

MAY 29 2003



LR-N03-0243

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

**FUEL RELATED ANALYSES FOR EXTENDED POWER UPRATE AND FUEL
VENDOR CHANGE
HOPE CREEK GENERATING STATION
FACILITY OPERATING LICENSE NPF-57
DOCKET NO. 50-354**

PSEG Nuclear LLC (PSEG) intends to apply for license amendments for Extended Power Uprate (EPU) and for a fuel vendor change for the Hope Creek Generating Station. This letter provides additional information regarding PSEG's plans.

At a meeting with the NRC staff on May 8, 2003, PSEG and the General Electric Company (GE) presented an overview of the planned licensing approach, which relies on the NRC approved Constant Pressure Power Uprate (CPPU) Licensing Topical Report (CLTR) process for all non-fuel dependent evaluations and the NRC approved EPU License Topical Report (ELTR) process for the fuel dependent evaluations. The NRC staff raised questions regarding the proposed content and basis of the fuel dependent information to be provided in the Power Uprate Safety Analysis Report (PUSAR) because the PUSAR will be based on a representative equilibrium GE14 core, while the actual core for the first uprate cycle will also contain another vendor's fuel.

In response to the staff's questions at the meeting and to facilitate NRC review, PSEG and GE have prepared an outline of the planned EPU project submittals, with specific emphasis on the fuel dependent analyses. These EPU project related submittals include additional reports not typically submitted to the NRC as part of an EPU package. Specifically, the supporting reports will include the Loss of Coolant Accident (LOCA) evaluation for both GE14 and SVEA 96+ fuel product lines; details of the thermal-hydraulic, neutronic, and mechanical modeling of the SVEA 96+ fuel design using NRC approved methods; and Anticipated Transient Without Scram (ATWS) and Appendix R evaluations for each fuel design (GE14 and SVEA 96+) and for the mixed core configuration.

The specifics of these reports, as they relate to the SVEA 96+ fuel, the GE14 fuel, or to the mixed core configuration are identified in Attachment 1. In addition, Attachment 1

APP 1

This letter forwards proprietary information in accordance with 10CFR 2.790. The balance of this letter may be considered non-proprietary upon removal of Attachment 1.

identifies the submittals in which each report is contained. Analyses identified by the light gray shading in the "Fuel Related Analyses" column have not typically been submitted to the NRC as part of an EPU package.

There will be three submittals associated with the EPU and fuel vendor change requiring NRC review and approval:

Submittal Date	Content
August, 2003	<u>GEXL Correlation (with Thermal Hydraulic Compatibility Report)</u> - GEXL correlation modified for the critical power monitoring of SVEA 96+ fuel. The Thermal-Hydraulic Compatibility Report, which will be submitted in parallel, presents the detailed aspects of modeling the SVEA 96+ fuel (pressure drop, assembly flows, R-factors) using Global Nuclear Fuels (GNF) methods to demonstrate thermal-hydraulic compatibility with the GE fuel design.
September, 2003	<u>EPU PUSAR/LCR</u> - This submittal will demonstrate the long term licensing basis uprate performance of Hope Creek based on a representative equilibrium core of GE14 fuel. The PUSAR will be a combination ELTR / CLTR submittal.
October, 2003	<u>SLMCPR TS change/LCR</u> - This submittal will contain the Cycle specific Safety Limit Minimum Critical Power Ratio (MCPR) for the first transition cycle. It will also include the Technical Specification Changes required for GE14 fuel transition and fuel vendor change.

The EPU PUSAR will provide the licensing basis analyses to support operation in the uprated condition with a representative equilibrium GE14 fuel core. The majority of these analyses will be performed at 120% of the original licensed thermal power (OLTP) in order to identify maximum operating margins. The PUSAR will contain information to support the selection of the representative GE14 core. It is important to point out that a significant portion of the PUSAR submittal contains information on topics that are not fuel dependent. This non-fuel dependent portion of the PUSAR will reference the CLTR (NEDC-33004P), which contains many generic evaluations. Therefore, the NRC can review these topics without referral to any of the additional supporting submittals identified below, potentially reducing NRC review resources.

