

Energy Northwest
New Nuclear LLC
345 Hills Street
Richland, WA 99352

Lisa Williams
Nuclear Development
P.O. Box 968, MD 1035
Richland, WA 99352-0968
Ph. 509-377-8148
llwilliams@energy-northwest.com

August 27, 2025
XO1-25-019

ATTN: Document Control Desk
US Nuclear Regulatory Commission
Washington, DC 20555-0001

Subject: Presentation Slides for Flooding Historical Information (Project #99902130)

- Reference: 1. Energy Northwest New Nuclear. "Methodology for Determining the Acceptability of Historical Information," White Paper, XO1-25-009, July 2025, ML25183A400.
2. Energy Northwest New Nuclear. "Acceptability of Historical Information - Flooding," White Paper, XO1-25-012, July 2025, ML25211A360.

This letter transmits Energy Northwest New Nuclear LLC's (ENNN) presentation slides for the discussion of the white papers referenced above in preparation for a public meeting on September 4, 2025.

ENNN intends to submit a Construction Permit Application (CPA) for up to twelve Xe-100 small modular reactors at a site adjacent to Columbia Generating Station (Columbia). Using the criteria provided in Reference 1 and based on the acceptability determination in Reference 2, these slides summarize ENNN's evaluation of the acceptability of using existing 2016 post-Fukushima flooding hazard reevaluations for Columbia in satisfying the requirements for assessing flooding hazards in ENNN's CPA.

XO1-25-012

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If you have any questions or need any additional information, please contact Nathan Clark at ndclark@energy-northwest.com or 509-377-6069.

Sincerely,

Signed by:

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Lisa Williams

Operations, Licensing, Environmental Manager, New Nuclear Development

Enclosures

1. Presentation Slides for Flooding Historical Information, ENNN, August 2025.

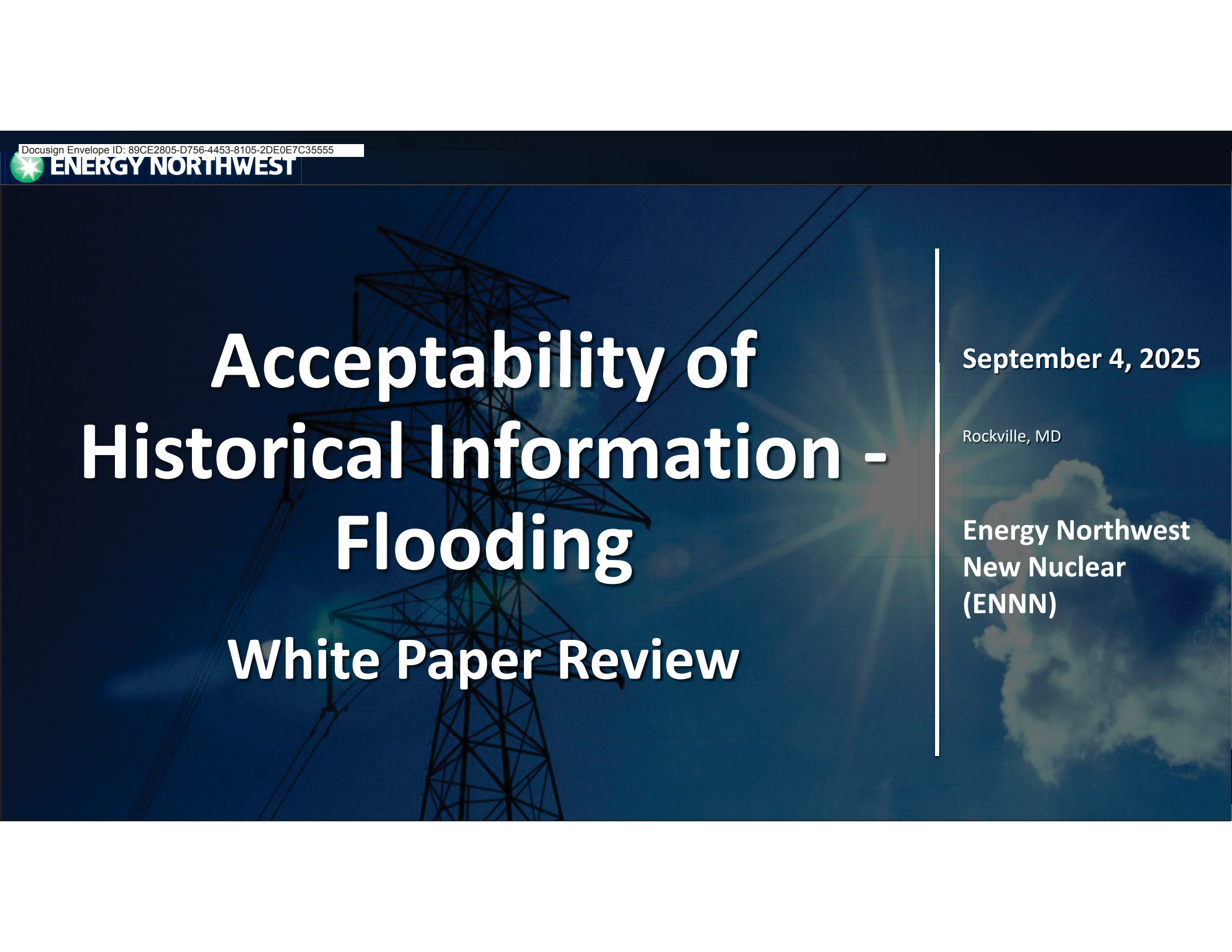
cc:

