

May 2, 2003  
NG-03-0304

10 CFR 50.90

Office of Nuclear Reactor Regulation  
U.S. Nuclear Regulatory Commission  
Attn: Document Control Desk  
Mail Station 0-P1-17  
Washington, DC 20555-0001

Subject: Duane Arnold Energy Center  
Docket No: 50-331  
Op. License No: DPR-49  
Revision of Technical Specification Change Request (TSCR-059A): "Update to Reactor Coolant System Pressure and Temperature Limit Curves."

- References:
1. Letter, M. Peifer (NMC) to USNRC, "Technical Specification Change Request (TSCR-059): 'Adoption of Generic Letter 96-03: Relocation of the Pressure Temperature Limit Curves and Low Temperature Overpressure Protection System Limits,'" NG-03-0123, February 28, 2003.
  2. Letter, B. Mozafari (USNRC) to G. VanMiddlesworth (NMC), Duane Arnold Energy Center - Issuance Of Amendment Re: Revised Pressure-Temperature Curves (TAC NO. MB0394), April 30, 2001.
  3. Letter, B. Mozafari (NRC) to G. Van Middlesworth (NMC), Correction to Issuance of Amendment, October 5, 2001.
  4. Letter, S. Richards (NRC) to J. Klapproth (GE-NE), Safety Evaluation for NEDC-32983P, September 14, 2001.
  5. Letter, B. Mozafari (NRC) to G. Van Middlesworth (NMC), Exemption from the Requirements of 10 CFR Part 50, Section 50.60(a) and Appendix G, April 27, 2001.

File: A-117

In Reference 1, Nuclear Management Company, LLC (NMC) requested a license amendment to adopt Generic Letter (GL) 96-03 into the Duane Arnold Energy Center (DAEC) Technical Specifications (TS). As part of that application, we referenced a previously-submitted topical report (GE-NE-A22-00100-08-01) as forming a part of the basis for our "NRC-approved methodology," as required by the GL. Subsequent to our Ref. 1 submittal, NMC has had teleconferences with the Staff and has been told that the Staff did not, in fact, review this topical report, as the basis for their approval of the Ref. 2 license amendment. Thus, in order to approve our Ref. 1 application, the Staff would have to conduct such a review of that topical report. Given the Staff's proposed schedule of at least one calendar year to review our topical, and the attendant review fees, we have determined that it is no longer cost-beneficial for us to pursue GL 96-03 at this time.

In addition, the existing DAEC P/T Limit curves have a "sunset clause" of September 1, 2003, per the Staff's SE (Ref. 2) and the correction letter (Ref. 3). Given this deadline, and the Staff's review schedule, we believe that continued pursuit of GL 96-03 is no longer a practical alternative to simply updating the existing curves with new ones, as suggested in Ref. 2.

AP01

Consequently, we are hereby amending our previous (Ref. 1) license amendment request. The enclosed application is intended to supercede that contained in Reference 1 in its entirety. We withdraw the previously-requested changes to the DAEC TS pages and submit in their place, the enclosed replacement for TS Figure 3.4.9-1, the P/T Limit curves for in-service leakage and hydrostatic testing, non-nuclear heatup and cooldown, and criticality for up to 32 Effective Full Power Years (EFPY). A new 10 CFR 50.92 evaluation of "No Significant Hazards Consideration" is also provided.

The revised P/T limits are based on General Electric (GE) Report, GE-NE-A22-00100-08-01-R1, "Pressure-Temperature Curves for Alliant Energy, Duane Arnold Energy Center," Revision 1, dated September 2002. This revision utilizes a vessel fluence calculated in accordance with an NRC-approved methodology, GE Report NEDC-32983P (Ref. 4). Revision 1 also extends the beltline region to encompass a new limiting component, the recirculation inlet nozzle (N2). The revised P/T limits continue to utilize ASME Code Case N-640, which was previously approved for use at the DAEC (Ref. 5).

Please note that the GE report (Attachment 5) contains information that the General Electric Company considers to be proprietary in nature and subsequently, pursuant to 10 CFR 9.17(a)(4), 2.790(a)(4) and 2.790(d)(1), requests that such information be withheld from public disclosure. The portion of the text containing the proprietary information is identified with vertical sidebars in the right margin. An affidavit supporting this request is provided as Attachment 6 to this letter. Attachment 5 also contains the redacted version of the report, with the GE proprietary material removed, suitable for public disclosure.

