

February 9, 2006

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) - POWER RANGE
NEUTRON MONITOR SYSTEM DIGITAL UPGRADE (TAC NOS. MC7486 AND
MC7487)

Dear Mr. McKinney:

In reviewing your submittal dated June 27, 2005, and your supplemental letter dated December 1, 2005, concerning a request to implement a digital upgrade to the Power Range Neutron Monitor System for SSES 1 and 2, 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 February 1, 2006. As agreed to by your staff, we request you respond within 30 days of the date of this letter.

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

Sincerely,

/RA/

Richard V. Guzman, 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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DATE	2/09/06	2/09/06	2/8/06	2/09/06

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REQUEST FOR ADDITIONAL INFORMATION
RELATING TO THE
POWER RANGE NEUTRON MONITOR SYSTEM DIGITAL UPGRADE FOR
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 proposed license amendment for PPL Susquehanna, LLC (PPL, the licensee) to Facility Operating License No. NPF-14 and NPF-22 related to the installation of the General Electric (GE) Nuclear Measurement Analysis and Control (NUMAC) Power Range Neutron Monitor System (PRNMS) for SSES 1 and 2. The NRC staff has determined the additional information requested below will be needed to complete its review.

1. Provide the analysis or reference document that links the configuration of the original system designed, tested, and described in the NRC-approved GE Licensing Topical Report NEDC-32410P-A, "Nuclear Measurement Analysis and Control Power Range Neutron Monitor Retrofit Plus Option III Stability Trip Function," and its Supplement 1, to the configuration of the systems which will be installed at SSES 1 and 2. This analysis should include any changes to the hardware, software, or processes used to fabricate the system and the justifications that these changes do not affect the SSES 1 and 2 system capability to meet the original protection system design requirements. For the software-related process portion of this analysis, the NRC staff plans to focus on any changes, to the following documents, identified in Branch Technical Position (BTP) Instrumentation and Controls Branch (HICB)-14, "Guidance on Software Reviews for Digital Computer-Based Instrumentation and Control Systems":

- Software Management Plan
- Design Specifications
- Software Development Plan
- Software Quality Assurance Plan
- Software Configuration Management Plan
- Software Safety Plan
- Design Safety Analysis
- Software V&V Plan
- V&V Change Report
- Configuration Management Change Report

Section 2, "Information to be Reviewed," of BTP HICB-14-7, explains that "the applicant/licensee need not develop a separate document for each of the topics identified below; however, project documentation should encompass all of the topics."

Enclosure

As a consideration for NRC staff review, since the actual documents will not be submitted, please identify the procedure where the topic is found if a procedure, listed above, was not specifically generated.

2. In Section 3.3, "Plant Process Computer Impact," PPL discusses the data transmission to be: "through a serial fiber-optic link to the new Multi-Vendor Data (acquisition system) (MVD) interface unit." Essentially, the data transmission path has changed from going through hardwire and the Oscillation Power Range Monitor (OPRM) module, to all process data going through the MVD module. The MVD will, in turn, transfer the information on an Ethernet bus to the plant process computer. Similarly, plant computer-calculated Local Power Range Monitor (LPRM) gain values and calculated core thermal power (to be used by the Average Power Range Monitor (APRM) to adjust the APRM gains) are transmitted via the Ethernet bus to the MVD, and onto the PRNMS. The NRC staff requests the following with regards to how the data is used and what transmission method is involved:
 - A. Explain the extent of the operator involvement in the generation, review, and use of these new LPRM gain and calculated core thermal power values which can affect APRM and OPRM setpoints.
 - B. Show how this communication provision (the two way communications path between the PRNMS system and the plant computer) through the MVD, is consistent with safety system-to-non-safety system separation and the isolation requirements of Institute of Electrical and Electronics Engineers-279 in terms of data transmission, cyber security, and electrical isolation.

Susquehanna Steam Electric Station, Unit Nos. 1 and 2

cc:

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