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A Duke Energy Company

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November 18, 2002

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555

Subject: Response to NRC Letter Dated November 13, 2002
Application to Renew the Licenses of McGuire Nuclear Station, Units 1 & 2 and Catawba Nuclear Station, Units 1 & 2

Docket Nos. 50-369, 50-370, 50-413 and 50-414

By letter dated June 13, 2001, Duke Energy Corporation (Duke) submitted an Application to Renew the Facility Operating Licenses of McGuire Nuclear Station and Catawba Nuclear Station (Application). The Application contains the technical information required by 10 CFR Part 54 and the Supplement to the Final Safety Analysis Report (FSAR) for each station as required by §54.21(d).

In a letter dated August 14, 2002, the NRC staff provided Duke a copy of the "Safety Evaluation Report with Open Items Related to the License Renewal of McGuire Nuclear Station, Units 1 and 2, Catawba Nuclear Station, Units 1 and 2." By letters dated October 2, 2002 and October 28, 2002, Duke provided its responses to the SER Open Items and revised UFSAR Supplements for each station. Comments on the SER were provided informally to the license renewal project manager.

The staff, in its letter dated October 19, 2002, provided requests for additional information on two topics and requested that Duke review an excerpt from the SER for the Waste Gas System Inspection. Duke letter dated November 5, 2002 provided responses to this staff letter.

By letter dated November 7, 2002, the staff identified a topic concerning the treatment of fuse holders within the scope of license renewal as long-lived, passive components subject to an aging management review for McGuire and Catawba. Duke letter dated November 14, 2002 provided a commitment to provide a response to the final interim staff guidance (ISG) when issued. Subsequent to the submittal of this Duke letter, the staff informed Duke that this commitment was not sufficient for the staff to make its finding. The revised commitment to this item is provided in Attachment 1.

A085
A053

By letter dated November 13, 2002, the NRC staff provided the status of its review of the McGuire and Catawba License Renewal Application and identified eight remaining issues. The Duke response to seven of these eight issues was provide by letter dated November 14, 2002. The remaining issue concerning the scoping of manual suppression systems in the Turbine Building is provided in Attachment 1.

If there are any questions, please contact Bob Gill at (704) 382-3339.

Very truly yours,

M. S. Tuckman

M. S. Tuckman

Attachment:

Affidavit

M. S. Tuckman, being duly sworn, states that he is Executive Vice President, Nuclear Generation Department, Duke Energy Corporation; that he is authorized on the part of said Corporation to sign and file with the U. S. Nuclear Regulatory Commission the attached response to the Safety Evaluation with Open Items Related to the License Renewal of McGuire Nuclear Station, Units 1 & 2 and Catawba Nuclear Station, Units 1 & 2 , Docket Nos. 50-369, 50-370, 50-413 and 50-414, and that all the statements and matters set forth herein are true and correct to the best of his knowledge and belief. To the extent that these statements are not based on his personal knowledge, they are based on information provided by Duke employees and/or consultants. Such information has been reviewed in accordance with Duke Energy Corporation practice and is believed to be reliable.

M. S. Tuckman

M. S. Tuckman, Executive Vice President
Duke Energy Corporation

Subscribed and sworn to before me this 18th day of November 2002.

Mary P. Nehus
Notary Public

My Commission Expires:

JAN 22, 2006

xc: (w/ Attachment)

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Attachment 1

Response to
NRC letters dated November 7 and 13, 2002

1. **Fuse Holder Commitment**

Duke provided its initial commitment to this item because of concerns that the ISG may prescribe a staff accepted aging management program or activity for fuse holders that may be inappropriate for implementation at either McGuire or Catawba. The scope of fuse holders is plant specific and the appropriate aging management program will depend on whether existing activities may be credited as is or enhanced or if new activities must be implemented. Duke recommends that the final ISG provide adequate flexibility for the attributes of any recommended program or activity to manage the effects of aging of the fuse holders within the scope of license renewal and not prescribe one specific program that would be acceptable to the staff. The following commitment supercedes the commitment provided by Duke in its November 14, 2002 letter:

> For McGuire, Duke commits to implement the final version of the fuse holder interim staff guidance (initially provided to NEI by letter dated May 16, 2002 and when finalized by the staff) by June 12, 2021 (the end of the initial license of McGuire Unit 1).
>
> For Catawba, Duke commits to implement the final version of the fuse holder interim staff guidance (initially provided to NEI by letter dated May 16, 2002 and when finalized by the staff) by December 6, 2024 (the end of the initial license of Catawba Unit 1).

