



**ENERGY  
NORTHWEST**

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EA-12-0151

U.S. Nuclear Regulatory Commission  
ATTN: Document Control Desk  
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Subject: **COLUMBIA GENERATING STATION, DOCKET NO. 50-397  
COMPLETION OF REQUIRED ACTION BY NUCLEAR REGULATORY  
COMMISSION (NRC) ORDER EA-12-051 RELIABLE SPENT FUEL  
POOL INSTRUMENTATION**

- References:
1. NRC Order EA-12-051, "Issuance of Order to Modify Licenses with Regard to Reliable Spent Fuel Pool Instrumentation," dated March 12, 2012 (ADAMS Accession No. ML12056A044)
  2. Letter GO2-13-036 dated February 28, 2013, from D. A. Swank (Energy Northwest) to the NRC "Energy Northwest's Response to NRC Order EA-12-051 - Overall Integrated Plan for Reliable Spent Fuel Pool Instrumentation" (ADAMS Accession No. ML13071A470)
  3. NRC letter "Interim Staff Evaluation and Request for Additional Information Regarding the Overall Integrated plan for Implementation of Order EA-12-051, Reliable Spent Fuel Pool Instrumentation," dated November 7, 2013 (ADAMS Accession No. ML13302C136)
  4. Nuclear Energy Institute document NEI 12-02, "Industry Guidance for Compliance with NRC Order EA-12-051, "To Modify Licenses with Regard to Reliable Spent Fuel Pool Instrumentation," Revision 1, dated August 2012 (ADAMS Accession No. ML12240A307)
  5. NRC Japan Lessons-Learned Project Directorate JLD-ISG-2012-03, "Compliance with Order EA-12-051, Reliable Spent Fuel Pool Instrumentation Interim Staff Guidance," Revision 0, dated August 29, 2012 (ADAMS Accession No. ML12221A339)
  6. NRC Letter "Report for the Audit Regarding Implementation of Mitigating Strategies and Reliable Spent Fuel Pool Instrumentation Related to Orders EA-12-049 and EA-12-051," dated June 16, 2015 (ADAMS Accession No. ML15139A462)

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# **COMPLETION OF REQUIRED ACTION BY NUCLEAR REGULATORY COMMISSION (NRC) ORDER EA-12-051 RELIABLE SPENT FUEL POOL INSTRUMENTATION**

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Dear Sir or Madam:

Columbia Generating Station (Columbia) has completed the installation of two reliable independent level monitors for the spent fuel pool (SFP) in response to the Nuclear Regulatory Commission (NRC) issued Order EA-12-051, "*Issuance of Order Modifying Licenses with Regard to Reliable Spent Fuel Pool Instrumentation*" (Reference 1). This letter provides the notification required by § IV.C.3 of the Order that full compliance with the requirements described in Attachment 2 of the Order have been achieved.

## **Background**

On March 12, 2012, the NRC issued Order EA-12-051 (Reference 1) to Energy Northwest. This Order was effective immediately and directed installation of a reliable SFP instrumentation as outlined in Attachment 2 of the Order. The Order required compliance prior to plant startup from the second refueling outage following submittal of the Overall Integrated Plan (OIP), or by December 31, 2016, whichever comes first. Columbia completed Refueling Outage 22 on June 28, 2015. The NRC staff requested that Licensees report to the Commission when full compliance with the requirements described in Attachment 2 of Reference 1 is achieved. The information provided herein documents full compliance for Columbia Generating Station in response to Order EA-12-051.

## **Compliance**

Columbia, a single unit with a single SFP, has installed two independent full scale level monitors on the SFP in response to Reference 1.

Energy Northwest submitted the Columbia OIP by the letter dated February 28, 2013 (Reference 2). By the letter dated November 7, 2013, the NRC provided its interim staff evaluation (Reference 3). Reference 3 requested additional information necessary for completion of the review. The requested information was posted to the E-portal and included the Columbia bridging document and the vendor reports. This information was also provided to the NRC auditors during the February 2015 NRC on-site audit.

Compliance with Order EA-12-051 was achieved using the guidance in Nuclear Energy Institute (NEI) document NEI 12-02 "*Industry Guidance for Compliance with NRC Order EA-12-051*." (Reference 4), and endorsed by the NRC in Reference 5.

## **Identification of Levels of Required Monitoring – Complete**

Columbia has identified the three required levels for monitoring SFP level in compliance with Order EA-12-051. These levels have been integrated into the site processes for monitoring level during events and responding to loss of SFP inventory.

## **Program Features - Complete**

Training of personnel performing maintenance functions including calibration and surveillance associated with the SFP level instrument channels at Columbia has been

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completed in accordance with an accepted training process as recommended in NEI 12-02, Section 4.1.

Operating and maintenance procedures for the Columbia SFP level instrument channels have been developed and integrated with existing procedures. These procedures have been verified and are available for use in accordance with the site procedure control program.

Site processes have been established to ensure the instruments are maintained at their design accuracy.

## **Instrument Designed Features - Complete**

The design of the SFP level measurement instrumentation system installed at Columbia complies with the requirements specified in Order EA-12-051 and described in NEI 12-02. The instrumentation system has been installed in accordance with the station's design control process.

The instruments have been arranged to provide reasonable protection against missiles. The instruments have been mounted to retain design configuration during and following the maximum expected ground motion. The instruments will be reliable during expected environmental and radiological conditions when the SFP is at saturation for extended periods. The instruments are independent of each other and have separate and diverse power supplies. The instruments will maintain their designed accuracy following a power interruption and are designed to allow for routine testing and calibration.

The instrument displays are located in the main control room and are readily accessible during postulated events and allow for SFP level information to be promptly available to decision makers.

## **Open Items and Requests for Additional Information (RAI) - Complete**

As documented in Reference 6, during the on-site portion of the NRC audit conducted from February 2-5, 2015, the NRC closed all 18 requests for additional information (RAI) identified in Reference 3. However, one new question on the susceptibility to portable radiofrequency (RF) transmitting devices (i.e., radio) was raised during the audit. Columbia was asked to provide an assessment of the potential susceptibilities of electromagnetic interference (EMI) and RF interference (RFI) in the areas where the SFP instrument is located and how to mitigate those susceptibilities (Audit Item 11-E).

This remained an open item from the February 2015 audit.

Columbia has reassessed the RF susceptibility of the new SFP instrumentation required by NRC Order EA-13-109. Columbia reviewed the requirements in the Electric Power Research Industry (EPRI) Test Report (TR) 102323, "*Guidelines for Electromagnetic Interference Testing of Power Plants*," previously endorsed by the NRC. The new instrumentation is classified as non-safety related and Table 1 of TR-102323 indicates that testing of this equipment for RF susceptibility is optional and therefore was not specified to the vendor. The vendor performance testing was witnessed and the

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documentation reviewed and accepted by Columbia. A demonstration of RF interference susceptibility was performed on May 21, 2015. The vendor reports and the demonstration results have been posted on the Columbia e-portal as outlined in the Columbia Audit Plan dated January 16, 2015. Since no EMI, RFI, or RF susceptibilities were identified, no mitigation is required.

No new commitments are identified in this letter.

If you have any questions or require additional information, please contact Ms. L. L. Williams at (509) 377-8148.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on the 11 day of August, 2015

Respectfully,



*for* W. G. Hettel  
Vice President, Operations

cc: NRC Region IV Administrator  
NRC Senior Resident Inspector/988C  
NRC NRR Project Manager  
CD Sonoda – BPA/1399 (email)