



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
RELATED TO AMENDMENT NO. 181 TO FACILITY OPERATING LICENSE NPF-9  
AND AMENDMENT NO. 163 TO FACILITY OPERATING LICENSE NPF-17  
DUKE ENERGY CORPORATION  
MCGUIRE NUCLEAR STATION, UNITS 1 AND 2  
DOCKET NOS. 50-369 AND 50-370

1.0 INTRODUCTION

By letter dated May 8, 1998, Duke Energy Corporation (the licensee) submitted a request for changes to the McGuire Nuclear Station, Units 1 and 2, Technical Specifications (TSs). The requested changes revise TS Table 3.7-1 by lowering the maximum allowable power range neutron flux high setpoint when one or more main steam safety valves (MSSVs) are inoperable. The proposed changes also revise the Bases for TS 3/4.7.1.1 to include the algorithm used for determining the new setpoint values. The proposed changes also delete the references to three-loop operation in current TS 3.7.1.1(b) and Table 3.7-2. These changes are consistent with the proposed Improved Standard Technical Specifications submitted by the licensee on May 27, 1997.

2.0 EVALUATION

Westinghouse has determined that the maximum allowable power range neutron flux high setpoints given in TS Table 3.7-1 may not be low enough to prevent a secondary side overpressurization during a loss of load/turbine trip. In its Nuclear Safety Advisory Letter (NSAL) 94-001 dated January 20, 1994, Westinghouse reported its determination that the maximum allowable initial power level is not a linear function of available MSSV relief capacity. It was further determined that the current TS provisions for reduced reactor power levels with inoperable MSSVs may not preclude the secondary side pressure from exceeding 110 percent of its design value during a loss of main feedwater transient, particularly at lower power levels. NSAL 94-001 also provided the licensee with an algorithm for determining revised neutron flux high setpoints.

The licensee has calculated new neutron flux high setpoint values based on the algorithm contained in Westinghouse's NSAL 94-001. The new values were lower than the values in the current TS. This process resulted in high neutron flux reactor trip setpoint values of 58 percent, 39 percent, and 19 percent of rated thermal power for a maximum of one, two, and three inoperable MSSVs, respectively, on any operating steam generator. Current TS values are 87 percent, 65 percent, and 43 percent for those same conditions.

The staff has found that the licensee's revised algorithm ensures that the maximum power level allowed for operation with inoperable MSSVs is below the heat-removing capability of the operable MSSVs. This ensures that the secondary system pressure will not exceed 110 percent of its design value. In addition, the new setpoints are more conservative than the previous setpoints. Therefore, the staff finds that the proposed changes to TS Table 3.7-1 and Bases Section 3/4.7.1.1 are acceptable.

The licensee also proposes to delete the references to three-loop operation in its proposed TS 3.7.1.1(b), delete Table 3.7-2 (setpoints for three-loop operation), and renumber Table 3.7-3 as Table 3.7-2. These changes are necessary to bring the TSs consistent with the plant operation, which does not allow three-loop operation during Modes 1 and 2 at McGuire. The staff finds that these proposed changes are acceptable.

### 3.0 STATE CONSULTATION

In accordance with the Commission's regulations, the North Carolina State official was notified of the proposed issuance of the amendments. The State official had no comments.

### 4.0 ENVIRONMENTAL CONSIDERATION

The amendments change requirements with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20. The NRC staff has determined that the amendments involve no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendments involve no significant hazards consideration, and there has been no public comment on such finding (63 FR 40554 dated July 29, 1998). Accordingly, the amendments meet the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendments.

### 5.0 CONCLUSION

The Commission has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendments will not be inimical to the common defense and security or to the health and safety of the public.

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Date: September 17, 1998