APPENDIX

Proposed Technical Specification Changes

4.2.1.2 Excore Detector Monitoring System - The excore detector monitoring system may be used for monitoring the core power distribution by:

a. Verifying at least once per 12 hours that the full length CEAs are withdrawn to and maintained at or beyond the Long Term Steady State Insertion Limits of Specification 3.1.3.6.

b. Verifying at least once per 31 days that the AXIAL SHAPE INDEX alarm setpoints are adjusted to within the allowable limits as required per Technical Specification 3.2.2.

c. Verifying at least once per 31 days that the AXIAL SHAPE INDEX is maintained within the allowable limits as required per Technical Specification 3.2.2, where 100 percent of the allowable power represents the maximum THERMAL POWER allowed by the existing Reactor Coolant Pump Combination.

4.2.1.3 Incore Detector Monitoring System - The incore detector monitoring system may be used for monitoring the core power distribution by verifying that the incore detector Local Power Density alarms:

a. Are adjusted to satisfy the requirements of the core power distribution map which shall be updated at least once per 31 days.

b. Have their alarm setpoint adjusted to less than or equal to the limits shown on Figure 3.2-1 when the following factors are appropriately included in the setting of these alarms:

1. Flux peaking augmentation factors as shown in Figure 4.2-1.
2. A measurement-calculational uncertainty factor of 1.07,
3. An engineering uncertainty factor of 1.03,
4. A linear heat rate uncertainty factor of 1.01 due to axial fuel densification and thermal expansion, and
5. A THERMAL POWER measurement uncertainty factor of 1.02.

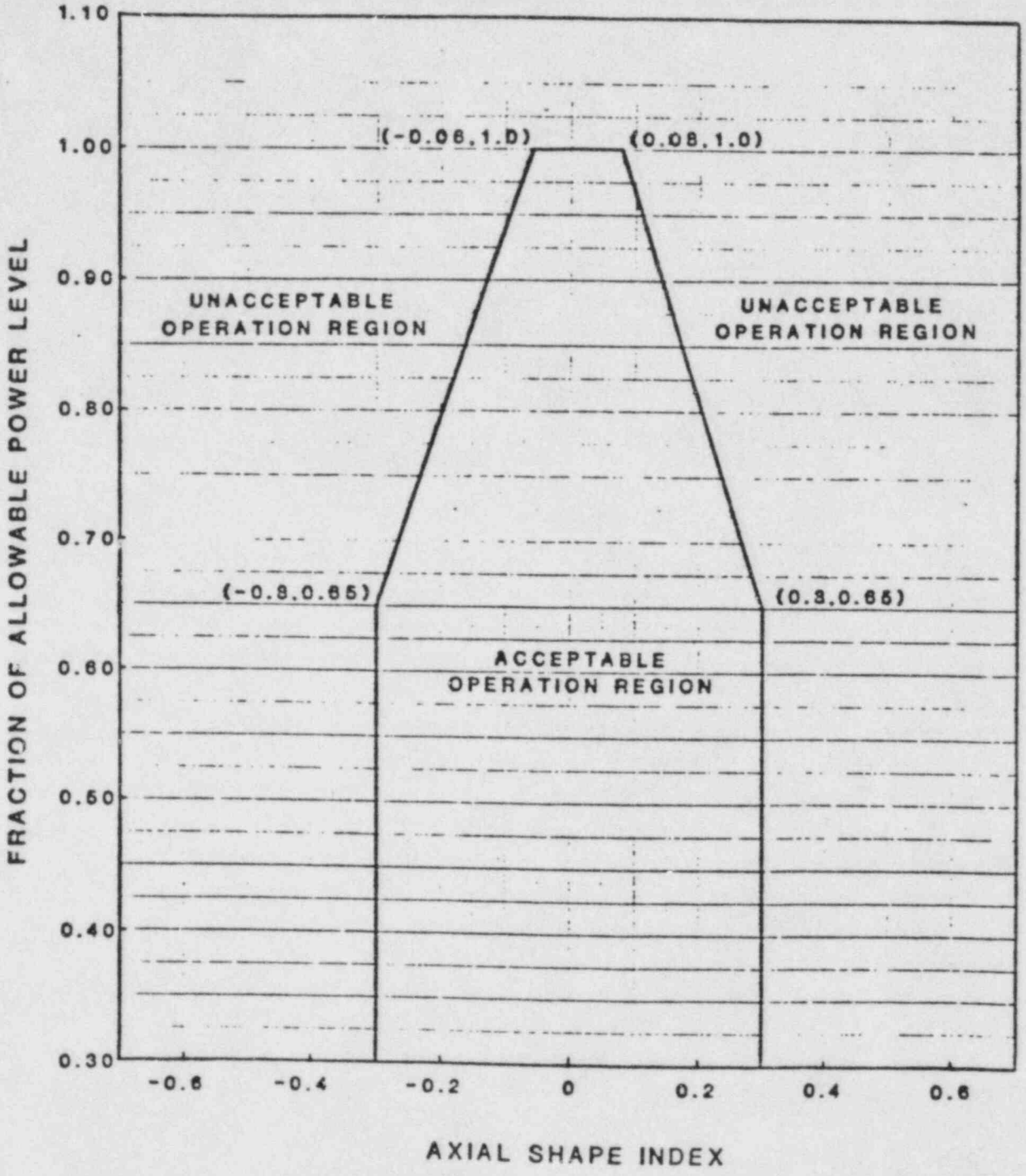


FIGURE 3.2-2a Axial Shape Index vs Fraction of Allowable Power Level per Specification 4.2.1.2c

