



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

January 16, 2015

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

SUBJECT: COLUMBIA GENERATING STATION - PLAN FOR THE ONSITE AUDIT  
REGARDING IMPLEMENTATION OF MITIGATING STRATEGIES AND  
RELIABLE SPENT FUEL POOL INSTRUMENTATION RELATED TO  
ORDERS EA-12-049 AND EA-12-051 (TAC NOS. MF0796 AND MF0797)

Dear Mr. Reddemann:

On March 12, 2012, the U.S. Nuclear Regulatory Commission (NRC) issued Order EA-12-049, "Issuance of Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond Design-Basis External Events" and Order EA-12-051, "Issuance of Order to Modify Licenses With Regard To Reliable Spent Fuel Pool Instrumentation," (Agencywide Documents Access and Management System (ADAMS) Accession Nos. ML12054A736 and ML12054A679, respectively). The orders require, in part, that all holders of operating reactor licenses and construction permits issued under Title 10 of the *Code of Federal Regulations* Part 50 to submit for review Overall Integrated Plans (OIPs), including descriptions of how compliance with the requirements of Attachment 2 of each order will be achieved.

By letter dated February 28, 2013 (ADAMS Accession No. ML13071A614), Energy Northwest (the licensee) submitted its OIP for Columbia Generating Station (Columbia) in response to Order EA-12-049. By letters dated August 28, 2013, February 27, and August 28, 2014 (ADAMS Accession Nos. ML1325A180, ML14073A122, and ML14254A403, respectively), the licensee submitted its first three six-month updates to the OIP. By letter dated August 28, 2013 (ADAMS Accession No. ML13234A503), the NRC notified all licensees and construction permit holders that the staff is conducting audits of their responses to Order EA-12-049 in accordance with NRC Office of Nuclear Reactor Regulation (NRR) Office Instruction LIC-111, "Regulatory Audits" (ADAMS Accession No. ML082900195). This audit process led to the issuance of the Columbia interim staff evaluation (ISE) on January 29, 2014 (ADAMS Accession No. ML13337A365) and continues with in-office and onsite portions of this audit.

By letter dated February 28, 2013 (ADAMS Accession No. ML13071A470), the licensee submitted its OIP for Columbia in response to Order EA-12-051. By letter dated June 20, 2013 (ADAMS Accession No. ML13165A093), the NRC staff issued a request for additional information (RAI). By letters dated July 19, and August 23, 2013, and February 27, and August 28, 2014 (ADAMS Accession Nos. ML13274A241, ML13248A448, ML14069A078, and ML14254A408, respectively), the licensee submitted its RAI response and first three six-month updates to the OIP. By letter dated November 7, 2013 NRC staff issued the Columbia ISE and RAI (ADAMS Accession No. ML13302C136). By letter dated March 26, 2014 (ADAMS Accession No. ML14083A620), the NRC notified all licensees and construction permit holders

M. Reddemann

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that the staff is conducting in-office and onsite audits of their responses to Order EA-12-051 in accordance with NRC NRR Office Instruction LIC-111, as discussed above.

The ongoing audit process, to include the in-office and onsite portions, allows the NRC staff to assess whether it has enough information to make a safety evaluation of the OIPs. The audit allows the NRC staff to review open and confirmatory items from the mitigation strategies ISE, RAI responses from the spent fuel pool instrumentation ISE, the licensee's integrated plans, and other audit questions. Additionally, the NRC staff gains a better understanding of submitted information, identifies additional information necessary for the licensee to supplement its plan, and identifies any staff potential concerns. The audit's onsite portion will occur prior to declarations of compliance for the first unit at each site.

This document outlines the on-site audit process that occurs after ISE issuance, as licensees provide new or updated information via periodic updates, update audit information on e-portals, provide preliminary Overall Program Documents/Final Integrated Plans, and continue in-office audit communications with staff while proceeding towards compliance with the orders.

The NRC staff plans to conduct an onsite audit at Columbia in accordance with the enclosed audit plan from February 2- 5, 2015.

If you have any questions, please contact me at 301-415-1544 or by e-mail at [stephen.monarque@nrc.gov](mailto:stephen.monarque@nrc.gov).

