

MAR 29 2002



LR-N02-0039  
LCR H02-04

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

**REQUEST FOR CHANGE TO TECHNICAL SPECIFICATIONS  
EXTENDED USE OF PRESSURE – TEMPERATURE LIMIT CURVES  
HOPE CREEK GENERATING STATION  
FACILITY OPERATING LICENSE NPF-57  
DOCKET NO. 50-354**

Pursuant to 10 CFR 50.90, PSEG Nuclear LLC (PSEG) hereby requests a revision to the Technical Specifications for the Hope Creek Generating Station. In accordance with 10CFR50.91(b)(1), a copy of this submittal has been sent to the State of New Jersey.

The proposed amendment will allow the use of the pressure-temperature curves approved in Amendment 131 for an additional cycle until revised curves are submitted utilizing Regulatory Guide 1.190 methodology as part of Hope Creek's extended power uprate. The submittal of Technical Specification changes for the extended power uprate are targeted for May 2003 to be implemented in the Fall 2004 outage (end of Cycle 12).

PSEG has evaluated the proposed changes in accordance with 10CFR50.91(a)(1), using the criteria in 10CFR50.92(c), and has determined this request involves no significant hazards considerations. The proposed amendment also meets the eligibility criteria for categorical exclusion set forth in 10CFR51.22(c)(9). An evaluation of the requested changes is provided in Attachment 1 to this letter. The marked up Technical Specification pages affected by the proposed changes are provided in Attachment 2.

PSEG requests approval of the proposed License Amendment by February 1, 2003 to be implemented within 60 days. This will allow startup from Hope Creek's eleventh (11) refueling outage which is scheduled in April 2003.

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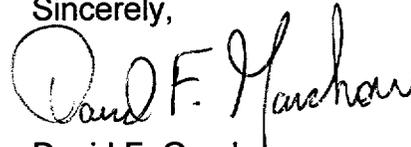
MAR 29 2002

Below is a summary of the commitments made in this submittal:

- o Based upon approval of this request, new pressure-temperature limit curves will be submitted as part of the Hope Creek extended power uprate utilizing the methodology of Regulatory Guide 1.190. Submittal of the technical specification changes are targeted for May 2003 with implementation of the extended power uprate in the Fall 2004 outage.

Should you have any questions regarding this request, please contact Mr. Brian Thomas at 856-339-2022.

Sincerely,



David F. Garchow  
Vice President – Operations

Attachments (2)

C Mr. H. J. Miller, Administrator - Region I  
U. S. Nuclear Regulatory Commission  
475 Allendale Road  
King of Prussia, PA 19406

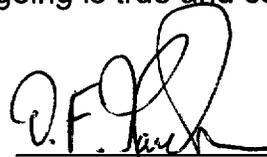
U. S. Nuclear Regulatory Commission  
ATTN: Mr. R. Ennis, Licensing Project Manager - Hope Creek  
Mail Stop 08B1  
Washington, DC 20555-0001

USNRC Senior Resident Inspector - HC (X24)

Mr. K. Tosch, Manager IV  
Bureau of Nuclear Engineering  
PO Box 415  
Trenton, NJ 08625

I declare under penalty of perjury that the foregoing is true and correct.

Executed on 3/29/02

  
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D. F. Garchow  
Vice President - Operations

**HOPE CREEK GENERATING STATION  
FACILITY OPERATING LICENSE NPF-57  
DOCKET NO. 50-354**

**EVALUATION OF REVISIONS TO THE TECHNICAL SPECIFICATIONS  
FOR EXTENDED USE OF PRESSURE-TEMPERATURE LIMIT CURVES**

**REQUEST FOR CHANGE TO TECHNICAL SPECIFICATIONS  
EXTENDED USE OF PRESSURE-TEMPERATURE LIMIT CURVES**

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**REQUEST FOR CHANGE TO TECHNICAL SPECIFICATIONS  
EXTENDED USE OF PRESSURE-TEMPERATURE LIMIT CURVES**

1. DESCRIPTION

The proposed amendment would revise the Hope Creek Technical Specifications contained in Appendix A to the Operating License to extend the use of the current pressure-temperature through the end of Cycle 12 operation. In Amendment 131 issued July 30, 2001 to increase the licensed power level by approximately 1.4%, the NRC approved the revision of the reactor vessel pressure-temperature (P-T) limits through the end of Cycle 11, which is currently scheduled to end in April 2003.

