

Exelon Generation  
4300 Winfield Road  
Warrenville, IL 60555

www.exeloncorp.com

RS-06-122

August 18, 2006

U. S. Nuclear Regulatory Commission  
ATTN: Document Control Desk  
Washington, DC 20555-0001

**Dresden Nuclear Power Station, Units 2 and 3  
Renewed Facility Operating License Nos. DPR-19 and DPR-25  
NRC Docket Nos. 50-237 and 50-249**

**Subject: Additional Information Supporting Request for License Amendment to Increase Main Steam Safety Valve Lift Setpoint Tolerance and Standby Liquid Control System Enrichment**

- References:**
1. Letter from P. R. Simpson (Exelon Generation Company, LLC) to U. S. NRC, "Request for License Amendment to Increase Main Steam Safety Valve Lift Setpoint Tolerance and Standby Liquid Control System Enrichment," dated June 2, 2006
  2. Letter from M. Banerjee (U. S. NRC) to C. M. Crane (Exelon Generation Company, LLC), "Dresden Nuclear Power Station, Units 2 and 3 – Request for Additional Information Related to License Amendment Request to Revise Technical Specification Surveillance Requirement 3.4.3.1 and 3.1.7.10 (TAC Nos. MD2166 and MD2167)," dated August 10, 2006

In Reference 1, Exelon Generation Company, LLC (EGC) requested an amendment to Renewed Facility Operating License Nos. DPR-19 and DPR-25 for Dresden Nuclear Power Station (DNPS) Units 2 and 3. The proposed change revises Technical Specification (TS) Surveillance Requirement (SR) 3.4.3.1 to increase the allowable as-found main steam safety valve (MSSV) lift setpoint tolerance from  $\pm 1\%$  to  $\pm 3\%$ . In addition, the proposed change revises SR 3.1.7.10 to increase the enrichment of sodium pentaborate used in the Standby Liquid Control System from  $\geq 30.0$  atom percent boron-10 to  $\geq 45$  atom percent boron-10.

In Reference 2, the NRC requested additional information to complete its review. In response to Reference 2, EGC is providing the attached information. Attachment 2 contains proprietary information as defined by 10 CFR 2.390, "Public inspections, exemptions, requests for

A001

withholding." General Electric (GE), as the owner of the proprietary information, has executed the affidavit provided in Attachment 3, which identifies that the information has been handled and classified as proprietary, is customarily held in confidence, and has been withheld from public disclosure. Accordingly, it is requested that the enclosed proprietary information be withheld from public disclosure in accordance with the provisions of 10 CFR 2.390 and 10 CFR 9.17, "Agency records exempt from public disclosure." A non-proprietary version of Attachment 2 is provided in Attachment 4.

EGC has reviewed the information supporting a finding of no significant hazards consideration that was previously provided to the NRC in Attachment 1 of Reference 1. The information provided in this submittal does not affect the bases for concluding that the proposed license amendment does not involve a significant hazards consideration.

There are no regulatory commitments contained in this letter. Should you have any questions concerning this letter, please contact Michelle Yun at (630) 657-2818.

I declare under penalty of perjury that the foregoing is true and correct. Executed on the 18th day of August 2006.

Respectfully,



Kenneth M. Nicely  
Manager – Licensing

cc: NRC Senior Resident Inspector  
NRC Regional Administrator, Region III

Attachment 1: Response to Request for Additional Information

Attachment 2: General Electric Report, "Request for Additional information for Plot of Vessel Pressure during ATWS PRFO event at BOC Dresden and Quad Cities – Proprietary"

Attachment 3: General Electric Affidavit

Attachment 4: General Electric Report, "Request for Additional information for Plot of Vessel Pressure during ATWS PRFO event at BOC Dresden and Quad Cities – Non-Proprietary"

**ATTACHMENT 1**  
**Response to Request for Additional Information**

**NRC Request 1**

The final paragraph of GE-NE-0000-0053-8435-R1P, page 6-5, states, "Exelon will ensure that the 10CFR50.62 [sic] requirement to inject 86 GPM [gallons per minute] of 13% sodium pentaborate solution, or the equivalent, plus the ATWS [anticipated transient without scram] specific injection requirements stated in Section 3.0 of this report are met for injection against the maximum reactor vessel pressure of 1301 psig at the SLCS sparger occurring during an ATWS event when the SLCS is in operation without opening of the SLCS relief valve." However, TS SR 3.1.7.7 requires a discharge pressure of 1275 psig for each pump. Explain the disparity in discharge pressure between the General Electric (GE) maximum and the SR. Also explain why TS SR 3.1.7.7 should not be revised to reflect the higher discharge pressure.

**Response**

The Dresden Nuclear Power Station (DNPS) Standby Liquid Control (SLC) system consists of a boron solution storage tank, two positive displacement pumps, two explosive valves, and associated piping and valves used to transfer borated water from the storage tank to the reactor pressure vessel. The following table provides SLC system relief valve setpoints and the system design pressure for each DNPS unit.

