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U. S. Nuclear Regulatory Commission
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SUSQUEHANNA STEAM ELECTRIC STATION PROPOSED LICENSE AMENDMENT NO. 285 FOR UNIT 1 OPERATING LICENSE NO. NPF-14 AND PROPOSED LICENSE AMENDMENT NO. 253 FOR UNIT 2 OPERATING LICENSE NO. NPF-22 EXTENDED POWER UPRATE APPLICATION RE: SAFETY RELATED PUMPS AND VALVES AND MECHANICAL EQUIPMENT ENVIRONMENTAL QUALIFICATION REVIEW REQUEST FOR ADDITIONAL INFORMATION RESPONSES
PLA-6196

Docket Nos. 50-387 and 50-388

References: 1) *PPL Letter PLA-6076, B. T. McKinney (PPL) to USNRC, "Proposed License Amendment Numbers 285 for Unit 1 Operating License No. NPF-14 and 253 for Unit 2 Operating License No. NPF-22 Constant Pressure Power Uprate," dated October 11, 2006.*

2) *USNRC Letter, R. V. Guzman (NRC) to B. T. McKinney (PPL), "Request for Additional Information (RAI) – Susquehanna Steam Electric Station, Units 1 and 2 (SSES 1 and 2) – Extended Power Uprate Application Re; Safety Related Pumps and Valves Mechanical Equipment Environmental Qualification Review (TAC Nos. MD3309 and MD3310)," dated April 18, 2007.*

3) *USNRC Letter, Victor Nerses (NRC) to R. G. Byram (PPL), "Safety Evaluation of Licensee Response to Generic Letter 95-07, Susquehanna Steam Electric Station Units 1 and 2 (TAC Nos. M93528 and M93529)," dated November 1, 1999.*

4) *PPL Letter PLA-6200 B. T. McKinney (PPL) to USNRC, "Proposed License Amendment No. 285 for Unit 1 Operating License No. NPF-14 and Proposed License Amendment No. 253 for Unit 2 Operating License No. NPF-22 Extended Power Uprate Application Re: Mechanical and Civil Engineering Technical Review Request for Additional Information Responses"*

Pursuant to 10 CFR 50.90, PPL Susquehanna LLC (PPL) requested in Reference 1 approval of amendments to the Susquehanna Steam Electric Station (SSES) Unit 1 and Unit 2 Operating Licenses (OLs) and Technical Specifications (TS) to increase the

A001
NRC/NRR

maximum power level authorized from 3489 Megawatts Thermal (MWt) to 3952 MWt, an approximate 13% increase in thermal power. The proposed Constant Pressure Power Uprate (CPPU) represents an increase of approximately 20% above the Original Licensed Thermal Power (OLTP).

The purpose of this letter is to provide responses to the "Request for Additional Information" transmitted to PPL in Reference 2.

The Attachments contain the PPL responses.

The PPL responses in Attachment 1 contain information that General Electric Company considers proprietary. General Electric Company requests that the proprietary information be withheld from public disclosure in accordance with 10 CFR 2.390 (a) 4 and 9.17 (a) 4. The Affidavit supporting this request is provided in Attachment 3. A non-proprietary version of Attachment 1 is provided in Attachment 2.

There are no new regulatory commitments associated with this submittal.

PPL has reviewed the "No Significant Hazards Consideration" and the "Environmental Consideration" submitted with Reference 1 relative to the Enclosure. We have determined that there are no changes required to either of these documents.

If you have any questions or require additional information, please contact Mr. Michael H. Crowthers at (610) 774-7766.

I declare under perjury that the foregoing is true and correct.

Executed on: 6-1-07

B. T. McKinney

Attachment 1: Proprietary Version of the Request for Additional Information Responses
Attachment 2: Non-Proprietary Version of the Request for Additional Information Responses
Attachment 3: General Electric Company Affidavit

Copy: NRC Region I
Mr. A. J. Blamey, NRC Sr. Resident Inspector
Mr. R. V. Guzman, NRC Sr. Project Manager
Mr. R. R. Janati, DEP/BRP

Attachment 2 to PLA-6196
Non-Proprietary Version of the Request for Additional Information Responses

NRC Question 1:

The licensee is requested to provide a description of its plans to implement the Inservice Testing Program as it relates to the proposed EPU operating conditions. Discuss with examples its evaluation of the impact of EPU conditions on the performance of safety-related pumps, power-operated valves, check valves, safety or relief valves, including consideration of changes in ambient conditions and power supplies (as applicable), and dynamic restraints; and to indicate any resulting component or support modifications, or adjustments to the IST Program, resulting from that evaluation.

