

June 23, 2008

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 FOR THE REVIEW OF THE
SUSQUEHANNA STEAM ELECTRIC STATION, UNITS 1 AND 2, LICENSE
RENEWAL APPLICATION

Dear Mr. McKinney:

By letter dated September 13, 2006, PPL Susquehanna, LLC submitted an application pursuant to Title 10 of the Code of Federal Regulations Part 54 (10 CFR Part 54), to renew the operating licenses for Susquehanna Steam Electric Station, Units 1 and 2, for review by the U.S. Nuclear Regulatory Commission (NRC or the staff). The staff is reviewing the information contained in the license renewal application and has identified, in the enclosure, areas where additional information is needed to complete the review. Further requests for additional information may be issued in the future.

Items in the enclosure were discussed with Duane Filchner, and a mutually agreeable date for the response is within 30 days from the date of this letter. If you have any questions, please contact me at 301-415-4029 or e-mail evelyn.gettys@nrc.gov.

Sincerely,

IRA

Evelyn Gettys, Project Manager
Projects Branch 1
Division of License Renewal
Office of Nuclear Reactor Regulation

Docket Nos. 50-387 and 50-388

Enclosure:
As stated

cc w/encl: See next page

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SUSQUEHANNA STEAM ELECTRIC STATION, UNITS 1 AND 2
LICENSE RENEWAL APPLICATION
REQUESTS FOR ADDITIONAL INFORMATION (RAI)

RAI B.2.31-01:

The license renewal application (LRA) states that the aging management program (AMP) B.2.31 “Small Bore Class 1 Piping Inspection” is a new program that will be consistent with the generic aging lessons learned (GALL) AMP XI.M35, “One-time Inspection of ASME Code Class 1 Small Bore Piping.” Provide your basis for categorizing AMP B.2.31 as being consistent with GALL AMP XI.M35 when AMP B.2.31 implies that non-volumetric examination techniques may be used as an alternate basis for performing the one-time inspections of the small bore Class 1 piping components and when AMP B.2.31 credits the program with managing an aging effect (i.e., loss of material) that is not within the scope of GALL AMP XI.M.35. Clarify whether the LRA will need to be amended to identify these aspects of the program as exceptions to GALL AMP XI.M35, and if so, justify your basis for crediting these exceptions for aging management of small bore Class 1 piping components.

In the LRA, both in the program description and in several aging management review line items, the AMP B.2.31 is credited with confirming the effectiveness of the Boiling Water Reactor (BWR) Water Chemistry Program in mitigating the aging effects of loss of material using “nondestructive examinations (including volumetric techniques).” However, GALL AMP XI.M35 is credited only with managing the aging effect of cracking and the only examination technique used in AMP XI.M35 is volumetric examination.

RAI B.2.31-02:

The LRA AMP B.2.31, “Small Bore Class 1 Piping Inspection,” is being used to monitor both the aging effect of cracking and the aging effect of loss of material in Class 1 small bore piping. However, the environmental stressors that may lead to cracking are not necessarily the same as the environmental stressors that may lead to loss of material. Clarify the selection processes and criteria that will be applied as part of this program to ensure that SSES will select and schedule inspection of the most limiting small bore Class 1 piping locations for both of these aging effects.

RAI B.2.31-03:

For AMP B.2.31, under the program element “monitoring and trending,” the LRA states that actual inspection locations will be based on physical accessibility, exposure levels, non-destructive examination techniques, and locations identified in NRC [Information Notice 97-46]. The NRC Information Notice was written relative to cracking that was detected in small bore unisolable high pressure injection piping at Oconee, Unit 2, which is a pressurized –water reactor (PWR). Justify your basis for using Oconee Unit 2 experience as being applicable operating experience for the SSES Small Bore Class 1 Piping Inspection Program and clarify how the information contained in NRC Information Notice 97-46 will be applied in selection process in order to ensure that the most susceptible small bore Class 1 piping locations to cracking (as a result of thermal and mechanical loading, or stress corrosion cracking) will be selected for the one-time inspection.

ENCLOSURE

RAI B.2.31-04:

In AMP B.2.31, under program element “Detection of Aging Effects,” the LRA states that SSES has found cracking due to vibrational fatigue of small bore piping and is performing augmented inspections as part of the Inservice Inspection program. Identify the small bore piping components that experienced the vibrational-induced cracks and the augmented inspection techniques that resulted in the detection of the cracking in the piping components. Clarify whether or not PPL has taken appropriate corrective actions either to repair the flaw indications in the components or to replace the impacted components, and identify whether or not these components locations will be re-inspected in the future. If these components will be inspected in the future, identify the inspection technique and frequency that will be used, with justification, for the re-inspections of the components.

RAI B.2.23-1

In the “scope of program” program element, the LRA states that this program detects loss of material due to crevice and pitting corrosion and selective leaching of the copper alloy cooler channel in the Control Structure HVAC System. Selective leaching generally does not cause changes in dimensions and is difficult to detect. The examination techniques used by this program to detect degradation is visual and/or volumetric. Neither one of these techniques by itself will detect selective leaching.

Please justify how this program will manage selective leaching and explain why these components are not included in LRA AMP B.2.29, Selective Leaching Program.

RAI B.2.23-2

The GALL AMP XI.M32, “One-time Inspection” program, “detection of aging effects” program element, has different inspection methods identified for monitoring specific aging mechanisms such as crevice corrosion, galvanic corrosion, etc. However, the LRA states generally that the program uses a combination of established volumetric or visual examination techniques. Please clarify which techniques will be used to detect the various aging mechanisms.