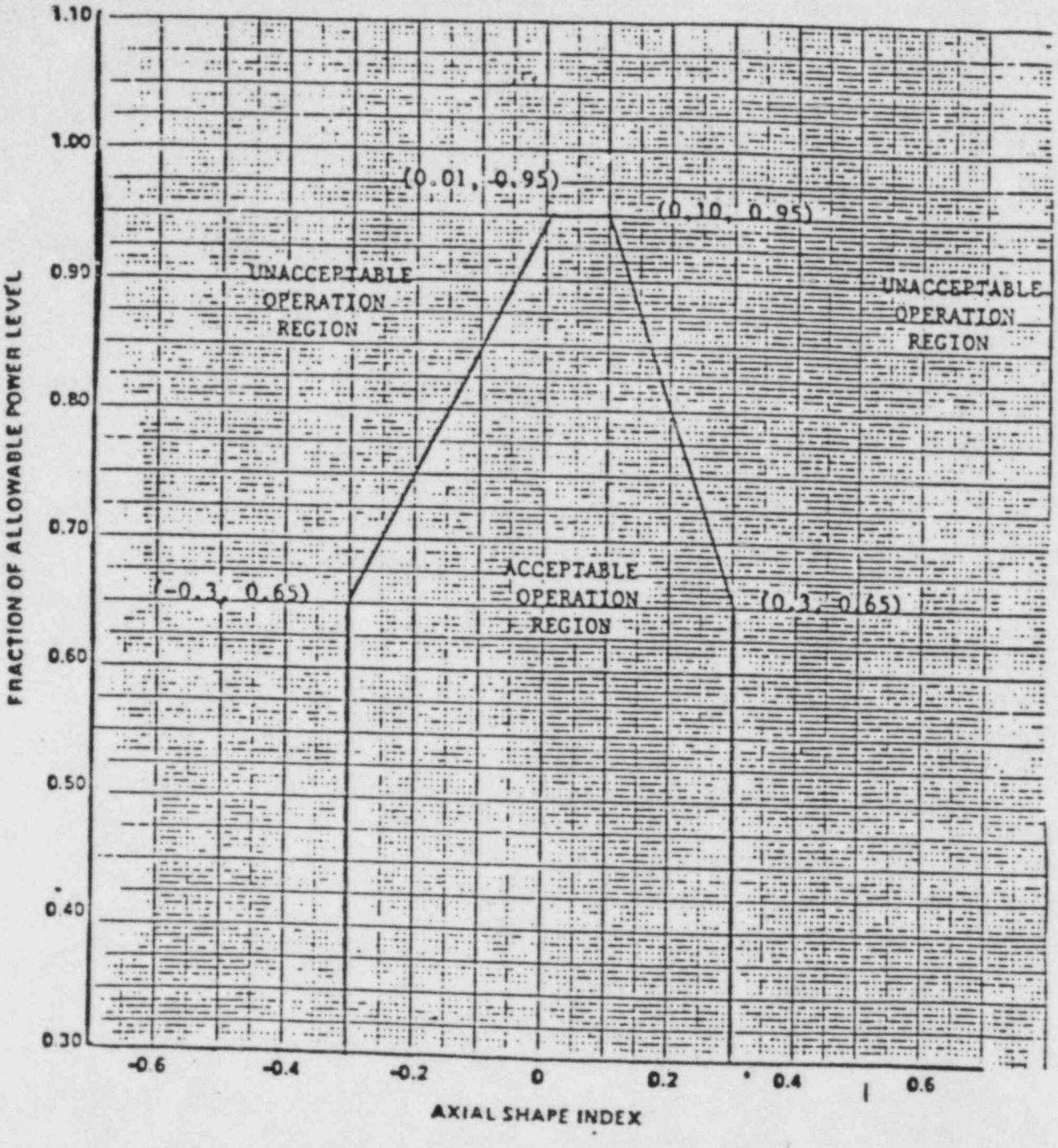


FIGURE 3.2-2b AXIAL SHAPE INDEX vs Fraction of Allowable Power Level per Specification 4.2.1.2c

POWER DISTRIBUTION LIMITS

TOTAL PLANAR RADIAL PEAKING FACTOR - F^T_{xy}

LIMITING CONDITION FOR OPERATION

3.2.2 Meet either of 3.2.2.1 or 3.2.2.2.

3.2.2.1 The calculated value of F^T_{xy}, defined as $F^T_{xy} = F_{xy}(1+Tq)$, shall be limited to ≤ 1.62 with the AXIAL SHAPE INDEX alarm setpoints adjusted consistent with the limits shown on Figure 3.2-2a, or

3.2.2.2 The calculated value of F^T_{xy}, defined as $F^T_{xy} = F_{xy}(1+Tq)$, shall be limited to ≤ 1.719 with the AXIAL SHAPE INDEX alarm setpoints adjusted consistent with the limits shown on Figure 3.2-2b.

APPLICABILITY: MODE 1*.

