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April 30, 1985

Dr. J. Nelson Grace, Regional Administrator
U.S. Nuclear Regulatory Commission
Region II
101 Marietta Street, NW, Suite 2900
Atlanta, Georgia 30323

Subject: McGuire Nuclear Station
Docket Nos. 50-369 and 50-370

Reference: RII:MDH
NRC/OIE Inspection Report 50-369/84-28
and 50-370/84-25

Dear Dr. Grace:

Pursuant to 10 CFR 2.201, please find attached a response to Violations I (50-369/84-28-11), II (50-369/84-28-03, 50-370/84-25-03), III (50-369/84-28-07, 50-370/84-25-07), IV (50-369/84-28-10, 50-370/84-25-10), and V (50-369/84-28-04, 50-370/84-25-04); along with a response to Deviations 1 (50-369/84-28-05, 50-370/84-25-05) and 2 (50-369/84-28-09, 50-370/84-25-09), all of which were identified in the above referenced inspection report. Note that Duke Power Company is denying violations II, III, IV, and V. The reasons for the denials as well as comments relative to the application of the Enforcement Policy have been included in our responses to the alleged violations. In addition, note that as indicated in the inspection report, Violation VI (50-369/84-28-01, 50-370/84-25-01) will be handled via separate correspondence.

With regard to the specific violations alleged in the Notice of Violation, Duke would like to make a number of preliminary observations regarding this enforcement action. First, Duke believes that the Staff is in effect imposing a number of backfits through this enforcement action. This is particularly the case with Violations II and IV alleged by NRC. Duke believes that doing so through the enforcement process is inconsistent with the spirit if not the letter of recent backfitting management initiatives undertaken by NRC to improve its management oversight of the backfitting process (Ref. Generic Letter 84-08, Interim Procedures for NRC Management of Plant-Specific Backfitting, April 4, 1984. Second, Duke notes for the record that the Staff has failed to reflect fully McGuire Unit 1 License Condition 2.C(4) and McGuire Unit 2 License Condition 2.C(2) in its summary of those conditions in the Notice of Violation.

IE01

The McGuire Unit 1 License Condition states as follows:

> "The licensee shall maintain in effect and fully implement all provisions of the approved fire protection plan and the NRC staff's McGuire Safety Evaluation Report Fire Protection Review in Supplement No. 2 to the McGuire Nuclear Station Safety Evaluation Report, dated March 1979. Duke Power Company shall comply with Sections III.G., Fire Protection of Safe Shutdown Capability, including Section III.L, Alternative and Dedicated Shutdown Capability, as appropriate; . . . " (emphasis added)

Similarly, the McGuire Unit 2 License Condition states that:

> "The licensee shall fully implement and maintain in effect all provisions of the approved fire protection plan as amended in September 1982 and the Fire Protection Review in Supplement No. 5 to the McGuire Nuclear Station Safety Evaluation Report, dated March 1979. Prior to March 1, 1984, the licensee shall meet the technical requirements of Sections III.G., Fire Protection of Safe Shutdown Capability, including Section III.L, Alternative and Dedicated Shutdown Capability, as appropriate; . . . " (emphasis added)

Duke believes that the phrase "as appropriate" is a critical element of the license conditions which should have been reflected in the summary of those provisions set forth in the Notice of Violation.

Duke Power Company does not consider any information contained in this report to be proprietary.

Very truly yours,

H.B. Tucker /BH

Hal B. Tucker

PBN:smh

Attachment

cc: Mr. W. T. Orders
Senior Resident Inspector - NRC
McGuire Nuclear Station

DUKE POWER COMPANY
MCGUIRE NUCLEAR STATION

Response to NRC/OIE Inspection Report 50-369/84-28 and 50-370/84-25

Violation I; 50-369/84-28-11, Severity Level III (Supplement I):

Unit 1 Operating License Section 2.c.(4) specified that the McGuire Nuclear Station shall comply with the requirements of 10 CFR Part 50, Appendix R, Section III.G., Fire Protection of Safe Shutdown Capability. Section III.G.2 requires that redundant trains of systems necessary to achieve and maintain hot shutdown conditions be maintained free from fire damage by providing fire protection features in accordance with Sections III.G.2.a, III.G.2.b, or III.G.2.c.