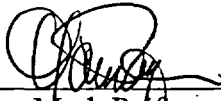
This application has been approved by the DAEC Operations Committee. A copy of this submittal, along with the 10 CFR 50.92 evaluation, is being forwarded to our appointed state official pursuant to 10 CFR Section 50.91.

To support implementation of this amendment prior to the expiration date of the existing P-T limit curves on September 1, 2003, NMC requests that the NRC review and approve this license amendment request by August 15, 2003.

There are no new commitments being made in this letter.

This letter is true and accurate to the best of my knowledge and belief.

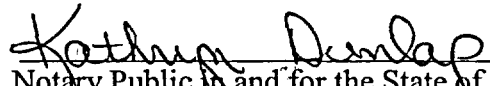
Nuclear Management Company, LLC

By   
Mark Peifer  
DAEC Site Vice President

State of Iowa  
(County) of Linn

Signed and sworn to before me on this 2 day of May, 2003,

by Mark Peifer

  
Notary Public in and for the State of Iowa

5-2003  
Commission Expires

Attachments:

1. Evaluation of Change Pursuant to 10 CFR Section 50.92
2. Proposed Change TSCR-059A to the Duane Arnold Energy Center Technical Specifications
3. Safety Assessment
4. Environmental Consideration
5. General Electric Report GE-NE-A22-00100-08-01-R1, Revision 1, September 2002 (Proprietary and Non-Proprietary Versions)
6. General Electric Co. Affidavit of Proprietary Information

cc: R. Browning (w/a)  
D. Hood (NRC-NRR) (w/a)  
J. Dyer (Region III) (w/a)  
D. McGhee (State of Iowa) (w/a)  
NRC Resident Office (w/a)  
IRMS (w/a)

EVALUATION OF CHANGE PURSUANT TO 10 CFR SECTION 50.92

Background:

This proposed amendment request revises the existing Reactor Coolant System (RCS) pressure and temperature (P/T) limits curves (Figure 3.4.9-1, "Pressure Versus Minimum Temperature Valid to Thirty-two Full Power Years, per Appendix G of 10CFR50") in the Duane Arnold Energy Center (DAEC) Technical Specifications (TS), with a new, updated set of curves. This revision is necessary, as the current Figure has a "sunset" clause and will no longer be valid after September 1, 2003, per the Staff's Safety Evaluation (SE) transmitted with License Amendment No. 238 to the DAEC Operating License, and correction letter (Ref. B. Mozafari (USNRC) to G. Van Middlesworth (NMC), dated October 5, 2002.) Per the Staff's SE, the new P/T limits curves have been prepared using a Nuclear Regulatory Commission (NRC) approved methodology for determining the neutron fluence (Ref. General Electric Co. (GE) topical report, NEDC-32983P-A). The new curves also reflect the addition of a new limiting component, the recirculation inlet nozzle (N2). As with the curves approved in License Amendment No. 238 and associated relief request (Ref. B. Mozafari (USNRC) to G. Van Middlesworth (NMC), dated April 27, 2001), the new curves are also based upon ASME Code Case N-640.

Nuclear Management Company, LLC, Docket No. 50-331,  
Duane Arnold Energy Center, Linn County, Iowa  
Date of Amendment Request: May 2, 2003

Description of Amendment Request:

The proposed amendment will revise the Technical Specifications (TS) to replace the existing Reactor Coolant System (RCS) pressure and temperature (P/T) limits curves for in-service leakage and hydrostatic testing, non-nuclear heatup and cooldown, and criticality (Figure 3.4.9-1, "Pressure Versus Minimum Temperature Valid to Thirty-two Full Power Years, per Appendix G of 10CFR50") with new P/T limits curves, which have been updated using an NRC-approved methodology for determining the neutron fluence on the Reactor Pressure Vessel (RPV). The new curves also reflect the addition of a new limiting component, the recirculation inlet nozzle (N2). No other changes to the Limiting Conditions for Operation or any Surveillance Requirements of Technical Specification 3.4.9 are proposed.