PPL Response:

The PPL engineering change program assures all procedures, design documents and programs such as the IST program, are updated to reflect the design. The engineering changes required for CPPU are being finalized. The below provides examples of changes and impacts to the IST program.

HPCI/RCIC

[[

]]
Additionally, no new components need to be added to these systems. Therefore, no changes are required to HPCI/RCIC pump, turbine, or valve In-Service Testing.

RHR/Core Spray (CS)

[[

]] because the basis for the setpoints is equipment or piping design pressures, which do not change for CPPU. [[

]] Therefore, no changes are required to the IST program for these systems.

ESW/RHRSW

Various modifications are planned for the ESW system, and the SSES ultimate heat sink (UHS), as identified in Attachment 7 of Reference 1. These include the plugging of nozzles in the spray pond large arrays to improve spray efficiency; and the addition of check valves in the ESW to Fuel Pool Cooling emergency make-up lines to reduce the mission dose for postulated accidents. In support of these modifications, changes to the IST program will be considered due to the additional valves. Other changes may be required, and will be addressed as part of PPL's engineering change process.

Main Steam SRV/ADS Valves

Per Section 3.1 of Attachment 4 of Reference 1, [[

]] Thus, [[ ]], and no changes to the IST Program are required for these valves.

Other Considerations

The relatively minor changes to ambient conditions under specific postulated accident scenarios resulting from CPPU do not require changes to the IST program.

Sections 6.1 and 6.2 of Attachment 4 of Reference 1 address AC and DC power supplies. Safety-related electrical loads, including diesel generator loads, are not changed for CPPU conditions. Therefore, there are no IST program changes associated with power supply changes for the systems discussed above.

There are no modifications involving dynamic restraints in primary containment, nor for the safety-related systems and components discussed above. However, PPL intends to upgrade pipe supports on the main steam and feedwater systems, as identified in Reference 4. Changes to the SSES snubber inspection and testing program will be addressed as part of PPL's engineering change process.

NRC Question 2:

In Section 4.1.4, "Generic Letter (GL) 89-10 Program," of Enclosure 4, "Susquehanna Steam Electric Station Units 1 and 2 Safety Analysis Report for Constant Pressure Power Uprate (CPPU)," to its submittal dated October 11, 2006, the licensee states that process parameters of temperature, pressure, and flow for motor-operated valves (MOVs) were reviewed; and increases in design differential pressure due to operation at CPPU conditions were identified for some MOVs. The licensee also states that operation at CPPU conditions increases post-accident room temperatures where some MOVs are located, potentially reducing the actuator output torque. Based on its review, the licensee states that the GL 89-10 MOVs are capable of performing their design-basis safety functions at CPPU conditions. The licensee is requested to discuss with examples its evaluation of safety-related MOVs within the programs established in response to GL 89-10, "Safety-Related Motor-Operated Valve Testing and Surveillance," and GL 96-05, "Periodic Verification of Design-Basis Capability of Safety-Related

Motor-Operated Valves," at SSES 1 and 2 for the potential impact from EPU operation, including the impact of increased process flows on operating requirements and increased ambient temperature on motor output.

PPL Response:

A list of process parameter changes for CPPU was generated. Existing MOV capability calculations were reviewed for impact as a result of these parameter changes. If there was no change to the calculation input parameters, then the MOV was concluded to be unaffected by CPPU. For MOV calculations with new CPPU input parameters, the percentage-change of this parameter was conservatively assumed to be a reduction in available margin for the MOV. All MOVs were found to have a positive available margin, which ensures their ability to perform their safety function. If a MOV has a low available margin, the diagnostic testing frequency may need to be increased. Managing the retest frequency for diagnostic testing, as impacted by reduced margins, will ensure that these MOVs are maintained, as required by GL 96-05. The following discussion illustrates several systems and areas evaluated for the CPPU conditions.

An example of an evaluation for CPPU operation is the increase in peak drywell pressure after a Reactor Recirculation (RR) line break. The pressure change was assessed as follows: The drywell pressure increases from 44.6 psig to 48.6 psig, resulting in an increase in differential pressure (DP) of approximately 9% for several MOVs. This DP increase, which does not impact loads such as packing friction, was conservatively assumed to reduce the total available margins for these valves by approximately 9%.

