



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

January 4, 2011

Mr. Timothy S. Rausch
Senior Vice President and Chief Nuclear Officer
PPL Susquehanna, LLC
769 Salem Boulevard
Berwick, PA 18603-0467

SUBJECT: SUSQUEHANNA STEAM ELECTRIC STATION, UNITS 1 AND 2 RE: RELIEF
REQUEST RR-02, REVISION 1 FROM THE REQUIREMENTS OF THE OM
CODE RE: INSERVICE TESTING OF SAFETY RELIEF VALVES
(TAC NOS. ME4068 AND ME4069)

Dear Mr. Rausch:

By letter dated June 1, 2010 (Accession No. ML101610805), as supplemented by letters dated October 15, 2010 and December 9, 2010 (Accession Nos. ML102910148 and ML103500340, respectively), PPL Susquehanna, LLC (PPL, the licensee), submitted Relief Request RR-02, Revision 1. This relief request proposed an alternative to certain inservice testing (IST) requirements of the American Society of Mechanical Engineers (ASME) Code for Operation and Maintenance of Nuclear Power Plants (OM Code) for Susquehanna Steam Electric Station (SSES) Units 1 and 2 main steam safety/relief valves (MSRVs) PSV141F013A through H, J through N, and P through S. This alternative requested approval to allow for a 6 month grace period for testing these MSRVs, in addition to the currently approved 6 year test frequency.

Specifically, pursuant to Title 10 of the *Code of Federal Regulations* (10 CFR) 50.55a(a)(3)(i), the licensee requested to use the proposed alternative, RR-02 Revision 1, on the basis that the alternative provides an acceptable level of quality and safety.

The U.S. Nuclear Regulatory Commission (NRC) staff has reviewed the licensee's request, as supplemented. As set forth in the enclosed safety evaluation, the NRC staff has determined that the proposed alternative described in Relief Request RR-02, Revision 1, provides an acceptable level of quality and safety and provides reasonable assurance that the MSRVs are operationally ready. Accordingly, the NRC staff has concluded that the licensee has adequately addressed all of the regulatory requirements set forth in 10 CFR 50.55a(a)(3)(i), and is in compliance with the ASME OM Code's requirements.

Therefore, the NRC staff authorizes the alternative noted above, at SSES Units 1 and 2, for MSRVs PSV141F013A through H, J through N, and P through S for the remainder of the third 10-year IST interval that began on June 1, 2004 and is scheduled to end on May 31, 2014.

T. S. Rausch

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All other ASME OM Code requirements for which relief was not specifically requested and approved, remain applicable.

Please contact me at (301) 415-2942, or the Project Manager, Bhalchandra K. Vaidya at (301) 415-3308, if you have any questions.

Sincerely,

A handwritten signature in cursive script that reads "Nancy L. Salgado".

Nancy L. Salgado, Chief
Plant Licensing Branch I-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. 50-387 and 50-388

Enclosure:
As stated

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SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
FOR RELIEF REQUEST RR-02, REVISION 1 REGARDING MAIN STEAM SAFETY/RELIEF
VALVES TEST FREQUENCY GRACE PERIOD RELATED TO THIRD 10-YEAR INTERVAL
INSERVICE TESTING PROGRAM
PPL SUSQUEHANNA, LLC
SUSQUEHANNA STEAM ELECTRIC STATION, UNITS 1 AND 2
DOCKET NOS. 50-387 AND 50-388

1.0 INTRODUCTION

By letter dated June 1, 2010 (Accession No. ML101610805), as supplemented by letters dated October 15, 2010, and December 9, 2010 (Accession Nos. ML102910148 and ML103500340, respectively), PPL Susquehanna, LLC (PPL, the licensee), submitted Relief Request RR-02, Revision 1. This relief request proposed an alternative to certain inservice testing (IST) requirements of the American Society of Mechanical Engineers (ASME) Code for Operation and Maintenance of Nuclear Power Plants (OM Code) for Susquehanna Steam Electric Station (SSES) Units 1 and 2 main steam safety/relief valves (MSRVs) PSV141F013A through H, J through N, and P through S. This alternative requested approval to allow for a 6 month grace period for testing these MSRVs, in addition to the currently approved 6 year test frequency.

Specifically, pursuant to Title 10 of the *Code of Federal Regulations* (10 CFR) 50.55a(a)(3)(i), the licensee requested to use the proposed alternative, RR-02, Revision 1, on the basis that the alternative provides an acceptable level of quality and safety.

2.0 REGULATORY EVALUATION

10 CFR 50.55a(f), "Inservice testing requirements", requires, in part, that ASME Code Class 1, 2, and 3 components meet the requirements of the ASME OM Code and applicable addenda, except where alternatives have been authorized pursuant to paragraphs (a)(3)(i) or (a)(3)(ii) of 10 CFR 50.55a.

In proposing alternatives, a licensee must demonstrate that the proposed alternative provides an acceptable level of quality and safety (10 CFR 50.55a(a)(3)(i)) or that compliance with the specified requirements of 10 CFR 50.55a would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety (10 CFR 50.55a(a)(3)(ii)). Proposed alternatives to the requirements of 10 CFR 50.55a(f) may be used when authorized by the Director, Office of Nuclear Reactor Regulation.