The existing TS P/T limits curves are only valid until September 1, 2003. This date was chosen to allow the completion of the Staff's review of the General Electric Co. (GE) topical report (NEDC-32983P) describing their methodology for determining the neutron fluence used in the calculation of the RCS P/T limits. The Staff has now completed its review of the GE topical report (Ref. Letter, S. A. Richards (USNRC) to J. F. Klapproth (GE), "Safety Evaluation for NEDC-32983P, 'General Electric Methodology for Reactor Pressure Vessel Fast Neutron Flux Evaluation' (TAC NO. MA9891)," September 14,

2001). New P/T limit curves for in-service leakage and hydrostatic testing, non-nuclear heatup and cooldown, and criticality have been prepared for the DAEC, using that approved methodology. As with the existing curves, the new curves are also based upon ASME Code Case N-640. This license amendment request seeks to replace the existing curves in the DAEC TS with these new, updated curves.

Basis for proposed No Significant Hazards Consideration:

The Commission has provided standards (10 CFR Section 50.92(c)) for determining whether a significant hazards consideration exists. A proposed amendment to an operating license for a facility involves no significant hazards consideration if operation of the facility in accordance with the proposed amendment would not (1) involve a significant increase in the probability or consequences of an accident previously evaluated; or (2) create the possibility of a new or different kind of accident from any accident previously evaluated; or (3) involve a significant reduction in a margin of safety.

After reviewing this proposed amendment, NMC has concluded:

- 1) The proposed amendment will not involve a significant increase in the probability or consequences of an accident previously evaluated.

The P/T limits are not derived from Design Basis Accident (DBA) analyses. They are prescribed by the ASME Code and 10CFR50 Appendix G and H and associated guidance documents, such as Regulatory Guide 1.99, Rev. 2, as restrictions on normal operation to avoid encountering pressure, temperature, and temperature rate of change conditions that might cause undetected flaws to propagate and cause non-ductile failure of the reactor coolant pressure boundary. Thus, they ensure that an accident precursor is not likely. Hence, they are included in the TS as satisfying Criterion 2 of 10CFR50.36(c)(2)(ii). The revision of the numerical value of these limits, i.e., new curves, using an NRC-approved methodology, does not change the existing regulatory requirements, upon which the curves are based. Thus, this revision will not increase the probability of any accident previously evaluated.

The proposed change does not alter the design assumptions, conditions, or configuration of the facility or the manner in which the facility is operated or maintained. The proposed changes will not affect any other System, Structure or Component (SSC) designed for the mitigation of previously analyzed events. The proposed change does not affect the source term, containment isolation, or radiological release assumptions used in evaluating the radiological consequences of any accident previously evaluated. Thus, the proposed revision of the existing numerical values with the updated figure for the RCS P/T limits, which are based upon an NRC-approved methodology for calculating the neutron fluence on the RPV and new limiting component, will not increase the consequences of any previously evaluated accident.

- 2) The proposed amendment will not create the possibility of a new or different kind of accident from any accident previously evaluated.

The proposed changes do not involve a physical alteration of the plant (i.e., no new or different type of equipment will be installed) or a change in the processes governing normal plant operation. The proposed changes are consistent with the safety analysis assumptions and current plant operating practice. NMC is only requesting to revise the existing numerical values and update the TS figure for the RCS P/T limits based upon an NRC-approved methodology for calculating the neutron fluence on the RPV, and to reflect a new limiting component. The curves continue to be based upon ASME Code Case N-640, which has been previously approved for use at the DAEC.

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

- 3) The proposed amendment will not involve a significant reduction in a margin of safety.

The proposed changes do not alter the manner in which Safety Limits, Limiting Safety System Settings or Limiting Conditions for Operation are determined. The setpoints at which protective actions are initiated are not altered by the proposed changes. Sufficient equipment remains available to actuate upon demand for the purpose of mitigating an analyzed event. NMC is only requesting to revise the existing numerical values and update the TS figure for the RCS P/T limits based upon an NRC-approved methodology for calculating the neutron fluence, NEDC-32983P-A. The new curves also reflect the addition of a new limiting component, the recirculation inlet nozzle (N2). No other changes to the Limiting Conditions for Operation or any Surveillance Requirements of Technical Specification 3.4.9 are proposed.

