

April 18, 2007

Mr. Britt T. McKinney
Sr. Vice President
and Chief Nuclear Officer
PPL Susquehanna, LLC
769 Salem Blvd., NUCSB3
Berwick, PA 18603-0467

SUBJECT: 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 AND
MECHANICAL EQUIPMENT ENVIRONMENTAL QUALIFICATION REVIEW
(TAC NOS. MD3309 AND MD3310)

Dear Mr. McKinney:

In reviewing your letter dated October 11, 2006, concerning the request to increase the maximum steady-state power level at the SSES 1 and 2 from 3489 megawatts thermal (MWt) to 3952 MWt, the Nuclear Regulatory Commission staff has determined that additional information contained in the enclosure to this letter is needed to complete its review. These questions were discussed with your staff during a teleconference on April 10, 2007. As agreed to by your staff, we request you respond by May 31, 2007.

If you have any questions, please contact me at 301-415-1030.

Sincerely,

/RA/

Richard V. Guzman, Senior Project Manager
Plant Licensing Branch I-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. 50-387 and 50-388

Enclosure:
RAI

cc w/encl: See next page

April 18, 2007

Mr. Britt T. McKinney
Sr. Vice President
and Chief Nuclear Officer
PPL Susquehanna, LLC
769 Salem Blvd., NUCSB3
Berwick, PA 18603-0467

SUBJECT: 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 AND MECHANICAL EQUIPMENT ENVIRONMENTAL QUALIFICATION REVIEW (TAC NOS. MD3309 AND MD3310)

Dear Mr. McKinney:

In reviewing your letter dated October 11, 2006, concerning the request to increase the maximum steady-state power level at the SSES 1 and 2 from 3489 megawatts thermal (MWt) to 3952 MWt, the Nuclear Regulatory Commission staff has determined that additional information contained in the enclosure to this letter is needed to complete its review. These questions were discussed with your staff during a teleconference on April 10, 2007. As agreed to by your staff, we request you respond by May 31, 2007.

If you have any questions, please contact me at 301-415-1030.

Sincerely,

/RA/

Richard V. Guzman, Senior Project Manager
Plant Licensing Branch I-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. 50-387 and 50-388

Enclosure:
RAI

cc w/encl: See next page

DISTRIBUTION:

Public RidsOgcMailCenter RidsNrrPmRGuzman RidsNrrCptbBC TScarbrough
LPLI-1 R/F RidsNrrDorLpl1-1 RidsAcrcsAcnwMailCenter RidsNrrLaSLittle

Accession Number: ML071060135

* RAI provided by memo. No substantive changes made.

OFFICE	NRR/LPLI-1/PM	NRR/LPLI-1/LA	NRR/CPTB/BC	NRR/LPLI-1/BC
NAME	RGuzman	SLittle	JMcHale*	MKowal
DATE	4/16/07	4/16/07	3/9/07	4/18/07

OFFICIAL RECORD COPY

REQUEST FOR ADDITIONAL INFORMATION
RELATING TO THE
APPLICATION FOR EXTENDED POWER UPRATE (EPU)
SAFETY-RELATED PUMPS AND VALVES,
MECHANICAL EQUIPMENT ENVIRONMENTAL QUALIFICATION
SUSQUEHANNA STEAM ELECTRIC STATION, UNITS 1 AND 2 (SSES 1 AND 2)
PPL SUSQUEHANNA, LLC
DOCKET NOS. 50-387 AND 50-388

The Nuclear Regulatory Commission (NRC) staff is reviewing the request from PPL Susquehanna, LLC (PPL, the licensee) to support the application of the EPU for SSES 1 and 2. The NRC staff has determined that additional information requested below will be needed to complete its review.

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 Inservice Testing Program, resulting from that evaluation.
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

Enclosure

- increased ambient temperature on motor output.
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.
 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 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.
 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.
 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.

Susquehanna Steam Electric Station, Unit Nos. 1 and 2

cc:

Robert A. Saccone
Vice President - Nuclear Operations
PPL Susquehanna, LLC
769 Salem Blvd., NUCSB3
Berwick, PA 18603-0467

Terry L. Harpster
General Manager - Plant Support
PPL Susquehanna, LLC
769 Salem Blvd., NUCSA4
Berwick, PA 18603-0467

Rocco R. Sgarro
Manager - Nuclear Regulatory Affairs
PPL Susquehanna, LLC
Two North Ninth Street, GENPL4
Allentown, PA 18101-1179

Supervisor -
Nuclear Regulatory Affairs
PPL Susquehanna, LLC
769 Salem Blvd., NUCSA4
Berwick, PA 18603-0467

Michael H. Crowthers
Supervising Engineer
Nuclear Regulatory Affairs
PPL Susquehanna, LLC
Two North Ninth Street, GENPL4
Allentown, PA 18101-1179

Steven M. Cook
Manager - Quality Assurance
PPL Susquehanna, LLC
769 Salem Blvd., NUCSB2
Berwick, PA 18603-0467

Luis A. Ramos
Community Relations Manager,
Susquehanna
PPL Susquehanna, LLC
634 Salem Blvd., SSO
Berwick, PA 18603-0467

Bryan A. Snapp, Esq
Assoc. General Counsel
PPL Services Corporation
Two North Ninth Street, GENTW3
Allentown, PA 18101-1179

Supervisor - Document Control Services
PPL Susquehanna, LLC
Two North Ninth Street, GENPL4
Allentown, PA 18101-1179

Richard W. Osborne
Allegheny Electric Cooperative, Inc.
212 Locust Street
P.O. Box 1266
Harrisburg, PA 17108-1266

Director, Bureau of Radiation Protection
Pennsylvania Department of
Environmental Protection
Rachel Carson State Office Building
P.O. Box 8469
Harrisburg, PA 17105-8469

Senior Resident Inspector
U.S. Nuclear Regulatory Commission
P.O. Box 35, NUCSA4
Berwick, PA 18603-0035

Regional Administrator, Region 1
U.S. Nuclear Regulatory Commission
475 Allendale Road
King of Prussia, PA 19406

Board of Supervisors
Salem Township
P.O. Box 405
Berwick, PA 18603-0035

Dr. Judith Johnsrud
National Energy Committee
Sierra Club
443 Orlando Avenue
State College, PA 16803