

ATTACHMENT 1

BY2C5 Revised Operating Limits Report
(January 31, 1994)

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Byron Unit 2 Cycle 5
Operating Limit Report - Fxy Portion

This Radial Peaking Factor Limit Report is provided in accordance with Paragraph 6.9.1.9 of the Byron Unit 2 Nuclear Plant Technical Specifications.

The Fxy limits for RATED THERMAL POWER within specified core planes for Cycle 5 shall be:

- a: For the lower core region from greater than or equal to 0% to less than or equal to 50%:

1. For all core planes containing bank "D" control rods:

$$\begin{array}{l} \text{RTP} \\ F_{xy} \leq 2.005, \quad \text{for BU} < 10000 \text{ MWD/MTU} \\ \leq 2.005, \quad \text{for BU} \geq 10000 \text{ MWD/MTU} \end{array}$$

2. For all unrodded core planes:

$$\begin{array}{l} \text{RTP} \\ F_{xy} \leq 1.736, \quad \text{for BU} < 10000 \text{ MWD/MTU} \\ \leq 1.699, \quad \text{for BU} \geq 10000 \text{ MWD/MTU} \end{array}$$

- b: For the upper core region from greater than 50% to less than or equal to 100%:

1. For all core planes containing bank "D" control rods:

$$\begin{array}{l} \text{RTP} \\ F_{xy} \leq 2.005, \quad \text{for BU} < 10000 \text{ MWD/MTU} \\ \leq 2.005, \quad \text{for BU} \geq 10000 \text{ MWD/MTU} \end{array}$$

2. For all unrodded core planes:

$$\begin{array}{l} \text{RTP} \\ F_{xy} \leq 1.777, \quad \text{for BU} < 10000 \text{ MWD/MTU} \\ \leq 1.777, \quad \text{for BU} \geq 10000 \text{ MWD/MTU} \end{array}$$

These Fxy(z) limits were used to confirm that the heat flux hot channel factor FQ(z) will be limited to the Technical Specification values of:

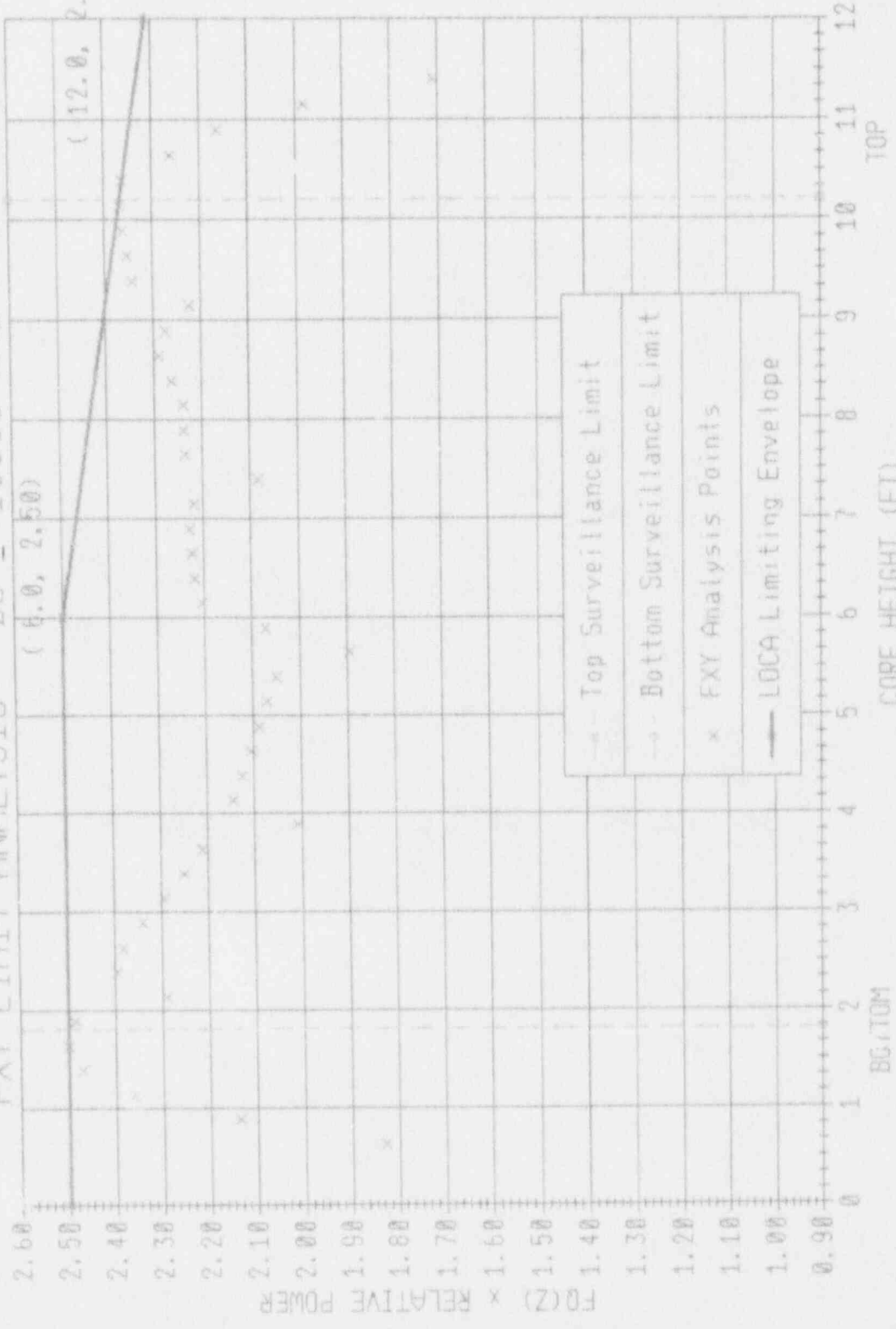
$$\begin{array}{l} F_Q(z) \leq \left[\frac{2.50}{P} \right] [K(z)] \quad \text{for } P > 0.5 \quad \text{and,} \\ F_Q(z) \leq [5.00] [K(z)] \quad \text{for } P \leq 0.5 \end{array}$$

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-8403, September, 1974. Therefore, these Fxy limits provide assurance that the initial conditions assumed in the LOCA analysis are met, along with the ECCS acceptance criteria of 10 CFR 50.46.

See the Attached Figures for the plot of $[F_Q^T(z) \cdot P_{rel}]$ vs. Axial Core Height.

REV. 1

BYRON UNIT 2 CYCLE 5 FQ(Z) X P VS. CORE HEIGHT FXY LIMIT ANALYSIS - BU ≥ 10000 MWD/MTU



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