2. PROPOSED CHANGE

The proposed changes to the Technical Specifications would revise the footnote on Figure 3.4.6.1-1, "Hydrostatic Pressure and Leak Tests Pressure/Temperature Limits- Curve A," Figure 3.4.6.1-2, "Non-Nuclear and Cooldown Pressure/Temperature Limits – Curve B," and Figure 3.4.6.1-3, "Core Critical Heatup and Cooldown Pressure/Temperature Limits – Curve C." The current footnote states, "This figure is valid through Cycle 11 Operation in accordance with NRC Safety Evaluation supporting Amendment No. 131." The revised footnote will read, "This figure is valid through Cycle 12 Operation in accordance with NRC Safety Evaluation supporting Amendment No. \_\_\_\_."

For consistency purposes, the note on figures 3.4.6.1-1, 3.4.6.1-2 and 3.4.6.1-3 which states that the, "Curves are valid for 32 EFPY of operation" is being deleted.

The marked up Technical Specification pages are included in Attachment 2.

3. BACKGROUND

On July 30, 2001, the NRC approved Amendment 131 to the Hope Creek Technical Specifications to allow an increase in licensed power level to 3339 MWt. As part of this amendment, PSEG requested changes to the pressure-temperature (P-T) limits for the Hope Creek reactor vessel. In the Safety Evaluation Report (SER) supporting Amendment 131 the NRC noted that the P-T limit curves were developed with an applicability of 32 effective full power years (EFPY) of operation which corresponds to the end of the current license.

In a teleconference between the NRC Staff and PSEG, the staff indicated that there were unresolved technical issues regarding the methodology used to derive the fluence values for the amendment. Specifically, the revised P-T curves did not reflect the guidance contained in Draft Regulatory Guide DG-1053, "Calculational and Dosimetry Methods for Determining Pressure Vessel Neutron

Fluence," (subsequently issued as Regulatory Guide 1.190 in March 2001). Therefore the P-T curves could not be approved for the entire operation of 32 EFPY.

As an interim solution, PSEG requested in Reference 2 to add a note to the P-T limit curves to allow their use until the end of Cycle 11. Prior to the end of Cycle 11 PSEG would resubmit new P-T limit curves utilizing the guidance of Regulatory Guide 1.190.

Following approval of Amendment 131 on July 30, 2001, PSEG determined that it will be performing an extended power uprate of Hope Creek. The extended power uprate is currently scheduled to be implemented in the Fall of 2004 at the conclusion of the end of Cycle 12 operation. As a result of the extended power uprate, the Hope Creek Technical Specifications will need to be revised including the pressure-temperature limit curves discussed above to reflect the increase in rated thermal power. As a result of this decision, PSEG is requesting that the current P-T limit curves approved in Amendment 131 for use until the end of cycle 11 be extended for use until the end of cycle 12. The P-T curves that will be submitted as part of the extended power uprate for Hope Creek will be performed utilizing the methodology of Regulatory Guide 1.190.

#### 4. TECHNICAL ANALYSIS

The proposed amendment would revise the note associated with Figures 3.4.6.1-1, 3.4.6.1-2 and 3.4.6.1-3 to extend the use of the P-T limit curves for an additional cycle.

