

DRAFT

REQUEST FOR ADDITIONAL INFORMATION

OFFICE OF NUCLEAR REACTOR REGULATION

LICENSE AMENDMENT REQUEST FOR CHANGE TO TECHNICAL SPECIFICATION 3.4.10

PPL SUSQUEHANNA, LLC

SUSQUEHANNA STEAM ELECTRIC STATION UNITS 1 AND 2

DOCKET NOS. 50-387 AND 50-388

By letter dated August 11, 2014,<sup>1</sup> PPL Susquehanna, LLC (PPL, the licensee) submitted a license amendment request to revise Technical Specification 3.4.10, "RCS Pressure and Temperature (P/T) Limits," for the Susquehanna Steam Electric Station (SSES), Units 1 and 2. Specifically, the licensee proposed to revise the P/T Limits curves to extend them into the vacuum region to address vacuum fill operations. To complete its review, the Nuclear Regulatory Commission (NRC) staff requests a response to the questions below.

**RAI 1**

**BACKGROUND**

Title 10 of the *Code of Federal Regulations* Part 50, Appendix G, "Fracture Toughness Requirements," requires that P/T limits be developed to bound all ferritic materials in the reactor vessel (RV). Further, Sections I and IV.A of 10 CFR Part 50, Appendix G specify that all ferritic reactor coolant pressure boundary (RCPB) components outside of the RV must meet the applicable requirements of American Society of Mechanical Engineers Boiler and Pressure Vessel Code (ASME Code), Section III, "Rules for Construction of Nuclear Facility Components."

**ISSUE**

As clarified in Regulatory Information Summary (RIS) 2014-11,<sup>2</sup> "Information on Licensing Applications for Fracture Toughness Requirements for Ferritic Reactor Coolant Pressure Boundary Components," P/T limit calculations for ferritic RV components other than those materials with the highest reference temperature, may define curves that are more limiting than those calculated for the RV beltline shell materials because the consideration of stress levels from structural discontinuities (such as nozzles) may produce a lower allowable pressure.

**REQUEST**

Describe how the P/T limit curves for SSES Units 1 and 2 consider all ferritic pressure boundary components of the reactor vessel that are predicted to experience a neutron fluence exposure greater than  $1 \times 10^{17}$  n/cm<sup>2</sup> ( $E > 1$  MeV) at the end of the licensed operating period.

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<sup>1</sup> Agencywide Documents Access and Management System (ADAMS) Accession Number ML14223A780.

<sup>2</sup> ADAMS Accession No. ML14149A165.

If the current P/T limit curves do not consider all ferritic pressure boundary components of the reactor vessel that are predicted to experience a neutron fluence exposure greater than  $1 \times 10^{17}$  n/cm<sup>2</sup> (E > 1 MeV) at the end of the licensed operating period, provide appropriately revised P/T limit curves to the NRC staff for review.

## **RAI 2**

### **BACKGROUND**

10 CFR 50.36(b) states, in part, that: "The technical specifications will be derived from the analyses and evaluation included in the safety analysis report, and amendments thereto, submitted pursuant to § 50.34."

### **ISSUE**

Page 3 of 7 of the licensee's application states, in part, that:

The absolute maximum vacuum is assumed to be no greater than 15 psig

Whereas the licensee's proposed Technical Specifications (TS) change on TS Figures 3.4.10-1 thru 3 shows P/T limit curves are extended to -100 psig. Any TS change should be consistent with technical justification.

### **REQUEST**

Please provide a justification for an extension of the P/T curves to -100 psig, or, TS Figures 3.4.10-1 through 3.4.10-3 should be revised to reflect the maximum vacuum of -15 psig as described in the submittal (i.e., adjusting the axis to end at -15 psig, terminating the P/T curves at -15 psig on the current scale, etc.).