May 4, 2007

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

SUBJECT: SUSQUEHANNA STEAM ELECTRIC STATION, UNIT 2 - ADDENDUM TO SAFETY EVALUATION REGARDING MINIMUM CRITICAL POWER RATIO SAFETY LIMIT AND REFERENCE CHANGES (TAC NO. MD3595)

Dear Mr. McKinney:

On March 19, 2007, the Nuclear Regulatory Commission (NRC) issued Amendment No. 218 to Facility Operating License No. NPF-22 for the Susquehanna Steam Electric Station, Unit 2 (SSES 2). This amendment revised the SSES 2 Technical Specifications (TSs) by revising the SSES 2 Cycle 14 Minimum Critical Power Ratio Safety Limit in Section 2.1.1.2 for two-loop and single-loop operation and the references listed in Section 5.6.5.b.

Subsequent to the issuance of the subject amendment, Mr. Duane Filchner of your staff pointed out a number of errors in the safety evaluation (SE) supporting the amendment. We agree that editorial and technical errors had been inadvertently made, resulting in several inaccurate statements in the SE. Enclosed please find the corrected page 2 of the SE, with side bars highlighting the areas of correction. We apologize if these errors caused you any inconvenience. If there are any questions regarding this matter, 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 No. 50-388

Enclosure:
As stated

cc w/encl: See next page

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2. NRC Generic Letter 88-16 (GL 88-16), "Removal of Cycle-Specific Parameter Limits from Technical Specifications," provides guidance on modifying cycle-specific parameter limits in the TSs.

3. NUREG-0800, "Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants," provides guidance on the acceptability of the reactivity control systems, the reactor core, and fuel-system design. Specifically, Section 4.2, "Fuel System Design," specifies the criteria for evaluation of fuel-design limits such that there be at least 95% probability at a 95% confidence level that the hot fuel rod in the core does not experience a departure from nucleate boiling or a transition condition during normal operation or anticipated operational occurrences. Section 4.4, "Thermal and Hydraulic Design," provides guidance on the review of thermal-hydraulic design in meeting the requirement of GDC-10 and the fuel-design criteria established in Section 4.2.

3.0 TECHNICAL EVALUATION

3.1 TS 2.1.1 Reactor Core SLs

PPL proposed to change the MCPRSL value in TS 2.1.1.2 for SSES U2C14 operation from 1.09 to 1.11 for two-loop recirculation and from 1.10 to 1.14 for single-loop recirculation operation with the reactor steam dome pressure ≥ 785 pounds per square-inch gauge (psig) and core flow ≥ 10 million pound-mass per hour (lb_m/hr).

PPL described the approved methodologies used to calculate the MCPRSL value for the proposed TS change in the submittal. The U2C14 MCPRSL analysis was performed by AREVA using SSES 2 plant-and cycle-specific fuel, core parameters, power profiles, and NRC-approved methodologies: (1) ANF-524 (P)(A), Revision 2, "Critical Power Methodology for Boiling Water Reactors," Supplement 1, Revision 2 and Supplement 2; (2) EMF-2209 (P)(A), Revision 2, "SPCB Critical Power Correlation," and (3) EMF-2158 (P)(A), Revision 0, "Siemens Power Corporation Methodology for Boiling Water Reactors: Evaluation and Validation of CASMO-4/MICROBURN-B2." PPL provides the justification that the increase in the MCPRSL is due to: (1) cycle-to-cycle variation (± 0.01) and (2) transition from ANFB-10 to SPCB critical power correlation. PPL also provides references of system-related and fuel-related uncertainties and a general assessment of their impact on results fo the values of MCPRSL including three affecting factors as stated in the PPL supplement dated February 15, 2007.

The NRC staff has reviewed the justification contained in the application and supplement for the proposed MCPRSL value of 1.11 for two-loop recirculation operation and 1.14 for single-loop recirculation operation using the approach stated in TS 5.6.5.b. Based on the review of the proposed changes, the NRC staff concludes that PPL has provided adequate justification for the 0.02 and 0.04 increase in the MPRSL values for U2C14 two-loop and single-loop operation, respectively. Additionally, the U2C14 MCPRSL will ensure that 99.9% of the fuel rods in the core will not experience boiling transition, which satisfies the requirements of GDC-10. Therefore, the proposed MCPRSLs and its analysis for U2C14 operation using the plant- and cycle-specific calculation in conjunction with NRC-approved methods, is acceptable.

Susquehanna Steam Electric Station, Units 1 and 2

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