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EA-12-049
EA-13-109
10 CFR 50.54(f)

December 29, 2016
GO2-16-171

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

Subject: **COLUMBIA GENERATING STATION, DOCKET NO. 50-397
ENERGY NORTHWEST'S COMBINED SIX-MONTH STATUS UPDATE
REPORT FOR THE IMPLEMENTATION OF NUCLEAR REGULATORY
COMMISSION (NRC) ORDERS EA-12-049 AND EA-13-109**

- References:
1. NRC Letter from E. J. Leeds (NRC) and M. R. Johnson (NRC) to Energy Northwest et.al, "Issuance of Order to Modify Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events," dated March 12, 2012
 2. NRC Letter from E. J. Leeds (NRC) to Licensees with Mark I and Mark II Containments, "Issuance of Order to Modify Licenses with Regard to Reliable Hardened Containment Vents Capable of Operation under Severe Accident Conditions," dated June 6, 2013
 3. Letter GO2-13-034 from A. L. Javorik (Energy Northwest) to NRC, "Energy Northwest's Response to NRC Order EA-12-049 – Overall Integrated Plan for Mitigating Strategies," dated February 28, 2013
 4. Letter GO2-15-175 from A. L. Javorik (Energy Northwest) to NRC, "Energy Northwest's Response to NRC Order EA-13-109 – Overall Integrated Plan for Reliable Hardened Containment Vents under Severe Accident Conditions Phases 1 and 2, Revision 1," dated December 15, 2015
 5. Letter GO2-14-031 from D. A. Swank (Energy Northwest) to NRC, "Energy Northwest's Second Six Month Status Update Report for the

- Implementation of NRC Order EA-12-049 Mitigation Strategies for Beyond Design Basis External Events," dated February 27, 2014
6. Letter GO2-16-125 from A. L. Javorik (Energy Northwest), "Energy Northwest's Seventh Six-Month Status Update Report for the Implementation of Nuclear Regulatory Commission (NRC) Order EA-12-049 Mitigation Strategies for Beyond Design Basis External Events," dated August 30, 2016
 7. Letter GO2-16-098 from A.L. Javoik (Energy Northwest), "Energy Northwest's Fourth Six-Month Status Update Report for the Implementation of Nuclear Regulatory Commission (NRC) Order EA-13-109, Order to Modify Licenses With Regard to Reliable Hardened Containment Vents Capable of Operation Under Severe Accident Conditions," dated June 30, 2016
 8. Letter GO2-14-026 dated February 21, 2014, from D. A. Swank (Energy Northwest) to NRC, "Request for Relaxation from NRC Order EA-12-049, 'Order Modifying Licenses With Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events'"
 9. NRC Letter dated April 15, 2014, from E. J. Leeds (NRC) to M. E. Reddemann (Energy Northwest), "Columbia Generating Station – Relaxation of Certain Schedule Requirements for Order EA-12-049 'Issuance of Order to Modify Licenses with Regard to Requirements for Mitigation Strategies for Beyond Design Basis External Events'"

Dear Sir or Madam,

By References 1 and 2, the Nuclear Regulatory Commission (NRC) issued Orders EA-12-049 and EA-13-109. Both Orders required licensees to develop an overall integrated plan (OIP) and submit 6-month update reports. References 3 and 4 transmitted the OIPs for the Orders. Reference 5 provided a revised OIP for Order EA-12-049. References 6 and 7 transmitted the previous 6-month update reports required by the Orders. By Reference 8 and 9, Energy Northwest requested and received a relaxation of the final implementation date of NRC Order EA-12-049 which tied certain requirements of Order EA-12-049 to the implementation date of Phase 1 of NRC Order EA-13-109. Therefore, Energy Northwest is combining the remaining 6-month update reports for NRC Order EA-12-049 with the 6-month update reports for NRC Order EA-13-109 until Phase 1 of Order EA-13-109 is reported complete and the implementation requirements of Order EA-12-049 have been met.

The enclosure to this letter and its attachment provide a combined 6-month update report and the status of the remaining open items for implementation of NRC Orders EA-12-049 and EA-13-109. Therefore, no update for Order EA-12-049 will be issued in February. The next combined update will be June of 2017.

