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JUN 05 2012

U. S. Nuclear Regulatory Commission  
Attn: Document Control Desk  
Mail Stop OP1-17  
Washington, DC 20555

**SUSQUEHANNA STEAM ELECTRIC STATION**  
**LICENSEE EVENT REPORT 50-387/2012-003-00**  
**LICENSE NO. NPF-14**  
**PLA-6862**

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**Docket No 50-387**

Attached is Licensee Event Report (LER) 50-387/2012-003-00. This event was determined to be reportable in accordance with 10 CFR 50.73(a)(2)(ii)(A) as a degraded or unanalyzed condition. This event is also reportable in accordance with 10 CFR 50.73(a)(2)(i)(B) for a condition prohibited by Technical Specifications. During the Unit 1 17<sup>th</sup> Refueling and Inspection Outage, the as-found minimum pathway Secondary Containment Bypass Leakage Technical Specification limit was exceeded during the regularly scheduled Local Leak Rate Testing.

There were no actual consequences to the health and safety of the public as a result of these events.

No commitments were identified in this submittal.

A handwritten signature in blue ink, appearing to read "Jeffrey M. Helsel", is written over a horizontal line.

J. M. Helsel

Attachment: LER 50-387/2012-003-000

Copy: NRC Region I  
Mr. P. W. Finney, NRC Sr. Resident Inspector  
Mr. R. R. Janati, DEP/BRP  
Ms. C. J. Sanders, NRC Project Manager

# LICENSEE EVENT REPORT (LER)

(See reverse for required number of digits/characters for each block)

Estimated burden per response to comply with this mandatory collection request: 80 hours. Reported lessons learned are incorporated into the licensing process and fed back to industry. Send comments regarding burden estimate to the Records and FOIA/Privacy Service Branch (T-5 F53), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to infocollects@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202, (3150-0104), Office of Management and Budget, Washington, DC 20503. If a means used to impose an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

|  |                                     |                          |
|--|-------------------------------------|--------------------------|
| <b>1. FACILITY NAME</b><br>Susquehanna Steam Electric Station Unit 1 | <b>2. DOCKET NUMBER</b><br>05000387 | <b>3. PAGE</b><br>1 OF 3 |
|--|-------------------------------------|--------------------------|

**4. TITLE**  
Unit 1 Secondary Containment Bypass Leakage Exceeded

| 5. EVENT DATE |     |      | 6. LER NUMBER |                   |         | 7. REPORT DATE |     |      | 8. OTHER FACILITIES INVOLVED |               |
|---------------|-----|------|---------------|-------------------|---------|----------------|-----|------|------------------------------|---------------|
| MONTH         | DAY | YEAR | YEAR          | SEQUENTIAL NUMBER | REV NO. | MONTH          | DAY | YEAR | FACILITY NAME                | DOCKET NUMBER |
| 04            | 06  | 2012 | 2012          | - 003 -           | 00      | 06             | 05  | 2012 | FACILITY NAME                | DOCKET NUMBER |
|               |     |      |               |                   |         |                |     |      |                              | 05000         |
|               |     |      |               |                   |         |                |     |      |                              | 05000         |

|                                   |  |
|-----------------------------------|--|
| <b>9. OPERATING MODE</b><br><br>5 | <b>11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR§:</b> (Check all that apply)  |
| <b>10. POWER LEVEL</b><br><br>0%  | <input type="checkbox"/> 20.2201(b) <input type="checkbox"/> 20.2203(a)(3)(i) <input type="checkbox"/> 50.73(a)(2)(i)(C) <input type="checkbox"/> 50.73(a)(2)(vii)<br><input type="checkbox"/> 20.2201(d) <input type="checkbox"/> 20.2203(a)(3)(ii) <input checked="" type="checkbox"/> 50.73(a)(2)(ii)(A) <input type="checkbox"/> 50.73(a)(2)(viii)(A)<br><input type="checkbox"/> 20.2203(a)(1) <input type="checkbox"/> 20.2203(a)(4) <input type="checkbox"/> 50.73(a)(2)(ii)(B) <input type="checkbox"/> 50.73(a)(2)(viii)(B)<br><input type="checkbox"/> 20.2203(a)(2)(i) <input type="checkbox"/> 50.36(c)(1)(i)(A) <input type="checkbox"/> 50.73(a)(2)(iii) <input type="checkbox"/> 50.73(a)(2)(ix)(A)<br><input type="checkbox"/> 20.2203(a)(2)(ii) <input type="checkbox"/> 50.36(c)(1)(ii)(A) <input type="checkbox"/> 50.73(a)(2)(iv)(A) <input type="checkbox"/> 50.73(a)(2)(x)<br><input type="checkbox"/> 20.2203(a)(2)(iii) <input type="checkbox"/> 50.36(c)(2) <input type="checkbox"/> 50.73(a)(2)(v)(A) <input type="checkbox"/> 73.71(a)(4)<br><input type="checkbox"/> 20.2203(a)(2)(iv) <input type="checkbox"/> 50.46(a)(3)(ii) <input type="checkbox"/> 50.73(a)(2)(v)(B) <input type="checkbox"/> 73.71(a)(5)<br><input type="checkbox"/> 20.2203(a)(2)(v) <input type="checkbox"/> 50.73(a)(2)(i)(A) <input type="checkbox"/> 50.73(a)(2)(v)(C) <input type="checkbox"/> OTHER<br><input type="checkbox"/> 20.2203(a)(2)(vi) <input checked="" type="checkbox"/> 50.73(a)(2)(i)(B) <input type="checkbox"/> 50.73(a)(2)(v)(D) <input type="checkbox"/> OTHER<br><div style="text-align: right; font-size: small;">Specify in Abstract below or in NRC Form 366A</div> |

