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Michael S. Tuckman
Executive Vice President
Nuclear Generation

September 25, 2002

U.S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, D.C. 20555

Subject: Duke Energy Corporation
Catawba Nuclear Station, Units 1 and 2
Docket Numbers 50-413 and 50-414
McGuire Nuclear Station, Units 1 and 2
Docket Numbers 50-369 and 50-370
Proposed Technical Specifications (TS) Amendments
Technical Specification 5.5.2 (Containment Leakage Rate Testing Program)
One-Time Extension of Integrated Leak Rate Testing (ILRT) Interval

Reference: Letter from Duke Energy Corporation to NRC, same subject, dated May 29, 2002

In the reference letter, Duke Energy Corporation submitted a request for amendments to the Catawba and McGuire Nuclear Station Facility Operating Licenses and TS. These amendments will allow, on a one-time basis, extension of the interval governing the conduct of ILRT from ten to fifteen years.

On August 20, 2002, a conference call was held among various representatives of Duke Energy Corporation and the NRC to discuss the subject request. The purpose of this letter is to respond to questions raised by the NRC during the conference call. Attachment 1 to this letter provides the responses to these questions.

On September 4, 2002, the NRC issued Amendments 207 and 188 for McGuire Units 1 and 2, respectively. These amendments allow the utilization of 10 CFR 50, Appendix J, Option B for Types B and C testing. As a result of the issuance of these amendments, it is necessary to resubmit one of the TS pages originally submitted via the reference letter so that the

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latest TS pages are submitted. Attachment 2 to this letter contains both the marked-up and reprinted affected TS page for McGuire.

The original conclusions of the No Significant Hazards Consideration Analysis and the Environmental Analysis as delineated in the reference letter are unchanged as a result of this amendment request supplement.

Pursuant to 10 CFR 50.91, copies of this letter are being sent to the appropriate state officials.

There are no regulatory commitments contained in this letter or its attachments.

Inquiries on this matter should be directed to L.J. Rudy at (803) 831-3084.

Very truly yours,

M. S. Tuckman

M.S. Tuckman

LJR/s

Attachments

M.S. Tuckman affirms that he is the person who subscribed his name to the foregoing statement, and that all the matters and facts set forth herein are true and correct to the best of his knowledge.

M. S. Tuckman

M.S. Tuckman, Executive Vice President

Subscribed and sworn to me: Sept 25, 2002
Date

Mary P. Nelms
Notary Public

My commission expires: JAN 22, 2006
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McGuire Document Control File
Catawba RGC Date File
ELL-EC050

ATTACHMENT 1

RESPONSE TO NRC REQUEST FOR ADDITIONAL INFORMATION

REQUEST FOR ADDITIONAL INFORMATION
CATAWBA UNITS 1 AND 2, AND MCGUIRE UNITS 1 AND 2
ONE TIME EXTENSION FOR CONTAINMENT INTEGRATED LEAK
RATE TESTING

Question 1.

Please provide the specific locations of the containment surface areas and associated causes of accelerated degradation and aging which you have identified in your inspection program and a summary of findings of the augmented examinations you have performed in these areas.

Duke Energy Corporation Response

The following areas are currently examined in accordance with the ASME Code, Section XI (1992 Edition with the 1992 Addenda), IWE-2500, Table IWE-2500-1, Examination Category E-C, as specified in the Catawba and McGuire Nuclear Station Containment Inservice Inspection Plans. Some of these areas were included in the initial 10 year inservice inspection plan in accordance with IWE-1241 because conditions in these areas were deemed capable of causing accelerated degradation and aging. Other areas have been added as a result of degradation or adverse conditions observed during the performance of IWE-2500, Table IWE-2500-1, Examination Category E-A, E-D, or E-G visual examinations. Except as noted below, accelerated degradation and aging have not been detected at these areas.

McGuire Nuclear Station Units 1 and 2

A. Surface areas directly behind the insulation panel attached to the interior surface of the containment vessel approximately 3 feet above the embedment zone.