No new commitments are being made by this letter or the enclosure. If you have any questions or require additional information, please contact Mr. R. M. Garcia at (509) 377-8463.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on this 29th day of December, 2016.

Respectfully,



A. L. Javorik

Vice President, Engineering

Enclosures: As stated

cc: NRC RIV Regional Administrator
NRC NRR Project Manager
NRC Senior Resident Inspector/988C

CD Sonoda – BPA/1399 (email)
WA Horin – Winston & Strawn

1.0 Introduction

By References 1 and 2 to this enclosure, the Nuclear Regulatory Commission (NRC) issued Orders EA-12-049 and EA-13-109 to Columbia Generating Station (Columbia). The Orders contained requirements for mitigation strategies for beyond-design-basis external events and the installation of a reliable containment hardened vent capable of operation under severe accident conditions. References 1 and 2 also required submittal of an Overall Integrated Plan (OIP) describing how compliance with the requirements described in the Orders will be achieved and required the submittal of status reports at six month intervals. This enclosure provides Energy Northwest's combined six-month status report for these NRC Orders a combined update of the remaining milestones including any changes to the compliance method or schedule.

2.0 Milestone Accomplishments

All the Mitigation Milestones required to support restart from Refueling Outage 22 (mitigation implementation outage) with the exception of plant changes directly associated with the implementation of the reliable hardened containment vent were reported complete in Reference 3 of this enclosure.

3.0 Milestone Schedule Status

The following table provides a listing of the remaining reports associated with NRC Orders EA-12-049 and EA-13-109.

Correspondence and Reports

Milestone	Target Completion Date	Activity Status	Comments <i>(Include date changes in this column)</i>
Submit Overall Integrated Implementation Plan (Phase 1)	June 2014	Complete	GO2-14-107 6/30/2014
Submit Overall Integrated Implementation Plan (Phase 2) which included a Phase 1 6-month status update.	Dec. 2015	Complete	GO2-15-175 12/16/2015
Next Combined Status Update Report for the Mitigation Strategies and Reliable Hardened Containment Vent	June 2017	Not Started	
Issuance of Energy Northwest's letter of compliance with NRC Order EA-12-049, Section IV.C.3	Aug. 2017	Not Started	
Issuance of Energy Northwest's letter of compliance with NRC Order EA-13-109, Phase 1	Aug. 2017	Not Started	
Submittal of Final Integrated Program Document Order EA-12-049.	Aug. 2017	Not Started	

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Enclosure

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6 th 6-month update for Order EA-13-109	June 2017	Not Started	
7 th 6-month update for Order EA-13-109	Dec. 2017	Not Started	
8 th 6-month update for Order EA-13-109	June 2018	Not Started	
9 th 6-month update for Order EA-13-109	Dec. 2018	Not Started	
10 th 6-month update for Order EA-13-109	June 2019	Not Started	
Issuance of Energy Northwest's letter of compliance with NRC Order EA-13-109, Phase 2	Aug. 2019	Not Started	

The tables below provide the status of the overall integrated plan for reliable hardened containment vents (HCV) under severe accident conditions milestones last reported in References 4 and 5 of this enclosure.

HCV Phase 1 Milestone Schedule:

Milestone	Target Completion Date	Activity Status	Comments <i>(Include date changes in this column)</i>
Hold preliminary/conceptual design meeting	June 2014	Complete	
WW Design Engineering Complete	May 2016		This date is changed to Feb 2017
WW Operation Procedure Changes Developed	Mar 2017		
WW Training Complete	Apr. 2017		
WW Installation Complete	May 2017		
WW Procedure Changes Active	May 2017		
Site Specific WW Maintenance Procedure Developed	June 2017		
WW Walk Through Demonstration/Functional Test	June 2017		
Submit WW Completion Report	Aug. 2017		

HCV Phase 2 Milestone Schedule

Milestone	Target Completion Date	Activity Status	Comments <i>(Include date changes in this column)</i>
Hold preliminary/conceptual design meeting	July 2016		This date has been changed to Jul 2017
Design Engineering On-site/Complete	July 2018		
Operations Procedure Changes Developed	Jan. 2019		
Site Specific Maintenance Procedure Developed	Jan. 2019		
Training Complete	Apr. 2019		
Implementation Outage	May 2019		
Procedure Changes Active	May 2019		
Walk Through Demonstration/Functional Test	June 2019		

4.0 Changes to the Compliance Methods

Changes to the OIP for Reliable HCV Vents under Severe Accident Conditions (EA-13-109):

During the September 29, 2016 audit phone call between the NRC staff and Energy Northwest, it was identified by the NRC that the method by which communications between the main control room, on-site FLEX pump operators, and the remote operating station would be accomplished was not explicitly defined in the OIP for Order EA-13-109.

