PLANT SYSTEMS

MAIN STEAM LINE ISOLATION VALVES

LIMITING CONDITION FOR OPERATION

3.7.1.5 Each main steam line isolation valve (MSIV) shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTION:

MODE 1:

With one MSIV inoperable but open, POWER OPERATION may continue provided the inoperable valve is restored to OPERABLE status within 4 hours; otherwise be in HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the following 6 hours.

MODES 2, 3, and 4:

With one MSIV inoperable, subsequent operation in MODE 2 or 3 or 4 may proceed provided the isolation valve is maintained closed. Otherwise, be in HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.7.1.5.1 Each MSIV shall be demonstrated OPERABLE by verifying full closure within 5 seconds in Modes 1, 2, and 3 when tested pursuant to Specification 4.0.5. The provisions of Specification 4.0.4 are not applicable for entry into MODE 3.

4.7.1.5.2 Each MSIV shall be demonstrated OPERABLE by verifying full closure within 120 seconds in Mode 4 when tested pursuant to Specification 4.0.5. The provisions of Specification 4.0.4 are not applicable for entry into Mode 3.

Docket No. 50-423
B13343

Attachment 2

Millstone Nuclear Power Station, Unit No. 3

Revised Three-Loop
Radial Peaking Factor Limit Report

October 1989

ATTACHMENT 1

Millstone Unit 3, Cycle 3
Radial Peaking Factor Limit Reports
for Four Loop and Three Loop Operation

Radial Peaking Factor Limit Report
Four Loop Operation

This Radial Peaking Factor Limit Report is provided in accordance with Paragraph 6.9.1.6 of the Millstone Unit 3 Nuclear Plant Technical Specifications.

The four loop operation F_{xy} limits for RATED THERMAL POWER within specific core planes for Cycle 3 shall be:

1. F_{xy}^{RTP} less than or equal to 1.79 for all core planes containing Bank "D" control rods, and

2. F_{xy}^{RTP} less than or equal to 1.67 for all unrodded core planes.

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

$$F_Q(z) \leq \left[\frac{2.32}{P}\right] [K(z)] \text{ for } P > 0.5 \text{ and,}$$

$$F_Q(z) \leq [4.64] [K(z)] \text{ for } P \leq 0.5$$

assuming that most limiting axial power distributions expected to result from the insertion and removal of Control Banks B, 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 F_{xy} limits provide assurance that the initial conditions assumed in the LOCA analysis are met, along with the ECCS acceptance criteria of 10CFR50.46.

See Figure 1 for a plot of $[F_Q^T \cdot P_{Rel}]$ versus Axial Core Height.

