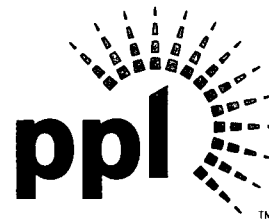


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**SUSQUEHANNA STEAM ELECTRIC STATION
REQUEST FOR ADDITIONAL INFORMATION FOR THE
REVIEW OF THE SUSQUEHANNA STEAM ELECTRIC STATION
UNITS 1 AND 2, LICENSE RENEWAL APPLICATION (LRA)
SECTIONS 3.3, B.2.6 AND B.2.49
PLA-6405**

**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) *Letter from Ms. E. H. Gettys (USNRC) to Mr. B. T. McKinney (PPL), "Request for Additional Information for the Review of the Susquehanna Steam Electric Station, Units 1 and 2 License Renewal Application," dated July 23, 2008.*
 - 3) *PLA-6375, Mr. B. T. McKinney (PPL) to Document Control Desk (USNRC), "Request for Additional Information for the Review of the Susquehanna Steam Electric Station, Units 1 and 2 License Renewal Application (LRA) Sections B.2.11, B.2.13, B.2.16, and B.2.17," dated June 30, 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.

Reference 2 is a request for additional information (RAI) related to License Renewal Application (LRA) Sections 3.3, B.2.6, and B.2.49. The enclosure to this letter provides the question responses and the additional requested information.

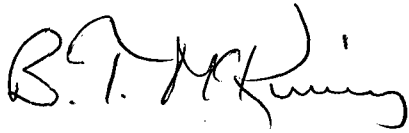
There are no new regulatory commitments contained herein as a result of the attached RAI responses. However, LRA Commitment #6 is revised in response to RAI B.2.6-1, as shown in the enclosure.

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: 5/22/08



B. T. McKinney

Enclosure: PPL Responses to NRC's Request for Additional Information (RAI)

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-6405
PPL Responses to NRC's
Request for Additional Information (RAI)**

RAI 3.3.2-4:

License renewal application (LRA) Table 3.3.2-22 contains a Table 2 item with the following material, environment, aging effect and program combination: copper alloy, treated water (internal), cracking and Closed Cooling Water Chemistry Program. This Table 2 item references generic aging lessons learned (GALL) Item VII.C2-4, which lists the aging effect as loss of material due to pitting, crevice and galvanic corrosion for the same material, environment and program combination. Clarify the applicability of the GALL Item VII.C2-4 to the Table 2 item in LRA Table 3.3.2-22 described above.

PPL Response:

GALL Item VII.C2-4 is not applicable to the “copper alloy / treated water (internal) / cracking / Closed Cooling Water Chemistry Program” item that is listed in LRA Table 3.3.2-22. The NUREG-1801 Volume 2 Item and the Table 1 Item for this line item should have been identified in the LRA as “N/A”.

Review of the LRA determined that this was the only case where copper alloy subject to cracking in treated water listed an applicable GALL item.

LRA Table 3.3.2-22 and Table 3.3.1, Item Number 3.3.1-51, are revised as follows to make the necessary changes in response to this RAI.

- The text in LRA Table 3.3.2-22 (on LRA page 3.3-289) is revised by addition (***bold italics***) and deletion (~~strickthrough~~).

Table 3.3.2-22 Aging Management Review Results - Reactor Building Closed Cooling Water System

Component / Commodity	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Volume 2 Item	Table 1 Item	Notes
Piping and Piping Components	Structural Integrity	Copper Alloy	Treated Water (Internal)	Cracking	Closed Cooling Water Chemistry Program	VII.C2-4 <i>N/A</i>	3.3.1-51 <i>N/A</i>	H, 0347

➤ The text in Table 3.3.1 (on LRA page 3.3-77) is revised by deletion (~~striketrough~~).

Table 3.3.1 Summary of Aging Management Programs for Auxiliary Systems Evaluated in Chapter VII of the GALL Report

Item Number	Component/Commodity	Aging Effect / Mechanism	Aging Management Programs	Further Evaluation Recommended	Discussion
3.3.1-51	Copper alloy piping, piping components, piping elements, and heat exchanger components exposed to closed cycle cooling water	Loss of material due to pitting, crevice, and galvanic corrosion	Closed-Cycle Cooling Water System	No	<p>Consistent with NUREG-1801, with exceptions. The Closed Cooling Water Chemistry Program is credited to manage loss of material for copper and copper alloy components that are exposed to treated water, including closed cycle cooling water.</p> <p>This item is also applicable to cracking of copper alloy components that are exposed to treated water, where Note H is used.</p>

RAI B.2.6-1:

The control rod drive (CRD) Return Line Nozzle Program takes an exception to the “acceptance criteria” program element to the GALL Aging Management Program (AMP) XI.M1 to use a weld overlay methodology as an alternative corrective action repair technique for flaw indications that are detected in the CRD return line nozzles or their pressure boundary welds (including the CRD return line cap-to-nozzle welds). The staff has noted that the applicant indicates that the weld overlay repair methodology will be implemented in accordance with the requirements of 10 CFR 50.55a. The staff also noted that the applicant did not indicate that this exception was applicable to the “corrective actions” program element for the CRD Return Line Nozzle Program. The ASME Code Section XI currently does not include any weld overlay methodologies as acceptable ASME Code Class repair techniques and reliefs for use of non-Code weld overlay methods have not yet been granted for either of the 10-Year Inservice inspection intervals that are applicable to Susquehanna Steam Electric Station (SSES), Units 1 and 2, in the period of extended operation.

