123 Main Street
White Plains, New York 10601
914-681-6840
914-287-3309 (FAX)

New York Power Authority

William J. Cahill, Jr.
Chief Nuclear Officer

November 20, 1995
JPN-95-050

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D.C. 20555-0001

Subject: James A. FitzPatrick Nuclear Power Plant
Docket No. 50-333
Generic Letter 92-01, Revision 1, Supplement 1
Reactor Vessel Structural Integrity - Six Month Response

References:
1. NRC Generic Letter 92-01, Revision 1, Supplement 1, "Reactor Vessel Structural Integrity," dated May 19, 1995.
2. NYPA letter, W. J. Cahill, Jr. to USNRC (IPN-95-088/JPN-95-038), "Reactor Vessel Structural Integrity," dated August 16, 1995.
3. BWR Vessel & Internals Project letter, J. T. Beckham, Jr. to NRC, "BWRVIP Response to Information Requests in NRC Generic Letter 92-01, Revision 1, Supplement 1, Reactor Vessel Structural Integrity," dated November 15, 1995.

Dear Sir:

The NRC requested (Reference 1) licensees to identify, collect, and report any new data pertinent to analyses of structural integrity of their reactor pressure vessels (RPV), and to assess the impact of that data on their RPVs integrity analyses. A response to Part 1 of the generic letter, which requested licensees to provide a description of those actions taken or planned to locate all data relevant to the determination of RPV integrity, was submitted in Reference 2. The additional information requested (Parts 2, 3, and 4) in the generic letter is provided in the enclosed attachments.

The search of available data bases identified additional plant specific RPV weld chemistry data that is consistent with previous weld chemistry used in the RPV structural integrity evaluations. The evaluations, using the new chemistry data, confirm the validity of RPV temperature limits in the current Technical Specifications, and confirm compliance with the structural integrity requirements of 10 CFR 50.60, 10 CFR 50.61, and Appendices G and H to 10 CFR Part 50. Attachment II provides a compilation of the plate and weld chemistry data identified, and the calculation of the average chemistry content considered in the evaluations.

A028
1/1

In addition, the BWR Vessel & Internals Project (BWRVIP) has recently issued a Vessel Integrity Program (VIP) report (Reference 3) which evaluates reactor vessel weld data for several boiling water reactors, including FitzPatrick. There are differences between the conclusions of Attachment I and the BWRVIP report for FitzPatrick, resulting from the vendor's conservative use of bounding (or limiting) weld data. The Authority's report uses best-estimate methods to analyze FitzPatrick-specific weld data.

If you have any questions, please contact Ms. C. D. Faison.

Very Truly Yours,

William J. Cahill, Jr.
Chief Nuclear Officer

STATE OF NEW YORK
COUNTY OF WESTCHESTER
Subscribed and sworn to before me
this 20th day of November, 1995.

Geraldine Strand
Notary Public

cc: See next page

GERALDINE STRAND
Notary Public, State of New York
No. 4991272
Qualified in Westchester County
Commission Expires Jan. 27, 1996

cc: Regional Administrator - Region I
U.S. Nuclear Regulatory Commission
475 Allendale Road
King of Prussia, PA. 19406

Office of the Resident Inspector
U.S. Nuclear Regulatory Commission
P.O. Box 136
Lycoming, NY 13093

Mr. C. E. Carpenter
Project Directorate 1-1
Division of Reactor Projects 1/11
U.S. Nuclear Regulatory Commission
Washington, DC 20555

ATTACHMENT I to JPN-95-050

GENERIC LETTER 92-01, REVISION 1, SUPPLEMENT 1
REACTOR VESSEL STRUCTURAL INTEGRITY - SIX MONTH RESPONSE

for

James A. FitzPatrick Nuclear Power Plant
Docket No. 50-333

New York Power Authority

Attachment I to JPN-95-050

James A. FitzPatrick Nuclear Power Plant
Docket No. 50-333

Generic Letter 92-01, Revision 1, Supplement 1
Reactor Vessel Structural Integrity - Six Month Response

This report provides a response to information requested in Parts 2, 3, and 4 of NRC Generic Letter 92-01, Revision 1, Supplement 1, for the James A. FitzPatrick Nuclear Power Plant.

Assessment of Changes in Best-Estimate Chemistry

NRC Request (GL 92-01, Rev. 1, Supp. 1, Part 2):

> Provide an assessment of any change in best-estimate chemistry based on consideration of all relevant data.

