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March 22, 2000  
MFN No. 00-011

Document Control Desk  
Nuclear Regulatory Commission  
Washington, DC 20555

Attention: Robert Pulsifer

Subject: **NRC/GE Status Meeting on GE's Thermal Power Optimization Program for Power Uprate Application to BWRs, March 14, 2000**

- Attachments:
1. GE Thermal Power Optimization Presentation Material from March 14, 2000 meeting between GE & NRC comprised of the following:
    - a. *GE's Thermal Power Optimization Program-Update, Open Session* (non-proprietary information), dated March 14, 2000 (5 pages)
    - b. *GE's Thermal Power Optimization Program-Update, Closed Session* (GE proprietary information), dated March 14, 2000 (12 pages)
  2. Affidavit – George B. Stramback (5 pages)

Dear Mr. Pulsifer:

Please find attached the two packages of presentation material from the March 14, 2000 meeting on the GE Thermal Power Optimization (TPO) program for BWRs. The purpose of this meeting was to provide the staff with an update on the program and obtain staff feedback on the proposed review schedule.

Attachment 1b (Closed Session) contains GE proprietary information that GE customarily maintains in confidence and withholds from public disclosure. An affidavit is attached (Attachment 2) which identifies that the designated material has been handled and classified as proprietary to GE. GE hereby requests that the designated information be withheld from public disclosure in accordance with the provisions of 10 CFR 2.790.

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I would like to thank the staff for the valuable feedback on the proposed development and review approach. GE is proceeding to generate the TPO Licensing Topical Report and anticipates submittal for staff review in June 2000. In the interim, please forward any further staff comments to Mr. Rufus Drury at (408) 925-1930.

Sincerely,



J.F. Klapproth, Manager  
Engineering and Technology  
GE Nuclear Energy  
(408) 925-5434  
Internet: [james.klapproth@gene.ge.com](mailto:james.klapproth@gene.ge.com)

cc: R. Caruso (NRC) w/o Attachments  
J. Donahue (NRC) w/o Attachments  
I. Nir (GE) w/o Attachments

# General Electric Company

## AFFIDAVIT

I, **George B. Stramback**, being duly sworn, depose and 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 presentation material attachment 1.a. to GE letter MFN No. 00-011, J.F. Klapproth (GE) to R. Pulsifer (NRC), *NRC/GE Status Meeting on GE's Thermal Power Optimization Program for Power Uprate Application to BWRs, March 14, 2000*, dated March 22, 2000. The proprietary information is contained in all of attachment 1.a. The proprietary attachment is marked with (GE Company Proprietary) or (GE Proprietary Information) and is titled as follows: *(1) GE's Thermal Power Optimization Program-Update, Closed Session*, dated March 14, 2000. This proprietary document, taken as a whole, constitutes a proprietary compilation of information, some of it also independently proprietary, prepared by the General Electric Company.
- (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.

Both the compilation as a whole and the marked independently proprietary elements incorporated in that compilation are considered proprietary for the reason described in items (4)a., (4)b., and (4)c., above.

- (5) The information sought to be withheld is being submitted to NRC in confidence. That information (both the entire body of information in the form compiled in this document, and the individual proprietary elements) is of a sort customarily held in confidence by GE, and has, to the best of my knowledge, consistently been held in confidence by GE, has not been publicly disclosed, and 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 proprietary presentation material is classified as proprietary because it contains strategic information regarding GE's work to extend the presently approved GE power uprate process. This information includes extension of the power uprate process based on the reduced uncertainty in plant thermal power approach employing constant steam dome pressure. The information also included the results of internal design reviews identifying topics that could be addressed generically verses those to be addressed on a plant specific basis. This extension of the power uprate process will utilize analytical models and methods, 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 remainder of the information identified in paragraph (2), above, is classified as proprietary because it constitutes a confidential compilation of strategic information, and conclusions extending the results from previous applications, which represent, as a whole, an integrated process or approach which GE has developed. The extensions include: 1) the reduced uncertainty in plant thermal power and 2) uprate analysis with constant steam dome pressure, which GE intends to apply to performance of evaluations of the safety-significant changes necessary to demonstrate the regulatory acceptability of a given increase in licensed power output for a GE BWR. The development and approval of the overall power uprate approach was achieved at a significant additional cost to GE, in excess of a million dollars, over and above the very large cost of developing the underlying individual proprietary analyses. These power uprate process extensions will represent an additional extensive investment costing approximately  $\frac{1}{2}$  to  $\frac{3}{4}$  million dollars.