A) If PPL seeks approval for the use of a non-Code weld overlay repair methodology for leaks that may develop in CRD return line nozzles or their pressure boundary welds (including the CRD return line cap-to-nozzle welds) during the period of extended operation, the staff requests that PPL place a commitment in the LRA that PPL will perform an ASME Code Section XI repair of the leaking component unless the weld overlay repair methodology is submitted for NRC review and approval and is granted in accordance with the requirements that are mandated in 10 CFR 50.55a(a)(3).

B) Provide your basis for not applying the exception on the weld overlay methodology to the “corrective actions” program element in the GALL AMP XI.M6, Control Rod Drive Return Line Nozzle.

PPL Response:**Part A:**

Prior to implementing a weld overlay repair methodology, for which there is no NRC-approved Code Case, PPL will submit a relief request to obtain NRC approval in accordance with 10 CFR 50.55a(a)(3).

The LRA is amended to add this commitment, as shown below, following the response to Part B of this RAI.

Part B:

The use of a weld overlay repair during the period of extended operation is not an exception to the “corrective actions” program element in the GALL AMP XI.M6, Control Rod Drive Return Line Nozzle, based on the following:

Any identified cracks or indications in the CRD return line nozzle are evaluated under the rules of ASME Section XI. If the evaluation determines that a repair is required, the design and implementation of the repair is governed by the SSES ASME Section XI repair program, which requires the repair to meet Code requirements unless relief is granted by the NRC. Furthermore, in accordance with the SSES Inservice Inspection (ISI) Program, when cracks or indications are identified, a condition report is written and, at that point, the SSES corrective action program also controls the resolution of the condition. Both the SSES ASME Section XI repair program and the SSES corrective action program meet the requirements of 10 CFR 50, Appendix B.

The corrective action element of GALL XI.M6 includes the statement that “As discussed in the appendix to this report, the staff finds the requirements of 10 CFR Part 50, Appendix B, acceptable to address the corrective actions.” Since the SSES ASME Section XI repair program and the SSES corrective action program both meet the requirements of 10 CFR 50, Appendix B, the corrective actions that would be taken in accordance with those programs are consistent with GALL.

- The commitment in Table A-1 for BWR CRD Return Line Nozzle Program (LRA page A-34) is revised by addition (***bold italics***).

Item Number	Commitment	FSAR Supplement Location (LRA App. A)	Enhancement or Implementation Schedule
6) BWR CRD Return Line Nozzle Program	Existing program is credited. <ul style="list-style-type: none"> • <i>PPL will implement weld overlay repairs in accordance with ASME Section XI and NRC-approved Code Cases. If no NRC-approved Code Case exists for the weld overlay, PPL will obtain NRC approval prior to implementing the repair in accordance with 10 CFR 50.55a.</i> 	A.1.2.5	Ongoing

- The discussion for the exception to the Acceptance Criteria element in Section B.2.6 (LRA page B-28) is revised by addition (***bold italics***) and deletion (~~strikethrough~~).

B.2.6 BWR CRD Return Line Nozzle Program

Exceptions to NUREG-1801

Program Element Affected:

- Acceptance Criteria –

SSES intends to repair CRDRL nozzle cracks, if found, by weld overlay rather than removing them by grinding as suggested in NUREG-1801. This is consistent with current industry practice and represents an update to NUREG-1801. SSES will obtain NRC approval prior to implementation of a weld overlay repairs ***in accordance with ASME Section XI and NRC-approved Code Cases. If no NRC-approved Code Case exists for the weld overlay, then SSES will obtain NRC approval prior to implementing the repair in accordance with 10 CFR 50.55a.***

RAIs on Added Program B.2.49

In Reference 3 PPL added an existing plant specific program, B.2.49, Preventive Maintenance Activities - Main Turbine Casing as a new aging management program (AMP). The following are responses to RAIs associated with that program.

RAI B.2.49-1:

In comparing the “monitoring and trending” element with the corresponding element of Standard Review Plan-License Renewal (SRP-LR), Appendix A.1, Section A.1.2.3.5, the staff determined that monitoring and trending is not described in enough detail to allow an assessment of the predictability of the extent of degradation. Please provide details describing the methods to assess remaining component life for loss of material using inspection results such that timely corrective action can be taken.

PPL Response:

The inspection is conducted to evaluate the condition of the internal surfaces of the turbine casing and looks for indications of erosion. Should erosion be detected the condition would be evaluated under the corrective action program. The evaluation would determine whether further examination or analysis was required to determine the margin to minimum wall thickness, the acceptability of the current condition, and what future actions would be necessary to maintain the component intended function. The evaluation performed under the corrective action program would also determine what further monitoring and trending is required.

The inspection and evaluation of the results rely on industry experience with the turbine equipment and the knowledge of the equipment vendor representative who is present during the inspections. The turbine casings have been in service since 1983 and 1985 for Units 1 and 2 respectively. The results of the latest inspections conducted in 2003 and 2004 found no signs of erosion and determined the casing to be in excellent condition.

RAI 2.49-2:

In comparing the “acceptance criteria” element with the corresponding element of SRP-LR, Appendix A.1, Section A.1.2.3.6, the staff determined that the applicant did not provide specific acceptance criteria or its basis, such as comparison to design minimum wall or manufacturer suggested minimum wall. Please provide detail on how acceptance criteria will be established.

PPL Response:

The inspection is conducted to evaluate the condition of the internal surfaces of the turbine casing and looks for indications of erosion. Should erosion be detected the condition would be evaluated under the corrective action program. The evaluation would determine whether further examination or analysis was required to determine the margin to minimum wall thickness, the acceptability of the current condition, and what future actions would be necessary to maintain the component intended function.

The inspection and evaluation of the results rely on industry experience with the turbine equipment and the knowledge of the equipment vendor representative who is present during the inspections.