Response:

The search of available data bases confirms that the baseplate chemistry (copper-nickel content) remains unchanged. The confirmation consisted of reviewing the actual material certifications from the plate mill, the NRC Reactor Vessel Integrity Database-Summary File for Upper Shelf Energy and Summary File for PTS, and, for copper, data from the plate manufacturer. The copper content data is based on ladle analysis values. The nickel content data is based on check analysis values.

The search of the available data bases resulted in the following changes in the weld chemistry data associated with the circumferential and axial welds in the beltline region:

Heat No. Weld	Previous Copper Content %	Revised Copper Content %	Previous Nickel Content %	Revised Nickel Content %
13253/12008 Lwr-Int. Shell Axial	0.26	0.253	0.87	0.060
27204/12008 Lwr. Shell Axial	0.25	0.183	0.99	1.000
305414 Circ.	0.33	0.337	0.59	0.600

The search located 10 datapoints for Heat No. 13253/12008, 6 datapoints for Heat No. 27204/12008, and 4 datapoints for Heat No.305414. The revised values in the table above were computed by averaging the datapoints. The sources of the weld chemistry data are:

- NRC - Reactor Vessel Integrity Database, Version 1.1, July 1995

- WOG - Reactor Vessel Database RPV Data, September 1995 (pre-release version)

See Attachment 2 for a compilation of the plate and weld chemistry data identified, and the calculation of the average chemistry content considered in the evaluation.

Need for the Use of the Regulatory Guide 1.99 Ratio Procedure

NRC Request (GL 92-01, Rev. 1, Supp. 1, Part 3)

> Provide a determination of the need for use of the ratio procedure in accordance with the established Position 2.1 of Regulatory Guide 1.99, Revision 2, for those licensees that use surveillance data to provide a basis for the RPV integrity evaluation.

Response:

The FitzPatrick RPV material evaluations do not use the ratio procedure because only one surveillance sample has been removed and analyzed for the FitzPatrick RPV. The second sample is scheduled for removal during the next refueling outage.

Results of Any Revisions to the Evaluation of RPV Integrity

NRC Request (GL 92-01, Rev. 1, Supp. 1, Part 4)

> Provide a written report providing any newly acquired data as specified above and (1) the results of any necessary revisions to the evaluation of RPV integrity in accordance with the requirements of 10 CFR 50.60, 10 CFR 50.61, Appendices G and H to 10 CFR Part 50, and any potential impact on LTOP or P-T limits in the technical specifications or (2) a certification that previously submitted evaluations remain valid. Revised evaluations and certifications should include consideration of Position 2.1 of Regulatory Guide 1.99, Revision 2, as applicable, and any new data.

Response:

Calculations using the new chemistry data discussed above confirm that the FitzPatrick reactor vessel continues to be limited by the lower shell axial welds 2-233 A-C. The new

chemistry data results in a lower Adjusted Reference Temperature (ART) for this limiting weld. Accordingly, the P-T curves in the FitzPatrick Technical Specifications, presented for up to 12, 14, and 16 EFPY of operation, remain valid. The new calculation yields the following limiting value for the RPV:

ART @16 EFPY = 107°F (previously 116°F)

This value remains well within the limits of 200°F maximum for the ART. The revised chemistry values remain within the bounding chemistry assumed in the Upper Shelf Energy Equivalent Margin Analysis submitted by References 1 and 2, and approved by the NRC in Reference 3.

References:

1. NYPA letter, W. A. Josiger to NRC (JPN-94-021), "Generic Letter 92-01, Revision 1, Reactor Vessel Structural Integrity," dated April 29, 1994.

2. NYPA letter, W. A. Josiger to NRC (JPN-94-041), "Generic Letter 92-01, Revision 1, "Reactor Vessel Structural Integrity," dated August 10, 1994.

3. NRC letter, L. B. Marsh to W. J. Cahill Jr., "Applicability of GE Topical Report NEDO-32205, Revision 1, For The James A. FitzPatrick Nuclear Power Plant (TAC No. M89580)," dated March 30, 1995.