Three additional reports containing analytical results due to the fuel vendor change will be submitted on the Hope Creek docket to provide confirmation of the representative results in the EPU PUSAR. The content of these additional reports will be as follows:

Submittal Date	Content
February, 2004	<u>Mixed Core Analysis Report (MCAR)</u> - Analysis of a representative mixed core of SVEA 96+ and GE14 fuel designs based on cycle specific reload licensing and transient analyses at EPU/MELLLA conditions using GESTAR II Reload Methodology

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Submittal Date	Content
	and NRC approved codes. Discussion of the applicability of the representative mixed core will be provided. This report will be submitted in the format of a Supplemental Reload Licensing Report (SRLR).
February, 2004	<u>Fuel Transition Report (FTR)</u> - Demonstrate acceptable performance of the SVEA 96+ fuel design using GESTAR II Reload Methodology and NRC approved codes for cycle independent fuel analyses.
February 2004	<u>LOCA Report</u> - Demonstrate compliance with 10CFR50.46 and 10CFR50 Appendix K for all fuel designs in the Mixed Core operating at EPU/MELLLA conditions using SAFER/GESTR methodology and NRC approved codes.

In summary, PSEG will use the NRC approved CLTR approach for all non-fuel dependent evaluations and the ELTR approach for the fuel dependent evaluations. Also, for the fuel dependent topics we are providing significant additional reports to address the fuel vendor change. PSEG recognizes that the schedule for review depends to a great extent on the quality and completeness of the submittals. PSEG further recognizes the complexity of these licensing change requests and proposes to meet with the staff at their earliest convenience to review the schedule and content for all of the above EPU related submittals. In addition, PSEG proposes to meet with the NRC to preview the analysis results, which may become available prior to the planned submittals, particularly for those areas not typically submitted as part of an EPU package.

In addition to the submittals discussed in this letter, PSEG plans to submit two other requests for license amendments in support of the EPU, one to implement Maximum Extended Load Line Limit Analysis (MELLLA), and a second to revise the reactor coolant system pressure/temperature (P/T) limits. The MELLLA application will provide an expansion of the operating domain to a higher rod line while establishing appropriate power and flow dependent thermal limits. It will include fuel specific analyses results for GE9 and SVEA 96+ fuel designs at the current licensed thermal power. PSEG plans to submit the MELLLA request for amendment in June 2003, to be implemented during the current operating cycle. The P/T limits request for amendment will be submitted for review concurrently with the EPU.

PSEG plans to submit the EPU License Change Request in September 2003 with NRC approval requested for August 2004. Assuming NRC approval, EPU and the transition to GE14 fuel would be implemented concurrently during the scheduled Fall 2004 refueling outage. PSEG requests that the staff expeditiously review the plan described

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above for implementation to ensure that it is consistent with staff expectations. PSEG also requests that NRC formally provide concurrence with the plan after meeting with PSEG to review the proposed schedule.

The information in Attachment 1 is proprietary to GE, and GE requests that it be withheld from public disclosure in accordance with 10 CFR 2.790(a)(4). An affidavit in support of this request is contained in Attachment 2.

Should you have any questions regarding this matter, please contact Mr. Paul Duke at 856-339-1466.

Sincerely,



D. F. Garchow
Vice President, Projects and Licensing

Attachments (2)

C Mr. H. J. Miller, Administrator - Region I
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Request for Withholding Attachment 1 from Public Disclosure

General Electric Company

AFFIDAVIT

I, George B. Stramback, state as follows:

- (1) I am Project Manager, Regulatory Services, 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 Attachment 1 to PSEG letter LR-N03-0243, D. F. Garchow (PSEG) to NRC, *Fuel Related Analyses for Power Uprate Amendment Request, Hope Creek Generating Station, Facility Operating License No. NPF-57, Docket No.50-354*, dated May 29, 2003. The proprietary information is the entire Attachment 1 table (GE Company Proprietary Information).
- (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.

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. 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. Its initial designation as proprietary information, and the subsequent steps taken to prevent its unauthorized disclosure, are as set forth in paragraphs (6) and (7) following.
- (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), above, is classified as proprietary because it contains analysis content details and their interrelationships to GE's integrated processes of Extended Power Uprate analyses, Fuel transition analyses, and Reload analyses, including their relationships to addressing competitor fuels. These analyses and interrelationships include GE's knowledge of analytical models, methods and processes, including computer codes, which GE has developed, obtained NRC approval of, and applied to perform evaluations of transient and accident events in the GE Boiling Water Reactor ("BWR").

The development and approval of these system, component, and thermal hydraulic models and computer codes was achieved at a significant cost to GE, on the order of several million dollars.

The development of the evaluation process along with the interpretation and application of the analytical results is derived from the extensive experience database that constitutes a major GE asset.

- (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 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.

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 of the opportunity to exercise its competitive advantage to seek an adequate return on its large investment in developing these very valuable analytical tools.

I declare under penalty of perjury that the foregoing affidavit and the matters stated therein are true and correct to the best of my knowledge, information, and belief.

Executed on this the 29th day of May, 2003.



George B. Stramback
General Electric Company