Flow rates for CPPU operation increase in three systems with GL 89-10 MOVs: Main Steam (MS), RR, and Emergency Service Water (ESW). For the MS and RR systems, fluid momentum effects are not considered in the DP calculations since flow would not increase the maximum calculated DP for gate and globe valves. Since the flow increase is less than 1% on the ESW system, the fluid momentum impact on the butterfly MOVs was considered to be negligible; therefore, there is no impact.

The room temperature in the main steam tunnel increases slightly after a DBA-LOCA. The MOVs in this room have been qualified to the higher temperature. The peak temperature in the drywell increases from 320°F to 337°F after a MS line break inside containment at CPPU conditions. This peak temperature is reached at one second after the break and then drops to less than 300°F at five seconds post break. Since the increase in temperature is only 17°F and the total duration above 320°F is approximately one second, the temperature increase external to the actuator is not judged to adversely impact the internal components of the MOVs, which have been qualified to 320°F for several hours.

NRC Question 3:

In Section 4.1.4 of Enclosure 4 to its submittal dated October 11, 2006, the licensee states that MOVs used as containment or high energy line break isolation valves, and air-operated valves (AOVs) used as containment isolation valves, were reviewed for effects of operations at CPPU conditions, including thermal binding and pressure locking as described in GL 95-07, "Pressure Locking and Thermal Binding of Safety-Related Power-Operated Gate Valves." The licensee is requested to discuss with examples, its evaluation of all safety-related power-operated gate valves and the potential for pressure locking or thermal binding resulting from EPU operation at SSES 1 and 2.

PPL Response:

PPL's evaluation for the potential of pressure locking and thermal binding of safety-related power-operated gate valves was reviewed by the NRC, and accepted in Reference 3. The corrective actions taken by PPL, as documented therein, are not affected by CPPU. The following discussion illustrates several cases evaluated for the CPPU conditions.

After a design basis accident, CPPU operation will result in an increase in drywell and wetwell pressure. Valves that were originally found to be not susceptible to pressure locking due to system design or procedural considerations remain not impacted. The increase in containment pressure does not affect the valves for which the disk was drilled, such as the RCIC, HPCI, LPCI, and Core Spray injection valves, RHR suppression pool supply and return valves, and HPCI suppression pool suction valve. In addition, valves with existing procedural guidance to eliminate the potential for pressure locking, such as RHR heat exchanger inlet and RHR pump minimum flow return valves remain unaffected by CPPU.

After a design basis accident, CPPU operation will result in an increase in drywell and wetwell temperature. With respect to thermal binding, the majority of valves are not susceptible as a result of their service application and materials of construction. As stated in the staff's acceptance for GL 95-07, only the RHR heat exchanger inlet & outlet valves were identified as being potentially susceptible to thermal binding during periods of unit shutdown. However, precautions were added to the applicable procedures to prevent closure of these valves when operating conditions pose the potential for thermal binding. These procedures remain valid and are not impacted by CPPU.

NRC Question 4:

In Section 4.1.4 of Attachment 4 to its submittal dated October 11, 2006, the licensee states the process parameters of temperature, pressure, and flow for AOVs were reviewed, and increases in design differential pressure due to operation at CPPU conditions have been identified for some AOVs. Based on its review, the licensee states that all AOVs with active, safety-related or safety-significant functions are capable of performing their design-basis safety functions at CPPU conditions. The licensee is requested to discuss with examples, its evaluation of safety-related AOVs and solenoid-operated valves, as applicable, for potential impact from EPU operation at SSES 1 and 2.

PPL Response:

A list of process parameter changes for CPPU was generated. Existing AOV capability calculations were reviewed for impact as a result of these parameter changes. If there was no change to the calculation input parameters, then the AOV was concluded to be unaffected by CPPU. For AOV calculations with new CPPU input parameters, the percentage-change of this parameter was conservatively assumed to be a reduction in available margin for the AOV. All AOVs were found to have a positive available margin, which ensures their ability to perform their safety function.

An example of an evaluation for CPPU operation is the increase in peak drywell pressure after a RR line break. For valves such as the impacted containment vent and purge valves, the pressure change was assessed as follows: The drywell pressure increases from 44.6 psig to 48.6 psig, resulting in an increase in differential pressure (DP) of approximately 9% for several AOVs. This DP increase, which does not impact loads such as packing friction, was conservatively assumed to reduce the total available margins for these valves by approximately 9%.

