

DESIGN FEATURES

5.3 REACTOR CORE

FUEL ASSEMBLIES

5.3.1 The reactor core shall contain 764 fuel assemblies with each initial core fuel assembly containing 62 fuel rods and two water rods clad with Zircaloy-2. Each fuel rod shall have a nominal active fuel length of 150 inches. The initial core loading shall have a maximum average enrichment of 1.90 weight percent U-235. Reload fuel shall be similar in physical design to the initial core loading except that the reload fuel may employ a 9 x 9 array of fuel rods. Lead Fuel Assembly (LFA) designs with the same material constituents but different geometric configurations are allowed.

CONTROL ROD ASSEMBLIES

5.3.2 ~~The reactor core shall contain 185 control rod assemblies, each consisting of a cruciform array of stainless steel tubes containing 143 inches of boron carbide, B<sub>4</sub>C, powder surrounded by a cruciform shaped stainless steel sheath.~~ REPLACE WITH INSERT A

5.4 REACTOR COOLANT SYSTEM

DESIGN PRESSURE AND TEMPERATURE

5.4.1 The reactor coolant system is designed and shall be maintained:

- a. In accordance with the code requirements specified in Section 5.2 of the FSAR, with allowance for normal degradation pursuant to the applicable surveillance requirements,
- b. For a pressure of:
  1. 1250 psig on the suction side of the recirculation pump.
  2. 1650 psig from the recirculation pump discharge to the outlet side of the discharge shutoff valve.
  3. 1550 psig from the discharge shutoff valve to the jet pumps.
- c. For a temperature of 575°F.

VOLUME

5.4.2 The total water and steam volume of the reactor vessel and recirculation system is approximately 22,539 cubic feet at a nominal steam dome saturation temperature of 545°F.

INSERT A

5.3.2

The reactor core shall contain 185 cruciform shaped control rod assemblies. The control materials shall be boron carbide,  $B_4C$ , and hafnium.

# GENERAL ELECTRIC COMPANY

## AFFIDAVIT

I, JAMES F. KLAPPROTH, being duly sworn, depose and state as follows:

- (1) I am Fuel Licensing Manager, 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 document: *GE Duralife 215 Control Rod Safety Evaluation*, GENE-778-028-0790, Revision 2, July 1992. This information is delineated by underlined text and by vertical 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.

- (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 design details that allow the nuclear lifetime to be determined. The nuclear lifetime of the control rod is used by the customer for evaluation in competitive bids. The nuclear lifetime is determined from the volume and distribution of absorber material. The inner diameter dimensions of the absorber tubes, as well as the number of absorber tubes and hafnium rods in the Duralife 215 control rod are used to determine the nuclear lifetime and hence considered proprietary to GE. These dimensions are the result of an optimization of mechanical and nuclear requirements. This information is considered to be proprietary for the reasons set forth in paragraph 4.b, above.
- (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 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.

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.

STATE OF CALIFORNIA                    )  
COUNTY OF SANTA CLARA        ) SS:

James F. Klapproth, 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 5<sup>th</sup> day of March, 1993

James F. Klapproth  
James F. Klapproth  
General Electric Company

Subscribed and sworn before me this 5<sup>th</sup> day of March, 1993



Mary L. Kendall  
Notary Public, State of California



*GE Nuclear Energy*

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GENE-778-028-0790  
Revision 2  
July 1992

# **GE Duralife 215 Control Rod**

## **Safety Evaluation**

ANO	SUP	FPAC	PAGES	AVAIL
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NEW CODES			
AA	RA	DKT TASK F2	DESCRIPTION: _____
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PRIMARY FILE LOCATION/LEVEL

FCEN	F1	F2	F3
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DSB #:

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**NOTES/SPECIAL INSTRUCTIONS**

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Encl Contains Prop Info

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