ACTION:

a. With $F^T_{xy} > 1.62$ and the AXIAL SHAPE INDEX alarm setpoints adjusted consistent with the limits shown on Figure 3.2-2a, within 6 hours either:

1) Reduce THERMAL POWER to bring the combination of THERMAL POWER and F^T_{xy} to within the limits of Figure 3.2-3a and withdraw the full length CEAs to or beyond the Long Term Steady State Insertion Limit of Specification 3.1.3.6, or

2) Apply the limits of Specification 3.2.2.2 and Figure 3.2-2b and within 72 hours adjust the AXIAL SHAPE INDEX alarm setpoints consistent with the limits shown on Figure 3.2-2b, or

3) Be in at least HOT STANDBY.

b. With $F^T_{xy} > 1.719$ and the AXIAL SHAPE INDEX alarm setpoints adjusted consistent with the limits shown on Figure 3.2-2b, within 6 hours either:

1) Reduce THERMAL POWER to bring the combination of THERMAL POWER and F^T_{xy} to within the limits of Figure 3.2-3b and withdraw the full length CEAs to or beyond the Long Term Steady State Insertion Limit of Specification 3.1.3.6, or

2) Be in at least HOT STANDBY.

*See Special Test Exception 3.10.2

4.2.2.1 The provisions of Specification 4.0.4 are not applicable.

4.2.2.2 F^T_{xy} shall be calculated by the expression $F^T_{xy} = F_{xy}(1+Tq)$ and F^T_{xy} shall be determined to be within its limit at the following intervals:

a. Prior to operation above 70 percent of RATED THERMAL POWER after each fuel loading,

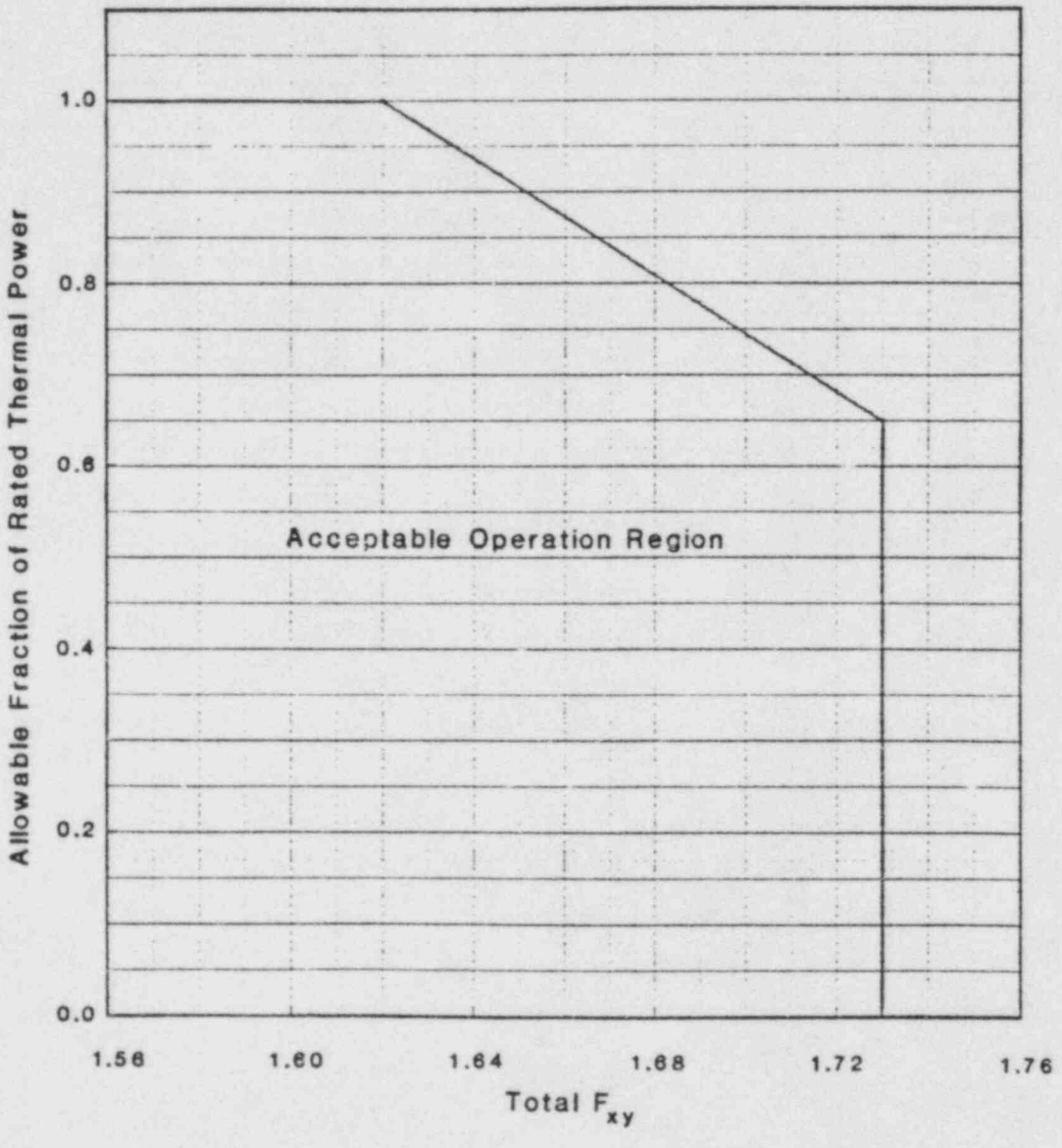
b. At least once per 31 days of accumulated operation in MODE 1, and