2. **New Open Item 3.3.6.2.1-1, aging effects for synthetic rubber expansion joint in condenser circulating water system**

Duke letter dated November 14, 2002 provided a response to this open item. Following staff review, a request was made to update the six-column aging management results table entry for the condenser circulating water pump expansion joint that had been provided previously by Duke letter dated April 15, 2002. The following is this updated table entry:

Component Type	Component Function	Material	Internal Environment / External Environment	Aging Effect	Aging Management Programs and Activities
Expansion Joints	Pressure Boundary	Synthetic Rubber	Raw Water	Cracking Wear	Condenser Circulating Water Pump Expansion Joint Expansion
			Yard	Cracking Wear	Condenser Circulating Water Pump Expansion Joint Expansion

3. **Open Item 2.3.3.19-4, scoping of manual suppression systems in the turbine building**

This response supplements the Open Item 2.3.3.19-4 response provided by Duke on October 28, 2002 and to address the staff's letter of November 13, 2002. The original open item contained several issues related to fire protection scoping, but it is Duke's understanding from an October 1, 2002 meeting between Duke and the staff and the staff's letter of November 13, 2002 that the one remaining unresolved issue of the Open Item is the scoping of manual hose stations in the Turbine Building.

This attachment is divided into four sections. Section I of this attachment includes the chronology of the licensing basis of McGuire and Catawba, including a conclusion regarding the current licensing basis of the stations. This information was provided informally to the staff by e-mail and fax on November 15, 2002. Section II of this attachment contains information related to 10 CFR 54.4(a)(3) scoping criteria and Duke's results from applying that scoping criteria to the Turbine Building manual hose stations. Section III of this attachment contains responses to the staff's particular bulleted items from the November 13, 2002 letter. Finally, Section IV of this attachment contains the aging management review results for the Turbine Building manual hose stations.

I. Chronology of Licensing Basis for Manual Hose Stations and Current Licensing Basis Conclusion

McGuire

May and August 1976 – NRC issues Appendix A to BTP 9.5-1

September 1, 1977- Duke issues original Fire Protection Review (FPR) to NRC. The FPR included responses to the BTP guidelines and a complete Fire Hazards Analysis.

March 1, 1978 - NRC issues SER (NUREG 0422) including Chapter 16 of SER, Technical Specifications

Chapter 16 of SER documents the staff review and findings for the applicant's proposed technical specifications.

January 31, 1979- Duke issues revised FPR to NRC, which incorporated results of RAIs, site visits, and meetings. This submittal is the submittal of record at the time the applicable portions of the SER is written.

March 1, 1979 - NRC issues Supplement 2 of SER. The SER provides the fundamental foundation of the licensing basis.

II. Fire Protection Systems Description
A. Water Suppression Systems

"(...)
The overall objective of our review of the McGuire Nuclear Plant fire protection program was to ensure that in the event of a fire at the facility, the units would maintain the ability to safely shutdown and remain in a safe shutdown condition and to minimize the release of radioactivity to the environment. Our review included an evaluation of the automatic and manually operated water and gas fire suppression systems, the fire detection systems, fire barriers, fire doors and dampers, fire protection, administrative controls and fire brigade training, and plant fire protection technical specifications.

The automatic sprinkler systems, e.g., wet sprinkler system, pre-action sprinkler systems, deluge and water spray systems, are designed to the requirements of NFPA Standard No. 13, "Standard for Installation of Sprinkler Systems," and NFPA Standard No. 15, "Standard for Water Spray Fixed System."

Manual hose stations are located throughout the plant to ensure that an effective hose stream can be directed to any safety related area in the plant. These systems are consistent with the requirements of NFPA Standard No. 14, "Standpipe and Hose System for Sizing, Spacing, and Pipe Support Requirements."