10CFR50, Appendix G specifies fracture toughness requirements to provide adequate margins of safety during operation over the service lifetime. The values of adjusted reference temperature and upper shelf energy are expected to remain within the limits of Regulatory Guide 1.99, Revision 2 and Appendix G of 10CFR50 for at least 32 effective full power years (EFPY) of operation. The safety analysis supporting this change continues to satisfy the ASME Code, including ASME Code Case N-640, and 10CFR50, Appendices G and H requirements and associated guidance documents, such as Regulatory Guide 1.99, Rev. 2. Thus, the proposed changes will not significantly reduce any margin of safety that currently exists.

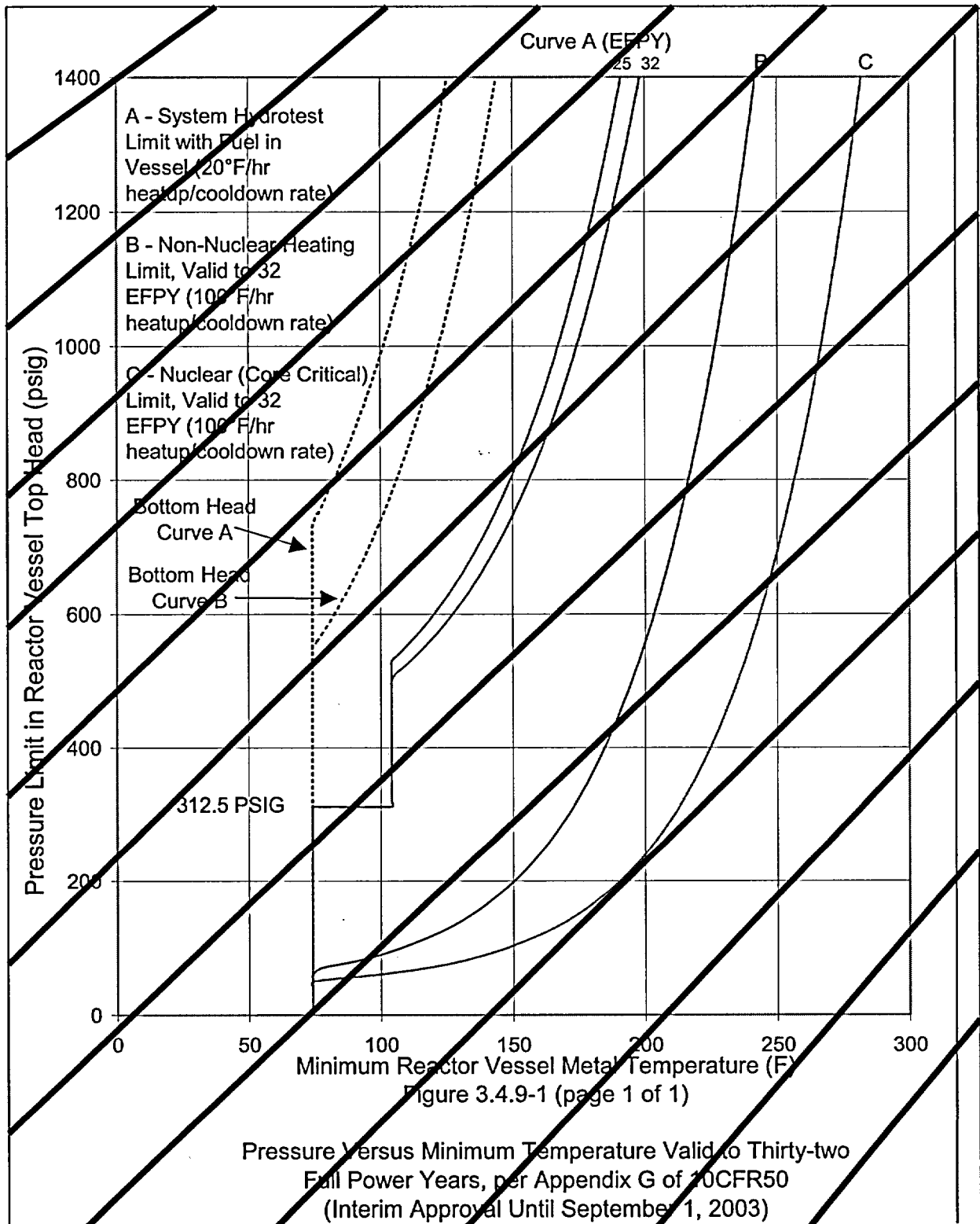
Based upon the above, NMC has determined that the proposed amendment will not involve a significant hazards consideration.