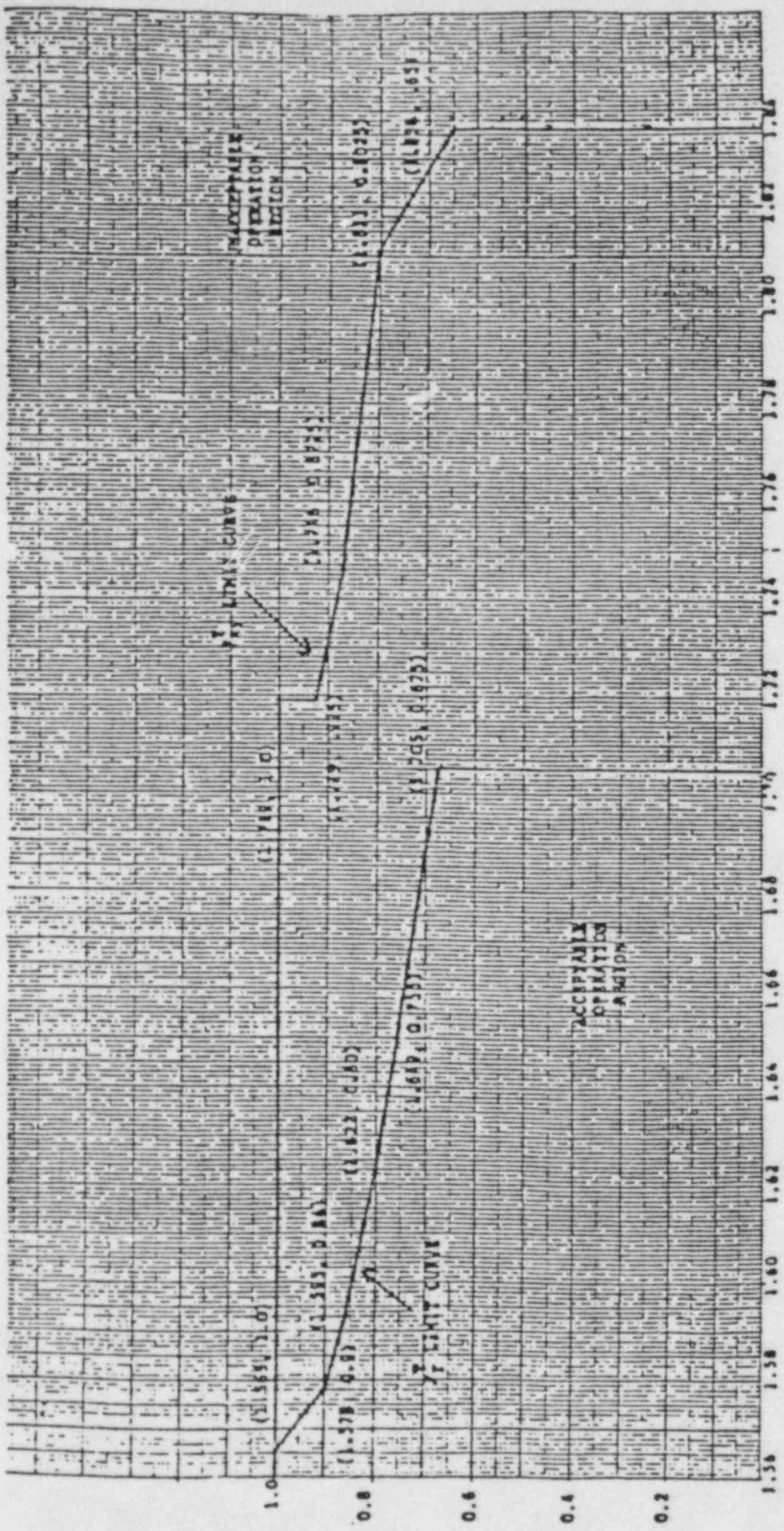
c. Within four hours if the AZIMUTHAL POWER TILT (T_q) is > 0.02.

4.2.2.3 F_{xy} shall be determined each time a calculation of F^T_{xy} is required by using the incore detectors to obtain a power distribution map with all full length CEAs at or above the Long Term Steady State Insertion Limit for the existing Reactor Coolant Pump combination. This determination shall be limited to core planes between 15% and 85% of full core height inclusive and shall exclude regions influenced by grid effects.

4.2.2.4 T_q shall be determined each time a calculation of F^T_{xy} is required and the value of T_q used to determine F^T_{xy} shall be measured value of T_q.

FIGURE 3.2-3a Total Radial Peaking Factor vs Allowable Fraction of Rated Thermal Power





ALLOWABLE FRACTION OF RATED THERMAL POWER

$F_r^T \cdot F_r^L \cdot [F_r = [1.0 \cdot \tau_q] \cdot F_{xy} = [1.0 \cdot \tau_q]]$

FIGURE 3.2-3b Total Radial Peaking Factor Versus Allowable Fraction of RATED THERMAL POWER

MILLSTONE UNIT 2

POWER DISTRIBUTION LIMITS

TOTAL INTEGRATED RADIAL PEAKING FACTOR - F_r^T

LIMITING CONDITION FOR OPERATION

3.2.3 The calculated value of F_r^T defined as $F_r^T = F_r (1+T_q)$, shall be limitied to $\leq$ 1.565.

APPLICABILITY: MODE 1*.

ACTION:

With $F_r^T >$ 1.565, within 6 hours either:

a. Reduce THERMAL POWER to bring the combination of THERMAL POWER and F_r^T to within the limits of Figure 3.2-3b and withdraw the full length CEAs to or beyond the Long Term Steady State Insertion Limits of Specification 3.1.3.6; or

b. Be in at least HOT STANDBY.

SURVEILLANCE REQUIREMENTS

4.2.3.1 The provisions of Specification 4.0.4 are not applicable.

4.2.3.2 F_r^T shall be calculated by the expression $F_r^T = F_r (1+T_q)$ and F_r^T shall be determined to be within its limit at the following intervals:

a. Prior to operation above 70 percent of RATED THERMAL POWER after each fuel loading,

b. At least once per 31 days of accumulated operation in Mode 1, and

c. Within four hours if the AXIMUTHAL POWER TILT (T_q) is > 0.020.

