



LR-N16-0184

10 CFR 50.73

October 4, 2016

U.S. Nuclear Regulatory Commission  
ATTN: Document Control Desk  
Washington, DC 20555-0001

Salem Nuclear Generating Station Unit 1  
Renewed Facility Operating License No. DPR-70  
NRC Docket No. 50-272

**SUBJECT:** LER 272/2016-004-000  
Containment Fan Coil Units Inoperable for longer than allowed by  
Technical Specification

Licensee Event Report, "Containment Fan Coil Units Inoperable for longer than allowed by Technical Specification" is being submitted pursuant to 10 CFR 50.73 (a)(2)(i)(B), "Any operation or condition which was prohibited by the plant's Technical Specifications....."

Should you have any questions or comments regarding the submittal, please contact Mr. Thomas Cachaza of Regulatory Affairs at 856-339-5038.

There are no regulatory commitments contained in this letter.

Sincerely,

  
F. Kenneth Grover  
Salem Plant Manager

tjc

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cc D. Dorman, Administrator – Region 1  
C. Parker, Licensing Project Manager – Salem  
P. Finney, USNRC Senior Resident Inspector – Salem  
P. Mulligan, Manager, IV, Bureau of Nuclear Engineering  
T. Cachaza, Salem Commitment Coordinator  
L. Marabella, Corporate Commitment Coordinator



**LICENSEE EVENT REPORT (LER)**

(See Page 2 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 FOIA, Privacy and Information Collections Branch (T-5 F53), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to Infocollects.Resource@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>Salem Generating Station – Unit 1 | <b>2. DOCKET NUMBER</b><br>05000272 | <b>3. PAGE</b><br>1 OF 3 |
|--|-------------------------------------|--------------------------|

**4. TITLE** Containment Fan Coil Units Inoperable for longer than allowed by Technical Specification

| 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          |
| 08            | 05  | 2016 | 2016          | 004               | 000     | 10             | 04  | 2016 | FACILITY NAME                | DOCKET NUMBER<br>05000 |
|               |     |      |               |                   |         |                |     |      | FACILITY NAME                | DOCKET NUMBER<br>05000 |

|                          |  |  |   |   |
|--------------------------|--|--|---|---|
| <b>9. OPERATING MODE</b> | <b>11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check all that apply)</b> |  |   |   |
| 1                        | <input type="checkbox"/> 20.2201(b)  | <input type="checkbox"/> 20.2203(a)(3)(i)                                    | <input type="checkbox"/> 50.73(a)(2)(ii)(A) | <input type="checkbox"/> 50.73(a)(2)(viii)(A) |
|                          | <input type="checkbox"/> 20.2201(d)  | <input type="checkbox"/> 20.2203(a)(3)(ii)                                   | <input type="checkbox"/> 50.73(a)(2)(ii)(B) | <input type="checkbox"/> 50.73(a)(2)(viii)(B) |
|                          | <input type="checkbox"/> 20.2203(a)(1)   | <input type="checkbox"/> 20.2203(a)(4)                                       | <input type="checkbox"/> 50.73(a)(2)(iii)   | <input type="checkbox"/> 50.73(a)(2)(ix)(A)   |
|                          | <input type="checkbox"/> 20.2203(a)(2)(i)  | <input type="checkbox"/> 50.36(c)(1)(i)(A)                                   | <input type="checkbox"/> 50.73(a)(2)(iv)(A) | <input type="checkbox"/> 50.73(a)(2)(x)       |
| 99.8                     | <input type="checkbox"/> 20.2203(a)(2)(ii)   | <input type="checkbox"/> 50.36(c)(1)(ii)(A)                                  | <input type="checkbox"/> 50.73(a)(2)(v)(A)  | <input type="checkbox"/> 73.71(a)(4)          |
|                          | <input type="checkbox"/> 20.2203(a)(2)(iii)  | <input type="checkbox"/> 50.36(c)(2)   | <input type="checkbox"/> 50.73(a)(2)(v)(B)  | <input type="checkbox"/> 73.71(a)(5)          |
|                          | <input type="checkbox"/> 20.2203(a)(2)(iv)   | <input type="checkbox"/> 50.46(a)(3)(ii)                                     | <input type="checkbox"/> 50.73(a)(2)(v)(C)  | <input type="checkbox"/> 73.77(a)(1)          |
|                          | <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)(D)  | <input type="checkbox"/> 73.77(a)(2)(i)       |
|                          | <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)(vii)   | <input type="checkbox"/> 73.77(a)(2)(ii)      |
|                          | <input type="checkbox"/> 50.73(a)(2)(i)(C)   | <input type="checkbox"/> OTHER Specify in Abstract below or in NRC Form 366A |   |   |

**12. LICENSEE CONTACT FOR THIS LER**

|   |   |
|---|---|
| <b>LICENSEE CONTACT</b><br>Thomas J. Cachaza, Senior Regulatory Compliance Engineer | <b>TELEPHONE NUMBER (Include Area Code)</b><br>856-339-5038 |
|---|---|

