**UNITED STATES**
**NUCLEAR REGULATORY COMMISSION**
REGION IV
1600 E. LAMAR BLVD.
ARLINGTON, TX 76011-4511

October 13, 2017

EA-17-085

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

SUBJECT: COLUMBIA GENERATING STATION - WITHDRAWAL OF NON-CITED VIOLATION IN NRC INSPECTION REPORT 05000397/2016009

Dear Mr. Reddemann:

On April 10, 2017, the U.S. Nuclear Regulatory Commission (NRC) issued Inspection Report 05000397/2016009 (Agencywide Document Access and Management System (ADAMS) Accession ML17100A499). In the inspection report, the NRC documented a preliminary White finding, a Green finding, and several non-cited violations (NCVs). These findings and violations were identified during a special inspection of an improperly packaged and manifested radwaste shipment sent by Columbia Generating Station to US Ecology on November 9, 2016.

On May 9, 2017, Energy Northwest provided a response (ADAMS Accession ML17129A627) that contested the Green finding and three of the NCVs documented in the April 10, 2017, inspection report. In a letter dated May 22, 2017 (ADAMS Accession ML17142A219), the NRC acknowledged receipt of the Energy Northwest letter and informed you that we would review the basis for contesting the NCVs and finding, and provide the results of our evaluation by written response.

In a letter dated July 31, 2017 (ADAMS Accession ML17212A914), the NRC documented that two of the three contested NCVs and the contested Green finding were upheld. In the same letter, the NRC indicated that the resolution of contested NCV 05000397/2016009-06, related to the failure to update the Final Safety Analysis Report with changes to radioactive waste processing and associated with Title 10 of the *Code of Federal Regulations* (10 CFR) 50.71(e), was being held in abeyance pending further review.

During the week of September 11, 2017, the NRC conducted a detailed onsite review of the May 9, 2017, response letter, the licensee's radioactive waste processing system including procedures and FSAR system description, and the regulatory requirements associated with 10 CFR 50.71(e). The review was conducted in accordance with Part I, Section 2.2.7, of the NRC Enforcement Manual by NRC staff who were not involved with the original inspection effort. After careful consideration of the bases for your contention, the NRC has concluded that the NCV associated with 10 CFR 50.71(e) will be withdrawn. The details are documented in the enclosure.

If you have any questions about this matter, please contact Heather Gepford, Chief, Plant Support Branch 2, at 817-200-1156.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice and Procedure," a copy of this letter and its enclosure 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.

Sincerely,

/RA/

Kriss M. Kennedy
Regional Administrator

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

Enclosure:
NRC Evaluation of Contested
Non-Cited Violation

cc w/encl. Columbia dist.

COLUMBIA GENERATING STATION - WITHDRAWAL OF NON-CITED VIOLATION IN NRC INSPECTION REPORT 05000397/2016009 DATED OCTOBER 13, 2017

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ADAMS ACCESSION NUMBER: ML17289A336

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## NRC Evaluation of Contested Non-Cited Violation

### Summary Statement of Non-Cited Violation (NCV) 05000397/2016009-06

The team identified a Severity Level IV non-cited violation of 10 CFR 50.71(e) for the failure of the licensee to periodically provide the NRC a Final Safety Analysis Report (FSAR) update with all changes made to the facility or procedures. Specifically, the licensee changed its radwaste management strategy for the spent fuel pool (SFP) cooling and cleanup system and material being stored in the SFP. However, the licensee had not changed its process control program or updated the FSAR to reflect the impact on waste streams from processing items stored in the SFP including activated metals, Tri-Nuclear® (Tri-Nuke) filters, filter socks, and demineralizer filter resins.

### Summary of Energy Northwest's Response

The licensee stated that it did not consider the SFP filter demineralizer waste stream a major system producing waste, and that the FSAR adequately describes the current radioactive waste practices of backwashing waste streams, such as from SFP filter demineralizers, floor drains, and waste collector filter demineralizers. This process is also adequately described in plant procedures. The licensee noted that the SFP filter demineralizer waste stream is not included as an individual waste stream because, as stated in the FSAR, Section 11.4.2.4, this waste stream is backwashed to the waste sludge phase separator tank together with other waste streams. The licensee does not consider the SFP filter demineralizer waste stream a major system producing waste, therefore it is not listed in the FSAR. The licensee contended that, since it is not considered a major system producing waste, describing the SFP filter demineralizer waste stream in the detail described in the NCV is beyond that which is required to be in the FSAR.

The licensee stated that the FSAR adequately describes the current radioactive waste practices of backwashing waste streams, such as from SFP filter demineralizers, floor drains, and waste collector filter demineralizers. This process is also adequately described in plant procedures. Therefore, it is the licensee's position that the FSAR adequately reflects current processes.

Regarding the issue that the FSAR does not specifically mention Tri-Nuke or sock filters in the dry active waste or dry solid waste system, the licensee contended that the FSAR Section 11.4.2.7 description of dry active waste consisting of "other similar materials" is inclusive of the Tri-Nuke and sock filters. Tri-Nuke filters are underwater filters and are similar in design to air filtration media, which is specifically listed in FSAR Section 11.4.2.7.

The licensee noted that Nuclear Energy Institute 98-03, "Guidelines for Updating Final Safety Analysis Reports," Revision 1, June 1999, discusses simplifying the FSAR to improve focus, clarity, and maintainability. Specifically, by not specifying brands of filters used in the SFP, the FSAR maintains required detail for a description of the types of items used yet allows for brand changes without a requirement to update the FSAR.

Licensee Conclusion

The licensee concluded that the failure to include the SFP system filter demineralizers as an individual waste stream or to specify underwater filters as a type of dry active waste did not impact safety or licensed activities. In addition, the licensee concluded that the lack of detail in

the FSAR is not required nor does it have an impact on how the licensee safely handles and disposes of the radiological material or the radiological safety of the plant workers or the public.

