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June 30, 2015
GO2-15-093 EA-13-109

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

Subject: **COLUMBIA GENERATING STATION, DOCKET NO. 50-397
ENERGY NORTHWEST'S SECOND SIX-MONTH STATUS UPDATE REPORT FOR THE IMPLEMENTATION OF NRC ORDER EA-13-109 – OVERALL INTEGRATED PLAN FOR RELIABLE HARDENED CONTAINMENT VENTS UNDER SEVERE ACCIDENT CONDITIONS**

References:
1. NRC Order EA-12-050, "Order Modifying Licenses with Regard to Reliable Hardened Containment Vents," March 12, 2012
2. NRC Order EA-13-109, "Order to Modify Licenses with Regard to Reliable Hardened Containment Vents Capable of Operation under Severe Accident Conditions," June 6, 2013
3. Letter GO2-14-107, dated June 30, 2014, from DA Swank, Energy Northwest, to the NRC, "Energy Northwest's Phase 1 Response to NRC Order EA-13-109 – Overall Integrated Plan for Reliable Hardened Containment Vents under Severe Accident Condition"
4. Letter GO2-14-175, dated December 17, 2014, from DA Swank, Energy Northwest, to the NRC, "Energy Northwest's First Six-Month Status Update Report for the Implementation of NRC Order EA-13-109 – Overall Integrated Plan for Reliable Hardened Containment Vents under Severe Accident Conditions"

Dear Sir or Madam,

On March 12, 2012, the Nuclear Regulatory Commission (NRC) issued Order EA-12-050, (Reference 1) which directed Energy Northwest's Columbia Generating Station (Columbia) to have a reliable hardened vent to remove decay heat and maintain control of containment pressure within acceptable limits following events that result in the loss of active containment heat removal capability or prolonged Station Blackout.

On June 6, 2013, the NRC issued Order EA-13-109; (Reference 2) which rescinded the requirements imposed in Section IV and Attachment 2 of Order EA-12-050 and replaced

them with the requirements contained in Section IV and Attachment 2 of Order EA-13-109. Order EA-13-109, Section IV, D.1 required all licensees to submit an Overall Integrated Plan (OIP) including a description of how compliance with the Phase 1 requirements described in Attachment 1 of the Order will be achieved.

In Reference 3, Energy Northwest submitted Columbia's OIP for the installation of a reliable hardened severe accident capable wetwell vent and in Reference 4, submitted the first 6-month update for that plan.

The attachment to this letter provides Energy Northwest's second six-month update report of Columbia's status of implementing Order EA-13-109 pursuant to Section IV, Condition C.2 of Reference 2.

There are no new or revised regulatory commitments contained 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 23rd day of June, 2015

Respectfully,

D.A. Swank
Assistant Vice President, Engineering

Attachment Second Six-Month Status Update Report for the Implementation of NRC Order EA-13-109

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

# ENERGY NORTHWEST'S SECOND SIX-MONTH STATUS UPDATE REPORT FOR THE IMPLEMENTATION OF NRC ORDER EA-13-109 – OVERALL INTEGRATED PLAN FOR RELIABLE HARDENED CONTAINMENT VENTS UNDER SEVERE ACCIDENT CONDITIONS

## ATTACHMENT

## COLUMBIA GENERATING STATION, DOCKET NO. 50-397

## SECOND SIX-MONTH STATUS UPDATE REPORT FOR THE IMPLEMENTATION OF NRC ORDER EA-13-109

## 1.0 Introduction

On March 12, 2012, the Nuclear Regulatory Commission (NRC) issued Order EA-12-050, (Reference 1) which directed Energy Northwest's Columbia Generating Station (Columbia), to have a reliable hardened containment vent (HCV) to remove decay heat and maintain control of containment pressure within acceptable limits following events that result in the loss of active containment heat removal capability or prolonged Station Blackout.

On June 6, 2013, the NRC issued Order EA-13-109; (Reference 2) which rescinded the requirements imposed in Section IV and Attachment 2 of Order EA-12-050 and replaced them with the requirements contained in Section IV and Attachment 2 of Order EA-13-109. Order EA-13-109, Section IV, D.1 required all licensees with Mark I and Mark II containments to submit an Overall Integrated Plan (OIP) including a description of how compliance with the Phase 1 requirements described in Attachment 2 of the Order will be achieved. In Reference 3, Energy Northwest submitted Columbia's Overall Integrated Plan (OIP) for the installation of a reliable, severe accident capable, hardened containment venting system.

Section IV, Condition D.3, of Reference 2 also required status reports at 6-month intervals following the submittal of the Phase 1 OIP. This report is Energy Northwest's second six-month status report of Columbia's implementation of Phase 1 for Order EA-13-109.

