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Serial: RA-18-0007
June 19, 2023

10 CFR 50.90

U.S. Nuclear Regulatory Commission
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Washington, DC 20555-0001

CATAWBA NUCLEAR STATION, UNIT NOS. 1 AND 2
DOCKET NOS. 50-413 AND 50-414 / RENEWED LICENSE NOS. NPF-35 AND NPF-52

**SUBJECT: License Amendment Application to Revise Control Room Cooling
Technical Specifications**

In accordance with 10 CFR 50.90, "Application for amendment of license, construction permit, or early site permit," Duke Energy Carolinas, LLC (Duke Energy), requests an amendment to Facility Operating License Nos. NPF-35 and NPF-52 for Catawba Nuclear Station, Units 1 and 2 (Catawba).

The proposed change would revise Catawba Technical Specification (TS) 3.7.11, "Control Room Area Chilled Water System (CRACWS)," to modify the TS Actions for two inoperable CRACWS trains. The proposed change provides 24 hours to restore one CRACWS train to operable status provided mitigating actions ensure the control room temperature is controlled.

The Enclosure to this letter provides an evaluation of the proposed change. Attachment 1 provides the existing TS pages marked up to show the proposed changes. Attachment 2 provides the existing TS Bases pages marked up to show the proposed changes. The proposed Bases changes are provided for information only.

The proposed change has been evaluated in accordance with 10 CFR 50.91(a) using criteria in 10 CFR 50.92(c), and it has been determined that the proposed change involves no significant hazards consideration. The bases for these determinations are included in the Enclosure.

This submittal contains no regulatory commitments.

A pre-submittal meeting between Duke Energy and the U.S. Nuclear Regulatory Commission (NRC) staff was held on December 8, 2022 to discuss the proposed change (ADAMS Accession No. ML22335A401).

Duke Energy requests approval of the proposed amendments within one year of the date this application is accepted by the NRC staff for review. Once approved, the amendments shall be implemented within 120 days.

In accordance with 10 CFR 50.91, Duke Energy is notifying the state of South Carolina of this license amendment request by transmitting a copy of this letter and attachments to the designated State Official.

Should you have any questions concerning this letter, or require additional information, please contact Ryan Treadway, Director – Nuclear Fleet Licensing at 980-373-2062.

I declare under penalty of perjury that the foregoing is true and correct. Executed on June 19, 2023.

Sincerely,



Nicole Flippin
Vice President – Catawba Nuclear Station

Enclosure:
Evaluation of the Proposed Change

Attachments:
1. Catawba Technical Specification 3.7.11 Markup
2. Catawba Technical Specification 3.7.11 Bases Markup (For Information Only)

cc (with Attachments):

L. Dudes, USNRC Region II – Regional Administrator
S. Williams, NRR Project Manager – Catawba
USNRC Senior Resident Inspector – Catawba

S. Jenkins, Chief, Bureau of Radiological Health (SC)
A. Wilson, Attorney General (SC)
L. Garner, Manager, Radioactive and Infectious Waste Management (SC)
Chairman, North Carolina Utilities Commission

ENCLOSURE
EVALUATION OF PROPOSED CHANGE

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1 SUMMARY DESCRIPTION

Duke Energy Carolinas, LLC (Duke Energy) proposes to modify Catawba Nuclear Station (Catawba) Technical Specification (TS) 3.7.11, "Control Room Area Chilled Water System (CRACWS)," to modify the TS Actions for two inoperable CRACWS trains. The change provides 24 hours to restore one CRACWS train to operable status provided mitigating actions ensure the control room temperature is controlled.

2 DETAILED DESCRIPTION

2.1 Control Room Area Chilled Water System Design and Operation

The CRACWS provides air temperature control for the Control Room, Control Room Area (CRA), and Switchgear Rooms. The CRA consists predominately of the Vital Battery and Equipment Rooms, Motor Control Center (MCC) rooms, and Cable Rooms. The Switchgear Rooms contain the essential switchgear. The design basis of the CRACWS is to maintain the Control Room temperature for 30 days of continuous occupancy. Temperature maintenance in the CRA and Switchgear Room is not required for operability of the CRACWS trains and is not governed by the CRACWS TS.

The CRACWS consists of two independent and redundant trains. Each train consists of a chiller package, chilled water pump, air handling units with cooling coils, instrumentation, and controls.

The CRACWS is an emergency system, which also operates during normal unit operations. A single train will provide the required temperature control to maintain the Control Room at 74°F during normal operation.