4.2.3.3 F_r shall be determined each time a calculation of F_r^T is required by using the incore detectors to obtain a power distribution map with all full length CEAs at or above the Long Term Steady State Insertion Limit for the existing Reactor Coolant Pump Combination.

4.2.3.4 T_q shall be determined each time a calculation of F_r^T is required and the value of T_q used to determine F_r^T shall be the measured value of T_q.

*See Special Test Exception 3.10.2

January 31, 1985
WGC-85-G-69

GFL Form 3.010-7.1
April 4, 1983

CORRESPONDENCE FOLLOW SHEET

TO: GENERATION FACILITIES LICENSING

AGENCY LETTER DATE 1/23/85

FROM: W. G. Counsil
W. G. Counsil

DATE OF RECEIPT FROM AGENCY 1/31/85

Please distribute the attached document and insure proper and timely action as per NEO Procedure 3.02 and GFL Procedure 3.01, as appropriate.

SUBJECT: IE Information Notice No. 85-05: Pipe Whip Restraints

All nuclear power reactor facilities holding an operating license or a construction permit.

COMMENTS:

COTRAP FILE NO: A04625

COPIES TO:	RMK	RJA	RJF	SO	MLC	J. Ely	RPW	
	RLM	PC	EA	S&W	MSL	CJGkuiding	REB	
NUCLEAR RECORDS	TJO	JOC	MFM	PCB	GLS	T. Murrison		
MP3 CAP Exclusions to Frank DiCesare (S&W)	RZT	LJN	TAM	AGJ	JMP	JLM		
CY/MP1/MP2/MP3/NRB Chairmen (I&E Insp. Report)			JWK	PAB	EAD			
I&E Bulletins, Circulars and Information Notices to MP-3 Project and to S&W.				MPB	MK			

JLM (MP3) RESPONSIBILITY – Nuclear Operations

LICENSING LEAD: GLS TECHNICAL LEAD: TECHNICAL SUPPORT:

RESPONSE/RESOLUTION
TECHNICAL SUPPORT DUE TO GFL:
RESPONSE/ACTION DUE BY GFL: N/A
COMMENTS:

CY, MILLSTONE 1 & 2 [signature] 2-4-85

MILLSTONE 3 & GENERIC [signature]

SSINS No.: 6835
IN 85-05

UNITED STATES
NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT
WASHINGTON, D.C. 20555

January 23, 1985

IE INFORMATION NOTICE NO. 85-05: PIPE WHIP RESTRAINTS

Addressees:

All nuclear power reactor facilities holding an operating license (OL) or a construction permit (CP).

Purpose:

This information notice is provided to alert recipients of a potentially significant problem pertaining to the energy absorbing material used in pipe whip restraints. It is expected that recipients will review the information for applicability to their facilities and consider actions, if appropriate, to preclude a similar problem occurring at their facilities. However, suggestions contained in this information notice do not constitute NRC requirements; therefore, no specific action or written response is required.

Description of Circumstances:

The Byron Nuclear Generating Station retested the energy absorbing material used in the pipe whip restraints and on October 31, 1984, reported that the dynamic crush strength of some samples was considerably lower than the values used in the design. The "6 KSI" material supplied by HEXCEL/MCI Division should have a strength between 5,400 and 7,000 psi. The manufacturer's test results were between 5,800 and 6,200 psi, but 40% of the material from Byron had a strength between 3,800 and 4,500 psi. In one instance, the dynamic crush strength was only 2,700 psi.

The function of the material is to slow the motion of major piping, such as the main steam line, in the event of a double-ended guillotine pipe break. The material is contained within the pipe whip restraint. This structure is not intended to serve as a restraint in normal operation or seismic loading.

The material consists of stainless steel sheets formed into a honeycomb shape and joined by a nickel brazing alloy. The product is in the form of rectangular plates up to 36 in. in length, width, or depth.

HEXCEL manufactured the material for the Byron Nuclear Generating Station in 1978 and 1979. A recent audit by the Office of Inspection and Enforcement found that an acceptable quality assurance program was not in effect during the period from 1978 to 1982. This material has been supplied by HEXCEL to other nuclear generating stations. It is not known if the material supplied by other vendors was made by HEXCEL.

The licensee is conducting a further investigation and assessing the impact on the unit. HEXCEL is continuing their internal investigation. It should be noted that separate from this specific problem the NRC is presently reviewing the pipe break criteria to determine if some whip restraints may be eliminated.

No specific action or written response is required by this information notice. If you have any questions about this matter, please contact the Regional Administrator of the appropriate NRC regional office or this office.