Areas that have been equipped or will be equipped with water suppression systems are:

(a) Cable spreading room (Manual Fog System)
(b) RHR pump rooms and adjacent corridor area (automatic)
(c) Motor driven auxiliary feedwater pump room (automatic)
(d) Centrifugal charging pump rooms (automatic)
(e) Nuclear service water pump rooms (automatic)
(f) Component cooling water pump rooms (automatic)
(g) Reactor coolant pump (remote manual)
(h) Containment Annulus (remote manual)
(i) Pipe corridor @ EL 725' (automatic)
(j) Battery room open area – east and west ends (automatic)

We have reviewed the design criteria and bases for the water suppression systems and conclude that these systems meet the guidelines of Appendix A to Branch Technical Position 9.5.1 and are in accord with the applicable portions of the National Fire Protection Association (NFPA) Codes, and are, therefore, acceptable."

April 1, 1981- NRC issues Supplement 5 of SER. Applicable portions are identical to above with the addition of the following in the list of areas equipped with water suppression:

(k) Cable shaft (automatic)
(l) Charcoal filters – containment (remote manual)
(m) Charcoal filters – react [sic] building (remote manual)

SER Section 5, Fire Protection for Specific Areas, gives detail on the fire protection features for the plant. Individual subsections are 5.1, Cable Spreading Room, 5.2, Battery Room Areas (Fire Area 13), 5.3, Fire Protection Inside Containment, 5.4, Residual Heat Removal Pump Rooms, and 5.5, Other Plant Areas. For Other Plant Areas, the SER states:

"The applicant's Fire Hazards Analysis addresses other plant areas not specifically discussed in this report. The applicant has committed to install additional detectors, portable extinguishers, hose stations, and some additional emergency lighting as identified in the applicant's installation schedule. We find these areas with the commitment made by the applicant to be in accordance with the guidelines of Appendix A of the BTP 9.5-1, and the

applicable sections of the National Fire Protection Association Code and are therefore acceptable."

The summary of the review of the SER is that the SER states the specific locations required to have suppression systems. None of these locations are in the Turbine Building. The SER requires that manual hose stations be able to reach any location that contains, or could present a fire exposure hazard to, safety-related equipment with at least one effective hose stream. None of the manual hose stations in the Turbine Building fulfill that criteria. The SER states that for other plant areas not specified, the staff relied on the FHA. The FHA does not dictate any automatic or manual suppression in the Turbine Building. The FHA states "The analysis was conducted in the Auxiliary Building and Reactor Buildings and that portion of the Turbine and Service Buildings which are adjacent to the Auxiliary Building." No Turbine Building suppression is identified in the FHA. Therefore, no Turbine Building fire presents an unacceptable fire exposure hazard to safety related systems in the Auxiliary Building.

October 7, 1982 – Duke submits a revision to the FPR. It contains the same information described as the January 31, 1979 submittal with respect to manual hose stations and did not change any of the conclusions of the SER as described above.

June 12, 1981 and March 3, 1983 – Based on the reviews and findings contained in the SER and its supplements, the NRC issues the Facility Operating Licenses for each McGuire unit.

The technical specifications were made a part of the Facility Operating License issued by the staff. Limiting Condition for Operation 3/4.7.10.4, Fire Hose Stations, specifically identifies those fire hose stations that must remain operable. None of the manual fire hose stations specifically identified in LCO 3/4.7.10.4 are located in the Turbine Building. All manual hose stations identified in LCO 3/4.7.10.4 are located in the Auxiliary Building.

June 6, 1989 – Subsequently, the NRC issued amendments to each units' Facility Operating License to relocate fire protection requirements from the operating licenses in the technical specifications to the FSAR.

Catawba

May and August 1976 – NRC issues Appendix A to BTP 9.5-1

December, 1977, June, 1979, (by letter dated 8/31/79) – Duke issues Fire Protection Review (FPR) to NRC. The FPR included responses to the BTP guidelines and a complete Fire Hazards Analysis.