**12. LICENSEE CONTACT FOR THIS LER**

|   |  |
|---|--|
| Facility Name<br>Brenda W. O'Rourke, Senior Engineer - Nuclear Regulatory Affairs | Telephone Number (Include Area Code)<br>(570) 542-1791 |
|---|--|

| CAUSE | SYSTEM | COMPONENT | MANUFACTURER | REPORTABLE TO EPIX | CAUSE | SYSTEM | COMPONENT | MANUFACTURER | REPORTABLE TO EPIX |
|-------|--------|-----------|--------------|--------------------|-------|--------|-----------|--------------|--------------------|
| X     | BD     | ISV       | A391         | Y                  |       |        |           |              |                    |

|  |                                     |       |     |      |
|--|-------------------------------------|-------|-----|------|
| <b>14. SUPPLEMENTAL REPORT EXPECTED</b><br><input type="checkbox"/> YES (If yes, complete 15. EXPECTED SUBMISSION DATE) <input checked="" type="checkbox"/> NO | <b>15. EXPECTED SUBMISSION DATE</b> | MONTH | DAY | YEAR |
|  |                                     |       |     |      |

**ABSTRACT** (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines)

On April 6, 2012, during the Susquehanna Unit 1 17<sup>th</sup> Refueling and Inspection Outage, it was determined that the as-found minimum pathway Secondary Containment Bypass Leakage (SCBL) Technical Specification (TS) limit was exceeded during the regularly scheduled Local Leak Rate Testing (LLRT). At the time the limit was exceeded, a LLRT was being performed on the Unit 1 'A' Feedwater Line Penetration X-9A. The tested containment isolation valve 141818A (FW LINE A ISO VLV TO RX) was leaking 2,855 standard cubic centimeters per minute (sccm). When the 2,855 sccm leakage through the 141818A valve was added to the combined as-found minimum pathway SCBL calculation, it equaled 7,185 sccm [15.224 standard cubic feet per hour (scfh)]. This total as-found minimum pathway leakage exceeded the TS limit of 7,079 sccm (15 scfh).

TS Surveillance Requirement 3.6.1.3.11 states, "Verify the combined leakage rate for all secondary containment bypass leakage paths is less than or equal to 15 scfh when pressurized to greater than or equal to P<sub>a</sub>." In accordance with 10 CFR 50.72(b)(3)(ii)(A), on April 6, 2012, ENS notification (# 47812) was made to the NRC for a degraded or unanalyzed condition. This condition is also reportable under 10 CFR 50.73(a)(2)(i)(B) as a condition prohibited by TSs because the total as-found minimum pathway SCBL leakage rate of 7,185 sccm exceeded the TS limit of 7,079 sccm.

The apparent cause of the excessive leakage through the 141818A valve was due to a galled disc stud and minor seat wear. The valve's disc stud was repaired and the soft seat was replaced. As a result, the as-left valve leakage was reduced from 2,855 sccm to 415 sccm. A modification was completed during the Unit 1 17RIO which replaced the containment spray penetration isolation valves for containment penetrations X-39A/B and X-17 with smaller isolation valves in the Condensate Transfer and Residual Heat Removal to Liquid Radwaste lines. This modification reduced the SCBL total by approximately 50 percent.

There were no actual adverse consequences to the health and safety of the public since the dose consequences from the additional leakage would not have exceeded regulatory limits.

