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NOV 04 2008

U. S. Nuclear Regulatory Commission
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**SUSQUEHANNA STEAM ELECTRIC STATION
REQUEST FOR ADDITIONAL INFORMATION FOR THE
REVIEW OF THE SUSQUEHANNA STEAM ELECTRIC STATION
UNITS 1 AND 2, LICENSE RENEWAL APPLICATION (LRA)
SECTION B.2.12 FOLLOWUP TO PLA-6436
PLA-6448**

**Docket Nos. 50-387
and 50-388**

- References:*
- 1) PLA-6110, Mr. B. T. McKinney (PPL) to Document Control Desk (USNRC),
"Application for Renewed Operating License Numbers NPF-14 and NPF-22,"
dated September 13, 2006.
 - 2) PLA-6436, Mr. B. T. McKinney (PPL) to Document Control Desk (USNRC),
"SSES Request for Additional Information for the Review of the SSES Units 1 and 2
License Renewal Application (LRA) Section B.2.12," dated October 22, 2008.

In accordance with the requirements of 10 CFR 50, 51, and 54, PPL requested the renewal of the operating licenses for the Susquehanna Steam Electric Station (SSES) Units 1 and 2 in Reference 1.

On October 27, 2008, a teleconference between PPL and NRC identified the need to provide the NRC with additional information and clarification to the RAI B.2.12-5 response in Reference 2.

The enclosure contains the additional information and clarification to RAI B.2.12-5 discussed during the teleconference.

There are no new regulatory commitments contained herein as a result of the attached response.

If you have any questions, please contact Mr. Duane L. Filchner at (610) 774-7819.

A120
NRR

I declare, under penalty of perjury, that the foregoing is true and correct.

Executed on: 11-04-08

Richard D. Fogarty for W.H. Spence

W. H. Spence

Enclosure: PPL Supplemental Response to RAI B.2.12-5 Discussed During October 27,
2008 Telecon

Copy: NRC Region I

Ms. E. H. Gettys, NRC Project Manager, License Renewal, Safety

Mr. R. Janati, DEP/BRP

Mr. F. W. Jaxheimer, NRC Sr. Resident Inspector

Mr. A. L. Stuyvenberg, NRC Project Manager, License Renewal, Environmental

**Enclosure to PLA-6448
PPL Supplemental Response to RAI B.2.12-5
Discussed During October 27, 2008 Telecon**

In a teleconference on October 27, 2008, the NRC staff and PPL discussed the responses to RAI B.2.12-5 in Reference 2, which established PPL's technical basis for concluding that loss of preload is not an applicable aging effect for in-scope bolted closures at SSES. The staff's position is that 1) loss of preload needs to be managed by the Bolting Integrity Program and 2) PPL's responses in Reference 2 do not adequately address the need to manage loss of preload. PPL agreed to provide a supplemental response to address the loss of preload aging effect. The original RAI is repeated below, followed by PPL's supplemental response to Part c of the RAI

RAI B.2.12-5: (Bolting Integrity)

In the Susquehanna Steam Electric Station (SSES) license renewal application, the applicant states that the B.2.12 "Bolting Integrity Program" is consistent with the bolting recommendations identified in generic aging lessons learned (GALL) Section XI.M18, with exceptions. The applicant takes an exception to the GALL Report parameters monitored or inspected program element in regard to loss of preload. The applicant states that loss of preload is not an aging effect requiring management since it does not reach the 700°F threshold at which the thermal effects aging mechanism occurs. However, loss of preload is identified in the GALL Report to include not only thermal effects, but also gasket creep and self loosening as aging mechanisms. The gasket creep and self loosening aging mechanisms are not discussed in the exception, and appears to imply that loss of preload due to gasket creep or self loosening are not accounted for at SSES.

- a. Please provide the technical basis for why SSES does not account for loss of preload due to gasket creep or self loosening and why SSES does not have any aging management review line items which reflect this aging effect.
- b. Please clarify the methods used to identify a loss of preload, or indication of loss of preload, and provide the technical basis for doing so.
- c. Please clarify whether the management of loss of preload for external bolting is included in the scope of the Bolting Integrity Program.

PPL Supplemental Response to Part c:

In Reference 2, PPL responded to Part c of RAI B.2.12-5, as follows:

The management of the loss of preload for external bolting is not in the scope of the Bolting Integrity Program. As discussed in the response to Part a of this RAI, the aging management review for bolted closures in the scope of license renewal at SSES did not identify loss of preload as an applicable aging effect.

Loss of preload due to stress relaxation (thermal effects) was evaluated and determined to be not applicable to SSES. Loss of preload due to gasket creep and self-loosening were evaluated and determined to be current plant operational (design) issues and not age-related degradation issues for license renewal.

To address the staff's concern for the management of loss of preload, PPL's previous response to Part c of RAI B.2.12-5, in Reference 2, is replaced in its entirety as follows:

As discussed in PPL's response to Part a, PPL's aging management review for license renewal concluded that loss of preload is not an applicable aging effect for in-scope bolted closures at SSES. Consequently, the aging effect of "Loss of preload due to thermal effects, gasket creep, and self-loosening" is not included in any of the aging management review results for "Bolting" presented in the LRA.

The various mechanisms that may lead to loss of preload in a bolted closure are plant operational (design) concerns. These concerns are valid for the current license term and the period of extended operation. As such, on-going activities to prevent and identify instances of loss of preload are part of the Bolting Integrity Program. Preventative actions include the selection of bolting materials/gaskets/lubricants, the determination of required torque values, and the proper fit-up/assembly of bolted closures in accordance with industry guidelines (e.g., EPRI NP-5067 and EPRI TR-104213) and applicable manufacturer/vendor recommendations for any new component installations and for the maintenance of existing components. Actions to identify leakage that could be due to loss of preload in pressure-retaining bolted closures include periodic visual inspections for leakage that are performed by the Inservice Inspection (ISI) Program and the System Walkdown Program, as discussed in PPL's response to Part b. Any identified leakage would be addressed through the plant corrective action program.

Through specific preventative actions and inspections, the Bolting Integrity Program provides for the management of loss of preload for all in-scope, pressure-retaining bolted closures at SSES.