Contrary to the above, as of July 18, 1984, the following safe shutdown systems were not provided with adequate fire protection features to satisfy the requirements set out above:

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.

Response:

1. Admission or denial of the alleged violation:

   Duke Power Company agrees that the alleged violation occurred as stated. Details of action taken and safety implications are contained in Duke letter dated August 2, 1984, to NRC/RII. However, as noted in the Inspection Report, these alleged violations were discovered by Duke, reported immediately upon its discovery, and decisive action was taken to preclude recurrence. In recognition of this, NRC has mitigated the civil penalty that could have been assessed. Duke believes that the categorization of these alleged violations as Severity Level III should be withdrawn by NRC.

   The NRC Enforcement Policy identifies Severity Level III violations as cause for significant concern. In our August 2, 1984 letter to NRC regarding these incidents, Duke addressed the safety significance of the incidents. (Additionally, safety evaluation information provided in

Duke letter dated June 1, 1984 to NRC/RII with regard to loss of automatic switchover capability of the Unit 2 TDAFP suction valves applies similarly for Unit 1.) Duke requests NRC reconsider the merits of identifying this alleged violation as Severity Level III in view of the information provided, as well as the fact that the potential civil penalty was fully mitigated. Further, Duke believes that the alleged violations should not have been cited (as was the case with other similar conditions - ref. Paragraphs 9.a and 9.b(3) of the inspection report) in that they meet the tests delineated in NRC Enforcement Action Policy, 10CFR Part 2, Appendix C for Non-Issuance of a Notice of Violation; i.e., (1) were identified by Duke, (2) fits in Severity Level IV or V (assuming NRC agreement with Duke's above Severity Level III position), (3) Duke reported them, (4) appropriate corrective actions were taken, and (5) they could not have been prevented by corrective action for a previous violation.

2. Reasons for the violation if admitted:

   The alleged violation occurred due to design deficiency.

3. Corrective steps which have been taken and the results achieved:

   Cables for motor operators of valves 1CA-161c and 1CA-162c in the Mechanical Pipe Chase and control cables for the Unit 1 Train "A" and "B" Centrifugal Charging and Auxiliary Feedwater Pumps in the Unit 1 Train "B" switchgear room have been wrapped with a three-hour fire rated insulating material.

4. Corrective steps taken to avoid further violations:

   When the subject arrangement was discovered during an internal review, Duke conducted a complete review of all cables where separation per Appendix R, Section III.G.2 is required to assure safe shutdown capability is not affected by a single fire. This review assures that other similar arrangements do not exist at McGuire.

5. Date when full compliance will be achieved:

   Full compliance was achieved on September 28, 1984.

Violation II; 50-369/84-28-03, 50-370/89-25-03,Severity Level IV (Supplement I):

Unit 1 Operating License Section 2.c.(4) and Unit 2 Operating License Section 2.c.(7) specify that the McGuire Nuclear Station shall comply with the requirements of 10 CFR Part 50, Appendix R, Section III.G., Fire Protection of Safe Shutdown Capability. Section III.G.2 requires that protection shall be provided in accordance with III.G.2.a., III.G.2.b, and III.G.2.c where cables or equipment, including associated non-safety circuits, could prevent operation or cause the faulty operation due to hot shorts, open circuits or shorts to ground of redundant trains of systems necessary to achieve and maintain hot shutdown conditions.

Contrary to the above, at the time of this inspection, 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.

Response:

1. Admission or denial of the alleged violation:

   Duke Power Company denies the alleged violation.