August, 1981, (by letter dated October 23, 1981) – Duke issues revised FPR to NRC, which includes responses to the BTP and Appendix R and a FHA. The October 23, 1981 submittal is the submittal of record at the time the February 1983 SER is written.

July 1981- NRC issues SRP which includes CMEB Section 9.5.1 as a replacement for BTP 9.5-1 and Appendix R.

The corresponding manual hose station requirement in the CMEB states:

> "Interior manual hose station installation should be able to reach any location that contains, or could present a fire exposure hazard to, safety-related equipment with at least one effective hose stream. To accomplish this, standpipes with hose connections equipped with a maximum of 100 feet of 1-1/2-inch woven-jacket, lines fire hose and suitable nozzles should be provided in all buildings on all floors. Individual standpipes should be at least 4 inches in diameter for multiple hose connections and 2-1/2 inches in diameter for single hose connections. These systems should follow the requirements of NFPA 14, "Standpipe and Hose Systems," for sizing, spacing, and pipe support requirements.
>
> Hose stations should be located as dictated by the fire hazard analysis to facilitate access and use for firefighting operations. (...)"

February 1983 – NRC issues SER (NUREG 0954), including Chapter 16 of SER, Technical Specifications

Chapter 16 of SER documents the staff review and findings for the applicant's proposed technical specifications.

Chapter 9 of the SER includes the following:

9.5.1.7 Fire Detection and Suppression
Sprinkler and Standpipe Systems

(...)

The areas that are being equipped with automatic water suppression systems are
(1) RHR pump rooms 100, 104, 105, 109, 110 and connecting corridors
(2) Fire Areas 2 & 3 (rooms 250 and 260)
(3) centrifugal charging pumps, rooms 231, 230, 241, and 240
(4) component cooling pumps and cable concentration areas
(5) reactor building annulus
(6) Fire Area RB-2, pipe corridor
(7) manual preaction for the lower containment filters
(8) reactor coolant pumps

In the Fire Hazards Analyses, the applicant identified fire areas containing safe-shutdown-related equipment that are not protected by an automatic sprinkler system. Fire protection for these areas consists of automatic fire detectors, manual hose stations, and portable fire extinguishers. The boundaries of these areas are composed of three-hour-fire-rated construction. Cable is of a galvanized steel interlocked armor design discussed in Section 9.5.1.5 of this report. The shutdown system is available to achieve safe shutdown in the event of a fire in any of these areas. This is an acceptable deviation from the guidelines of BTP CMEB 9.5-1, Item C.5.b(2).
Interior manual hose stations are provided and equipped to reach any plant location with at least one effective hose stream. Each hose station is provided with a maximum of 100 ft of 1 ½-in. hose with a spray nozzle to provide adequate coverage. The staff finds that the hose stations meet the guidelines of BTP CMEB 9.5-1, Item C.6.c, and are, therefore, acceptable."

Because the SRP is issued at virtually the same time Catawba is finishing its response to the BTP, NRC agrees to let Catawba respond to the BTP but reviews Catawba against the CMEB in the SRP. The SER clearly documents that Catawba is reviewed against and licensed to the SRP as stated in the Introduction Section of 9.5.1.1:

"The staff has reviewed the fire protection program for conformance with SRP Section 9.5-1, Fire Protection, (NUREG-0800). This document, in BTP CMEB 9.5-1, incorporates the guidance of Appendix A to BTP ASB 9.5-1 and the technical requirements of Appendix R to 10 CFR 50."

The SER is clear that Catawba is licensed to Item C.6.c of the CMEB. The CMEB is the NRC's latest published version of the guidelines and requires that manual hose stations be able to reach any location that contains, or could present a fire exposure hazard to, safety-related equipment with at least one effective hose stream. None of the hose stations in the Turbine Building fulfill that criteria.

July 1983, (by letter dated November 4, 1983) - Duke submits a revision to the FPR. It contains the same information described as the October 23, 1981 submittal with respect to manual hose stations and did not change any of the conclusions of the SER as described above.

January 20, 1984 – An NRC audit report states:

> "To comply with Section C.6.c of BTP CMEB 9.5-1, interior manual hose stations should be installed so as to be able to reach any location that contains, or could present, a fire exposure hazard to safety related equipment with at least one effective hose stream."