Due to the increase in peak drywell pressure after a DBA-LOCA, the 4-way solenoid valve on the inboard main steam isolation valves (MSIVs) may not reposition when activated. These valves require a minimum of 50 psid (actuator supply pressure over drywell pressure) to reposition, allowing supply air to the valve actuator. To ensure that the inboard MSIVs meet their safety function at CPPU conditions, the 4-way solenoid valves were replaced with a new valve that requires a minimum of 25 psid to reposition. These solenoid valves have been replaced on both SSES units.

Flow rates for CPPU operation increase in several systems containing AOVs with active, safety-related or safety-significant functions: Feedwater (FW), Main Steam (MS), and Condensate (CD) system. For these systems, fluid momentum effects were not originally considered in the DP calculations since it will not increase the maximum calculated DP for gate and globe valves. Since none of these systems contain butterfly valves with active, safety-related or safety-significant air operators, fluid momentum effects do not need to be evaluated.

The temperature in the drywell increases from 320°F to 337°F after a MS line break inside containment. This peak temperature is reached at one second after the break and then drops to less than 300°F at five seconds post break. Since the increase in temperature is only 17°F and the total duration above 320°F is approximately one second, the temperature increase external to the actuator is judged to not adversely impact the internal components of the AOVs, which have been qualified to 320°F for several hours.

NRC Question 5:

In Section 10.3, "Environmental Qualification," of Enclosure 4 to its submittal dated October 11, 2006, the licensee indicates that safety-related components are required to be qualified for the environment in which they are intended to operate. In Section 10.3.2, "Mechanical Equipment with Non-Metallic Components," the licensee states that accident temperature, pressure, and radiation level increase due to CPPU. The licensee states that the design control program ensures that non-metallic components (e.g., seals, gaskets, lubricants, and diaphragms) are specified and procured for the environment in which they are intended to function. The licensee is requested to identify the range of the non-metallic components in safety-related mechanical equipment with examples. The discussion of examples should include (1) applicable environmental conditions, (2) required operating life, (3) capabilities of the non-metallic components, (4) basis for the environmental qualification of mechanical equipment, and (5) the surveillance and maintenance programs to be developed to ensure functionality during their design life.

PPL Response:

Range of Non-Metallics Used in Safety Related Mechanical Equipment

The range of non-metallic components used in safety related mechanical equipment includes packing, gaskets, component seals, valve seats and O-rings. Typical material applications are as follows:

Table 1
Typical Non-Metallic Materials Used in Safety-Related Mechanical Equipment

Application	Typical Materials
Packing	Graphite Stainless Steel and Graphite
Gaskets	"Flexitallic" with Stainless Steel and Graphite
Valve Seats	Viton EPT Rubber
O-Rings	Ethylene Propylene (EPR) Buna-N Viton
Actuator Diaphragm	Neoprene Viton
Disk Seal	Ethylene Propylene (EPR)
Retaining Ring	SS and Graphite
Lubricant	Colloidal Graphite (Neolube)

The non-metallic components in mechanical safety related equipment are located in primary containment, reactor building and control structure. The applicable ambient temperatures, pressures and humidity levels are tabulated below:

Table 2
Applicable Design Ambient Temperature, Pressures and Humidity Levels for Non-Metallic Components at CPPU Conditions

	Primary Containment	Reactor Building	Control Structure
Normal Temperature ^{O}F (min-max)	90-150	40-130	40-104
Accident Temperature ^{O}F (min-max)	90-340	NA-139/305*	40-104
Normal Pressure (min-max)	0.1-1.5 PSIG	(-0.375")WG to Atm	Atm to +1/8"WG
Accident Pressure (Max)	63.3 PSIA	23.1 PSIA*	+1/8"WG
Normal Humidity %RH (min-max)	20/90	10/90	10/100
Accident Humidity %RH (max)	100	100*	100

* High Energy Line Break value

CPPU results in slightly higher process temperatures for certain systems and a small increase in heat load due to higher electrical currents in some motors and cables. Accordingly, ambient temperatures will increase slightly where these changes exist, as described in PUSAR Section 6.6. However, operation at CPPU conditions does not result in ambient temperatures that exceed the ambient design temperatures listed in Table 2. CPPU will not result in ambient pressure changes except in containment where the post-LOCA pressure will increase by 4.0 PSIG. Operation at CPPU conditions does not result in a change in humidity levels.