As stated above, the P-T limit curves approved in Amendment 131 did not reflect the guidance contained in Draft Regulatory Guide DG-1053, "Calculational and Dosimetry Methods for Determining Pressure Vessel Neutron Fluence," (subsequently issued as Regulatory Guide 1.190 in March 2001). Therefore the P-T curves could not be approved for the entire operation of 32 EFPY.

The maximum fluence used to develop the current P-T limit curves is  $5.24 \times 10^{17}$  n/cm<sup>2</sup>. For the same rated power level, fluence is directly proportional to EFPY. The maximum fluence above relates to 32 EFPY which is assumed to be at the end of the plant license (2026). In previous discussions, the NRC had indicated that the new Regulatory Guide (RG) 1.190 methods could result in fluence that is approximately 20% higher than the previous methods. In evaluating the feasibility of extending the current P-T limit curves to the end of cycle 12, an assumption was used that the actual fluence value would be 50% higher than the current values. This means that the fluence at 32 EFPY would be 1.5 times higher than was assumed in the existing P-T limits. Using this assumption, the maximum fluence value of  $5.24 \times 10^{17}$  n/cm<sup>2</sup> would be reached at 21.3 EFPY (32/1.5). Thus for a 50% higher fluence, the current P-T limit curves would be valid to 21.3 EFPY.

At the end of the previous cycle (cycle 10) in October 2001, the EFPY of operation was 12.2 EFPY. Utilizing fuel design projections, Hope Creek would reach 21.3 EFPY in fuel cycle 17, which is projected to start in year 2010. Therefore with a 50% higher fluence value, the current P-T curves would still be valid until the year 2010. Based on the above, the currently approved P-T curves would provide more than sufficient margin to operate until the end of cycle 12 (Fall 2004) and ensure that the reactor vessel integrity is protected under all operating conditions.

For consistency purposes, the note on figures 3.4.6.1-1, 3.4.6.1-2 and 3.4.6.1-3 which states that the, "Curves are valid for 32 EFPY of operation" is being deleted. Removal of this note will eliminate any confusion associated with the note that will state that the curves are only valid to the end of cycle 12.

## 5. REGULATORY SAFETY ANALYSIS

### 5.1 No Significant Hazards Consideration

PSEG Nuclear LLC (PSEG) has evaluated whether or not a significant hazards consideration is involved with the proposed amendment by focusing on the three standards set forth in 10 CFR 50.92, "Issuance of amendment" as discussed below:

1. Does the proposed change involve a significant increase in the probability or consequences of an accident previously evaluated?

Response: No.

The proposed amendment to revise the technical specifications to extend the use of the pressure-temperature (P-T) limits does not affect the operation or configuration of any plant equipment. Thus, no new accident initiators are created by this change. The proposed change extends the use of the P-T limits for an additional cycle. The P-T limits are based on the projected reactor vessel neutron fluence at 32 effective full power years (EFPY) of operation. At the end of cycle 10, Hope Creek Generating Station (HCGS) was at approximately 12.2 EFPY of operation (38.1% of the 32 EFPY). At the end of cycle 12 there will remain sufficient margin to ensure that the current 32 EFPY fluence projections will not be exceeded. This ensures that the basis for proposed applicability of the current P-T limits is conservative for use until the end of cycle 12 ensuring that the reactor vessel integrity is protected under all operating conditions. Therefore, the proposed change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

2. Does the proposed change create the possibility of a new or different kind of accident from any accident previously evaluated?

Response: No.

The proposed amendment revises the technical specifications to extend the use of the pressure-temperature (P-T) limits. It does not change the design function or operation of any systems, structures or components. Plant operation will not be affected by the proposed amendments and no new failure mechanisms, malfunctions or accident initiators will be created. The current P-T limits will remain valid and conservative during the proposed extension period.

Therefore, the proposed change does not create the possibility of a new or different kind of accident from any previously evaluated.

3. Does the proposed change involve a significant reduction in a margin of safety?

Response: No.

