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SAFETY EVALUATION BY THE  
OFFICE OF NUCLEAR REACTOR REGULATION  
RELATED TO AMENDMENT NO.10  
TO LICENSE NPF-9  
DUKE POWER COMPANY

INTRODUCTION

By letters dated November 11, 1981 and December 16, 1981, the licensee requested changes to the McGuire Nuclear Station Unit 1, License NPF-9, License Conditions:

- (a) 2.C.(11)f.(1) - Inadequate Core Cooling Instruments (II.F.2); reactor vessel water level instrumentation system
- (b) 2.C.(11)f.(3) - Inadequate Core Cooling Instruments (II.F.2); in-core thermocouple monitoring system.
- (c) 2.C.(11)l.(2) - Final Recommendations of B & O Task Force (II.K.3); revised small break LOCA model (II.K.3.30)

The proposed changes involve extending the required implementation dates for three NUREG-0737 condition items.

EVALUATION

Pursuant to the TMI-related action items described in NUREG-0737, "Clarification of TMI Action Plan Requirements" which were approved by the Commission for implementation, the McGuire Unit 1 operating license is conditioned to the extent that the aforementioned license conditions each have a January 1, 1982 implementation date.

Condition (a)

In its letter of November 11, 1981, requesting a change in the license condition implementation date from January 1, 1982 to prior to startup after the first refueling, the licensee stated that considerable effort has been taken to install the Westinghouse Reactor Vessel Level Instrumentation System (RVLIS). All installation work not requiring shutdown of the unit has been completed. During the recent unscheduled outage which commenced in early December, vacuum fill and hydraulic balancing of the system was started. The final installation and check-out of the system will, however, require an additional outage period of approximately 6 weeks. It is not anticipated that such an outage during the near term will be available. Based on the licensee's efforts to date we consider that the licensee has made good faith efforts to meet the schedule date of January 1, 1982.

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The staff has not yet completed its review of the design of the Westinghouse level system. Also the staff has previously evaluated this matter and granted a similar extension to the Sequoyah Nuclear Station Unit 2 to install the RVLIS prior to startup after the first refueling. The staff does not consider the requested extension to represent a safety concern and is consistent with the decision already accepted by the Commission.

Condition (b)

By letter dated December 16, 1981, the licensee requests a change in the license condition implementation date from January 1, 1982 to prior to startup after the first refueling. This condition requires the incore thermocouple system to meet a revised set of design criteria in the areas of performance, qualification and operator interface. In a letter to the NRC on April 23, 1981, the licensee provided its assessment of the installed thermocouple system and stated its intent to pursue development of a thermocouple system which would meet the criteria in NUREG-0737. Toward this end the licensee has completed the following:

- (1) Requested a proposal from Westinghouse for an upgraded system
- (2) Evaluated the separation of thermocouple cables for compliance with 10 CFR 50 Appendix R (Ref: Licensee letter dated October 21, 1981 to the NRC)
- (3) Evaluated the survivability of the cables associated with the incore (core exit) thermocouples (Ref: "Analysis of Hydrogen Control Measures at McGuire Nuclear Station", Section 5.0, submitted to the NRC on October 31, 1981.)
- (4) Increased the range of the backup display to 2300 F from the original 700 F.

A final design has yet to be developed by Westinghouse as a resolution to this generic requirement. Based on the licensee's efforts to date we consider that the licensee has made good faith efforts to meet the schedule date of January 1, 1982. Although the staff has yet to evaluate the submitted information, it has no basis to rescind its approval of the thermocouple monitoring system as presently installed at McGuire and concludes that deferral of the required implementation date will not result in a reduction in safety. As in the case of Condition (a), we have granted a similar deferral to the Sequoyah Nuclear Station, Unit 2 and this action is consistent with the decision already accepted by the Commission.

Condition (c)

This condition requires that the analysis methods used by Westinghouse for small-break LOCA analysis for compliance with Appendix K to 10 CFR Part 50 be revised

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documented, and submitted for NRC approval. By letter dated December 16, 1981, the licensee requests a change in the license condition submittal date from January 1, 1982 to May 1, 1982.

In its letter of December 16, 1981, the licensee states that the small-break LOCA analysis model currently approved by the NRC for use on McGuire Nuclear Station is conservative and in conformance with Appendix K to 10 CFR Part 50. However, (as documented in letter NS-TMA-2318, dated September 26, 1980, T. M. Anderson to D. G. Eisenhower) Westinghouse believes that improvement in the realism of small-break calculations is a worthwhile effort and has committed to revise its small-break LOCA analysis model to address NRC concerns (e.g. NUREG-0611, NUREG-0623, etc.) requiring further analysis. This revised Westinghouse model is currently scheduled for submittal to the NRC by April 1, 1982 as documented in letter NS-EPR-2524, dated November 25, 1981, E. P. Rahe to D. G. Eisenhower. Based upon the licensee's efforts to date we consider that the licensee has made good faith efforts to meet the schedule date of January 1, 1982.