The CRACWS components are arranged in redundant, safety-related trains. During emergency operation, the CRACWS maintains the Control Room temperature between 72°F and 85°F. A single active failure of a component of the CRACWS, with a loss of offsite power, does not impair the ability of the system to perform its design function. Redundant detectors and controls are provided for Control Room temperature control. The CRACWS is designed in accordance with Seismic Category I requirements. The CRACWS is capable of removing sensible and latent heat loads from the Control Room, which include consideration of equipment heat loads and personnel occupancy requirements, to ensure equipment operability. The CRACWS is shared between the two units. The system must be operable for each unit when that unit is in the Mode of Applicability.

The Catawba CRACWS is described in Catawba UFSAR Section 9.4.

2.2 Current Technical Specifications Requirements

The current Catawba TS provides an Action which allows 30 days to restore an inoperable CRACWS train. The 30 day Completion Time is based on the ability of the remaining operable CRACWS train to maintain the Control Room temperature within limits, the low probability of an event requiring Control Room isolation, and alternate cooling means that may be available. If the inoperable train is not restored within the 30 day Completion Time and either unit is in Modes 1, 2, 3, or 4, a shutdown of that unit is required. If the inoperable train is not restored

within 30 days while in Modes 5 or 6, or during movement of recently irradiated fuel, the operable CRACWS train must be placed in operation immediately. An alternative, if the inoperable CRACWS train is not restored within 30 days while in Modes 5 or 6, or during movement of recently irradiated fuel assemblies, is to immediately suspend movement of recently irradiated fuel assemblies.

The current TS Required Action for two inoperable CRACWS trains while in Modes 1, 2, 3, or 4 is to immediately enter Limiting Condition for Operation (LCO) 3.0.3. If two inoperable CRACWS trains are inoperable in Modes 5 or 6, or during movement of recently irradiated fuel assemblies, the Required Action is to immediately suspend movement of recently irradiated fuel assemblies.

2.3 Reason for the Proposed Change

The current TS require an immediate disruption of plant operations in the event both CRACWS trains become inoperable. Allowing for 24 hours to restore an inoperable CRACWS train to operable status minimizes the potential safety consequences and operational risks associated with the disruption of plant operations.

In addition to the reasons described above, situations have occurred in which both CRACWS trains were inoperable. A review of operating history for the last 14 years discovered the following events:

- In 2011, Catawba Units 1 and 2 entered LCO 3.0.3 and shut down when one train of the control room temperature control system failed while the redundant train was inoperable for maintenance. The Catawba units share a common control room. The NRC granted a Notice of Enforcement Discretion (NOED) (ADAMS Accession No. ML113560359) to allow the units to remain in Mode 3 while a train was restored. The NOED was based on a qualitative risk assessment and the compensatory measures put in place during the enforcement discretion period. One train of control room temperature control was restored in approximately 15 hours. The proposed change would have prevented the dual unit shutdown and the need for an NOED.
- In 2010, McGuire Units 1 and 2 received a NOED (ADAMS Accession No. ML100201023) to terminate a plant shutdown required by LCO 3.0.3 when one train of the control room temperature control system failed while the redundant train was inoperable for scheduled maintenance. McGuire Units 1 and 2 share a common control room. The NOED was based on a qualitative risk assessment which considered that the risk was bounded by the risk associated with shutting down both units and the compensatory measures put in place during the enforcement discretion period. One train of control room temperature control was restored in approximately 23 hours. The proposed change would have prevented the dual unit power reduction and the need for an NOED.
- In 2008, Sequoyah received an NOED (ADAMS Accession No. ML082760667) when a component in one control room air conditioning train failed while the diesel generator supporting the redundant train was inoperable for maintenance. Sequoyah Units 1 and 2 share a common control room and, absent the issuance of the NOED, a dual-unit shutdown would have been required. The NOED was based on a qualitative risk assessment which considered that the risk was bounded by the risk associated with shutting down the unit and the compensatory measures put in place during the enforcement discretion period. The two control room air conditioning trains were inoperable

for approximately 7 hours. The proposed change would have eliminated the need for the NOED.

In each of these cases, a 24 hour Completion Time to restore one CRACWS train to operable status would have prevented a dual-unit power reduction or shutdown, or eliminated the need for an NOED.

2.4 Description of the Proposed Change

The proposed change revises the Required Actions applicable when two CRACWS trains are inoperable. The proposed Required Actions require immediate initiation of an action to implement mitigating actions to ensure control room temperature will not exceed 80°F, or if one CRACWS train is not restored to operable status within 24 hours while in Modes 1, 2, 3, or 4, the unit must be in Mode 3 in 6 hours and Mode 5 in 36 hours. In Mode 5 or 6, or during movement of recently irradiated fuel assemblies, immediate suspension of movement of recently irradiated fuel assemblies.

