE 1.163, SEPTEMBER, 1995, OPTION B,

SURVEILLANCE REQUIREMENTS (Continued)

a. DELETED

~~erall Integrated Containment Leakage Rate) 40 ± 10 month intervals during shutdown at or (Unit 1) at P_t, 7.34 psig, during each * The third test of each set shall be condown for the 10-year plant inservice~~

b. DELETED

~~to meet either 0.75 L_a or (Unit 1) ubsequent Type A tests shall be mmission. If two consecutive Type A L_a or (Unit 1) 0.75 L_t, a Type A test ery 18 months until two consecutive L_a or (Unit 1) 0.75 L_t at which time~~

the above test schedule may be resumed;

c. The accuracy of each Type A test shall be verified by a supplemental test ~~which:~~ IN ACCORDANCE WITH REGULATORY GUIDE 1.163, SEPTEMBER, 199

~~1) Confirms the accuracy of the test by verifying that the supplemental test result, L_c, minus the sum of the Type A and the superimposed leak, L_o, is equal to or less than 0.25 L_a or (Unit 1) 0.25 L_t;~~

~~2) Has a duration sufficient to establish accurately the change in leakage rate between the Type A test and the supplemental test; and~~

~~3) Requires that the rate at which gas is injected into the containment or bled from the containment during the supplemental test is between 0.75 L_a and 1.25 L_a or (Unit 1) 0.75 L_t and 1.25 L_t.~~

d. Type B and C tests shall be conducted with gas at a pressure not less than P_a, 14.68 psig, at intervals no greater than 24 months except for tests involving:

1) Air locks,

2) Purge supply and exhaust isolation valves with resilient material seals, and

3) Dual-ply bellows assemblies on containment penetrations between the containment building and the annulus.

~~* For Catawba Unit 1, a one-time change is granted to extend this interval between the second test (performed 3/91) and the third test to 60 ± 10 months. Also, this test will not be performed during the 10-year ISI refueling outage. This represents an exemption to 10 CFR 50, Appendix J.~~

3/4.6.1 PRIMARY CONTAINMENT

3/4.6.1.1 CONTAINMENT INTEGRITY

Primary CONTAINMENT INTEGRITY ensures that the release of radioactive materials from the containment atmosphere will be restricted to those leakage paths and associated leak rates assumed in the safety analyses. This restriction, in conjunction with the leakage rate limitation, will limit the SITE BOUNDARY radiation doses to within the dose guideline values of 10 CFR Part 100 during accident conditions.

3/4.6.1.2 CONTAINMENT LEAKAGE

The limitations on containment leakage rates ensure that the total containment leakage volume will not exceed the value assumed in the safety analyses at the peak accident pressure, P_a. As an added conservatism, the ~~measured~~ AS-LEFT overall integrated leakage rate is further limited to less than or equal to 0.75 L_a ~~or 0.75 L_t; as applicable, during performance of the periodic tests~~ to account for possible degradation of the containment leakage barriers between leakage tests.

The surveillance testing for measuring leakage rates ~~are~~ 15 consistent with the requirements of Appendix J of 10 CFR Part 50; OPTION B.

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 outside atmosphere of 1.5 psig, and (2) the containment peak pressure does not exceed the design pressure of 15 psig during LOCA conditions.

CONTAINMENT LEAKAGE

LIMITING CONDITION FOR OPERATION

3.6.1.2 Containment leakage rates shall be limited to:

a. An overall integrated leakage rate of less than or equal to L_a, 0.30% by weight of the containment air per 24 hours at P_a, 14.68 psig.

b. A combined leakage rate of less than 0.60 L_a for all penetrations and valves subject to Type B and C tests, when pressurized to P_a, and

c. A combined bypass leakage rate of less than 0.07 L_a for all penetrations identified in Table 3.6-1 as secondary containment bypass leakage paths when pressurized to P_a.

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

ACTION:

With: (a) the measured overall integrated containment leakage rate exceeding 0.75 L_a, or (b) the measured combined leakage rate for all penetrations and valves subject to Types B and C tests exceeding 0.60 L_a, or (c) the combined bypass leakage rate exceeding 0.07 L_a, restore the overall integrated leakage rate to less than 0.75 L_a and the combined leakage rate for all penetrations and valves subject to Type B and C tests to less than 0.60 L_a, and the combined bypass leakage rate to less than 0.07 L_a prior to increasing the Reactor Coolant System temperature above 200°F.

SURVEILLANCE REQUIREMENTS

4.6.1.2 The containment leakage rates shall be demonstrated in accordance with 10 CFR 50.54(o) at a test schedule determined in conformance with Appendix J of 10 CFR Part 50, Option B, using the methods and provisions of Regulatory Guide 1.163, September, 1995.