The proposed change extends the use of the current P-T limits for an additional cycle of operation. The P-T limits are based on the projected reactor vessel neutron fluence at 32 EFPY of operation. At the end of cycle 10 in April 2000, HCGS was at approximately 12.2 EFPY of operation (38.1% of the 32 EFPY). At the end of cycle 12, HCGS will have obtained less than 50% of the 32 EFPY operating time which provides significant margin to ensure that the current 32 EFPY fluence projection will not be exceeded. This ensures that the basis for the P-T limits is conservative for use through the end of cycle 12 and therefore ensures that the reactor pressure vessel integrity is protected under all operating conditions.

Therefore, the proposed change does not involve a significant reduction in a margin of safety.

Based on the above, PSEG concludes that the proposed changes present no significant hazards consideration under the standards set forth in 10 CFR 50.92(c), and accordingly, a finding of "no significant hazards consideration" is justified.

## 5.2 Applicable Regulatory Requirements/Criteria

Appendix G to 10 CFR Part 50 specifies fracture toughness requirements for ferritic materials of pressure-retaining components of the reactor coolant pressure boundary to provide adequate margins of safety during any condition of

normal operation, including anticipated operational occurrences and system hydrostatic tests, to which the pressure boundary may be subjected to over its service lifetime. Appendix G requires that certain pressure-temperature (P-T) limits for reactor pressure vessels must be at least as conservative as limits obtained by following the methods of analysis and the margins of safety of Appendix G to Section XI of the ASME Code.

In conclusion, based on the considerations discussed above, (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

## 6. ENVIRONMENTAL CONSIDERATION

PSEG has determined the proposed amendment would change a requirement with respect to installation or use of a facility component located within the restricted area, as defined in 10 CFR 20, or would change an inspection or a surveillance requirement. The proposed amendment does not involve (i) a significant hazards consideration, (ii) a significant change in the types or significant increase in the amounts of any effluents that may be released offsite, or (iii) a significant increase in individual or cumulative occupational radiation exposure. Accordingly, the proposed amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Therefore, pursuant to 10 CFR 51.22(b), an environmental assessment of the proposed change is not required.

## 7. REFERENCES

1. PSEG Nuclear letter LR-N00-0405 from Mark B. Bezilla to Document Control Desk "Request for License Amendment Increased Licensed Power Level," dated December 1, 2000.
2. PSEG Nuclear Letter LRN-01-0052 from Mark B. Bezilla to Document Control Desk, "Supplemental Information for Request for License Amendment Increased Licensed Power Level," dated February 12, 2001.
3. NRC Amendment 131, "Hope Creek Generating Station, Issuance of Amendment RE: 1.4% Increase in Licensed Power Level," dated July 30, 2001.
4. Regulatory Guide 1.190, "Calculational and Dosimetry Methods for Determining Pressure Vessel Neutron Fluence," March 2001.

