MAY 04 1990

Docket No. 50-333

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Mr. John C. Brons
Executive Vice President - Nuclear Generation
Power Authority of the State of New York
123 Main Street
White Plains, New York 10601

Dear Mr. Brons:

SUBJECT: PROPOSED CHANGE TO THE TECHNICAL SPECIFICATION REGARDING AUGMENTED INSERVICE INSPECTION OF MAIN STEAM AND FEEDWATER PIPING WELDS (TAC NO. 75876)

Because there are no pipe whip restraints for the main steam and feedwater piping inside the drywell of the James A. FitzPatrick Nuclear Power Plant, you committed to an augmented inservice inspection (ISI) of certain welds in the subject piping during licensing reviews conducted in 1972. This program was incorporated as Technical Specification 4.6.F.2.

By letter dated January 16, 1990, you submitted a proposed change to the technical specifications (TS) to eliminate the augmented ISI program being applied to the main steam and feedwater piping. The proposed change would apply "leak-before-break" (LBB) technology to portions of the piping inside the primary containment using the revised General Design Criteria 4 (GDC-4) of Appendix A to 10 CFR Part 50 to eliminate the need for pipe whip restraints, and thus eliminate the augmented ISI program requirements which have been imposed in lieu of additional pipe whip restraints. The technical basis for the request is contained in a report prepared for you by Structural Integrity Associates, Inc., dated April 1988 (numbered SIR-86-033).

The staff review of your submittal has revealed discrepancies between it and staff application of the provisions of the GDC-4 rule. They are described in Appendix A, attached, and will require extensive revision of the submittal, assuming that satisfactory resolution is possible. Because of these discrepancies, the limited staff resources available, and the uncertain outcome of the LBB approach for the subject piping, the staff will not continue its review of the amendment application and it is, therefore, denied. This action closes TAC No. 75876.

A copy of the Notice of Denial of Amendment and Opportunity for Hearing to be published in the Federal Register is enclosed for your information.

Sincerely,
ORIGINAL SIGNED BY:

David E. LaBarge, Project Manager
Project Directorate I-1
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

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Enclosure: As stated

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*See Previous concurrence

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Power Authority of the State of New York

James A. FitzPatrick Nuclear
Power Plant

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APPENDIX A

DISCREPANCIES BETWEEN THE SUBMITTAL AND THE GDC-4 RULE

(1) The application of LBB technology must be applied to an entire piping system from anchor point to anchor point. The submittal indicated that the LBB evaluation was performed for the specific weld locations subjected to the augmented ISI requirements.

(2) The plant, being a boiling water reactor (BWR), has a five gallon per minute (gpm) unidentified leakage rate limit specified in the TS. Because the plant can continue to operate without containment entry to identify the source of less than the five gpm limit for unidentified leakage, the staff considers it appropriate to use five gpm as the basis for the detectable leakage rate in LBB analysis. To account for uncertainties inherent in the analysis and leak detection capability, a margin of ten on leakage is required. Thus, the stability of a flaw that would leak at 50 gpm must be demonstrated. However, your analysis considered the stability of a flaw that would leak at five gpm.

(3) In estimating the leakage flaw size, you used the absolute summation of the normal load components instead of the algebraical summation, resulting in a smaller and, thus, less conservative estimate.

(4) Your leakage calculation procedure was not benchmarked against experimental data or other acceptable procedures. In particular, steam in the main steam line introduces further uncertainties in the leakage calculation.

(5) Based on industry operating experience, the subject piping is susceptible to water hammer which would preclude the application of LBB analysis.

(6) The feedwater line has the propensity for thermal fatigue, which was not addressed in the analysis.