UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

May 26, 1994

Docket Nos. 50-424
and 50-425

Mr. C. K. McCoy
Vice President - Nuclear
Vogtle Project
Georgia Power Company
P.O. Box 1295
Birmingham, Alabama 35201

Dear Mr. McCoy:

SUBJECT: GENERIC LETTER (GL) 92-01, REVISION 1, "REACTOR VESSEL STRUCTURAL INTEGRITY," VOGTLE ELECTRIC GENERATING PLANT, UNITS 1 AND 2 (TAC NOS. M83522 AND M83523)

By letter dated June 25, 1992, Georgia Power Company (GPC) provided its response to GL 92-01, Revision 1. The NRC staff has completed its review of your response. Based on its review, the staff has determined that GPC has provided the information requested in GL 92-01.

The GL is part of the 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 the Reactor Vessel Integrity Database (RVID). The RVID contains the following tables: A pressurized thermal shock (PTS) table for PWRs, a pressure-temperature limits table for BWRs and an upper-shelf energy (USE) table for PWRs and BWRs. Enclosure 1 provides the PTS tables, Enclosure 2 provides the USE tables for your facilities, and Enclosure 3 provides a key for the nomenclature used in the tables. The tables include the data necessary to perform USE and RT_{pts} evaluations. These data were taken from your response to GL 92-01 and previously docketed information. References to the specific source of the data are provided in the tables.

We request that you verify that the information that you have provided for your facilities has been accurately entered in the summary data files. No response is necessary unless an inconsistency is identified. If no comments are received within 30 days from the date of this letter, the staff will consider your actions related to GL 92-01, Revision 1, to be complete and the staff will use the information in the tables for future NRC assessments of your reactor pressure vessel.

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,

Original signed by:
L. Wheeler for:

Darl S. Hood, Project Manager
Project Directorate II-3
Division of Reactor Projects I/II
Office of Nuclear Reactor Regulation

Enclosures:
1. Pressurized Thermal Shock Tables
2. Upper-Shelf Energy Tables
3. Nomenclature Key

cc w/enclosures:
See next page

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Sincerely,

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Darl S. Hood, Project Manager
Project Directorate II-3
Division of Reactor Projects I/II
Office of Nuclear Reactor Regulation

Enclosures:
1. Pressurized Thermal Shock Tables
2. Upper-Shelf Energy Tables
3. Nomenclature Key

cc w/enclosures:
See next page

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Summary File for Pressurized Thermal Shock

Plant Name	Beltline Ident.	Heat No. Ident.	ID Neut. Fluence at EOL	IRT_{NDT}	Method of Determin. IRT_{NDT}	Chemistry Factor	Method of Determin. CF	%Cu	%Ni
Vogtle 1 EOL: 1/16/2027	Int. shell B8805-1		3.16E19	0°F	Plant Specific	51	Table	0.08	0.59
	Int. shell B8805-2		3.16E19	20°F	Plant Specific	51	Table	0.08	0.59
	Int. shell B8805-3		3.16E19	30°F	Plant Specific	37	Table	0.06	0.60
	Lower shell B8606-1		3.16E19	20°F	Plant Specific	31	Table	0.05	0.59
	Lower shell B8606-2		3.16E19	20°F	Plant Specific	31	Table	0.05	0.58
	Lower shell B8606-3		3.16E19	10°F	Plant Specific	37	Table	0.06	0.64
	Axial & Girth Welds	83653	3.16E19	-80°F	Plant Specific	33.5	Table	0.04	0.10

References Vogtle 1

Chemical composition, fluence, and IRT_{NDT} are from June 25, 1992, letter from C. K. McCoy (GPCo) to USNRC Document Control Desk, subject: Vogtle Electric Generating Plant, Reactor Vessel Structural Integrity, Generic Letter 92-01, Revision 1

Summary File for Pressurized Thermal Shock

Plant Name	Beltline Ident.	Heat No. Ident.	ID Neut. Fluence at EOL	IRT_{NDT}	Method of Determin. IRT_{NDT}	Chemistry Factor	Method of Determin. CF	%Cu	%Ni
Vogtle 2 EOL: 2/9/2029	Int. shell R4-1		3.17E19	10°F	Plant specific	37	Table	0.06	0.64
	Int. shell R4-2		3.17E19	10°F	Plant specific	31	Table	0.05	0.62
	Int. shell R4-3		3.17E19	30°F	Plant specific	31	Table	0.05	0.59
	Lower shell B8825-1		3.17E19	40°F	Plant specific	31	Table	0.05	0.59
	Lower shell R8-1		3.17E19	40°F	Plant specific	37	Table	0.06	0.62
	Lower shell B8628-1		3.17E19	50°F	Plant specific	31	Table	0.05	0.59
	Axial welds	87005	3.17E19	-10°F	Plant specific	46.95	Table	0.07	0.13
	Circ. weld	87005	3.17E19	-30°F	Plant specific	42.8	Table	0.06	0.12

References for Vogtle 2

Chemical composition, fluence, and IRT_{NDT} are from June 25, 1992, letter from C. K. McCoy (GPCo) to USNRC Document Control Desk, subject: Vogtle Electric Generating Plant, Reactor Vessel Structural Integrity, Generic Letter 92-01, Revision 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
Vogtle 1 EOL: 1/16/2027	Int. shell B8805-1		A 533B-1	70.2	1.883E19	90	Direct
	Int. shell B8805-2		A 533B-1	78.0	1.883E19	100	Direct
	Int. shell B8805-3		A 533B-1	83.4	1.883E19	107	Direct
	Lower shell B8606-1		A 533B-1	90.4	1.883E19	116	Direct
	Lower shell B8606-2		A 533B-1	88.1	1.883E19	113	Direct
	Lower shell B8606-3		A 533B-1	92.0	1.883E19	118	Direct
	Welds	83653	Linde 0091, SAW	104.5	1.883E19	134	Direct

References

Chemical composition, fluence, and UUSE data are from June 25, 1992, letter from C. K. McCoy (GPCo) to USNRC Document Control Desk, subject: Vogtle Electric Generating Plant, Reactor Vessel Structural Integrity, Generic Letter 92-01, Revision 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
Vogtle 2 EOL: 2/9/2029	Int. shell R4-1		A 533B-1	74	1.889E19	95	Direct
	Int. shell R4-2		A 533B-1	81	1.889E19	104	Direct
	Int. shell R4-3		A 533B-1	65	1.889E19	84	Direct
	Lower shell B8825-1		A 533B-1	65	1.889E19	83	Direct
	Lower shell R8-1		A 533B-1	68	1.889E19	87	Direct
	Lower shell B8628-1		A 533B-1	66	1.889E19	85	Direct
	Axial welds	87005	Linde 0091, SAW	115	1.889E19	152	Direct
	Circ. weld	87005	Linde 124, SAW	69	1.889E19	90	Direct

References

Chemical composition, fluence, and UUSE data are from June 25, 1992, letter from C. K. McCoy (GPCo) to USNRC Document Control Desk, subject: Vogtle Electric Generating Plant, Reactor Vessel Structural Integrity, Generic Letter 92-01, Revision 1

PRESSURIZED THERMAL SHOCK AND USE TABLES FOR ALL PWR PLANTS

NOMENCLATURE

Pressurized Thermal Shock 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 cooper 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 either owners group or plant-specific equivalent margins analyses.

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 either owners group or plant-specific equivalent margins analyses.

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.