



UNITED STATES
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

June 3, 1994

Docket No. 50-321

Mr. J. T. Beckham, Jr.
Vice President - Plant Hatch
Georgia Power Company
P.O. Box 1295
Birmingham, Alabama 35201

Dear Beckham:

SUBJECT: GENERIC LETTER (GL) 92-01, REVISION 1, "REACTOR VESSEL STRUCTURAL INTEGRITY," HATCH NUCLEAR PLANT, UNIT 1 (TAC NO. M83469)

By letter dated, July 2, 1992, you responded to Generic Letter (GL) 92-01, Revision 1. The NRC staff has completed its review of your response and finds that you have provided the information requested in GL 92-01 for Hatch Unit 1.

The GL is part of the NRC staff's program to evaluate reactor vessel integrity for Pressurized Water Reactors (PWRs) and Boiling Water Reactors (BWRs). The information provided in response to GL 92-01, including previously docketed information, is being used to confirm that licensees satisfy the requirements and commitments necessary to ensure reactor vessel integrity for their facilities.

A substantial amount of information was provided in response to GL 92-01, Revision 1. These data have been entered into a computerized data base designated Reactor Vessel Integrity Database (RVID). The RVID contains the following tables: A pressurized thermal shock (PTS) table for PWRs, a pressure-temperature limit table for BWRs and an upper-shelf energy (USE) table for PWRs and BWRs. Enclosure 1 provides the pressure-temperature table, Enclosure 2 provides the USE table for your facility, and Enclosure 3 provides a key for the nomenclature used in the tables. The tables include the data necessary to perform USE, pressure-temperature limit, and RT_{PTS} evaluations. These data were taken from your response to GL 92-01 and previously docketed information. The information in the RVID for your facility will be considered accurate at this point in time and will be used in the staff's assessments related to vessel structural integrity. References to the specific source of the data are provided in the tables.

As a result of our GL 92-01 review, the NRC staff has identified one open issue for your plant. The initial RT_{NDT} values determined by General Electric's (GE) initial methodology have not been validated and the BWR Owners Group report, GE-NE-523-109-0893, entitled, "Basis for GE RT_{NDT} Estimation Method," did not resolve the issue. GE is in the process of validating its methodology for resolving the initial RT_{NDT} determination issue and will document the results in a topical report. The BWR Owners Group is obtaining approval from its members to provide the GE topical report to the NRC staff for its review and approval. We request that you submit within 30 days a

000010

NRC FILE CENTER COPY

9406100308 940603
PDR ADDCK 05000321
P PDR

LF01
11

commitment to the BWR Owners Group effort or a schedule for a plant-specific analysis to resolve this issue. Further, we request that you provide confirmation of the plant-specific applicability of the topical report, NEDO-32205, Revision 1, (as specified in Appendix B of that report) and submit a request for approval of the topical report as the basis for demonstrating compliance with 10 CFR Part 50, Appendix G, Paragraph IV.A.1 We further request that you verify that the information you have provided for your facility has been accurately entered in the data base. If no comments are made in your response to the last request, the staff will use the information in the tables for future NRC assessments of your reactor pressure vessel.

Once you have (1) confirmed the applicability of the topical report, NEDO-32205, Revision 1, to your plant, (2) submitted the request for approval, and (3) provided your commitment to the BWR Owners Group effort or a satisfactory schedule for providing a plant-specific analysis, the staff will consider your actions related to GL 92-01, Revision 1, to be complete. Plant-specific licensing action(s) will be initiated to resolve these issues.

The information requested by this letter is within the scope of the overall burden estimated in GL 92-01, Revision 1, "Reactor Vessel Structural Integrity, 10 CFR 50.54(f)." The estimated average number of burden hours is 200 person hours for each addressee's response. This estimate pertains only to the identified response-related matters and does not include the time required to implement actions required by the regulations. This action is covered by the Office of Management and Budget Clearance Number 3150-0011, which expires June 30, 1994.