	Unit 2	Unit 3
Relief Valve Setpoint	1500 psig	1586 psig
SLC System Design Pressure	1500 psig	1586 psig

Technical Specification (TS) Surveillance Requirement (SR) 3.1.7.7 is based on NUREG-1433, "Standard Technical Specifications General Electric Plants, BWR/4." SR 3.1.7.7 of NUREG-1433 requires that each SLC system positive displacement pump develops a flow rate and discharge pressure based on plant-specific values. DNPS SR 3.1.7.7 is performed to verify a flow rate of  $\geq 40$  gpm at a discharge pressure of  $\geq 1275$  psig. The intent of this SR is to ensure that pump performance has not degraded during the fuel cycle. As described in the Bases for SR 3.1.7.7, this test confirms one point on the pump design curve and is indicative of overall performance. The test confirms operability of the SLC pumps, detects incipient failures identified by abnormal performance, and provides assurance that the pumps have not degraded. Verifying that the pump is operating on its curve provides confidence that the pump will meet its design requirements.

In addition, SR 3.1.7.7 is performed to meet the requirements of the DNPS Inservice Testing Program. In accordance with the American Society of Mechanical Engineers (ASME) Operation and Maintenance (OM) Code, 1998 edition through 2000 addenda, subsection ISTB-3300, "Reference Values," the reference values shall be established at a point of operation (i.e., reference point) readily duplicated during subsequent tests. The vendor documentation establishes that the SLC system positive displacement pumps will meet their required flow rate over the entire range of operating pressure when tested at the reference point. Thus, testing at a reference point is sufficient to establish operability. This philosophy applies regardless of a change in ATWS analytical injection pressure. The DNPS SR 3.1.7.7 test pressure remains consistent with the ASME OM Code Inservice Testing requirements. Therefore, it is not necessary to revise SR 3.1.7.7.

**ATTACHMENT 1**  
**Response to Request for Additional Information**

**NRC Request 2**

Figure 3-8 of same report provides the bounding pressure against which SLCS must inject. Please provide the figure with reactor vessel lower plenum pressure scaled in psig.

**Response**

The requested information is provided in Attachment 2.

**ATTACHMENT 3**

**General Electric Affidavit**

# General Electric Company

## AFFIDAVIT

I, **Louis M. Quintana**, state as follows:

- (1) I am Manager, Licensing, 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 Enclosure 1 of Letter No. 06-07-003, *Submittal of Response to Request for Additional information (RAI) for Plot of Vessel Pressure during ATWS PRFO event at BOC Dresden and Quad Cities*, July 28, 2006. The proprietary information is delineated by a double underline inside double square brackets. Figures and large equation objects are identified with double square brackets before and after the object. In each case, the superscript notation<sup>(3)</sup> refers to Paragraph (3) of this affidavit, which provides the basis for the proprietary determination.
- (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), and 2.390(a)(4) for "trade secrets" (Exemption 4). The material for which exemption from disclosure is here sought 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 aspects of past, present, or future General Electric customer-funded development plans and programs, resulting in potential products to General Electric;

d. 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 paragraphs (4)a., and (4)b, above.

- (5) To address 10 CFR 2.390 (b) (4), 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 detailed results and conclusions regarding GE processes and methodology supporting evaluations of the safety-significant changes necessary to demonstrate the regulatory acceptability for relaxation of the safety valve setpoint tolerance for a GE BWR, utilizing 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 hundred thousand 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 28<sup>th</sup> day of July 2006



Louis M. Quintana  
Manager, Licensing

**ATTACHMENT 4**

**General Electric Report, "Request for Additional information for Plot of Vessel Pressure during ATWS PRFO event at BOC Dresden and Quad Cities - Non-Proprietary"**

**Enclosure 2**

**Letter No. 06-07-003**

**Request for Additional information for Plot of Vessel Pressure  
during ATWS PRFO event at BOC Dresden and Quad Cities  
–Non-Proprietary**

**Non-Proprietary Notice**

This is a non-proprietary version of the Enclosure 1 of Letter No. 06-07-003, which has the proprietary information removed. Portions of the document that have been removed are indicated by an open and closed bracket as shown here [[ ]].

## **Response**

Figure 3-8 of Reference 1 contains graphs related to the Pressure Regulator Failure Open (PRFO) Anticipated Transient Without Scram (ATWS) event analyzed at the beginning of a representative fuel cycle (BOC). This document provides an alternate representation of the transient information provided in Figure 3-8 of Reference 1. The alternate representation in this document replaces the plot of Vessel Pressure Rise with a plot of Lower Plenum Pressure. The Lower Plenum Pressure is plotted on a secondary axis and is plotted in the units of psig. The lower plenum pressure is corrected to an elevation of 152" above vessel zero.

As stated in Table 3-11 of Reference 1, it is noted that the PRFO event did not result in the highest lower plenum pressure while the Standby Liquid Control System was operating. However, for all transients, the peak lower plenum pressures during the time period when the Standby Liquid Control System is operating varied by less than 5 psi.

## **Reference**

1. GE-NE-0000-0053-8435-R1P "Dresden 2 and 3 and Quad Cities 1 and 2 Safety Valve Setpoint Tolerance Relaxation", Revision 1, May 2006.

**Figure 1 – PRFO - BOC – GE14 Fuel  
(Based on Figure 3-8 from Reference 1)**

[[

[[

]]

]]