Attorney for Licensee: Jonathan Rogoff, Esquire, General Counsel, NMC, LLC, 700 First St., Hudson, WI, 54016.

Proposed Change TSCR-059A to the Duane Arnold Energy Center  
Technical Specifications

The holders of license DPR-49 for the Duane Arnold Energy Center propose to amend the Technical Specifications (TS) by deleting the referenced page and replacing it with the enclosed new page. Both "pen & ink" markups of the existing TS page and the corresponding clean, typed revision are provided. Any affected BASES page(s) will be updated during implementation of this amendment under TS 5.5.10, BASES Control Program.

<u>Page</u>	<u>Description of Change</u>
3.4-24	Replace existing Figure 3.4.9-1 with the new Figure 3.4.9-1.





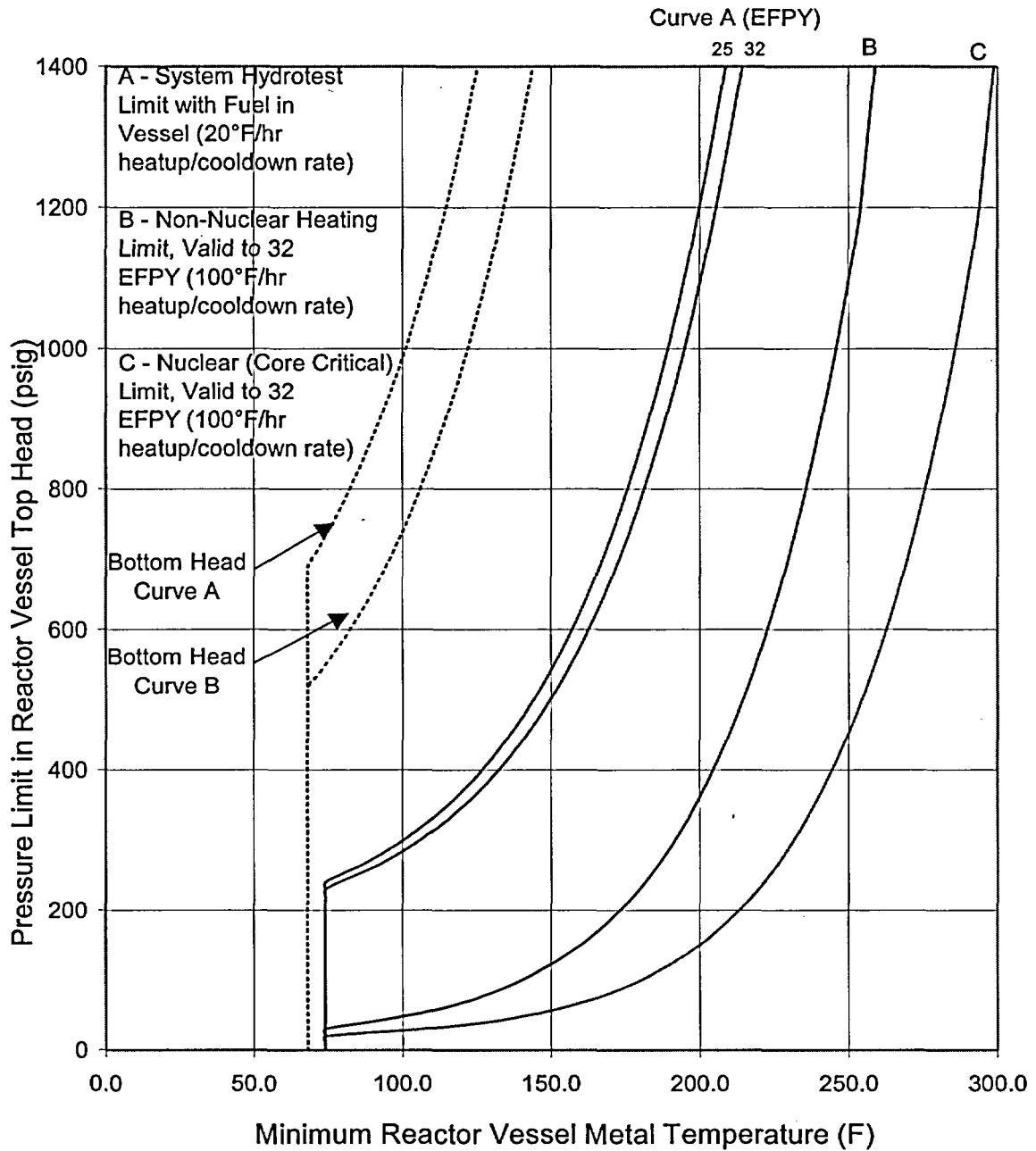


Figure 3.4.9-1 (page 1 of 1)