Enclosure

The SSES Units 1 and 2 third 10-year IST interval commenced on June 1, 2004 and is scheduled to be completed by May 31, 2014. The third 10-year interval IST programs were developed to meet the requirements of the 1998 Edition through 2000 Addenda of the ASME OM Code pursuant to 10 CFR 50.55a(f)(4)(ii).

The U. S. Nuclear Regulatory Commission's (NRC's) findings with respect to approving the alternative associated with the SSES RR-02, Revision 1, are given below:

3.0 TECHNICAL EVALUATION

3.1 Licensee's Alternative Request RR-02, Revision 1

Appendix I, "Inservice Testing of Pressure Relief Devices in Light-Water Reactor Nuclear Power Plants," I-1330(a), "Test Frequencies, Class 1 Pressure Relief Valves," requires, in part, that, "Class 1 pressure relief valves shall be tested at least once every 5 years, starting with initial electric power generation." MSRVs PSV141F013A through H, J through N, and P through S are Class 1 pressure relief/safety valves.

Code Case OMN-17, "Alternative Rules for Testing ASME Class 1 Pressure Relief/Safety Valves," Section 1(a), "Test Frequencies, Class 1 Pressure Relief Valves," allows, "the test interval for any individual valve that is in service shall not exceed 72 months except that a 6-month grace period is allowed to coincide with refueling outages."

By letter dated March 10, 2005, the NRC authorized RR-02, Revision 0, in which the licensee proposed an alternative test frequency of 6 years (three refueling outages) in lieu of 5 years as required by Appendix I, paragraph I-1330(a) of the ASME OM Code for MSRVs PSV141F013A through H, J through N, and P through S (Accession No. ML050690239).

By letter dated June 1, 2010, the licensee requested approval of RR-02, Revision 1 (ADAMS Accession No. ML101610805) to allow for a grace period of 6 months for the test frequency (in addition to the 6-year testing frequency which was previously approved) for the MSRVs noted above.

3.2 NRC Staff Evaluation

The ASME published Code Case OMN-17, "Alternative Rules for Testing ASME Class 1 Pressure Relief/Safety Valves" in the 2009 Edition of the OM Code. This code case has not yet been approved for use by the NRC in Regulatory Guide 1.192, "Operation and Maintenance Code Case Acceptability, ASME OM Code." The code case imposes a special maintenance requirement to disassemble and inspect each valve to verify that parts are free from defects resulting from the time-related degradation or maintenance-induced wear prior to the start of the extended test frequency. PPL is not requesting to adopt Code Case OMN-17. However, consistent with the special maintenance requirement in Code Case OMN-17, PPL stated that "subsequent to completion of as-found testing, each SRV in the removed complement is disassembled to perform an inspection and maintenance activities, including disc and seat inspection for evidence of degradation such as leakage or misalignment. Any SRV that fails the

as-found set-pressure test is inspected to determine the cause. All adverse conditions are corrected, the disc and seats are lapped, and the valve is reassembled. Each SRV is then recertified for service through inspection and testing consistent with ASME OM Code requirements, including set-pressure, seat tightness, stroke time and disc lift verifications, solenoid coil pick up/drop out, and air actuator integrity tests. After recertification testing, the SRVs are stored in controlled areas at the recertification vendor facility and at Susquehanna SES.”

In addition, the licensee provided test data for the MSRVs for both units for the time period from initial operation to March 2010. This data comprised of 295 tests and showed that the average of the as-found pressure is within -0.78% of the set-pressure, with a calculated standard deviation of 1.56%. The test data shows that only two tests exceeded +3% of the set-pressure. Per the data provided, it has been over 10 years since these two tests were conducted and no high side as-found setpoint test failures have occurred since flexi discs have been installed in the MSRVs at SSES.

The NRC staff finds that the proposed alternative to allow for a grace period of 6 months for the test frequency of the SSES MSRVs listed in Revision 1 to RR-02 is acceptable. Disassembling and inspecting each MSRv to verify that parts are free from defects resulting from the time-related degradation or maintenance-induced wear, and correcting all adverse conditions, provides reasonable assurance that the MSRVs are operationally ready during the extended test interval grace period of 6 months.

4.0 CONCLUSION

As set forth above, the NRC staff determines that the proposed alternative in RR-02, Revision 1, provides an acceptable level of quality and safety. Accordingly, the NRC staff concludes that the licensee has adequately addressed all of the regulatory requirements set forth in 10 CFR 50.55a(a)(3)(i), and is in compliance with the ASME Code requirements. All other ASME OM Code requirements for which relief was not specifically requested and approved remain applicable.

Therefore, the NRC staff authorizes the alternative noted above, at SSES Units 1 and 2, for MSRVs PSV141F013A through H, J through N, and P through S for the remainder of the third 10-year IST interval that began on June 1, 2004 and is scheduled to end on May 31, 2014.

Principal Contributor: L. Feliu
Date: January 4, 2011

T. S. Rausch

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All other ASME OM Code requirements for which relief was not specifically requested and approved, remain applicable.

Please contact me at (301) 415-2942, or the Project Manager, Bhalchandra K. Vaidya at (301) 415-3308, if you have any questions.

Sincerely,

/RA/

Nancy L. Salgado, Chief
Plant Licensing Branch I-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

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(**) concurrence by e-mail

ADAMS Accession No.: ML103560005 (*) No substantial change from SE Input Memo

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