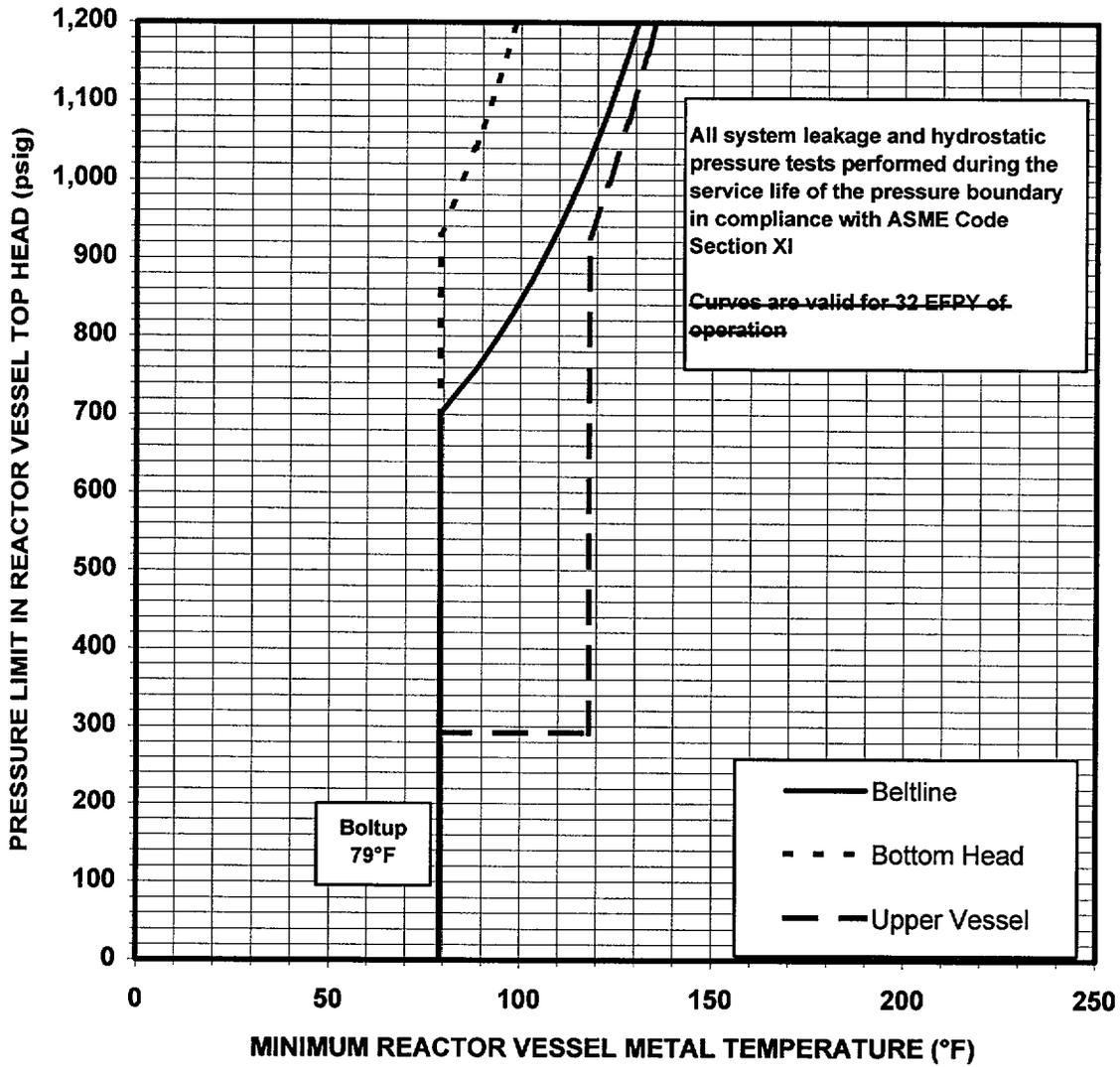
**HOPE CREEK GENERATING STATION  
FACILITY OPERATING LICENSE NPF-57  
DOCKET NO. 50-354  
REVISIONS TO THE TECHNICAL SPECIFICATIONS**

TECHNICAL SPECIFICATION PAGES WITH PROPOSED CHANGES

The following Technical Specifications for Facility Operating License No. NPF-57 are affected by this change request:

<u>Technical Specification</u>	<u>Page</u>
Figure 3.4.6.1-1	3/4 4-23
Figure 3.4.6.1-2	3/4 4-23a
Figure 3.4.6.1-3	3/4 4-23b

