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Docket No. 50-348

U. S. Nuclear Regulatory Commission
Region II, Suite 3100
101 Marietta Street N.W.
Atlanta, Georgia 30303

Attention: Region II Administrator

Gentlemen:

Joseph M. Farley Nuclear Plant - Unit 1
Radial Peaking Factor Limit Report

Enclosed is the Radial Peaking Factor Limit Report for Cycle 8 of Unit 1. This report is provided in accordance with Paragraph 6.9.1.11 of the Unit 1 Technical Specifications. Also enclosed is a copy of the elevation dependent peaking factor versus core height graph for Cycle 8 of Unit 1 which is being submitted in support of the subject report.

If you have any questions, please advise.

Yours very truly,

R. P. McDonald

RPM/JAR:kpc-D-TS5

Enclosure

cc: Mr. L. B. Long
Mr. L. S. Rubenstein
Mr. E. A. Reeves
Mr. W. H. Bradford
Mr. C. H. Berlinger

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ENCLOSURE

FARLEY UNIT 1 CYCLE 8

RADIAL PEAKING FACTOR LIMIT REPORT

This Radial Peaking Factor Limit Report is provided in accordance with Paragraph 6.9.1.11 of the Joseph M. Farley Nuclear Plant Unit 1 Technical Specifications.

The F_{xy} limits for RATED THERMAL POWER within specified core planes for Cycle 8 shall be:

1. F_{xy}^{RTP} less than or equal to 2.00 for all core planes containing bank "D" control rods.

2. For all unrodded core planes:

   F_{xy}^{RTP} less than or equal to 1.71 up to core elevations of 6.9 ft.

   F_{xy}^{RTP} less than or equal to 1.76 for core elevations above 6.9 ft.

These $F_{xy}(z)$ limits are used to confirm that the heat flux hot channel factor $F_Q(z)$ will be limited to the Technical Specification values of:

$$F_Q(z) \leq \frac{2.31}{P} [K(z)] \text{ for } P > 0.5 \text{ and,}$$

$$F_Q(z) \leq 4.62 [K(z)] \text{ for } P \leq 0.5$$

assuming the most limiting axial power distributions expected to result from the insertion and removal of control banks C and D during operation, including the accompanying variations in the axial xenon and power distributions as described in the "Power Distribution Control and Load Following Procedures," WCAP-8385, September 1974. Therefore, these Fxy limits provide assurance that the initial conditions assumed in the LOCA analysis are met and the ECCS acceptance criteria limit of 2200°F for Peak Clad Temperature is not exceeded.

FIGURE 1

Maximum $F_q^T * P_{rel}$ versus Core Height

During Normal Operation

Farley Unit 1 Cycle 8