



**UNITED STATES  
NUCLEAR REGULATORY COMMISSION**

REGION IV  
1600 E. LAMAR BLVD.  
ARLINGTON, TX 76011-4511

July 6, 2017

EA-17-028

Mr. Mark E. Reddemann  
Chief Executive Officer  
Energy Northwest  
P.O. Box 968 (Mail Drop 1023)  
Richland, WA 99352-0968

**SUBJECT: COLUMBIA GENERATING STATION - FINAL SIGNIFICANCE DETERMINATION OF A WHITE FINDING, NOTICE OF VIOLATION, FOLLOW-UP ASSESSMENT LETTER, AND NRC INSPECTION REPORT 05000397/2017009**

Dear Mr. Reddemann:

This letter provides you the final significance determination of the preliminary White finding discussed in our letter dated April 10, 2017, which included Special Inspection Report 05000397/2016009 (Agencywide Document Access and Management System (ADAMS) Accession ML17100A499). The finding involved the failure to ensure that the contents of a radioactive waste container did not exceed the radiation level requirements for shipping.

A regulatory conference was held on May 2, 2017, to discuss your views on this issue. During the meeting, your staff described your assessment of the significance of the apparent violation and associated corrective actions, including the root-cause evaluation. Specifically, your staff stated that the root cause was that station procedures to implement spent fuel pool clean-up activities and the associated radioactive waste surveys, processing, and shipping activities were not sufficient to ensure compliance with all requirements. Additionally, your staff identified contributing causes of inadequate management oversight and non-conservative decision-making. Your staff indicated that the corrective actions included developing and issuing an updated procedure to implement the clean-up activities and that key personnel had been trained to provide increased and more effective oversight.

During the regulatory conference, your staff indicated that NRC Inspection Manual Chapter 0609, Appendix M, "Significance Determination Process Using Qualitative Criteria," required an initial bounding evaluation to be performed. Your staff additionally cited NRC Inspection Manual Chapter 0308, Attachment 3, Appendix M, "Technical Basis for the Significance Determination Process (SDP) Using Qualitative Criteria," which states, "to the extent possible, given the circumstances of the finding, quantitative tools should be used to frame the risk impact of the finding."

During the regulatory conference, your staff presented an estimate for the probability of Shipment No. 16-40 experiencing an accident that would result in a release. The NRC determined that use of a quantitative analysis to conduct an initial bounding evaluation was not

appropriate for this issue. The significance determination process for the Public Radiation Safety Cornerstone is a deterministic process and not a process that explicitly utilizes probability and other factors to determine the probabilistic risk associated with a finding.

The NRC Inspection Manual Chapter 0609, Appendix D, "Public Radiation Safety Significance Determination Process," Section VII, "Transportation," specifically states that "while power reactor shipping history has demonstrated that serious mishaps are highly unlikely, if a transportation incident occurs with a package breach, then public dose consequences could result." Thus, the significance of transportation findings are based on the consequences to the public from an accident, rather than the probability or frequency of an accident. Therefore, the significance of a finding involving transportation of radioactive material, including improperly transporting a Type B quantity of material as low specific activity in a Type A package, requires a qualitative assessment.

Further, NRC Inspection Manual Chapter 0308, Appendix D, "Technical Basis for Public Radiation Safety Significance Determination Process," states that, "In addition to the regulatory requirements, this cornerstone contains a 'public confidence' factor that is used to define the significance of a finding. It was recognized by the NRC and stakeholders that a licensee's control of its radioactive material is a significant issue for members of the public; even when very low levels of radioactive material are involved. Because of this, the Public Radiation Safety SDP was developed with a 'public confidence' factor which provides for a higher level of significance than would be warranted based solely on the risk from exposure to the radioactive material."

Transportation regulations in Title 49 of the *Code of Federal Regulations* (49 CFR) Parts 172 and 173, and Title 10 of the *Code of Federal Regulations* (10 CFR) Part 71 were derived based on the need to protect the public and emergency workers in the event of an accident. The limits on activity in a Type A package and dose rate from the unshielded contents of low specific activity (LSA) material were developed with the underlying assumption that an accident has occurred. NUREG-1608, "Categorizing and Transporting Low Specific Activity Material and Surface Contaminated Objects," states, in part, that the intent of the dose rate limit is to restrict the quantity of LSA material allowed in a non accident-resistant package. The NUREG further states that limiting the dose rate external to LSA material to 1 rem/hr at 3 meters from the unshielded material provides an additional margin of safety in the event of an accident.

