

Mr. Robert G. Byram
Senior Vice President
and Chief Nuclear Officer
PP&L, Inc.
2 North Ninth Street
Allentown, PA 18101

January 3, 2001

SUBJECT: RELIEF REQUEST NO. 18 (RR-18) FROM AMERICAN SOCIETY OF
MECHANICAL ENGINEERS BOILER AND PRESSURE VESSEL CODE (ASME
CODE), SECTION XI, SUSQUEHANNA STEAM ELECTRIC STATION,
UNITS 1 & 2 (TAC NOS. MB0369 AND MB0370)

Dear Mr. Byram:

In a letter dated October 24, 2000, PPL Susquehanna, LLC, submitted RR-18 from the requirements of Section XI, "Rules for Inservice Inspection of Nuclear Power Plant Components," of the ASME Code for the second 10-year inservice inspection (ISI) interval. This request for relief is associated with the implementation of ultrasonic testing training requirements in Appendix VIII to Section XI.

The NRC staff reviewed the proposed relief request against the requirements of Section XI of the 1989 Edition of the ASME Code. The staff's safety evaluation is enclosed.

The NRC staff has concluded that the proposed alternative to the ASME Code requirement in RR-18 provides an acceptable level of quality and safety and is acceptable. Pursuant to 10 CFR 50.55a(a)(3)(i), the proposed alternative is authorized for RR-18 for the second 10-year ISI interval.

Sincerely,

/RA/

Marsha Gamberoni, Chief, Section 1
Project Directorate I
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket Nos. 50-387 and 50-388

Enclosure: Safety Evaluation

cc w/encl: See next page

Susquehanna Steam Electric Station, Units 1 &2

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cc w/encl: See next page

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SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SECOND 10-YEAR INSERVICE INSPECTION PROGRAM

FOR RELIEF REQUEST NO. 18 (RR-18)

PPL SUSQUEHANNA, LLC

SUSQUEHANNA STEAM ELECTRIC STATION, UNITS 1 & 2

DOCKET NOS. 50-387 AND 50-388

1.0 INTRODUCTION

The inservice inspection (ISI) of the American Society of Mechanical Engineers Boiler and Pressure Vessel Code (ASME Code) Class 1, Class 2, and Class 3 components will be performed in accordance with Section XI of the ASME Code and applicable addenda as required by Title 10 of the *Code of Federal Regulations* 10 CFR Section 50.55a(g), except where specific written relief has been granted by the Commission pursuant to 10 CFR 50.55a(g)(6)(i). Pursuant to 10 CFR 50.55a(a)(3), it is stated in part that alternatives to the requirements of paragraph (g) may be used, when authorized by the Nuclear Regulatory Commission (NRC), if the licensee demonstrates that: (i) the proposed alternatives would provide an acceptable level of quality and safety, or (ii) compliance with the specified requirements would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety.

Pursuant to 10 CFR 50.55a(g)(4), ASME Code Class 1, 2, and 3 components (including supports) will meet the requirements, except the design and access provisions and the preservice examination requirements, set forth in the ASME Code, Section XI, "Rules for Inservice Inspection of Nuclear Power Plant Components," to the extent practical within the limitations of design, geometry, and materials of construction of the components. The regulations require that inservice examination of components and system pressure tests conducted during the first 10-year interval and subsequent intervals comply with the requirements in the latest edition and addenda of Section XI of the ASME Code incorporated by reference in 10 CFR 50.55a(b) twelve months prior to the start of the 120-month interval, subject to the limitations and modifications listed therein. The ISI Code of record for Susquehanna Steam Electric Station (SSES), Unit 1 and Unit 2, second 10-year interval is the 1989 Edition of the ASME Code. The components (including supports) may meet the requirements set forth in subsequent editions and addenda of the ASME Code incorporated by reference in 10 CFR 50.55a(b) subject to the limitations and modifications listed therein and subject to Commission approval.

Enclosure

By letter dated October 24, 2000, PPL Susquehanna, LLC, the licensee, submitted RR-18, which proposed using the annual training requirements specified in 10 CFR 50.55a(b)(2)(xiv) in lieu of the annual training requirements specified in Subsubarticle VII-4240 to Appendix VII of Section XI of the Code for both Appendix VIII and non-Appendix VIII qualification of UT personnel.

