

Georgia Power Company
40 Inverness Center Parkway
Post Office Box 1295
Birmingham, Alabama 35201
Telephone 205 877-7279

J. T. Beckham, Jr.
Vice President—Nuclear
Hatch Project



HL-1668
001740

July 15, 1991

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

PLANT HATCH - UNITS 1, 2
NRC DOCKETS 50-321, 50-366
OPERATING LICENSES DPR-57, NPF-5
REQUEST TO REVISE TECHNICAL SPECIFICATIONS:
REACTOR VESSEL TEMPERATURE AND PRESSURE LIMITS

Gentlemen:

In accordance with the provisions of 10 CFR 50.90, as required by 10 CFR 50.52(c)(1), Georgia Power Company (GPC) hereby proposes a revision to the Unit 1 and Unit 2 Technical Specifications (TS), Appendix A to Operating Licenses DPR-57 and NPF-5, respectively.

The proposed amendment revises the Unit 2 TS as specified in GPC's November 22, 1988, response to NRC Generic Letter (GL) 88-11, issued July 12, 1988. The proposed changes pertain to the reactor pressure vessel (RPV) test specimens and the RPV pressure and temperature (P-T) limits for hydrostatic pressure tests required by ASME Code, Section XI, non-nuclear heatup and cooldown, core critical operation, and vessel stud tensioning. The revised P-T limits, which reflect the test results from the first reactor surveillance capsule removed from the Hatch Unit 2 RPV in the Fall of 1989, were determined in accordance with the instructions of Regulatory Guide 1.99, "Radiation Embrittlement of Reactor Vessel Materials," Revision 2.

The amendment request also proposes to delete the schedule for removal of the RPV surveillance capsules from the Unit 2 TS in accordance with NRC Generic Letter 91-01. In addition, a minor change to the Unit 1 Bases addressing P-T limits is included.

Enclosure 1 provides a detailed description of the proposed changes and circumstances necessitating the change request.

Enclosure 2 details the basis for GPC's determination the proposed changes do not involve any significant hazards considerations.

9107220235 910715
PDR ADOCK 05000321
P PDR

A047
11

U. S. Nuclear Regulatory Commission

July 15, 1991

Page Two

Enclosure 3 provides page change instructions for incorporating the proposed changes into the Hatch Unit 1 and Unit 2 TS. The proposed changed TS pages, including the marked-up pages, follow Enclosure 3.

Enclosure 4 is General Electric (GE) Report No. SASR 90-104, "E. I. Hatch Nuclear Power Station, Unit 2 Vessel Surveillance Materials Testing and Fracture Toughness Analysis," which details the evaluations used to determine the proposed TS changes.

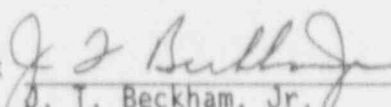
To allow time for procedure revisions and orderly incorporation into copies of the TS, GPC requests the proposed amendment, once approved by the NRC, be issued with an effective date to be not later than 60 days from the issuance of the amendment.

In accordance with the requirements of 10 CFR 50.91, a copy of this letter and all applicable enclosures will be sent to Mr. J. D. Tanner of the Environmental Protection Division of the Georgia Department of Natural Resources.

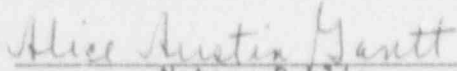
Mr. J. T. Beckham, Jr. states he is Vice President of Georgia Power Company and is authorized to execute this oath on behalf of Georgia Power Company, and to the best of his knowledge and belief, the facts set forth in this letter are true.

GEORGIA POWER COMPANY

BY:


J. T. Beckham, Jr.

Sworn to and subscribed before me this 15th day of July 1991.


Notary Public

MY COMMISSION EXPIRES APRIL 10, 1993

GKM/cr

Enclosures: (See next page.)

