

November 20, 1985

Docket No. 50-333

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

Dear Mr. Brons:

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION -
BWR FEEDWATER NOZZLE CRACKING ANALYSIS

Re: James A. FitzPatrick Nuclear Power Plant

We have reviewed your submittal dated August 20, 1983 concerning the analysis of feedwater nozzle cracking at FitzPatrick and have identified the need for the enclosed additional information to enable us to complete our review.

We request that you provide us with the necessary information within 45 days of receipt of this letter.

The reporting and/or recordkeeping requirements contained in this letter affect fewer than ten respondents; therefore, OMB clearance is not required under P.L. 96-511.

Sincerely,

Original signed by/

8512060101 851120
PDR ADOCK 05000333
S PDR

Domenic B. Vassallo, Chief
Operating Reactors Branch #2
Division of Licensing

Enclosure:
As stated

cc w/enclosure:
See next page

DL:ORB#2
SNorris:ajs
11/19/85

DL:ORB#2
HAbelson
11/20/85

DL:ORB#2
DVassallo
11/20/85

Mr. John C. Brons
Power Authority of the State of New York

James A. FitzPatrick Nuclear
Power Plant

cc:

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REQUEST FOR ADDITIONAL INFORMATION REGARDING
BWR FEEDWATER NOZZLE CRACKING ANALYSIS

JAMES A. FITZPATRICK NUCLEAR POWER PLANT

By letter dated August 20, 1985, the licensee submitted three reports concerning the analysis of feedwater nozzle cracking for the FitzPatrick facility. The following is a Request for Additional Information related to each of these reports.

- A. "James A. FitzPatrick Nuclear Power Station Feedwater Nozzle Fracture Mechanics Analysis to show Compliance with NUREG-0619," General Electric (GE), NEDC-3G799-P/DRFB13-109-3, December 1984.

1. Page 3-1

It is unclear how 27 and 28 startup/shutdown events were obtained from Figure 3-1 and reference 2 respectively. It is also unclear whether the startup data shown in Tables 3-1 through 3-3 were used in the analysis. Provide a more detailed discussion on the calculation and application of the thermal events/cycles in the analysis.

2. Page 4-1

The report stated that the heat transfer coefficients were taken from the GE analysis (NEDE-21812). Justify the fact that the generic heat transfer coefficients used in the GE analysis satisfy the plant specific conditions at FitzPatrick.

3. Page 5-1

The report stated that pressure stresses require a scaling factor based on a three-dimensional analysis. Cite the reference for the three-dimensional analysis in the report. Provide the scaling factor and the justification for using it in the analysis.

- B. "Feedwater Nozzle Rapid Cycling Fatigue Analysis James A. FitzPatrick Nuclear Power Plant," General Electric, MDE-21-0185/DRFB13-109-3, January 1985.

1. Page 9

Cite the reference for the GE feasibility study that was mentioned. This study indicated that seal refurbishment which includes restoration of the initial seal radial gap and axial gap is preferred. This new concept results in a lower number of seal refurbishments and better feedwater nozzle protection than that offered by the GE analysis.

2. Page 21

The two curves in Figure 5-1 show that the new seal refurbishment concept has a higher usage factor than that of the original seal refurbishment concept. Explain why the new seal refurbishment concept is preferred if it results in a higher usage factor.

- C. "Effects of Reactor Water Cleanup Reroute on Feedwater Nozzle Fatigue Usage James A. FitzPatrick Nuclear Power Plant," General Electric, MDE-22-0185/DRFB13-109-3, January 1985.

1. Page 8

The report stated that reactor water cleanup (RWCU) flow is a small portion of the total feedwater flow.

Provide the flow rate of RWCU and feedwater system under startup, shutdown, and scram conditions.

2. Page 13

The evaluation presented in NEDE-21821 showed that the largest improvement in the crack initiation usage factor would be achieved by rerouting RWCU, i.e., a reduction in usage factor from 0.70 to 0.46; however, in the FitzPatrick analysis, the reduction in usage factor is from 0.814 to 0.801. Explain the fact that the FitzPatrick analysis has such a low reduction compared to the NEDE-21821-02 results.