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DUKE POWER

May 9, 1990

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

Subject: McGuire Nuclear Station, Unit 1, Docket No. 50-369
Proposed Emergency Technical Specification Amendment
4.6.1.8, Annulus Ventilation System

Gentlemen:

Pursuant to 10 CFR 50.90, find attached a proposed license amendment to facility operating license NPF-9 for McGuire Nuclear Station Unit 1. Attachment No. 1 provides: a description of the changes; a justification for the emergency revision; safety analysis for the change; and, a no significant hazards discussion; and, Attachment No. 2 provides a hand marked copy of the proposed changes.

During a Heating, Ventilation and Air Conditioning (HVAC) review at our Catawba Nuclear Station, it was discovered that the Annulus Ventilation (VE) system heaters were not conservatively sized for all postulated operating modes. During postulated low voltage conditions sufficient power is not supplied to the VE system heaters to maintain the relative humidity of the air entering the VE carbon absorber beds below 70%. As a result of this discovery, a revision to Catawba's Technical Specification (TS) was submitted on April 23, 1990. Subsequently, a review of the McGuire Nuclear Station electrical system and VE system heaters has determined the same problem exists on McGuire Units 1 and 2.

Currently, McGuire Unit 1 is scheduled to enter Mode 4 on May 11, 1990, at which time the VE system is required to be operable; therefore to preclude a last minute emergency TS revision, we request emergency approval of the attached TS revision by May 11, 1990. On Unit 2, we are currently operating at a reduced Unit 2 VE system flowrate tolerance to ensure operability; however, the reduction in normal operating margin is not desirable for long term operation, and we will submit a similar TS amendment request for Unit 2 at a later date.

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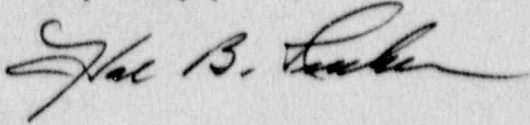
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Pursuant to 10 CFR 50.91(b)(1), the appropriate North Carolina official is also being provided a copy of this amendment request.

Should there be any questions, please contact Steve LeRoy at (704) 373-6233.

Very truly yours,



Hal B. Tucker

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Attachments

xc: Mr. S.D. Ebnetter, Regional Administrator
U.S. Nuclear Regulatory Commission, Region XI
101 Marietta Street, NW, Suite 2900
Atlanta, Georgia 30323

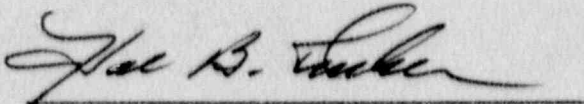
Mr. Dayne Brown, Chief
Radiation Protection Branch
Division of Facility Services
Department of Human Resources
701 Barbour Drive
Raleigh, N.C. 27603-2008

Mr. Darl Hood, NRC Project Manager
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Mr. P.K. Van Doorn
NRC Senior Resident Inspector
McGuire Nuclear Station

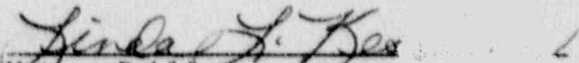
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HAL B. TUCKER, being duly sworn, states that he is Vice President of Duke Power Company; that he is authorized on the part of said Company to sign and file with the U.S. Nuclear Regulatory Commission this revision to the McGuire Nuclear Station License No. NPF-9; and, that all statements and matters set forth therein are true and correct to the best of his knowledge.



Hal B. Tucker, Vice President

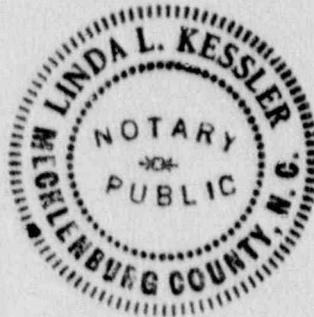
Subscribed and sworn to before me this 9th day of May 1990.