U. S. Nuclear Regulatory Commission

July 15, 1991

Page Two

Enclosures:

1. Basis for Change Request
2. 10 CFR 50.92 Evaluation
3. Page Change Instructions
4. GF Report No. SASR 90-104, "E. I. Hatch Nuclear Power Station, Unit 2 Vessel Surveillance Materials Testing and Fracture Toughness Analysis," dated May 1991.

cc: Georgia Power Company

Mr. H. L. Sumner, General Manager - Nuclear Plant

Mr. J. D. Heidt, Manager Engineering and Licensing - Hatch
NORMS

U.S. Nuclear Regulatory Commission, Washington, D.C.

Mr. K. Jabbour, Licensing Project Manager - Hatch

U.S. Nuclear Regulatory Commission, Region II

Mr. S. D. Ebner, Regional Administrator

Mr. L. D. Wert, Senior Resident Inspector - Hatch

State of Georgia

Mr. J. D. Tanner, Commissioner - Department of Natural Resources

ENCLOSURE 1

PLANT HATCH - UNITS 1, 2
NRC DOCKETS 50-321, 50-366
OPERATING LICENSES DPR-57, NPF-5
REQUEST TO REVISE TECHNICAL SPECIFICATIONS:
REACTOR VESSEL TEMPERATURE AND PRESSURE LIMITS

BASIS FOR CHANGE REQUEST

PROPOSED CHANGE ONE:

This proposed change modifies the Unit 2 Technical Specifications (TS) pressure-temperature (P-T) curves to reflect the results of surveillance specimen testing and incorporates NRC guidance provided in Regulatory Guide 1.99, Revision 2. The change replaces the predicted Adjustment of Reference Temperature (ART) for the limiting beltline material (proposed TS Figure D 3/4.4.6-1) and the P-T limits for non-nuclear heatup, cooldown, criticality, and inservice hydrostatic tests (proposed TS Figures 3.4.6.1-1, 3.4.6.1-2, and 3.4.6.1-3, respectively). This change also modifies the operating temperatures around the closure flange region.

Unit 2 Bases Section 3/4 4.6 has been revised to reflect this change and includes a brief description of the use of the revised TS curves during inservice hydrostatic/leakage testing. This brief description of proper P-T conformance during the hydrostatic/leakage test has also been added to Unit 1 Bases Section 3.6.B.

Basis for Proposed Change One:

The reactor pressure vessel (RPV) receives neutron fluence during operation, which tends to raise the nil-ductility temperature (NDT). P-T curves are provided in the TS to assure RPV operation occurs far from the region in which brittle fracture could occur. To assure there is sufficient margin to NDT, specimens of RPV materials are placed in regions of the core which receive substantial irradiation. The samples are periodically removed and tested to benchmark predicted calculations of the rise in the reference temperature of NDT (RTNDT). The proposed change modifies the TS P-T curves, accounting for Unit 2-specific data and the NRC guidance provided in Regulatory Guide 1.99, Revision 2.

Surveillance Capsule 3 was removed from the Unit 2 RPV at the end of Fuel Cycle 8 and shipped to GE Vallecitos Nuclear Center (VNC) for testing. The flux wires, and Charpy V-Notch and tensile test specimens removed from the capsule were tested in accordance with ASTM Standard E185-82. Revised operating limits curves were developed using flux wire test results. Enclosure 4 provides a detailed evaluation of the test results and analytical methods used to revise the Unit 2 TS.

ENCLOSURE 1 (Continued)

REQUEST TO REVISE TECHNICAL SPECIFICATIONS:

BASIS FOR CHANGE REQUEST

The irradiation effects were projected, based on Regulatory Guide 1.99, Revision 2, to conditions for 32 effective full power years (EFPY) of operation. The 32 EFPY conditions are predicted to be less severe than the limits in 10 CFR 50, Appendix G.

The P-T operating limits curves were developed for three reactor conditions: hydrostatic pressure tests, non-nuclear heatup and cooldown, and core critical operation. These revised curves replace Unit 2 TS Figures 3.4.6.1-1, 3.4.6.1-2, and 3.4.6.1-3, respectively. They were developed by considering the requirements applicable to the reactor pressure vessel non-beltline, beltline, and closure flange regions. The limiting regions of the vessel affecting the curves' shapes are the feedwater nozzle, bottom head and closure flange regions. The bolt preload and minimum permissible operating temperatures were determined to be 90°F. The predicted irradiation shifts for the Unit 2 beltline materials are low enough that the beltline is not predicted to be limiting through 32 EFPY of operation. Therefore, barring any changes due to future surveillance data or revisions to regulations, the Unit 2 P-T curves will apply for operation through 32 EFPY.