Pressure Versus Minimum Temperature Valid to Thirty-two Full Power Years, per Appendix G of 10CFR50

## SAFETY ASSESSMENT

### 1.0 INTRODUCTION

By letter dated May 2, 2003, Nuclear Management Company, LLC, (NMC), proposed changes to the Technical Specifications (TS) for the Duane Arnold Energy Center (DAEC). These changes supercede those previously submitted by NMC, under letter dated February 28, 2003. The requested change is the revision of the Reactor Coolant System (RCS) pressure temperature (P/T) limits numerical values and associated curves for in-service leakage and hydrostatic testing, non-nuclear heatup and cooldown, and criticality (TS Figure 3.4.9-1, "Pressure Versus Minimum Temperature Valid to Thirty-two Full Power Years, per Appendix G of 10CFR50"), with updated limits and new associated curves. The new curves also reflect the addition of a new limiting component, the recirculation inlet nozzle (N2). No other changes to TS 3.4.9 (RCS P/T Limits), either the Limiting Conditions for Operation or any Surveillance Requirements are proposed.

### 2.0 BACKGROUND

Per the Staff's Safety Evaluation (SE), transmitted with License Amendment No. 238 to the DAEC Operating License, the Staff approved the existing P/T limit curves for the DAEC, which were based upon ASME Code Case N-640. However, as noted in the accompanying Staff's SE, such approval was granted on an interim basis until September 1, 2003, so that the Staff could complete its review and approval of the General Electric Company's (GE) topical report (NEDC-32983P) which describes their methodology for calculating the neutron fluence values used in generating the subject P/T limit curves. The Staff has subsequently completed its review and issued its SE approving NEDC-32983P (Letter, S. A. Richards (USNRC) to J. F. Klapproth (GE), "Safety Evaluation for NEDC-32983P, 'General Electric Methodology for Reactor Pressure Vessel Fast Neutron Flux Evaluation' (TAC NO. MA9891)," September 14, 2001). Thus, a revision to the existing curves is required, prior to the expiration of the "sunset clause" of September 1, 2003.

### 3.0 EVALUATION

All components of the RCS are designed to withstand the effects of cyclic loads resulting from system pressure and temperature changes. These loads are introduced by normal heatup and cooldown operations, power transients, and reactor trips. In accordance with Appendix G to 10 CFR Part 50, and associated guidance documents, such as Regulatory Guide 1.99, Rev. 2, TS limit the pressure and temperature changes during RCS heatup and cooldown within the design assumptions and the stress limits for cyclic operation. These limits are defined by P/T limit curves for heatup, cooldown, and in-service leak and hydrostatic testing. Each curve defines an acceptable region for normal operation. The curves are used for operational guidance during heatup and cooldown maneuvering, when pressure and temperature indications are monitored and compared to the applicable curve to determine that operation is within the allowable region. In addition, the rate of change of RCS temperature is controlled during normal heatup and cooldown operations, i.e., degrees Fahrenheit per hour.

Revision of the existing P/T curves for in-service leakage and hydrostatic testing, non-nuclear heatup and cooldown, and criticality are in accordance with the requirements specified in Appendix G to 10 CFR Part 50 and continue to be based upon ASME Code Case N-640. 10CFR50, Appendix G specifies fracture toughness requirements to provide adequate margins of safety during operation over the service lifetime. The values of adjusted reference temperature and upper shelf energy are expected to remain within the limits of Regulatory Guide 1.99, Revision 2 and Appendix G of 10CFR50 for at least 32 effective full power years (EFPY) of operation. No other changes to the Limiting Conditions for Operation or any Surveillance Requirements of Technical Specification 3.4.9 are proposed. Only the curves associated with the P/T limits are to be revised, based upon an NRC-approved methodology for calculating the neutron fluence on the RPV and new limiting component (recirculation inlet nozzle, N2); the requirements of Appendix G to 10 CFR Part 50 and associated guidance documents, such as Regulatory Guide 1.99, Rev. 2 will continue to be met.