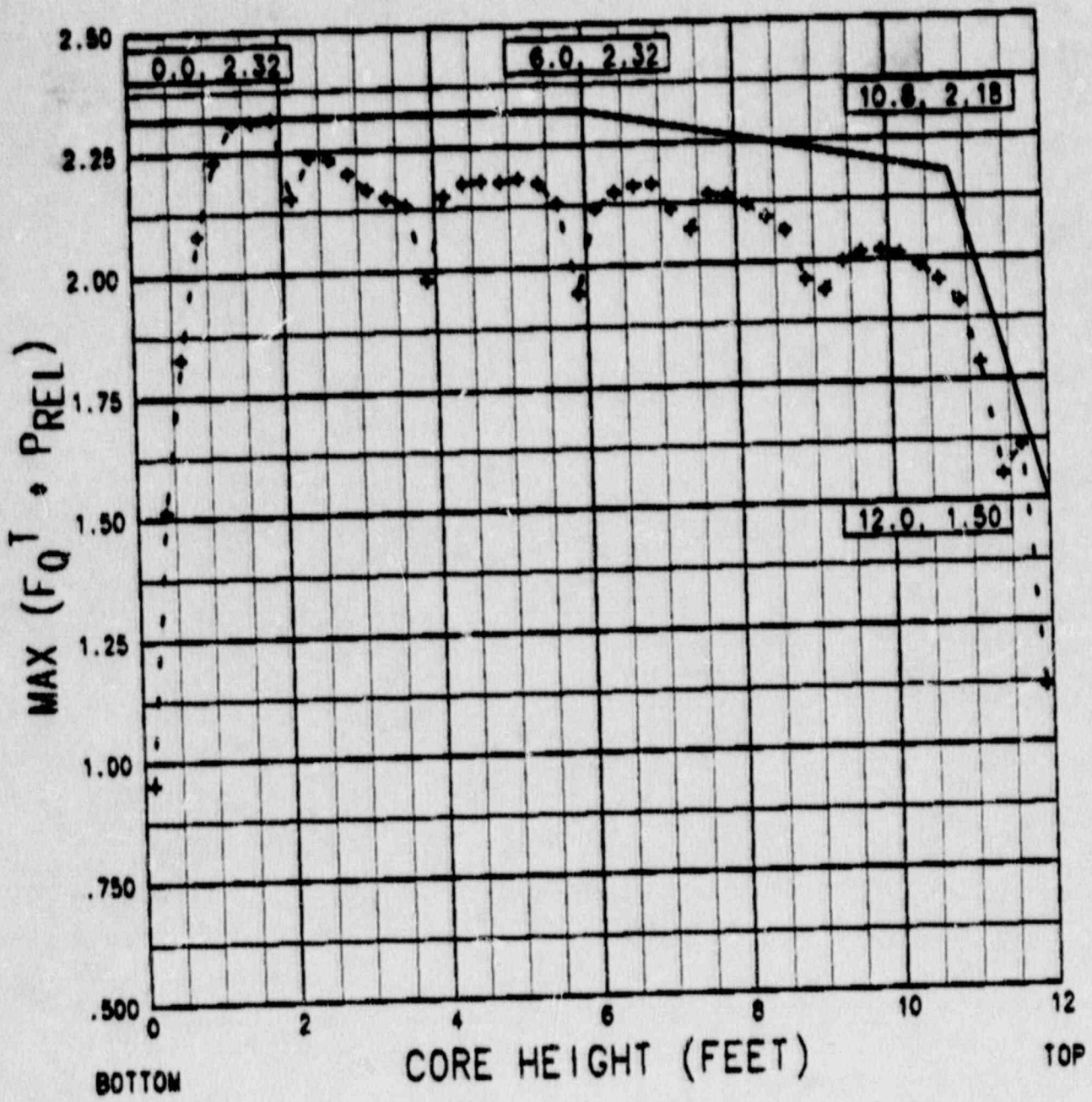

FIGURE 1

MAXIMUM F_Q^T · P_{REL} VERSUS AXIAL CORE HEIGHT
DURING NORMAL CORE 4 LOOP OPERATION

Radial Peaking Factor Limit Report
Three Loop Operation

This Radial Peaking Factor Limit Report is provided in accordance with Paragraph 6.9.1.6 of the Millstone Unit 3 Nuclear Plant Technical Specifications.

The three loop operation F_{xy} limits for 65% of RATED THERMAL POWER within specific core planes for Cycle 3 shall be:

1. $F_{xy}^{0.65\ RTP}$ less than or equal to 1.64 for all core planes containing Bank "D" control rods, and

2. $F_{xy}^{0.65\ RTP}$ less than or equal to 1.53 for all unrodded core planes.

3. In the relationship for F_{xy}^{L} the multiplier M_{Fxy} is equal to 0.312.

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

$$F_Q(z) \leq \left[\frac{1.69}{P}\right] [K(z)] \text{ for } 0.65 \geq P > 0.325 \text{ and,}$$

$$F_Q(z) \leq [5.20]\ [K(z)] \text{ for } P \leq 0.325$$

assuming that most limiting axial power distributions expected to result from the insertion and removal of Control Banks B, 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 F_{xy} limits provide assurance that the initial conditions assumed in the LOCA analysis are met, along with the ECCS acceptance criteria of 10CFR50.46.

See Figure 2 for a plot of $[F_Q^T \cdot P_{Rel}]$ versus Axial Core Height.