Notary Public

My Commission Expires:

May 7, 1994



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May 9, 1990

Attachment No. 1

Technical Discussion, No Significant Hazards Analysis, and
Environmental Impact Analysis

Technical Discussion

This submittal proposes amendments to the McGuire Technical Specifications (TS) that would:

- ◆ Revise TS 4.6.1.8.b.2 and 4.6.1.8.c to change the specified laboratory testing standard to ASTM D3803-86, "Test Method A" for a Methyl-Iodide penetration of less than 0.71% on Unit 1;
- ◆ Revise TS 4.6.1.8.d.5 to include a different dissipation requirement for the heaters on Unit 1; and,
- ◆ Revise the Bases, 3/4.6.1.8, Annulus Ventilation System to include a discussion regarding the testing standard, ASTM D3803-86.

During a Heating, Ventilation and Air Conditioning (HVAC) review at our Catawba Nuclear Station, it was discovered that the Annulus Ventilation (VE) system heaters were not conservatively sized for all postulated operating modes. During postulated degraded grid voltage conditions with loss of one of the two offsite power sources and all plant auxiliaries of the unit aligned to the other offsite power source through the remaining step-up transformer with a concurrent LOCA, sufficient power would not be supplied to the VE system heaters to maintain the relative humidity of the air entering the VE carbon absorber beds below 70%. As a result of this discovery, a revision to Catawba's Technical Specification was submitted on April 23, 1990. Subsequently, a review of the McGuire electrical system and VE system heaters has determined the same problem exists.

In reviewing the possible solutions to avoid an emergency TS revision, the alternatives included operating the Unit 1 VE system with reduced flow rates and compensatory surveillance requirements. Under these conditions, the VE system could potentially violate the TS required flowrates. We also considered reconfiguring the power distribution system by adding an additional transformer, or replacing the VE system heaters with higher rated heaters. Both modifications depend on the availability of the replacement parts which is currently unknown, and would require a reanalysis of the McGuire electrical distribution system, to include a possible change to the emergency diesel generator rating. These types of modifications and the analysis would prevent the restart of McGuire Unit 1 from the current refueling outage for an undetermined length of time.

Currently, on McGuire Unit 2, an operability evaluation was performed and it was determined that the VE system was operable at a reduced VE system flowrate tolerance as long as the voltage is maintained at greater than or equal to 555 volts at the VE heater terminal.

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This voltage level is ensured by monitoring the voltage at the 4160 volt bus. An evaluation with postulated degraded grid voltage demonstrated that the voltage at the VE system heater terminals will be at least 555 volts. This evaluation in addition to the degraded grid voltage included the following conditions:

- Loss of one step-up transformer with all plant auxiliary loads aligned to the remaining main step-up transformer;
- LOCA; and,
- No loss of offsite power.

The option of operating the Unit 2 VE system at the reduced flowrate tolerance along with the required voltage monitoring, has been determined not to be desirable for the long term due to the reduced operating margin. Therefore, a TS amendment request will also be submitted for Unit 2 at a later date on a non-emergency basis.

Therefore, to resolve this issue, we propose an emergency TS revision for McGuire Unit 1 which would change the testing standard for the VE system carbon to another, more restrictive, standard that is utilized for systems that don't have heaters for humidity reduction. Revising the carbon absorber test method will ensure the VE system filters maintain a decontamination efficiency of greater than or equal to 95% under all anticipated operating modes without use of the VE system heaters. Even though we would not be taking credit for the VE system heaters, the heaters would still remain in operation. While in operation, even under postulated degraded voltage, the relative humidity would not exceed approximately 85%.

In addition, and as a result of the carbon testing change, it is also necessary to change the existing TS for Unit 1 (4.6.1.8.d.5), regarding the VE system heaters power dissipation test. The existing TSs require a VE system flow of 8000 CFM +/- 10% and heat dissipation of 43KW +/- 6.4. This value would be changed to 43KW + 6.4 / -17.5. This limit is based on the consideration of a degraded voltage with a corresponding heater capacity decrease, and the entering air at 100% relative humidity and 122 degrees-F. With the heater capacity degraded by 17.5 KW (surveillance value converted to 600 volts), during a degraded voltage condition, the air entering the carbon filter would be approximately 85% relative humidity. This humidity is well below the 95% relative humidity specified by the proposed carbon test criteria, adding conservatism to the system operation.