2.0 EVALUATION

2.1 RR-18 Annual UT Retraining

All components subject to ultrasonic testing (UT) examination in accordance with the 1995 Edition through the 1996 Addenda of Section XI of the Code.

2.2 Code Requirements for which Relief is Requested

Pursuant to 10 CFR 50.55a(a)(3)(i), the licensee is requesting relief from the 1995 Edition with the 1996 Addenda, Appendix VII to Section XI of the Code, Subsubarticle VII-4240 for Appendix VIII qualified UT personnel and the 1989 Edition of Appendix VII to Section XI, Subsubarticle VII-4240 for non-Appendix VIII qualified UT personnel. Subsubarticle VII-4240 requires a minimum of 10 hours of annual UT training. The request for relief, RR-18, is for the second 10-year ISI interval.

2.3 Licensee's Proposed Alternative to Code

The licensee's proposed alternative is to conduct annual UT training in accordance with 10 CFR 50.55a(b)(2)(xiv) requirements in lieu of Subsubarticle VII-4240 to Appendix VII of Section XI of the 1989 Edition and the 1995 Edition with the 1996 Addenda of the Code.

2.4 Evaluation

Subsubarticle VII-4240, Appendix VII of Section XI of the Code requires 10 hours of annual training to impart knowledge of new developments, material failure modes, and any pertinent technical topics as determined by the licensee. No hands-on training or practice is required to be included in the 10 hours of training. This training is required of all UT personnel qualified to perform examinations of ASME Code Class 1, 2, and 3 systems. Independent of the ASME Code, 10 CFR 50.55a(b)(2)(xiv) imposes the requirement that 8 hours of hands-on training with flawed specimens containing cracks be performed no earlier than 6 months prior to performing examinations at a licensee's facility. The licensee contends that maintaining two separate UT annual training programs provides for potential conflicting requirements and redundant tracking systems.

As part of the NRC staff's rulemaking effort to revise 10 CFR 50.55a(b)(2), the issue of UT annual training requirements was reviewed. The review was included in the summary of comments to the rule (64 *FR* 51370). In the review, the NRC staff determined that the 10 hours of annual training requirement specified in the ASME Code was inadequate for two reasons. The first reason was that the training does not require practice with flawed specimens. Practice with flaws is necessary to maintain familiarity with signals that can be difficult to interpret. The second reason is related to the length of training and its frequency. Studies have shown that

an examiner's capability begins to diminish within 6 months if skills are not maintained.

Therefore, examiners must practice on a frequent basis to maintain their capability for proper interpretation of flaws.

Based on resolution of public comments for the above rulemaking, the NRC staff accepted an industry initiative advanced by the Electric Power Research Institute, which proposed 8 hours of hands-on practice with flawed specimens containing cracks. The practice would occur no earlier than 6 months prior to performing examinations at a licensee's facility. The initiative was adopted in 10 CFR 50.55a(b)(2)(xiv) for personnel maintaining their Appendix VIII qualifications.

In addition to its application for Appendix VIII UT personnel qualification, the licensee's proposal is to extend 10 CFR 50.55a(b)(2)(xiv) criteria to non-Appendix VIII UT personnel and to eliminate redundant annual UT training programs. The NRC staff believes that the proposed alternative to use 10 CFR 50.55a(b)(2)(xiv) in lieu of Subsubarticle VII-4240 will maintain the skill and proficiency of UT personnel at or above the level provided in the Code for annual UT training, thereby providing an acceptable level of quality and safety.

3.0 CONCLUSION

Based on the discussion above, the NRC staff concludes that use of the proposed alternative annual training requirements for the qualification of Appendix VIII and non-Appendix VIII UT personnel will provide an acceptable level of quality and safety. Therefore, pursuant to 10 CFR 50.55a(a)(3)(i), the proposed alternative, RR-18, is authorized during the second 10-year interval for SSES Units 1 & 2.

Principal Contributors: L. Burkhart
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Date: January 3, 2001