These surface areas are examined in accordance with Table IWE-2500-1, Examination Category E-C, Item E4.12 from the exterior of the containment vessel. These surface areas were selected for examination because the top of the insulation panel had not been sealed to prevent moisture intrusion, and because evidence of moisture intrusion had been noted during past inspections. Examination area is approximately 12" high, extending nearly all of the way around the periphery of the containment vessel. Accelerated aging and degradation have not been detected on surfaces of the steel containment vessel as a result of augmented examinations performed on these areas to date.

B. Containment vessel surface areas directly behind cork expansion joint material between the interior concrete structure and steel containment vessel at Elevation 752′ + 1 3/8″ between azimuths 104° and 122° (approx.).

These areas are examined in accordance with Table IWE-2500-1, Examination Category E-C, Item E4.12 from the exterior of the containment vessel. These locations were selected for examination because the cork expansion joint material has not been removed at these locations, and it is still possible for moisture to accumulate behind the expansion joint material. During past inspections, some staining and corrosion had been observed on accessible containment surfaces directly beneath these areas, indicating that moisture intrusion has occurred. Accelerated aging and degradation have not been detected on surfaces of the steel containment vessel as a result of augmented examinations performed on these areas to date.

McGuire Nuclear Station Unit 1 Only

A. Moisture barriers at the embedment zone around the periphery of the exterior side of the steel containment vessel, and at the interface between the steel containment vessel and the fuel transfer tube radiation shielding concrete on the exterior side of the steel containment vessel.

These areas are examined in accordance with Table IWE-2500-1, Examination Category E-C, Item E4.11 and were selected for augmented examination as a result of conditions observed during the performance of Table IWE-2500-1, Examination Category E-D, Item E5.30 examinations. Accelerated aging and degradation have not been detected on surfaces of the steel containment vessel as a result of augmented examinations performed on these areas to date.

McGuire Nuclear Station Unit 2 Only

A. Moisture barriers at the embedment zone around the periphery of the exterior side of the steel containment vessel, between azimuths 0° and 180° (approx.) and between azimuths 270° and 360° (approx.), and moisture barriers at the interface between the steel containment vessel and the fuel transfer tube radiation shielding concrete on the exterior side of the steel containment.

These items are examined in accordance with Table IWE-2500-1, Examination Category E-C, Item E4.11 and were selected for augmented examination as a result of conditions observed during the performance of Table IWE-2500-1, Examination Category E-D, Item E5.30 examinations. Accelerated aging and degradation have not been detected on surfaces of the steel containment vessel as a result of augmented examinations performed on these areas to date.

B. Surfaces between the steel containment vessel and the fuel transfer tube radiation shielding concrete on the interior of the vessel, between elevations 728'+4" and 729'+4".

These areas are examined in accordance with Table IWE-2500-1, Examination Category E-C, Item E4.12. The examination area extends approximately 3 feet on each side of the fuel transfer tube and is examined from the exterior of the containment vessel. This location was selected for examination because general visual examinations conducted in accordance with Table IWE-2500-1, Examination Category E-A, Item E1.11 detected evidence of borated water at this location on the interior surface of the containment vessel adjacent to inaccessible areas. Examinations performed to date on these areas have not detected any wall thinning of the containment vessel shell plate. However, these areas are considered to be subject to potential accelerated degradation and aging.

Catawba Nuclear Station Units 1 and 2

A. Surface areas on the interior of the containment vessel, located between azimuths 247° and 303° (approx.), below Elevation 593'+10 1/2", along the top of the cork expansion joint material installed between the interior concrete structure and the containment vessel at the containment air return exchange and hydrogen skimmer fan pit floor.

These areas are examined in accordance with Table IWE-2500-1, Examination Category E-C, Item E4.11. These areas were selected for examination because most of the cork expansion joint material has not been removed at this location, moisture intrusion has occurred, and some rusting and minor pitting has been observed on containment shell surfaces along the top of the cork material. The cause of the identified corrosion is attributed to excessive moisture that exists during refueling outages as a result of ice loading activities in these areas. This moisture is held against the containment vessel shell plate by the cork material. Visual examinations have revealed that adverse conditions (corrosion) still exist at these locations. However, these areas are also examined in accordance with Table IWE-2500-1, Examination Category E-C, Item E4.12 and are being monitored as described below. These areas are considered to be subject to potential accelerated degradation and aging.

