



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

December 18, 2013

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 – REQUEST FOR ADDITIONAL INFORMATION REGARDING REQUEST FOR CHANGES TO TECHNICAL SPECIFICATION SURVEILLANCE REQUIREMENT 3.5.1.12: (TAC NOS. MF1955 AND MF1956)

Dear Mr. Rausch:

By letter dated June 6, 2013,¹ PPL Susquehanna, LLC submitted a license amendment request for Susquehanna Steam Electric Station, Units 1 and 2. The proposed amendment would change technical specification (TS) Surveillance Requirement 3.5.1.12 in TS 3.5.1, "ECCS [emergency core cooling system]– Operating." Specifically, the proposed amendments would eliminate the current TS requirement that "each ADS [Automatic Depressurization System] valve opens when manually actuated," to the requirement that "each ADS valve actuator strokes when manually actuated." Additionally, the surveillance frequency would change from "24 months on a STAGGERED TEST BASIS for each valve solenoid," to "24 months." To complete its review, the Nuclear Regulatory Commission staff requests responses to the enclosed questions.

The draft questions were sent to Mr. Duane L. Filchner, of your staff, to ensure that the questions were understandable, the regulatory basis for the questions was clear, and to determine if the information was previously docketed. On December 17, 2013, Mr. Filchner, agreed that you would provide a response by January 24, 2014.

If you have any questions regarding this matter, please contact me at 301-415-4090.

Sincerely,

Handwritten signature of Jeffrey A. Whited in black ink.

Jeffrey A. Whited, Project Manager
Plant Licensing Branch I-2
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. 50-387 and 50-388

Enclosure:
Request for Additional Information

cc w/encl: Distribution via Listserv

¹ Agencywide Documents Access and Management System Accession No. ML13158A096.

REQUEST FOR ADDITIONAL INFORMATION
REGARDING PROPOSED LICENSE AMENDMENT REQUEST TO
CHANGE SURVEILLANCE REQUIREMENT 3.5.1.12
PPL SUSQUEHANNA, LLC
SUSQUEHANNA STEAM ELECTRIC STATION, UNITS 1 AND 2
DOCKET NOS. 50-387 AND 50-388

By letter dated June 6, 2013,¹ PPL Susquehanna, LLC submitted a license amendment request for Susquehanna Steam Electric Station, Units 1 and 2. The proposed amendment would change technical specification (TS) Surveillance Requirement (SR) 3.5.1.12 in TS 3.5.1, "ECCS [emergency core cooling system]– Operating." Specifically, the proposed amendments would eliminate the current TS requirement that "each ADS [Automatic Depressurization System] valve opens when manually actuated," to the requirement that "each ADS valve actuator strokes when manually actuated." Additionally, the surveillance frequency would change from "24 months on a STAGGERED TEST BASIS for each valve solenoid," to "24 months." To complete its review, the Nuclear Regulatory Commission (NRC) staff from the Division of Safety Systems, Technical Specifications Branch (STSB), the Division of Engineering, Instrumentation and Controls Branch (EICB), and the Component Performance, Non-Destructive Examination (NDE), and Testing Branch (EPNB) request responses to the below questions.

- EICB RAI 1: Provide a description of Susquehanna's operating experience with single and repeated open cycling action with the ADS valves that develop the leakage. The discussion would assist the staff in understanding and considering the problem being experienced.
- EICB RAI 2: Justify the technical analysis as to why the valves appear to operate within their normal design per this statement: "design appears to be adequate and is not considered to be a cause for ADS valve seat leakage as a result of manual operation of the ADS valves," and according to the reference citation 7.3, under the discussion, please explain the apparent contradiction to this statement: "[t]he licensee believes that the failure of the S/RV [safety/relief valve] is related to the manufacturing tolerances of the valve stem and piston assembly and to the lengthy service time without adequate inspection and maintenance." It appears that ADS valves with mechanical issues per design and wear require higher inspection surveillance.
- EICB RAI 3: The cited material states that the design for a Target Rock valve does degrade and requires periodic inspection, which could mean an increased validation of valve operation is best done with the ADS valve connected to the relief positioner, yet the valves cited in the license amendment request are identified as Crosby valves. Explain the discrepancy.

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- EICB RAI 4: Provide drawings/sketches/piping and instrument diagrams depicting detailed design of the physical installation of the ADS valve (including information on the actuator such as number and arrangement of solenoids and air system arrangement) the licensee wants to disconnect from the positioner, so the staff can verify the ADS actuator is disconnected from the valve to ensure no damage is done to the valve seat or to the valve internals.
- EICB RAI 5: Provide further discussion on the S/RVs replaced under current practices for a 24 month cycle and how a "main disk exercise test" (referred to on page 3 of 7) performed on all S/RVs at least once every 6 years would ensure the main disks can freely open. This discussion would aid the staff in understanding the operating history of the S/RVs.
- EICB RAI 6: Provide the cited document in reference 7.2, "INPO [Institute of Nuclear Power Operations] Event Report, Level 3, 11-24, "Maintenance Error results in Uncontrolled Reactor Vessel Depressurization," dated July 26, 2011. "The cited material is not available to the NRC in its entirety. Furthermore, the redacted INPO version states the valve failed open. The staff would like to know the relevance to this proposed licensing amendment.
- EPNB RAI 1: Are the actual installed actuators and solenoids shipped and tested with a given ADS valve during off-site bench testing?
- EPNB RAI 2: Do the set point testing program and the valve control program referred to in Sections 1 and 3 of the referenced letter implement the requirements of American Society of Mechanical Engineers (ASME) operations and maintenance (OM) Code for the testing of the ADS valves? Describe the specific tests performed for these valves to comply with ASME OM Code, Mandatory Appendix I, paragraph I-3310.
- EPNB RAI 3: Does the Susquehanna test program for the subject ADS valves fully implement the requirements of ASME OM Code Case OMN-17? In particular, are the valves disassembled and inspected after as-found set-pressure testing?
- EPNB RAI 4: Do the tests performed to satisfy TS SR 3.5.1.11 and SR 3.5.1.12 actuate each solenoid independently for a given actuator?
- EPNB RAI 5: Under the proposed new wording of SR 3.5.1.12, is the existing note still necessary that allows for a 12-hour delay in testing?
- EPNB RAI 6: Does deletion of "on a staggered test basis for each valve solenoid" from the SR 3.5.1.12 frequency requirement mean that each solenoid on each actuator will be individually tested every 24 months?
- STSB RAI 1: 10 CFR 50.36(c)(3), "Surveillance requirements," requires, in part, that SRs be established to ensure that the necessary quality of components is maintained, and that facility operation will be within safety limits.

The proposed SR changes would eliminate the TS requirement to verify that for the ADS valves to open during manual actuation of the ADS circuitry. When

performing the testing in-situ as required by the current TSS, the testing verifies that the ADS valve components actuate as designed and discharge lines are not blocked. This test provides assurance that the necessary quality of components is maintained, and that facility operation will be within safety limits.

Please provide a description of the Quality Assurance and Foreign Material Exclusion methods that will be used to provide assurance that the ADS valves that have been bench-tested will actuate as designed and that discharge lines are not blocked once the valves are installed.

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Jeffrey A. Whited, Project Manager
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*via memo dated **via e-mail dated

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