DRAFT

REQUEST FOR ADDITIONAL INFORMATION

OFFICE OF NUCLEAR REACTOR REGULATION

LICENSE AMENDMENT REQUEST FOR TECHNICAL SPECIFICATION

CHANGES TO LOW PRESSURE SAFETY LIMIT

PPL SUSQUEHANNA, LLC

SUSQUEHANNA STEAM ELECTRIC STATION UNITS 1 AND 2

DOCKET NO. 50-387 AND 50-388

By letter dated December 19, 2012,[1] PPL Susquehanna, LLC (PPL), submitted a License Amendment Request (LAR) for review and approval of a revision to the Susquehanna Steam Electric Station (SSES) Units 1 and 2, Technical Specification (TS). Specifically, PPL requested a change to TS Section 2.1.1, Reactor Core SLs [Safety Limits], to reflect a lower reactor steam dome pressure for Reactor Core SLs 2.1.1.1 and 2.1.1.2. PPL stated that the revision became necessary as a result of the GE 10 CFR Part 21 Communication, SC05-03, "Potential to Exceed Low Pressure Technical Specification Safety Limit," submitted by letter dated March 29, 2005.[2] To complete its review, the Nuclear Regulatory Commission staff requests a response to the questions below.

RAI-01: Siemens Power Corporation B (SPCB), AREVA NP Inc.'s (AREVA) critical power correlation for boiling water reactors is applicable to AREVA (formerly SPCB) ATRIUM-9B and ATRIUM-10 fuel designs. TS Section 4.2.1, Fuel Assemblies, states, in part, that:

> A limited number of lead use assemblies that have not completed representative testing may be placed in nonlimiting core regions.

Provide the fuel type(s) that will be used in SSES Units 1 and 2 cores for the term of this amendment.

RAI-02: Discuss how operating SSES Units 1 and 2 with a core with mixed fuel design would impact analyses associated with the LAR. Address in particular the scenario where the critical power correlations for the different fuel types have different lower bound pressure ranges.

RAI-03: TS 2.1.1.2 specifies the SL on the minimum critical power ratio (MCPR). The proposed change in TS 2.1.1.2 expands the range of applicability of the SL on the MCPR to a lower pressure. Discuss the impact of the proposed change in TS 2.1.1.2 on the determination of the MCPR core operating limits (Specification 3.2.2) in the

[1] Agencywide Documents Access and Management System (ADAMS) Accession No. ML12355A351.
[2] ADAMS Accession No. ML050950428.

core operating limit report as specified in TS Section 5.6.5, CORE OPERATING LIMITS REPORT (COLR).

RAI-04: The proposed change in TS 2.1.1.2 expands the range of applicability of the SL on the MCPR to a lower pressure. The proposed TS change would require determination of the CPR with the reactor at steam dome pressure ≥ 557 psig and core flow ≥ 10 million lbm/hr.

a. Discuss if there is any reduction in the margin of safety because of the expanded range of applicability of the SL on the MCPR.
b. Provide the MCPRs, as determined by the SPCB correlation at steam dome pressures of 785 psig and 557 psig for SSES Units 1 and 2 respectively when the reactor is at 23% of rated thermal power (RTP) and a core flow of 10 million lbm/hr.
c. Provide the corresponding mass flux in lbm/hr-ft^2 for the lowest assembly flow at 23% of RTP and a core flow of 10 million lbm/hr.

RAI-05: SC05-03 presented a typical PRFO (pressure regulator failure open) response for a low pressure isolation setpoint – analytical limit of 720 psig. The LAR noted that for SSES Units 1 and 2 the nominal and allowable trip setpoints for the Main Steam Line Pressure – Low are 861 psig and 841 psig respectively.

a. Discuss the applicability of the generic transient analysis in SC05-03 to SSES Units 1 and 2.
b. Discuss expected differences, if any, in the SSES Units 1 and 2 plant response as compared to the generic transient analysis in SC05-03.