Describing each change:

- The existing Conditions D and E are modified to a new condition D. The new Condition states, "Two CRACWS trains inoperable." New required Action D.1 requires initiation of action to implement mitigating actions, immediately. New required Action D.2 requires verifying control room temperature is less than or equal to 80 °F immediately and once per hour thereafter. New required Action D.3 requires restoring one CRACWS train to operable status within 24 hours. The three Required Actions are linked with the logical connector "AND."
- A new Condition E is added. The new Condition E states, "Required Action and associated Completion Time of Condition E not met in MODE 1, 2, 3, or 4." New required Action E.1 requires being in Mode 3 within 6 hours. New required Action E.2 requires being in Mode 5 within 36 hours. The two new Required Actions are linked with the logical connector "AND."
- A new Condition F is added. The new Condition F states, "Required Action and associated Completion Time of Condition D not met in Modes 5 or 6, or during movement of recently irradiated fuel assemblies." New required Action F.1 requires immediate suspension of movement of recently irradiated fuel assemblies.
- The existing Action D is deleted.
- The existing Action E is deleted.

3 TECHNICAL EVALUATION

The proposed change provides three new Required Actions to be followed when two CRACWS trains are inoperable.

A new Required Action D.1 states, "Implement mitigating actions" with a Completion Time of "Immediately." The TS Bases include a listing of mitigating actions which can be taken to control temperature. Examples include use of CRACWS system tie-in, opening cabinet doors, use of fans, use of ice vests, use of alternate (i.e., non-safety-related) ventilation systems, or opening control room doors or ventilation paths. As part of the design change process, any mitigating

actions used to satisfy this Required Action will be evaluated and proceduralized prior to use. Design analyses will show that the mitigating actions have sufficient capability to maintain control room temperature.

The intended mitigating action is use of a non-safety chilled water source to supply chilled water to the CRACWS cooling coils. A plant modification has been initiated to supply chilled water from the Computer Room Chilled Water System (YJ) and will follow applicable processes and procedures, including a 50.59 review to evaluate any need for NRC review related to the plant modification and establishing appropriate procedures and training. As part of the plant modification, an evaluation will be done to ensure the capability of the YJ system. This modification will not impact operability of the control room envelope and will not directly impact TS LCO 3.7.10. Utilizing an existing non-safety chilled water source, with similar water quality specifications, will not introduce impurities with the potential for fouling of the CRACWS cooling coils. When implementing this intended mitigating action, use of a non-safety chilled water source, the corresponding CRACWS train fans must be operable to provide air movement. If the corresponding CRACWS train fans are not operable, the mitigating action would not be capable of maintaining control room temperature and Condition E or F, as appropriate, would be entered.

A new Required Action D.2 states, "Verify control room temperature less than or equal to 80°F with a Completion Time of immediately and once per hour thereafter." The purpose of the Required Action is to ensure the control room temperature is being controlled. If it cannot be verified that the control room temperature is less than or equal to 80°F, subsequent actions are required based upon the mode of operation. The specified temperature limit of 80°F is slightly above the normal operating temperature range of the control room (74°F), providing operational flexibility when implementing the mitigating actions. This temperature does not impact the operability of equipment or habitability of the control room. The limit of 80°F maintains margin below the TS limit for the control room of 90°F, specified in Surveillance Requirement 3.7.11.1. The "Control Room High Temperature" Abnormal Procedure directs operators to immediately shut down the affected unit if Control Room temperature exceeds 90 °F. Additionally, the Bases for TS 3.7.11 state that, during emergency operation, the CRACWS maintains the temperature between 72 and 85 °F. The specified temperature limit for the proposed change of 80 degrees when both CRACWS trains are inoperable is adequate given that it is below both the 85 °F specified for emergency operation and the 90 degrees for which operators are directed to enact unit shutdown during Control Room High Temperature events. Thus, adequate margin to operational limits for control room equipment is maintained.

Subsequent to immediate control room temperature verification, the 1 hour frequency is adequate given the indications available in the control room and evaluation to be completed prior to use of the mitigating actions to maintain temperature. Control room temperature data is measured and displayed in the control room, and operators will have awareness of temperature trending relative to the 80°F limit. When Catawba is in this TS Action statement, operations personnel will place heightened attention on restoring a train of CRACWS to operable status and satisfying the other associated Required Actions to prevent a dual-unit shutdown.

A new Required Action D.3 states, "Restore one CRACWS train to OPERABLE status," with a Completion Time of 24 hours. The 24 hour Completion Time is considered adequate given the mitigating actions and the low probability of an accident that would require the CRACWS, provides a reasonable time to diagnose, plan, repair, and test most problems with the CRACWS, while minimizing the period of time that control room occupants might have to

respond to an event while utilizing the mitigating actions. From the cited examples in section 2.4 above, 24 hours is sufficient time in most circumstances to restore at least one CRACWS train to operable status while minimizing the length of time in which the CRACWS is inoperable and potentially avoiding unnecessary impact to plant operations.