RAI B.2.23-3

In the “monitoring and trending” program element, the LRA states that no actions are taken as part of this program, since it is a one-time inspection activity. Please confirm if the corrective action program will increase the sample size in the event aging effects are detected.

RAI B.2.23-4

In the “acceptance criteria” program element, the GALL AMP XI.M32, “One-time Inspection” program states that any indication or relevant conditions of degradation detected are evaluated. LRA Section B.2.23 states that no unacceptable loss of material (or wall thinning) or fouling of heat exchanger tubes and fins that could result in a loss of component intended function during the period of extended operation, as determined by engineering evaluation. Explain why the acceptance criteria for B.2.23 differ from the recommendations of the GALL Report and clarify what “no unacceptable loss of material (or wall thinning) or fouling...” means.

RAI B.2.23-5

The “operating experience” program element states that the Cooling Unit Inspection is a new program and there is no plant-specific program operating experience. Several condition reports have been generated during walkdowns, surveillance and maintenance activities on the cooling units that are included in the scope of this program. Please identify if there was any age related degradation documented for these cooling units.

RAI B.2.24-1

The “operating experience” program element states that the “Heat Exchanger Inspection” is a new program and there is no plant-specific program operating experience. However, during performance of surveillance tests or maintenance activities on these heat exchangers any degradation of tubes that was observed would have been documented.

Please identify examples of issues that may have been documented to address age-related degradation of the heat exchanger tubes within the scope of this program and include them in your operating experience element.

RAI B.2.26-1

The GALL AMP XI.M32, “One-time Inspection” program, “detection of aging effects” program element, has different inspection methods identified for monitoring specific aging mechanisms such as crevice corrosion, galvanic corrosion, etc. However, the LRA states generally that the program uses established visual examination techniques. Please clarify which visual technique will be used to detect reduction of fracture toughness as evidenced by cracking.

RAI B.2.26-2

The “acceptance criteria” program element states that no cracking that could result in a loss of component intended function(s) during the period of extended operation, as determined by engineering evaluation.

Please confirm if the cast austenitic stainless steel (CASS) main steam flow restrictors were screened for thermal aging? Are they susceptible? Will flaw tolerance evaluation be performed if cracking is detected?

Please explain what type of corrective actions and monitoring will be implemented if cracking is detected.

RAI B.2.26.3

In the “detection of aging effects” program element, the LRA states that the amp “Steam Flow Restrictor Inspection” will be applied to all eight (four per unit) main steam flow restrictors at SSES. Please clarify if this means that all eight flow restrictors will be inspected. Please provide the sample size, and identify if the program will provide for increasing the sample size in the event that aging effects are detected.

RAI B.2.27-1

In the GALL AMP XI.M32 “One-time Inspection” program the “detection of aging effects” program element, has a different inspection methods identified for monitoring specific aging mechanisms such as crevice corrosion, general corrosion, etc. However, the LRA states generally that the program uses a combination of established volumetric or visual examination techniques. Please clarify which techniques will be used to detect the various aging mechanisms.

RAI B.2.27-2

In the “monitoring and trending” program element, the LRA states that no actions are taken as part of this program, since it is a one-time inspection activity. Please confirm if the corrective action program will increase the sample size in the event aging effects are detected.

RAI B.2.27-3

In the “acceptance criteria” program element, GALL AMP XI.M32 states that any indication or relevant conditions of degradation detected are evaluated. LRA Section B.2.27 states that no unacceptable loss of material (or wall thinning) or fouling of heat exchanger tubes and fins that could result in a loss of component intended function during the period of extended operation, as determined by engineering evaluation. Explain why the acceptance criteria for B.2.27 differ from the recommendations of GALL and clarify what “no unacceptable loss of material (or wall thinning) or fouling...” means.

RAI B.2.28-1

In Table 3.2.2-9, the diesel generator starting air system, has the AMP “Supplemental Piping/Tank Inspection” program credited for managing the aging effect of loss of material for stainless steel drain trap bodies and carbon steel moisture separators. However, a review of the AMP Evaluation Results Document indicates that diesel generator starting air system is not included in the scope of the Supplemental Piping/Tank Inspection Program. Please justify why it is not included.

RAI B.2.28-2

The GALL AMP XI.M32, in the “detection of aging effects” program element, different inspection methods are identified for monitoring specific aging mechanisms such as crevice corrosion, galvanic corrosion, etc. However, the LRA states generally that the program uses a combination of established volumetric or visual examination techniques. Please clarify which techniques will be used to detect the various aging mechanisms.

RAI B.2.28-3

In the monitoring and trending element, the LRA states that no actions are taken as part of this program, since it is a one-time inspection activity. Please confirm if the corrective action program will increase the sample size in the event aging effects are detected.

RAI B.2.28-4

In the “acceptance criteria” program element, the GALL AMP XI.M32 states that any indication or relevant conditions of degradation detected are evaluated. LRA Section B.2.28 states that no unacceptable loss of material (or wall thinning) that could result in a loss of component intended function during the period of extended operation, as determined by engineering evaluation. Explain why the acceptance criteria for B.2.28 differ from the recommendations of the GALL Report and clarify what “no unacceptable loss of material (or wall thinning)” means.

Letter to B. McKinney from E. Gettys, dated June 23, 2008

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