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February 15, 2008

U.S. Nuclear Regulatory Commission
Document Control Desk
Washington, DC 20555-001

Subject: Duke Power Company LLC d.b.a. Duke Energy Carolinas, LLC

McGuire Nuclear Station, Units 1 and 2
Docket Nos. 50-369 and 50-370

Catawba Nuclear Station, Units 1 and 2
Docket Nos. 50-413 and 50-414

License Amendment Request to Revise Ice Condenser Licensing Basis

In accordance with the provisions of Section 50.90 of Title 10 of the Code of Federal Regulations (10CFR), Duke Power Company LLC d.b.a. Duke Energy Carolinas, LLC (Duke) proposes a license amendment request (LAR) for the Renewed Facility Operating Licenses (FOLs) and Updated Final Safety Analysis Reports (UFSARs) for the McGuire and Catawba Nuclear Stations, Units 1 and 2.

The proposed amendment revises the McGuire and Catawba UFSARs by requiring an inspection of each ice condenser within 24 hours of experiencing a seismic event greater than or equal to an Operating Basis Earthquake (OBE) within the five (5) week period after ice basket replenishment has been completed to confirm that adverse ice fallout has not occurred which could impede the ability of the ice condenser lower inlet doors to open. This action would be taken, in lieu of requiring a five week waiting period following ice basket replenishment, prior to beginning ascension to power operations.

The proposed changes provide an alternate methodology to confirm the ice condenser lower inlet doors can open to fulfill their intended safety function. Justification for the use of the proposed alternate methodology is based upon reasonable assurance that the ice condenser lower inlet doors will open following a seismic event during the 5 week period and the low probability of a seismic event occurring coincident with or subsequently followed by a Design Basis Accident.

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Attachment 1a provides existing UFSAR pages for McGuire Units 1 and 2, marked-up to show the proposed change.

Attachment 1b provides existing UFSAR pages for Catawba Units 1 and 2, marked-up to show the proposed change.

Attachment 2 provides Duke's evaluation of the LAR which contains a description of the proposed changes, the technical analysis, the determination that this LAR contains No Significant Hazards Considerations, the basis for the categorical exclusion from performing an Environmental Assessment/Impact Statement, precedent and references.

Attachment 3 identifies regulatory commitments made in support of this license amendment request.

Duke requests NRC review and approval of this LAR by March 31, 2008 in order to support the McGuire Unit 2 start-up. Station procedures [requiring the inspection of each ice condenser within 24 hours of experiencing a seismic event greater than or equal to an Operating Basis Earthquake (OBE) within the five (5) week period after ice basket replenishment] will be implemented at the McGuire and Catawba Nuclear Stations prior to beginning ascension to power operations subsequent to ice basket replenishment at that station.

Revisions to the McGuire and Catawba UFSARs will be made in accordance with 10CFR50.71(e).

In accordance with Duke internal procedures and the Quality Assurance Topical Report, the proposed amendment has been reviewed and approved by the McGuire and Catawba Plant Operations Review Committees and the Duke Corporate Nuclear Safety Review Board.

Pursuant to 10CFR50.91, a copy of this LAR has been forwarded to the appropriate North Carolina and South Carolina state officials.

Please direct any questions you may have in this matter to K. L. Ashe at (704) 875-4535, or R. D. Hart at (803) 831-3622.

Very truly yours,

Bruce Hamilton

B. H. Hamilton

xc w/ Attachments:

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Bruce H. Hamilton 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.

Bruce Hamilton

Bruce H. Hamilton, Vice President, McGuire Nuclear Station

Subscribed and sworn to me: 2-15-08
Date

Kay L Crane

Kay L Crane, Notary Public

My commission expires: 4-1-2012
Date

KAY L. CRANE
NOTARY
PUBLIC
LINCOLN COUNTY, N.C.

ATTACHMENT 1a

Marked-Up McGuire UFSAR

6.2.2.7.3 Design Evaluation

The pressure drop through the ducts and manifolds was estimated by using loss coefficients determined by using a standard reference (Reference 49) as a guide. The pressure drop through the air handlers was determined by test. The overall system flow rate was established by superimposing the system flow versus ΔP curve over the fan flow versus ΔP curve.

With the flow rate established the capacity of the air handlers was determined. First the air handler capacity was theoretically determined for a set of design conditions approximating operating conditions. Next the air handler units were tested by the manufacturer to the set of specified design conditions. It was determined that the theoretical relationships adequately predicted air handler performance and these techniques were then used to adjust the test values to those of actual operation. The gross operating capacity of one air handler is just under 30,000 Btu/hr by test and calculation.

The nominal heat load of 432,000 Btu/hr is adjusted by a factor of 10/7 to insure adequate capacity under operating conditions for fouling, defrosting or isolated instances of one or several unit failures. Maintenance and inspection insures reliable mechanical operation and cooling performance.

An estimate of the number of air handlers required is made to initiate the calculation, the flow pressure and rates drops are then calculated and the fan motor heat and heat transfer rates of the air handler unit predicted. The predicted performance is compared with the required capability and the calculation is reiterated varying the number of AH units until the predicted performance just exceeds the required capability.

The final number of required air handlers was determined to be 30.

A modal frequency analysis was performed for the air handling unit housings and support structure. The results indicate that the design frequency is approximately 20 Hz, so that the fundamental mode is well out of the frequency range of peak amplification on the response spectra. In the process of designing the structure on the basis of stiffness, strength of members subjected various combinations exceeds specified limits by generous margins.

6.2.2.8 Lower Inlet Doors

6.2.2.8.1 Design Basis

Function

The ice condenser inlet doors form the barrier to air flow through the inlet ports of the ice condenser for normal unit operation. They also provide the continuation of thermal insulation around the lower section of the crane wall to minimize heat input that would promote sublimation and mass transfer of ice in the ice condenser compartment. In the event of a loss-of-coolant accident, LOCA, causing a pressure increase in the lower compartment, the doors open, venting air and steam relatively evenly into all sections of the ice condenser.

The door panels are provided with tension spring mechanisms that produce a small closing torque on the door panels as they open. The magnitude of the closing torque is equivalent to providing approximately a one pound per square foot pressure drop through the inlet ports with the door panels open to a position equivalent to the full port flow area. The zero load position of the spring mechanisms is set such that, with zero differential pressure across the door panels, the gasket holds the door slightly open. This setting provides assurance that all doors will be open slightly, upon removal of cold air head, therefore eliminating significant inlet maldistribution for very small incidents.