There are TS in the Westinghouse improved STS (NUREG-1431, Ref. 6) which provide a 24 hour Completion Time for two inoperable filtration systems due to an inoperable building boundary. These are: TS 3.7.10, "Control Room Emergency Filtration System," TS 3.7.12, "Emergency Core Cooling System Pump Room Exhaust Air Cleanup System," and TS 3.7.13, "Fuel Building Air Cleanup System." The 24 hour Completion Time was found to be acceptable for these specifications based on the low probability of an event and the use of compensatory measures. The same justification of the low probability of an event and the use of compensatory measures is applicable to the proposed change.

Should a component required by the CRACWS be unable to perform its required function, LCO 3.7.11 would be declared not met and all applicable Actions would be followed. Specifically, if both trains of CRACWS are inoperable, then proposed TS 3.7.11 Condition D would be entered.

A new Condition E states, "Required Action and associated Completion Time of Condition D not met in MODE 1, 2, 3, or 4." Should the mitigating actions not be implemented, control room temperature not be maintained less than or equal to 80°F, or if one CRACWS train is not restored to operable status within 24 hours while in Modes 1, 2, 3, or 4, the unit must be in Mode 3 in 6 hours and Mode 5 in 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging plant systems. Currently LCO 3.0.3 must be entered immediately per current TS 3.7.11 Condition E. LCO 3.0.3 requires entry to MODE 3 within 7 hours and MODE 5 in 37 hours. The proposed Completion Times of 6 hours and 36 hours are within the current TS limits.

A new Condition F states, "Required Action and associated Completion Time of Condition E not met in Mode 5 or 6, or during movement of recently irradiated fuel assemblies." Should the mitigating actions not be implemented, control room temperature not be maintained less than or equal to 80°F, or if one CRACWS train is not restored to operable status within 24 hours while in Modes 5 or 6, or during movement of recently irradiated fuel assemblies, movement of recently irradiated fuel assemblies must be suspended immediately. The Required Action minimizes the potential for a radioactive release which might require control room isolation and subsequent cooling.

In a presubmittal meeting held with NRC staff on December 8, 2022 (Ref. 8), the staff posed some items for inclusion in the LAR which were discussed in the meeting. Items which have not already been addressed implicitly in the LAR are discussed below.

- The NRC staff inquired on potential actions for structures, systems, and components (SSCs) for any potential impact to control room and essential switchgear rooms for equipment above 90°F. Additionally, NRC staff inquired on the impact to safety-related SSCs, including the essential switchgear, that will be affected by two inoperable CRACWS for a 24-hour period.
 - o As discussed above in Section 2.1, the CRACWS system provides cooling for the CR, CRA, and essential switchgear rooms. However, the LCO of TS 3.7.11 is considered met in the Mode of Applicability when the CRACWS trains provide the requisite cooling to the CR such that control room temperature is maintained.

Thus, cooling to the CRA and essential switchgear rooms, by way of maintaining a habitable environment, and any SSCs contained within those areas, are outside the scope of the proposed amendment to TS 3.7.11.

- In introducing margin by way of an 80°F limit when two trains of CRACWS are inoperable, no additional equipment concerns are introduced by the proposed change given the current temperature limits in TS 3.7.11.

The CRACWS system is not directly credited with preventing or mitigating an accident in the safety analysis. Unavailability of the CRACWS will not directly impact plant safety provided actions are in place to ensure operator habitability and equipment operational requirements are not exceeded. Plant staff can monitor control room temperature to ensure it remains habitable and that control room temperature will not exceed equipment operational requirements. Mitigating actions can be used to ensure control room temperature is controlled. Therefore, requiring an immediate disruption of plant operation or plant activities is not commensurate with the level of degradation associated with two inoperable CRACWS trains.

The current TS requirements for the CRACWS are also inconsistent with the requirements for other Catawba TS. Another current Catawba TS which provides a 30-day Completion Time for an inoperable train and does not require a disruption of plant operations for two or more inoperable trains. The system is provided with a 30 day Completion Time to restore an inoperable train because the system is of low safety significance or is only relied on for low probability events.

- TS 3.3.3, "Post Accident Monitoring (PAM) Instrumentation ," provides 30 days to restore one or more functions with one or more required channels inoperable and 7 days to restore one or more functions with two or more required channels inoperable for certain functions with more than one required channel.