Greg Cullen

Ken Langdon

Eric Andrews

Ms. Denise McGovern, NRR/DANU/UAL2



Acceptability of Historical Information - Flooding

White Paper Review

September 4, 2025

Rockville, MD

Energy Northwest
New Nuclear
(ENNN)

Purpose of Meeting

- To engage early with NRC staff on ENNN's approach of using historical license-based flooding information from a co-located nuclear facility
- To identify technical or policy issues that might affect this approach
- To ensure predictability in the NRC's response to ENNN's future Construction Permit Application (CPA) related to flooding hazard analysis

Introduction

- ADVANCE Act Section 505(c) requires licensing basis for existing utilization facilities at the site to be used to the extent practicable.
- ENNN's proposed location will be co-located next to Columbia, a licensed operating facility.
- Columbia's flooding licensing basis was reevaluated post-Fukushima.
- Energy Northwest New Nuclear, LLC (ENNN) plans to utilize the Columbia flood hazard reevaluation inputs and evaluations.

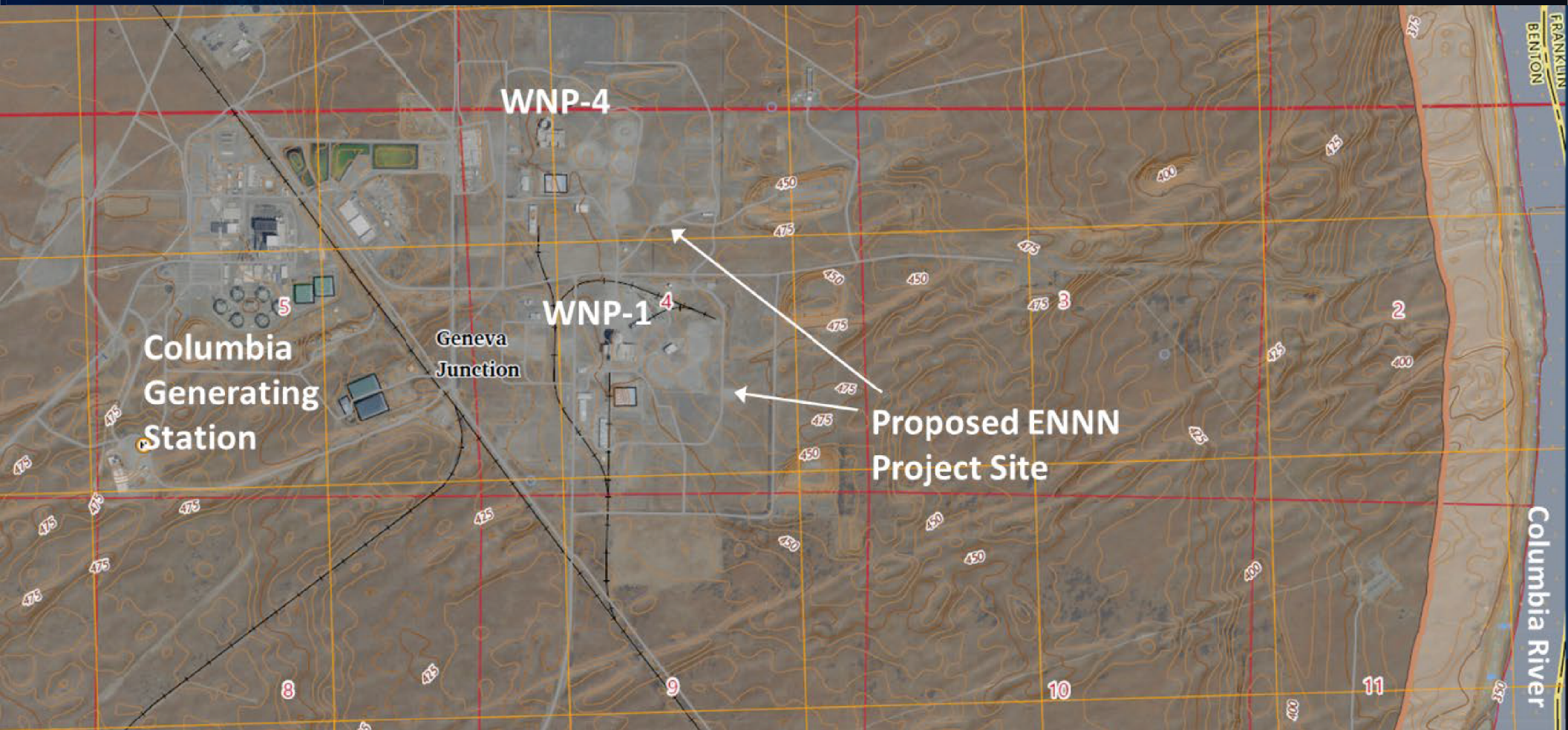


History of Energy Northwest Nuclear Projects

- **Columbia Generating Station (Columbia)**
 - Licensed in 1984, extension granted 2012
 - Post-Fukushima flood hazard reevaluations 2012-2018
- **Washington Nuclear Project (WNP) 1 & 4 Site**
 - CPs issued in 1975 and 1978
 - Construction halted in 1982

ENNN SMR Project Background

- Plan to construct and operate up to 12 Xe-100 high temperature helium gas-cooled reactors on former WNP-1 and 4 site
- Total of 960 MWe
- ENNN Project Site
 - One mile east of Columbia
 - Elevation between 452 - 467 ft MSL (Columbia 441 ft MSL)



Flood Hazard Mechanisms

- Local Intense Precipitation (LIP)
- Probable Maximum Flood (PMF) (local basin)
- PMF (streams and rivers)
- Dam Breaches and Failure
- Channel Migration
- Ice Effects
- Tsunami, Seiche, Storm Surge
- Combined Effects

Columbia Flood Hazard Reevaluation

- March 2011 tsunami and Fukushima Daiichi accident
- March 2012 NRC issued an information request under 10 CFR 50.54(f)
 - aka Near Term Task Force (NTTF) recommendations
 - Scope included reevaluation of flooding hazards using “present-day regulatory guidance and methodologies being used for early site permits and combined license reviews”
- October 2016 Columbia submitted reevaluation results to NRC
- February 2018 NRC Accepted EN Response

Methodology for Determining Applicability of Historical Information