On this basis, NMC concludes that the proposed changes provide an acceptable means of establishing the detailed values of the P/T limit curves and heatup and cooldown rate limits. Further, because plant operation continues to be limited in accordance with the requirements of Appendix G to 10 CFR Part 50, and associated guidance documents, such as Regulatory Guide 1.99, Rev. 2 and the updated P/T limits in the TS are established using a methodology approved by the NRC, these changes will not impact plant safety.

Accordingly, NMC concludes that the proposed changes are acceptable.

## ENVIRONMENTAL CONSIDERATION

10 CFR Section 51.22(c)(9) identifies certain licensing and regulatory actions which are eligible for categorical exclusion from the requirement to perform an environmental assessment. A proposed amendment to an operating license for a facility requires no environmental assessment if operation of the facility in accordance with the proposed amendment would not: (1) involve a significant hazards consideration; (2) result in a significant change in the types or significant increase in the amounts of any effluents that may be released offsite; and (3) result in a significant increase in individual or cumulative occupational radiation exposure. Nuclear Management Company, LLC has reviewed this request and determined that the proposed amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR Section 51.22(c)(9). Pursuant to 10 CFR Section 51.22(b), no environmental impact statement or environmental assessment needs to be prepared in connection with the issuance of the amendment. The basis for this determination follows:

### Basis

The change meets the eligibility criteria for categorical exclusion set forth in 10 CFR Section 51.22(c)(9) for the following reasons:

1. As demonstrated in Attachment 1 to this letter, the proposed amendment does not involve a significant hazards consideration.
2. The proposed change involves the reactor vessel pressure and temperature (P/T) limits. These limits are prescribed by the ASME Code and 10 CFR 50 Appendix G and H, and approved exemptions thereto, as restrictions on normal operation to avoid encountering pressure, temperature, and temperature rate of change conditions that might cause undetected flaws to propagate and cause non-ductile failure of the reactor coolant pressure boundary.

The proposed change does not involve modifications to the radioactive waste processing systems or to radioactive waste effluent monitors. Accordingly, the changes do not require the radioactive waste processing systems to perform any different function than they are designed to perform nor do they change the operation or testing of any such system.

Therefore, this change will not result in a significant change in the types or significant increase in the amounts of any effluents that may be released offsite.

3. The proposed change will not appreciably change the way the plant or its systems are operated. There will be no significant increase in either individual or cumulative occupational radiation exposure. Inspections of primary containment during pressure tests will continue to be done in accordance with as low as reasonably achievable (ALARA) principles. The change will result in slightly higher temperatures in the

primary containment during these inspections, but will not result in additional time for the inspections and will therefore not increase worker exposure.

Therefore, this change will not result in a significant increase in individual or cumulative occupational radiation exposure.

General Electric Report

GE-NE-A22-00100-08-01-R1, Revision 1

September 2002

(Proprietary and Non-Proprietary Versions)

General Electric Co.

Affidavit of Proprietary Information

# General Electric Company

## AFFIDAVIT

I, **George B. Stramback**, state as follows:

- (1) I am Project Manager, Regulatory Services, General Electric Company ("GE") and have been delegated the function of reviewing the information described in paragraph (2) which is sought to be withheld, and have been authorized to apply for its withholding.
- (2) The information sought to be withheld is contained in the GE proprietary report GE-NE-A22-00100-08-01R1, *Pressure-Temperature Curves for Alliant Energy Duane Arnold Energy Center*, Revision 1, Class III (GE Proprietary Information), dated September 2002. The proprietary information is delineated by bars marked in the margin adjacent to the specific material.
- (3) In making this application for withholding of proprietary information of which it is the owner, GE relies upon the exemption from disclosure set forth in the Freedom of Information Act ("FOIA"), 5 USC Sec. 552(b)(4), and the Trade Secrets Act, 18 USC Sec. 1905, and NRC regulations 10 CFR 9.17(a)(4), 2.790(a)(4), and 2.790(d)(1) for "trade secrets and commercial or financial information obtained from a person and privileged or confidential" (Exemption 4). The material for which exemption from disclosure is here sought is all "confidential commercial information", and some portions also qualify under the narrower definition of "trade secret", within the meanings assigned to those terms for purposes of FOIA Exemption 4 in, respectively, Critical Mass Energy Project v. Nuclear Regulatory Commission, 975F2d871 (DC Cir. 1992), and Public Citizen Health Research Group v. FDA, 704F2d1280 (DC Cir. 1983).
- (4) Some examples of categories of information which fit into the definition of proprietary information are:
  - a. Information that discloses a process, method, or apparatus, including supporting data and analyses, where prevention of its use by General Electric's competitors without license from General Electric constitutes a competitive economic advantage over other companies;
  - b. Information which, if used by a competitor, would reduce his expenditure of resources or improve his competitive position in the design, manufacture, shipment, installation, assurance of quality, or licensing of a similar product;