The NRC's improved Standard Technical Specifications (STS) for all other plant designs provide a 30 day Completion Time to restore one inoperable control room cooling train. However, instead of an LCO 3.0.3 entry, all other plant designs provide a Completion Time to restore one inoperable control room cooling train to operable status when both trains are inoperable:

- NUREG-1432 (Ref. 1), the improved STS for Combustion Engineering plants, TS 3.7.12 provides 24 hour to restore one of two inoperable control room cooling trains. This allowance was approved and incorporated in the STS by the NRC on May 30, 2013 as TSTF-426, Revision 5, "Revise or Add Actions to Preclude Entry into LCO 3.0.3 – RITSTF Initiatives 6b & 6c (Ref. 2).
- NUREG-1433 (Ref. 3), the improved STS for Boiling Water Reactor (BWR)/4 plants, TS 3.7.5 provides 72 hours to restore one of two operable control room cooling subsystems provided control room area temperature is verified to be below a plant-specific limit every 4 hours. This specification was used as a model for the proposed change. This allowance was approved by the NRC on March 26, 2007 as TSTF-477, Revision 3, "Add Action for Two Inoperable Control Room AC Subsystems" (Ref. 4).
- NUREG-1434 (Ref. 5), the improved STS for BWR/6 plants, TS 3.7.4, provides 7 days to restore one of two inoperable control room cooling subsystems provided control room area temperatures verified to be below a plant-specific limit every 4 hours. This allowance was included in the STS as part of TSTF-477, but has existed in the TS for all BWR/6 plants since conversion to the STS.

4 REGULATORY EVALUATION

4.1 Applicable Regulatory Requirements/Criteria

The following NRC requirements and guidance documents are applicable to the proposed change.

The regulations at Title 10 of the Code of Federal Regulations (10 CFR) Part 50.36 "Technical specifications," establish the requirements related to the content of the TSs. Section 50.36(c)(2) states:

Limiting conditions for operation. Limiting conditions for operation are the lowest functional capability or performance levels of equipment required for safe operation of the facility. When a limiting condition for operation of a nuclear reactor is not met, the licensee shall shut down the reactor or follow any remedial action permitted by the technical specifications until the condition can be met.

The regulatory requirements in 10 CFR 50.36 are not specific regarding the actions to be followed when TS requirements are not met other than a unit shut down. The proposed change provides remedial actions in the Technical Specifications to be followed when the Limiting Condition for Operation is not met. Therefore, the proposed change is consistent with the requirements of 10 CFR 50.36.

Appendix A of 10 CFR 50 provides General Design Criteria (GDC) for nuclear power plants. Plant-specific design criteria are described in the plant's UFSAR. Criterion 19 states:

Criterion 19-Control room. A control room shall be provided from which actions can be taken to operate the nuclear power unit safely under normal conditions and to maintain it in a safe condition under accident conditions, including loss-of-coolant accidents. Adequate radiation protection shall be provided to permit access and occupancy of the control room under accident conditions without personnel receiving radiation exposures in excess of 5 rem whole body, or its equivalent to any part of the body, for the duration of the accident. Equipment at appropriate locations outside the control room shall be provided (1) with a design capability for prompt hot shutdown of the reactor, including necessary instrumentation and controls to maintain the unit in a safe condition during hot shutdown, and (2) with a potential capability for subsequent cold shutdown of the reactor through the use of suitable procedures.

The proposed change has no effect on the design of the control room or on operator radiation dose, as that protection is provided by other systems required by the Technical Specifications. The proposed change also has no effect on alternate control locations outside of the control room. Therefore, the only aspect of GDC 19 applicable to the proposed change is the criterion to design the control room from which actions can be taken to operate the nuclear power unit safely under normal conditions and to maintain it in a safe condition under accident conditions, including loss-of-coolant accidents. The proposed change has no effect on the design of the control room and the proposed actions will ensure that the control room temperature is maintained such that the plant may be operated safely from the control room.

Regulatory Guide 1.196, "Control Room Habitability at Light-Water Nuclear Power Reactors," Revision 0, provides guidance and criteria that the NRC staff considers acceptable for implementing the agency's regulations as they relate to control room habitability. The Regulatory Guide addresses radiological, hazardous chemical, or smoke challenges that could result in the inability of the operators to control the reactor from the control room. It does not address the performance of the reactor controls and instrumentation systems that are affected by environmental conditions, nor does it address human engineering (i.e., temperature, vibration, sound, or lighting). Therefore, the proposed change has no effect on the application of the Regulatory Guide.

The proposed change does not affect plant compliance with these regulations or guidance and will ensure that the lowest functional capabilities or performance levels of equipment required for safe operation are met.

4.2 Precedent

In 2018 the NRC approved an equivalent LAR for the Control Room Cooling System for Byron and Braidwood Nuclear Plants, Units 1 and 2 (Ref. 7). In the event that both trains of control room cooling become inoperable, the License Amendment allows 24 hours to return one train to operable, while requiring mitigating actions to keep the control room temperature less than or equal to 80 °F, such as the use of a Control Room Cooling System purge mode, use of non-safety chilled water sources, or use of supplemental coolers.

