



General Electric Company
175 Curtner Avenue, San Jose, CA 95128

JSC-8997
PWM-89126
MFN 060-89
August 22, 1989

US Nuclear Regulatory Commission
Mail Station P1-137
Washington, DC 20555

Attention: Thomas E. Murley, Director
Office of Nuclear Reactor Regulation

Subject: FUEL CHANNEL BOW

Dear Mr. Murley:

The cause of four ABB Atom SVEA assembly fuel failures in late 1988 at Oskarshamn Unit 2 was identified as overheating of the fuel cladding due to dryout. A contributing factor to these failures was stated to be an unexpected large bowing of the second lifetime channels placed on the two high burnup 8x8 assemblies adjacent to the failed SVEA assemblies. GE has concluded an assessment of the impact of fuel channel bowing on thermal margins for plants with GE fuel. The result of this assessment is expected to be a small reduction in Minimum Critical Power Ratio (MCPR) thermal margin.

GE has kept the Reactor Systems Branch of the NRC fully apprised of the investigation of the effects of channel bow. This includes a report on the impact of fuel channel bowing sent to the NRC in March; a presentation to the NRC providing a status report of the investigation in June; and a recent telephone call providing the impact on MCPR margins, a proposed channel bow application plan and an implementation schedule. A meeting with the NRC to review the details of this assessment is scheduled for September 12.

Implementation of the application plan will begin with reloads after December 1989. Based on the attached, operation of plants with GE fuel using current plant operating and safety limits and monitoring procedures will not pose a risk to the health and safety of the public in the period of operation before the proposed modifications can be implemented. Therefore, no interim changes in operation of monitoring are proposed.

NRR/DEST/R3B 41 Encl

Add:

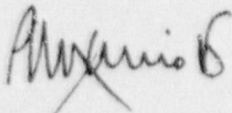
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It should be noted that the information in Attachment 1 is of the type which GE maintains in confidence and withholds from public disclosure. It has been handled and classified as proprietary to GE as indicated in the affidavit in Attachment 2. We hereby request that this information be withheld from public disclosure in accordance with the provisions of 10CFR2.790.

Please contact J. S. Charnley of my staff if additional information is required.

Very truly yours,



P. W. Marriott, Manager
Licensing & Consulting Services

rmw

Attachments

cc J. S. Charnley
L. S. Gifford
M. W. Hodges

Attachment 2

GENERAL ELECTRIC COMPANY

AFFIDAVIT

I, Janice. S. Charnley, being duly sworn, depose and state as follows:

1. I am Manager, Fuel Licensing, General Electric Company, and have been delegated the function of reviewing the information described in paragraph 2 which is sought to be withheld from public disclosure and have been authorized to apply for its withholding.
2. The information sought to be withheld is Attachment 1 to letter MFN 060-89, P. W. Marriott (GE) to Thomas E. Murley (NRC), "Fuel Channel Bow," August 21, 1989.
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. Initial approval of proprietary treatment of a document is typically made by the Subsection manager of the originating component, the person who is 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 are clearly identified as proprietary.
6. The procedure for approval of external release of such a document typically requires review by the Subsection Manager, Project Manager, Principal Scientist or other equivalent authority, by the Subsection Manager of the cognizant Marketing function (or 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 and then only with appropriate protection by applicable regulatory provisions or proprietary agreements.
7. 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.

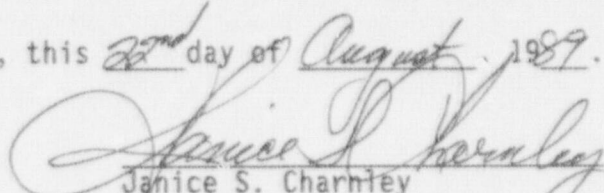
8. The document mentioned in Paragraph 2 above is classified as proprietary because it contains details concerning current General Electric fuel designs which were developed at considerable expense to General Electric which are not available to other parties.
9. The information to the best of my knowledge 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 disclosures to third parties have been made pursuant to regulatory provisions of proprietary agreements which provide for maintenance of the information in confidence.
10. 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 it would provide other parties, including competitors, with valuable information regarding current General Electric fuel designs which were obtained at considerable cost to the General Electric Company.

STATE OF CALIFORNIA)
COUNTY OF SANTA CLARA) ss:


Janice. S. Charnley, being duly sworn, deposes and says:

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

Executed at San Jose, California, this 22nd day of August, 1989.


Janice S. Charnley
General Electric Company

Subscribed and sworn before me this 22nd day of August, 1989.


NOTARY PUBLIC, STATE OF CALIFORNIA