1. Regulatory Changes – same regulations?
2. Analysis Methodology – same methods?
3. Scope of Analysis – same scope of analysis?
4. Site Changes – site unchanged?
5. Quality Assurance (QA) – done under App. B Program?
6. Copy of Record – copy of record exists?

Question 1, Same Regulations?

- No, ENNN is subject to non-light water reactor PDC from RG 1.232 while Columbia falls under 10 CFR 50 App A GDC. However, ENNN intends to apply X-energy's PDC-2 which is nearly identical to GDC 2.
- No changes to 10 CFR 50 Appendix A, GDC 2
- No changes to 10 CFR 100 Subpart B

Question 1, Same Regulations? (cont.)

GDC 2	X-energy PDC-2
<p>Structures, systems, and components important to safety shall be designed to withstand the effects of natural phenomena such as earthquakes, tornadoes, hurricanes, floods, tsunami, and seiches without loss of capability to perform their safety functions. The design bases for these structures, systems, and components shall reflect:</p> <p>(1) Appropriate consideration of the most severe of the natural phenomena that have been historically reported for the site and surrounding area, with sufficient margin for the limited accuracy, quantity, and period of time in which the historical data have been accumulated,</p> <p>(2) appropriate combinations of the effects of normal and accident conditions with the effects of the natural phenomena and</p> <p>(3) the importance of the safety functions to be performed.</p>	<p>Safety-significant structures, systems, and components shall be designed to withstand the effects of natural phenomena such as earthquakes, tornadoes, hurricanes, floods, tsunami, and seiches without loss of capability to perform their safety functions. The design bases for these structures, systems, and components shall reflect:</p> <p>(1) Appropriate consideration of the severity of the natural phenomena that have been historically reported for the site and surrounding area, with sufficient margin for the limited accuracy, quantity, and period of time in which the historical data have been accumulated,</p> <p>(2) appropriate combinations of the effects of normal, anticipated operational occurrence, design basis event, and design basis accident conditions with the effects of the natural phenomena,</p> <p>(3) the safety-significance of the functions to be performed.</p>

➔RESULT: No changes needed to historical analyses based on this criteria.

Question 2, Same Analysis Methodology?