Sincerely,



Stephen R. Monarque, Project Manager  
Orders Management Branch  
Japan Lessons-Learned Division  
Office of Nuclear Reactor Regulation

Docket No.: 50-397

Enclosure:  
Audit plan

cc w/encl: Distribution via Listserv

**Audit Plan  
Columbia Generating Station**

**BACKGROUND AND AUDIT BASIS**

On March 12, 2012, the U.S. Nuclear Regulatory Commission (NRC) issued Order EA-12-049, "Issuance of Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond Design-Basis External Events" and Order EA-12-051, "Issuance of Order to Modify Licenses With Regard To Reliable Spent Fuel Pool Instrumentation," (Agencywide Documents Access and Management System (ADAMS) Accession Nos. ML12054A736 and ML12054A679, respectively). Order EA-12-049 directs licensees to develop, implement, and maintain guidance and strategies to maintain or restore core cooling, containment, and spent fuel pool (SFP) cooling capabilities in the event of a beyond-design-basis external event (BDBEE). Order EA-12-051 requires, in part, that all operating reactor sites have a reliable means of remotely monitoring wide-range SFP levels to support effective prioritization of event mitigation and recovery actions in the event of a BDBEE. The orders require, in part, that all holders of operating reactor licenses and construction permits issued under Title 10 of the *Code of Federal Regulations* Part 50 to submit for review, Overall Integrated Plans (OIPs), including descriptions of how compliance with the requirements of Attachment 2 of each order will be achieved.

By letter dated February 28, 2013 (ADAMS Accession No. ML13071A614), Energy Northwest (the licensee) submitted its OIP for Columbia Generating Station (Columbia) in response to Order EA-12-049. By letters dated August 28, 2013, February 27, and August 28, 2014 (ADAMS Accession Nos. ML1325A180, ML14073A122, and ML14254A403, respectively), the licensee submitted its first three six-month updates to the OIP. By letter dated August 28, 2013 (ADAMS Accession No. ML13234A503), the NRC notified all licensees and construction permit holders that the staff is conducting audits of their responses to Order EA-12-049 in accordance with NRC Office of Nuclear Reactor Regulation (NRR) Office Instruction LIC-111, "Regulatory Audits" (ADAMS Accession No. ML082900195). The purpose of the NRC staff's audit is to determine the extent to which the licensees are proceeding on a path towards successful implementation of the actions needed to achieve full compliance with the order. This audit process led to the issuance of the Columbia interim staff evaluation (ISE) on January 29, 2014, (ADAMS Accession No. ML13337A365) and continues with in-office and onsite portions of this audit.

By letter dated February 28, 2013 (ADAMS Accession No. ML13071A470), the licensee submitted its OIP for Columbia in response to Order EA-12-051. By letter dated June 20, 2013 (ADAMS Accession No. ML13165A093), the NRC staff issued a request for additional information (RAI). By letters dated July 19, and August 23, 2013, and February 27, and August 28, 2014 (ADAMS Accession Nos. ML13274A241, ML13248A448, ML14069A078, and ML14254A408, respectively), the licensee submitted its RAI response and first three six-month updates to the OIP. The NRC staff issued the Columbia ISE and RAI on November 7, 2013 (ADAMS Accession No. ML13302C136). By letter dated March 26, 2014 (ADAMS Accession No. ML14083A620), the NRC notified all licensees and construction permit holders that the staff is conducting in-office and onsite audits of their responses to Order EA-12-051 in accordance with NRC NRR Office Instruction LIC-111, as discussed above.

Enclosure

The ongoing audit process, to include the in-office and onsite portions, allows the NRC staff to assess whether it has enough information to make a safety evaluation of the OIPs. The audit allows the NRC staff to review open and confirmatory items from the mitigation strategies ISE, RAI responses from the spent fuel pool instrumentation (SFPI) ISE, the licensee's OIPs, and other audit questions. Additionally, the NRC staff gains a better understanding of submitted information, identifies additional information necessary for the licensee to supplement its plan, and identifies any staff potential concerns. The audit's onsite portion will occur prior to declarations of compliance for the first unit at each site.

This document outlines the on-site audit process that occurs after ISE issuance as licensees provide new or updated information via periodic updates, update audit information on e-portals, provide preliminary Overall Program Documents (OPDs)/Final Integrated Plans (FIPs), and continue in-office audit communications with staff while proceeding towards compliance with the orders.