For larger incidents, the doors open fully and flow distribution is controlled by the flow area and pressure drops of inlet ports. The doors are provided with shock absorber assemblies to dissipate the larger door kinetic energies generated during large break incidents.

All high energy piping breaks postulated in accordance with draft standard ANSI N176 are reviewed individually as part of Duke's pipe rupture analysis to insure that pipe restraints, guard pipes, jet deflectors, etc.; are installed as necessary to prevent steam burnthrough of the ice condenser due to jet impingement upon the lower inlet doors.

As indicated in Section 3.5.4.1, Containment safety systems, operating deck and Containment shell within a potential path of a missile generated in the lower compartment can either withstand the effect of the missile or are protected by a shield wall able to contain the effects of such a postulated event. Design provisions require that potential missiles be oriented in such a manner so as to reduce the probability of striking critical targets.

Effect Of Steam Line Break On Lower Ice Condenser Inlet Doors

Postulated steam line breaks inside Containment cannot result in direct steam impingement of the lower ice condenser inlet doors due to the following design characteristics:

1. Piping arrangement with respect to the inlet doors was a major pipe routing consideration.
2. Guard piping of portions of the Main Steam System inside Containment is utilized to preclude:
   a. steam burn-through of the ice condenser due to jet impingement on the lower inlet doors.
   b. a LOCA caused by a postulated steam line break.
   c. a subsequent pipe break of either the Main Steam or Feedwater System of unaffected steam generators.
   d. local overpressurization caused by excessive flow rates.
3. Restraints and energy absorbers are utilized to restrict excessive movements from a postulated rupture and prevent direct steam impingement on the lower inlet doors.

Design Criteria

1. Radiation Exposure

   Maximum radiation at inlet door is 5 r/hr gamma during normal operations. No secondary radiation due to neutron exposure.

2. Structural Requirements

   Refer to Section 6.2.2.16.

3. Loading Modes
   a. The door hinges and crane wall embedments, etc., must support the dead weight of the door assembly during all conditions of operation. Door hinges shall be designed and fabricated to preclude galling and self welding.
   b. Seismic Loads tend to open the door.
   c. During normal operations the outer surface of the door operates at a temperature approaching that of the lower compartment while the inner surface approaches that of the ice bed. During loss-of-coolant accidents, the outer surface is subjected to higher temperatures on a transient basis. Resultant thermal stresses are considered in the door design.
   d. During large break accidents, the doors are accelerated by pressure gradients then stopped by the Shock Absorber System. During small break accidents, doors open in proportion to the applied pressure with restoring force provided by springs. Upon removal of pressure, door closure results as a result of spring action.
4. Design Criteria - Accident Conditions

a. All doors open to allow venting of energy to the ice condenser for any leak rate which results in a divider deck differential pressure in excess of the ice condenser cold head.

   The force required to open the doors of the ice condenser is sufficiently low such that the energy from an leakage of steam through the divider barrier can be readily absorbed by the Containment Spray System without exceeding Containment design pressure.

b. Doors and door ports limit maldistribution to 150 percent maximum, peak to average mass input for the accident transient, for any Reactor Coolant System release of sufficient magnitude to cause the doors to open.

c. The basic performance requirement for lower inlet doors for design basis accident conditions is to open rapidly and fully, to insure proper venting of released energy into the ice condenser. The opening rate of the inlet doors is important to insure minimizing the pressure buildup in the lower compartment due to the rapid release of energy to that compartment. The rate of pressure rise and the magnitude of the peak pressure in any lower compartment region is related to the confinement of that compartment. The time period to reach peak lower compartment pressure due to the design basis accident is approximately 0.05 seconds.

d. Doors are of simple mechanical design to minimize the possibility of malfunction.

e. The inertia of the doors is low, consistent with producing a minimal effect on initial pressure.

5. Design Criteria - Normal Operation

   a. The doors restrict the leakage of air into and out of the ice condenser to the minimum practicable limit. The inlet door leakage has been confirmed by test to be within the 50 cfm total used for the ice condenser design.

   b. The doors restrict local heat input in the ice condenser to the minimum practicable limit. Heat leakage through the doors to the ice bed is a total of 20,000 Btu/hr or less (for 24 pairs of doors).

   c. The doors are instrumented to provide indication of their closed position. Under zero differential pressure conditions all doors remain 3/8 inch open.

   d. Provision made for adequate means of inspecting the doors during reactor shutdown.

   e. The doors are designed to withstand earthquake loadings without damage so as not to affect subsequent ice condenser operation for normal and accident conditions. These loads are derived from the seismic analysis of the Containment.

   f. The Door System provide a flow proportioning capability for small break conditions in accordance with Figure 6-128.

6. Interface Requirements

   a. Crane wall attachment of the door frame is via studs with a compressible seal. Attachment to the crane wall is critical for the safety function of the doors.

   b. Sufficient clearance is required for doors to open into the ice condenser. Items to be considered in this interface are floor clearance, lower support structure clearance and floor drain operation and sufficient clearance (approximately six inches) to accommodate ice fallout in the event of a seismic disturbance ~~occurring coincident with a loss-of-coolant accident.~~ * INSERT

   c. Door opening and stopping forces are transmitted to the crane wall and lower support structure, respectively.

Design Loads

* INSERT:

Original ice basket qualification testing (Topical Report WCAP-8110, Supplement 9-A), has shown freshly loaded ice is considered fused after five weeks. In the event of an earthquake (OBE or greater) which occurs within five weeks following the completion of ice basket replenishment, plant procedures require a visual inspection of applicable areas of the ice condenser within 24 hours to confirm that opening of the ice condenser lower inlet doors is not impeded by any ice fallout resulting from the seismic disturbance. This alternative method of compliance with the requirements of GDC 2 is credible based upon the reasonable assurance that the ice condenser doors will open following a seismic event during the 5 week period and the low probability of a seismic event occurring coincident with or subsequently followed by a Design Basis Accident.

Pressure loading during LOCA is provided by the Transient Mass Distribution (TMD) code from an analysis of a double-ended hot leg break in the corner formed by the refueling canal, with 100 percent entrainment of water in the flow. For conservatism, TMD results were increased by 40 percent in performing the design analysis for the lower inlet doors.

The lower inlet door design parameters and loads are presented in Table 6-95.