## 2.0 Milestone Accomplishments

The following milestones have been completed since the update submitted on December 17, 2014.

- Submittal of second 6-month update

## 3.0 Milestone Schedule Status

The following provides an updated milestone schedule to support reliable hardened vent OIP. There are three Target Completion Date changes due to design development delays. These changes have not impacted the overall scheduled completion.

| Milestones | Target Completion Date | Activity Status | Revised Target Completion Date |
|---|---|---|---|
| **Correspondence & Reports:** | | | |
| Submit the Reliable Hardened Containment Vents under Severe Accident Conditions Overall Integrated Plan for Phase 1 | Jun 30, 2014 | Completed | N/A |
| First Status Update Report for the Overall Reliable Hardened Containment Vents under Severe Accident Conditions Integrated Plan for Phase 1 | Dec 31, 2014 | Completed | N/A |
| Second Status Update Report for the Overall Reliable Hardened Containment Vents under Severe Accident Conditions Integrated Plan for Phase 1 | Jun 30, 2015 | Completed | N/A |
| Third Status Update Report for the Overall Reliable Hardened Containment Vents under Severe Accident Conditions Integrated Plan for Phase 1 | Dec 31, 2015 | | N/A |
| Fourth Status Update Report for the Overall Reliable Hardened Containment Vents under Severe Accident Conditions Integrated Plan for Phase 1 | Jun 30, 2016 | | N/A |
| Fifth Status Update Report for the Overall Reliable Hardened Containment Vents under Severe Accident Conditions Integrated Plan for Phase 1 | Dec 31, 2016 | | N/A |
| Final Completion Report for the Overall Reliable Hardened Containment Vents under Severe Accident Conditions Integrated Plan for Phase 1 | June 2017 | | N/A |

| Milestones | Target Completion Date | Activity Status | Revised Target Completion Date |
|---|---|---|---|
| **Engineering & Modifications:** | | | |
| Develop Engineering Design for Modifications (100% package) for Phase 1 | Apr 2015 | In Process | Dec 2015 |
| Plant Modification Installation for Phase 1 | June 2017 | Awaiting design completion | NA |
| **Program & Procedures:** | | | |
| Develop the program and procedures to operate, test, and maintain the HVCS for Phase 1 | June 2015 | Awaiting design completion | Dec 2016 |
| Coordinate procedures for HCVS with AOPs, EOPs, SAGs FSGs, and SAMGs for Phase 1 | Mar 2017 | Awaiting design completion | NA |
| Implement the procedures for Phase 1 | June 2017 | Awaiting design completion | NA |
| **Operations & Training:** | | | |
| Develop the training for all personnel expected to operate the HCVS – Phase 1 | Mar 2017 | Awaiting design completion | NA |
| Complete the training of personnel – Phase 1 | Mar 2017 | Awaiting design completion | Jun 2017 |

## 4.0 Changes to Compliance Method

Columbia will be moving the rupture disk to inside the secondary containment and does not anticipate any changes to the compliance method. Any changes in the compliance method will be provided in a subsequent update.

## 5.0 Need for Relief/Relaxation and Basis for the Relief/Relaxation

Energy Northwest expects to fully comply with the Order and its implementation date and does not anticipate a request for relief and/or relaxation of Order EA-13-109, Phase 1.

## 6.0 Open Items

There are no changes in the licensee identified open items listed below. A new table of the open items from the Interim Staff Evaluation (Reference 5) has been added for completeness.

| Licensee Identified Open Items from Overall Integrated Plan | | | |
|---|---|---|---|
| **Open Item Number** | **Open Items Action** | **Status** | **Response** |
| 1 | Provide resolution of the potential secondary containment bypass leakage path in the first 6-month update of the HCVS OIP | Closed | Columbia will use a rupture disk to prevent secondary containment bypass leakage |
| 2 | Evaluate the location of the ROS for accessibility. | | |
| 3 | Determine the location of the portable air compressor and evaluate for accessibility under SA HCVS use. | | |
| 4 | Evaluate the location of the FLEX DGs for accessibility under Severe Accident HCVS use. | | |
| 5 | Confirm suppression pool heat capacity | Closed | Calculation ME-02-14-02, Revision 0, Appendix C confirms that there is sufficient heat capacity in the suppression pool water when at a minimum Technical Specification level to control pressure in containment before venting commences. |
| 6 | Determine the method of qualification for each instrument listed | | |
| 7 | Complete the evaluation to determine accessibility, habitability, staffing sufficiency, and communication capability of the ROS. | | |
| 8 | Identify design codes after design is finalized. | | |
| 9 | Equipment qualifications will include temperature, pressure, radiation level, and total integrated dose radiation from the effluent vent pipe at local and remote locations. | | |
| 10 | Provide site-specific details of the EOPs when available. | | |