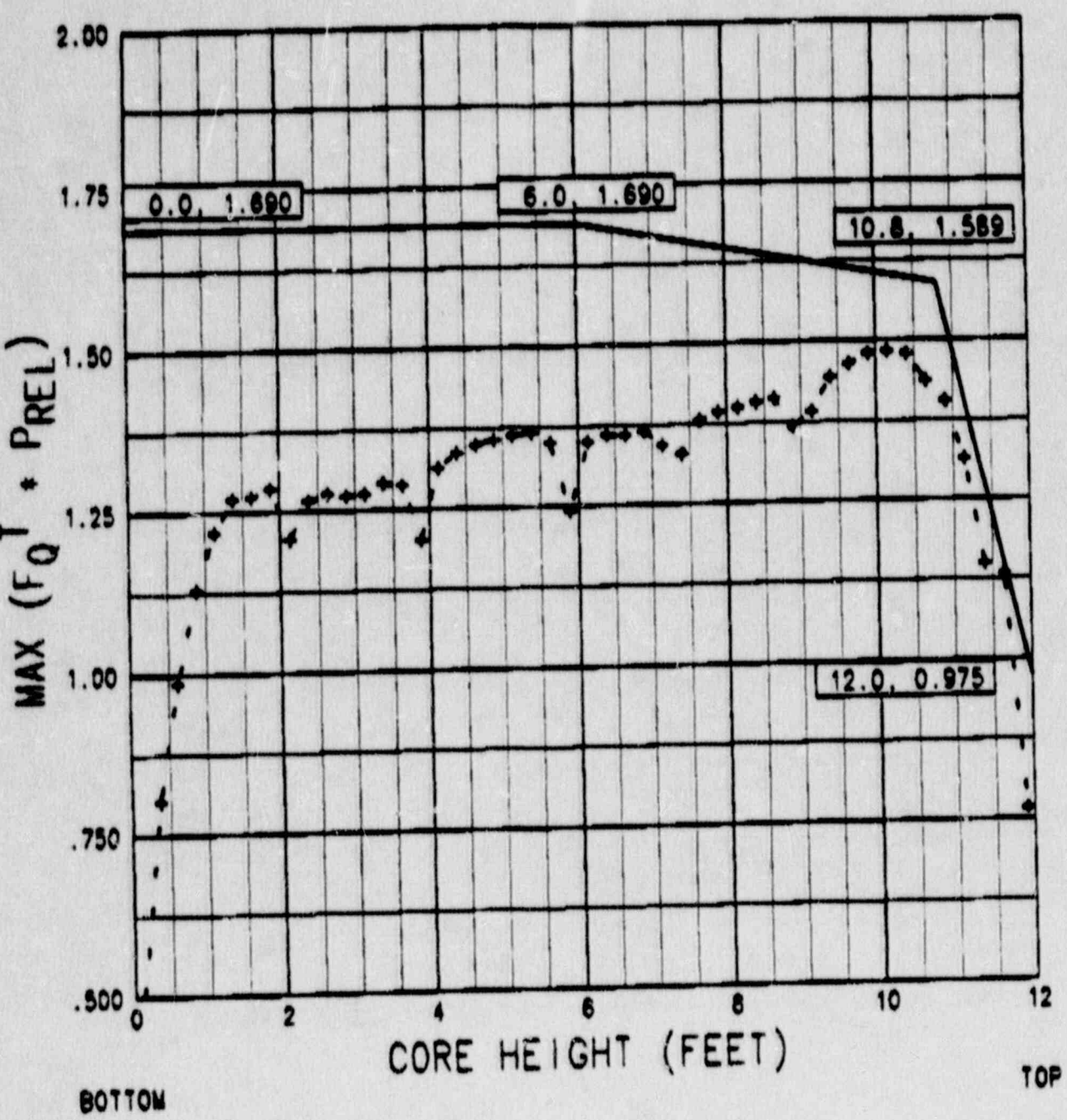

FIGURE 2

MAXIMUM F_Q^T · P_{REL} VERSUS AXIAL CORE HEIGHT
DURING NORMAL CORE 3 LOOP OPERATION

WESTINGHOUSE PROPRIETARY CLASS 3

ATTACHMENT 2

Suggested Revision to
Technical Specification 4.2.2.2.2.e
and Revised Three Loop Radial Peaking
Factor Limit Report