6.2.2.8.2 System Design

Twenty-four pairs of inlet doors are located on the ice condenser side of ports in the crane wall at an elevation immediately above the ice condenser floor. General details of these doors are shown in Figure 6-129 through Figure 6-133. Each door panel is 92.5 in. high, 42 in. wide and 7.5 in. thick. Each pair is hinged vertically on a common frame.

Each door consists of a 0.5 in. thick Fiber Reinforced Polyester (FRP) plate stiffened by six steel ribs, bolted to the plate. The FRP plate is designed to take vertical bending moments resulting from pressures generated from a LOCA and from subsequent stopping forces on the door. The ribs are designed to take horizontal bending moments and reactions, as well as tensile loads resulting from the door angular velocity, and transmit them to the crane wall via the hinges and door frame.

Seven inches of urethane foam are bonded to the back of the FRP plate to provide thermal insulation. The front and back surfaces of the door are protected with 26 gauge stainless steel covers which provide a complete vapor barrier around the insulation. The urethane foam and stainless steel covers do not carry overall door moments and shearing forces.

Three hinge assemblies are provided for each door panel; each assembly is connected to two of the door ribs. Loads from each of the two ribs are transmitted to a single 1.572 inch diameter hinge shaft through brass bushings. These bushings have a spherical outer surface which prevents binding which might otherwise be caused by door rib and hinge bar flexure during accident loading conditions. The hinge shaft is supported by two self-aligning, spherical roller bearings in a cast steel housing. Vertical positioning of the door panel and shaft with respect to the bearing housing are provided by steel caps bolted to the ends of the shaft and brass spacer rings between the door ribs and bearings. Shims are provided between the shaft and caps to obtain final alignment. Each bearing housing is bolted to the door frame by four bolts, threaded into tapped holes in the housing. Again, shims are provided between the housings and door frame to maintain hinge alignment. Hinges are designed and fabricated to prevent galling and self welding.

The door frame is fabricated mainly from steel angle sections; 6 in. x 6 in. on the sides and 6 in. x 4 in. on the top and bottom. A 4 in. central I beam divides the frame into sections for each door. At each hinge bracket, extensions and gusset plates, fabricated from steel plate, are welded to the frame to carry loads to the crane wall.

The door panel is sealed to the frame by compliant bulb-type rubber seals which fit into channels welded to the door frame. During normal unit operations these seals are compressed by the cold air head of the ice bed acting on the door panels. As the seals operate at a much warmer temperature than the ice bed, frosting of the seal region is extremely unlikely.

Each door is provided with four proportioning springs. One end of each spring is attached to the door panel and the other to a spring housing mounted on the door frame. These springs provide a door return torque proportional to the door opening angle and thus satisfy the requirement for flow proportioning. In addition, they assure that the doors close in the event they are inadvertently opened during normal unit operations. The springs are adjusted during assembly such that, with no load on the doors, the doors are slightly open. For small door openings, the required 3/8 inch effective door opening is controlled by a 3/8 inch gap between panels and is, thus, independent of the door position as measured in degrees.

ATTACHMENT 1b

Marked-Up Catawba UFSAR

delivery capacity. The entering glycol mixture is at -5°F nominal temperature and discharged at 1.0°F nominal. Electrical power is provided for fan motor and defrost heaters as well as for control circuits.

In order to limit seismically induced loads the AHU and supports are designed to have a natural frequency in excess of 20 Hz. All materials used in the AHU's are compatible with both normal and post LOCA environments.

AHU Support Structure

The support structure supports the air handling unit vertically and tangentially from the cross beam of the top deck structure and is radially hinged from channels attached to the crane or Containment wall. All parts are coated with a paint suitable for use inside Containment. Figure 6-152 shows the design of the structure.

6.7.7.3 Design Evaluation

The pressure drop through the ducts and manifolds was estimated by using loss coefficients determined by using a standard reference (Reference 7) as a guide. The pressure drop through the air handlers was determined by test. The overall system flow rate was established by superimposing the system flow versus P curve over the fan flow versus P curve.

With the flow rate established the capacity of the air handlers was determined. First the air handler capacity was theoretically determined for a set of design conditions approximating operating conditions. Next the air handler units were tested by the manufacturer to the set of specified design conditions. It was determined that the theoretical relationships adequately predicted air handler performance and these techniques were then used to adjust the test values to those of actual operation. The gross operating capacity of one air handler is just under 30,000 Btu/hr by test and calculation.

The air handling unit heat load is adjusted by a factor of 10/7 to insure adequate capacity under operating conditions for fouling, defrosting or isolated instances of one or several unit failures. Maintenance and inspection insures reliable mechanical operation and cooling performance.

An estimate of the number of air handlers required is made to initiate the calculation, the flow pressure and rates drops are then calculated and the fan motor heat and heat transfer rates of the air handler unit predicted. The predicted performance is compared with the required capability and the calculation is reiterated varying the number of AH units until the predicted performance just exceeds the required capability.

The final number of required air handlers was determined to be 30.

A modal frequency analysis was performed for the air handling unit housings and support structure. The results indicate that the design frequency is approximately 20 Hz, so that the fundamental mode is well out of the frequency range of peak amplification on the response spectra. In the process of designing the structure on the basis of stiffness, strength of members subjected to various combinations exceeds specified limits by generous margins.

6.7.8 Lower Inlet Doors

6.7.8.1 Design Bases

Function

The ice condenser inlet doors form the barrier to air flow through the inlet ports of the ice condenser for normal unit operation. They also provide the continuation of thermal insulation around the lower section of the crane wall to minimize heat input that would promote sublimation and mass transfer of ice in the ice condenser compartment. In the event of a loss-of-coolant accident, LOCA, causing a pressure increase in the lower compartment, the doors open, venting air and steam relatively evenly into all sections of the ice condenser.

The door panels are provided with tension spring mechanisms that produce a small closing torque on the door panels as they open. The magnitude of the closing torque is equivalent to providing approximately a one pound per square foot pressure drop through the inlet ports with the door panels open to a position equivalent to the full port flow area. The zero load position of the spring mechanisms is set such that, with zero differential pressure across the door panels, the gasket holds the door slightly open. This setting provides assurance that all doors will be open slightly, upon removal of cold air head, therefore eliminating significant inlet maldistribution for very small incidents.

For larger incidents, the doors open fully and flow distribution is controlled by the flow area and pressure drops of inlet ports. The doors are provided with shock absorber assemblies to dissipate the larger door kinetic energies generated during large break incidents.