Energy Northwest intends to use the same communications plan used for the mitigation strategies as provided below.

The primary means of onsite and offsite communication to be used during an extended loss of alternating current (ac) power (ELAP) event at Columbia are the installed sound powered telephone and radio systems. It has been determined that the indoor and outdoor locations where plant equipment or on-site FLEX equipment may be used, can be communicated with by using sound-powered phone headsets, satellite phones, or hand-held radios in radio-to-radio mode. The sound powered phone system can still be used if and when other communication methods become unavailable.

Sound Powered Phones

In addition to the installed sound powered phone system, five portable sound powered phone kits are available in each FLEX building. The kits are available to provide point-to-point communication to areas that have lost the other forms of communication. They can also be used to extend the current sound powered

phone system. Each kit contains 800 feet of cable, two headsets, and junction boxes. The junction boxes allow multiple kits to be attached together to provide longer cable runs or to allow additional headsets to be connected.

Satellite Phone System

Each portable satellite phone is battery powered. Three batteries have been allocated to each phone with each battery providing 4 hours of talk time. The battery chargers for the satellite phones are stored in the same locations as the phones. These chargers can be powered by the FLEX building standby generators.

Base stations are located in the control room, technical support center (TSC), emergency operations facility (EOF), alternate EOF and joint information center (JIC).

The base stations are powered from automobile type batteries located in the FLEX buildings for the control room and TSC, in the telecom room for the EOF and in the APEL/TEC facility for the alternate EOF and JIC. These batteries are good for approximately 24 hours on a loss of power.

The chargers for the base station batteries are powered by normal site power with the respective facility's back-up generators providing the emergency power.

Hand-held Radios

It has been determined that the mounting of some radio system components does not meet the seismic requirements necessary to assure radio system availability following an earthquake. However, hand-held portable radio-to-radio capability will be available. Battery chargers can be powered by the FLEX building standby generators.

Changes to the Overall Integrated Plan for Mitigating Strategies (EA-12-049):

Reference 6 of this enclosure revised the original overall integrated plan and provided the following Phase 3 discussion for maintaining core cooling with portable equipment. The actions discussed in this strategy were later determined to be recovery actions, not Phase 3 actions.

"For Phase 3, core cooling will be accomplished by placing one loop of RHR into the shutdown cooling mode. This will be accomplished by providing power from a pair of synchronized 4160 VAC FLEX portable diesel fueled gas turbine generators (from the RRC [Regional Resource Center]) and supplying the RHR heat exchanger and RHR pump room cooler with SW pumped by a large portable FLEX pump (from the RRC) via connection to either division of SW piping. The flow through the RHR heat exchanger and RHR pump room cooler will be in the opposite direction from that which occurs during normal operation.

The 4160 VAC FLEX turbine generators will be sized to carry the loads necessary to support the Phase 3 FLEX strategies including an RHR pump and its support equipment (e.g., motor-operated valves, keep-fill pumps, room coolers). The turbine generators will be capable of being connected to connection points at the output

breaker of the Division 1 or the Division 2 EDG, thereby providing power to the Division 1 or Division 2 RHR pump via the associated safety related 4160 VAC bus.

As planned, the 4160 VAC turbine generators will accommodate the approximate 1 MW load from an RHR pump, related valves, and required miscellaneous loads. The miscellaneous required loads include Control Room, Cable Spreading room, Switchgear Room and RHR Room emergency cooling fans, DC battery chargers and an SFP cooling pump.