SURVEILLANCE REQUIREMENTS

4.2.2.2.1 The provisions of Specification 4.0.4 are not applicable.

4.2.2.2.2 F_{xy} shall be evaluated to determine if $F_Q(Z)$ is within its limit by:

a. Using the movable incore detectors to obtain a power distribution map at any THERMAL POWER greater than 5% of RATED THERMAL POWER,

b. Increasing the measured F_{xy} component of the power distribution map by 3% to account for manufacturing tolerances and further increasing the value by 5% to account for measurement uncertainties,

c. Comparing the F_{xy} computed (F_{xy}^C) obtained in Specification 4.2.2.2.2b, above to:

1) The F_{xy} limits for 65% of RATED THERMAL POWER ($F_{xy}^{0.65\ RTP}$) for the appropriate measured core planes given in Specification 4.2.2.2.2e. and f., below, and

2) The relationship:

$$F_{xy}^L = F_{xy}^{0.65\ RTP}\,[1+M_{F_{xy}}(^{0.65}_{Z}-P)],$$

Where F_{xy}^L is the limit for fractional THERMAL POWER operation expressed as a function of $F_{xy}^{0.65\ RTP}$, $M_{F_{xy}}$ is the F_{xy} multiplier, and P is the fraction of RATED THERMAL POWER at which F_{xy} was measured.

d. Remeasuring F_{xy} according to the following schedule:

1) When F_{xy}^C is greater than the $F_{xy}^{0.65\ RTP}$ limit for the appropriate measured core plane but less than the F_{xy}^L relationship, additional power distribution maps shall be taken and F_{xy}^C compared to $F_{xy}^{0.65\ RTP}$ and F_{xy}^L either:

a) Within 24 hours after exceeding by 20% of RATED THERMAL POWER or greater, the THERMAL POWER at which F_{xy}^C was last determined, or

b) At least once per 31 Effective Full Power Days (EFPD), whichever occurs first.

Radial Peaking Factor Limit Report
Three Loop Operation

This Radial Peaking Factor Limit Report is provided in accordance with Paragraph 6.9.1.6 of the Millstone Unit 3 Nuclear Plant Technical Specifications.

The three loop operation F_{xy} limits for 65% of RATED THERMAL POWER within specific core planes for Cycle 3 shall be:

1. $F_{xy}^{0.65\ RTP}$ less than or equal to 1.81 for all core planes containing Bank "D" control rods, and

2. $F_{xy}^{0.65\ RTP}$ less than or equal to 1.69 for all unrodded core planes.

3. In the relationship for F_{xy}^{L} the multiplier M_{Fxy} is equal to 0.281.

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

$$F_Q(z) \leq \left[\frac{1.69}{P}\right] [K(z)] \text{ for } 0.65 \geq P > 0.325 \text{ and,}$$

$$F_Q(z) \leq [5.20] [K(z)] \text{ for } P \leq 0.325$$

assuming that most limiting axial power distributions expected to result from the insertion and removal of Control Banks B, 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 F_{xy} limits provide assurance that the initial conditions assumed in the LOCA analysis are met, along with the ECCS acceptance criteria of 10CFR50.46.

See Figure 2 for a plot of $[F_Q^T \cdot P_{Rel}]$ versus Axial Core Height.

Docket No. 50-423
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Attachment 3

Millstone Nuclear Power Station, Unit No. 3

Examples of F^L_{xy} Using the
Current and Proposed Relationships

October 1989

Millstone Nuclear Power Station, Unit No. 3
Examples of F^L_{xy} Using the
Current and Proposed Relationships

Current	Proposed
$F^L_{xy} = 1.53\ [1 + .312\ (1 - P)]$ Unrodded	$F^L_{xy} = 1.69\ [1 + .281\ (.65 - P)]$ Unrodded
$P = .65$ $\quad F^L_{xy} = 1.69$	$F^L_{xy} = 1.69$
$P = .5$ $\quad F^L_{xy} = 1.76$	$F^L_{xy} = 1.76$
$F^L_{xy} = 1.64\ [1 + .312\ (1 - P)]$ Rodded	$F^L_{xy} = 1.81\ [1 + .281\ (.65 - P)]$ Rodded
$P = .65$ $\quad F^L_{xy} = 1.81$	$F^L_{xy} = 1.81$
$P = .5$ $\quad F^L_{xy} = 1.89$	$F^L_{xy} = 1.89$
Additional surveillance required when F^C_{xy} is between 1.53/1.64 and the limit.	Additional surveillance required when F^C_{xy} is between 1.69/1.81 and the limit.