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AUG 08 1985

Duke Power Company
ATTN: Mr. H. B. Tucker, Vice President
Nuclear Production Department
422 South Church Street
Charlotte, NC 28242

Gentlemen:

SUBJECT: REPORT NOS. 50-369/84-28 AND 50-370/84-25

This letter refers to your April 30, 1985 response to our Notice of Violation and Notice of Deviation issued on March 15, 1985, concerning activities authorized under NRC Operating License NPF-9 and NPF-17 for McGuire Nuclear Station, Units 1 and 2.

We have reviewed your response, which requests the severity level of Violation I be mitigated and your denial of Violation IV. Based on this review, we have concluded for the reasons presented in the enclosure to this letter that the violations occurred as stated in the Notice of Violation. Therefore, in accordance with the requirements of 10 CFR 2.201, and within 20 days of the date of this letter, please submit an additional response for Violation IV. No response is required for Violation 1.

Your response also denied Violations II, III, and V. Based on the clarification provided in your April 30, 1985 response, and subsequent telephone conversations with the Duke fire protection staff, we accept your denial. These violations have been rescinded. NRC Region II records have been revised to reflect their withdrawal.

Your response alleged that backfits would result from this enforcement action, particularly with Violations II and IV. As previously stated, Violation II has been rescinded, and after review by the Region II staff, we conclude that corrective actions to Violation IV do not meet the criteria established for determining that a plant-specific backfit, under 10 CFR 50.109, exists.

We have reviewed your responses to the deviations identified in Enclosure 2 of the subject report and find them acceptable. We will examine the implementation of your corrective actions during future inspections.

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Should you have any questions concerning this letter, we would be happy to meet with you and discuss the matter further.

Sincerely,

/S/

J. Nelson Grace
Regional Administrator

Enclosure:
Staff Evaluation of Licensee Responses
to Inspection Report Nos. 50-369/84-28
and 50-370/84-25

cc w/encl:
T. L. McConnell, Station Manager

bcc w/encl:
Document Control Desk
State of North Carolina
NRC Resident Inspector
D. Hood NRR/LB4
R. Walker
V. Brownlee
A. Herdt
T. Conlon
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M. Hunt
P. Madden
J. Axelrad, I&E

RII	RII	RII	RII	RII
PMMadden:es	TEConlon	ARHerdt	AFGibson	VLBrownlee
7/26/85	7/26/85	8/1/85	8/1/85	7/2/85

RII	RII	RII
RDWalker	GRJenkins	JAOlshinski
7/12/85	8/5/85	8/6/85

ENCLOSURE

STAFF EVALUATION OF LICENSEE RESPONSES
TO INSPECTION REPORT
50-369/84-28 AND 50-370/84-25
DATED APRIL 30, 1985

1. Request To Mitigate the Severity Level of Violation I

As of July 18, 1984, the following safe shutdown systems/components at McGuire were not provided with adequate fire protection features in order to maintain one train free from fire damage in accordance with 10 CFR 50, Appendix R, Section III.G.2.a, III.G.2.b, or III.G.2.c:

A. Cabling to the valve operators for the Safe Shutdown System (SSS) Unit 1 Turbine Driven Auxiliary Feedwater Pump (TDAFP) suction valves 1CA-161c and 1CA-162c, equipment necessary to achieve and maintain hot shutdown, did not have the required fire protection features defined in Sections III.G.2.a, III.G.2.b, or III.G.2.c. This cabling is located within the Unit 1 pipe chase and mechanical penetration room. No fire suppression system was provided in these areas.

B. Control cables for both the Unit 1 Train "A" and Train "B" pumps of the centrifugal charging and auxiliary feedwater systems, systems necessary to achieve and maintain hot shutdown, did not have the required fire protection features as defined in Section III.G.2.a, III.G.2.b, or III.G.2.c. These cables are located within the same Unit 1 Train "B" switchgear room. No fire suppression system was provided in this area.

The above Unit 1 related Appendix R deficiencies as noted by the inspection report, were discovered by Duke, reported to the NRC appropriately upon their discovery, and corrective actions were implemented. However, these deficient conditions were in violation of fire protection requirements established to protect or enable operation (i.e., lack of automatic fire suppression and/or fire barrier) of safe shutdown equipment such that a fire, if it were to occur in those areas identified above, could damage equipment to the extent that safe hot standby could not have been achieved and maintained using the equipment dedicated for this purpose. Based on the seriousness of these deficient conditions, this violation was categorized as a Severity Level III violation. Therefore, this violation does not meet the tests delineated in NRC enforcement policy, 10 CFR Part 2, Appendix C for non-issuance of a Notice of Violation. In addition, in accordance with the "General Statement of Policy and Procedure for NRC Enforcement Action," 10 CFR Part 2, Appendix C, the base civil penalty assessed for this type of violation is $50,000. In recognition of Duke Power Company's discovery of these deficient conditions, the reporting of these conditions immediately upon their discovery and the actions taken to preclude their recurrence, the civil penalty was mitigated in its entirety.