2. Reasons for the violation if admitted:

   As part of Duke's Appendix R effort, an associated circuits review, including fuse/breaker coordination studies, of the normal and dedicated (i.e, standby) shutdown systems was performed. With regard to the standby shutdown system, this analysis verified that the standby shutdown power supply and distribution system is properly coordinated, thus insuring the capability to achieve and maintain hot shutdown in selected plant areas.

The cited regulation discusses a cause and effect relationship; the cause being hot shorts, open circuits, or shorts to ground and the effect being an inability to achieve and maintain hot shutdown conditions.

Duke considers that McGuire is in compliance in that even though a lack of electrical protection exists for the examples cited, the loss of power to these components does not preclude the operator's ability to reach and maintain hot shutdown condition, using actions previously found to be acceptable by NRC.

With regard to the normal shutdown systems, a few isolated cases of lack of fuse/breaker coordination were discovered for areas where one of the two normal shutdown systems could be utilized to achieve and maintain hot shutdown. These cases were analyzed in detail and the analysis was provided in the associated circuits report. Important features of this analysis include:

1) The fact that SECY-83-269 Attachment 2, NRC Staff Position on Allowable Repairs, allows for manual breaker and valve operations and does not call this a "repair procedure,"

2) For a given fire area, normal controls would most likely be available, but if not a minimum amount of additional operator manual action would be required,

3) 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.

4) For the 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 summary, the ability to achieve and maintain hot shutdown utilizing the normal shutdown systems for selected plant areas is assured. Additionally, off-site power, main feedwater, and charging from the reciprocating charging pump is expected to be available, providing additional depth to the plant's capability to shutdown during and following a fire.

3. Corrective steps which have been taken and the results achieved:

No actions are considered justified in response to this alleged violation.

4. Corrective steps which will be taken to avoid further violations:

None are anticipated.

5. Date when full compliance will be achieved:

Not applicable.

Violation III; 50-369/84-28-07, 50-370/84-25-07, Severity Level IV (Supplement I):

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 Nuc' :r Station Fire Protection Review are not separated by a fire barrier:

A. Recycle Evaporator Feed Pumps, Room 620
B. Waste Drain Tank Pumps, Room 639
C. 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

Response:

1. Admission or denial of the alleged violation

   Duke Power Company denies the alleged violation.

   Duke requests that NRC reconsider the merits of citing this condition as a Severity Level IV violation. NRC Enforcement Policy states that Level IV violations are of more than minor concern - if left uncorrected, they could lead to a more serious concern. This alleged violation is in fact an editorial misunderstanding. When the document is reviewed in total, along with the consideration of the safety significance of the components listed, it is clear what actual fire protection features are required. There is no safety concern associated with the error and no hardware changes are justified.

2. Reasons for the violation if admitted:

   Duke Power Company submits the following explanation for denying the alleged violation:

The pumps noted above (Items A-F) as identified in Appendix C of the McGuire Nuclear Station Fire Protection Review are only classified safety-related due to their existence in an ASME Section 3 system for maintaining pressure boundary. With 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.

The NRC inspector's basis for citing this violation is due to editorial interpretations. Although Section F.11 of the Fire Protection Review makes a general statement regarding barriers and detectors, Appendix C (Fire Hazards Analysis) clearly defines where fire barriers and detectors are provided. Further, it is obvious that this equipment is not needed for safe shutdown and need not be protected from fire.

Provision of fire barriers and detectors for the reference pumps would not improve the safe shutdown capability of the station.

This item has been identified as one of several changes which are desired to bring the McGuire Fire Protection Review document up to date. (As additional information, the Boron Injection Recirculation Pumps have been removed.)

3. Corrective actions which have been taken and the results achieved:

   The cause of this misunderstanding will be resolved by the subject document update. No corrective action is necessary.

   By letter dated November 30, 1984 from H B Tucker to J P O'Reilly, Duke committed to update the Fire Protection Review by October 1, 1985. As part of this revision, reference will be made that only pumps required for safe shutdown will be separated by fire barriers and will have detectors.

4. Corrective steps which will be taken to avoid further violations:

   None are considered necessary.