| List of Open Items from the Interim Staff Evaluation (ISE) | | | |
|---|---|---|---|
| **ISE Item Number** | **Action** | **Status** | **Response** |
| 1 | Make available for NRC staff audit the location of the ROSs. | | |
| 2 | Make available for NRC staff audit the location of the portable air compressor. | | |

| List of Open Items from the Interim Staff Evaluation (ISE) | | | |
|---|---|---|---|
| **ISE Item Number** | **Action** | **Status** | **Response** |
| 3 | Make available for NRC staff audit the location of the portable diesel generators. | | |
| 4 | Make available for NRC staff audit an evaluation of temperature and radiological conditions to ensure that operating personnel can safely access and operate controls and support equipment. | | |
| 5 | Make available for NRC staff audit analyses demonstrating that HCVS has the capacity to vent the steam/energy equivalent of one percent of uprated licensed/rated thermal power (unless a lower value is justified), and that the suppression pool and the HCVS together are able to absorb and reject decay heat, such that following a reactor shutdown from full power containment pressure is restored and then maintained below the primary containment design pressure and the primary containment pressure limit. | | |
| 6 | Make available for NRC staff audit the descriptions of local conditions (temperature, radiation and humidity) anticipated during ELAP and severe accident for the components (valves, instrumentation, sensors, transmitters, indicators, electronics, control devices, etc.) required for HCVS venting including confirmation that the components are capable of performing their functions during ELAP and severe accident conditions. | | |
| 7 | Make available for NRC staff audit documentation of the HCVS nitrogen pneumatic system design including sizing and location. | | |

| List of Open Items from the Interim Staff Evaluation (ISE) | | | |
|---|---|---|---|
| **ISE Item Number** | **Action** | **Status** | **Response** |
| 8 | Make available for NRC staff audit the final sizing evaluation for HCVS batteries/battery charger including incorporation into FLEX DG loading calculation. | | |
| 9 | Make available for NRC staff audit documentation that demonstrates adequate communication between the remote HCVS operation locations and HCVS decision makers during ELAP and severe accident conditions. | | |
| 10 | Provide a description of the strategies for hydrogen control that minimizes the potential for hydrogen gas migration and ingress into the reactor building or other buildings. | | |
| 11 | Make available for NRC staff audit descriptions of all instrumentation and controls (existing and planned) necessary to implement this order including qualification methods. | | |
| 12 | Make available for NRC staff audit documentation of an evaluation verifying the existing containment isolation valves, relied upon for the HCVS, will open under the maximum expected differential pressure during BDBEE and severe accident wetwell venting. | | |
| 13 | Make available for NRC staff audit site specific details of the EOPs when available. | | |
| 14 | Provide justification for not leak testing the HCVS every three operating cycles and after restoration of any breach of system boundary within buildings. | | |

## 7.0 Potential Safety Evaluation Impacts

Energy Northwest does not anticipate any impacts to the Interim Safety Evaluation.

## 8.0 References

1. NRC Order EA-12-050, "Order Modifying Licenses with Regard to Reliable Hardened Containment Vents," March 12, 2012 (ADAMS Accession No.: ML12054A694)
2. NRC Order EA-13-109, "Order to Modify Licenses with Regard to Reliable Hardened Containment Vents Capable of Operation under Severe Accident Conditions," June 6, 2013 (ADAMS Accession No.: ML 13143A334 (Pkg.))
3. Letter GO2-14-107, dated June 30, 2014, from DA Swank, Energy Northwest, to the NRC, "Energy Northwest's Phase 1 Response to NRC Order EA-13-109 – Overall Integrated Plan for Reliable Hardened Containment Vents under Severe Accident Condition" (ADAMS Accession No.: ML14191A688)
4. Letter GO2-14-175, dated December 17, 2014, from DA Swank, Energy Northwest, to the NRC, "Energy Northwest's First Six-Month Status Update Report for the Implementation of NRC Order EA-13-109 – Overall Integrated Plan for Reliable Hardened Containment Vents under Severe Accident Conditions" (ADAMS Accession No.: ML14357A069)
5. NRC letter "Columbia Generating Station – Interim Staff Evaluation Relating to Overall Integrated Plan in Response to Phase 1 of Order EA-13-109 (Severe Accident Capable Hardened Vents)" March 25, 2015 (TAC No. MF4383) (ADAMS Accession No.: ML14335A258)