The large-capacity FLEX pump will be sized to provide sufficient flow to the RHR heat exchanger to support the shutdown cooling or suppression pool cooling modes of RHR. This strategy for shutdown cooling can be accomplished utilizing a single large FLEX pump or multiple FLEX pumps, depending on pump sizes available from the RRC. In order to prevent pipe damage due to water hammer, a keep-fill pump will be repowered to allow proper fill and vent of the RHR system prior to shutdown cooling operation."

Consequently, Columbia's Phase 3 strategy for reactor core cooling and heat removal has been revised as follows:

The Phase 3 strategy uses equipment from the NSRC [National SAFER Resource Center] to backup or supplement the on-site Phase 2 FLEX equipment to restore or maintain the key safety functions. The Phase 2 mechanical and electrical connection points are compatible with the NSRC equipment. The NSRC equipment is delivered to Columbia within 24 hours of a request for delivery. Other NSRC equipment that is not backup or redundant to Phase 2 FLEX equipment can be applied towards recovery efforts.

In addition to other equipment, Columbia will receive the following Phase 3 NSRC equipment designed to provide the same function and use the same connection points as the on-site Phase 2 FLEX equipment:

NSRC Component	Performance Description
480 VAC Diesel-powered Generator	480 Volts AC 1100 kW
SG/RPV Water Makeup Pump	500 PSI 500 GPM

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

Beyond the relaxation requested in Reference 7 and granted in Reference 8, there has been no additional relaxation needs identified.

6.0 Open Items from Overall Integrated Plan, Interim Staff Evaluation, and Audits

The attached tables provide an update of the status of the remaining open items documented in References 4 and 5.

7.0 References

1. NRC Letter from E. J. Leeds (NRC) and M. R. Johnson (NRC) to Energy Northwest et.al, "Issuance of Order to Modify Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events," dated March 12, 2012
2. NRC Letter from E. J. Leeds to Licensees with Mark I and Mark II Containments, "Issuance of Order to Modify Licenses with Regard to Reliable Hardened Containment Vents Capable of Operation under Severe Accident Conditions," dated June 6, 2013
3. Letter GO2-15-124, from D. A. Swank (Energy Northwest) to NRC "Energy Northwest's Fifth Six-Month Status Update Report for the Implementation of Nuclear Regulatory Commission (NRC) Order EA-12-049 Mitigation Strategies for Beyond Design Basis External Events," dated August 25, 2015
4. Letter GO2-16-098 from A.L. Javoik (Energy Northwest), "Energy Northwest's Fourth Six-Month Status Update Report for the Implementation of Nuclear Regulatory Commission (NRC) Order EA-13-109, Order to Modify Licenses With Regard to Reliable Hardened Containment Vents Capable of Operation Under Severe Accident Conditions," dated June 30, 2016
5. Letter GO2-16-125 from A. L. Javorik (Energy Northwest), "Energy Northwest's Seventh Six-Month Status Update Report for the Implementation of Nuclear Regulatory Commission (NRC) Order EA-12-049 Mitigation Strategies for Beyond Design Basis External Events," dated August 30, 2016
6. Letter GO2-14-031 from D. A. Swank (Energy Northwest) to NRC, "Energy Northwest's Second Six Month Status Update Report for the Implementation of NRC Order EA-12-049 Mitigation Strategies for Beyond Design Basis External Events," dated February 27, 2014
7. Letter GO2-14-026, from D. A. Swank (Energy Northwest) to NRC, "Request for Relaxation from NRC Order EA-12-049, 'Order Modifying Licenses With Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events,'" dated February 21, 2014
8. NRC Letter from E. J. Leeds to M. E. Reddemann (Energy Northwest), "Columbia Generating Station – Relaxation of Certain Schedule Requirements for Order EA-12-049 'Issuance of Order to Modify Licenses with Regard to Requirements for Mitigation Strategies for Beyond Design Basis External Events,'" dated April 15, 2014