With regard to the mitigation of potential violation conditions addressed in paragraphs 9.a and 9.b(3) of the inspection report, it was assessed that the conditions met the Severity Level IV criteria of 10 CFR Part 2, Appendix C on the basis that automatic fixed fire suppression was provided for both the Unit 2 related turbine driven and motor driven auxiliary feedwater pump rooms. Thus, the conditions described in paragraphs 9.a and 9.b(3) of the inspection report are not similar to the conditions of the corresponding Unit 1 areas identified by Violation I.

In summary, we conclude that the violation, as cited in the Notice of Violation, will remain as a Severity Level III violation.

Given that there are specific requirements, this is not a plant-specific backfit issue.

2. Acceptance of Licensee's Denial of Violation II

As of July 18, 1984, the following circuits were identified as having a common power source with shutdown equipment and the power source was not properly electrically protected from the circuit of concern or protected in accordance with 10 CFR Part 50, Appendix R, Section III.G.2 in that they lacked circuit breaker and/or fuse coordination:

A. 125 VDC control power for Centrifugal Charging Pumps CCPA or CCPB from panels EVDA or EVDD, respectively.

B. 600 VAC power supply for auxiliary feedwater supply Motor Operated Valves (MOVs) CA46B, CA50B, CA54AC, and CA58A.

C. 600 VAC power supply for PORV block valves MOVINC31B and MOVINC35B.

D. 600 VAC power supply for RHR isolation valve MOVINDIB.

E. 600 VAC power supply for Turbine Driven Auxiliary Feedwater Pump (TDAFP) Suction valve CA7A.

F. 600 VAC power for nuclear service valve RN16B (sic. - RN-162B).

G. 600 VAC power for Volume Control Tank (VCT) outlet valves NV141A and NV142B.

H. 600 VAC power for Component Cooling Pump (sic. - Centrifugal Charging Pump) (CCP) suction valves for RWST NV221A and NV222B.

We have reviewed your denial of the above alleged violation and with regard to the normal shutdown systems, your response indicated that the lack of fuse/breaker coordination existed for the examples cited. In addition, your response indicated that only one train of the two normal shutdown systems would be affected by the lack of electrical protection and that the unaffected shutdown train could be utilized to achieve and maintain hot standby conditions. We have reviewed your associated circuit report and

conclude that these cases were analyzed in detail. The following summarizes the results of your analysis with regard to the fuse/breaker coordination deficiencies identified in the violation:

A. For cases specifically cited in Items B, D, E, and G, the valve is already in the required shutdown position during plant operation, is not subject to spurious operation, and, therefore, motive power or subsequent operator action is not required.

B. For other cases cited in Items A, C, F, and H, adequate time is available for operator action, procedures were provided to operations personnel, and manpower availability verified.

In addition, further discussions with your staff have clarified that the redundant circuits cited in the violation were separated and routed through different fire areas. The RHR isolation valves are made inoperable during normal operation by opening their respective power breakers. The PORV block valves are a defense-in-depth measure to back up the PORVs which have power removed when a reactor trip occurs. The PORVs fail closed on a loss of power. Based on your response to this violation and our subsequent discussions with your staff, the information presented appears to be adequate with respect to satisfying the requirements of Appendix R associated circuit common bus and spurious signal concerns. Therefore, we have withdrawn the subject violation.

3. Acceptance of Licensee's Denial of Violation III

Unit 1 Operating License Section 2.c.(4) and Unit 2 Operating License Section 2.c.(7) require the licensee to fully implement and maintain, in effect, all provisions of the approved fire protection plan. The approved fire protection plan includes the McGuire Nuclear Station Fire Protection Review, Revision September 1982. Section F.11 of the referenced document, Safety-Related Pumps, indicates that redundant safety-related pumps are separated by fire barriers and that automatic fire detection with alarm and annunciation is provided in the control room.

Contrary to the above, at the time of this inspection, the following safety-related pumps identified in Appendix C of the McGuire Nuclear Station Fire Protection Review were not separated by a fire barrier.

