

POST-ACCIDENT
TEMPERATURE AND PRESSURE
PROFILES
FOR
E. I. HATCH NUCLEAR POWER PLANT
UNITS 1 AND 2

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PDR ADOCK 05C00321
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February 24, 1984

I. Introduction

10CFR 50.49 (e.1.) requires that equipment which is important to safety, as defined by 10CFR 50.49 (b), be qualified to the most severe design basis accident during or following which this equipment is required to remain functional. This report is prepared to document the approach used by Georgia Power Company to meet this requirement for Edwin I. Hatch Nuclear Power Plant Units 1&2.

II. Analysis

Georgia Power Company did not elect to utilize the generic BWR temperature profile of Figure C-1 of NUREG-0588. In lieu of the generic profile, a plant unique analysis was utilized for the Georgia Power Company IEB 79-01B effort. The analytical method used for the large LOCA event is documented in the E. I. Hatch FSAR Section 14.4.3 for Unit 1 and Section 6.2.1.4.2 for Unit 2. These analysis have been previously reviewed and approved by the NRC. These analysis have been completed in such a way that they maximize the peak drywell pressure but not the temperature. In order to assess the most adverse temperature conditions, General Electric Company completed NSEO-52-0583 which assumed a spectrum of steam line break sizes. A copy of NSEO-52-0583 is attached as Appendix A of this report. It should be noted that the analytical method used for the analysis is in compliance with the requirements of NUREG-0588.

A review of NSEO-52-0583 has been completed and an oversight has been found in assumption 15 of Section 5. The report implies that Plant Hatch has the capability to throttle the core spray system flow, which it does not. The oversight does not affect the results of the analysis since the intent of the assumption is to indicate that RPV water level will be maintained between level 1 and level 8 and the plant emergency procedures will assure that the level is controlled within these limits.

The results of the analysis have been combined to produce an enveloping₂ curve titled Composite Drywell Temperature curve for a 0.01 ft², 0.1 ft², and 0.5 ft² main steam line break. This curve has been used to qualify equipment inside the drywell for the steam line break. A copy of the large break LOCA curves for Units 1 and 2 and the main steam line break curve has been included as Appendix E of this report.

III. Profile Utilization

The IEB 79-01B program is designed to assure qualification of equipment important to safety. To this end, each piece of equipment inside the drywell of both units has been evaluated to assure that it has been tested to an environment which envelopes both the large LOCA for each unit and the curve for the main steam line breaks inside the drywell. The events are evaluated separately which is acceptable since a large LOCA and a main steam line break will not occur concurrently.

IV. Conclusion

The large LOCA profiles and the main steam line break profile attached as Appendix B of this report demonstrate that the E. I. Hatch IEB 79-01B program fully meets the requirements of 10CFR 50.49 (e.1). The analysis used for the evaluation assures that the post-accident harsh environment assumed for the purposes of the equipment qualification program envelopes the most severe conditions.

APPENDIX A

GENERAL ELECTRIC COMPANY

AFFIDAVIT

I, Joseph F. Quirk, being duly sworn, depose and state as follows:

1. I am Manager, BWR Systems Licensing, 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 contained in the document NSE0-52-0583 entitled "Edwin I. Hatch Nuclear Power Plant Extended Drywell Temperature Analysis".
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 person 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 requires review 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.

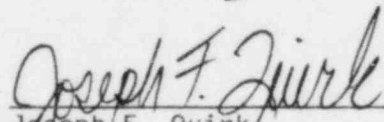
8. The document mentioned in paragraph 2 above has been evaluated in accordance with the above criteria and procedures and has been found to contain information which is proprietary and which is customarily held in confidence by General Electric.
9. The information noted in the document given in Paragraph 2 that is considered proprietary to General Electric includes the results of a plant-unique drywell temperature analysis for Edwin I. Hatch Nuclear Power Plant Units 1 and 2 which provides drywell atmosphere conditions for equipment qualification.
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 disclosures to third parties have been made pursuant to regulatory provisions of 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 approximately 6 manyears of effort and \$32,000 in analysis costs were required to develop the methodology to obtain the information.

STATE OF CALIFORNIA)
COUNTY OF SANTA CLARA) ss:

Joseph F. Quirk, being duly sworn, deposes and says:

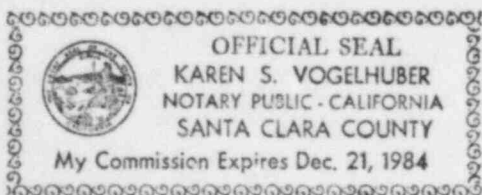
That he has read the foregoing affidavit and the matters stated therein are true and correct to the best of his knowledge, information, and belief.

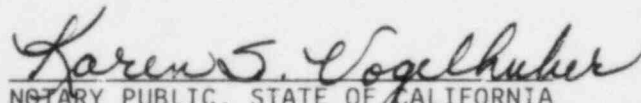
Executed at San Jose, California, this 23 day of FEBRUARY, 1984.



Joseph F. Quirk
General Electric Company

Subscribed and sworn before me this 23 day of FEBRUARY 1984





NOTARY PUBLIC, STATE OF CALIFORNIA