

**DUKE POWER COMPANY**

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June 2, 1983

Mr. Harold R. Denton, Director  
Office of Nuclear Reactor Regulation  
U. S. Nuclear Regulatory Commission  
Washington, D. C. 20555

Attention: Ms. E. G. Adensam, Chief  
Licensing Branch No. 4

Re: McGuire Nuclear Station  
Docket No. 50-369, 50-370

Dear Mr. Denton:

Our letter of November 23, 1982 contained an application for an amendment to McGuire Unit 1 License No. NPF-9. The proposed amendment would change the minimum Reactor Coolant System (RCS) flow rate required by Technical Specifications based upon reduced measurement uncertainty. This application was revised in our letter of April 27, 1983 based upon comments and questions by the NRC staff. The April 27, 1983 letter also contained an application for the same amendment for McGuire Unit 2 License No. NPF-17. New procedures for handling proposed license amendments have since been promulgated in 10 CFR 50.91 which may involve significant delay in the issuance of these proposed amendments due to the requirement for public notice and a 30- day comment period.

Duke Power believes that the proposed amendment for McGuire Unit 1 should be issued and made immediately effective as an emergency pursuant to 10 CFR 50.91(a)(5). RCS flow rate measurements have indicated insufficient flow for operation above 90% rated thermal power based upon current Technical Specifications. The proposed amendment would alleviate this situation and allow operation at 100% power. Further, McGuire Unit 1 is expected to be ready for escalation above 90% power level by June 6, 1983. Therefore, failure to act upon the proposed amendment in a timely manner will involve derating of McGuire Unit 1.

Duke Power has acted in good faith by making a timely application for the amendment on November 23, 1982. Additionally, the revision to the original application was submitted only two days after an April 25, 1983 meeting with the NRC staff when the need for the revision became evident. Duke Power has consistently provided timely responses to questions from the NRC staff throughout their review of the proposed amendments.

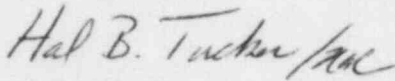
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In support of this request, Attachment 1 provides an analysis which concludes that the proposed amendments do not involve significant hazards considerations. Attachment 2 contains supplementary information concerning the penalty for undetected feedwater venturi fouling which was provided to the NRC staff on May 31, 1983. For completeness, Attachment 3 contains a copy of the proposed amendment as revised on April 27, 1983.

Please advise, if there are any questions.

Very truly yours,



Hal B. Tucker

REH:jfw  
Attachments

cc: Mr. James P. O'Reilly, Regional Administrator  
U. S. Nuclear Regulatory Commission  
Region II  
101 Marietta Street, NW, Suite 2900  
Atlanta, Georgia 30303

Mr. Dayne H. Brown, Chief  
Radiation Protection Branch  
Division of Facility Services  
Department of Human Resources  
P. O. Box 12200  
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Mr. W. T. Orders  
NRC Resident Inspector  
McGuire Nuclear Station

## Attachment 1

### Determination of No Significant Hazards Considerations

The following is an analysis of the proposed amendments to License Nos. NPF-9 and NPF-17 for McGuire Units 1 and 2 which were requested by H. B. Tucker's letter of April 27, 1983. The proposed amendments would change Technical Specifications to reduce the minimum Reactor Coolant System (RCS) flow rate based upon a reduction in measurement uncertainty. This analysis which is performed according to the standards of 10 CFR 50.92 concludes that the proposed amendments do not involve significant hazards considerations:

- (1) Operation of the facilities in accordance with the proposed amendments would not involve a significant increase in the probability or consequences of an accident previously evaluated. Where applicable, the analyses described in the Final Safety Analysis Report (FSAR) assume that the minimum RCS flow rate (thermal design flow) is 97,500 gallons per minute for each reactor coolant loop. Also, the analysis for operation at 90% power or less assumes RCS flow rate is 95% of thermal design flow. The proposed amendments would not involve a change in these assumptions. Therefore, the probability and consequences of the accidents previously evaluated are not significantly increased.
- (2) The proposed amendments would not create the possibility of a new or different kind of accident from any accident previously evaluated. The net effect of the proposed amendments would be a reduction in the minimum RCS flow rate required by Technical Specifications; however, the minimum RCS flow rate would not be reduced to less than that which is assumed in the accident analyses described in the Final Safety Analysis Report (FSAR). Therefore, operation under the proposed amendments would involve RCS flow rates previously verified by the accident analyses to be safe.
- (3) The proposed amendments do not involve a significant reduction in a margin of safety. Significant safety margins are contained in the accident analyses due to the conservatism inherent in the calculational models used to predict plant behavior. In addition, input assumptions used in the accident analyses concerning initial operating conditions, safety systems performance, etc. (including RCS flow rate) are also conservative. Because the proposed amendments do not involve any changes to the accident analyses, no significant reduction in a margin of safety is involved.

Based upon the above analysis and the standards of 10 CFR 50.92, the proposed amendments do not involve significant hazards considerations.

## Attachment 2

### McGuire Nuclear Station RCS Flow Measurement Penalty for Undetected Feedwater Venturi Fouling

The following information is provided to explain the proposed 0.1% RCS flow measurement penalty for undetected feedwater venturi fouling:

The McGuire Performance Monitoring Program includes a periodic test conducted monthly for the purpose of detecting potential venturi fouling. The undetected development of venturi fouling during a power cycle would introduce a non-conservative bias into any subsequent efforts to normalize the RCS elbow tap flow indicators. The periodic test employs measurements of electrical output and feedwater flow which are used in a trend analysis.

The ratio of electrical output to feedwater flow would shift in the event of venturi fouling and is, therefore, monitored to detect fouling. Indicated reactor thermal power is directly proportional to indicated feedwater flow. Venturi fouling would result in an increase in indicated feedwater flow which would increase indicated reactor thermal power. Since the reactor thermal power is limited to the 100% licensed value, indicated feedwater flow is also limited and actual feedwater flow would be reduced. By reducing actual feedwater flow, electrical output is reduced by the same degree. Therefore, by comparing electrical output with indicated feedwater flow, venturi fouling can be detected.

The normal relationship between electrical output and indicated feedwater flow will be established during the first fuel cycle when the venturi is presumed to be clean. To avoid any significant effect of measurement uncertainties on the result, the monthly test will involve taking a total of 120 readings of each parameter over  $\frac{1}{2}$  hour at 15 second intervals. Then, the mean electrical output will be compared to the mean feedwater flow. If the trend of the monthly test results indicate that this ratio has deviated by 0.1%, corrective action will be taken before performing the next precision heat balance for RCS flow measurement. Corrective action will involve either (1) inspecting and cleaning the venturi or (2) quantifying the bias effect of the fouling and making allowance for it in the RCS flow measurement.

The 0.1% value serves as an "alarm level" at which corrective action must be taken. This value was chosen because it is believed to be high enough to avoid spurious "alarms" yet low enough to avoid an unnecessarily excessive penalty for fouling.