Based on the above, the NRC concluded that a qualitative approach, similar to the deterministic methodology of NRC Inspection Manual Chapter 0609, Appendix D, was the appropriate method to assess the significance of the finding. Specifically, the NRC determined that a bounding qualitative evaluation, using best available information (specifically NRC Inspection Manual Chapter 0609, Appendix D, and the NRC Enforcement Manual) results in a White significance (low-to-moderate safety significance) finding. As described in Attachment 3 of the NRC Special Inspection Report 05000397/2016009, the NRC considered additional attributes as they related to this finding, including defense-in-depth elements, the degree of degradation of components, the period of time the performance deficiency existed, and the other qualitative factors.

After considering the information developed during the inspection and the information you provided at the regulatory conference, the NRC has concluded that the finding associated with the violation of 49 CFR 173.427 is appropriately characterized as White, having low-to-moderate safety significance.

In your letter dated May 9, 2017 (ADAMS Accession ML17129A627), you requested that the NRC consider combining four of the violations documented in NRC Special Inspection Report 05000397/2016009 into a single problem. The four violations included the preliminary White finding and apparent violation of 49 CFR 173.427, and the three Green non-cited violations associated with the failure to conduct adequate surveys of a solid radioactive waste shipment (10 CFR 20.1501), the failure to provide an accurate shipping manifest (10 CFR 20.2006(b)), and the failure to transfer byproduct material to a disposal facility in accordance with the facility's license (10 CFR 30.41(b)(5)).

The NRC considered this request and determined that the four violations would not be combined and characterized as a problem. Although the four violations were closely related, the significance of three of the violations was appropriately determined to be Green as previously documented in NRC Special Inspection Report 05000397/2016009. The White finding associated with the violation of 49 CFR 173.427 focuses on the resultant consequence that radioactive material was transported in a less robust package than required.

The additional concerns you raised in your May 9, 2017, letter are currently under review by the NRC staff, and our response will be provided in separate correspondence.

You have 30 calendar days from the date of this letter to appeal the staff's determination of significance for the identified White finding. Such appeals will be considered to have merit only if they meet the criteria given in the NRC Inspection Manual Chapter 0609, Attachment 2. An appeal must be sent in writing to the Regional Administrator, Region IV, 1600 E. Lamar Blvd., Arlington, TX 76011.

The NRC has also determined that transporting a package as low specific activity with an external radiation level of 2.1 rem/hr at a distance of 3 meters from the unshielded material is a violation of 49 CFR 173.427, as cited in the enclosed Notice of Violation (Notice). The circumstances surrounding the violation were described in detail in NRC Special Inspection Report 05000397/2016009. In accordance with the NRC Enforcement Policy, the Notice is considered an escalated enforcement action because it is associated with a White finding.

You are required to respond to this letter and should follow the instructions specified in the enclosed Notice when preparing your response. If you have additional information that you believe the NRC should consider, you may provide it in your response to the Notice. The NRC's review of your response to the Notice will also determine whether further enforcement action is necessary to ensure compliance with regulatory requirements.

As a result of our review of Columbia Generating Station's performance, including this White finding, we have assessed the performance of Columbia Generating Station to be in the Regulatory Response Column of the NRC's Action Matrix, effective the first quarter of 2017. Therefore, we plan to conduct a supplemental inspection using Inspection Procedure 95001, "Supplemental Inspection Response to Action Matrix Column 2 Inputs," when your staff has notified us in writing of your readiness for this inspection. This inspection is conducted to provide assurance that the root and contributing causes of risk-significant performance issues are understood, the extent of condition and the extent of causes are identified, and the corrective actions are sufficient to prevent recurrence.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice and Procedure," a copy of this letter, its enclosure, and your response, will be made available electronically for public inspection in the NRC Public Document Room or from the NRC's ADAMS, accessible from the

NRC Web site at <http://www.nrc.gov/reading-rm/adams.html>. To the extent possible, your response should not include any personal privacy, proprietary, or safeguards information so that it can be made available to the Public without redaction.