Until the staff has evaluated the revised model it has no basis to rescind its approval of the current model and concludes that deferral of the required implementation date will not result in a reduction in safety. As in the previously discussed Conditions, we have granted a similar deferral to the Sequoyah Nuclear Station Unit 2.

#### ENVIRONMENTAL CONSIDERATION

We have determined that the amendment does not authorize a change in effluent types or total amounts nor an increase in power level and will not result in any significant environmental impact. Having made this determination, we have further concluded that the amendment involves an action which is insignificant from the standpoint of environmental impact and, pursuant to 10 CFR Section 51.5(d)(4), that an environmental impact statement or negative declaration and environmental impact appraisal need not be prepared in connection with the issuance of this amendment.

#### CONCLUSION

We have concluded, based on the consideration discussed above, that: (1) because the amendment does not involve a significant increase in the probability or consequences of accidents previously considered and does not involve a significant decrease in a safety margin, the amendment does not involve a significant hazards consideration, (2) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, and (3) such activities will be conducted in compliance with the Commission's regulations and the issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public.

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The proposed changes involve extending the required implementation dates for three NUREG-0737 condition items.

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Pursuant to the TMI-related action items described in NUREG-0737, "Clarification of TMI Action Plan Requirements" which were approved by the Commission for implementation, the McGuire Unit 1 operating license is conditioned to the extent that the aforementioned license conditions each have a January 1, 1982 implementation date.

Condition (a)

In its letter of November 11, 1981, the licensee stated that considerable effort has been taken to install the Westinghouse Reactor Vessel Level Instrumentation System (RVLIS). All work not requiring shutdown of the unit has been completed. During the recent unscheduled outage which commenced in early December, vacuum fill and hydraulic balancing of the system was started. The final installation and checkout of the system will, however, require an additional outage period of approximately 6 weeks. It is not anticipated that such an outage during the near term will be available. In addition the staff has not yet completed its review of the design of the Westinghouse level system. The staff does not consider the requested extension to represent a safety concern. Relatedly the staff has previously evaluated this matter and granted a similar extension to the Sequoyah Nuclear Station, Units 1 and 2.

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Condition (b)

This condition requires the incore thermocouple system to meet a revised set of design criteria in the areas of performance, qualification and operator interface. In a letter to the NRC on April 23, 1981, the licensee provided its assessment of the installed thermocouple system and stated its intent to pursue development of a thermocouple system which would meet the criteria in NUREG-0737. Toward this end the licensee has completed the following:

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A final design has yet to be developed by Westinghouse as a resolution to this generic requirement. Although the staff has yet to evaluate the submitted information, it has no basis to rescind its approval of the thermocouple monitoring system as presently installed at McGuire and concludes that deferral of the required implementation date will not result in a reduction in safety. As in the case of Condition (a), we have granted a similar deferral to the Sequoyah Nuclear Station.

Condition (c)

This condition requires that the analysis methods used by Westinghouse for small-break LOCA analysis for compliance with Appendix K to 10 CFR Part 50 be revised, documented, and submitted for NRC approval.

In its letter of November 16, 1981, the licensee states that the small-break LOCA analysis model currently approved by the NRC for use on McGuire Nuclear Station is conservative and in conformance with Appendix K to 10 CFR Part 50. However, (as documented in letter NS-TMA-2318, dated September 26, 1980, T. M. Anderson to D. G. Eisenhut) Westinghouse believes that improvement in the realism of small-break calculations is a worthwhile effort and has committed to revise its small-break LOCA analysis model to address NRC concerns (e.g., NUREG-0611, NUREG-0623, etc.) This revised Westinghouse model is currently scheduled for submittal to the NRC by April 1, 1982 as documented in letter NS-EPR-2524, dated November 25, 1981, E. F. Rahe to D. G. Eisenhut.

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Until the staff has evaluated the revised model it has no basis to rescind its approval of the current model and concludes that deferral of the required implementation date will not result in a reduction in safety. As in the previously discussed Conditions, we have granted a similar deferral to the Sequoyah Nuclear Station.

#### ENVIRONMENTAL CONSIDERATION

We have determined that the amendment does not authorize a change in effluent types or total amounts nor an increase in power level and will not result in any significant environmental impact. Having made this determination, we have further concluded that the amendment involves an action which is insignificant from the standpoint of environmental impact and, pursuant to 10 CFR Section 51.5(d)(4), that an environmental impact statement or negative declaration and environmental impact appraisal need not be prepared in connection with the issuance of this amendment.

#### CONCLUSION

We have concluded, based on the consideration discussed above, that: (1) because the amendment does not involve a significant increase in the probability or consequences of accidents previously considered and does not involve a significant decrease in a safety margin, the amendment does not involve a significant hazards consideration, (2) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, and (3) such activities will be conducted in compliance with the Commission's regulations and the issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public.

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