Following the licensee's declarations of order compliance, the NRC staff will evaluate the Integrated Plan as supplemented, the resulting site-specific OPDs/FIPs, and, as appropriate, other licensee submittals based on the requirements in the orders. For Order EA-12-049, the NRC staff will make a safety determination regarding order compliance using the Nuclear Energy Institute (NEI) developed guidance document NEI 12-06, "Diverse and Flexible Coping Strategies (FLEX) Implementation Guide" issued in August, 2012 (ADAMS Accession No. ML12242A378), as endorsed by NRC Japan Lessons-Learned Project Directorate (JLD) interim staff guidance (ISG) JLD-ISG-2012-01 "Compliance with Order EA-12-049, 'Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events'" (ADAMS Accession No. ML12229A174). For Order EA-12-051, the NRC staff will make a safety determination regarding order compliance using the NEI developed guidance 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'" (ADAMS Accession No. ML12240A307), as endorsed, with exceptions and clarifications, by NRC ISG JLD-ISG-2012-03 "Compliance with Order EA-12-051, 'Reliable Spent Fuel Pool Instrumentation'" (ADAMS Accession No. ML12221A339). Should the licensee propose an alternative strategy or other method deviating from the guidance, additional staff review will be required to evaluate the alternative strategy in reference to the applicable order.

## AUDIT SCOPE

As discussed, onsite audits will be performed per NRR Office Instruction LIC-111, "Regulatory Audits," to support the development of safety evaluations. Site-specific Integrated Plan and OPDs/FIPs rely on equipment and procedures that apply to all units at a site, therefore, audits will be planned to support the "first unit at each site." On-site audits for subsequent units at a site will be on an as-needed basis.

The purpose of this audit is to obtain and review information responsive to the Columbia Integrated Plan, as supplemented, open and confirmatory items from the mitigation strategies ISE, RAI responses from the SFPI ISE, and to observe and gain a better understanding of the basis for the site's overall programs to ensure the licensee is on the correct path for compliance with the Mitigation Strategies and Spent Fuel Instrumentation orders. These may include, but are not limited to:

- Onsite review and discussion for the basis and approach for detailed analysis and calculations (Orders EA-12-049, EA-12-051);
- Walk-throughs of strategies and laydown of equipment to assess feasibility, timing, and effectiveness of a given mitigating strategy or integration of several strategies (Order EA-12-049);
- Storage, protection, access, and deployment feasibility and practicality for onsite portable equipment (Order EA-12-049);
- Evaluation of staging, access, and deployment of offsite resources to include National SAFER Response Center (NSRC) provided equipment (Order EA-12-049); and
- Review dimensions and sizing of the SFP area, placement of the SFP level instrumentation, and applicable mounting methods and design criteria (Order EA-12-051).

**NRC AUDIT TEAM**

<b>Title</b>	<b>Team Member</b>
Lead Project Manager	Stephen Monarque
Technical Support	Kevin Roche
Technical Support	Prem Sahay
Technical Support	Duc Nguyen
Technical Support	Josh Miller

**NRC AUDIT TEAM SUPPLEMENTAL AUDIT MEMBERS**

<b>Title</b>	<b>Team Member</b>
Deputy Director Japan Lessons Learned Division	Michael Franovich
Branch Chief Policy & Support Branch	Gregory Bowman
Branch Chief Hazards Management Branch	Sheena A. Whaley
Senior Project Manager	Victor Hall

**LOGISTICS**

The audit will be conducted onsite at Columbia on February 2-5, 2015. Entrance and exit briefings will be held with the licensee at the beginning and end of the audit, respectively, as well as daily briefings of team activities. Additional details will be addressed over the phone. A more detailed schedule is provided below.

A private conference room is requested for NRC audit team use with access to audit documentation upon arrival and as needed.

## DELIVERABLES

An audit report/summary will be issued to the licensee within 90 days from the end of the audit.

## INFORMATION NEEDS

- Materials/documentation provided in responses to open or confirmatory items and RAIs in the Columbia ISEs;
- OPD/FIP (current version), operator procedures, operator training plans, NSRC playbook; and
- Materials/documentation for staff audit questions and/or the licensee OIP identified open items as listed in the Part 2 table below

To provide supplemental input to the ongoing audit of documents submitted to the NRC and made available via e-portal, the onsite audit will have three components: 1) a review of the overall mitigating strategies for the site, including, walk-throughs of strategies and equipment laydown of select portions; 2) a review of material relating to open or confirmatory items and RAIs from the ISEs, staff audit questions, and the licensee open items; and 3) additional specific issues requested by NRC technical reviewers related to preparation of a safety evaluation. Each part is described in more detail below:

### Part 1 - Overall Mitigating Strategies and Program Review:

During the onsite audit, please be prepared to conduct a tabletop discussion of the site's integrated mitigating strategies and SFPI compliance program. This discussion should address the individual components of the plans, as well as the integrated implementation of the strategies including a timeline. The licensee team presenting this should include necessary representatives from site management, engineering, training, and operations that were responsible for program development, and will be responsible for training and execution.