A. Recycle Evaporator Feed Pumps, Room 620
B. Waste Drain Tank Pumps, Room 639
D. Boron Injection Recirculation Pumps - Unit 2, Room 788
D. Boron Injection Recirculation Pumps - Unit 1, Room 730
E. Fuel Pool Cooling Pumps - Unit 1, Room 816
F. Fuel Pool Cooling Pumps - Unit 2, Room 829

In addition, the following safety-related pumps were not provided with automatic fire detection capabilities:

A. Recycle Evaporator Feed Pumps, Room 620
B. Waste Drain Tank Pumps, Room 639
C. Fuel Pool Cooling Pumps - Unit 1, Room 816
D. Fuel Pool Cooling Pumps - Unit 2, Room 829

In your response to the above alleged violation, you state that the pumps noted in Items A - F are only classified safety-related due to their existence in an ASME Section 3 system maintaining pressure boundary. With the exception of the Fuel Pool Cooling Pumps, these pumps do not receive blackout or 1E power. The pumps do not provide a safe shutdown function and are not needed for mitigation of an accident, nor are they required for the safe shutdown of the plant.

We have reviewed Section F.11 and Appendix C of the McGuire Nuclear Station Fire Protection Review and conclude that Appendix C (Fire Hazards Analysis) clearly defines where fire barriers and detectors are provided and that a fire which causes damage to both redundant trains of the subject pumps would not impact the plant's ability to achieve and maintain safe shutdown condition. Therefore, the provisions of fire barriers and detectors for the subject pumps would not improve the safe shutdown capabilities of the plant.

By letter dated November 30, 1984, from H. B. Tucker to J. P. O'Reilly, you committed to update the McGuire Fire Protection Review by October 1, 1985. It is our understanding, as a part of this revision, Section F.11 will be revised to indicate that only those pumps required for safe shutdown will be separated by fire barriers and will have fire detectors. In addition, it is our understanding that the proposed October 1, 1985, revision to the McGuire Fire Protection Review will be submitted to the NRC for review.

Therefore, on the basis of the information you have presented in your response, we have withdrawn the subject violation.

4. Denial of Violation IV

Duke Power's corrective actions taken for the deficiencies identified by the June 1, 1984 Nonconformance Report and Violation 1, as discussed above, consisted of the installation of fire rated barrier enclosures for valves 2CA-161C, 2CA-162C, 1CA-161C, 1CA-162C and their associated cables.

10 CFR Part 50, Appendix R, Section III.G.2.a specifically states that for these fire barriers - "Structural steel forming a part of or supporting such fire barriers shall be protected to provide fire resistance equivalent to that required of the barrier."

At the time of the inspection, the structural steel members supporting the following fire barrier assemblies were not protected at McGuire with a fire proofing material which had a fire resistive rating equivalent to that of the fire barrier assembly in that:

A. A one-hour fire barrier enclosure for valves 2CA-161C and 2CA-162C and associated cabling was not sufficient in that the structural steel members supporting the fire barrier were not protected to assure a one-hour fire rating as required by Section III.G.2.c.

B. Valves 1CA-161C and 1CA-162C and portions of their associated cabling are enclosed in a three-hour rated fire barrier. However, the structural steel members supporting the fire barrier were not protected to assure a three-hour fire rating as required by Section III.G.2.a.

In the attachment to your April 30, 1985 letter, you provide an explanation for denying the above alleged violation. In your explanation you reference the May 7, 1984 Regional Workshop and Enclosure 1, Interpretations of Appendix R, which was distributed to the Region II licensees during the workshop. In your response you specifically reference the fire area boundary criteria identified in Item 5 of Enclosure 1 as the basis for your denial of the violation. However, the fire area boundary evaluation criteria addressed in Item 5 is not specifically related to maintaining one train of safe shutdown systems free from fire damage. Enclosure 1, Item 3, Fire Damage states, "In promulgating Appendix R, the Commission has provided methods acceptable for assuring that necessary structures, systems and components are free of fire damage (see e.g., Sections III.G.2.a, b and c), that is the structure, system or component under consideration is capable of performing its intended functions before, during and after the postulated fire, as needed." In addition, Enclosure 2, Questions Raised During The Nuclear Utility Fire Protection Seminar, question Category II, Structural Steel, response to Question B states, "exposed steel, such as cable tray supports, need to be protected if their failure, because of a fire, would result in the loss of the integrity of the fire barrier."

