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July 30, 2024

GO2-24-060

10 CFR 2.201

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

Subject: **COLUMBIA GENERATING STATION, DOCKET NO. 50-397
REPLY TO A NOTICE OF VIOLATION; EA-21-170 and EA-23-054**

- References:
- 1) Nuclear Regulatory Commission (NRC) Letter EA-21-170, "Columbia Generating Station – Final Significance Determination of a White Finding, Notice of Violation and Follow-Up Assessment Letter; NRC Inspection Report 05000397/2023090," ML23111A237, dated June 1, 2023.
 - 2) NRC Letter EA-23-054, "Columbia Generating Station – Final Significance Determination of a White Finding, Notice of Violation and Follow-Up Assessment Letter; NRC Inspection Report 05000397/2023093," ML23276B477, dated November 1, 2023.
 - 3) Letter from D Brown (Energy Northwest) to US Nuclear Regulatory Commission, "Reply to a Notice of Violation; EA-21-170," ML23193B032, GO2-23-090, dated July 12, 2023.
 - 4) Letter from D Brown (Energy Northwest) to US Nuclear Regulatory Commission, "Supplement to Reply to a Notice of Violation; EA-21-170," ML23208A331, GO2-23-093, dated July 27, 2023.
 - 5) Letter from D Brown (Energy Northwest) to US Nuclear Regulatory Commission, "Reply to a Notice of Violation; EA-23-054," ML23348A359, GO2-23-130, dated December 14, 2023.
 - 6) Letter from D Brown (Energy Northwest) to US Nuclear Regulatory Commission, "Supplement to Reply to a Notice of Violation; EA-21-170," ML24008A181, GO2-24-005, dated January 8, 2024.

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Dear Sir or Madam:

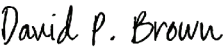
As required by 10 CFR 2.201, this letter provides Energy Northwest's reply to Notice of Violation EA-21-170 and EA-23-054 cited in the Nuclear Regulatory Commission (NRC) inspection reports (Reference 1 and Reference 2). The responses to the violations, as described in the enclosure, includes the reason for the violation, the corrective steps that have been taken and the results achieved, the corrective steps that will be taken, and the date when full compliance will be achieved.

This letter and accompanying enclosure supersede the enclosures of References 3, 4, 5 and 6.

There are no commitments being made to the NRC by this letter. Should you have any questions, please contact IR Bitner, Regulatory Compliance Supervisor, at (509) 377-4204.

Executed this 30th day of July, 2024.

Respectfully,

DocuSigned by:

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David P. Brown
Site Vice President

Enclosure: Reply to EA-21-170 and EA-23-054 Notice of Violations

cc: NRC Director Division of Operating Reactor Safety, Region IV
NRC Region IV Administrator
NRC NRR Project Manager
NRC Resident Inspector/988C
NRC Enforcement, Region IV
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Reply to EA-21-170 and EA-23-054 Notice of Violations**

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Energy Northwest accepts the violations documented in the Nuclear Regulatory Commission (NRC) Inspection Report 05000397/2023090 (Reference 1) and NRC Inspection Report 05000397/2023093 (Reference 2). Energy Northwest has recently conducted a new root cause to better encompass the event as a whole, incorporate external feedback, and provide a clearer layout of analysis and actions in a single root cause product. Energy Northwest has taken prompt action towards return to full compliance and has determined a comprehensive corrective action plan for long-term sustained compliance related to the violations noted in Reference 1 and Reference 2.

NRC letter dated June 1, 2023, (Reference 1) cited 3 (A-C) violations and NRC letter dated November 1, 2023 (Reference 2) cited 1 (D) violation. Responses required by the letters are below.

A. Violation of 10 CFR 20.1701

Notice of Violation

From NRC letter dated June 1, 2023:

10 CFR 20.1701 requires, in part, that the licensee shall use, to the extent practical, process or other engineering controls to control the concentration of radioactive material in air.

Contrary to the above, on May 28, 2021, the licensee failed to use, to the extent practical, process or other engineering controls to control the concentration of radiation material in air. Specifically, the licensee did not properly plan for the use of engineering controls with enough specificity in accordance with station procedures (i.e., procedure HPI-12.90, "Contamination Control Containment Devices") to ensure proper control for installation and removal of the glove bag, which is used to prevent airborne contamination. The failure to ensure proper control of the glove bag resulted in an airborne contamination event that caused two individuals to receive internal doses of greater than 700 millirem committed effective dose equivalent.