Design Criteria

1. Radiation Exposure

   Maximum radiation at inlet door is 5 rad/hr gamma during normal operations. No secondary radiation due to neutron exposure.

2. Structural Requirements

   Refer to Section 6.7.16

3. Loading Modes

   a. The door hinges and crane wall embedments, etc., must support the dead weight of the door assembly during all conditions of operation. Door hinges shall be designed and fabricated to preclude galling and self welding.

   b. Seismic Loads tend to open the door.

   c. During normal operations the outer surface of the door operates at a temperature approaching that of the lower compartment while the inner surface approaches that of the ice bed. During loss-of-coolant accidents, the outer surface is subjected to higher temperatures on a transient basis. Resultant thermal stresses are considered in the door design.

   d. During large break accidents, the doors are accelerated by pressure gradients then stopped by the Shock Absorber System. During small break accidents, doors open in proportion to the applied pressure with restoring force provided by springs. Upon removal of pressure, door closure results as a result of spring action.

4. Design Criteria - Accident Conditions

   a. All doors open to allow venting of energy to the ice condenser for any leak rate which results in a divider deck differential pressure in excess of the ice condenser cold head.

      The force required to open the doors of the ice condenser is sufficiently low such that the energy from any leakage of steam through the divider barrier can be readily absorbed by the Containment Spray System without exceeding Containment design pressure.

   b. Doors and door ports limit maldistribution to 150 percent maximum, peak to average mass input for the accident transient, for any Reactor Coolant System release of sufficient magnitude to cause the doors to open.

   c. The basic performance requirement for lower inlet doors for design basis accident conditions is to open rapidly and fully, to insure proper venting of released energy into the ice condenser. The opening rate of the inlet doors is important to insure minimizing the pressure buildup in the lower compartment due to the rapid release of energy to that compartment. The rate of pressure rise and the magnitude of the peak pressure in any lower compartment region is related to the confinement of that compartment. The time period to reach peak lower compartment pressure due to the design basis accident is approximately 0.05 seconds.

d. Doors are of simple mechanical design to minimize the possibility of malfunction.

e. The inertia of the doors is low, consistent with producing a minimal effect on initial pressure.

5. Design Criteria - Normal Operation

a. The doors restrict the leakage of air into and out of the ice condenser to the minimum practicable limit. The inlet door leakage has been confirmed by test to be within the 50 cfm total used for the ice condenser design.

b. The doors restrict local heat input in the ice condenser to the minimum practicable limit. Heat leakage through the doors to the ice bed is a total of 20,000 Btu/hr or less (for 24 pairs of doors).

c. The doors are instrumented to provide indication of their closed position. Under zero differential pressure conditions all doors remain 3/8 inch open.

d. Provision for adequate means of inspecting the doors during reactor shutdown.

e. The doors are designed to withstand earthquake loadings without damage so as not to affect subsequent ice condenser operation for normal and accident conditions. These loads are derived from the seismic analysis of the Containment.

f. The Door System provides a flow proportioning capability for small break conditions in accordance with Figure 6-153.

6. Interface Requirements

a. Crane wall attachment of the door frame is via bolts into embedded anchor plates with a compressible seal. Attachment to the crane wall is critical for the safety function of the doors.

b. Sufficient clearance is required for doors to open into the ice condenser. Items to be considered in this interface are floor clearance, lower support structure clearance and floor drain operation and sufficient clearance (approximately six inches) to accommodate ice fallout in the event of a seismic disturbance. ~~occurring coincident with a loss of coolant accident.~~ * INSERT

c. Door opening and stopping forces are transmitted to the crane wall and lower support structure, respectively.

Design Loads

Pressure loading during LOCA is provided by the Transient Mass Distribution (TMD) code from an analysis of a double-ended hot leg break in the corner formed by the refueling canal, with 100 percent entrainment of water in the flow. For conservatism, TMD results were increased by 40 percent in performing the design analysis for the lower inlet doors.

The lower inlet door design parameters and loads are presented in Table 6-122.

6.7.8.2 System Design

Twenty-four pairs of inlet doors are located on the ice condenser side of ports in the crane wall at an elevation immediately above the ice condenser floor. General details of these doors are shown in Figure 6-154 through Figure 6-158. Each door panel is 92.5 in. high, 42 in. wide and 7.5 in thick. Each pair is hinged vertically on a common frame.

* INSERT:

Original ice basket qualification testing (Topical Report WCAP-8110, Supplement 9-A), has shown freshly loaded ice is considered fused after five weeks. In the event of an earthquake (OBE or greater) which occurs within five weeks following the completion of ice basket replenishment, plant procedures require a visual inspection of applicable areas of the ice condenser within 24 hours to confirm that opening of the ice condenser lower inlet doors is not impeded by any ice fallout resulting from the seismic disturbance. This alternative method of compliance with the requirements of GDC 2 is credible based upon the reasonable assurance that the ice condenser doors will open following a seismic event during the 5 week period and the low probability of a seismic event occurring coincident with or subsequently followed by a Design Basis Accident.

ATTACHMENT 2

EVALUATION OF PROPOSED AMENDMENT

1.0 DESCRIPTION

2.0 BACKGROUND

3.0 TECHNICAL ANALYSIS AND DISCUSSION OF THE PROPOSED CHANGE

4.0 SUMMARY

5.0 REGULATORY SAFETY ANALYSIS

5.1 NO SIGNIFICANT HAZARDS CONSIDERATION

5.2 APPLICABLE REGULATORY REQUIREMENTS/CRITERIA

6.0 ENVIRONMENTAL CONSIDERATIONS

7.0 PRECEDENT

8.0 REFERENCES

1.0 DESCRIPTION

Pursuant to 10CFR50.90, Duke Energy Carolinas, LLC (Duke) is requesting a license amendment request (LAR) for the McGuire Nuclear Station, Units 1 and 2, and the Catawba Nuclear Station, Units 1 and 2, Renewed Facility Operating Licenses (FOLs) and Updated Final Safety Analysis Reports (UFSARs). The proposed amendment revises each station's UFSAR to require an inspection of each ice condenser within 24 hours of experiencing a seismic event greater than or equal to an Operating Basis Earthquake [OBE (defined as 8/15 of a Safe Shutdown Earthquake[1] for all frequencies)] within the five (5) week period after ice basket replenishment is completed. This will confirm that adverse ice fallout has not occurred which could impede the ability of the ice condenser lower inlet doors to open. This action would be taken in lieu of requiring a five week waiting period following the completion of ice basket replenishment prior to beginning ascent to power operations.