In your response, you also indicated that the need to protect the subject cables was determined in June and July 1984, and based on the information provided in the Regional Appendix R Workshop and Attachment 1 to all licensees subject to Appendix R to 10 CFR 50, dated March 3, 1984, Enclosure 1, your staff determined, utilizing the fire area boundary evaluation criteria, that fire proofing of the structural steel cable tray supports was not required. During the inspection the inspectors reviewed the fire test documentation for the raceway fire barrier assemblies and your fire area boundary evaluations for the subject areas. The fire test report which documents the test results for the one-hour raceway fire barrier designs qualified the fire barrier enclosure materials ability to protect approximately 12 feet of electrical raceway supported by the fire resistive furnace walls. Therefore, this test did not qualify a protected raceway

span which exceeds 12 feet between fire resistive raceway supports. In addition, the inspectors reviewed the fire area boundary evaluations for the Unit 2 motor driven auxiliary feedwater pump room and Unit 1 mechanical pipe chase. These evaluations did not consider the May 7, 1984 Regional Fire Protection Workshop guidance provided to Region II licensees in Enclosure 1, Item 3 criteria for maintaining one train of safe shutdown systems free from fire damage, Enclosure 2, Question Category II, Question B, protection of structural steel supports supporting cable trays and the defense-in-depth fire protection engineering principles provided in NUREG 0800, Standard Review Plan 9.5.1 Fire Protection Program.

Defense-in-Depth Principle C stipulates that plant safety systems should be designed in such a manner that if a fire that gets started, in spite of the fire prevention program, and burns for a considerable time, in spite of the fire protection activities, the fire will not prevent essential plant safety functions from being performed. In your response to the subject violation, you indicated that the potential fire severity based on all in-situ combustible materials in the Unit 2 motor driven auxiliary feedwater pump room to be approximately twelve minutes and about nine minutes in the Unit 1 mechanical pipe chase. This equates to a temperature of approximately 1325°F and 1240°F, respectively, when compared to the ASTM-E119 standard time temperature curve. This appears to be consistent with your fire area boundary evaluations for the subject areas; however, your evaluation did not consider, in spite of the fire protection activities, the effects of a fire which is not effectively controlled or suppressed. Since structural steel begins to lose its structural integrity when exposed to temperatures of 1000°F for about five minutes, the potential exists in the Unit 2 auxiliary feedwater pump room and Unit 1 mechanical pipe chase that a fire could cause structural deformation to the steel supports supporting the protected raceway in the subject areas. Therefore, the failure of the steel supports could lead to the failure of the raceway fire barrier assembly and could potentially cause both redundant trains of safe shutdown systems to sustain fire damage.

We conclude that the fire protection features required by 10 CFR 50, Appendix R, Section III.G.2 have not been fully implemented in the Unit 2 motor driven auxiliary feedwater pump room and Unit 1 mechanical pipe chase.

Furthermore, our review indicates that by letter dated January 9, 1981, Duke committed to implement three issues, Section III.O, Section III.J., and Section III.G., identified in Appendix R to 10 CFR 50. This commitment is reflected in Supplement No. 5 to the SER dated April 1981. Supplement No. 6 to the SER states that additional licensee information concerning Sections III.G., III.J., and III.O., was reviewed and no deviations to these requirements were identified.

Additionally, these issues were reflected in the license conditions for the plant. Therefore, based on the above, we conclude that the corrective action to Violation IV is not a plant-specific backfit issue.

5. Acceptance of Licensee's Denial of Violation V

Contrary to the above, at the time of this inspection, the following plant areas were identified as not having adequate emergency lighting in accordance with the requirements of Appendix R Section III.L:

A. Several lighting units in the Unit 1 interior doghouse were mounted behind concrete columns, piping, and other similar structures and/or components which eliminated their effectiveness to illuminate access ladders to safety shutdown valves.

B. No 8-hour, battery-powered lighting units were provided for the Unit 1 and Unit 2 corridor 908 which provides a portion of the access and egress route between the main control room and the Standby Shutdown Facility.

In your response to the above alleged violation, you indicated that in the Unit 1 interior doghouse there are two battery-powered lighting units on elevation 767 which illuminate the path from the entrance door to a ladder which operators may need to access in order to operate safe shutdown valves.

In addition, you indicated that in order to enhance the lighting in the area of the ladder, a plant modification will be made to reposition a bulb of lighting Unit 20T.

In further discussions with your staff regarding the emergency lighting discrepancy associated with corridor 908, it was determined that the double non-fire rated doors at the end of the subject corridor have been removed. Your staff indicated that this was done in order to enhance the existing emergency lighting and provide assurance that the corridor would be adequately lighted.

Therefore, on the basis of the information you have presented in your response and the subsequent discussions with your staff, we have withdrawn the subject violation.