Reason for Violation

The root cause of the violation was Radiation Protection (RP) Leaders were ineffective in shaping organizational behaviors and reinforcement of programmatic standards leading to inadequate demonstration of radiological command and controls. Contributing causes included:

- A procedure allowed crediting an engineering control to determine risk level.

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- Radiation Services personnel did not demonstrate a prudent approach when making several decisions related to control of the job.
- Job planning activities were not rigorous enough to promote consistent job performance.
- RP Technicians, RP Leads, and RP Supervisors did not uphold fundamental radiation safety standards related to positive RP command and control and adherence to relevant procedures.

Corrective Steps and Results Achieved

Immediate actions taken include:

- A formal stop work order was issued for the evolution, and the entire project team conducted a stand down to discuss the event (including immediate lessons learned).
- A prompt Human Performance event investigation was performed, and individuals involved in the event were interviewed.
- The Radiation Work Permit (RWP) was revised to require respirators to be worn during pipe preparations for the remaining two pipe weld preparations.
- The dayshift Radiation Protection Technicians were tasked to prepare, install, and remove the glove bags since they were more proficient with glove bag use.

Additional actions taken include:

- The station Health Physics Instruction HPI-12.90, "Contamination Control Containment Devices" was updated to add a requirement for just-in-time-training via mockup, a formal written plan, and include guidance on having a secondary engineering control in the event the containment device is breached or fails to function as designed.
- The station Plant Procedure Manual 11.2.8.2, "Radiation Work Permit Preparation and Use" was revised to include a hold point when glove bags are used to control the spread of radioactivity to the air as well as require size and type of glove bag to be specified as part of the RWP and to re-evaluate risk categorization when revising an RWP due to field conditions.
- A benchmark of the As Low As Reasonably Achievable (ALARA) planning process to include risk levels was conducted.

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- The station Plant Procedure Manual 11.2.2.12, “Radiological Risk Assessment and Management” was updated to determine initial risk assuming no elimination or mitigation actions, define risk mitigation and risk elimination actions, and only allow the risk categorization to credit an action that eliminates the risk.
- Gap training was performed for qualified individuals and RP supervisors on the revised Radiological Risk Assessment and Management procedure.
- The station Health Physics Instruction HPI-0.41, “Expectations for Radiological Job Coverage” was revised to include RP responsibilities for installation and removal of containment devices.
- The station Plant Procedure Manual 11.2.2.11 “Exposure Evaluations for Maintaining [Total Effective Dose Equivalent] TEDE ALARA” was revised to ensure a TEDE ALARA evaluation is performed when using an engineering control.
- Initial and periodic evaluated Dynamic Learning Activities were created for Energy Northwest and Contractor RP Technicians, RP Supervisors, and case studies / tabletop for ALARA Planners and Support Staff to include Fundamental Radiation Safety Standards, positive RP command and control of radiological work activities and prudent over simply allowable approach to decisions related to control of radiological jobs.
- RP monthly all-hands agenda was modified to engage the team in RP performance in radiological safety standards, positive RP command and control, and the prudent approach to decision making rather than simply allowable approach.

Corrective Steps that Will be Taken

- RP supervisors will document one observation a month (for six months) that focuses on one of the following:
 - ALARA risk assessment and planning details including the identification and incorporation of steps necessary to support RWP and Job Work Packages and consistent performance.
 - The adequacy of pre-job briefs and job turnovers.
 - The demonstration of radiological safety standards, positive RP command and control, and a prudent approach to decision making over simply allowable.

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- An interim effectiveness review is currently scheduled for completion by November 29, 2024, with the final effectiveness review currently scheduled for completion by August 31, 2025, following the next refueling outage.

Date of Full Compliance

Full compliance with 10 CFR 20.1701 was achieved upon completion of all actions, with the exception of the Effectiveness Review, under Condition Report 00420829 on December 28, 2022.

B. Violation of Technical Specification 5.7.2.b

Notice of Violation

From NRC letter dated June 1, 2023:

Technical Specification 5.7.2.b requires, in part, that access to, and activities in, each high radiation area with dose rates greater than 1.0 rem/hour at 30 centimeters from the radiation source shall be controlled by means of a radiation work permit.

Radiation work permit 30004732, created to control activities in a Technical Specification 5.7.2.b high radiation area, required, in part, that continuous Health Physics job coverage is provided when personnel are entering and working in areas with dose rates greater than 0.8 rem/hour.