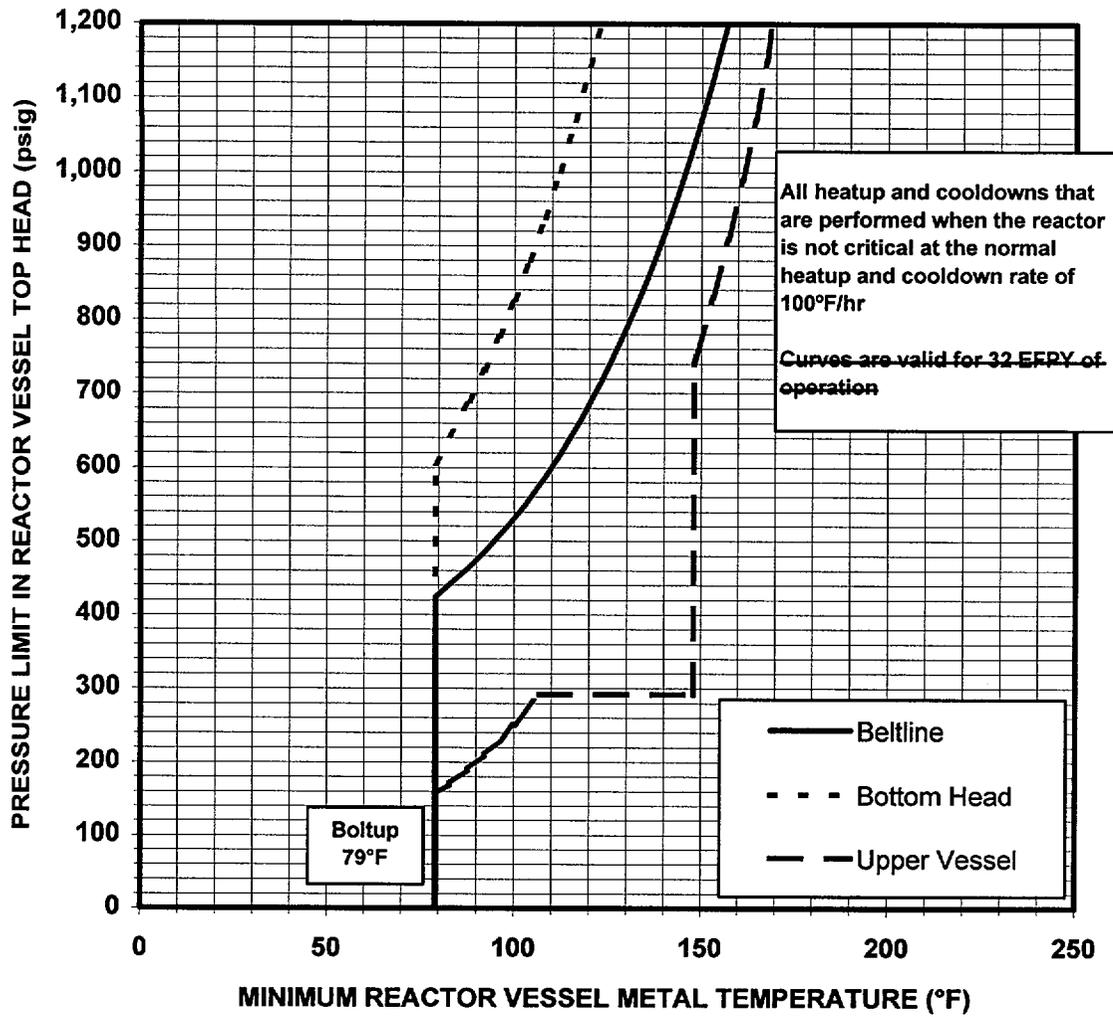
**Figure 3.4.6.1-1  
Hydrostatic Pressure and Leak Tests Pressure/Temperature Limits - Curve A**



Note: This figure is valid through Cycle 44-12 Operation in accordance with NRC Safety Evaluation Report supporting Amendment No. \_\_\_\_\_