List of Overall HCV Integrated Plan Open Items			
HCV OIP Open Item	Action	Status	Comment
OI-HCV-01	Provide resolution of the potential secondary containment bypass leakage path in the first 6-month update of the HCVS OIP	CLOSED	Closed in Letter GO2-15-175. Columbia will use a rupture disk to prevent secondary containment bypass leakage.
OI-HCV-02	Evaluate the location of the ROS for accessibility.	OPEN	
OI-HCV-03	Determine the location of the portable air compressor and evaluate for accessibility under Severe Accident HCVS use. Including connection point(s) Including refueling operations	OPEN	
OI-HCV-04	Evaluate the location of the FLEX DG for accessibility under Severe Accident HCVS use. Including connection point(s) Including refueling operations	OPEN	
OI-HCV-05	Confirm suppression pool heat capacity	CLOSED	Closed in Letter GO2-15-175. 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.
OI-HCV-06	Determine the method of qualification for each instrument	OPEN	
OI-HCV-07	Complete the evaluation to determine accessibility, habitability, staffing sufficiency, and communication capability of the ROS.	OPEN	
OI-HCV-08	Identify design codes after design is finalized.	OPEN	

List of Overall HCV Integrated Plan Open Items			
HCV OIP Open Item	Action	Status	Comment
OI-HCV-09	Equipment qualifications will include temperature, pressure, radiation level, and total integrated dose radiation from the effluent vent pipe at local and remote locations.	OPEN	
OI-HCV-10	Provide site-specific details of the EOPs when available. Develop procedures for SAWA and SAWM	OPEN	
OI-HCV-11	FLEX air compressors need to be credited to recharge air lines for HCVS components after 24 hours.	CLOSED	The HCV strategy will credit for the existing 300 CFM FLEX air compressor FLEX-C-3 staged in FLEX Building 82 and FLEX-C-4 in Building 600. The 300 CFM capacity of the air compressor is sufficient.
OI-HCV-12	SAWA/SAWM flow is controlled using hose installed valves and mechanical flow elements (EA-12-049 actions). Location of these valves and flow elements will need to be considered per HCVS-FAQ-12.	OPEN	
OI-HCV-13	Reconcile the out-of-service provisions for HCVS/SAWA with the provisions documented in Columbia's PPM 1.5.18, Managing B.5.b and FLEX Equipment Unavailability.	OPEN	
OI-HCV-14	Complete the evaluation to determine accessibility, habitability, staffing sufficiency, and communication capability during SAWA/SAWM	OPEN	
OI-HCV-15	Perform MAPP analysis for NEI 13-02 figures C-2 through C-6 and determine the time sensitive SAWM actions	OPEN	
OI-HCV-16	Develop procedure for line-up and use of HCVS	OPEN	
OI-HCV-17	Add sound powered phone extension cable for instrument rack E-IR-85 to inventory procedure	CLOSED	Additional cable not need as each FLEX building has 5 sound powered phone kits
OI-HCV-18	Evaluate deployment pathways for severe accident capable criteria	OPEN	

List of Overall HCV Integrated Plan Open Items			
HCV OIP Open Item	Action	Status	Comment
OI-HCV-19	Develop required training and frequency IAW the SAT process	OPEN	
OI-HCV-20	Incorporate approved language of OIP Attachment 2.1.D into site SAMG procedure(s)	OPEN	

Response to the Phase 1 Request for Additional Information			
RAI Number ISE Report Section	Action	Status	Comment
01 Section 3.2.1	Make available for NRC staff audit the location of the remote operating station (ROS).	CLOSED	Letter GO2-15-175 The location of the remote operating station is shown on Figure 1-1.
02 Section 3.2.1	Make available for NRC staff audit the location of the portable air compressor.	OPEN	
03 Section 3.2.1	Make available for NRC staff audit the location of the portable diesel generators.	OPEN	
04 Section 3.2.1 Section 3.2.2.4 Section 3.2.2.5 Section 3.2.2.10 Section 3.2.4.1 Section 3.2.4.2 Section 3.2.5.2 Section 3.2.6	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.	OPEN	

Response to the Phase 1 Request for Additional Information			
RAI Number ISE Report Section	Action	Status	Comment
05 Section 3.2.2.1 Section 3.2.2.2	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.	CLOSED	ME-02-13-03 ME-02-14-13 ME-02-12-18
06 Section 3.2.2.3 Section 3.2.2.5 Section 3.2.2.9 Section 3.2.2.10	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.	OPEN	
07 Section 3.2.2.4 Section 3.2.6	Make available for NRC staff audit documentation of the HCVS nitrogen pneumatic system design including sizing and location.	CLOSED	Calculations ME-02-15-08 and ME-02-14-17 were approved on 8/10/16. ME-02-15-08 confirms the adequate sizing and location of the nitrogen piping and ME-02-14-17 sizes the relief valve HCV-RV-101. This AR may be closed since the calculations are available for NRC audit. Copies of approved cover sheets are included in EDMS.