Contrary to the above, on May 28, 2021, the licensee failed to control the activities in a high radiation area with dose rates greater than 1.0 rem/hour at 30 centimeters from the radiation source in accordance with radiation work permit 30004732. Specifically, the licensee failed to follow radiation work permit 30004732 and provide continuous Health Physics job coverage when personnel entered and worked in an area with dose rates greater than 0.8 rem/hour (i.e., 1.3 rem/hour at 30 centimeters from the radiation source). A radiation protection technician, scheduled to provide the continuous Health Physics job coverage, was unable to physically fit on the work area platform and left the workers unattended in the area. A second radiation protection technician subsequently replaced the original technician as the workers were conducting job activities in the work area.

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Reason for Violation

The root cause of the violation was Radiation Protection (RP) Leaders were ineffective in shaping organizational behaviors and reinforcement of programmatic standards leading to inadequate demonstration of radiological command and controls. Contributing causes included:

- Radiation Services personnel did not demonstrate a prudent approach when making several decisions related to control of the job.
- RP Technicians, RP Leads, and RP Supervisors did not uphold fundamental radiation safety standards related to positive RP command and control and adherence to relevant procedures.

Corrective Steps and Results Achieved

- Initial and periodic evaluated Dynamic Learning Activities were created for Energy Northwest and Contractor RP Technicians, RP Supervisors, and case studies / tabletop for ALARA Planners and Support Staff to include Fundamental Radiation Safety Standards, positive RP command and control of radiological work activities and prudent over simply allowable approach to decisions related to control of radiological jobs.
- RP monthly all-hands agenda was modified to engage the team in RP performance in radiological safety standards, positive RP command and control, and the prudent approach to decision making rather than simply allowable approach.
- Pre-outage RP leader 'on-boarding' training was created for permanent and outage support leadership focusing on clearly setting direction, building trust, and responding to concerns.
- Revised the Radiological Planning and Reviews procedure to incorporate an ALARA plan review tool for elevated and high radiological risk ALARA Plans.
- Created a new Health Physics Instruction related to outage preparation activities for Radiation Protection.

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Corrective Steps that Will be Taken

- RP supervisors will document one observation a month (for six months) that focuses on one of the following:
 - ALARA risk assessment and planning details including the identification and incorporation of steps necessary to support RWP and Job Work Packages and consistent performance.
 - The adequacy of pre-job briefs and job turnovers.
 - The demonstration of radiological safety standards, positive RP command and control, and a prudent approach to decision making over simply allowable.
- An interim effectiveness review is currently scheduled for completion by November 29, 2024, with the final effectiveness review currently scheduled for completion by August 31, 2025, following the next refueling outage.

Date of Full Compliance

Full compliance was achieved on May 29, 2021, upon approval of return-to-work criteria.

C. Violation of 10 CFR 20.1501(a)(2)

Notice of Violation

From NRC letter dated June 1, 2023:

10 CFR 20.1501(a)(2) requires, in part, that licensees shall make surveys of areas that are reasonable under the circumstances to evaluate the magnitude and extent of radiation levels; and concentrations or quantities of residual radioactivity.

Contrary to the above, on May 27, 2021, the licensee failed to make surveys of areas that were reasonable under the circumstances to evaluate the magnitude and extent of radiation levels; and concentrations or quantities of residual radioactivity. Specifically, the licensee failed to adequately determine the work area radiation levels as documented in survey M-20210528-13, which stated, the survey “was not an extensive search for the highest exposure rate.” In addition, the licensee failed to adequately evaluate the extent of contamination levels on the piping prior to the work activity. The surveys completed prior to the event did not adequately identify work area dose rates and did not identify appropriate contamination levels, resulting in a lower risk rating to the job and less rigorous radiological controls for the activity.

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Reason for Violation

The root cause of the violation was Radiation Protection (RP) Leaders were ineffective in shaping organizational behaviors and reinforcement of programmatic standards leading to inadequate demonstration of radiological command and controls. Contributing causes included:

- RP Technicians, RP Leads, and RP Supervisors did not uphold fundamental radiation safety standards related to positive RP command and control and adherence to relevant procedures.
- Inadequate survey review & approval process.