December 6, 1984 and February 24, 1986 – Based on the reviews and findings contained in the SER and its supplements, the NRC issues the Facility Operating Licenses for each Catawba unit.

The technical specifications were made a part of the Facility Operating License issued by the staff. Limiting Condition for Operation 3/4.7.10.4, Fire Hose Stations, specifically identifies those fire hose stations that must remain operable. None of the manual fire hose stations specifically identified in LCO 3/4.7.10.4 are located in the Turbine Building. All manual hose stations identified in LCO 3/4.7.10.4 are located in the Auxiliary Building, fuel pool area, or nuclear service water pump structure.

November 30, 1990 – Subsequently, the NRC issued amendments to each units' Facility Operating License to relocate fire protection requirements from the operating licenses in the technical specifications to the FSAR.

CONCLUSION

Clearly, the guidance was evolving during the licensing of McGuire and Catawba. The guidance and the Duke responses comprise over a thousand pages of documents. Review of this information confirms that licensing basis of McGuire and Catawba is most clearly embodied in the staff's SER and in the technical specifications contained in the operating licenses.

Duke's conclusion from the exercise of reviewing the licensing basis of McGuire and Catawba is that the manual hose stations within the licensing basis are those listed in the original technical specifications, which did not include any Turbine Building manual hose stations. Since the conversion from technical specification to the UFSAR, the current licensing basis for McGuire and Catawba includes those hose stations listed in UFSAR Chapter 16, Selected Licensee Commitments. The Selected Licensee Commitments do not include any Turbine Building manual hose stations.

II. 10 CFR 54.4(a)(3) Scoping Criteria

The following information provides Duke's underlying principle for scoping systems, structures, and components that meet 10 CFR 54.4(a)(3) criteria.

10 CFR 54.4(a)(3)

(a) Plant systems, structures, and components within the scope of this part are--

[...]

(3) All systems, structures, and components relied on in safety analyses or plant evaluations to perform a function that demonstrates compliance with the Commission's regulations for fire protection (10 CFR 50.48), environmental qualification (10 CFR 50.49), pressurized thermal shock (10 CFR 50.61), anticipated transients without scram (10 CFR 50.62), and station blackout (10 CFR 50.63).

The documents from the current licensing basis are used to identify the systems, structures, and components **relied on in safety analyses or plant evaluations to perform a function** that demonstrates compliance with the Commission's regulations for fire protection (10 CFR 50.48). Individual commitments made on the docket may or may not have been relied upon in a safety analysis or plant evaluation. Care must be taken to review all of the documents to put the specific commitments in context.

Similar processes were used to perform scoping for fire protection (10 CFR 50.48) as were used for environmental qualification (10 CFR 50.49), pressurized thermal shock (10 CFR 50.61), anticipated transients without scram (10 CFR 50.62), and station blackout (10 CFR 50.63). That is, all relevant documents were reviewed, including the plant specific analyses and evaluations that were performed.

The results of the fire protection scoping review clearly show that Turbine Building manual hose stations were not credited in any plant specific safety analysis or evaluation to perform a function that demonstrates compliance with 10 CFR 50.48.

III. Responses to concerns in NRC letter dated November 13, 2002

The following information provides additional insights related to each bulleted item raised by the staff in their November 13, 2002 letter.

Open Item 2.3.3.19-4, scoping of manual suppression systems in the turbine building

- The response focused on the main turbine lubricating oil tank.

