



W. Grover Hettel  
Columbia Generating Station  
P.O. Box 968, PE23  
Richland, WA 99352-0968  
Ph. 509.377.8311 | F. 509.377.4150  
wghettel@energy-northwest.com

October 4, 2013  
GO2-13-139

10 CFR 50.73

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

Subject: **COLUMBIA GENERATING STATION, DOCKET NO. 50-397**  
**LICENSEE EVENT REPORT NO. 2013-004-01**

Reference: Letter from WG Hettel (Energy Northwest) to U.S Nuclear Regulatory Commission dated August 1, 2013.

Dear Sir or Madam:

Transmitted herewith is Licensee Event Report (LER) No. 2013-004-01 for Columbia Generating Station. This report is submitted pursuant to 10 CFR 50.73(a)(2)(i)(B).

At the time of submittal of LER-2013-004-00 (Reference), submittal of a supplement was anticipated because the event investigation was not completed. That investigation has now been completed and supplemental information is provided in the enclosure, LER No. 2013-004-01.

There are no commitments being made to the NRC by this letter. If you have any questions or require additional information, please contact Mr. J. R. Trautvetter, Regulatory Compliance Supervisor, at (509) 377-4337.

Respectfully,

W. G. Hettel  
Vice President, Operations

Enclosure: Licensee Event Report 2013-004-01

JEZZ  
URR

**LICENSEE EVENT REPORT NO. 2013-004-01**

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cc: NRC Region IV Administrator  
NRC NRR Project Manager  
NRC Senior Resident Inspector/988C  
A. J. Rapacz – BPA/1399  
W.A. Horin – Winston & Strawn

**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 FOIA/Privacy Section (T-5 F53), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by Internet e-mail to [infocollects.resource@nrc.gov](mailto:infocollects.resource@nrc.gov), and to the Desk Officer, Office of Information and Regulatory Affairs, NE08-10202 (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.

**1. FACILITY NAME**

Columbia Generating Station

**2. DOCKET NUMBER**

05000397

**3. PAGE**

1 OF 3

**4. TITLE**

Jumper makes Suppression Pool Spray Valve Remote Transfer Switch Inoperable

**5. EVENT DATE**

MONTH	DAY	YEAR
06	04	2013

**6. LER NUMBER**

YEAR	SEQUENTIAL NUMBER	REV NO.
2013	004	01

**7. REPORT DATE**

MONTH	DAY	YEAR
10	04	2013

**8. OTHER FACILITIES INVOLVED**

FACILITY NAME	DOCKET NUMBER
	05000

**9. OPERATING MODE**

5

**11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check all that apply)**

- |   |   |   |   |
|---|---|---|---|
| <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)     |
| <input type="checkbox"/> 20.2201(d)         | <input type="checkbox"/> 20.2203(a)(3)(II)            | <input type="checkbox"/> 50.73(a)(2)(II)(A) | <input type="checkbox"/> 50.73(a)(2)(VII)(A)  |
| <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) |
| <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)   |
| <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)       |
| <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)          |
| <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)          |
| <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                |
| <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)  |   |

Specify in Abstract below  
or in NRC Form 388A**12. LICENSEE CONTACT FOR THIS LER****FACILITY NAME**

Diego Suarez

**TELEPHONE NUMBER (Include Area Code)**

509-377-8652

**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

**14. SUPPLEMENTAL REPORT EXPECTED**☐ YES (If yes, complete 15. EXPECTED SUBMISSION DATE) ☒ NO**15. EXPECTED SUBMISSION DATE**

MONTH	DAY	YEAR

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

When performing a logic system functional test (LSFT) of the Remote Shutdown Panel transfer switch during refueling outage R21 on June 4, 2013, the procedure for testing the remote transfer switch for the suppression pool spray valve failed because a jumper had been left installed following a new bucket (breaker) installation at the Motor Control Center during the previous refueling outage R20. A satisfactory LSFT was performed prior to the installation of the new bucket into the MCC but this LSFT was not re-performed to verify the operability of the new bucket after installation. The problem went undetected until the R21 LSFT test failed. The remote transfer switch was inoperable from May 16, 2011 until June 4, 2013 when the condition was discovered. This resulted in failure to meet Surveillance Requirement (SR) 3.3.3.2.4 and non-compliance with Technical Specifications (TS) Limiting Condition for Operation (LCO) 3.3.3.2.

The preliminary apparent causes have been identified as: (1) a lack of a standard for Work Order instructions involving the removal and installation of jumpers, resulting in personnel having to rely on experience and skill of the craft for the proper way of executing and documenting required modifications; and (2) inadequate decision making resulting in the use of a post maintenance testing procedure after the installation of the Spectrum bucket in May 2011 that did not adequately prove operability.

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**NARRATIVE**

**PLANT CONDITIONS**

The event was discovered June 4, 2013 when a logic system functional test (LSFT) of the Suppression Pool Remote Transfer Switch [JS] failed. The plant was in Mode 5 during refueling outage R21 with the reactor mode switch in Refuel.