Corrective Steps and Results Achieved

- Initial and periodic evaluated Dynamic Learning Activities were created for Energy Northwest and Contractor RP Technicians, RP Supervisors, and case studies / tabletop for ALARA Planners and Support Staff to include Fundamental Radiation Safety Standards, positive RP command and control of radiological work activities and prudent over simply allowable approach to decisions related to control of radiological jobs.
- RP monthly all-hands agenda was modified to engage the team in RP performance in radiological safety standards, positive RP command and control, and the prudent approach to decision making rather than simply allowable approach.
- Pre-outage RP leader 'on-boarding' training was created for permanent and outage support leadership focusing on clearly setting direction, building trust, and responding to concerns.
- Created a new Health Physics Instruction related to outage preparation activities for Radiation Protection.
- A survey review check list has been developed to use in approval of radiological surveys when surveys are documented.

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Corrective Steps that Will be Taken

- RP supervisors will document one observation a month (for six months) that focusses on one of the following:
 - ALARA risk assessment and planning details including the identification and incorporation of steps necessary to support RWP and Job Work Packages and consistent performance.
 - The adequacy of pre-job briefs and job turnovers.
 - The demonstration of radiological safety standards, positive RP command and control, and a prudent approach to decision making over simply allowable.
- An interim effectiveness review is currently scheduled for completion by November 29, 2024, with the final effectiveness review currently scheduled for completion by August 31, 2025, following the next refueling outage.

Date of Full Compliance

Full compliance was achieved on May 29, 2021, upon approval of return-to-work criteria.

D. Violation of 10 CFR 20.1204(a)

Notice of Violation

From NRC letter dated November 1, 2023:

10 CFR 20.1204(a) requires, in part, that the licensee shall, when required under 10 CFR 20.1502, take suitable and timely measurements of: (1) concentrations of radioactive materials in air in work areas; or (2) quantities of radionuclides in the body; or (3) quantities of radionuclides excreted from the body; or (4) combinations of these measurements, to determine compliance with occupational dose equivalent limits.

10 CFR 20.1502(b)(1) requires, in part, that the licensee shall monitor the occupational intake of radioactive material by and assess the committed effective dose equivalent to adults likely to receive, in 1 year, an intake in excess of 10 percent of the annual limit on intake.

Contrary to the above, on May 28, 2021, when required under 10 CFR 20.1502, the licensee failed to take suitable and timely measurements of: (1) concentrations of radioactive materials in air in work areas; or (2) quantities of radionuclides in the body; or (3) quantities of radionuclides excreted from the

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body; or (4) combinations of these measurements, to determine compliance with occupational dose equivalent limits. Specifically, the licensee failed to: (1) take measurements of the concentrations of radioactive materials in the air at the work area and instead used a general area air sample point located approximately 15 feet away from the pipefitters receiving the intake of radioactive material; (2) properly evaluate alpha emitters, which would not be adequately detected using whole-body counts; (3) follow station procedures for in vitro monitoring by not conducting feces sampling or establishing elimination trends; or (4) use a combination of measurements from above to determine compliance with occupational dose equivalent limits.

Reason for Violation

The following were identified as the root causes of the violation:

The root causes of the violation were:

- Radiation Protection (RP) Leaders were ineffective in shaping organizational behaviors and reinforcement of programmatic standards leading to inadequate demonstration of radiological command and controls.
- Procedure for bioassay were inadequate in that they were not easy to follow, requiring personnel with specialized experience to implement, and requiring exercising "professional judgement" to successfully determine the correct course of action.

Corrective Steps and Results Achieved

- Initial and periodic evaluated Dynamic Learning Activities were created for Energy Northwest and Contractor RP Technicians, RP Supervisors, and case studies / tabletop for ALARA Planners and Support Staff to include Fundamental Radiation Safety Standards, positive RP command and control of radiological work activities and prudent over simply allowable approach to decisions related to control of radiological jobs.
- RP monthly all-hands agenda was modified to engage the team in RP performance in radiological safety standards, positive RP command and control, and the prudent approach to decision making rather than simply allowable approach.
- Bioassay procedures were revised to reduce the level of professional judgement and more systematically assess and document dose based on quantities of radionuclides in the body.
- The station bioassay procedure was revised to require an external peer check if CEDE exceeds 100 mRem.

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Corrective Steps that Will be Taken

- Interim effectiveness reviews are currently scheduled for completion by November 29, 2024, for first root cause and October 31, 2024, for second root cause with the final effectiveness reviews currently scheduled for completion by August 31, 2025, following the next refueling outage.

Date of Full Compliance

Full compliance with 10 CFR 20.1204(a) was achieved upon completion of re-assessment of assigned internal dose for workers who received internal contamination during the Refueling Outage 25 Reactor Water Cleanup pipe weld contamination event on December 28, 2023.