  It is not clear from the staff's statement why focusing on the main turbine lubricating oil tank is a problem or issue for the staff. However, Duke provides the following information in an attempt to clarify the information that was provided in the October 28, 2002 response. It is common engineering practice to evaluate a bounding, worst case scenario that in turn, envelopes all other configurations. Duke's response of October 28, 2002, provided the licensing basis associated with manual hose stations in the Turbine Building and the technical information to justify the licensing basis. The technical information in the response stated that Duke had reviewed the technical analyses associated with Turbine Building fires and found that Turbine Building fires do not pose an unacceptable fire exposure hazard to the Auxiliary Building. This analysis was submitted to and approved by the NRC during original licensing of McGuire and Catawba. To provide even further assurance, Duke's response proceeded to give the technical justification that supports that fact. In doing so, Duke looked at each combustible load in the Turbine Building, determined that the main turbine lubricating oil tank is the worst case combustible load due to its loading and location, and stated that it does not present an unacceptable fire exposure hazard. If the worst case combustible load does not present an unacceptable fire exposure hazard, then the other combustible loads in the Turbine Building likewise do not present an unacceptable fire exposure hazard. The response clearly states this approach by stating, "Duke reviewed each area listed in the open item to validate whether an exposure hazard does exist that would jeopardize areas of the Auxiliary Building that house safety-related and safe shutdown equipment...the limiting area is associated with the main turbine components."

- Response ignored other potential exposure hazards.

  Duke's response of October 28, 2002, did not ignore other potential exposure hazards, as explained in the information given above. The October 28, 2002 response states, "Duke reviewed each area listed in the open item to validate whether an exposure hazard does exist that would jeopardize areas of the Auxiliary Building that house safety-related and safe shutdown equipment...the limiting area is associated with the main turbine components." Since the main turbine lubricating oil tank is the worst case combustible load in the Turbine Building, and it does not present an unacceptable fire exposure hazard

to the Auxiliary Building, then other areas of the Turbine Building are also not credible exposure hazards.

- Duke has placed total reliance on the three hour fire barrier and 100 feet of space.

  It is not clear from the staff's statement why placing reliance on the three hour fire barrier and 100 feet of space is a problem or issue for the staff. Standard industry practice and regulatory guidance stipulate that fire areas be separated from one another by three-hour fire barriers. These three-hour barriers along with administrative controls for fire prevention, and detection and redundant suppression capability within the Auxiliary Building make up the defense-in-depth for protection of safe-shutdown capability. This information is contained in McGuire and Catawba's Fire Hazards Analysis (FHA) which was submitted to the staff as part of the Fire Protection Review (FPR), which in turn is referenced in the SERs.

- Response ignored defense in-depth provided by manual hose stations.

  As stated in regulations (Criterion 3 to Appendix A, 10 CFR 50.48) and numerous staff publications (NUREG-0800, RG 1.70 and RG 1.189), the criteria for an acceptable fire protection program is to maintain the ability to safety shutdown the plant and remain in a safe shutdown condition and to minimize the release of radioactivity to the environment. The Turbine Building manual hose stations do not provide defense-in-depth for these criteria.

  Defense-in-depth of a fire protection program is defined in Appendix R as

  > "The fire protection program shall extend the concept of defense-in-depth to fire protection in fire areas important to safety, with the following objectives:
  > - ◊ To prevent fires from starting
  > - ◊ To detect rapidly, control, and extinguish promptly those fires that do occur;
  > - ◊ To provide protection for structures, systems, and components important to safety so that a fire that is not promptly extinguished by the fire suppression activities will not prevent the safe shutdown of the plant."

  Defense-in-depth applies to fire areas important to safety. The fire areas important to safety at McGuire are the Auxiliary Building and Reactor Building. The fire areas important to safety at Catawba are the Auxiliary Building, Reactor Building, and Nuclear Service Water Pump Structure. Effective fire barriers, along with administrative controls for fire prevention, and detection and redundant suppression capability make up the defense-in-depth for protection of safe-shutdown capability. The Turbine Building

manual hose stations do not provide defense-in-depth for the stations' fire protection program. This information is clearly outlined in McGuire and Catawba's Fire Hazards Analysis (FHA) which was submitted to the staff as part of the Fire Protection Review (FPR), which in turn is referenced in the SERs.

- Contrary to the guidance in Appendix A to BTP 9.5-1 and CMEB 9.5-1.