The requirements of 10 CFR 50, Appendix G, "Fracture Toughness Requirements," address vessel design life conditions and limits of operation designed to prevent brittle fracture. Based on surveillance testing results and the associated analyses, the following conclusions are made:

1. The adjusted reference temperatures at 32 EFPY for the limiting beltline material of 69°F is below the 10 CFR 50, Appendix G, allowable limit of 200°F, above which special analyses or provisions for annealing are required. (Reference proposed TS Figure B 3/4.4.6-1.)
2. The 32 EFPY values of the Upper Shelf Energy (USE), calculated to be 61 ft-lb and 72 ft-lb for plate and weld material, respectively, are well above the 10 CFR 50, Appendix G, allowable of 50 ft-lb. Thus, there is no need, based on USE values, for special analyses or provisions for annealing the Unit 2 vessel beltline.

ENCLOSURE 1 (Continued)

REQUEST TO REVISE TECHNICAL SPECIFICATIONS:

BASIS FOR CHANGE REQUEST

3. Examination of the normal and upset operating conditions for the reactor shows that the worst P-T conditions expected from unplanned temperature transients are acceptable relative to the limits shown in proposed TS Figures 3.4.6.1-1 and 3.4.6.1-3. Therefore, the only expected operating conditions for which the operating tests are a concern are those involving operator interaction, such as pressure testing and initiation of core criticality.

The proposed TS P-T curves incorporate the latest guidance of 10 CFR 50, Appendix G, and the test results from the first surveillance capsule specimen from Unit 2. Therefore, the curves are acceptable for use at Plant Hatch Unit 2.

PROPOSED CHANGE TWO:

Unit 2 TS Table 4.4.6.1.3-1, the schedule for removal of the RPV surveillance capsules, has been deleted and relocated to the FSAR. Also, the reference to this Table in surveillance requirement 4.4.6.1.3 and in Bases Section 3/4.4.6 have been removed. The Bases section has been revised to indicate the removal schedule will be contained in the FSAR.

Basis for Proposed Change Two:

On January 4, 1991, the NRC issued Generic Letter (GL) 91-01, "Removal of the Schedule for the Withdrawal of Reactor Vessel Material Specimens from Technical Specifications." The GL encouraged licensees to propose deletion of this table as one of the line-item improvements from the TS Improvement Program.

The removal of the schedule for withdrawal of reactor vessel material surveillance specimens from the TS will not result in any loss of regulatory control because changes to this schedule are controlled by the requirements of Appendix H to 10 CFR Part 50. The Unit 2 TS will still maintain the surveillance requirement which states that the "... specimens shall be removed and examined to determine changes in material properties, as required by 10 CFR 50, Appendix H." An updated version of the specimen withdrawal schedule will be contained in the Unit 2 Final Safety Analysis Report (FSAR).

ENCLOSURE 2

PLANT HATCH - UNITS 1 AND 2
NRC DOCKETS 50-321, 50-366
OPERATING LICENSES DPR-57, NPF-5
REQUEST TO REVISE TECHNICAL SPECIFICATIONS:
REACTOR VESSEL TEMPERATURE AND PRESSURE LIMITS

10 CFR 50.92 EVALUATION

PROPOSED CHANGE ONE:

This proposed change modifies the Unit 2 TS P-T curves and associated Bases to reflect the results of surveillance specimen testing and incorporates NRC guidance provided in Regulatory Guide 1.99, Revision 2. The change replaces the predicted Adjustment of Reference Temperature (ART) for the limiting beltline material (proposed TS Figure B 3/4.4.6-1) and the P-T limits for non-nuclear heatup and cooldown, criticality, and inservice hydrostatic tests (proposed TS Figures 3.4.6.1-1, 3.4.6.1-2, and 3.4.6.1-3, respectively). This change also modifies the operating temperatures around the closure flange region. A minor clarification to Unit 1 Bases Section 3.6.B is also proposed.