Edward L. Jordan, Director
Division of Emergency Preparedness
and Engineering Response
Office of Inspection and Enforcement

Technical Contact: P. Cortland, IE
(301) 492-4175

Attachment:
List of Recently Issued IE Information Notices

Attachment
IN 85-05
January 23, 1985

LIST OF RECENTLY ISSUED
IE INFORMATION NOTICES

Information Notice No.	Subject	Date of Issue	Issued to
85-04	Inadequate Management Of Security Response Drills	1/17/85	All power reactor facilities holding an OL or CP, & fuel fabrication & processing facilities
85-03	Separation Of Primary Reactor Coolant Pump Shaft And Impeller	1/15/85	All pressurized water power reactor facilities holding an OL or CP
85-02	Improper Installation And Testing Of Differential Pressure Transmitters	1/15/85	All power reactor facilities holding an OL or CP
85-01	Continuous Supervision Of Irradiators	1/10/85	All material licensees possessing irradiators that are not self-shielded and contain more than 10,000 curies of radioactive material
84-94	Reconcentration Of Radionuclides Involving Discharges Into Sanitary Sewage Systems Permitted Under 10 CFR 20.303	12/21/84	All NRC materials licensees other than licensees that use sealed sources only
84-93	Potential For Loss Of Water From The Refueling Cavity	12/17/84	All power reactor facilities holding an OL or CP
84-92	Cracking Of Flywheel On Cummins Fire Pump Diesel Engines	12/17/84	All power reactor facilities holding an OL or CP
84-91	Quality Control Problem Of Meteorological Measurements Problems	12/10/84	All power reactor facilities holding an OL or CP

OL = Operating License
CP = Construction Permit

January 29, 1985
WGC-85-CY-008

GFL Form 3.010-7.1
April 4, 1983

CORRESPONDENCE FOLLOW SHEET

TO: GENERATION FACILITIES LICENSING

AGENCY LETTER DATE 1/22/85

FROM: [signature]
W. G. Counsil

DATE OF RECEIPT FROM AGENCY 1/29/85

Please distribute the attached document and insure proper and timely action as per NEO Procedure 3.02 and GFL Procedure 3.01, as appropriate.

SUBJECT: Notice of Violation (Inspection No. 50-213/84-24) Occupational Radiation Exposure.

COMMENTS: Response requested within 30 days.

COTRAP FILE NO: A04619

RMK RZT JMP CFS
RLM RJA PC J F OPEKA
TJD LJN GRP
MFM RCR H.Clow
G. Bouchard

COPIES TO:
NUCLEAR RECORDS
MP3 CAP Exclusions to Frank DiCesare (S&W)
CY/MP1/MP2/MP3/NRB Chairmen (I&E Insp. Report)
I&E Bulletins, Circulars and Information Notices to MP-3 Project and to S&W.

RESPONSIBILITY Nuc Ops

LICENSING LEAD: ~~[crossed out]~~ GLS

TECHNICAL LEAD: Nuc Ops

TECHNICAL SUPPORT:

RESPONSE/RESOLUTION Nuc. Ops
TECHNICAL SUPPORT DUE TO ~~GFL:~~ February 14, 1985
RESPONSE/ACTION DUE BY ~~GFL:~~ February 21, 1985
COMMENTS: Nuc. Ops

The NRC has chosen to award a Severity Level III with no fine for this incident. Note that they cite three violations for one error.

CY, MILLSTONE 1 & 2 [signature] 2-1-85
MILLSTONE 3 & GENERIC [signature] -N/A.

UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION I
631 PARK AVENUE
KING OF PRUSSIA, PENNSYLVANIA 19406

January 22, 1985

Docket No. 50-213
EA 84-133

RECEIVED

JAN 29 1985

SENIOR VICE PRESIDENT
Nuclear Engineering & Operations

Connecticut Yankee Atomic Power Company
ATTN: Mr. W. G. Counsil
Senior Vice President - Nuclear
Engineering and Operations Group
P. O. Box 270
Hartford, Connecticut 06101

Gentlemen:

Subject: Notice of Violation (Inspection No. 50-213/84-24)

This refers to the special NRC safety inspection conducted on October 22-23, 1984 at the Haddam Neck Nuclear Power Plant, Haddam Neck, Connecticut, of activities authorized by NRC License No. DPR-61. The report of the inspection was forwarded to you on November 23, 1984. The inspection was conducted to review the circumstances associated with an unplanned occupational radiation exposure, in excess of that planned for a work activity, to one of your employees. The unplanned exposure was identified on October 13, 1984 and reported to the NRC by your staff on October 15, 1984. On December 6, 1984, an enforcement conference was held with Mr. C. F. Sears and other members of your staff during which the exposure, the associated violations, the cause of the violations, and your corrective actions were discussed.

Although the unplanned occupational radiation exposure received by the individual was not in excess of regulatory limits, the violations which are described in the enclosed Notice, are of concern to the NRC because adequate radiological controls over the performance of the work activity were not implemented, thereby creating a substantial potential for a radiation exposure in excess of regulatory limits. Specifically, a Junior Health Physics Technician assigned the responsibility of providing radiological control coverage during the work activity was not qualified to perform the task. As a result, adequate coverage was not provided during the activity and the unplanned exposure occurred.

The violations associated with this exposure have been categorized in the aggregate as a Severity Level III problem in accordance with the NRC Enforcement Policy, 10 CFR Part 2, Appendix C, as revised, 49 FR 8583 (March 8, 1984). Although a civil penalty was considered for this Severity Level III problem, I have decided, after consultation with the Director, Office of Inspection and Enforcement, not to propose a civil penalty in this case. In making this decision, I have considered that: (1) you reported the event to the NRC; (2) your immediate and long-term corrective actions were

prompt and comprehensive; and (3) in light of your history of satisfactory performance in this area, the event appears to be an isolated occurrence rather than indicative of a programmatic weakness (performance in the radiological controls area was rated to be Category 1 in the last two NRC Systematic Assessments of Licensee Performance conducted for your facility). However, we emphasize that similar violations in the future may result in additional enforcement action.

You are required to respond to the enclosed Notice and should follow the instructions specified therein when preparing your response. Your written reply to this letter and the results of future inspections will be considered in determining whether further enforcement action is appropriate.