The proposed change provides an alternate methodology (i.e., the visual inspection) to confirm the ice condenser lower inlet doors can open to fulfill their safety function. Justification for the use of the proposed methodology is based upon:

- Reasonable assurance that the ice condenser would function following a seismic event, and
- The low probability of a seismic event coincident with, or subsequently followed by a Design Basis Accident

2.0 BACKGROUND

The McGuire and Catawba ice condensers consist of a completely enclosed annular compartment located around approximately 300 degrees of the perimeter of the upper compartment of the Containment, but penetrating the operating deck so that a portion extends into the Containment lower compartment. The lower portion has a series of hinged doors (lower inlet doors) exposed to the atmosphere of the lower Containment compartment and designed to remain closed during normal plant operation. At the top of the ice condenser is another set of doors (top deck doors) that are exposed to the atmosphere of the upper compartment; these doors also remain closed during normal plant operation. Intermediate deck doors are located below the top deck doors. These doors form the floor of a plenum at the upper part of the ice

[1] The Safe Shutdown Earthquake is that earthquake which is based upon an evaluation of the maximum earthquake potential considering the regional and local geology and seismology and specific characteristics of local subsurface material. It is that earthquake which produces the maximum vibratory ground motion for which certain structures, systems, and components important to nuclear safety are designed to remain functional.

condenser and remain closed during normal plant operation. Within the ice condenser, ice is held in baskets arranged to promote heat transfer to the ice. During normal plant operation, the ice condenser performs no function and is not required for a controlled shutdown of the unit.

The ice condenser is structurally designed to withstand a Safe Shutdown Earthquake plus a Design Basis Accident.

In the event of a loss-of-coolant accident (LOCA) or high energy line break (HELB), which includes a steam or feedwater line break inside Containment, the pressure rises in the lower compartment and the ice condenser lower inlet doors open. This allows air and steam to flow from the lower compartment into the ice condenser. The resulting pressure increase within the ice condenser causes the intermediate deck doors and the top deck doors at the top of the ice condenser to open, allowing air to flow out of the ice condenser into the upper compartment. Steam entering the ice condenser is condensed by the ice, thus limiting the peak pressure and temperature buildup in Containment. Condensation of steam within the ice condenser allows a continual flow of steam from the lower compartment to the condensing surface of the ice, thus reducing the lower compartment pressure.

Sufficient ice heat transfer surface and flow passages are provided in the ice condenser so that the magnitude of the pressure transient resulting from an accident does not exceed the Containment design pressure. The lattice frame and support column assemblies allow passage of steam and air through the space around the ice baskets.

The floor drains are passive structural components during normal operation. During a small pipe break, the condensed steam and melted ice will collect on the floor of the ice condenser and then flow out through the drains. For intermediate and large pipe breaks, water will drain through both the lower inlet doors and the drains.

The lower inlet doors are provided with shock absorber assemblies to dissipate the kinetic energy generated by opening the doors during a large pipe break scenario.

Structural interfaces and clearances in the ice condenser are designed to accommodate ice fallout without compromising ice bed performance during accident mitigation. Ice fallout could potentially:

Reduce the mass of the ice bed,

Block flow channels,

Block lower inlet doors, and/or

Block floor drains

The current licensing basis, as described in the McGuire and Catawba UFSARs, requires that the ice condenser doors open in the event of a seismic disturbance occurring coincident with a LOCA.

As part of the ice condenser qualification program, seismic testing of ice baskets was conducted at the Westinghouse Waltz Mill facility to determine the amount of ice fallout from ice baskets subjected to simulated plant time history seismic disturbances.

Ice condenser qualification program test results were reported in WCAP-8110, "Test Plans and Results for the Ice Condenser System", and ten supplements. Supplement 9 to the WCAP, entitled "Ice Fallout From Seismic Testing of Fused Ice Basket", addresses ice retention during a seismic event.

This document describes the test apparatus and methodology for verifying that flaked ice will be retained in an ice basket subjected to cumulative worst-case Safe Shutdown Earthquake seismic loading. In the Atomic Energy Commission's [AEC (now NRC)] evaluation of WCAP-8110, Supplement 9, dated Nov 21, 1974, [renamed WCAP-8110, Supplement 9-A] it is stated that a flaked ice basket stored for at least five weeks exhibited adequate retention capability when subjected to Design Basis [Safe Shutdown] Earthquake seismic response spectra.

The AEC's November 21, 1974 letter, included within WCAP-8110, Supplement 9-A, contains the following statement: "As a result of our review, we have concluded that the data presented in WCAP-8110 Supplement 9 [the Westinghouse test report] are adequate to conclude that land-based plants using ice condenser type containments should begin their initial ascent to power after a minimum of five weeks following ice loading." The same November 21, 1974 letter accepts the document as a topical report which may be referenced in license applications. Both McGuire and Catawba UFSARs reference WCAP-8110, Supplement 9-A.

The term "ice fusion" refers to a condition established when an ice basket freshly loaded with flake ice achieves stability at the operating temperature of the ice condenser, i.e., when the ice freezes or otherwise solidifies such that it tends to stay in the ice basket when agitated. If the ice were not sufficiently fused during a seismic event, it is possible that ice could fall from the ice baskets and impede the ability of the ice condenser lower inlet doors to open.

In order for the ice condenser to perform its energy absorption and pressure mitigation functions, the ice condenser lower inlet doors must open to allow the mass release from a high energy line break to enter the ice condenser, and the ice bed ice mass and geometry must be adequate to support heat transfer to the ice bed.

3.0 TECHNICAL ANALYSIS AND DISCUSSION OF THE PROPOSED CHANGE

10CFR 50.59(a)(6) defines a test or experiment not described in the Final Safety Analysis Report to mean any activity where a structure, system, or component is utilized or controlled in a manner which is either: (i) outside the reference bounds of the design bases as described in the UFSAR, or (ii) inconsistent with the analyses or descriptions in the UFSAR.