B. Surface areas directly behind the cork expansion joint material installed between the containment vessel and interior concrete structure at the containment air return exchange and hydrogen skimmer fan pit floor between azimuths 247° and 303° (approx.), between Elevations 593'+9 3/8" and 590'+9 3/8" (approx.).

These areas are examined in accordance with Table IWE-2500-1, Examination Category E-C, Item E4.12 from the exterior of the containment vessel. These locations were selected for examination because corrosion has been identified at the containment air return exchange and hydrogen skimmer fan pit floor on the interior of the containment vessel at the top of the cork expansion joint material, as discussed above. Although some wall thinning has occurred at these areas, no change in wall thickness has been detected during consecutive ultrasonic thickness measurements. These areas will continue to require augmented examination until such time that the causes of the corrosion have been eliminated, the cork expansion joint material is removed, and the containment vessel damaged coatings are repaired. As discussed above, these areas are considered to be subject to potential accelerated degradation and aging.

C. Surface areas directly behind cork expansion joint material along the top of floor joints between the interior concrete structure and steel containment vessel at the following locations:

- Between Elevations 565'+5 5/8" and 564'+5 5/8" (approx.), between azimuths 0° to 250°, and 270° to 360° (approx.).
- Between Elevations 579'+1 3/8" and 578'+1 3/8" (approx.), between azimuths 104° to 122° (approx.).
- Between Elevations 594'+8 3/8" and 593'+8 3/8" (approx.), between azimuths 0° to 247°, and 303° to 360° (approx.). This area is located at the ice condenser floor where it may be possible for

moisture to accumulate against the containment vessel. The risk of potential degradation is considered higher here than for other areas of the containment vessel covered by insulation behind the ice condensers.

These areas are examined in accordance with Table IWE-2500-1, Examination Category E-C, Item E4.12 from the exterior side of the containment vessel. These locations were selected for examination because most of the expansion joint material has not been removed from the interior side of the containment vessel, and evidence of moisture and staining has been observed beneath these areas on the interior side of the vessel. No change in wall thickness has been detected during consecutive ultrasonic thickness measurements performed on the above areas. These areas are considered to be subject to potential accelerated degradation and aging.

Catawba Nuclear Station Unit 2 Only

A. Equipment Hatch Latch Bolts

Two of the latch bolts on Unit 2 are examined in accordance with Table IWE-2500-1, Examination Category E-C, Item E4.11 and were selected for examination as a result of conditions found during the performance of Table IWE-2500-1, Examination Category E-G, Item E8.30 examinations. These conditions included damaged washers and minor mechanical damage (scratches) on one of the bolt shanks. Although the observed conditions were evaluated as acceptable by Engineering, it was decided to add these two latch bolts to the augmented examination program. The observed conditions were not considered to be indicative of accelerated degradation or aging.

Question 2.

Inspections of some reinforced and steel containments (e.g., North Anna, Brunswick, and D. C. Cook) have indicated degradation from the uninspectable (embedded) side of the steel shell and liner of primary containments. The major uninspectable areas of the ice condenser containment include those behind the ice baskets and part of the shell embedded in the basemat. Please discuss whether there are uninspectable areas and what programs are used to monitor its condition. Also, address how potential leakage

due to age related degradation from these uninspectable areas are factored into the risk assessment in support of the requested ILRT interval extension from 10 to 15 years.