4.3 No Significant Hazards Consideration Determination

Duke Energy Carolinas, LLC (Duke Energy) requests a proposed change to the TSs for Catawba Nuclear Station, Units 1 and 2. The proposed change modifies TS 3.7.11, Control Room Area Chilled Water System (CRACWS)" to modify the TS Required Action for two inoperable CRACWS trains. The revised Required Action provides for restoration of one CRACWS train to operable status within 24 hours provided immediate action is taken to implement mitigating actions and the control room temperature is maintained less than or equal to 80°F.

Duke Energy has evaluated whether or not a significant hazards consideration is involved with the proposed amendment(s) by focusing on the three standards set forth in 10 CFR 50.92, Issuance of amendment," as discussed below:

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

Response: No

The CRACWS is not an initiator of any accident. previously evaluated. As a result, the probability of an accident previously evaluated is not increased. The consequences of an accident during the proposed 24 hour Completion Time are no different than the consequences of an accident in Modes 1, 2, 3, and 4 during the existing 1 hour Completion Time provided in LCO 3.0.3 to prepare for a shutdown. The only accident previously evaluated in Modes 5 or 6 is a fuel handling accident. The accident evaluation does not assume a loss of offsite electrical power or additional failures, and the

mitigating actions to maintain control room temperature less than or equal to 80°F will still be available should a fuel handling accident occur. As a result, providing 24 hours to restore one train of control room cooling does not significantly increase the consequences of a fuel handling accident over the current requirement.

Therefore, the proposed change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

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

Response: No

All plant equipment controlled from the control room and operator response actions in response to a design basis accident will be maintained as currently designed and applied. No new equipment or operator responses are required in response to a design basis accident as part of this proposed change. The proposed change will not alter the design or function of the control room or the CRACWS system. Should the new Required Actions not be met, the existing and proposed Required Actions require preparation for an orderly unit shutdown, or suspension of movement of recently irradiated fuel assemblies, as applicable based on the mode of applicability.

Therefore, the proposed change does not create the possibility of a new or different kind of accident from any previously evaluated.

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

Response: No

The proposed change provides a limited period of time to restore an inoperable CRACWS System train instead of interrupting plant operations, possibly requiring an orderly unit shutdown, or suspension of movement of recently irradiated fuel assemblies. A plant disruption or transient may be avoided with mitigating actions taken and the control room temperature maintained. The potential to avoid a plant transient in conjunction with maintaining the control room temperature offsets any risk associated with the limited Completion Time. The proposed change does not impact a design basis, TS Limiting Condition for Operation, limiting safety system setting, or safety limit specified in TSs.

Therefore, the proposed change does not involve a significant reduction in a margin of safety.

Based on the above, Duke Energy concludes that the proposed changes do not involve a significant hazards consideration as set forth in 10 CFR 50.92(c), "Issuance of Amendment".

4.4 Conclusions

In conclusion, based on the considerations discussed above, (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

5 ENVIRONMENTAL CONSIDERATION

A review has determined that the proposed amendment would change a requirement with respect to installation or use of a facility component located within the restricted area, as defined in 10 CFR 20, or would change an inspection or surveillance requirement. However, the proposed amendment does not involve (i) a significant hazards consideration, (ii) a significant change in the types or a significant increase in the amounts of any effluents that may be released offsite, or (iii) a significant increase in individual or cumulative occupational radiation exposure. Accordingly, the proposed amendment meets the eligibility criterion for categorical exclusion set forth in 10 CFR 51.22(c)(9). Therefore, pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the proposed amendment

6 REFERENCES

1. NUREG-1432, "Standard Technical Specifications for Combustion Engineering Plants," Revision 5, dated September, 2021. (NRC ADAMS Accession No. ML21258A421).
2. TSTF-426, Revision 5, "Revise or Add Actions to Preclude Entry into LCO 3.0.3 -RITSTF Initiatives 6b & 6c," approved on May 30, 2013 (Federal Register 78 FR 32476).
3. NUREG-1433, "Standard Technical Specifications for General Electric BWR/4 Plants," Revision 5, dated September, 2021. (NRC ADAMS Accession No. ML21272A357).
4. TSTF-477, Revision 3, "Add Action for Two Inoperable Control Room AC Subsystems," approved on March 26, 2007 (Federal Register 72 FR 14143).
5. NUREG-1434, "Standard Technical Specifications for General Electric BWR/6 Plants," Revision 5, dated September, 2021. (NRC ADAMS Accession No. ML21271A582).
6. NUREG-1431, "Standard Technical Specifications for Westinghouse Plants," Revision 5, dated September, 2021. (NRC ADAMS Accession No. ML21259A155).
7. "Byron Station, Unit Nos. 1 and 2, And Braidwood Station, Units 1 and 2 – Issuance of Amendments Regarding Control Room Ventilation Temperature Control System (CAC Nos. MF9932, MF9933, MF9934, and MF9935; EPID L-2017-LLA-0247)," (NRC ADAMS Accession No. ML18054B436).

