

August 1, 2001
NG-01-0926

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
Response to Request for Additional Information (RAI) to Technical
Specification Change Request TSCR-042 – Extended Power Uprate
(TAC # MB0543)

References: 1. NG-00-1900, “Technical Specification Change Request (TSCR-042):
‘Extended Power Uprate’,” dated November 16, 2000.
2. NG-01-0738, “Response to Request for Additional Information (RAI)
to Technical Specification Change Request TSCR-042 – Extended
Power Uprate. (TAC # MB0543),” dated June 5, 2001.

File: A-117, SPF-189

Dear Sir(s):

On July 18, 2001 and July 24, 2001, conference calls were held with the NRC Staff regarding the Reference 1 amendment request to increase the authorized license power level of the Duane Arnold Energy Center (DAEC). In order to complete their confirmatory analysis, the Staff requested additional input datapoints to those previously provided (Ref. 2). In addition, the Staff requested an explanation for an apparent anomalous result in the long-term containment analysis previously submitted (Ref. 2). Attachment 1 to this letter contains the additional information, as requested in these conference calls.

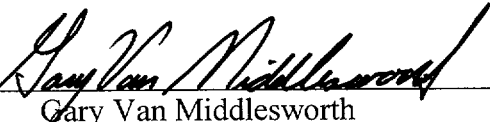
Please note that the response in Attachment 1 contains information that the General Electric Company (GE) considers to be proprietary in nature and subsequently, pursuant to 10 CFR 9.17(a)(4), 2.790(a)(4) and 2.790(d)(1), requests that such information be withheld from public disclosure. The portion 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 2 to this letter. Attachment 3 is the redacted version of Attachment 1, with the GE proprietary material removed, suitable for public disclosure.

No new commitments are being made in this letter.

Please contact this office should you require additional information regarding this matter.

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

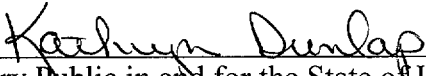
NUCLEAR MANAGEMENT COMPANY, LLC

By 
Gary Van Middlesworth
DAEC Site Vice-President

State of Iowa
(County) of Linn

Signed and sworn to before me on this 2 day of August, 2001,

by Gary Van Middlesworth


Notary Public in and for the State of Iowa

July 24, 2002
Commission Expires

- Attachments:
- 1) DAEC Response to NRC Containment Systems Branch Request for Additional Information Regarding Proposed Amendment for Power Uprate
 - 2) General Electric Affidavit of Proprietary Information
 - 3) Redacted Version of DAEC Response to NRC Containment Systems Branch Request for Additional Information Regarding Proposed Amendment for Power Uprate

cc: T. Browning
R. Anderson (NMC) (w/o Attachments 1&2)
B. Mozafari (NRC-NRR)
J. Dyer (Region III)
D. McGhee (State of Iowa) (w/o Attachments 1&2)
NRC Resident Office
Docu

Attachment 2 to

NG-01-0926

General Electric Affidavit of Proprietary Information

General Electric Company

AFFIDAVIT

I, **George B. Stramback**, being duly sworn, depose and 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 Enclosure 1 to letter GEDA-AEP-561, *Response to NRC RAIs Regarding SHEX Application*, (GE Company Proprietary), dated July 31, 2001. The proprietary information is delineated by bars marked in the margin adjacent to the specific material in the *Enclosure 1 to Letter GEDA-AEP-561 GE Responses to NRC RAIs Regarding SHEX Application*.
- (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 further details regarding the GE proprietary report NEDC-32980P, *Safety Analysis Report for Duane Arnold Energy Center Extended Power Uprate*, Class III (GE Proprietary Information), dated November 2000, which contains detailed results of analytical models, methods and processes, including computer codes, which GE has developed, obtained NRC approval of, and applied to

perform evaluations of transient and accident events in the GE Boiling Water Reactor ("BWR").

The development and approval of these system, component, and thermal hydraulic models and computer codes was achieved at a significant cost to GE, on the order of several million dollars.

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 beyond the original development cost. The value of the technology base goes beyond the extensive physical database and analytical methodology and includes development of the expertise to determine and apply the appropriate evaluation process. In 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.

STATE OF CALIFORNIA)
) ss:
COUNTY OF SANTA CLARA)

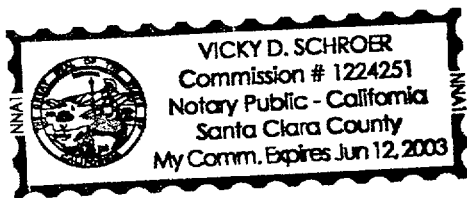
George B. Stramback, being duly sworn, deposes and says:


That he has read the foregoing affidavit and the matters stated therein are true and correct to the best of his knowledge, information, and belief.

Executed at San Jose, California, this 31st day of July 2001.


George B. Stramback
General Electric Company

Subscribed and sworn before me this 31st day of July 2001.




Notary Public, State of California

Redacted Version of
DAEC Response to NRC
Containment Systems Branch
Request for Additional Information
Regarding Proposed Amendment for Power Uprate

1. Data contained in Table II, Page 17 of the June 5, 2001 letter NG-01-0738 shows that at approximately 8 hours into the Large Break LOCA the SHEX calculated temperature of the wetwell atmosphere increases approximately 10 F. It then returns to its previous value after approximately three and one half hours. It is not clear what is causing this increase since no noticeable changes are occurring in flows and heat transfer. Please explain.

DAEC Response:

The SHEX computer run was reviewed to determine the cause of the apparent anomaly in the wetwell temperature response at approximately 8 hours into the event. As stated in the NRC's request, no significant changes in key parameters occurred during this time period that would produce this wetwell temperature response.

[[General Electric Proprietary Information Redacted]]

The anomaly in the wetwell temperature response, which appeared in the original analysis, was not present in the sensitivity run with the **[[General Electric Proprietary Information Redacted]]**. The cause of the anomaly was attributed to the **[[General Electric Proprietary Information Redacted]]** value selected for the wetwell temperature calculation and not to any real physical phenomena.

To determine if the change in the **[[General Electric Proprietary Information Redacted]]** affected other parts of the analysis, the results of the sensitivity run were compared to the original SHEX calculation. The comparison demonstrated that other than the disappearance of the wetwell temperature incursion there were no significant differences.

2. Staff calculations predict a suppression pool temperature approximately 10 F higher than the Duane Arnold calculations. NRC staff would like to discuss the mass and energy balances to make sure that they are consistent and to try to find the reason for the higher suppression pool temperature.

DAEC Response:

Table 1 shows the integrated break mass and break energy calculated by the SHEX code during the first 59 seconds for the same time steps as in the previous data transmittals. The integrated break mass and break energy calculated by the SHEX code include the break mass and energy flow from the vessel for all the intermediate calculation steps in the analysis, not just those time steps that are shown in the SHEX

printed output. Therefore, the data in Table 1 provides an accurate representation of the total break mass and total break energy released from the vessel during the first 59 seconds as calculated by the SHEX code.

TABLE 1 – Integrated Break Mass and Break Energy Data
from SHEX – DBA-LOCA

Time (seconds)	Integrated Vessel Break Mass (lbm)	Integrated Vessel Break Energy (MBtu)
0	0	0
25.7	305,480	178.35
42.1	341,770	209.31
59.0	396,430	229.72