Duke Energy Corporation Response

Surface areas of the containment vessels at Catawba and McGuire that are inaccessible for visual examination, and programs used to monitor the condition of these areas are as follows:

A. Interior surfaces of the containment vessel shell directly behind the ice condensers

These inaccessible surface areas are not considered likely to experience accelerated aging and degradation as described in IWE-1241 of the ASME Code, Section XI (1992 Edition with the 1992 Addenda). However, nearly all of the surfaces on the exterior of the containment opposite these areas are accessible for visual examination and are examined in accordance with Table IWE-2500-1, Examination Category E-A, Items E1.11 and E1.12 of the ASME Code, Section XI (1992 Edition with the 1992 Addenda), as modified by 10CFR50.55a(b)(2)(ix)(E).

B. Exterior and interior surfaces of the containment shell and liner plate that are embedded in the concrete basemat

These inaccessible surface areas are not considered likely to experience accelerated aging and degradation as described in IWE-1241 of the ASME Code, Section XI (1992 Edition with the 1992 Addenda). However, moisture barriers installed at the embedment zones on the interior and exterior of the containment vessel are examined in accordance with the following:

- Table IWE-2500-1, Examination Category E-D, Item E5.30 of the ASME Code, Section XI (1992 Edition with the 1992 Addenda).
- Table IWE-2500-1, Examination Category E-C, Item E4.11 of the ASME Code, Section XI (1992 Edition with the 1992 Addenda), as required by IWE-2420(b). These examinations are performed only on a limited number of moisture barriers whose examination results have required evaluation in accordance with IWE-3000.
- Procedures used for performing Table IWE-2500-1, Examination Category E-A, Item E1.11 examinations

currently require visual examination of these moisture barriers once each inservice inspection period.

C. Interior surfaces of the containment vessel shell covered by cork expansion joint material behind interior structure walls

These inaccessible surface areas are not considered likely to experience accelerated aging and degradation as described in IWE-1241 of the ASME Code, Section XI (1992 Edition with the 1992 Addenda). However, surfaces adjacent to these areas are accessible for visual examination and are examined in accordance with Table IWE-2500-1, Examination Category E-A, Items E1.11 and E1.12 of the ASME Code, Section XI (1992 Edition with the 1992 Addenda), as modified by 10CFR50.55a(b)(2)(ix)(E). If degradation of containment shell plate surfaces is detected adjacent to these areas, supplemental examinations must be performed as required by IWE-3200.

D. Exterior surfaces of the containment vessel shell covered by cork expansion joint material and radiation shielding concrete surrounding the fuel transfer tube (Catawba Units 1 and 2, and McGuire Units 1 and 2), and interior surfaces of the containment vessel shell covered by cork expansion joint material and radiation shielding concrete surrounding the fuel transfer tube (Catawba Units 1 and 2, and McGuire Unit 1 only)

These inaccessible surface areas are not considered likely to experience accelerated aging and degradation as described in IWE-1241 of the ASME Code, Section XI (1992 Edition with the 1992 Addenda). However, moisture barriers installed at the horizontal and vertical interfaces between the containment vessel shell and the shielding concrete are examined in accordance with the following:

- Table IWE-2500-1, Examination Category E-D, Item E5.30 of the ASME Code, Section XI (1992 Edition with the 1992 Addenda).
- Table IWE-2500-1, Examination Category E-C, Item E4.11 of the ASME Code, Section XI (1992 Edition with the 1992 Addenda), as required by IWE-2420(b). These examinations are performed only on a limited number of moisture barriers whose examination results have required evaluation in accordance with IWE-3000.

- Procedures used for performing Table IWE-2500-1, Examination Category E-A, Item E1.11 examinations currently require visual examination of these moisture barriers once each inservice inspection period.

E. Interior surfaces of the containment vessel shell covered by cork expansion joint material and radiation shielding concrete surrounding the fuel transfer tube (McGuire Unit 2 only)

As a result of Table IWE-2500-1, Examination Category E-A, Item E1.11 examinations performed during refueling outage 2EOC13 in 2000, these surfaces are considered to be subject to potential accelerated aging and degradation due to corrosion (these conditions were addressed in a letter from Duke Energy Corporation to the NRC, dated January 11, 2001). Accessible portions of these areas are now examined in accordance with Table IWE-2500-1, Examination Category E-C, Item E4.12 of the ASME Code, Section XI (1992 Edition with the 1992 Addenda). Please note that no change in wall thickness has been detected during consecutive examinations of these areas performed to date.