**LICENSEE EVENT REPORT (LER)  
CONTINUATION SHEET**

| 1. FACILITY NAME                          | 2. DOCKET | 6. LER NUMBER |                   |                 | 3. PAGE |
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| Susquehanna Steam Electric Station Unit 1 | 05000387  | YEAR          | SEQUENTIAL NUMBER | REVISION NUMBER | 2 OF 3  |
|   |           | 2012          | --003--           | 00              |         |

**NARRATIVE**

**CONDITION PRIOR TO THE EVENT**

Unit 1 - Mode 5, 0 percent Rated Thermal Power

**EVENT DESCRIPTION**

On April 6, 2012, during the Susquehanna Unit 1 17<sup>th</sup> Refueling and Inspection Outage (RIO), it was determined that the as-found minimum pathway Secondary Containment Bypass Leakage (SCBL) Technical Specification (TS) limit was exceeded during the regularly scheduled Local Leak Rate Testing (LLRT). At the time the limit was exceeded, a LLRT was being performed on the Unit 1 'A' Feedwater Line Penetration X-9A. The tested containment isolation valve 141818A (FW LINE A ISO VLV TO RX) was leaking 2,855 standard cubic centimeters per minute (sccm). When the 2,855 sccm leakage through the 141818A valve was added to the combined as-found minimum pathway SCBL calculation, it equaled 7,185 sccm [15.224 standard cubic feet per hour (scfh)]. This total as-found minimum pathway leakage exceeded the TS limit of 7,079 sccm (15 scfh).

TS Surveillance Requirement 3.6.1.3.11 states, "Verify the combined leakage rate for all secondary containment bypass leakage paths is less than or equal to 15 scfh when pressurized to greater than or equal to P<sub>a</sub>." In accordance with 10 CFR 50.72(b)(3)(ii)(A), on April 6, 2012, ENS notification (# 47812) was made to the NRC for a degraded or unanalyzed condition. This condition is also reportable under 10 CFR 50.73(a)(2)(i)(B) as a condition prohibited by TSs because the total as-found minimum pathway SCBL leakage rate of 7,185 sccm exceeded the TS limit of 7,079 sccm.

**CAUSE OF THE EVENT**

The apparent cause of the excessive leakage through the 141818A valve was due to a galled disc stud and minor seat wear. This excessive leakage, in combination with the carryover leakage from the containment spray penetration X-39A/B and X-17 valves (3,893 sccm) during the Unit 1 16<sup>th</sup> RIO, resulted in the TS SCBL limit being exceeded.

**ANALYSIS / SAFETY SIGNIFICANCE**

**Actual Consequences**

The purpose of the primary containment isolation valves is to limit fission product release during and following postulated Design Basis Accidents. The SCBL TS value is established to limit the release of radioactive materials outside of secondary containment to ensure offsite and main control room doses remain within NRC regulatory limits. No event occurred during the SCBL testing or during any other plant condition over the past operating cycle that would have challenged the regulatory limits. As such, this event did not impact the health and safety of the public.

**Potential Consequences**

Analysis has concluded that during a postulated design basis accident, the increase in dose related to the elevated SCBL leaks rate would not have exceeded NRC regulatory limits.

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|   |           | 2012          | --003--           | 00              |         |

**CORRECTIVE ACTIONS**

Completed Actions

- Maintenance was performed on the Unit 1 'A' Feedwater Line Penetration X-9A valve 141818A. The disc stud was repaired and the soft seat was replaced. This reduced the as-left valve leakage from 2,855 sccm to 415 sccm.
- A modification was completed during the current Unit 1 17RIO which replaced the containment isolation valves for Containment Spray penetrations X-39A/B and X-17, as SCBL barriers, with smaller isolation valves in the Condensate Transfer and Residual Heat Removal (RHR) to Liquid Radwaste lines. This modification reduced the Containment Spray penetration X-39B leakage from 4,515 sccm to 3,893 sccm.

Planned Corrective Actions

- A Unit 2 modification to replace the containment isolation valves for Containment Spray penetrations X-39A/B and X-17 as SCBL barriers with smaller isolation valves in the Condensate Transfer and RHR to Liquid Radwaste lines is planned for the next Unit 2 RIO.
- With the Unit 1 modification to replace the containment isolation valves for containment spray complete as noted above, (although not included in the SCBL calculation for Unit 1 17RIO) the next step is to address the performance of the feedwater check valves. Condition Reports are in the SSES corrective action program to address these valves which could have future impact on SCBL.

**ADDITIONAL INFORMATION**

Failed Component Information:

Component: 141818A; 24-inch Advanseal check valve

Model: None

Manufacturer: Anchor Darling Valve Co.

Previous Similar Events:

- LER 2010-001-00, Docket No. 387/ License No. NPF-14
- LER 2007-001-00, Docket No. 388 / License No. NPF-22
- LER 2001-003-00, Docket No. 388 / License No. NPF-22
- LER 1999-002-00, Docket No. 388 / License No. NPF-22
- LER 1996-011-00, Docket No. 387 / License No. NPF-14