In accordance with 10 CFR 2.790, a copy of this letter and its enclosure will be placed in the NRC Public Document Room.

The responses directed by this letter and the enclosed Notice are not subject to the clearance procedures of the Office of Management and Budget, otherwise required by the Paperwork Reduction Act of 1980, PL 96-511.

Sincerely,

T Murley

Thomas E. Murley
Regional Administrator

Enclosure: Notice of Violation

cc w/encl:
R. Graves, Plant Superintendent
D. O. Nordquist, Manager of Quality Assurance
R. T. Laudenat, Manager, Generation Facilities Licensing
J. F. Opeka, Vice President, Nuclear Operations
Gerald Garfield, Esquire
Public Document Room (PDR)
Local Public Document Room (LPDR)
Nuclear Safety Information Center (NSIC)
NRC Resident Inspector
State of Connecticut

NOTICE OF VIOLATION

Connecticut Yankee Atomic
Power Company
Haddam Neck Nuclear Power Plant

Docket No. 50-213
License No. DPR-61
EA 84-133

On October 22-23, 1984, an NRC special safety inspection was conducted to review the circumstances associated with a reported occupational radiation exposure of 3.309 rems to the upper right arm of a worker during an attempted retrieval of a wrench which had inadvertently been dropped into the secondary side of one of the steam generators. The radiation exposure was identified by the licensee on October 13, 1984 and reported to the NRC on October 15, 1984. Although the exposure was subsequently determined to be less than the regulatory limit (3 rems), a substantial potential for exposure in excess of regulatory limits existed during the wrench recovery operation because adequate radiological controls were not implemented.

The radiation exposure occurred while the worker had his right arm inserted in the secondary side of Steam Generator No. 1 through a handhole as part of the retrieval operation. The individual worked in this position for approximately 30 minutes. Although the Junior Health Physics (HP) Technician assigned to provide job radiological control coverage during the retrieval operation checked the monitoring devices on the worker after 15 minutes and noted a reading of 1250 mrem on the upper right arm, the Junior HP Technician erroneously concluded that the monitoring device was in error and allowed the worker to resume his activities for another 15 minutes after all monitoring devices were rezeroed. After observing a reading of 1400 mrem on the upper right arm of the worker after the second 15 minute interval, the worker and the Junior HP Technician vacated the area.

The Junior HP Technician had been assigned the job of radiological control coverage of the wrench recovery operation on October 13, 1984 by the Senior Station HP Technician assigned as coordinator of steam generator activities. However, the Junior HP Technician did not possess the required years of experience and had not received the appropriate training required for providing such coverage.

These events demonstrate the importance of your having adequate radiological controls over activities performed within the facility.

In accordance with the General Statement of Policy and Procedure for NRC Enforcement Actions, 10 CFR Part 2, Appendix C, as revised, 49 FR 8583 (March 8, 1984), the violations are set forth below:

A. Technical Specification 6.3.1 requires that each member of the facility staff meet or exceed the minimum qualifications of ANSI N18.1-1971 for comparable positions.

Section 4.5.2 of ANSI N18.1-1971 requires, in part, that technicians in responsible positions have a minimum of two years of working experience in their specialty.

Contrary to above, on October 13, 1984, a Junior Health Physics Technician was assigned the responsibility of providing radiological control for the Steam Generator No. 1 wrench recovery operation with less than one year working experience in her speciality.

B. Technical Specification 6.4.1 requires, in part, a replacement training program for facility staff in accordance with Section 5.5 of ANSI N18.1-1971.

Section 5.5 of ANSI N18.1-1971 requires, in part, special training sessions for replacement personnel.

Contrary to the above, on October 13, 1984, a Junior Health Physics (HP) Technician was assigned as a replacement Health Physics Technician, with the responsibility for providing radiological control coverage during the retrieval of a wrench from the secondary side of Steam Generator No. 1, but the Junior HP Technician had not received any special training in station radiation protection procedures.

C. Technical Specification 6.13.1(c) requires, in part, a health physics qualified individual (i.e., qualified in radiation protection procedures) with a radiation dose monitoring device to provide positive control over work activities in high radiation areas.

Contrary to the above, on October 13, 1984, a Junior Health Physics Technician was assigned the responsibility of providing radiological control coverage during the recovery of a wrench from the secondary side of Steam Generator No. 1, a high radiation area, but the technician did not provide positive control over work activities and was not qualified to provide such coverage in that she had not received the necessary training and did not possess the required two years of radiation control experience as described in Items A and B above.

Collectively, these violations have been categorized as a Severity Level III problem (Supplement IV).

Pursuant to the provisions of 10 CFR 2.201, Connecticut Yankee Atomic Power Company is hereby required to submit to this office, within 30 days of the date of this Notice, a written statement or explanation including for each alleged violation: (1) admission or denial of the alleged violation; (2) the reasons

for the violation, if admitted; (3) the corrective steps which have been taken and the results achieved; (4) the corrective steps which will be taken to avoid further violations; (5) the date when full compliance will be achieved. Consideration may be given to extending the response time for good cause shown.

FOR THE NUCLEAR REGULATORY COMMISSION

Thomas E. Murley
Regional Administrator

Dated at King of Prussia, Pennsylvania
this 22nd day of January 1985.

January 31, 1985
WGC-85-G-69

GFL Form 3.010-7.1
April 4, 1983

CORRESPONDENCE FOLLOW SHEET

TO: GENERATION FACILITIES LICENSING

AGENCY LETTER DATE 1/23/85

FROM: W. G. Counsil
W. G. Counsil

DATE OF RECEIPT FROM AGENCY 1/31/85

Please distribute the attached document and insure proper and timely action as per NEO Procedure 3.02 and GFL Procedure 3.01, as appropriate.