Sincerely,

*/RA/*

Kriss M. Kennedy  
Regional Administrator

Docket No. 50-397  
License No. NPF-21

Enclosure:  
Notice of Violation

## NOTICE OF VIOLATION

Energy Northwest  
Columbia Generating Station

Docket No. 50-397  
License No. NPF-21  
EA-17-028

During an NRC inspection conducted from December 12, 2016, to February 24, 2017, a violation of NRC requirements was identified. In accordance with the NRC Enforcement Policy, the violation is listed below:

10 CFR 71.5(a) requires, in part, that each licensee who transports licensed material outside the site of usage, as specified in the NRC license, or where transport is on public highways, shall comply with the applicable requirements of the Department of Transportation regulations in 49 CFR Parts 171 through 180.

49 CFR 173.427(a)(1) requires, in part, that low specific activity material must be transported in accordance with the condition that the external dose rate may not exceed an external radiation level of 10 mSv/hr (1 rem/hr) at 3 meters (10 feet) from the unshielded material.

Contrary to the above, on November 9, 2016, the licensee failed to transport low specific activity material in accordance with the condition that the external dose rate may not exceed an external radiation level of 10 mSv/hr (1 rem/hr) at 3 meters (10 feet) from the unshielded material. Specifically, the licensee transported a package as low specific activity material with an external radiation level of 2.1 rem/hr at a distance of 3 meters from the unshielded material.

This violation is associated with a White Significance Determination Process finding.

Pursuant to the provisions of 10 CFR 2.201, Energy Northwest is hereby required to submit a written statement or explanation to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001, with a copy to the Regional Administrator, Region IV, 1600 E. Lamar Blvd., Arlington, TX 76011, and a copy to the NRC Resident Inspector at the facility that is the subject of this Notice, within 30 days of the date of the letter transmitting this Notice of Violation (Notice). This reply should be clearly marked as a "Reply to a Notice of Violation; EA-17-028" and should include for each violation: (1) the reason for the violation, or, if contested, the basis for disputing the violation or severity level, (2) the corrective steps that have been taken and the results achieved, (3) the corrective steps that will be taken, and (4) the date when full compliance will be achieved.

Your response may reference or include previous docketed correspondence, if the correspondence adequately addresses the required response. If an adequate reply is not received within the time specified in this Notice, an order or a Demand for Information may be issued as to why the license should not be modified, suspended, or revoked, or why such other action as may be proper should not be taken. Where good cause is shown, consideration will be given to extending the response time.

If you contest this enforcement action, you should also provide a copy of your response, with the basis for your denial, to the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001.

Enclosure

Because your response will be made available electronically for public inspection in the NRC Public Document Room or from the NRC's document system (ADAMS), accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html>, to the extent possible, it should not include any personal privacy, proprietary, or safeguards information so that it can be made available to the public without redaction. If personal privacy or proprietary information is necessary to provide an acceptable response, then please provide a bracketed copy of your response that identifies the information that should be protected and a redacted copy of your response that deletes such information. If you request withholding of such material, you must specifically identify the portions of your response that you seek to have withheld and provide in detail the bases for your claim of withholding (e.g., explain why the disclosure of information will create an unwarranted invasion of personal privacy or provide the information required by 10 CFR 2.390(b) to support a request for withholding confidential commercial or financial information). If safeguards information is necessary to provide an acceptable response, please provide the level of protection described in 10 CFR 73.21.

In accordance with 10 CFR 19.11, you may be required to post this Notice within two working days of receipt.

Dated this 6th day of July 2017

COLUMBIA GENERATING STATION - FINAL SIGNIFICANCE DETERMINATION OF A WHITE FINDING, NOTICE OF VIOLATION, FOLLOW-UP ASSESSMENT LETTER, AND NRC INSPECTION REPORT 05000397/2017009 – JULY 5, 2017

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