In this case, the reference bounds of the design bases are incorporated by reference to WCAP 8110, Supplement 9-A in the McGuire and Catawba UFSARs. The reference bounds of the design bases is: "land-based plants using ice condenser type containments should begin their initial ascent to power after a minimum of five weeks following ice loading." This bounding waiting period assures that ice in the ice baskets will be sufficiently fused such that ice fall out during a Safe Shutdown Earthquake does not impede the ice condenser's design function while the plant shuts down. For seismic events equal to or less than a Safe Shutdown Earthquake, adequate retention of ice in the baskets is ensured by the current design bases. The activity to be analyzed is the ability for the Catawba and McGuire Units to start an ascent to power operations without waiting for the bounding five week period if an alternate method of meeting the requirement is utilized.

10CFR 50.59 (c)(1) states, in part, that the licensee may make changes to the licensed facility as described in the UFSAR and conduct tests and experiments not described in the UFSAR without obtaining a license amendment only if the changed test or experiment does not meet the criteria in paragraph (c)(2) of this section.

10CFR 50.59 (c)(2) states, in part, that the licensee shall obtain a license amendment pursuant to 10 CFR 50.90 prior to implementing a proposed test or experiment which would: (ii) result in more than a minimal increase in the likelihood of occurrence of a malfunction of a structure, system, or component important to safety previously evaluated in the UFSAR; or (viii) result in a departure from a method of evaluation described in the UFSAR used in establishing the design basis or in the safety analyses.

A review of the activity showed that the criterion for a license amendment submittal was met. Thus, a request for an alternate means of meeting the requirements is described below:

The current text of the McGuire and Catawba UFSAR, Section 6.2.2.8.1 and Section 6.7.8.1, respectively, entitled "Lower Inlet Doors, Design Basis, Interface Requirements," read as follows:

> Sufficient clearance is required for the doors to open into the ice condenser. Items to be considered in this interface are floor clearance, lower support structure clearance and floor drain operation and sufficient clearance (approximately six inches) to accommodate ice fallout in the event of a seismic disturbance occurring coincident with a LOCA.

The proposed revision to this paragraph reads as follows:

> Sufficient clearance is required for the doors to open into the ice condenser. Items considered in this interface are floor clearance, lower support structure clearance and floor drain operation, and sufficient clearance (approximately six inches) to accommodate ice fallout in the event of a seismic disturbance. Original ice basket qualification testing (Topical Report WCAP-8110, Supplement 9-A), has shown freshly loaded ice is considered fused after five weeks. In the event of an earthquake (OBE or greater) which occurs within five weeks following the completion of ice basket replenishment, plant procedures require a visual inspection of applicable areas of the ice condenser within 24 hours to confirm that opening of the ice condenser lower inlet doors is not impeded by any ice fallout resulting from the seismic disturbance. This alternative method of compliance with the requirements of GDC 2 is credible based upon the reasonable assurance that the ice condenser doors will open following a seismic event during the 5 week period and the low probability of a seismic event occurring coincident with or subsequently followed by a Design Basis Accident.

Under the proposed change to the licensing basis, power ascension and normal plant operation could occur for a period of up to five weeks prior to achieving full qualification of the ice condenser as defined in the current licensing basis. One of five scenarios could occur during this "period of potential exposure," specifically:

i. *No seismic disturbance, LOCA, or HELB occurs*

ii. *A seismic disturbance occurs without a LOCA or HELB occurring*

iii. *LOCA or HELB occurs without a seismic disturbance*

iv. *A seismic disturbance occurs coincident with a LOCA or HELB*

v. *A seismic disturbance occurs with a subsequent LOCA or HELB*

Under the first three scenarios, there is no impact as a result of the proposed change. In the first two scenarios, the ice condenser would not be called upon to perform an accident mitigation function. In the third scenario, although the ice condenser would be called upon to mitigate an accident, absent a seismic disturbance, there is no driver to dislodge ice, and the ice condenser would function as designed.

In the fourth and fifth scenarios, if a LOCA or HELB occurred coincident with, or subsequent to a seismic disturbance, it is possible that ice in freshly loaded ice baskets could fall out. However, several factors provide defense-in-depth and tend to mitigate the safety significance of the proposed change:

- There is Reasonable Assurance That the Ice Condenser Would Function Following a Seismic Event

  Reduction in total ice mass:

  > The basis of the current five-week ice fusion time requirement was derived from qualification testing (*c.* 1974) conducted by Westinghouse during development and licensing of ice condenser Containments. Determination of a minimum ice fusion time was not an objective of the test program.
  >
  > As a result of the review of test results captured in WCAP 8110, Supplement 9, the Ice Condenser Utility Group (I&M, TVA and Duke) concluded that the five-week ice fusion time selected as the licensing basis was conservative and that ice condenser design has substantial margin with respect to ice fallout. A key consideration in reaching this conclusion was inherent conservatisms in the 1974 test program:
  >
  > - The test baskets floated freely in the lattice frames and were not fixed at one end. The floating end exacerbates the movement resulting from application of a given seismic excitation, which would tend to overstate the ice fallout in the test compared to expected fallout from an actual plant event.
  > - The test basket was only six feet tall and had an open top, whereas an actual ice condenser basket typically consists of eight vertically stacked six-foot sections, with only the uppermost section having an open top. The majority of ice fallout during the tests occurred

from the open top of the basket. Since proportionally less ice would be expected to fall out of the lower seven sections of an actual ice condenser basket, the percentage of ice falling out of the test basket section overstates what would be expected during an actual plant event.

Flow channel blockage:

The successful completion of McGuire and Catawba Technical Specification Surveillance Requirement 3.6.12.3 ensures that the ice accumulation on the structural steel members comprising flow channels through the ice bed is less than or equal to a 15% blockage of the total flow area for each safety analysis section.

Therefore, it can be reasonably assumed that any loose, granular ice that would be shaken free during a seismic event from a recently replenished ice basket cannot block flow passages that were verified to be at least 85% clear during the preceding surveillance inspection.

Restriction of lower inlet door movement:

The redundancy of flow paths in the ice condenser provides reasonable assurance that the ice condenser would perform its function even if some lower inlet doors were partially degraded.

Analyses have been performed for McGuire and Catawba using the GOTHIC computer code to determine what fraction, if any, of the lower inlet doors could be completely blocked closed during the blow-down period of the limiting size large break LOCA. These analyses demonstrated that Containment pressure will remain acceptable with 33% of the lower inlet doors completely blocked shut (i.e., will not open at all).

Floor drain blockage:

As discussed in the McGuire and Catawba UFSARs, Containment peak pressure is not affected by drain performance. There are a total of 20 ice condenser floor drains among the 24 ice condenser bays. The ice condenser design is such that for blockage of any floor drain, water would flow to adjacent bays and eventually would spill over the lower inlet door openings if necessary. Additionally, any ice on the floor of the ice condenser would be melted by the rise in temperature of the ice condenser and flowing meltwater.