F. Interior surfaces of the containment vessel shell covered by cork expansion joint material behind interior structure floors. These include the floors beneath the ice condensers (Catawba Units 1 and 2 only).

Cork expansion joint material still exists between some of the interior structure concrete floors and the containment vessel shell plate interior surfaces. At some of these locations, coatings degradation and corrosion have been detected near the floor elevation during general visual examinations performed in accordance with Table IWE-2500-1, Examination Category E-A, Item E1.11 of the ASME Code, Section XI (1992 Edition with the 1992 Addenda), and general visual examinations performed in accordance with 10CFR50, Appendix J. As a result, these surfaces are examined in accordance with Table IWE-2500-1, Examination Category E-C, Item E4.12 of the ASME Code, Section XI (1992 Edition with the 1992 Addenda) at locations where the cork expansion joint material exists between the interior structure floors and the containment vessel shell plate. Ultrasonic thickness measurements are performed from the exterior of the containment vessel. Please note that no change in wall thickness has been recorded at Catawba and McGuire during consecutive examinations of these areas. Although corrosion has been identified at some of these locations, the rate of corrosion (based on consecutive examination results) is very small.

As a result of degradation at these locations, much of the cork expansion joint has been removed from between the containment vessel shell plate and the interior structure concrete floors at McGuire, including behind the ice condenser floors. Catawba has removed, or is in the process of removing, much of this cork expansion joint material for similar reasons. Once removed, many of these surfaces will be considered accessible for visual examination and shall be subject to examination in accordance with Table IWE-2500-1, Examination Category E-A, Item E1.11 and Item E1.12, as modified by 10CFR50.55a(b)(2)(ix)(E).

G. Interior surfaces of the containment vessel shell covered by insulation panel at the base of the containment vessel (McGuire only)

This insulation panel is installed along the bottom of the containment vessel shell interior surface, extending approximately 3 feet up from the containment embedment zone. The areas behind the insulation panel are not considered likely to experience accelerated aging and degradation as described in IWE-1241 of the ASME Code, Section XI (1992 Edition with the 1992 Addenda), except for the location along the top of the insulation panel where the panel is attached to the containment vessel shell with intermittent fillet welds. Because the connection detail does not preclude the possibility that moisture can access portions of the containment vessel shell behind the panel, and because moisture has been detected at these locations during past visual examinations, the portion of the containment vessel shell plate directly behind the top of the insulation panel is considered to be subject to potential accelerated aging and degradation due to corrosion. As a result, the containment vessel shell plate surfaces directly behind the top of the insulation panel are examined from the exterior of the containment vessel in accordance with Table IWE-2500-1, Examination Category E-C, Item E4.12 of the ASME Code, Section XI (1992 Edition with the 1992 Addenda). Please note that examinations performed to date on these areas have not detected any wall thinning of the containment vessel shell plate. In addition, moisture barriers (sealant) are installed at the base of the insulation panel to prevent moisture from accessing the containment vessel shell plate at the embedment zone behind the insulation panel, and these moisture barriers are examined in accordance with Table IWE-2500-1, Examination Category E-D, Item E5.30 of the ASME Code, Section XI (1992 Edition with the 1992 Addenda).

Please refer to the reference letter for a description of the Catawba and McGuire risk assessments to support the ILRT interval extension.

The Catawba and McGuire risk assessments to support the ILRT interval extension contain three leakage classes. The intact containment class (EPRI Containment Failure Class 1) includes a leakage term, which is independent of the source or cause of the leak. The intact containment class is assumed to leak at the design leak.