**13. COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT**

| CAUSE | SYSTEM | COMPONENT | MANU-FACTURER | REPORTABLE TO EPIX | CAUSE | SYSTEM | COMPONENT | MANU-FACTURER | REPORTABLE TO EPIX |
|-------|--------|-----------|---------------|--------------------|-------|--------|-----------|---------------|--------------------|
| A     |        |           |               | N                  |       |        |           |               |                    |

|  |                                     |       |     |      |
|--|-------------------------------------|-------|-----|------|
| <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 August 5, 2016, while performing the scheduled stroke time surveillance testing of the 11 Service Water (SW) Accumulator Discharge Valves, the 11SW535 stroked closed in 3.17 seconds, placing it in the 'Required Action Range' for a stroke time less than 5 seconds. Evaluation determined that the actual valve stroke time did not impact the functionality of the system. Investigation determined that the air supply valve to the 11SW535 had been replaced on May 11, 2016 and that the appropriate retest (stroke time testing of the 11SW535) had not been performed. This affected the operability of 11 and 12 Containment Fan Coil Units (CFCU) after both CFCU's had previously been declared operable. The 11 and 12 CFCU's were required to be operable upon entry into Mode 4 (while returning the unit to service from 1R24) on July 24, 2016 at 1009. Upon entry into Mode 4, the 13 CFCU was inoperable and had been tagged for maintenance. Inoperability of the 13 CFCU continued until July 28, 2016 at 0103. Additionally the 11 and 12 CFCU's continued to be inoperable until the 11SW535 was retested satisfactorily. Both the 11SW535 and the 11 and 12 CFCU's were declared operable August 6, 2016 at 1826. Technical specification (TS) 3.6.2.3 Requires 5 CFCU's to be operable in Modes 1, 2, 3, and 4. TS 3.6.1.1 requires primary containment integrity be maintained in Modes 1, 2, 3, and 4. The action times for both TS's were not met. This report is being made in accordance with 10CFR50.73 (a)(2)(i)(B), "Any operation or condition which was prohibited by the plant's Technical Specifications....."



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

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 FOIA, Privacy and Information Collections Branch (T-5 F53), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to Infocollects.Resource@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.

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|                                   |           | YEAR          | SEQUENTIAL NUMBER | REVISION NUMBER |         |
| Salem Generating Station – Unit 1 | 05000272  | 2016          | 004               | 000             | 2 OF 3  |

**NARRATIVE**

**PLANT AND SYSTEM IDENTIFICATION**

Westinghouse-Pressurized Water Reactor {PWR/4}

Containment Fan Cooling System {BK}

\*Energy Industry Identification System (EIS) codes and component function identifier codes appear as {SS/CCC}.

**IDENTIFICATION OF OCCURRENCE**

Event Date: 08/05/2016  
Discovery Date: 08/05/2016

**CONDITIONS PRIOR TO OCCURRENCE**

Salem Unit 1 was in Mode 1 at 99.8 percent rated thermal power (RTP).

**DESCRIPTION OF OCCURRENCE**

On August 5, 2016, while performing the scheduled stroke time surveillance testing of the 11 Service Water (SW) Accumulator Discharge Valves, the 11SW535 stroked closed in 3.17 seconds, placing it in the 'Required Action Range' for a stroke time less than 5 seconds. Evaluation determined that the actual valve stroke time did not impact the functionality of the system. Investigation determined that the air supply valve to the 11SW535 had been replaced on May 11, 2016 and that the appropriate retest (stroke time testing of the 11SW535) had not been performed. This affected the operability of 11 and 12 Containment Fan Coil Units (CFCU) after both CFCU's had previously been declared operable.

The 11 and 12 CFCU's were required to be operable upon entry into Mode 4 (while returning the unit to service from 1R24) on July 24, 2016 at 1009. Upon entry into Mode 4, the 13 CFCU was inoperable and had been tagged for maintenance. Inoperability of the 13 CFCU continued until July 28, 2016 at 0103. Additionally the 11 and 12 CFCU's continued to be inoperable until the 11SW535 was retested satisfactorily. Both the 11SW535 and the 11 and 12 CFCU's were declared operable August 6, 2016 at 1826.

Technical specification (TS) 3.6.2.3 Requires 5 CFCU's to be operable in Modes 1, 2, 3, and 4. TS 3.6.1.1 requires primary containment integrity be maintained in Modes 1, 2, 3, and 4. The action times for both TS's were not met.

This report is being made in accordance with 10CFR50.73 (a)(2)(i)(B), "Any operation or condition which was prohibited by the plant's Technical Specifications....."

**CAUSE OF EVENT**

The Senior Reactor Operator (SRO) did not ensure that the retest requirements associated with the work order were understood. The SRO did not use adequate technical rigor in ensuring that the appropriate retest requirements in the work order activity were complied with.

**SAFETY CONSEQUENCES AND IMPLICATIONS**

There was no safety consequence associated with this event. The UFSAR chapter 15 analysis identifies that 3 CFCU's along with a single train of containment spray are required to maintain the containment temperature and pressure below the design basis value. During the period described adequate CFCU's were functionally available to respond to a design basis event. An evaluation of the 11SW535 stroke time determined that the valve remained open for an adequate duration to ensure that the CFCU discharge piping would stay pressurized above saturation and prevent a void from occurring and would have been able to perform the safety function.



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|                                   |           | 2016          | 004               | 000             |         |

**NARRATIVE**

**SAFETY SYSTEM FUNCTIONAL FAILURE**

This condition did not result in a safety system functional failure as defined in NEI 99-02, Regulatory Assessment Performance Indicator Guidelines.

**PREVIOUS EVENTS**

A review of previous events for the past three years did not identify any similar events.

**CORRECTIVE ACTIONS**

The air supply valve to the 11SW535 was adjusted and retested satisfactorily and the SW accumulator was declared operable.

An extent of condition review of approximately 350 mode 4 operations retest activities was completed with no additional errors found.

When planning future outages, include a requirement to brief Window Closure SRO's prior to mode 4 and 3 to ensure that error precursors, applicable barriers, and required standards for operation and window closure are discussed.

**Commitments**

There are no regulatory commitments contained in this LER.