In conclusion, there is reasonable assurance that the ice condenser would function properly following a seismic event within the 5 week period due to inherent conservatisms in the 1974 test data, the low likelihood of flow channel and floor drain blockage, and inherent redundancy of flow paths into the ice condenser.

- The Probability of a Seismic Disturbance Coincident With or Subsequently Followed by a LOCA or HELB is Low

  The proposed amendment revises the McGuire and Catawba UFSARs by requiring an inspection of each ice condenser within 24 hours of experiencing a seismic event greater than or equal to an Operating Basis Earthquake (OBE) within the five (5) week period after the completion of ice basket replenishment to confirm that adverse ice fallout has not occurred which could impede the ability of the ice condenser lower inlet doors to open. This action would be taken, in lieu of requiring a five week waiting period following ice loading, prior to ascension to power operations.

  Although this License Amendment Request is not presented as a risk-informed change under the guidance of Regulatory Guide 1.174, "An Approach for Using Probabilistic Risk Assessment in Risk-Informed Decisions on Plant-Specific Changes to the Licensing Basis," consideration of the probability of occurrence provides an insight into the very small risk involved in the proposed change.

  The annual probability of exceedance for the OBE level earthquake at McGuire and Catawba were derived from EPRI RP 101-53. The ice condenser was conservatively assumed to be required by the applicable operating mode for the entire 5 week fusion period. The probability that the ice condensers doors could become impeded during the 5 week period was computed. The likelihood of a LOCA or HELB, which would require the ice condenser, following the impediment was then estimated with time constraints as noted below. The ice condenser inspection is required within 24 hours. If the ice condenser lower inlet doors are determined to be impeded and can not be restored, the unit must be in Mode 5 within the next 37 hours. Therefore, the total exposure time for consideration of a subsequent event is 61 hours. The frequency of LOCAs and HELBs were derived from NUREG/CR-6928 and NUREG/CR-5750.

As a result, the probability of ice condenser impairment and subsequent challenge is estimated to be less than 2.2E-09 for both McGuire and Catawba during the "period of potential exposure". This is a very low probability as would be expected by the nature of the events.

Approval of the proposed amendment is justifiable based upon the low probability that a LOCA or HELB would occur coincident with or subsequent to an OBE (while the plant is shutting down) during the "period of potential exposure". After the five-week fusion time has been reached, the Westinghouse Topical Report WCAP-8110, Supplement 9-A test report concludes that acceptable levels of ice fallout occur for all expected seismic events, up to and including the Safe Shutdown Earthquake.

4.0 SUMMARY

Duke requests changes to the McGuire and Catawba Nuclear Station Renewed FOLs and UFSARs to require an inspection of each ice condenser within 24 hours of experiencing a seismic event greater than or equal to Operating Basis Earthquake (OBE) within the five (5) week period after the completion of ice basket replenishment to confirm that ice fallout has not occurred which could impede the ability of the ice condenser lower inlet doors to open. This action would be taken in lieu of requiring a five week waiting period following ice basket replenishment prior to beginning ascension to power operations. The proposed change provides an alternate methodology in confirming the lower inlet doors can open to fulfill their intended safety function.

The proposed change would permit the ascent to power operations within the five week period following the completion of ice basket replenishment by accepting a very small risk during the short period of time that the ice condenser may experience ice fallout from freshly loaded ice baskets as a result of a seismic event greater than or equal to an OBE. As previously discussed, several factors provide defense-in-depth and mitigate the safety significance of the proposed change.

After the five-week fusion time has been reached, the Westinghouse Topical Report WCAP-8110, Supplement 9-A test report concludes that acceptable levels of ice fallout occur for all expected seismic events, up to and including the Safe Shutdown Earthquake.

5.0 REGULATORY SAFETY ANALYSIS

5.1 No Significant Hazards Consideration:

Duke Energy Carolinas, LLC (Duke) has concluded that operation of Catawba Nuclear Station, Units 1 & 2, and McGuire Nuclear Station, Units 1 & 2, in accordance with the proposed change to the UFSAR does not involve a significant hazards consideration. Duke's conclusion is based on its evaluation, in accordance with 10 CFR 50.91(a)(1), of the three standards set forth in 10 CFR 50.92(c).

A. Does the proposed amendment involve a significant increase in the probability or consequences of an accident previously evaluated?

Response: No.

The analyzed accidents of consideration in regard to changes potentially affecting the ice condenser are a loss of coolant accident and a steam or feedwater line break inside Containment. The ice condenser is an accident mitigator and is not postulated as being the initiator of a LOCA or HELB. The ice condenser is structurally designed to withstand a Safe Shutdown Earthquake plus a Design Basis Accident and does not interconnect or interact with any systems that interconnect or interact with the Reactor Coolant, Main Steam or Feedwater systems. Because the proposed changes do not result in, or require any physical change to the ice condenser that could introduce an interaction with the Reactor Coolant, Main Steam or Feedwater systems, there can be no change in the probability of an accident previously evaluated.

Under the current licensing basis, the ice condenser ice baskets would be considered fully fused prior to power ascension and the ice condenser would perform its accident mitigation function even if a safe shutdown seismic event occurred coincident with or just preceding the accident. Under the proposed change, there is some finite probability that, within 24 hours following a seismic disturbance, a LOCA or HELB in Containment could occur within five weeks of the completion of ice basket replenishment. However, several factors provide defense-in-depth and tend to mitigate the potential consequences of the proposed change.

Design basis accidents are not assumed to occur simultaneously with a seismic event. Therefore, the coincident occurrence of a LOCA or HELB with a seismic event is strictly a function of the combined probability of the occurrence of independent events, which in this case is very low. Based on the Probabilistic Risk Assessment model and seismic hazard analysis, the combined probability of occurrence of a seismic disturbance greater than or equal to an OBE during the 5 week period following ice replenishment coincident with or subsequently followed by a LOCA or HELB during the time required to perform the proposed inspection (24 hours) and if required by Technical Specifications, complete Unit shutdown (37 hours), is less than 2.2E-09 for McGuire and Catawba. This probability is well below the threshold that is typically considered credible.

