April 27, 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: INSTRUMENTATION AND CONTROLS TECHNICAL 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 30, 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

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Accession Number: ML071140343 * RAI provided by memo. No substantive changes made.

OFFICE	NRR/LPLI-1/PM	NRR/LPLI-1/LA	NRR/EICA/BC	NRR/LPLI-1/BC
NAME	RGuzman	SLittle	IJung*	MKowal
DATE	4/24/07	4/26/07	3/16/07	4/27/07

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REQUEST FOR ADDITIONAL INFORMATION

RELATING TO THE

APPLICATION FOR EXTENDED POWER UPRATE (EPU)

INSTRUMENTATION AND CONTROLS TECHNICAL REVIEW

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. Setpoint Calculation Methodology: Provide documentation (including sample calculations) of the methodology used for establishing the limiting nominal setpoint and the limiting acceptable values for the as-found and as-left setpoints as measured in periodic surveillance testing as described below. Indicate the related analytical limits and other limiting design values (and the sources of these values) for each setpoint.

2. Safety Limit (SL)-Related Determination: Provide a statement as to whether or not the setpoint is a limiting safety system setting for a variable on which an SL has been placed as discussed in Title 10 of the *Code of Federal Regulations* (10 CFR) Section 50.36(c)(1)(ii)(A). Such setpoints are described as "SL-related" in the discussions that follow. In accordance with 10 CFR 50.36(c)(1)(ii)(A), the following guidance is provided for identifying a list of functions to be included in the subset of limiting safety system settings (LSSSs) specified for variables on which SLs have been placed as defined in Standard Technical Specifications (STS) Section 2.1.1, "Reactor Core SLs," and Section 2.1.2, "Reactor Coolant System Pressure SLs." This subset includes automatic protective devices in TSs for specified variables on which SLs have been placed that (1) initiate a reactor trip or (2) actuate safety systems. As such, these variables provide protection against violating reactor core SLs, or reactor coolant system pressure boundary SLs.

   Examples of instrument functions that might have LSSSs included in this subset in accordance with the plant-specific licensing basis, are the pressurizer pressure reactor trip (pressurized-water reactors (PWRs)), rod block monitor withdrawal blocks (boiling-water reactors (BWRS)), feedwater and main turbine high water level trip (BWRs), and end-of-cycle recirculation pump trip (BWRs). For each setpoint, or related

group of setpoints, that you determined not to be SL-related, explain the basis for this determination.

3. For setpoints that are determined to be SL-related, the NRC letter to the Nuclear Energy Institute Setpoint Methods Task Force, dated September 7, 2005 (ML052500004), describes setpoint-related TSs (SRTSs) that are acceptable to the NRC for instrument settings associated with SL-related setpoints. Specifically, Part "A" of the enclosure to the letter provides limiting condition for operation notes to be added to the TSs, and Part "B" includes a check list of the information to be provided in the TS Bases related to the proposed TS changes.

   (I) Describe whether and how you plan to implement the SRTS suggested in the September 7, 2005, letter. If you do not plan to adopt the suggested SRTS, explain how you will ensure compliance with 10 CFR 50.36 by addressing items 3(ii) and 3(iii), below.

   (ii) As-Found Setpoint evaluation: Describe how surveillance test results and associated TS limits are used to establish operability of the safety system. Show that this evaluation is consistent with the assumptions and results of the setpoint calculation methodology. Discuss the plant corrective action processes (including plant procedures) for restoring channels to operable status when channels are determined to be "inoperable" or "operable but degraded." If the criteria for determining operability of the instrument being tested are located in a document other than the TSs (e.g., plant test procedure) explain how the requirements of 10 CFR 50.36 are met.

   (iii) As-Left Setpoint control: Describe the controls employed to ensure that the instrument setpoint is, upon completion of surveillance testing, consistent with the assumptions of the associated analyses. If the controls are located in a document other than the TS (e.g., plant test procedure) explain how the requirements of 10 CFR 50.36 are met.

4. For setpoints that are not determined to be SL-related, describe the measures to be taken to ensure that the associated instrument channel is capable of performing its specified safety functions in accordance with applicable design requirements and associated analyses. Include in your discussion, information on the controls you employ to ensure that the as-left trip setting after completion of periodic surveillance is consistent with your setpoint methodology. Also discuss the plant corrective action processes (including plant procedures) for restoring channels to operable status when channels are determined to be "inoperable" or "operable but degraded." If the controls are located in a document other than the TS (e.g., plant test procedure), describe how it is ensured that the controls will be implemented.

5. PPL has requested that the local power range monitor calibration interval be increased from 1000 megawatt-days per metric ton (MWD/MT) to 2000 MWD/MT. Describe expected changes in accuracy between calibrations, including changes due to higher neutron flux and longer duration of calibration which is likely to cause higher drift between calibrations. Address any thermal margin changes in core monitoring due to changes in uncertainty.

6. Main steam flow increased from 14.437 million-pounds per hour (Mlb/hr) to 16.532 Mlb/hr. The previous setpoint was 121 pounds per square-inch differential (psid), and the new suggested setpoint is 179 psid. The revised setpoint appears to be too high as compared to the calculated setpoint for the increase in flow. Provide additional justification for the setpoint change and applicable sample calculations as identified under item 1 above. In addition, since the restriction of reducing power when the leading edge flowmeter is not available has been removed, explain how the higher inaccuracy has been accounted for in the setpoint calculation.

7. The Average Power Range Monitors (APRM) flow biased simulated thermal power based scram setpoints for allowable values are being changed due to the constant pressure power uprate (CPPU) in TS Table 3.3.1-1, Function 2.b as well as in Note b. The NRC staff notes that the basis for this change may be addressed, in part, by the Bases changes associated with recent APRM/Rod Block Monitor/TSs/Maximum Load Line Limit Analysis implementation. However, please provide the basis and any additional justification (i.e., sample calculations) for this setpoint change specific to the proposed CPPU.

Susquehanna Steam Electric Station, Unit Nos. 1 and 2

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