Section 8.5. Typical Radiation levels calculated for EQ are listed in Table 3 below:

Table 3
Radiation Levels Calculated for Equipment Qualification (3)

	Primary Containment	Reactor Building	Control Structure
Normal Radiation (R/hr)	≤0.1 – 84	≤0.1 – 2,700 (4)	≤0.0005 – 0.1
Normal Operating Total Integrated Dose 40 years (R)	2.3E7 (2)	1.30E6 (4)	3.5E4
Accident Radiation			
Maximum Dose Rate (R/hr)	1.0E7 gamma 1.2E8 beta	1.9E5 gamma 1.9E3 beta	3.5E4 gamma (1) 2.0E1 beta
180 day Total Integrated Dose (R)	5.6E7 gamma 8.2E8 beta	6.2E6 gamma 3.0E5 beta	1.2E7 gamma (1) 1.0E3 beta

(1) Based on contact with SGTS filter assembly @ elevation 806 ft of the control structure.
(2) Based on radiation zone with the highest normal operating dose rate outside the bioshield and includes gamma and neutron contributions.
(3) Radiation levels listed were calculated for harsh areas associated with the electrical equipment EQ program. The dose rates and integrated doses listed are judged to bound areas that contain safety related mechanical equipment with non-metallic components.
(4) Maximum values based on TIP contact dose.

Required Operating Life

Purchase specifications typically require that the operating life of mechanical equipment be a minimum of 40 years. The operating life of the non-metallic subcomponents varies according to the application and the maintenance frequency for the parent component. Component replacement frequency is also driven by operating experience and Original Equipment Manufacturer recommendations.

Capabilities of Non-Metallics and Basis of Qualification

Qualification of mechanical components, including their non-metallic subcomponents, is based on adherence to specified design requirements included in purchase specifications along with periodic testing and maintenance that is performed to ensure continued functionality.

The specified component design requirements include the nominal environmental conditions in which the components must be capable of performing their design function. Typically, only a small percentage of the surface area of non-metallic subcomponents such as gaskets, packing and o-ring seals are directly exposed to ambient environmental conditions. Non-metallic subcomponents such as valve seats are totally enclosed within the parent component and are not directly exposed to ambient environmental conditions. Therefore, environmental factors have limited affects on non-metallic subcomponents in mechanical equipment. The normal ambient environmental conditions that were included in the specifications for the original purchase of mechanical components generally bound the conditions that will exist at CPPU. Calculated ambient environmental conditions are slightly more severe compared to some of the original specified ambient environmental conditions. However, there are many mitigating factors which significantly reduce or eliminate the overall risk that components will fail to perform their safety function due to environmental factors. For example:

- In many cases, failure of non-metallic subcomponents in mechanical equipment results in failure of the parent component to a safe state. For example, the reactor recirculation pump cooling water isolation valves are air operated butterfly valves that function as containment isolation boundary valves. Failure of the operator diaphragm would result in the valve failing to the closed position. This is the safe position for this valve. In addition, the valve reaches its desired state (closed position) immediately after LOCA. Exposure to accident conditions after this change in state does not preclude the valve from remaining in the closed position.

- For many mechanical components, the design process conditions are far more severe than environmental conditions. For example, the design temperature of the Residual Heat Removal (RHR) pump room is 130°F. Under certain conditions, RHR design process temperatures will be as high as 340°F.

Considerations such as these in combination with design, testing and maintenance ensures that mechanical components that include non-metallic subcomponents are compatible with their environmental conditions and are capable of performing their safety functions.

Surveillance and Maintenance Programs

The Equipment Reliability and Station Health Process is an integrated process whose objective is to prevent failures of critical equipment. This process encompasses the identification of Critical Components, Performance Monitoring, Corrective Action, Continuing Reliability Improvement, Preventative Maintenance and Long Term Planning and Life Cycle Management. The process is based on INPO AP-913, Equipment Reliability Process Description and is described in an SSES procedure:

- Identification of Component Criticality is an input to the performance monitoring process and is used to determine the level of monitoring that should be applied to a component. The determination of Component Criticality is not dependent on whether or not a component contains non-metallic subcomponents. Instead, the assignment of Component Criticality Code is based on the impact of the component's failure. Consideration of the component's failure, rather than consideration of its materials, is a bounding consideration that is conservative and direct.