Sincerely,
/s/

Kahtan N. Jabbour, Project Manager
Project Directorate II-1
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Enclosures:

- 1. Pressure-Temperature Limit Table
- 2. Upper-Shelf Energy Table
- 3. Nomenclature Key

DISTRIBUTION

- Docket File ACRS(10)
- NRC/Local PDRs OGC
- PDII-3 Reading L.Berry
- S.Varga K.Jabbour
- G.Lainas
- D.Matthews
- J.Johnson, RII
- Q.McDonald (w/o encl)

cc w/enclosures:
See next page

OFF	LA:PD23:DRPE	PM:PD23:DRPE	D:PD23:DRPE	
NAME	LBerry	KJabbour:dt	DMatthews	
DATE	6/2/94	6/2/94	6/3/94	

OFFICIAL RECORD COPY

Document Name: G:\HATCH\HAT83469.LTR

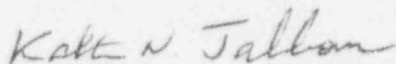
June 3, 1994

commitment to the BWR Owners Group effort or a schedule for a plant-specific analysis to resolve this issue. Further, we request that you provide confirmation of the plant-specific applicability of the topical report, NEDO-32205, Revision 1, (as specified in Appendix B of that report) and submit a request for approval of the topical report as the basis for demonstrating compliance with 10 CFR Part 50, Appendix G, Paragraph IV.A.1 We further request that you verify that the information you have provided for your facility has been accurately entered in the data base. If no comments are made in your response to the last request, the staff will use the information in the tables for future NRC assessments of your reactor pressure vessel.

Once you have (1) confirmed the applicability of the topical report, NEDO-32205, Revision 1, to your plant, (2) submitted the request for approval, and (3) provided your commitment to the BWR Owners Group effort or a satisfactory schedule for providing a plant-specific analysis, the staff will consider your actions related to GL 92-01, Revision 1, to be complete. Plant-specific licensing action(s) will be initiated to resolve these issues.

The information requested by this letter is within the scope of the overall burden estimated in GL 92-01, Revision 1, "Reactor Vessel Structural Integrity, 10 CFR 50.54(f)." The estimated average number of burden hours is 200 person hours for each addressee's response. This estimate pertains only to the identified response-related matters and does not include the time required to implement actions required by the regulations. This action is covered by the Office of Management and Budget Clearance Number 3150-0011, which expires June 30, 1994.

Sincerely,



Kahtan N. Jabbour, Project Manager
Project Directorate II-1
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Enclosures:

1. Pressure-Temperature Limit Table
2. Upper-Shelf Energy Table
3. Nomenclature Key

cc w/enclosures:

See next page

Mr. J. T. Beckham, Jr.
Georgia Power Company

Edwin I. Hatch Nuclear Plant

cc:

Mr. Ernest L. Blake, Jr.
Shaw, Pittman, Potts and Trowbridge
2300 N Street, NW.
Washington, DC 20037

Mr. Marvin Sinkule, Chief
Project Branch #3
U. S. Nuclear Regulatory Commission
101 Marietta Street, NW, Suite 2900
Atlanta, Georgia 30323

Mr. S. J. Bethay
Manager Licensing - Hatch
Georgia Power Company
P. O. Box 1295
Birmingham, Alabama 35201

Mr. Dan H. Smith, Vice President
Power Supply Operations
Oglethorpe Power Corporation
2100 East Exchange Place
Tucker, Georgia 30085-1349

Mr. L. Sumner
General Manager, Nuclear Plant
Georgia Power Company
Route 1, Box 439
Baxley, Georgia 31513

Charles A. Patrizia, Esquire
Paul, Hastings Janofsky & Walker
12th Floor
1050 Connecticut Avenue, NW.
Washington, DC 20036

Resident Inspector
U.S. Nuclear Regulatory Commission
Route 1, Box 725
Baxley, Georgia 31513

Mr. Jack D. Woodard
Senior Vice President -
Nuclear Operations
Georgia Power Company
P. O. Box 1295
Birmingham, Alabama 35201

Regional Administrator, Region II
U.S. Nuclear Regulatory Commission
101 Marietta Street, NW, Suite 2900
Atlanta, Georgia 30323

Chairman
Appling County Commissioners
County Courthouse
Baxley, Georgia 31513

Mr. Charles H. Badger
Office of Planning and Budget
Room 610
270 Washington Street, SW.
Atlanta, Georgia 30334

Harold Reheis, Director
Department of Natural Resources
205 Butler Street, SE., Suite 1252
Atlanta, Georgia 30334