Evaluation	Eval Date	Guidance Used for Fukushima Reevaluations	Rev Used	Current Guidance	Current Rev
LIP	Nov 2016	RG 1.59 NUREG/CR-7046 ANSI/ANS-2.8	Aug 1977 Nov 2011 1992	RG 1.59 NUREG/CR-7046 ANSI/ANS-2.8	Aug 1977 Nov 2011 1992
PMF (local basin)	Nov 2016	RG 1.59 NUREG/CR-7046 ANSI/ANS-2.8	Aug 1977 Nov 2011 1992	RG 1.59 NUREG/CR-7046 ANSI/ANS-2.8	Aug 1977 Nov 2011 1992
PMF (streams and rivers)	Nov 2016	RG 1.59 NUREG/CR-7046 ANSI/ANS-2.8	Aug 1977 Nov 2011 1992	RG 1.59 NUREG/CR-7046 ANSI/ANS-2.8	Aug 1977 Nov 2011 1992
Dam Failure	Jun 2022	RG 1.59 JLD-ISG-2013-01	Aug 1977 Jul 2013	RG 1.59 JLD-ISG-2013-01	Aug 1977 Jul 2013

Question 2, Same Analysis Methodology? (cont.)

Evaluation	Eval Date	Guidance Used for Fukushima Reevaluations	Rev Used	Current Guidance	Current Rev
Channel Migration	Nov 2016	NUREG/CR-7046	Nov 2011	NUREG/CR-7046	Nov 2011
Ice Effects	Nov 2016	NUREG/CR-7046	Nov 2011	NUREG/CR-7046	Nov 2011
Tsunami, Seiche, Storm Surge	2016	RG 1.59 NUREG/CR-7046 JLD-ISG-2012-06	Aug 1977 Nov 2011 Jan 2013	RG 1.59 NUREG/CR-7046	Aug 1977 Nov 2011
Combined Effects	Nov 2016	RG 1.59 NUREG/CR-7046 ANSI/ANS-2.8	Aug 1977 Nov 2011 1992	RG 1.59 NUREG/CR-7046 ANSI/ANS-2.8	Aug 1977 Nov 2011 1992

→ RESULT: Guidance is still current. No changes needed to historical analyses.

Question 3, Same Scope of Analysis?

LIP	No – requires a site-specific Water Surface Elevation (WSE) evaluation, rainfall input is applicable
PMP (local basin)	Yes – same drainage basin between Columbia and ENNN Project Site
PMP (streams and rivers)	Yes – both sites near Columbia River flood zone
Dam Failure	Yes – both sites near Columbia River flood zone
Channel Migration	Yes – both sites near Columbia River flood zone
Ice Effects	Yes – both sites near Columbia River flood zone
Tsunami, Seiche, and Storm Surge	Yes – screened out
Combined Effects	Yes – same drainage basin and Columbia River flood zone

➔ RESULT: No changes needed to historical analyses except for LIP.

Question 4, Site Unchanged?

- Watershed and basin characteristics in the area surrounding ENNN Project Site appear to be unchanged.
- Conservation and preservation areas north, east, and south of site
- EN disturbed lands map shows little change in inundation corridors.

→ **RESULT:** No changes needed to historical analyses for this criteria.

Question 5, Appendix B Program?

- No, Dam Failure analysis performed by US Army Corps of Engineers (USACE) under contract with NRC; however, USACE Dam Failure analysis was accepted by NRC.
- All other flooding hazard reevaluation analyses performed under Enercon's Appendix B QA Program.

→RESULT: No changes needed to historical analyses.

Question 6, Copy of Record?

- Yes, analysis packages from Flooding Hazard Reevaluation Report are retained by EN.
- Dam failure analysis was performed by USACE under contract with NRC. ENNN intends to engage USACE prior to CPA submittal to confirm previous dam failure conclusions.

→**RESULT:** Historical analysis records are available.

Question Summary

Flooding Mechanism	Same Regulations?	Same Methods?	Same Scope of Analysis?	Site Unchanged?	App B Program?	Copy of Record?
LIP	No but justified	Yes	No	Yes	Yes	Yes
PMP (local basin)	No but justified	Yes	Yes	Yes	Yes	Yes
PMP (streams and rivers)	No but justified	Yes	Yes	Yes	Yes	Yes
Dam Failure	No but justified	Yes	Yes	Yes	No but justified	Yes
Channel Migration	No but justified	Yes	Yes	Yes	Yes	Yes
Ice Effects	No but justified	Yes	Yes	Yes	Yes	Yes
Tsunami, Seiche, and Storm Surge	No but justified	Yes	Yes	Yes	Yes	Yes
Combined Effects	No but justified	Yes	Yes	Yes	Yes	Yes

Conclusions

- Evaluation inputs and results can be applied to the ENNN Project Site.
 - Exception: LIP requires a site-specific evaluation for WSE.
- PSAR will document justification for using historical analyses.
- PSAR will confirm ENNN Project Site elevation relative to maximum water surface elevations.
- PSAR will confirm watershed and basin characteristics are unchanged.
- ENNN intends to engage USACE prior to CPA submittal to confirm previous dam failure conclusions.

Questions and Comments?

Certificate Of Completion

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llwilliams@energy-northwest.com

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