5. Date when full compliance will be achieved:

   Upon submittal of the above document.

Violation IV; 50-369/84-28-07, 50-370/84-25-07, Severity Level IV (Supplement I):

Unit 1 Operating License Section 2.c.(4) and Unit 2 Operating License Section 2.c.(7) specify that the McGuire Nuclear Station shall comply with the requirements of 10 CFR Part 50, Appendix R, Section III.G., Fire Protection of Safe Shutdown Capability. Sections III.G.2.a and III.G.2.c require that structural steel members forming a part of or supporting fire barriers be provided with fire resistance equivalent to that of the fire barriers to which such members form a part of or support; that is, three hours or one hour, respectively.

Contrary to the above, as of this inspection, the structural steel members supporting the following items did not meet the applicable fire resistive rating:

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 are not protected to assure a three-hour fire rating as required by Section III.G.2.a.

Response:

1. Admission or denial of the alleged violation:

   Duke Power Company denies the alleged violation.

2. Reasons for the violation if admitted:

   Duke Power Company submits the following explanation for denying the alleged violation:

   On May 7, 1984, a Regional Workshop was conducted in Atlanta, Georgia to clarify staff interpretations of certain Appendix R provisions. At the workshop draft interpretations of specific issues were provided. Enclosure 1, Item 5 Fire Area Boundaries, states "The term fire area as used in Appendix R means an area sufficiently bounded to withstand the hazards associated with the area and as necessary, to protect important equipment within the area from a fire outside the area. In order to meet the regulation, fire area boundaries need not be completely sealed floor-to-ceiling, wall-to-wall boundaries. Where fire area boundaries were not approved under the Appendix A process, or where such boundaries are not wall-to-wall, floor-to-ceiling boundaries with all penetrations sealed to the fire rating required of the boundaries, licensees must perform an evaluation to access the adequacy of fire area boundaries in their plants to determine if the boundaries are sufficient."

The need to protect the subject cables was determined in June and July 1984, respectively. At that time, using information presented at the Regional Workshop in May, Duke conducted an engineering evaluation of Unit 2 Motor Driven Auxiliary Feedwater Pump room and Unit 1 Mechanical Pipe Chase.

In the Unit 2 Motor Driven Auxiliary Feedwater Pump room, combustible loading in the vicinity of 2CA161c and 2CA162c was determined to be very light consisting primarily of motor operated valve cable with exposed plastic insulation. Duke has calculated potential fire severity, based on all in-situ combustible material in the room to be less than 12 minutes. This is extremely conservative since these combustible materials are distributed throughout the room. The bay in which cables are wrapped (BB-CC 61-62) has very few cables with exposed plastic insulation. An automatic sprinkler system is provided in the room with sprinkler heads rated at 212° F. Since structural steel does not begin to lose structural integrity until exposed to temperatures in excess of 1000° F for about 5 minutes, operation of the sprinkler system will assure that the subject cable tray supports are not affected by fire.

In the Unit 1 Mechanical Pipe Chase, Duke reviewed combustible loading, administrative controls of transient combustibles, lack of potential ignition source and room volume/geometry as described above. Based on in-situ combustible loading in the area of the subject cables and for one bay in each direction, Duke calculated potential fire severity as described above and determined potential fire severity to be about 9 minutes. Again, this is extremely conservative because the pipe chase is a large open area with ceiling height of about 35 feet so that, if the combustible material was involved in fire, heat would rise and disperse throughout the room rather than concentrate at the cables.

Additionally, safety evaluation information with regard to loss of automatic switchover capability of the Unit 2 TDAFP suction valves (which applies similarly for Unit 1), as well as a postulated fire in the Unit 2 MDAFP room, was provided in Duke letter dated June 1, 1984, to NRC/R II.