Summary File for Pressure-Temperature Limits

Plant Name	Beltline Ident.	Heat No. Ident.	ID Neut. Fluence at EOL	IRT _{max}	Method of Determin. IRT _{max}	Chemistry Factor	Method of Determin. CF	%Cu	%Ni
Hatch 1 EOL: 8/6/2014	Lower Int. Shell G-4803-7	C4337-1	1.8E18	10°F	Plant specific	127.5	Table	0.17	0.62
	Lower Int. Shell G-4804-1	C3985-2	1.8E18	10°F ¹	Plant specific	90.4	Table	0.13	0.58
	Lower Int. Shell G-4804-2	C4114-2	1.8E18	10°F ¹	Plant specific	93.5	Table	0.13	0.70
	Lower Shell G-4805-1	C4112-1	1.8E18	10°F ¹	Plant specific	92	Table	0.13	0.64
	Lower Shell G-4805-2	C4112-2	1.8E18	10°F ¹	Plant specific	92	Table	0.13	0.64
	Lower Shell G-4805-3	C4149-3	1.8E18	10°F ¹	Plant specific	98.65	Table	0.14	0.57
	Lower Int. Axial Welds 1-308G/J	IP2815	1.8E18	-10°F	Plant specific	209.6	Table	0.27	0.76
	Lower Int. Axial Welds 1-308G/J	IP2809	1.8E18	-10°F ¹	Plant specific	211.8	Table	0.28	0.76
	Lower Shell Axial Welds 1-307A/C	13253	1.8E18	-10°F ¹	Plant specific	206.4	Table	0.27	0.74
	Lower Int./ Lower Shell Circ. Weld 1-313	90099	1.8E18	-10°F ¹	Plant specific	207	Table	0.17	1.00
	Lower Int./ Lower Shell Circ. Weld 1-313	33A277	1.8E18	-10°F ¹	Plant specific	236	Table	0.23	1.00

References for Hatch 1

Fluence, IRT, and chemical composition data are from July 2, 1992, letter from J. T. Beckham, Jr. to USNRC Document Control Desk, subject: Response to NRC Generic Letter 92-01, Revision 1, Reactor Vessel Structural Integrity

Weld flux data are from November 22, 1988, letter from W. G. Hairston (GPCo) to USNRC Document Control Desk, subject: Response to Generic Letter 88-11

¹Additional information required to confirm value.

Summary File for Upper Shelf Energy

Plant Name	Beltline Ident.	Heat No.	Material Type	1/4T USE at EOL	1/4T Neutron Fluence at EOL	Unirrad. USE	Method of Determin. Unirrad. USE
Hatch 1 EOL: 8/6/2014	Lower Int. Shell G-4803-7	C4337-1	A 5338-1	EMA ²	1.3E18	EMA ²	---
	Lower Int. Shell G-4804-1	C3985-2	A 5338-1	EMA ²	1.3E18	EMA ²	---
	Lower Int. Shell G-4804-2	C4114-2	A 5338-1	B6	1.3E18	90	65%
	Lower Shell G-4805-1	C4112-1	A 5338-1	EMA ²	1.3E18	EMA ²	---
	Lower Shell G-4805-2	C4112-2	A 5338-1	EMA ²	1.3E18	EMA ²	---
	Lower Shell G-4805-3	C4149-3	A 5338-1	EMA ²	1.3E18	EMA ²	---
	Lower Int. Axial Welds 1-308G/J	IP2815	Linde 1092, SAW	EMA ²	1.3E18	EMA ²	---
	Lower Int. Axial Welds 1-308G/J	IP2809	Linde 1092, SAW	EMA ²	1.3E18	EMA ²	---
	Lower Shell Axial Welds 1-307A/C	13253	Linde 1092, SAW	EMA ²	1.3E18	EMA ²	---
	Lower Int./ Lower Shell Circ. Weld 1-313	90099	Linde 0091, SAW	EMA ²	1.3E18	EMA ²	---
Lower Int./ Lower Shell Circ. Weld 1-313	33A277	Linde 0091, SAW	EMA ²	1.3E18	EMA ²	---	

²Licensee must confirm applicability of Topical Report NEDO-32205, Rev. 1

Summary File for Upper Shelf Energy

Plant Name	Beltline Ident.	Heat No.	Material Type	1/4T USE at EOL	1/4T Neutron Fluence at EOL	Unirrad. USE	Method of Determin. Unirrad. USE
<p><u>References for Hatch 1</u></p> <p>Fluence and chemical composition data are from July 2, 1992, letter from J. T. Beckham, Jr. to USNRC Document Control Desk, subject: Response to NRC Generic Letter 92-01, Revision 1, Reactor Vessel Structural Integrity</p> <p>Plate USE datum is from the surveillance capsule report (NEDC-30997)</p>							

Enclosure 3

Nomenclature and Tables

PRESSURE-TEMPERATURE LIMIT TABLES AND USE TABLES FOR ALL BWR PLANTS

NOMENCLATURE

Pressure-Temperature Limits Table

- Column 1: Plant name and date of expiration of license.
Column 2: Beltline material location identification.
Column 3: Beltline material heat number; for some welds that a single-wire or tandem-wire process has been reported, (S) indicates single wire was used in the SAW process, (T) indicates tandem wire was used in the SAW process.
Column 4: End-of-life (EOL) neutron fluence at vessel inner wall; cited directly from inner diameter (ID) value or calculated by using Regulatory Guide (RG) 1.99, Revision 2 neutron fluence attenuation methodology from the quarter thickness (T/4) value reported in the latest submittal (GL 92-01, PTS, or P/T limits submittals).
Column 5: Unirradiated reference temperature.
Column 6: Method of determining unirradiated reference temperature (IRT).