In addition to Class 1, specific containment failure classes due to extending the ILRT interval were added for the Catawba and McGuire ILRT extension risk assessments. These classes are Class 3a (small leak) and Class 3b (large leak, LERF). The probability of these accident classes occurring is estimated from historical data. This data consists of ILRT results for various plants and the data indirectly includes some aging effects, by virtue of the fact that some of the data is for containments older than Catawba's and McGuire's. Using the historical data produces a conservative estimate for the LERF class. This estimate is conservative since the historical data does not contain any ILRT failures with a leak rate sufficiently large to be classified as LERF, and the methods used to estimate failure rates with zero occurrences are biased towards the upper range of failure rates. The actual rate is not expected to be significantly higher than the calculated rate. If the actual rate were significantly higher, then failures should have been observed in the historical data. However, actual rates that are 10, 100, or 1000 times lower than the calculated rate are consistent with the observed data.

Also, NEI has collected additional data ("Interim Guidance for Performing Risk Impact Assessments In Support of One-Time Extensions for Containment Integrated Leakage Rate Test", NEI, November 2001) on ILRTs. This data was not used in the Catawba and McGuire assessments. However, use of this data would tend to lower the risk estimates for Classes 3a and 3b.

Based on the above discussion of the uninspectable areas, the fact that historical data indirectly includes some age related effects, and the conservatism in the Catawba and McGuire risk assessments, the effects of aging have been considered to the extent necessary in the Catawba and McGuire risk assessments.

Question 3.

You state that Duke Energy Corporation has received NRC approval to use the Alternative Serial Number 98-GO-001, eliminating the need to perform visual examinations of seals and gaskets in accordance with the 1992 Edition with the 1992 Addenda of the ASME Code Section XI, Subsection IWE, Table IWE-2500-1, Category E-D, Item E5.10 and E5.20. Because of the flexibility provided for Type B and C testing in Option B of Appendix J, please provide the schedule when the seals and gaskets will be examined during the extended ILRT interval from 10 to 15 years.

Duke Energy Corporation Response

A description of penetrations using seals and gaskets to assure containment leak-tight integrity was provided in Duke Energy Corporation's letter to the NRC, dated April 6, 1998. The types of penetrations supplied with seals and gaskets are as follows:

1. Electrical penetrations with header plates that are welded to containment vessel penetration sleeves and are supplied with electrical conductor seals in the header plate

   Conductor seals on these penetrations are considered inaccessible for visual inspection because they are enclosed within electrical penetration junction boxes. The leak-tight integrity of these seals is assured by local leak rate testing in accordance with 10CFR50, Appendix J, Option B. The frequency of Type B testing of these seals is at least once every ten years. This testing frequency is not affected by the request to extend the Type A test interval from ten to fifteen years.

2. Electrical penetrations with header plates that are bolted to containment vessel penetrations and are sealed with dual metal o-rings. These electrical penetrations also have electrical conductor seals in the header plate.

   Conductor seals on these penetrations are also considered inaccessible for visual inspection because they are enclosed within electrical penetration junction boxes. Metal o-rings on these penetrations are considered inaccessible for visual inspection because they are enclosed between the electrical penetration header plate and the containment penetration mounting flange, and because these bolted connections are not normally disassembled to permit visual examination of the o-rings. The leak-tight integrity of these seals is assured by local leak rate testing in accordance with 10CFR50, Appendix J, Option B. The frequency of Type B testing of these seals is at least once every ten years. This testing frequency is not affected by the request to extend the Type A test interval from ten to fifteen years.

3. Mechanical penetrations with bolted joints, such as the fuel transfer tube penetrations and dual blind flanged spare penetrations. These penetrations are supplied with gaskets or o-rings.

   Gaskets on these penetrations are not normally subject to periodic visual inspection. However, the fuel transfer tube penetration flange is removed each refueling outage, and most of the blind flanges on spare penetrations are removed during each refueling outage. New gasketing is installed when the penetration flange is reinstalled, and a Type B leak rate test is performed following reassembly to verify the leak-tightness of the penetration. If any of the spare penetrations is not regularly used during refueling outages, the leak-tightness of the penetration is assured by periodic local leak rate testing in accordance with 10CFR50, Appendix J, Option B. The frequency of Type B testing of these seals and gaskets is at least once every ten years. This testing frequency is not affected by the request to extend the Type A test interval from ten to fifteen years.