Basis for Proposed Change One:

Georgia Power Company has reviewed this proposed change and determined it does not involve a significant hazards consideration based on the following:

1. The proposed change does not increase the probability or consequences of an accident previously evaluated based on the specimen test results (i.e., flux wires, Charpy V-Notch impact test specimens, and uniaxial tensile test specimens) removed from the Unit 2 RPV in the Fall of 1989. The proposed limits are based on the analyses of the specimens using the methods described in 10 CFR 50, Appendix H, ASTM Standard E185, and Regulatory Guide 1.99, Revision 2, and meet the requirements of 10 CFR 50, Appendix G. No plant equipment or system, other than the RPV, is affected by the proposed changes.
2. The proposed change does not create the possibility of a new or different type of accident from any accident previously evaluated, because no new modes of operation are introduced. The proposed change places new limits on pressure and temperature, thus ensuring the RPV will not fail due to brittle fracture. The new limits were calculated using approved methods and meet the requirements of 10 CFR 50, Appendix G. Therefore, the possibility of vessel failure due to incorrect operating limits is not introduced.

ENCLOSURE 2 (Continued)

REQUEST TO REVISE TECHNICAL SPECIFICATIONS:

10 CFR 50.92

3. The proposed change does not significantly reduce a margin of safety, since the margin of safety is maintained by imposing new limits on RPV pressure and temperature to account for the increase in reference temperature.

PROPOSED CHANGE TWO:

Unit 2 TS Table 4.4.6.1.3-1, the schedule for removal of the RPV surveillance capsules, has been deleted and relocated to the FSAR. Also, references to this table in Surveillance Requirement 4.4.6.1.3 and Bases section 3/4.4.6 have been removed. The Bases section has been revised to indicate the removal schedule will be contained in the Unit 2 FSAR.

Basis for Proposed Change Two:

Georgia Power Company has reviewed this proposed change and determined it does not involve a significant hazards consideration based on the following:

1. The proposed change does not significantly increase the probability or consequences for an accident previously evaluated because the reactor vessel material surveillance program is not affected by the proposed change. Implementation of the proposed change will delete a license requirement that is redundant to the Code of Federal Regulations. Thus, this proposed Technical Specification is considered to be administrative in nature.
2. The proposed change will not create the possibility of a new or different kind of accident from any accident previously evaluated because implementation of this change will not alter plant configuration or mode of operation. Compliance with existing regulations will ensure continued confidence in reactor vessel material properties.
3. The proposed change will not involve a significant reduction in the margin of safety because the evaluation of reactor vessel material embrittlement is not altered by this change. Additionally, Surveillance Requirement 4.4.6.1.3 and Table 4.4.6.1.3-1 are not beneficial to the primary user of the Technical Specifications (i.e., the reactor operator). Thus, deletion of this material will actually enhance the usability of the Technical Specifications by plant operators.

ENCLOSURE 3

PLANT HATCH - UNITS 1, 2
NRC DOCKETS 50-321, 50-366
OPERATING LICENSES DPR-57, NPF-5
REQUEST TO REVISE TECHNICAL SPECIFICATIONS:
REACTOR VESSEL TEMPERATURE AND PRESSURE LIMITS

PAGE CHANGE INSTRUCTIONS

The proposed changes to the Plant Hatch Unit 1 and Unit 2 Technical Specifications (Appendix A to Operating Licenses DPR-57 and NPF-5, respectively) will be incorporated as follows:

UNIT 2

| <u>Page</u> | <u>Instruction</u> |
|-------------|--------------------|
| 3/4 4-13 | Replace |
| 3/4 4-14 | Replace |
| 3/4 4-15 | Replace |
| 3/4 4-16 | Replace |
| 3/4 4-17 | Delete |
| B 3/4 4-4 | Replace |
| B 3/4 4-5 | Replace |
| B 3/4 4-6 | Replace |

UNIT 1

| <u>Page</u> | <u>Instruction</u> |
|-------------|--------------------|
| 3.6-16 | Replace |