Following the tabletop discussion, please be prepared to conduct walk-throughs of procedures and demonstrations of equipment as deemed necessary by NRC audit team members. Include representatives from engineering and operations that will be responsible for training and execution. At this time we expect, at a minimum, to walk-through the items below. Based on the tabletop presentations and audit activities, this list may change.

### WALK-THROUGH LIST:

1. Walk-through a sample of strategies that will be delineated by specific NRC staff audit team members
2. Walk-through of portable (FLEX) diesel generator (DG) procedures, to include power supply pathways, areas where manual actions are required, and electrical isolation

3. Walk-through of building access procedures, to include any unique access control devices
4. Strategy walk-through of transfer routes from staging and storage areas to deployment locations for both onsite and offsite equipment
5. Strategy walk-through for core cooling and reactor coolant system (RCS) inventory, to include portable pumping equipment, flow paths, and water storage locations and the related reactor systems analysis and calculations
6. Walk-through of communications enhancements, described in the licensee's submittal dated October 30, 2012, as supplemented by letter dated February 21, 2013 (ADAMS Accession No. ML12319A079 and ML130720726, respectively), and the NRC staff's assessment for Columbia, dated April 11, 2013 (ADAMS Accession No. ML13091A295).
7. Walk-through of SFP area, SFPI locations, and related equipment mounting areas

Part 2 – Specific Technical Review Items:

During the visit, the following audit items will be addressed from the Columbia ISEs: open items, confirmatory items, and SFPI RAIs; Columbia audit question list; and the licensee's OIP. Please provide documents or demonstrations as needed to respond to each item.

Part 3 – Specific Topics for Discussion:

1. Draft of Columbia OPD/FIP
2. Portable (FLEX) equipment maintenance and testing
3. NSRC Plan for Columbia

### **Proposed Schedule for Columbia Audit**

#### **Onsite Day 1, Monday February 2, 2015**

08:00 Check in at site; Badging and Dosimetry

10:00 Energy Northwest Presentation of strategies

12:00 Introductions of site management

12:30 Lunch

13:30 NRC Audit Team Activities

- Technical area break-out discussions between NRC and Energy Northwest staff in the areas of reactor systems, electrical, balance of plant/structures, and others
- Review documents relating to open or confirmatory items, request for additional items, codes, analyses, etc.

16:30 NRC Audit Team meeting

17:00 Team lead daily debrief/next day planning with Energy Northwest

#### **Onsite Day 2, Tuesday, February 3, 2015**

08:00 Continue NRC Audit Team Activities

- Review documents relating to open or confirmatory items, RAIs, codes, analyses, etc.
- Mitigating Strategies/SFPI walk-throughs with Energy Northwest

12:00 Lunch

13:00 Continue NRC Audit Team Activities

16:30 NRC Audit Team meeting

17:00 Team lead daily debrief/next day planning with Energy Northwest

#### **Onsite Day 3, Wednesday, February 4, 2015**

08:00 Continue NRC Audit Team Activities

12:00 Lunch

13:00 Continue NRC Audit Team Activities

16:30 NRC Audit Team meeting

17:00 Team lead daily debrief/next day planning with Energy Northwest

**Onsite Day 4, Thursday, February 5, 2015**

08:00 Continue NRC Audit Team Activities

12:00 Lunch

13:00 Continue NRC Audit Team Activities

15:00 NRC and Energy Northwest pre-exit meeting

16:00 Exit meeting with Energy Northwest

construction permit holders that the staff is conducting in-office and onsite audits of their responses to Order EA-12-051 in accordance with NRC NRR Office Instruction LIC-111, as discussed above.

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If you have any questions, please contact me at 301-415-1544 or by e-mail at [stephen.monarque@nrc.gov](mailto:stephen.monarque@nrc.gov).

Sincerely,  
*/RA/*  
 Stephen R. Monarque, Project Manager  
 Orders Management Branch  
 Japan Lessons-Learned Division  
 Office of Nuclear Reactor Regulation

Docket No.: 50-397

Enclosure:  
 Audit plan  
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\* via email

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