As stated, the VE system heaters are provided to ensure the relative humidity of the air entering the VE carbon absorber beds is less than 70%. Under low voltage conditions, with the maximum TS allowed VE system flow rate of 8800 CFM, the relative humidity of the air entering the VE carbon absorber beds is postulated to exceed 70%. The proposed revision to the TS will also change the carbon absorber test method as described in Regulatory Guide 1.52 Rev 2, March 1978, Regulatory Position C.6.a to ensure the VE filters continue to have a decontamination efficiency of greater than or equal to 95% under all anticipated operating conditions.

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The proposed standard, ASTM D3803-86, "Test Method A" will require testing of carbon samples at 30 degrees-C and at 95% relative humidity for a carbon absorber bed decontamination efficiency of 95%. The methyl-iodide penetration would be changed from 1% to 0.71%. Reducing the methyl iodide penetration to 0.71% ensures a carbon absorber decontamination factor of 95%, that is assumed in the existing McGuire FSAR Dose Analysis for the VE system. The proposed methyl-iodide penetration of 0.71% instead of 1% also increases the penetration safety factor of the VE system from a factor of 5 to 7. The requirements of the new standard compensate for the reduced capacity of the VE system heaters as a result of the degraded voltage.

For the reasons described above, this change will conservatively ensure that calculated offsite and onsite doses are not adversely affected while allowing the existing 8000 cfm +/- 10% VE system flow rate.

The change to the TS Bases will describe the new ASTM D3803-86, Test Method A to be used for surveillance testing and its relation to the degraded bus voltage condition.

No Significant Hazards Analysis

Duke Power Company has determined that this amendment does not involve a significant hazards consideration.

10 CFR 50.92 states that a proposed amendment involves no significant hazards considerations if operation in accordance with the proposed amendment would not: (1) Involve a significant increase in the probability or consequences of an accident previously evaluated; or, (2) Create the possibility of a new or different kind of accident previously evaluated; or, (3) Involve a significant reduction in the margin of safety.

Operation of McGuire Unit 1 in accordance with the proposed amendment would not involve a significant increase in the probability or consequences of an accident previously evaluated. The VE system is an accident mitigation system which is designed to actuate on a high containment pressure signal. The proposed amendment would not affect this function of the system. The probability of the previously evaluated accident would remain the same. The proposed revision would introduce a new dissipation voltage and testing standard that would, under low voltage conditions, assure the VE system carbon absorbers function at a decontamination efficiency of 95% at a relative humidity up to 95%. This carbon efficiency is the same as the existing TSs; therefore, the consequences of a previously evaluated accident would not increase, but remain the same.

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Operation of McGuire Unit 1 in accordance with the proposed amendment would not create the possibility of a new or different kind of accident previously evaluated. The proposed revision makes changes to the testing requirements and VE system heater dissipation requirement to ensure the system fulfills its design function. The changes only maintain this ability and do not introduce system changes that create new failure modes; therefore, no new or different accidents are created.

Operation of McGuire Unit 1 in accordance with the proposed amendment would not involve a significant reduction in the margin of safety. The proposed change imposes a more conservative carbon testing requirement to assure the current VE carbon absorber efficiency is maintained at 95%. Although we are not taking credit for humidity reduction by the VE system heaters at a reduced capacity, the heaters, at worst case will maintain the inlet air to the VE system carbon bed at approximately 85% relative humidity; thereby, adding conservatism. The safety assumptions unchanged and remain valid. Therefore, the margin of safety in the current TSs is not reduced.

Duke concludes that the proposed changes contained in this amendment request do not involve a significant hazards consideration as defined by 10 CFR 50.92.

Environmental Impact Analysis

The proposed technical specification amendment has been reviewed against the criteria of 10 CFR 51.22 for environmental considerations. The proposed changes do not involve a significant hazards consideration, nor increase the types and amounts of effluents that may be released offsite, nor increase individual or cumulative occupational radiation exposures. Therefore, the proposed technical specification changes meet the criteria given in 10 CFR 51.22 (c)(9) for a categorical exclusion from the requirement for an Environmental Impact Statement.