4. Equipment hatch cover seals

   These dual, elastomeric seals are inspected in accordance with existing station procedures prior to reinstalling the equipment hatch cover each refueling outage. Following installation, the leak-tight integrity of the equipment hatch cover seals is verified by performing a Type B local leak rate test in accordance with 10CFR50, Appendix J. At Catawba, the equipment hatch seals are currently replaced every refueling outage.

5. Personnel air lock door seals

Catawba and McGuire currently perform visual examinations of air lock door inflatable seals every 6 months. These visual examinations are not required by current Technical Specifications. Please note that periodic leak rate testing of the air locks and seals is performed in accordance with Technical Specifications SR 3.6.2.1 and SR 3.6.2.2.

6. Miscellaneous electrical and mechanical penetrations in the personnel air lock barrels and bulkheads, including viewports

   Visual examinations of these gaskets are not required, and are not performed. However, air lock leak rate tests performed in accordance with Technical Specifications SR 3.6.2.1 are sufficient to demonstrate that these penetrations remain leak-tight.

Containment surfaces (including those in the vicinity of the above listed penetrations) are subject to visual examination in accordance with the ASME Code, Section XI, Subsection IWE (1992 Edition with the 1992 Addenda), IWE-2500, Table IWE-2500-1, Examination Category E-A, Item E1.11 prior to each Type A test and once every ISI period (as required by 10CFR50.55a(b)(2)(ix)(E)). These containment surfaces are also subject to examination in accordance with IWE-2500, Table IWE-2500-1, Examination Category E-A, Item E1.12 once every interval (ten years). Adverse conditions that can be detected visually and which could affect the leak-tight integrity of these penetrations would be detected by these visual examinations.

Question 4.

Regarding components whose integrity is typically verified during an ILRT, Catawba and McGuire employ dual ply bellows on all containment penetration assemblies for piping systems containing hot fluids. Following completion of the ILRT, each dual ply bellow assembly is subject to a low-pressure test of the space between the bellows to demonstrate the integrity of both bellows. For Catawba, this test is also performed at least once every two years. However, McGuire has an exemption to Appendix J that only requires this test to be performed following the ILRT. Discuss why McGuire could not perform the test every two years or perform the test at least in consistent with 10-year interval. If the test is

to be extended to 15 years, discuss how potential leakages due to age-related degradation mechanisms are factored into the risk-informed assessment related to the interval extension from 10 to 15 years.

Duke Energy Corporation Response

The bellows are defined as Type B components, and are required to be tested in accordance with 10CFR50, Appendix J. Under Option A, the frequency for testing the bellows is at least once every two years. Under Option B, the frequency of Type B components can be extended to once every 60 months if the component passes two consecutive as-found tests and once every 120 months if it passes three consecutive as-found tests. Although Option A requires the bellows to be tested at least once every two years and Option B allows 60 and 120-month test intervals, McGuire has an exemption from these test requirements and intervals. McGuire's exemption requires the bellows to be tested following an ILRT (10-year test interval).

Although McGuire is only required to test the bellows following an ILRT (once every 10 years), a more conservative approach (test plan) has been implemented. McGuire has developed and is presently utilizing a supplementary testing program that tests one-third of the bellows each outage until all bellows have been tested. This supplementary testing program will be formally incorporated into McGuire's Containment Leak Rate Testing Program. Under this program, all bellows will be tested (one-third each outage until all are tested) at low pressures to identify and record leakage rate values. If any fail the acceptance criterion (0 sccm), then the leaking bellows would be tested at design pressure and its leakage recorded and added to the total containment leakage rate. In addition, all leaking bellows will continue to be tested at an increased frequency to ensure trending and monitoring to detect possible degradation. Under no scenario shall a bellow's test interval exceed the current 10-year (plus 25% grace, not to exceed 15 months) ILRT interval.