ATTACHMENT II to JPN-95-050

REACTOR PRESSURE VESSEL MATERIAL CHEMISTRY DATA

for

James A. FitzPatrick Nuclear Power Plant
Docket 50-333

New York Power Authority

JAF DATABASE AND PLANT SPECIFIC DATA FOR ANALYSES OF WELD MATERIAL HEAT

13253/12008

ITEM NO.	PLANT NAME	COMPONENTS	PCT Cu	PCT Ni	REF:
1	J. A. FitzPatrick	Lower Int. Shell Axial Welds 1 – 233 A – C	0.26	0.87	1, 2
2	D. C. Cook 1	Nozzle Shell Axial Weld 1 – 442	0.28	0.74	1
3		Nozzle Shell Axial Weld 1 – 442	0.27	0.74	2
4		Lower Shell Axial Welds 3 – 442 A – C	0.28	0.74	1
5		Lower Shell Axial Welds 3 – 442 A – C	0.22	0.84	2
6		Int. Shell Axial Welds 2 – 442 A – C	0.28	0.74	1
7		Int. Shell Axial Welds 2 – 442 A – C	0.22	0.84	2
8	Fermi 2	Lower Shell Axial Welds 2 – 307A – C	0.26	0.87	1, 2
9	Fort Calhoun	Lower Shell Axial Welds 3 – 410 A – C	0.21	0.86	1
10	Maine Yankee	Axial Welds 3 – 203 A – C	0.22	0.84	1, 2

JAF DATABASE AND PLANT SPECIFIC DATA ANALYSES OF WELD MATERIAL HEAT

27204/12008

ITEM NO.	PLANT NAME	COMPONENTS	PCT Cu	PCT Ni	REF:
1	J. A. FitzPatrick	Lower Shell Axial Welds 2-233 A-C	0.25	0.99	1, 2
2	Fort Calhoun	Lower Shell Axial Welds 3-410 A-C	0.19	0.97	1
3		Lower Shell Axial Welds 3-410 A-C	0.21	1.00	2
4	Cooper	Lower Int. Shell Axial Welds 1-233 A-C	0.19	0.97	1, 2
5	Pilgrim	Lower Int. Shell Axial Welds 1-338 A-C	0.13	1.06	1, 2
6		Lower Shell Axial Welds 2-338 A-C	0.13	1.06	1, 2

JAF DATABASE AND PLANT SPECIFIC DATA FOR ANALYSES OF WELD MATERIAL HEAT

305414

ITEM NO.	PLANT NAME	COMPONENTS	PCT Cu	PCT Ni	REF:
1	J. A. FitzPatrick	Circ. Weld 1–240	0.33	0.59	1, 2
2	Beaver Valley 1	Lower Shell Axial Weld 20–714	0.34	0.61	1
3		Lower Shell Axial Weld 20–714	0.35	0.61	2
4	La Salle 1	Lower Int. Shell Axial Welds 4–308 A–C	0.33	0.59	1, 2

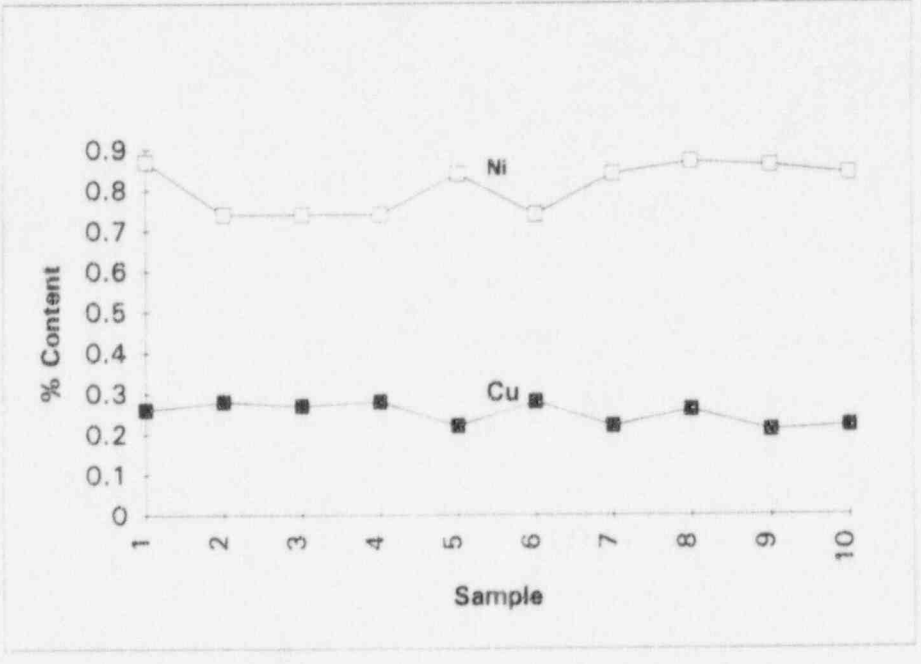
REFERENCES:

(1) NRC – Reactor Vessel Integrity Database, Version 1.1, July 1995

(2) WOG – Reactor Vessel Database RPV Data, September 11, 1995

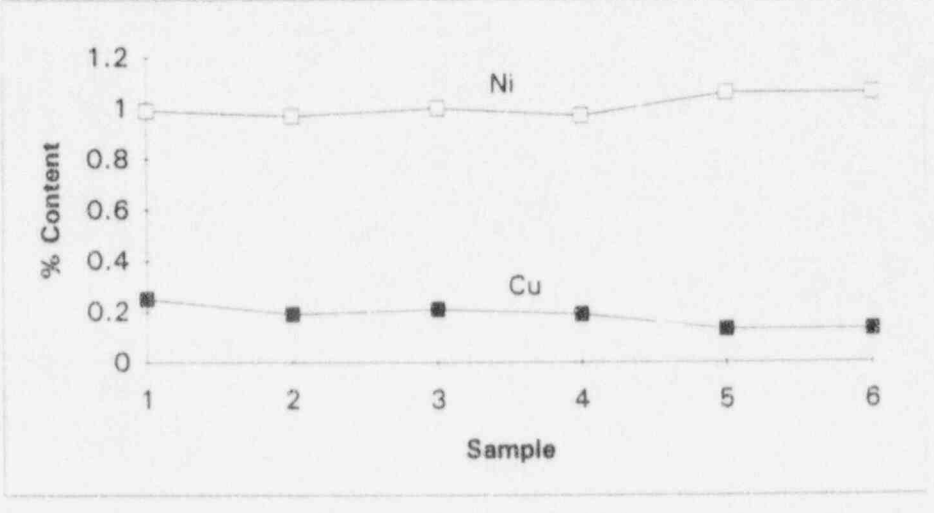
JAF BELTLINE WELD/CHEMISTRY FOR HEAT NUMBER 13253/12008

ITEM	% Cu	% Ni
1	0.26	0.87
2	0.28	0.74
3	0.27	0.74
4	0.28	0.74
5	0.22	0.84
6	0.28	0.74
7	0.22	0.84
8	0.26	0.87
9	0.21	0.86
10	0.22	0.84
MEAN	**0.253333**	**0.804444**
STDEV	**0.029059**	**0.059591**



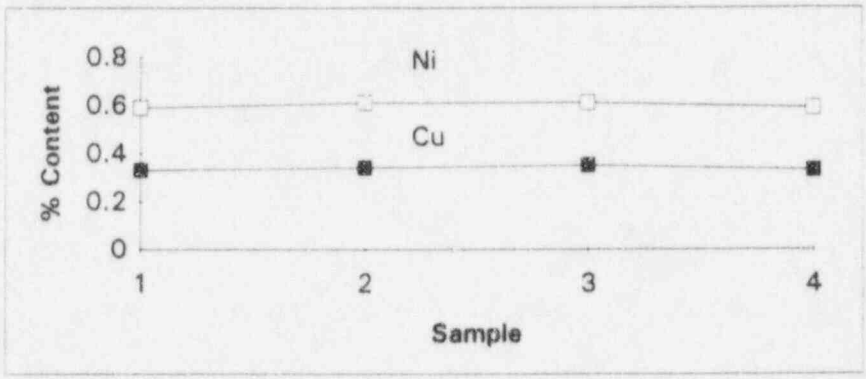
JAF BELTLINE WELD/CHEMISTRY FOR HEAT NUMBER 27204/12008

ITEM	% Cu	% Ni
1	0.25	0.99
2	0.19	0.97
3	0.21	1
4	0.19	0.97
5	0.13	1.06
6	0.13	1.06
MEAN	0.183333	1.008333
STDEV	0.046762	0.041673



JAF BELTLINE WELD/CHEMISTRY FOR HEAT NUMBER 305414

ITEM	% Cu	% Ni
1	0.33	0.59
2	0.34	0.61
3	0.35	0.61
4	0.33	0.59
MEAN	0.3375	0.6
STDEV	0.009574	0.011547



James A. FitzPatrick Beltline Plate Material Chemistry

Reactor Pressure Vessel Beltline Plate Chemistry

Plate Designation	Heat #	%Cu	%Ni
Lwr.-Int. Shell Plate - G3413-7	C 3368-1	**0.12** (l)	0.54 (l), **0.50** (c)
Lwr.-Int. Shell Plate - G3414-1	C 3301-1	**0.18** (l)	0.60 (l), **0.57** (c)
Lwr.-Int. Shell Plate - G3414-2	C 3278-2	**0.13** (l)	0.60 (l), **0.57** (c)
Lwr. Shell Plate - G3415-1R	3394-1	**0.11** (l)	0.51 (l), **0.56** (c)
Lwr. Shell Plate - G3415-2	C 3103-2	**0.14** (l)	0.60 (l), **0.57** (c)
Lwr. Shell Plate - G3415-3	C 3376-2	**0.13** (l)	0.58 (l), **0.60** (c)

(c) check analysis
(l) ladle analysis