  The guidance does not constitute the licensing basis for McGuire and Catawba. Nonetheless, the guidance was issued several times with several variations of the wording. The latest guidance published by the staff in the BTP CMEB 9.5-1 which is a part of the Standard Review Plan (NUREG-0800) states in section C.6.c (4):

  > "Interior manual hose installation should be able to reach any location that contains, or could present a fire exposure hazard to, safety-related equipment with at least one effective hose stream. To accomplish this, standpipes with hose connections equipped with a maximum of 100 feet of 1 ½-inch woven-jacket, lined fire hose and suitable nozzles should be provided in all buildings on all floors...Hose stations should be located as dictated by the **fire hazard analysis** (emphasis added) to facilitate access and use for firefighting operations."

  The scope of manual hose stations within McGuire and Catawba's 10 CFR 50.48 program is in not contrary to this guidance, but rather, includes all manual hose stations relied upon in the Fire Hazards Analyses.

- This guidance states in part that "interior manual hose stations should be provided in all buildings, including containment, on all floors".

  Appendix A to the APCSB BTP makes this statement. This guidance was later clarified and in BTP CMEB 9.5-1 (NUREG-0800), as quoted above and in Appendix R. The difference between this requirement in the APCSB BTP and the SRP and Appendix R is significant in that it demonstrates that the NRC recognized through the development of their regulation the early guidance was not clear. It is obvious that the intent of the regulation was never to provide an effective hose steam in "all buildings", yet to provide protection in areas that pose a credible exposure threat to safety-related systems, structures, and components.

- Duke implemented this guidance at McGuire and Catawba.

  Duke has implemented this guidance at McGuire and Catawba. As described in Section II of this attachment, the SERs, which constitute, in part, the licensing basis of the stations, clearly state that the staff relied on the fact that the plants have hose stations that

are installed to reach any location that contains, or could present a fire exposure hazard to, safety-related equipment with at least one effective hose stream. Each individual hose station that meets the criteria of reaching any location that contains, or could present a fire exposure hazard to, safety-related equipment with at least one effective hose stream is identified in the original technical specifications, now UFSAR, Chapter 16, Selected Licensee Commitments. None of the manual hose stations are located in the Turbine Building.

- The Statement of Considerations for 10 CFR 50.48 support the staff's position.

  Duke assumes the staff is referring to 45 FPR 76605, Section II.D, which states:

  Manual Fire Suppression Technical Basis

  > Considerable reliance is placed on automatic fire suppression systems throughout a nuclear power plant. However, manual fire fighting activities often can control and extinguish slowly developing fires before an automatic fire suppression system is actuated. In addition, fires that are controlled or extinguished by automatic systems require a certain amount of manual response. Also, some areas of the plant do not warrant the installation of automatic fire suppression systems. Manual response is the only fire suppression available for these areas; thus, it is important that manual fire fighting capability be present in all areas of the plant, and that standpipe and hose stations be located throughout the plant. The standpipe and hose stations are to be located so that at least one effective hose stream can be brought to bear at any location in the plant containing or presenting a hazard to structures, systems, or components important to safety. They are to be supplied from the fire water supply system except for those inside containments, which may be connected to other reliable water supplies if a separate penetration into containment cannot be made for fire water service needs.

  The SOC says essentially the same thing as the guidance documents. The SOC states that hose stations should be located throughout the plant such that at least one effective hose stream can be brought to bear at any location in the plant containing or presenting a hazard to structures, systems, or components important to safety. (Note: the terms "important to safety" and "safety-related" are used interchangeably in the regulations to have the same meaning, as stated in Appendix R, "[t]he phrases 'important to safety,' or 'safety-related,' will be used throughout this appendix R as applying to all safety functions.")

  The Turbine Building does not contain safety-related, or important to safety, equipment. The Turbine Building also does not contain a location that presents a hazard to structures, systems, and components important to safety. This fact is demonstrated in the Fire

Hazards Analysis for each station, which has been submitted to and approved by the staff. Since the Turbine Building does not contain structures, systems, and components important to safety and does not present a hazard to structures, systems, and components important to safety, the hose stations in the Turbine Building do not meet the criteria of the description in the SOC.

IV. Conclusion

Duke has reviewed the documents in its possession, including the Fire Hazards Analysis for each station, and has concluded that the Turbine Building manual hose stations do not perform a function relied on in a safety analysis or plant evaluation to demonstrate compliance with 10 CFR §50.48. Therefore, these hose stations do not meet §54.4. The staff, on the other hand, based on its review of documents in its possession, has concluded that all manual hose stations within the Turbine Building are required.