Even if ice were to fall from ice baskets during a seismic event occurring coincident with or subsequently followed by an accident, the ice condenser would be expected to perform its intended safety function. The design of the lower inlet doors is such that complete blockage of flow into the ice condenser is not credible during a LOCA or HELB. The inherent redundancy of flow paths into the ice condenser provide reasonable assurance that it would perform its function even if some lower inlet doors were blocked closed.

Based on the above, the proposed changes do not involve a significant increase in the probability or consequences of an accident previously evaluated. The ice condenser is expected to perform its intended safety function under all circumstances following a LOCA or HELB in Containment.

B. Does the proposed amendment create the possibility of a new or different kind of accident from any accident previously evaluated?

Response: No.

The proposed change affects the assumed timing of a postulated seismic and design basis accident applied to the ice condenser and provides an alternate methodology to confirm the ice condenser lower inlet doors are capable of opening. As previously discussed, the ice condenser is not postulated as an initiator of any design basis accident. The proposed change does not impact any plant system, structure or component that is an accident initiator. The proposed change does not involve any hardware changes to the ice condenser or other changes that could create new accident mechanisms. Therefore, there can be no new or different accidents created from those previously identified and evaluated.

C. Does the proposed amendment involve a significant reduction in the margin of safety?

Response: No.

Margin of safety is related to the confidence in the ability of the fission product barriers to perform their design functions during and following an accident situation. These barriers include the fuel cladding, the Reactor Coolant system, and the Containment system. The performance of the fuel cladding and the Reactor Coolant system will not be impacted by the proposed change.

The requirement to inspect the ice condensers within 24 hours of experiencing seismic activity greater than or equal to an OBE during the five (5) week period following the completion of ice basket replenishment will confirm that the ice condenser lower inlet doors are capable of opening. This inspection will confirm that the ice condenser doors remain fully capable of performing their intended safety function under credible circumstances.

The inherent redundancy of flow paths into the ice condenser provides reasonable assurance that it would perform its function even if some lower inlet doors were blocked closed. As such, the ice condenser has reasonable assurance of performing its intended function during the highly unlikely scenario in which a postulated accident (LOCA or HELB) occurs coincident with or subsequently following a seismic event.

The proposed change affects the assumed timing of a postulated seismic and design basis accident applied to the ice condenser and provides an alternate methodology in confirming the ice condenser lower inlet doors are capable of opening. As previously discussed, the combined probability of occurrence of a LOCA or HELB and a seismic disturbance greater than or equal to an OBE during the "period of potential exposure" is less than 2.2E-09 for McGuire and Catawba. This probability is well below the threshold that is considered credible.

Therefore, the proposed change does not involve a significant reduction in the margin of safety. The McGuire and Catawba ice condensers will perform their intended safety function under credible circumstances.

The changes proposed in this LAR do not make any physical alteration to the ice condensers, nor does it affect the required functional capability of the ice condenser in any way. The intent of the proposed change to the UFSARs is to eliminate an overly restrictive waiting period prior to Unit ascent to power operations following the completion of ice basket replenishment. The required inspection of the ice condenser following a seismic event greater than or equal to an OBE will confirm that the ice condenser lower inlet doors will continue to fully perform their safety function as assumed in the McGuire and Catawba safety analyses.

Thus, it can be concluded that the proposed change does not involve a significant reduction in the margin of safety.

5.2 Applicable Regulatory Requirements/Criteria:

The proposed inspection of each ice condenser within 24 hours of experiencing a seismic event equal to or greater than an OBE within the five (5) week period after ice basket replenishment provides an alternate method of confirming that the lower inlet doors would open subsequent to a seismic event. Justification for the use of the proposed methodology is based upon reasonable assurance that the ice condenser doors would function following a seismic event, and the low probability of a seismic event coincident with, or immediately followed by a Design Basis Accident.

This LAR does not alter or revise the current bounding safety analyses of record in any way. Consequently, McGuire and Catawba will remain in compliance with the applicable regulations and requirements. These are:

- 10CFR50, Appendix A, General Design Criterion (GDC) 2, "Design Basis For Protection Against Natural Phenomena," which requires that structures, systems and components important to safety be designed to withstand the effects of natural phenomena such as earthquakes;

- GDC 16, "Containment Design," which requires that the reactor Containment and associated systems provide an essentially leak-tight barrier against the uncontrolled release of radioactivity to the environment;

- GDC 38, "Containment Heat Removal," which requires that a system be provided to remove heat from the reactor Containment; and

- GDC 50, "Containment Design Basis," which requires that the reactor Containment structure be designed with conservatism to accommodate applicable design parameters (pressure, temperature, leakage rate).

This LAR is being submitted in accordance with 10 CFR 50.90.

6.0 ENVIRONMENTAL CONSIDERATIONS

The proposed changes do not involve a significant hazards consideration, a significant change in the types of or significant increase in the amounts of any effluents that may be released offsite, or a significant increase in individual or cumulative occupational radiation exposure. Therefore, the proposed changes meet the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Therefore, pursuant to 10 CFR 51.22(b), an environmental assessment of the proposed changes is not required.

7.0 PRECEDENT

None

8.0 REFERENCES

The following documents were consulted:

a. WCAP-8110, Supplement 9, dated May 13, 1974

b. AEC Evaluation of WCAP-8110, Supplement 9-A, dated Nov 21, 1974

c. WCAP-8110, Supplement 1, "Test Plans and Results for the Ice Condenser System," dated April 30, 1973

ATTACHMENT 3

Regulatory Commitments

REGULATORY COMMITMENTS:

The following table identifies those actions committed to by Duke in this document. Any other statements made in this licensing submittal are provided for informational purposes only and are not considered to be regulatory commitments. Please direct any questions you may have in this matter to K. L. Ashe at (704) 875-4535, or R. D. Hart at (803) 831-3622

REGULATORY COMMITMENTS	Due Date
Implement McGuire station procedures requiring the inspection of each ice condenser within 24 hours of experiencing a seismic event greater than or equal to an Operating Basis Earthquake (OBE) within the five (5) week period after the completion of ice basket replenishment.	Prior to beginning ascent to power operations subsequent to ice basket replenishment during McGuire's 2EOC18 outage.
Implement Catawba station procedures requiring the inspection of each ice condenser within 24 hours of experiencing a seismic event greater than or equal to an Operating Basis Earthquake (OBE) within the five (5) week period after the completion of ice basket replenishment.	Prior to beginning ascent to power operations subsequent to ice basket replenishment during Catawba's 1EOC17 outage.