Response to the Phase 1 Request for Additional Information			
RAI Number ISE Report Section	Action	Status	Comment
08 Section 3.2.2.4 Section 3.2.6	Make available for NRC staff audit the final sizing evaluation for HCVS batteries/battery charger including incorporation into FLEX DG loading calculation.	CLOSED	E/I-02-13-03
09 Section 3.2.2.5	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.	CLOSED	See Section 4.0 of the Enclosure to this letter.
10 Section 3.2.2.6	Provide a description of the strategies for hydrogen control that minimizes the potential for hydrogen gas migration and ingress into the RB or other buildings.	CLOSED	Energy Northwest will use Option number 5 of the NEI White Paper HCV-WP-03, Hydrogen/Carbon Monoxide Control Measures and add a check valve at the discharge end of the vent pipe to address the flammability of combustible gasses.
11 Section 3.2.2.9	Make available for NRC staff audit descriptions of all instrumentation and controls (existing and planned) necessary to implement this order including qualification methods.	OPEN	
12 Section 3.2.2.9	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.	CLOSED	Columbia will be using an unused containment penetration and will be installing new containment isolation valves.

Response to the Phase 1 Request for Additional Information			
RAI Number ISE Report Section	Action	Status	Comment
13 Section 3.4.1	Make available for NRC staff audit site specific details of the EOPs when available.	CLOSED	The following EOPs provide for containment venting during an ELAP event: PPM 5.6.1, SBO/ELAP PPM 5.6.2, SBO and ELAP Attachments PPM 5.2.1, Primary Containment Control
14 Section 3.4.4	Provide justification for not leak testing the HCVS every three operating cycles and after restoration of any breach of system boundary within buildings.	CLOSED	Columbia has adopted the current NEI guidance on testing and Inspection requirements as shown in Table 4-1 of Reference 4
15 AR Task 36	Add a discussion on communications between the CR, FELX pump, and ROS operators to the December 6-month HCV update.	CLOSED	Discussed in Section 4.0 of the enclosure to this letter.

List of Remaining FLEX Integrated Plan Open Items		
FLEX OIP Open Item	Action	Status
OI-FLEX-73	GOTHIC analyses will be confirmed, or revised, to bound the design of the hardened containment vent after the design is finalized. (This OI has been added to assure that the subject analyses reflect the design required by EA-13-109.)	Open AR 278368-89 is tracking with a 01/27/2017 due date (D Myers)
OI-FLEX-43	The flooding hazards analysis will provide information about site water level associated with a probable maximum precipitation (PMP) event and a local intense precipitation (LIP) event. These water levels will be compared to elevations for the FLEX buildings as well as the deployment routes for the equipment. A LiDAR survey of the site was performed and a topographic plan of the site has been generated to assist in this evaluation. The flooding analysis is currently in progress. The results will be used to provide a response to this question in a future OIP update. (Response to NRC Audit Question 03) (This OI has been changed because the flooding analysis remains in progress and the OI was not closed in the February 2014 update.)	Closed The flooding hazard reevaluation was completed and the report was provided to the NRC in letter GO2-16-143, dated 10/6/16.

List of Remaining FLEX Integrated Plan Open Items		
OI-FLEX-44	A future update to the OIP will address the applicability to Columbia of each of the nine considerations in NEI 12-06 Section 6.2.3.2, Deployment of FLEX Equipment. (Response to NRC Audit Question 04) (This OI has been changed because the flooding analysis remains in progress and the OI will be closed in a future update.)	Closed The Flooding Hazard Reevaluation Report (FHRR) shows the results are either bounded by the current design basis or available physical margin exists.
OI-FLEX-45	The flooding analysis will be used to determine if any of the external flooding procedures should be changed. (Response to NRC Audit Question 04)	Closed The Flooding Hazard Reevaluation Report (FHRR) shows the results are either bounded by the current design basis or available physical margin exists.