Figure 3.4.6.1-2

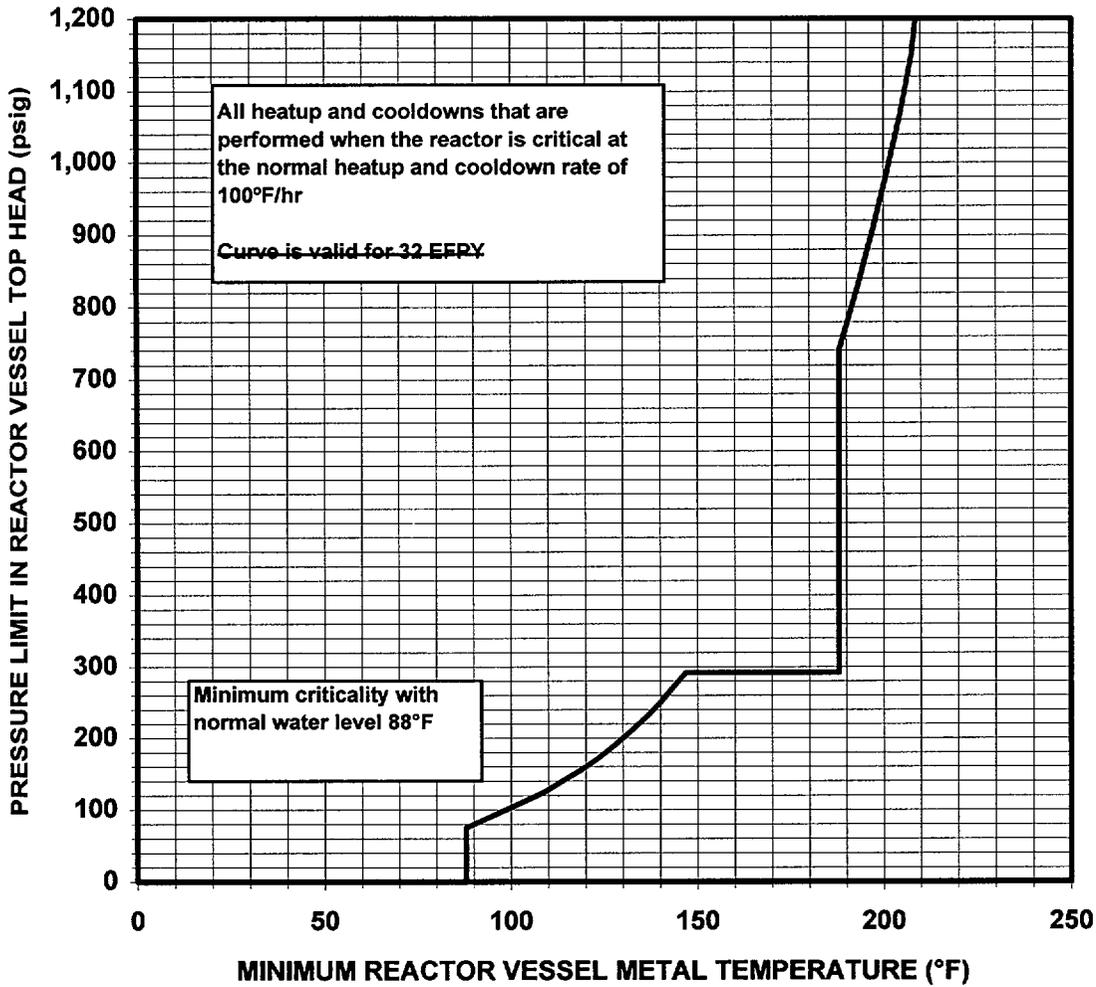
Non-Nuclear Heatup and Cooldown Pressure/Temperature Limits - Curve B



Note: This figure is valid through Cycle 44 12 Operation with NRC Safety Evaluation Report supporting Amendment No. \_\_\_\_\_

Figure 3.4.6.1-3

Core Critical Heatup and Cooldown Pressure/Temperature Limits - Curve C



Note: This figure is valid through Cycle 44 12 Operation in accordance with NRC Safety Evaluation Report supporting Amendment No. \_\_\_\_\_