To effect a change to the licensing basis of a plant requires a thorough evaluation of the impact of the change on all postulated accident and transient events, and all other regulatory requirements and commitments included in the plant's FSAR. The analytical process to perform and document these evaluations for a proposed power uprate was developed at a substantial investment in GE resources and expertise. The results from these evaluations identify those BWR systems and components, and those postulated events, which are impacted by the changes required to accommodate operation at increased power levels, and, just as importantly, those which are not so impacted, and the technical justification for not considering the latter in changing the licensing basis. The scope thus determined forms the basis for GE's offerings to support utilities in both performing analyses and providing licensing consulting services. Clearly, the scope and magnitude of effort of any attempt by a competitor to effect a similar licensing change can be narrowed considerably based upon these results. Having invested in the initial evaluations and

developed the solution strategy and process described in the subject document GE derives an important competitive advantage in selling and performing these services. However, the mere knowledge of the impact on each system and component reveals the process, and provides a guide to the solution strategy.

- (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, including justifications for not including certain analyses in applications to change the licensing basis.

GE's competitive advantage will be lost if its competitors are able to use the results of the GE experience to avoid fruitless avenues, or to normalize or verify their own process, or to claim an equivalent understanding by demonstrating that they can arrive at the same or similar conclusions. In particular, the specific areas addressed by any document and submittal to support a change in the safety or licensing bases of the plant will clearly reveal those areas where detailed evaluations must be performed and specific analyses revised, and also, by omission, reveal those areas not so affected.

While some of the underlying analyses, and some of the gross structure of the process, may at various times have been publicly revealed, enough of both the analyses and the detailed structural framework of the process have been held in confidence that this information, in this compiled form, continues to have great competitive value to GE. This value would be lost if the information as a whole, in the context and level of detail provided in the subject GE document, were to be disclosed to the public. Making such information available to competitors without their having been required to undertake a similar expenditure of resources, including that required to determine the areas that are not affected by a power uprate and are therefore blind alleys, 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 its analytical process.

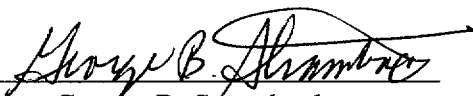
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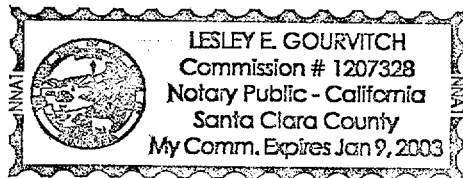
George B. Stramback, being duly sworn, deposes and says:

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 22nd day of March 2000.

  
George B. Stramback  
General Electric Company

Subscribed and sworn before me this 22 day of MARCH 2000.



  
Notary Public, State of California



***GE's Thermal Power Optimization  
Program-Update***

*Open Session*

Jim Klapproth, GE

March 14, 2000







## **Background...**

- NRC proposed a rulemaking which would change a requirement in 10 CFR part 50 appendix K
  - Allows utilities option to apply reduced adder to the nominal licensed power level
  - Based on reduced feedwater flow measurement instrument error
  
- Change based on topical report submitted to NRC by Caldon, Inc. (Caldon)
  - Ultrasonic flow meter (leading edge flow meter - LEFM)
  - Demonstrated more accurate feedwater flow measurement
  
- NRC issued SER approving Caldon's LEFM technology



## **Background...**

- BWR operating license (OL) is supported by a number of analyses and evaluations based on 2% feedwater flow uncertainty
  - Apply reduced feedwater flow uncertainty to those analyses
    - Utility may justify increasing the reactor thermal power level consistent with approved feedwater flow measurement and still remain within boundaries of these specific analyses
  
- Significant number of other safety analyses and evaluations that also support OL are performed at either nominal reactor thermal power level without an adder for feedwater flow uncertainty, or through statistical application of this uncertainty
  - These analyses and evaluations must be either re-performed or disposed for application of an increased reactor thermal power level



**Background...**

- Utilities have approached GE to request this type of support for their BWRs
- GE recognizes need to adapt and simplify NRC-approved power uprate processes for this application
- GE has called this meeting to discuss GE's streamlined approach to Thermal Power Optimization and provide status update



**Agenda for the Closed (Proprietary) Session...**

- Overview of GE's NRC-Approved Stretch Power Uprate (SPU) and Extended Power Uprate (EPU) processes for application to Boiling Water Reactors (BWRs)
- Review of GE's approach to support increase in reactor thermal power level (Thermal Power Optimization, or "TPO") consistent with approved feedwater flow measurement
- Status/Schedule
- NRC Feedback