Based on these evaluations and information provided in Regional Appendix R Workshop and Attachment 1 To All Licensees Subject to Appendix R to 10CFR50, dated March 3, 1984, Enclosure 1, Duke determined that fire insulating material was not required on the subject cable tray supports. In addition, the NRC fire protection policy steering committee issued Draft Generic Letter on fire protection in January 1985. Enclosure 3, Interpretation of Appendix R, Item 4, Fire Boundaries, restated the option for Engineering assessment to determine adequacy of fire barriers. Appendix R, Questions and Answers, Question 3.3.4 discusses cable tray supports and restates that an exemption is not required but test documentation and engineering evaluations must be available for review.

Since the commission has not yet acted on the Draft Generic Letter, this violation should be withdrawn and revisited when the commission action is finalized.

3. Corrective steps which have been taken and the results achieved:

   No corrective actions are considered justified at this time.

4. Corrective steps which will be taken to avoid further violations:

   None.

5. Date when full compliance will be achieved:

   McGuire is considered to be in full compliance.

Violation V; 50-369/84-28-07, 50-370/84-25-07, Severity Level V (Supplement I):

Unit 1 Operating License Section 2.c(4) and Unit 2 Operating License Section 2.c.(7) specify that the McGuire Nuclear Station shall comply with the requirements of 10 CFR Part 50, Appendix R, Section III.J., Emergency Lighting, except for certain approved exemptions. Section III.J requires emergency lighting units with at least an 8-hour battery power supply to be provided in all areas needed for operation of safe shutdown equipment and in access and egress routes thereto.

Contrary to the above, at the time of this inspection, the following plant areas were identified as not having adequate emergency lighting:

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.

Response:

1. Admission or denial of the alleged violation:

   Duke Power Company acknowledges that the arrangement was generally as stated but denies the alleged violation.

2. Reasons for the violations if admitted:

   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. (Duke agrees to enhance illumination of the subject ladder by repositioning a bulb of one lighting unit, 20T around column FF53.)

   Corridor 908 provides a path from the control room to turbine buildings of each unit. The corridor is about 24 feet long with an unobstructed path from the control room to double doors on the far end. The doors were normally propped open, in which case, the entire area is illuminated by battery powered lighting units. Should the double doors be closed, an operator moving through the corridor would only need to proceed in a direct path for 24 feet to exit the corridor and enter the illuminated area.

   In addition, dedicated, battery powered portable lighting units are maintained in the control room for use in the event that a fire and coincidental, simultaneous loss of off-site power were to occur which necessitated operation of the Standby/Shutdown System. Thus, an operator leaving the control room for the Standby/Shutdown Facility would have a dedicated lighting device in his possession when he passed through corridor 908.

3. Corrective steps which have been taken and results achieved:

   No corrective steps are considered necessary.

4. Corrective steps which will be taken to avoid further violations:

   No corrective steps are considered necessary.

5. Date when full compliance will be achieved:

   McGuire is considered to be in full compliance.

Deviation 50-369/84-28-05, 50-370/84-25-05:

Duke Power Company's letters of November 18, 1983 and February 20, 1984 to the NRC committed to provide battery-powered hand lanterns in the control room to be used in emergency situations by the plant operators.

Contrary to the above, at the beginning of this inspection, no battery-powered hand lanterns were provided in the control room.

Response:

The battery powered hand lanterns were provided to the control room (as indicated in the inspection report) on September 28, 1984. Further deviations will be avoided by ensuring items are identified on Duke Power's NRC commitment index as applicable.

Deviation 50-369/84-28-09, 50-370/84-25-09:

Duke Power Company's letter of December 14, 1982 to the NRC committed to providing portable radios for communications between the Standby Shutdown Facility and the auxiliary feedwater local control stations.

Contrary to the above, at the beginning of this inspection, direct radio communication could not be established between the Standby Shutdown Facility and the auxiliary feedwater local control stations due to transmission interferences caused by plant structures. Therefore, the radios were nonfunctional.

Response:

A modification will be made by January 1, 1986 to the existing security radio communications system to provide a portable radio system that will provide communication capability between all required locations.