**NRC Evaluation of the Licensee Response**:

The circumstances surrounding the proposed violation of 10 CFR 50.71(e) were reviewed and are summarized as follows. Two main concerns were identified by the NCV:

(1) The FSAR does not adequately describe the waste path from the SFP filter demineralizers
(2) The FSAR does not adequately describe the Tri-Nuclear underwater filtration system, or its waste handling

Final Safety Analysis Report, Section 11.4.2.4, states that backwash resin wastes from the SFP filter demineralizers, floor drain, and waste collector filter demineralizers are backwashed to the waste sludge phase separator tank (FDR-TK-22). After each backwash batch is received by the separator, it is allowed to settle for a period of time and the decantate is then transferred by pumping to the floor drain collector tank.

Final Safety Analysis Report, Section 11.4.3.4, states that the wet wastes are characterized in individual waste streams for reactor water cleanup resins, equipment drain radioactive (EDR) and floor drain radioactive (FDR) powdered resins, EDR and FDR bead resins, and condensate resins. The description of the floor drain system states that wastes from the turbine building, reactor building, and radwaste building floor drain sumps are routinely monitored and collected for processing in the floor drain collector tank. The floor drain filter and demineralizer sludges are combined with equipment drain filters and sludges to form a mixture, which is sampled prior to processing.

Procedure SWP-RMP-02 “Radioactive Waste Process Control Program,” Section 2.1.3, states that resins from the EDR may be combined with SFP cooling and clean-up resins in tank FDR-TK-22. Section 2.1.4 states that the FDR resins are also pumped to tank FDR-TK-22. Tank FDR-TK-22 is the waste sludge phase separator tank, which is referenced in the FSAR, Section 11.4.2.4.

When the FSAR sections above are read independently, it is difficult to discern the system configuration. However, when read together, they describe a consistent flow path. Resins from the SFP filter demineralizers, EDR system, and FDR system are all backwashed to the waste sludge phase separator tank, also called tank FDR-TK-22. After a period of time, the sludge and the water separate, and the water is sent to the floor drain collector tank. Tank FDR-TK-22 is sampled and characterization is based on the sample results. The FSAR could be enhanced to allow easier understanding of how SFP filter demineralizer wastes are handled. Use of the term “individual waste streams” in the FSAR, when several are blended streams, is also confusing. However, this issue does not meet the threshold for a regulatory issue.

The second aspect of the NCV was that the team determined that there was not a formal evaluation on whether the SFP filter demineralizer should be considered its own major waste stream and the fact that waste stream characterizations had not been performed for SFP filter media since at least 2011.

Whether the SFP demineralizers is a major or minor waste producing system, accurate sampling prior to processing is critical to waste characterization. The onsite review determined

that wastes from the SFP demineralizer are sampled after blending with the EDR and FDR resins, and prior to processing, via tank FDR-TK-22. This blended waste stream is sampled on a biennial basis, in accordance with the Low-Level Waste Licensing Branch Technical Position on Radioactive Waste Classification, dated May 11, 1983. Further, a review of the past 10 years of samples from this waste stream showed a consistent ratio of cobalt-60 to strontium-90, nickel-63, iron-55 and plutonium-239, with sample to sample values falling within a factor of ten, and the performance value provided in Section C of the 1983 Branch Technical Position. Based upon this information, it was concluded that the licensee is following the guidance provided by the NRC for this waste stream.

The onsite review also evaluated whether the FSAR adequately described the Tri-Nuclear underwater filtration system, and the waste handling of Tri-Nuke and other filters, including characterization.

The licensee contended that the FSAR is not required to specify name brands and that the FSAR Section 11.4.2.7 description of dry active waste as including “other similar materials” was inclusive of the Tri-Nuke and sock filters. The onsite review determined that the FSAR, Section 11.4.2.7, “Miscellaneous Dry Solid Waste System,” states that dry active waste may consist of “air filtration media, miscellaneous paper, plastic, and rags from contaminated areas, contaminated clothing, tools, and equipment parts which cannot be effectively decontaminated, solid laboratory wastes, and other similar materials.” The NRC agreed that it was not the intent of the FSAR to specify brands of equipment used in the plant.

Licensee personnel indicated that because items typically stay in the SFP for years prior to shipment, they do not characterize them until they are preparing a shipment. The NRC determined this approach was acceptable for items stored in the SFP because the items are characterized before leaving the site. During the onsite review, it was determined that processing of the spent vacuum filters was previously performed using work orders, but has subsequently been included in Procedure PPM 11.2.23.45, “Management of Spent Fuel Pool Filters, Irradiated, and Non-Irradiated Items to Support Packaging, Transportation, and Disposal as Low-Level Waste.” The licensee will be referencing this in the next revision of the process control program (Action Request 370038-02).

Lastly, the onsite review by the NRC determined that the Tri-Nuke underwater vacuum system was not a plant structure, system,or component as described under 10 CFR 50.34(b). Rather, it is a vendor supplied temporary system, and as such is not required to be included in the licensee’s FSAR. Additionally, with the exception of adding the vendor supplied Tri-Nuke system, the licensee had not changed their radwaste management strategy for the spent fuel pool (SFP) cooling and cleanup system since plant start-up. As a result, there would be no changes dictating a requirement to update in the FSAR.

NRC Staff Conclusion

Based on further inspection of the issue, the NRC concludes that the finding documented in NRC Inspection Report 05000397/2016009 as NCV 05000397/2016009-06, “Failure to Update the Final Safety Analysis Report with Changes to Radioactive Waste Processing,” is withdrawn.