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May 1, 2013
GO2-13-069

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. 2013-002-00

Dear Sir or Madam:

Transmitted herewith is Licensee Event Report No. 2013-002-00 for Columbia Generating Station. This report is submitted pursuant to 10 CFR 50.73(a)(2)(i)(B).

There are no commitments being made to the NRC by this letter. If you have any questions or require additional information, please contact Ms. LL Williams at (509) 377-8148.

Respectfully,

D Swank for

AL Javorik
Vice President, Engineering

Attachment: Licensee Event Report 2013-002-00

cc: NRC Region IV Administrator
NRC NRR Project Manager
NRC Senior Resident Inspector/988C
AJ Rapacz – BPA/1399
WA Horin – Winston & Strawn

IE22
NRR

NRC FORM 366 (10-2010) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB NO. 3150-0104 EXPIRES 10/31/2013

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, 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.

LICENSEE EVENT REPORT (LER)

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

1. FACILITY NAME	2. DOCKET NUMBER	3. PAGE
Columbia Generating Station	05000397	1 OF 3

4. TITLE

Main Control Room Cooler Failed Surveillance

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 05000
03	02	2013	2013	- 002 -	00	05	01	2013	FACILITY NAME	DOCKET NUMBER 05000

9. OPERATING MODE

1

10. POWER LEVEL

100

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

- ☐ 20.2201(b)
- ☐ 20.2201(d)
- ☐ 20.2203 (a)(1)
- ☐ 20.2203(a)(2)(i)
- ☐ 20.2203(a)(2)(ii)
- ☐ 20.2203(a)(2)(iii)
- ☐ 20.2203(a)(2)(iv)
- ☐ 20.2203(a)(2)(v)
- ☐ 20.2203(a)(2)(vi)
- ☐ 20.2203(a)(3)(i)
- ☐ 20.2203(a)(3)(ii)
- ☐ 20.2203(a)(4)
- ☐ 50.36(c)(1)(i)(A)
- ☐ 50.36(c)(1)(ii)(A)
- ☐ 50.36(c)(2)
- ☐ 50.46(a)(3)(ii)
- ☐ 50.73(a)(2)(i)(A)
- ☒ 50.73(a)(2)(i)(B)
- ☐ 50.73(a)(2)(i)(C)
- ☐ 50.73(a)(2)(ii)(A)
- ☐ 50.73(a)(2)(ii)(B)
- ☐ 50.73(a)(2)(iii)
- ☐ 50.73(a)(2)(iv)(A)
- ☐ 50.73(a)(2)(v)(A)
- ☐ 50.73(a)(2)(v)(B)
- ☐ 50.73(a)(2)(v)(C)
- ☐ 50.73(a)(2)(v)(D)
- ☐ 50.73(a)(2)(vii)
- ☐ 50.73(a)(2)(viii)(A)
- ☐ 50.73(a)(2)(viii)(B)
- ☐ 50.73(a)(2)(ix)(A)
- ☐ 50.73(a)(2)(x)
- ☐ 73.71(a)(4)
- ☐ 73.71(a)(5)
- ☐ OTHER

Specify in Abstract below or in NRC Form 366A

12. LICENSEE CONTACT FOR THIS LER

FACILITY NAME	TELEPHONE NUMBER *(Include Area Code)*
M. Hedges	509-377-8277

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
E	VI	CLR	P295	Y						

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)*

In October 2012, it was determined that the Technical Specification (TS) surveillance procedure to verify that each control room air conditioning (AC) subsystem has the capability to remove the assumed heat load for TS Surveillance Requirement (SR) 3.7.4.1 did not satisfy the surveillance requirement. The methodology for the existing surveillance had been in use since 1998 around the time Energy Northwest converted to the Improved Technical Specifications. TS SR 3.0.3 was invoked and a new surveillance procedure was developed. On March 2, 2013, while performing the new surveillance procedure, the test results revealed that the air handler thermal performance for the "A" train did not meet the acceptance criteria. This failure to satisfy SR 3.7.4.1 in March, following entry into SR 3.0.3, is reportable under 10 CFR 50.73(a)(2)(i)(B) – Any operation or condition which was prohibited by the plant's technical specifications.