ATTACHMENT 2

MARKED-UP AND REPRINTED TS PAGE FOR MCGUIRE

5.0 ADMINISTRATIVE CONTROLS

5.5 Programs and Manuals

The following programs shall be established, implemented, and maintained.

5.5.1 Offsite Dose Calculation Manual (ODCM)

The ODCM shall contain the methodology and parameters used in the calculation of offsite doses resulting from radioactive gaseous and liquid effluents, in the calculation of gaseous and liquid effluent monitoring alarm and trip setpoints, and in the conduct of the radiological environmental monitoring program.

Licensee initiated changes to the ODCM:

a. Shall be documented and records of reviews performed shall be retained. This documentation shall contain:

   1. sufficient information to support the change(s) together with the appropriate analyses or evaluations justifying the change(s), and

   2. a determination that the change(s) do not adversely impact the accuracy or reliability of effluent, dose, or setpoint calculations;

b. Shall become effective after the approval of the Station Manager; and

c. Shall be submitted to the NRC in the form of a complete, legible copy of the entire ODCM as a part of or concurrent with the Radioactive Effluent Release Report for the period of the report in which any change in the ODCM was made. Each change shall be identified by markings in the margin of the affected pages, clearly indicating the area of the page that was changed, and shall indicate the date (i.e., month and year) the change was implemented.

5.5.2 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. This program shall be in accordance with the guidelines contained in Regulatory Guide 1.163, "Performance-Based Containment Leak-Test Program," dated September 1995.

Replace with INSERT 1

(continued)

INSERT 1 for Catawba:

as modified by the following exceptions:

a. The containment visual examinations required by Regulatory Position C.3 shall be conducted 3 times every 10 years, including during each shutdown for SR 3.6.1.1 Type A test, prior to initiating the Type A test; and

b. NEI 94-01-1995, Section 9.2.3: The first Type A test performed after the November 14, 2000 (Unit 1) and February 7, 1993 (Unit 2) Type A test shall be performed no later than November 13, 2015 (Unit 1) and February 6, 2008 (Unit 2).

INSERT 1 for McGuire:

, as modified by the following exception:

a. NEI 94-01-1995, Section 9.2.3: The first Type A test performed after the May 27, 1993 (Unit 1) and August 20, 1993 (Unit 2) Type A test shall be performed no later than May 26, 2008 (Unit 1) and August 19, 2008 (Unit 2).

5.0 ADMINISTRATIVE CONTROLS

5.5 Programs and Manuals

The following programs shall be established, implemented, and maintained.

5.5.1 Offsite Dose Calculation Manual (ODCM)

The ODCM shall contain the methodology and parameters used in the calculation of offsite doses resulting from radioactive gaseous and liquid effluents, in the calculation of gaseous and liquid effluent monitoring alarm and trip setpoints, and in the conduct of the radiological environmental monitoring program.

Licensee initiated changes to the ODCM:

a. Shall be documented and records of reviews performed shall be retained. This documentation shall contain:

   1. sufficient information to support the change(s) together with the appropriate analyses or evaluations justifying the change(s), and

   2. a determination that the change(s) do not adversely impact the accuracy or reliability of effluent, dose, or setpoint calculations;

b. Shall become effective after the approval of the Station Manager; and

c. Shall be submitted to the NRC in the form of a complete, legible copy of the entire ODCM as a part of or concurrent with the Radioactive Effluent Release Report for the period of the report in which any change in the ODCM was made. Each change shall be identified by markings in the margin of the affected pages, clearly indicating the area of the page that was changed, and shall indicate the date (i.e., month and year) the change was implemented.

5.5.2 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. This program shall be in accordance with the guidelines contained in Regulatory Guide 1.163, "Performance-Based Containment Leak-Test Program," dated September 1995, as modified by the following exception:

a. NEI 94-01-1995, Section 9.2.3: The first Type A test performed after the May 27, 1993 (Unit 1) and August 20, 1993 (Unit 2) Type A test shall be performed no later than May 26, 2008 (Unit 1) and August 19, 2008 (Unit 2).

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