- c. Information which reveals cost or price information, production capacities, budget levels, or commercial strategies of General Electric, its customers, or its suppliers;
- d. Information which reveals aspects of past, present, or future General Electric customer-funded development plans and programs, of potential commercial value to General Electric;
- e. Information which discloses patentable subject matter for which it may be desirable to obtain patent protection.

The information sought to be withheld is considered to be proprietary for the reasons set forth in both paragraphs (4)a. and (4)b., above.

- (5) The information sought to be withheld is being submitted to NRC in confidence. The information is of a sort customarily held in confidence by GE, and is in fact so held. The information sought to be withheld has, to the best of my knowledge and belief, consistently been held in confidence by GE, no public disclosure has been made, and it is not available in public sources. All disclosures to third parties including any required transmittals to NRC, have been made, or must be made, pursuant to regulatory provisions or proprietary agreements which provide for maintenance of the information in confidence. Its initial designation as proprietary information, and the subsequent steps taken to prevent its unauthorized disclosure, are as set forth in paragraphs (6) and (7) following.
- (6) Initial approval of proprietary treatment of a document is made by the manager of the originating component, the person most likely to be acquainted with the value and sensitivity of the information in relation to industry knowledge. Access to such documents within GE is limited on a "need to know" basis.
- (7) The procedure for approval of external release of such a document typically requires review by the staff manager, project manager, principal scientist or other equivalent authority, by the manager of the cognizant marketing function (or his delegate), and by the Legal Operation, for technical content, competitive effect, and determination of the accuracy of the proprietary designation. Disclosures outside GE are limited to regulatory bodies, customers, and potential customers, and their agents, suppliers, and licensees, and others with a legitimate need for the information, and then only in accordance with appropriate regulatory provisions or proprietary agreements.
- (8) The information identified in paragraph (2), above, is classified as proprietary because it contains detailed methods and processes, which GE has developed and applied to pressure-temperature curves for the BWR over a number of years.

The development of the BWR pressure-temperature curves was achieved at a significant cost, on the order of  $\frac{3}{4}$  million dollars, to GE. The development of the

evaluation process along with the interpretation and application of the analytical results is derived from the extensive experience database that constitutes a major GE asset.

- (9) Public disclosure of the information sought to be withheld is likely to cause substantial harm to GE's competitive position and foreclose or reduce the availability of profit-making opportunities. The information is part of GE's comprehensive BWR safety and technology base, and its commercial value extends development of the expertise to determine and apply the appropriate evaluation process. In beyond the original development cost. The value of the technology base goes beyond the extensive physical database and analytical methodology and includes addition, the technology base includes the value derived from providing analyses done with NRC-approved methods.

The research, development, engineering, analytical and NRC review costs comprise a substantial investment of time and money by GE.

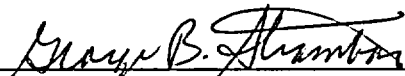
The precise value of the expertise to devise an evaluation process and apply the correct analytical methodology is difficult to quantify, but it clearly is substantial.

GE's competitive advantage will be lost if its competitors are able to use the results of the GE experience to normalize or verify their own process or if they are able to claim an equivalent understanding by demonstrating that they can arrive at the same or similar conclusions.

The value of this information to GE would be lost if the information were disclosed to the public. Making such information available to competitors without their having been required to undertake a similar expenditure of resources would unfairly provide competitors with a windfall, and deprive GE of the opportunity to exercise its competitive advantage to seek an adequate return on its large investment in developing these very valuable analytical tools.

I declare under penalty of perjury that the foregoing affidavit and the matters stated therein are true and correct to the best of my knowledge, information, and belief.

Executed on this 5<sup>th</sup> day of September 2002.



George B. Stramback  
General Electric Company