- Performance Monitoring includes testing performed under the Maintenance Rule Program. Testing performed under the Maintenance Rule monitors the effectiveness of the maintenance program to ensure that safety-related structures, systems, and components (SSCs) and certain SSCs that are not safety related, are capable of performing their intended functions. Additional testing is performed per Technical Specifications and the In-Service Testing program. If degraded equipment performance is observed, corrective action is initiated.

- When Corrective Action is initiated, cause determination is recommended to determine if changes to the maintenance and/or monitoring strategy are needed. Key equipment problems are identified in the Long-Term Planning and Life-Cycle Management Process.

- The Continuing Equipment Reliability Improvement process drives continuous reviews to identify alternative strategies and improvements in maintenance tasks based on station equipment operating experience.

- The Preventive Maintenance program ensures appropriate maintenance activities are generated, scheduled, documented and performed to ensure equipment function effectiveness.

- The Long Term Planning and Life Cycle Management process assures that long term maintenance/replacement strategies are developed to deal with aging and obsolescence. The process includes periodic review of system/component health and identified vulnerabilities.

NRC Question 6:

In Section 10.3.3, "Mechanical Component Design Qualification," of Enclosure 4 to its submittal dated October 11, 2006, the licensee states that mechanical design of equipment/components in certain systems is affected by operation at CPPU conditions due to increased temperatures and, in some cases, flow and pressure. The licensee is requested to (1) discuss the environmental qualification methods and approaches applied to mechanical equipment (including pumps, power-operated valves, safety-relief valves, and check valves) and their supports, (2) provide examples of the increased temperatures, flows, and loads resulting from EPU conditions, (3) indicate the impact on operating life of mechanical equipment from EPU operation, and (4) describe the surveillance and maintenance program for mechanical equipment to ensure functionality during their design life.

PPL Response:

Environmental Qualification Methods and Approaches Applied to Mechanical Equipment

The method and approach described above in PPL Response to NRC Question 5 also applies to mechanical equipment.

Increased temperatures, flows, and loads resulting from EPU conditions

Changes in operating conditions are summarized in PUSAR Table 1-2. Feedwater temperature at full CPPU power increases approximately 9°F compared to CLTP conditions. Feedwater flow and main steam flow increases approximately 14.5% between CLTP conditions and full power CPPU conditions. These are the most significant process condition changes. Examples of loading changes are discussed in PUSAR Section 3 and 4.1.

Impact on Operating Life of Mechanical Equipment

Design conditions for safety related mechanical equipment will not be exceeded for operation at CPPU conditions. Component ratings for non-safety-related equipment have been reviewed to confirm that operation will be acceptable at CPPU conditions. In some cases, such as the #5 feedwater heaters, components will be re-rated for CPPU conditions.

Slightly higher degradation rates of mechanical components due to wear and erosion may be experienced. However, maintenance and testing will trigger repair or replacement. The increased Main Steam and FW flow rates at CPPU conditions do not significantly affect the potential for flow-accelerated corrosion (FAC) in these systems.

Surveillance and Maintenance Programs

The program description provide in PPL Response to NRC Question 5 also applies to mechanical equipment.

Attachment 3 to PLA-6196
General Electric Company Affidavit

General Electric Company

AFFIDAVIT

I, George B. Stramback, state as follows:

(1) I am 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 Enclosure 1 to GE letter GE-SSES-AEP-323, Larry King (GE) to Mike Gorski (PPL), *GE Proprietary Review of PPL Letters PLA-6196 and PLA-6200,* dated May 22, 2007. The proprietary information in the Enclosures 1 and 2, which are entitled *GE Proprietary Review of PPL Letter PLA-6196 and GE Proprietary Review of PPL Letter PLA-6200*, is delineated by a [[dotted underline inside double square brackets.{3}]] Figures and large equation objects are identified with double square brackets before and after the object. In each case, the sidebars and the superscript notation{3} 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 information about the results of analytical models, methods and processes, including computer codes, which GE has developed, obtained NRC approval of, and applied to perform evaluations of loss-of-coolant accident events in the GE Boiling Water Reactor ("BWR"). The development and approval of the BWR loss-of-coolant accident analysis 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 22nd day of May 2007.

George B. Stramback

George B. Stramback
General Electric Company