8. "Summary of December 8, 2022, Public Meeting with Duke Energy Carolinas, LLC, Regarding Pre-Application Meeting to Discuss Proposed License Amendment Request to Revise TS 3.7.11, "Control Room Area Chilled Water System (CRACWS)," December 8, 2022; (NRC ADAMS Accession No. ML22335A401).

ATTACHMENT 1

CATAWBA TECHNICAL SPECIFICATION 3.7.11 MARKUP

(3 pages follow this page)

3.7 PLANT SYSTEMS

3.7.11 Control Room Area Chilled Water System (CRACWS)

LCO 3.7.11 Two CRACWS trains shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, 4, 5, and 6,
During movement of recently irradiated fuel assemblies.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One CRACWS train inoperable.	A.1 Restore CRACWS train to OPERABLE status.	30 days
B. Required Action and associated Completion Time of Condition A not met in MODE 1, 2, 3, or 4.	B.1 Be in MODE 3.	6 hours
	<u>AND</u> B.2 Be in MODE 5.	36 hours
C. Required Action and associated Completion Time of Condition A not met in MODE 5 or 6, or during movement of recently irradiated fuel assemblies.	C.1 Place OPERABLE CRACWS train in operation.	Immediately
	<u>OR</u> C.2 Suspend movement of recently irradiated fuel assemblies.	Immediately

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>D. Two CRACWS trains inoperable in MODE 5 or 6, or during movement of recently irradiated fuel assemblies.</p> <p>D. Two CRACWS trains inoperable.</p>	<p>D.1 Suspend movement of recently irradiated fuel assemblies.</p> <p>D.1 Implement mitigating actions.</p> <p><u>AND</u></p> <p>D.2 Verify control room temperature $\leq 80^{\circ}\text{F}$.</p> <p><u>AND</u></p> <p>D.3 Restore one CRACWS train to OPERABLE status.</p>	<p>Immediately</p> <p>Immediately</p> <p>Immediately and once per hour thereafter</p> <p>24 hours</p>
<p>E. Two CRACWS trains inoperable in MODE 1, 2, 3, or 4.</p> <p>E. Required Action and associated Completion Time of Condition D not met in MODE 1, 2, 3, or 4.</p>	<p>E.1 Enter LCO 3.0.3.</p> <p>E.1 Be in MODE 3.</p> <p><u>AND</u></p> <p>E.2 Be in MODE 5.</p>	<p>Immediately</p> <p>6 hours</p> <p>36 hours</p>
<p>F. Required Action and associated Completion Time of Condition D not met in MODE 5 or 6, or during movement of recently irradiated fuel assemblies.</p>	<p>F.1 Suspend movement of recently irradiated fuel assemblies</p>	<p>Immediately</p>

No Changes This
Page

ACTIONS (continued)

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.7.11.1 Verify the control room temperature is $\leq 90^{\circ}\text{F}$.	In accordance with the Surveillance Frequency Control Program

ATTACHMENT 2

**CATAWBA TECHNICAL SPECIFICATION 3.7.11 BASES MARKUP (FOR INFORMATION
ONLY)**

(5 pages follow this page)

B 3.7 PLANT SYSTEMS

B 3.7.11 Control Room Area Chilled Water System (CRACWS)

BASES

BACKGROUND The CRACWS provides temperature control for the control room and the control room area.

The CRACWS consists of two independent and redundant trains that provide cooling to the control room and control room area. Each train consists of a chiller package, chilled water pump, and air handling units with cooling coils. Chilled water is passed through the cooling coils of the air handling unit to cool the air. Electric duct heaters are then used to control the supply air temperature.

The CRACWS provides both normal and emergency cooling to the control room and control room area. A single train will provide the required temperature control to maintain the control room approximately 74°F. The CRACWS operation in maintaining the control room temperature is discussed in the UFSAR, Section 9.4 (Ref. 1).

APPLICABLE SAFETY ANALYSES The design basis of the CRACWS is to maintain the control room temperature for 30 days of continuous occupancy.

The CRACWS components are arranged in redundant, safety related trains. During emergency operation, the CRACWS maintains the temperature between 72°F and 85°F. A single active failure of a component of the CRACWS, with a loss of offsite power, does not impair the ability of the system to perform its design function. Redundant detectors and controls are provided for control room temperature control. The CRACWS is designed in accordance with Seismic Category I requirements. The CRACWS is capable of removing sensible and latent heat loads from the control room, which include consideration of equipment heat loads and personnel occupancy requirements, to ensure equipment OPERABILITY.

The CRACWS satisfies Criterion 3 of 10 CFR 50.36 (Ref. 2).

BASES

LCO Two independent and redundant trains of the CRACWS are required to be OPERABLE to ensure that at least one is available, assuming a single failure disabling the other train. Total system failure could result in the equipment operating temperature exceeding limits in the event of an accident.

