



General Electric Company  
175 Curtner Avenue, San Jose, CA 95125

April 21, 1994

MFN No. 026-94  
Docket STN 52-004

Document Control Desk  
U.S. Nuclear Regulatory Commission  
Washington DC 20555

Attention: Richard W. Borchardt, Director  
Standardization Project Directorate

Subject: NRC Requests for Additional Information (RAIs) on the Simplified Boiling  
Water Reactor (SBWR) Design, RAI 950.43

References: Transmittal of Requests for Additional Information (RAIs) Regarding the SBWR  
Design, Letter from M. Malloy to P. W. Marriott dated March 8, 1994

The Reference letter requested SBWR core neutronics data to permit Brookhaven National  
Laboratory (BNL) to modify the RAMONA - 4B code for the staff's use. In fulfillment of this  
request, GE is submitting Attachment 1 to this letter which describes the contents of a tape sent to  
BNL on March 2, 1994 that provided the information requested by RAI 950.43, and which BNL  
subsequently identified as constituting an appropriate response to this RAI.

Please note that the information contained in the enclosure is of the type which GE maintains in  
confidence and withholds from public disclosure. It has been handled and classified as proprietary  
to GE as indicated in the attached affidavit. We hereby request that this information be withheld  
from public disclosure in accordance with the provisions of 10CFR2.790.

Sincerely,

P. W. Marriott  
Manager, Advanced Plant Technologies  
MC-781, (408)925-6948

Attachment 1, "Responses to NRC RAIs"

cc: M. Malloy, Project Manager (NRC) (w/2 copies of Attachment 1)  
F. W. Hasselberg, Project Manager (NRC) (w/1 copy of Attachment 1)

LTRBK 94-10

9404260226 940421  
PDR ADDCK 05200004  
A PDR

Change: NRC PDR  
PNL

DD40  
Ltr. Encl.  
1 0  
1 0

## GENERAL ELECTRIC COMPANY

### AFFIDAVIT

I, Patrick W. Marriott, being duly sworn, depose and state as follows:

- (1) I am the Manager, Advance Plant Technologies, 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 response to NRC Requests for Additional Information (RAI) 950.43. This information is contained on GE proprietary tapes and delineated by bars marked in the margin adjacent to the specific written material.
- (3) In making this application for withholding of proprietary information of which it is an 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, 794F2d1280 (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. Its initial designation as proprietary information, and the subsequent steps taken to prevent its unauthorized disclosure, are as set forth in (6) and (7) following. 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.
- (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) is classified as proprietary because it contains details of the method of development and supporting data and analyses, including test data and modeling, relative to the TRACG computer program. This program is intended for use as the licensing-basis code for evaluating BWR response to transients, loss-of-coolant accidents, reactivity insertion accidents, and anticipated transients without scram. This code has been under development by GE for over ten years, at a total cost in excess of \$3 million. This information is considered to be proprietary for the reasons set forth in both paragraphs 4.a and 4.b, on the previous page.

- (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 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 and its associate.

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.

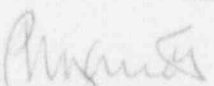
The value of this information to GE would be lost if the information were disclosed to the public. Making such information available to competitors without their having been required to undertake a similar expenditure of resources would unfairly provide competitors with a windfall, and deprive GE and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

STATE OF CALIFORNIA }  
COUNTY OF SANTA CLARA }SS:


Patrick W. Marriott, being duly sworn, deposes and says:

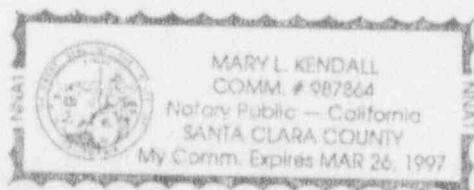
That he has read the foregoing affidavit and the matters stated therein are true and correct to the best of his knowledge,

Executed at San Jose, California, this 22 day of April, 1994

  
\_\_\_\_\_  
Patrick W. Marriott  
General Electric Company

Subscribed and sworn before me this 22<sup>nd</sup> day of April, 1994

  
\_\_\_\_\_  
Notary Public, State of California



RAI Number: 950.43

Question:

In order to generate a complete set of SBWR core cross sections and their associated void and moderator temperature feedback coefficients, the staff needs GE to supplement the responses to Q440.1-Q440.5 (transmitted in GE letter MFN No. 174-93 dated October 25, 1993) relating to neutronics data.

- a. For the void feedback, GE did not provide the perturbed cases at the history-dependent void fraction of 0.0 and 0.7 for all five fuel types. For the moderator temperature feedback, the perturbed cases were improperly generated (both the fuel and moderator temperatures were perturbed at the same time).

Run each of the following 10 cases as a function of exposure (0.0 to 55 GWD/T) for all five fuel types. (Cases 1-8 are for the void feedback as a function of void history. Cases 9 and 10 are for the moderator temperature feedback at an average instantaneous void of 40 percent and an average history-dependent void of 40 percent.)

Case	$\alpha_i/\alpha_h$	$T_f/T_{f,r}$ (°C)	$T_m/T_{m,r}$ (°C)	Control Rod
1	0.4/0.0	532/532	286/286	Out
2	0.4/0.0	532/532	286/286	In
3	0.7/0.0	532/532	286/286	Out
4	0.7/0.0	532/532	286/286	In
5	0.0/0.7	532/532	286/286	Out
6	0.0/0.7	532/532	286/286	In
7	0.4/0.7	532/532	286/286	Out
8	0.4/0.7	532/532	286/286	In
9	0.4/0.4	532/532	160/286	Out
10	0.4/0.4	532/532	160/286	In

$\alpha_i$  = instantaneous void fraction  
 $\alpha_h$  = history-dependent void fraction  
 $T_f$  = perturbed fuel temperature  
 $T_{f,r}$  = reference (rated) fuel temperature  
 $T_m$  = perturbed moderator temperature  
 $T_{m,r}$  = reference (rated) moderator temperature

- b. The reduced power cases at 0, 25, 50, and 75 percent of rated, needed for the evaluation of the coefficients for equilibrium xenon, appear to have been improperly generated as they all have identical cross sections. Regenerate the cross sections for the reduced power cases of 25 and 50 percent of rated power.