Plant-Specific

This indicates that the IRT was determined from tests on material removed from the same heat of the beltline material.

MTEB 5-2

This indicates that the unirradiated reference temperature was determined from following MTEB 5-2 guidelines for cases where the IRT was not determined using American Society of Mechanical Engineers Boiler and Pressure Vessel Code, Section III, NB-2331, methodology.

Generic

This indicates that the unirradiated reference temperature was determined from the mean value of tests on material of similar types.

- Column 7: Chemistry factor for irradiated reference temperature evaluation.
Column 8: Method of determining chemistry factor

Table

This indicates that the chemistry factor was determined from the chemistry factor tables in RG 1.99, Revision 2.

Calculated

This indicates that the chemistry factor was determined from surveillance data via procedures described in RG 1.99, Revision 2.

Column 9: Copper content; cited directly from licensee value except when more than one value was reported. (Staff used the average value in the latter case.)

No Data

This indicates that no copper data has been reported and the default value in RG 1.99, Revision 2, will be used by the staff.

Column 10: Nickel content; cited directly from licensee value except when more than one value was reported. (Staff used the average value in the latter case.)

No Data

This indicates that no nickel data has been reported and the default value in RG 1.99, Revision 2, will be used by the staff.

Upper Shelf Energy Table

Column 1: Plant name and date of expiration of license.

Column 2: Beltline material location identification.

Column 3: Beltline material heat number; for some welds that a single-wire or tandem-wire process has been reported, (S) indicates single wire was used in the SAW process. (T) indicates tandem wire was used in the SAW process.

Column 4: Material type; plate types include A 533B-1, A 302B, A 302B Mod., and forging A 508-2; weld types include SAW welds using Linde 80, 0091, 124, 1092, ARCOS-B5 flux, Rotterdam welds using Graw Lo, SMIT 89, LW 320, and SAF 89 flux, and SMAW welds using no flux.

Column 5: EOL upper-shelf energy (USE) at T/4; calculated by using the EOL fluence and either the copper value or the surveillance data. (Both methods are described in RG 1.99, Revision 2.)

EMA

This indicates that the USE issue may be covered by the approved equivalent margins analysis in the BWR Owners Group Topical Report: NEDO-32205, Revision 1.

Column 6: EOL neutron fluence at T/4 from vessel inner wall; cited directly from T/4 value or calculated by using RG 1.99, Revision 2 neutron fluence attenuation methodology from the ID value reported in the latest submittal (GL 92-01, PTS, or P/T limits submittals).

Column 7: Unirradiated USE.

EMA

This indicates that the USE issue may be covered by the approved equivalent margins analysis in the BWR Owners Group Topical Report: NEDO-32205, Revision 1.

Column 8: Method of determining unirradiated USE

Direct

For plates, this indicates that the unirradiated USE was from a transverse specimen. For welds, this indicates that the unirradiated USE was from test date.

65%

This indicates that the unirradiated USE was 65% of the USE from a longitudinal specimen.

Generic

This indicates that the unirradiated USE was reported by the licensee from other plants with similar materials to the beltline material.

NRC generic

This indicates that the unirradiated USE was derived by the staff from other plants with similar materials to the beltline material.

10, 30, 40, or 50 °F

This indicates that the unirradiated USE was derived from Charpy test conducted at 10, 30, 40, or 50 °F.

Surv. Weld

This indicates that the unirradiated USE was from the surveillance weld having the same weld wire heat number.

Equiv. to Surv. Weld

This indicates that the unirradiated USE was from the surveillance weld having different weld wire heat number.

Sister Plant

This indicates that the unirradiated USE was derived by using the reported value from other plants with the same weld wire heat number.

Blank

indicates that there is insufficient data to determine the unirradiated USE. These licensees will utilize Topical Report NEDO-32205, Revision 1 to demonstrate USE compliance to Appendix G, 10 CFR Part 50.