**EVENT DESCRIPTION**

On 6/04/2013, during performance of surveillance procedure on the control power transfer switch [JS] located in the Remote Shutdown Panel, a step to verify no continuity (contacts open) for the transfer switch for the suppression pool spray valve RHR-V-27B [ISV] failed. Failure of the surveillance was attributed to a jumper [57] installed (as-found) in 480V Motor Control Center [MCC] starter controls contained in the new bucket. The jumper had been left in place since refueling outage R20 when the Spectrum bucket (breaker) was installed on May 16, 2011. The transfer switch was, therefore, inoperable since the jumper was left in place, because Surveillance Requirement 3.3.3.2.4 under Technical Specifications (TS) Limiting Condition for Operation (LCO) 3.3.3.2, The Remote Shutdown System Functions Shall Be Operable, would not have been met when in Modes 1 or 2.

**IMMEDIATE CORRECTIVE ACTION**

The jumper was removed and the loosened terminals were torqued to restore bucket to design configuration.

**CAUSE**

The Cause Evaluation identified preliminary apparent causes of this event as follows: (1) a lack of a standard for Work Order instructions involving removal and installation of jumpers, which requires personnel to rely on experience and skill of the craft for the proper way of executing and documenting required modifications; and (2) inadequate decision making resulting in the use of a post maintenance testing procedure after the installation of the Spectrum bucket in May 2011 that did not adequately prove operability.

**FURTHER CORRECTIVE ACTION**

Procedures will be revised to provide additional level of detail for work order steps involving determination and termination of wires, cables and jumpers.

Additional corrective actions are being investigated that may result in additional proposed corrective measures. A supplement to this Licensee Event Report will be submitted if the final corrective action plan is substantively different than that included in this form.

**ASSESSMENT OF SAFETY CONSEQUENCES**

The remote transfer switch is located at the Remote Shutdown Panel. The switch transfers control of the Division 2 suppression pool spray valve from the Main Control Room to the Remote Shutdown Panel and vice versa. The suppression pool spray valve is used to provide cooling to the wetwell portion of the primary containment as a means to control containment pressure during an accident.

The jumpered terminals in the remote shutdown transfer switch did not impact the operation of the suppression pool spray valve from the Main Control Room.

With the jumper left in place the operation of the suppression pool spray valve could be impacted from the Remote Shutdown Panel because of loss of starter control power for valve RHR-V-27B under some abnormal scenarios (i.e., fire in the Main Control Room), which would require the replacement of a blown fuse prior to being able to operate the valve from the Remote Shutdown Panel. However, the normal position for this valve is closed and it would not normally be

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**NARRATIVE**

operated from the Remote Shutdown Panel in the event of a fire in the Control Room. Therefore the safety significance of this failure is low.

**SIMILAR EVENTS**

There are several documented conditions with similar circumstances involving improper removal or installation of jumpers. However, they were due to improper placement or removal of jumpers and did not involve jumpers being left in for an extended period of time.

**ENERGY INDUSTRY IDENTIFICATION SYSTEM (EIIIS) INFORMATION CODES**

EIIS codes are bracketed [ ] where applicable in the narrative.

\* \* \* \* \* **SUPPLEMENTAL REPORT** \* \* \* \* \*

Licensee Event Report (LER) 2013-004-00 was originally submitted pursuant to the requirements of 10 CFR 50.73(a)(2)(i)(B) and 50.73(a)(2)(v)(D). This supplement withdraws selection of the latter reportability criterion, 50.73(a)(2)(v)(D) because it is not applicable to this event. On completion of the evaluation and further review of the Engineering assessment it has been determined that the jumper that was left in place in the breaker of the RHR-V-27B valve would not have prevented fulfillment of a safety function that is needed to shut down the reactor and maintain it in a safe shutdown condition, or to mitigate the consequences of an accident.

Review of the Engineering assessment of this event indicates that the presence of the jumper in the breaker for the RHR-V-27B valve would not have impacted the ability to operate the valve from the Control Room. Therefore operation of RHR-V-27B for heat dissipation in the suppression pool in the event of an accident (i.e., LOCA) would not have been prevented by the jumper. Thus the operation of the RHR-V-27B valve needed to mitigate the consequences of an accident was not impacted.

An assessment of the ability to safely shutdown the reactor and maintain it in a shutdown condition and the ability to remove residual heat from the core was completed and determined that there was no impact on either of these functions. This is based on the fact that although the installation of the jumper could have caused a loss of control power to the valve when it is transferred to the Remote Shutdown Panel, the loss of power to RHR-V-27B would not impact its safety function because the valve is normally closed and would fail as is. Additionally the Post Fire Safe Shutdown (PFSS) Analysis establishes as a basis that all plant safe shutdown equipment is functional and that there are no tests or maintenance activities going on at the time of fire ignition. Thus it is assumed that the RHR-V-27B valve would be closed for a fire that required Main Control Room evacuation and would fail in that position if the transfer to the remote shutdown panel would have caused the fuses to blow. Therefore, the ability to make up coolant to the reactor using Division 2 RHR or to go into shutdown cooling is not impacted.