Notwithstanding the above, Duke will not challenge this issue further. Duke will include the Turbine Building manual hose stations in the license renewal aging management review. Duke does not recognize any reason for including the Turbine Building manual hose stations other than to support the timely completion of the license renewal review on schedule.

In response to Open Item 2.3.3.19-4, the following is a summary of the aging management review that has been performed on the Turbine Building manual hose stations for both McGuire and Catawba.

Aging Management Review Results

This response provides the aging management review results for the portion of the Fire Protection System containing Turbine Building manual hose stations. The system contains piping, valves, and fire hose racks.

Section 3.3 of the Application is supplemented with the following table entries. The table entries below contain components of the McGuire Fire Protection System (Interior) and Catawba Fire Protection System (Interior). Tables 3.3.26 and 3.3.27 are supplemented with the following table entries. The information contained in the table was obtained in the manner described in Section 3.3.1 of the Application.

1	2	3	4	5	6
Component Type	**Component Function**	**Material**	**Internal Environment (Note 1)** **External Environment (Note 2)**	**Aging Effect**	**Aging Management Program and Activity (Note 3)**
Fire Hose Rack	Pressure Boundary	Brass	Ventilation	None Identified	None Required
			Sheltered	None Identified	None Required
Piping	Pressure Boundary	Galvanized Steel	Raw Water	Loss of Material	Service Water Piping Corrosion Program Galvanic Susceptibility Inspection
			Sheltered	None Identified	None Required
Valves	Pressure Boundary	Bronze	Raw Water	Fouling	Fire Protection Program
				Loss of Material	Service Water Piping Corrosion Program
			Sheltered	None Identified	None Required

Based on the evaluations provided in Appendix B of the Application, the *Service Water Piping Corrosion Program* and the *Galvanic Susceptibility Inspection* adequately manage the aging for the applicable components listed here and no changes to the Application are required. The fouling of the valves in the Turbine Building manual hose stations will be managed by the *Turbine Building Manual Hose Station Flow Test* activity of the *Mechanical Fire Protection Component Tests and Inspections* which will periodically open each hose station valve partially to verify no flow blockage. This activity is synonymous with the *Mechanical Fire Protection Component Tests and Inspections* activity already credited for other hose stations within the scope of license renewal.

The following information is provided to supplement the *Mechanical Fire Protection Component Tests and Inspections* contained in Section B.3.12.2 of the McGuire and Catawba License Renewal Application to address fouling of the valves in the Turbine Building manual hose stations:

Monitoring & Trending
Turbine Building hose station valves within the scope of license renewal will be opened at least once every three years. The Turbine Building hose station valve tests are not governed by Selected Licensee Commitments, but will be performed by procedure.

Corrective Action and Confirmation Process
Specific corrective actions and confirmatory actions, as needed, will be implemented in accordance with the corrective action program.

Administrative Controls
The *Turbine Building Manual Hose Station Flow Test* will be implemented by plant procedures which will provide steps for performance of the activity and require documentation of the results.

To address fouling of the valves in the Turbine Building manual hose stations, the following statements will be added to the summary description of the *Fire Protection Program* in Section 18.2.8.5 of the McGuire UFSAR Supplement and Section 18.2.8.5 of the Catawba UFSAR Supplement:

> For the period of extended operation associated with license renewal, all of the hose stations in the Turbine Building within the scope of license renewal will be periodically tested as follows: Every three (3) years, open each hose station valve partially to verify no flow blockage.
>
> For McGuire, the *Turbine Building Manual Hose Station Flow Test* will be implemented following issuance of renewed operating licenses for McGuire Nuclear Station and by June 12, 2021 (the end of the initial license of McGuire Unit 1).
>
> For Catawba, the *Turbine Building Manual Hose Station Flow Test* will be implemented following issuance of renewed operating licenses for Catawba Nuclear Station and by December 6, 2024 (the end of the initial license of Catawba Unit 1).