SURVEILLANCE REQUIREMENTS (Continued)

a. Deleted

b. Deleted

c. The accuracy of each Type A test shall be verified by a supplemental test in accordance with Regulatory Guide 1.163, September, 1995.

d. Type B and C tests shall be conducted with gas at a pressure not less than P_a, 14.68 psig, at intervals no greater than 24 months except for tests involving:

1) Air locks,

2) Purge supply and exhaust isolation valves with resilient material seals, and

3) Dual-ply bellows assemblies on containment penetrations between the containment building and the annulus.

BASES

3/4.6.1 PRIMARY CONTAINMENT

3/4.6.1.1 CONTAINMENT INTEGRITY

Primary CONTAINMENT INTEGRITY ensures that the release of radioactive materials from the containment atmosphere will be restricted to those leakage paths and associated leak rates assumed in the safety analyses. This restriction, in conjunction with the leakage rate limitation, will limit the SITE BOUNDARY radiation doses to within the dose guideline values of 10 CFR Part 100 during accident conditions.

3/4.6.1.2 CONTAINMENT LEAKAGE

The limitations on containment leakage rates ensure that the total containment leakage volume will not exceed the value assumed in the safety analyses at the peak accident pressure, P_a. As an added conservatism, the as-left overall integrated leakage rate is further limited to less than or equal to 0.75 L_a to account for possible degradation of the containment leakage barriers between leakage tests.

The surveillance testing for measuring leakage rates is consistent with the requirements of Appendix J of 10 CFR Part 50, Option B.

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 outside atmosphere of 1.5 psig, and (2) the containment peak pressure does not exceed the design pressure of 15 psig during LOCA conditions.

CONTAINMENT LEAKAGE

LIMITING CONDITION FOR OPERATION

3.6.1.2 Containment leakage rates shall be limited to:

a. An overall integrated leakage rate of less than or equal to L_a, 0.30% by weight of the containment air per 24 hours at P_a, 14.68 psig.

b. A combined leakage rate of less than 0.60 L_a for all penetrations and valves subject to Type B and C tests, when pressurized to P_a, and

c. A combined bypass leakage rate of less than 0.07 L_a for all penetrations identified in Table 3.6-1 as secondary containment bypass leakage paths when pressurized to P_a.

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

ACTION:

With: (a) the measured overall integrated containment leakage rate exceeding 0.75 L_a, or (b) the measured combined leakage rate for all penetrations and valves subject to Types B and C tests exceeding 0.60 L_a, or (c) the combined bypass leakage rate exceeding 0.07 L_a, restore the overall integrated leakage rate to less than 0.75 L_a, and the combined leakage rate for all penetrations and valves subject to Type B and C tests to less than 0.60 L_a, and the combined bypass leakage rate to less than 0.07 L_a prior to increasing the Reactor Coolant System temperature above 200°F.

SURVEILLANCE REQUIREMENTS

4.6.1.2 The containment leakage rates shall be demonstrated in accordance with 10 CFR 50.54(o) at a test schedule determined in conformance with Appendix J of 10 CFR Part 50, Option B, using the methods and provisions of Regulatory Guide 1.163, September, 1995.

SURVEILLANCE REQUIREMENTS (Continued)

a. Deleted

b. Deleted

c. The accuracy of each Type A test shall be verified by a supplemental test in accordance with Regulatory Guide 1.163, September, 1995.

d. Type B and C tests shall be conducted with gas at a pressure not less than P_a, 14.68 psig, at intervals no greater than 24 months except for tests involving:

   1) Air locks,

   2) Purge supply and exhaust isolation valves with resilient material seals, and

   3) Dual-ply bellows assemblies on containment penetrations between the containment building and the annulus.

BASES

3/4.6.1 PRIMARY CONTAINMENT

3/4.6.1.1 CONTAINMENT INTEGRITY

Primary CONTAINMENT INTEGRITY ensures that the release of radioactive materials from the containment atmosphere will be restricted to those leakage paths and associated leak rates assumed in the safety analyses. This restriction, in conjunction with the leakage rate limitation, will limit the SITE BOUNDARY radiation doses to within the dose guideline values of 10 CFR Part 100 during accident conditions.

3/4.6.1.2 CONTAINMENT LEAKAGE

The limitations on containment leakage rates ensure that the total containment leakage volume will not exceed the value assumed in the safety analyses at the peak accident pressure, P_a. As an added conservatism, the as-left overall integrated leakage rate is further limited to less than or equal to 0.75 L_a to account for possible degradation of the containment leakage barriers between leakage tests.

The surveillance testing for measuring leakage rates is consistent with the requirements of Appendix J of 10 CFR Part 50, Option B.

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 outside atmosphere of 1.5 psig, and (2) the containment peak pressure does not exceed the design pressure of 15 psig during LOCA conditions.

Attachment II
Description of and Justification for
Technical Specification Change

Description of Changes

The changes included in Attachment I will implement the NRC's revision to 10 CFR 50, Appendix J, which became effective on October 26, 1995. The revision to the regulation represents a shift away from prescriptive testing requirements in Appendix J, Option A, to a performance-based approach (Option B). Specifically, upon completion of two consecutive successful Type A tests, the licensee may extend the test interval up to 10 years between Type A tests. (Option B also provides for test interval extensions for Type B and C testing, but these changes are not being requested at this time.)