The CRACWS is considered to be OPERABLE when the individual components necessary to maintain the control room temperature are OPERABLE in both trains. These components include a chiller package, chilled water pump, and air handling unit. In addition, the CRACWS must be OPERABLE to the extent that air circulation can be maintained.

The CRACWS is shared between the two units. The system must be OPERABLE for each unit when that unit is in the MODE of Applicability. If a CRACWS component becomes inoperable, then the Required Actions of this LCO must be entered independently for each unit that is in the MODE of applicability of the LCO.

APPLICABILITY In MODES 1, 2, 3, 4, 5, and 6, and during movement of recently irradiated fuel assemblies, the CRACWS must be OPERABLE to ensure that the control room temperature will not exceed equipment operational requirements following a design basis accident. The CRACWS is only required to be OPERABLE during fuel handling involving handling recently irradiated fuel (i.e., fuel that has occupied part of a critical reactor core within the previous 72 hours) due to radioactive decay.

ACTIONS A.1

With one CRACWS train inoperable, action must be taken to restore OPERABLE status within 30 days. In this Condition, the remaining OPERABLE CRACWS train is adequate to maintain the control room temperature within limits. However, the overall reliability is reduced because a single failure in the OPERABLE CRACWS train could result in loss of CRACWS function. The 30 day Completion Time is based on the low probability of an event, the consideration that the remaining train can provide the required protection, and that alternate safety or nonsafety related cooling means are available.

BASES

ACTIONS (continued)

B.1 and B.2

In MODE 1, 2, 3, or 4, if the inoperable CRACWS train cannot be restored to OPERABLE status within the required Completion Time, the unit must be placed in a MODE that minimizes the risk. To achieve this status, the unit must be placed in at least MODE 3 within 6 hours, and in MODE 5 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems.

C.1 and C.2

In MODE 5 or 6, or during movement of recently irradiated fuel, if the inoperable CRACWS train cannot be restored to OPERABLE status within the required Completion Time, the OPERABLE CRACWS train must be placed in operation immediately. This action ensures that the remaining train is OPERABLE, and that active failures will be readily detected.

An alternative to Required Action C.1 is to immediately suspend activities that present a potential for releasing radioactivity. This places the unit in a condition that minimizes accident risk. This does not preclude the movement of fuel to a safe position.

Insert 1



Insert 2



D.1 F.1
In MODE 5 or 6, or during movement of recently irradiated fuel assemblies, with two CRACWS trains inoperable, action must be taken immediately to suspend activities that could result in a release of radioactivity. This places the unit in a condition that minimizes risk. This does not preclude the movement of fuel to a safe position.

E.1

~~If both CRACWS trains are inoperable in MODE 1, 2, 3, or 4, the control room CRACWS may not be capable of performing its intended function. Therefore, LCO 3.0.3 must be entered immediately.~~

BASES

SURVEILLANCE
REQUIREMENTS

SR 3.7.11.1

This SR verifies that the heat removal capability of the system is sufficient to maintain the temperature in the control room at or below 90°F. The Surveillance Frequency is based on operating experience, equipment reliability, and plant risk and is controlled under the Surveillance Frequency Control Program.

REFERENCES

1. UFSAR, Section 9.4.
2. 10 CFR 50.36, Technical Specifications, (c)(2)(ii).
3. 10 CFR 50.67, Accident source term.
4. Regulatory Guide 1.183, Revision 0.

Insert 1

D.1, D.2, and D.3

If both CRACWS trains are inoperable, the CRACWS may not be capable of performing its intended function. Therefore, the control room area temperature is required to be monitored to ensure that temperature is being maintained low enough that equipment in the control room is not adversely affected and habitability is maintained. If air circulation is limited, temperature monitoring in multiple locations in the affected areas may be required in order to ensure that the temperature limit is not exceeded. Mitigating actions, such as use of the Computer Room Chilled Water (YJ) system tie-in to the Control Room Air Handling Units, opening cabinet doors, use of fans, use of ice vests, use of alternate (i.e., non-safety-related) ventilation systems, or opening control room doors or ventilation paths, may be used to maintain control room area temperature. With the control room temperature being maintained within the temperature limit, 24 hours is allowed to restore a CRACWS train to OPERABLE status. This Completion Time is reasonable considering that the control room temperature is being maintained within limits and the low probability of an event occurring requiring control room isolation.

Insert 2

E.1 and E.2

In MODE 1, 2, 3, or 4, if the inoperable CRACWS trains cannot be restored to OPERABLE status within the required Completion Time, the unit must be placed in a MODE that minimizes the risk. To achieve this status, the unit must be placed in at least MODE 3 within 6 hours, and in MODE 5 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems.