

# GENERAL ELECTRIC

NUCLEAR POWER

SYSTEMS DIVISION

GENERAL ELECTRIC COMPANY, 175 CURTNER AVE., SAN JOSE, CALIFORNIA 95125  
MC 682, (408) 925-3697

MFN-177-82

JSC-21-82

November 19, 1982

U. S. Nuclear Regulatory Commission  
Division of Project Management  
Washington, DC 20555

Attention: Frank J. Miraglia, Assistant Director  
Safety Assessment

Gentlemen:

SUBJECT: BARRIER FUEL AMENDMENT TO NEDE-24011-P-A-4

Reference: 1) Letter, J. S. Charnley (GE) to R. L. Tedesco (NRC),  
"Administrative Amendments to GE Licensing Topical  
Reports NEDE-24011-P-A-4 and NEDE-24011-P-A-4-US",  
August 31, 1982  
2) NUREG-0390, "Topical Report Review Status"  
3) "Generic Information for Barrier Fuel Demonstration  
Bundle Licensing," NEDO-24259-A, February 1981

This letter submits for NRC review 25 copies of a proposed revision to the subject Licensing Topical Report that will incorporate information on barrier fuel. A SE review committee originally classified this revision as administrative based on the criteria in 10CFR50.59, and it was submitted to the NRC in the Reference 1 letter as a proposed administrative amendment. However, the NRC rejected the administrative classification; therefore, the information is hereby resubmitted for review in accordance with the procedures identified in Reference 2. It is requested that this review be completed by February 28, 1983, to support our program for barrier fuel introduction. General Electric has made commercial arrangements to supply barrier fuel to nine U.S. reactors, with fuel shipment commencing in June 1983. Completion of your review by February 28 is necessary so that factory conversion can be made in time for fuel shipment.

General Electric believes that three months will provide the NRC a sufficient length of time for review because 1) barrier fuel is a minor modification to current fuel designs, and 2) the NRC has previously reviewed and approved the use of barrier fuel in a demonstration reload (Reference 3). A series of reports detailing the progress of the development of barrier fuel have also been previously submitted to the NRC; these reports are referenced in Attachment 1.

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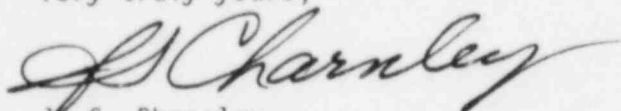
The barrier fuel option requires no changes to the safety analysis or approved models used to establish technical specifications. Neither the probability of occurrence nor the consequences of an accident or malfunction of equipment important to safety increase. Instead, General Electric believes that the barrier fuel option will enhance fuel reliability, thereby decreasing the probability of malfunction, and is in all respects a positive contribution in improving fuel performance.

A bracket in the side margin of the enclosed material indicates the changes to the subject Licensing Topical Report proposed to incorporate barrier fuel. In cases where the bracket also encloses part of a sentence that has not been changed, the information to be considered in this review is underlined.

Some of the pages in this revision contain information which GE customarily maintains in confidence and withholds from public disclosure. This information has been handled and classified as proprietary to GE as indicated in the affidavit in Attachment 2. We hereby request that this information be withheld from public disclosure in accordance with the provisions of 10CFR2.790.

Please contact W. A. Zarbis (408-925-5070) or myself if there are any questions.

Very truly yours,



J. S. Charnley  
Fuel Services Manager  
Nuclear Safety and Licensing Operation

RLG:pab:rm/J11055

Attachments

cc: C. H. Berlinger  
R. O. Meyer  
L. S. Gifford  
J. S. Berggren

ATTACHMENT 1

- 1) "Demonstration of Fuel Resistant to Pellet-Cladding Interaction, First Semiannual Report, July-December 1977," compiled by H. S. Rosenbaum, February 1978 (GEAP-23773).
- 2) "Demonstration of Fuel Resistant to Pellet-Cladding Interaction, Second Semiannual Report, January-June 1978," compiled by H. S. Rosenbaum, February 1978 (GEAP-23773-1).
- 3) "Demonstration of Fuel Resistant to Pellet-Cladding Interaction, Phase 1 Final Report," compiled by H. S. Rosenbaum, March 1979 (GEAP-23773-2).
- 4) "Demonstration of Fuel Resistant to Pellet-Cladding Interaction, Phase 2, First Semiannual Report, January-June 1979," compiled by H. S. Rosenbaum, August 1979 (GEAP-25163-1).
- 5) "Demonstration of Fuel Resistant to Pellet-Cladding Interaction, Phase 2, Second Semiannual Report, July-December 1980," compiled by H. S. Rosenbaum, March 1980 (GEAP-25163-2).
- 6) "Demonstration of Fuel Resistant to Pellet-Cladding Interaction, Phase 2, Third Semiannual Report, January-June 1980," compiled by H. S. Rosenbaum, September 1980 (GEAP-25163-3).
- 7) "Demonstration of Fuel Resistant to Pellet-Cladding Interaction, Phase 2, Fourth Semiannual Report, July-December 1980," compiled by H. S. Rosenbaum, March 1981 (GEAP-25163-4)
- 8) "Demonstration of Fuel Resistant to Pellet-Cladding Interaction, Phase 2, Fifth Semiannual Report, January-June 1981," compiled by H. S. Rosenbaum, September 1982 (GEAP-25163-5).
- 9) "Demonstration of Fuel Resistant to Pellet-Cladding Interaction, Phase 2, Sixth Semiannual Report, July-December 1981", compiled by H. S. Rosenbaum, March 1982 (GEAP-25163-6).
- 10) "Tensile Studies of Irradiated Zirconium in a Liquid Cesium/Cadmium Environment," P. C. Kelly and D. S. Tomalin, August 1980 (GEAP-25324).
- 11) "Barrier Fuel Lead Test Assemblies - Pre-Irradiation Characterization and First Cycle Post-Irradiation Examination," J. R. Thompson, November 1981 (GEAP-25447-1).
- 12) "The Behavior of Unirradiated Zirconium-Lined and Copper-Plated Zircaloy-2 Tubing Under Simulated PCI Conditions," R. P. Gangloff, November 1979 (GEAP-25093).
- 13) "Accelerated Pellet-Cladding Interaction Tests of Barrier Fuel," J. H. Davies, June 1981 (GEAP-25356).

ATTACHMENT 2

GENERAL ELECTRIC COMPANY

AFFIDAVIT

I, Glenn G. Sherwood, being duly sworn, depose and state as follows:

1. I am Manager, Nuclear Safety & Licensing Operation, General Electric Company, 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 information concerning a new General Electric fuel design option. This information is to be added to General Electric Company Licensing Topical Report NEDE-24011-P-A, "Standard Application for Reactor Fuel". Proprietary information is indicated by a bar in the side margin.
3. In designating material as proprietary, General Electric utilizes the definition of proprietary information and trade secrets set forth in the American Law Institute's Restatement Of Torts, Section 757. This definition provides:

"A trade secret may consist of any formula, pattern, device or compilation of information which is used in one's business and which gives him an opportunity to obtain an advantage over competitors who do not know or use it.... A substantial element of secrecy must exist, so that, except by the use of improper means, there would be difficulty in acquiring information.... Some factors to be considered in determining whether given information is one's trade secret are: (1) the extent to which the information is known outside of his business; (2) the extent to which it is known by employees and others involved in his business; (3) the extent of measures taken by him to guard the secrecy of the information; (4) the value of the information to him and to his competitors; (5) the amount of effort or money expended by him in developing the information; (6) the ease or difficulty with which the information could be properly acquired or duplicated by others."

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 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 consisting of supporting data and analyses, including test data, relative to a process, method or apparatus, the application of which provide a competitive economic advantage, e.g., by optimization or improved marketability;

- c. 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;
  - d. Information which reveals cost or price information, production capacities, budget levels or commercial strategies of General Electric, its customers or suppliers;
  - e. Information which reveals aspects of past, present or future General Electric customer-funded development plans and programs of potential commercial value to General Electric;
  - f. Information which discloses patentable subject matter for which it may be desirable to obtain patent protection;
  - g. Information which General Electric must treat as proprietary according to agreements with other parties.
5. In addition to proprietary treatment given to material meeting the standards enumerated above, General Electric customarily maintains in confidence preliminary and draft material which has not been subject to complete proprietary, technical and editorial review. This practice is based on the fact that draft documents often do not appropriately reflect all aspects of a problem, may contain tentative conclusions and may contain errors that can be corrected during normal review and approval procedures. Also, until the final document is completed it may not be possible to make any definitive determination as to its proprietary nature. General Electric is not generally willing to release such a document to the general public in such a preliminary form. Such documents are, however, on occasion furnished to the NRC staff on a confidential basis because it is General Electric's belief that it is in the public interest for the staff to be promptly furnished with significant or potentially significant information. Furnishing the document on a confidential basis pending completion of General Electric's internal review permits early acquaintance of the staff with the information while protecting General Electric's potential proprietary position and permitting General Electric to insure the public documents are technically accurate and correct.
6. Initial approval of proprietary treatment of a document is made by the Subsection Manager of the originating component, the man most likely to be acquainted with the value and sensitivity of the information in relation to industry knowledge. Access to such documents within the Company is limited on a "need to know" basis and such documents at all times are clearly identified as proprietary.
7. The procedure for approval of external release of such a document is reviewed by the Section Manager, Project Manager, Principal Scientist or other equivalent authority, by the Section 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 in accordance with the



standards enumerated above. Disclosures outside General Electric are generally limited to regulatory bodies, customers and potential customers and their agents, suppliers and licensees only in accordance with appropriate regulatory provisions or proprietary agreements.

8. The document mentioned in paragraph 2 above has been evaluated in accordance with the above criteria and procedures and has been found to contain information which is proprietary and which is customarily held in confidence by General Electric.
9. The information concerning the new General Electric fuel design option has been classified as proprietary because it contains details concerning fuel assembly, mechanical analyses, and fuel assembly hardware material properties which were performed and developed at considerable expense to General Electric and which are not available to other parties. The information is of a type customarily held in confidence by General Electric since it reveals important product features and contains valuable design information which were obtained at considerable expense to General Electric.
10. The information, to the best of my knowledge and belief, has consistently been held in confidence by the General Electric Company, no public disclosure has been made, and it is not available in public sources. All disclosure to third parties have been made pursuant to regulatory provisions or proprietary agreements which provide for maintenance of the information in confidence.
11. Public disclosure of the information sought to be withheld is likely to cause substantial harm to the competitive position of the General Electric Company and deprive or reduce the availability of profit-making opportunities because:
  - a. Development of the final design information in the report cost more than \$36,000,000.
  - b. The design and analysis information are a part of the General Electric technological base which is sold in the form of licensee agreements. The precise value of these analyses is difficult to identify relative to the total value of the license agreement, but it is clearly substantial. The value to General Electric would be lost if this information were disclosed to the public.
  - c. Competitors in the field market lack the methods capability and experience which General Electric has developed. Knowing the new design information in this report will allow them to reduce uncertainty factors included in fuel bids. This would cause General Electric to lose its current competitive advantage.
  - d. The information in this report discloses apparatus which would improve customer acceptance of General Electric's fuel. Availability of the information to General Electric's competitors would enable them to modify their fuel to better compete

with General Electric, as well as take marketing or other action to improve their product's position.

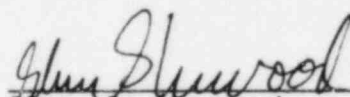
- e. Research, development, engineering, analytical, and other costs and expenses must be included in General Electric's fuel price. The ability of General Electric competitors to utilize such information without similar expenditure of resources would enable them to sell fuel at prices not reflecting similar expenditures.

STATE OF CALIFORNIA            )  
COUNTY OF SANTA CLARA    ) ss:

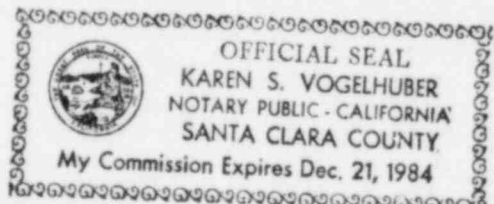
Glenn G. Sherwood, being duly sworn, deposes and says:

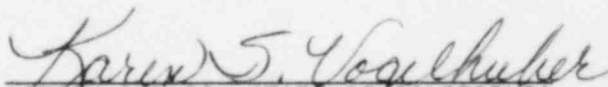
That he has read the foregoing affidavit and the matters stated therein are true and correct to the best of his knowledge, information, and belief.

Executed at San Jose, California, this 19 day of November, 1982.

  
\_\_\_\_\_  
Glenn G. Sherwood  
General Electric Company

Subscribed and sworn before me this 19 day of November 1982.



  
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NOTARY PUBLIC, STATE OF CALIFORNIA

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