The changes requested herein include:

Specification 3.6.1.2.a.2), which specifies requirements for reduced-pressure testing, is being deleted. Reduced-pressure testing is not acceptable under the new (Option B) rule. Accordingly, references to reduced-pressure acceptance criteria are also deleted from the ACTION statement.

Surveillance Requirement 4.6.1.2 is being revised to refer to the requirement in 10 CFR 50.54(o) that containment testing be performed pursuant to Appendix J; the reference to Appendix J that currently exists in SR 4.6.1.2 will now refer to Option B of the Appendix; a reference to Regulatory Guide 1.163, September, 1995, is being added. RG 1.163 is the implementation document for the new rule.

SR 4.6.1.2.a and b. are deleted. The test schedule is now determined based upon the criteria of the implementing documents.

In SR 4.6.1.2.c, a reference is added to RG 1.163, dated September, 1995, as the implementing document; and redundant and/or obsolete requirements (c.1), 2), and 3)) are deleted.

A footnote at the bottom of page 3.6-3, which refers to a deferral of a CLRT for Catawba Unit 1, is deleted. With the approval of this proposed amendment, the test will become unnecessary.

A change to BASIS 3/4.6.1.2 specifies that the as-left containment leakage shall be less than or equal to .75 L_a, to account for possible degradation of the containment between tests. Also, a reference to a reduced-pressure test criterion was deleted, and a reference to Option B of Appendix J was added.

Technical Justification

The proposed changes are based on approved guidance documents from the NRC and Nuclear Energy Institute (NEI), including NEI 94-01, dated July 26, 1995; Regulatory Guide 1.163, dated September, 1995; and sample Improved Standard Technical Specifications (ISTS) developed by NEI, with NRC cooperation. The sample ISTS provided guidance on the scope of changes that the NRC expects to see from each of the utilities who elect to pursue Option B. The changes presented in this application meet the intent of the changes, relative to Type A testing, that have been approved in concept by the NRC. The NRC has determined that the industry guideline (NEI 94-01) referenced in the Regulatory Guide, with some exceptions, is an acceptable means of demonstrating compliance with the requirements of Option B. Duke Power intends to comply with the provisions of the NEI document, except as modified by the Regulatory Guide.

The as-found acceptance criterion for Type A tests, L_a, as specified in TS 3.6.1.2, has not changed, nor has the requirement that the containment leakage be less than or equal to .75 L_a before entering a mode in which containment integrity is required.

Deleting the details of the test program from TSs, and providing a reference to the guidance document (RG 1.163) is consistent with the recommendations of the Regulatory Guide.

The change in the test interval, based on the performance of the containment structure in previous tests, has been determined by the NRC's own analysis, presented in NUREG-1493, to have a minimal impact on safety. Catawba has achieved excellent results in previous CLRTs for both units.

Attachment III

No Significant Hazards Analysis

The following analysis is presented, pursuant to 10 CFR 50.91, to demonstrate that the proposed change will not create a Significant Hazard Consideration.

1. The proposed change will not involve a significant increase in the probability or consequences of an accident previously evaluated.

Containment leak rate testing is not an initiator of any accident; the proposed change does not affect reactor operations or accident analysis, and has no significant radiological consequences. Therefore, this proposed change will not involve an increase in the probability or consequences of any previously-evaluated accident.

2. The proposed change will not create the possibility of any new accident not previously evaluated.

The proposed change does not affect normal plant operations or configuration, nor does it affect leak rate test methods. The test history at Catawba (no ILRT failures) provides continued assurance of the leak tightness of the containment structure.

3. There is no significant reduction in a margin of safety.

The proposed changes are based on NRC-accepted provisions, and maintain necessary levels of reliability of containment integrity. The performanced-based approach to leakage rate testing recognizes that historically good results of containment testing provide appropriate assurance of future containment integrity; this supports the conclusion that the impact on the health and safety of the public as a result of extended test intervals is negligible.

Based on the above, no significant hazards consideration is created by the proposed change.

Environmental Assessment

The proposed change has been evaluated to determine if any environmental impact would be created. The change is considered to meet the criteria (presented in 10 CFR 51.22(c)(9)) for categorical exclusion from the requirements for an environmental assessment, because:

A. As documented above, the change will create No Significant Hazards Consideration.

B. There is no change in the type, or significant increase in the amounts, of any effluent that may be released offsite.

The change will create no new mechanism by which effluents are released, and will provide continued assurances that leakage remains within the existing allowed leakage, L_a.

C. There is no significant increase in individual or cumulative occupational radiation exposure.

The proposed change will not change methods by which radioactive materials, including effluents, are handled, processed, or disposed of. Normal radiation levels within the nuclear station will not increase, and this change will not result in personnel spending additional time in radiation areas. Therefore, there will be no increase in individual or cumulative radiation exposure.