SUBJECT: IE Information Notice No. 85-05: Pipe Whip Restraints

All nuclear power reactor facilities holding an operating license or a construction permit.

COMMENTS:

COTRAP FILE NO: A04625

COPIES TO:

NUCLEAR RECORDS	RMK	RJA	RJF	SO	MLC	J. Ely	RPW
MP3 CAP Exclusions to Frank DiCesare (S&W)	RLM	PC	EA	S&W	MSL	CJGkidding	REB
CY/MP1/MP2/MP3/NRB Chairmen (I&E Insp. Report)	TJO	JOC	MFM	PCB	GLS	T. Murawski	
I&E Bulletins, Circulars and Information Notices to MP-3 Project and to S&W.	RZT	LJM	TAM	RGJ	JMP	JLM	
	JWK			PAB	EAD		
	MPB				MK		

JLM (MP3) RESPONSIBILITY – Nuclear Operations

LICENSING LEAD: GLS TECHNICAL LEAD: TECHNICAL SUPPORT:

RESPONSE/RESOLUTION
TECHNICAL SUPPORT DUE TO GFL:
RESPONSE/ACTION DUE BY GFL: N/A
COMMENTS:

CY, MILLSTONE 1 & 2 [signature] 2-1-85

MILLSTONE 3 & GENERIC [signature]

SSINS No.: 6835
IN 85-05

UNITED STATES
NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT
WASHINGTON, D.C. 20555

January 23, 1985

IE INFORMATION NOTICE NO. 85-05: PIPE WHIP RESTRAINTS

Addressees:

All nuclear power reactor facilities holding an operating license (OL) or a construction permit (CP).

Purpose:

This information notice is provided to alert recipients of a potentially significant problem pertaining to the energy absorbing material used in pipe whip restraints. It is expected that recipients will review the information for applicability to their facilities and consider actions, if appropriate, to preclude a similar problem occurring at their facilities. However, suggestions contained in this information notice do not constitute NRC requirements; therefore, no specific action or written response is required.

Description of Circumstances:

The Byron Nuclear Generating Station retested the energy absorbing material used in the pipe whip restraints and on October 31, 1984, reported that the dynamic crush strength of some samples was considerably lower than the values used in the design. The "6 KSI" material supplied by HEXCEL/MCI Division should have a strength between 5,400 and 7,000 psi. The manufacturer's test results were between 5,800 and 6,200 psi, but 40% of the material from Byron had a strength between 3,800 and 4,500 psi. In one instance, the dynamic crush strength was only 2,700 psi.

The function of the material is to slow the motion of major piping, such as the main steam line, in the event of a double-ended guillotine pipe break. The material is contained within the pipe whip restraint. This structure is not intended to serve as a restraint in normal operation or seismic loading.

The material consists of stainless steel sheets formed into a honeycomb shape and joined by a nickel brazing alloy. The product is in the form of rectangular plates up to 36 in. in length, width, or depth.

HEXCEL manufactured the material for the Byron Nuclear Generating Station in 1978 and 1979. A recent audit by the Office of Inspection and Enforcement found that an acceptable quality assurance program was not in effect during the period from 1978 to 1982. This material has been supplied by HEXCEL to other nuclear generating stations. It is not known if the material supplied by other vendors was made by HEXCEL.

The licensee is conducting a further investigation and assessing the impact on the unit. HEXCEL is continuing their internal investigation. It should be noted that separate from this specific problem the NRC is presently reviewing the pipe break criteria to determine if some whip restraints may be eliminated.

No specific action or written response is required by this information notice. If you have any questions about this matter, please contact the Regional Administrator of the appropriate NRC regional office or this office.

Edward L. Jordan, Director
Division of Emergency Preparedness
and Engineering Response
Office of Inspection and Enforcement

Technical Contact: P. Cortland, IE
(301) 492-4175

Attachment:
List of Recently Issued IE Information Notices

Attachment
IN 85-05
January 23, 1985

LIST OF RECENTLY ISSUED
IE INFORMATION NOTICES

Information Notice No.	Subject	Date of Issue	Issued to
85-04	Inadequate Management Of Security Response Drills	1/17/85	All power reactor facilities holding an OL or CP, & fuel fabrication & processing facilities
85-03	Separation Of Primary Reactor Coolant Pump Shaft And Impeller	1/15/85	All pressurized water power reactor facilities holding an OL or CP
85-02	Improper Installation And Testing Of Differential Pressure Transmitters	1/15/85	All power reactor facilities holding an OL or CP
85-01	Continuous Supervision Of Irradiators	1/10/85	All material licensees possessing irradiators that are not self-shielded and contain more than 10,000 curies of radioactive material
84-94	Reconcentration Of Radionuclides Involving Discharges Into Sanitary Sewage Systems Permitted Under 10 CFR 20.303	12/21/84	All NRC materials licensees other than licensees that use sealed sources only
84-93	Potential For Loss Of Water From The Refueling Cavity	12/17/84	All power reactor facilities holding an OL or CP
84-92	Cracking Of Flywheel On Cummins Fire Pump Diesel Engines	12/17/84	All power reactor facilities holding an OL or CP
84-91	Quality Control Problem Of Meteorological Measurements Problems	12/10/84	All power reactor facilities holding an OL or CP

OL = Operating License
CP = Construction Permit