The control room AC subsystem has been cleaned, retested, and returned to operable status.

NARRATIVE

PLANT CONDITIONS

At the time of event, the plant was operating in Mode 1 at 100% power.

EVENT DESCRIPTION

In October 2012, it was determined that the Technical Specification (TS) surveillance procedure to verify that each control room air conditioning (AC) subsystem [VI] has the capability to remove the assumed heat load for TS Surveillance Requirement (SR) 3.7.4.1 did not satisfy the surveillance requirement. The methodology for the existing surveillance had been in use since 1998 around the time Energy Northwest converted to the Improved Technical Specifications. TS SR 3.0.3 was invoked. An informational test was performed on November 3, 2012, indicating acceptable performance of the cooler [CLR]. A new surveillance procedure was developed and on March 2, 2013, while performing the new surveillance, the test results revealed that the air handler thermal performance for the "A" train did not meet the acceptance criteria. This failure to satisfy SR 3.7.4.1 in March, following entry into SR 3.0.3, is reportable under 10 CFR 50.73(a)(2)(i)(B) – Any operation or condition which was prohibited by the plant's technical specifications.

IMMEDIATE CORRECTIVE ACTION

- Addition of Hydrogen Peroxide to the service water spray ponds to kill biological material in the cooling water.
- Cleaning and Inspection of the air side of the cooling coils.
- Cleaning, flushing and inspection of the water side of the cooling coils [CCL]
- Adjustment of the water flow to balance coil flow and heat removal capacity.

A final performance of the test on March 21, 2013 demonstrated heat removal capacity significantly above the minimum acceptance criteria.

CAUSE

The direct cause was determined to be macro-fouling of the water side of the tubes. The presence of large anode deposits, due to degradation of the zinc sacrificial anode, and sediment in the lower tubes of the cooling coils were blocking flow.

The apparent cause was lack of a periodic performance test. With no component specific periodic performance test specified timely identification of degradation, and subsequent action to mitigate the degradation, was not possible to prevent component failure. No routine surveillance on this cooler had been performed for 16 years.

Contributing to this failure was a lack of procedural guidance to balance flow through the cooling coils. The control room coolers are unique in that they are the only double coil coolers used for service water systems [BI]. There is no flow indication for the individual coils, only the total flow. Thermal performance testing found that flow was not properly balanced between the coils.

Another contributing cause was a general increase in the sediment levels of the service water system.

NARRATIVE

FURTHER CORRECTIVE ACTION

The surveillance procedure for the control room cooler will be scheduled and performed on a routine basis.

Develop periodic inspection, cleaning, and anode replacement plan for all coolers.

ASSESSMENT OF SAFETY CONSEQUENCES

The main control room has two divisions of air handling units, each with the capability to maintain temperatures within the required limits during accident conditions. The main control room air coolers are required to have a minimum efficiency of 65% to provide the required cooling for a design basis event. In November 2012, the measured efficiency of the "A" train AC was 67% as obtained by a maintenance test. The measured efficiency for the "A" train AC in March 2013 was 62.6%. The "B" train AC efficiency was greater than 65%. The "B" train AC was fully capable of maintaining required control room temperatures. The "A" train AC was still capable of providing adequate cooling for most situations. Since November 2012 the "B" train was not been available for service on three occasions each with an outage duration of less than 1 day. During these times the "A" train would still have been capable of maintaining the control room within the required limits due to actual conditions being significantly less than design basis conditions (ambient temperature of 105°F and service water temperature of 77°F).

In addition to the coolers utilizing service water, the main control room AC subsystem also has the capability to be aligned to emergency chillers [KM], which provide additional cooling capability. Each division of the main control room air handler has two sets of coolers. One emergency cooler and one for normal HVAC. Both emergency coolers can be lined up to either service water or an emergency chiller, a clean closed-loop system. Typically, the "A" train is lined up to service water and the "B" train to an emergency chiller.

The safety significance of one main control room cooler having a slightly reduced efficiency was minimal.

SIMILAR EVENTS

A review of various databases at Columbia found no similar issues of a component not being tested per surveillance.

ENERGY INDUSTRY IDENTIFICATION SYSTEM (EIIS) INFORMATION CODES

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