LO-125420



September 13, 2022

Docket No. 99902052

U.S. Nuclear Regulatory Commission ATTN: Document Control Desk One White Flint North 11555 Rockville Pike Rockville, MD 20852-2738

SUBJECT: NuScale Power, LLC Submittal of Presentation Materials, Entitled "Carbon Free Power Project (CFPP) Combined License Application (COLA) Presentation Volcanic Hazards Analysis for CFPP," PM-125419-NP, Revision 0, on behalf of CFPP, LLC

REFERENCES: 1. NuScale Power Letter to Nuclear Regulatory Commission, "Licensing Lead for Carbon Free Power Project, LLC," dated October 12, 2021 (ML21299A363)

 LO-118758, NuScale Power, LLC Submittal of Carbon Free Power Project (CFPP) Combined License Application (COLA), "Volcano Hazards Analysis Methodology" White Paper, WP-122306, Revision 0, on behalf of CFPP, LLC (ML22224A196)

On August 11, 2022, NuScale Power, LLC (NuScale) on behalf of CFPP provided to the NRC a white paper "Volcano Hazards Analysis Methodology" White Paper, WP-122306, Revision 0 (Reference 2), which summarized the strategy that would be utilized to identify, screen, and model volcanic hazards at the CFPP site.

This letter transmits the presentation material for the NRC public meeting for the purposes of discussion of the conclusion of this white paper. The purpose of this presentation is to provide the NRC with an overview of the proposed CFPP strategy for a Volcanic Hazard Analysis (VHA) in accordance with Regulatory Guide 4.26, "Volcanic Hazards Assessment for Proposed Nuclear Power Reactor Sites". In addition, this presentation will provide an opportunity for discussion and feedback on the contents and strategy of the submitted white paper. The Enclosure to this letter is entitled, "Carbon Free Power Project (CFPP) Combined License Application (COLA) Presentation Volcanic Hazards Analysis for CFPP."

If you have any questions, please contact Kyra Perkins at 980-349-4117 or at kperkins@nuscalepower.com.

Sincerely,

(John Volkoff) Manager, Combined License Applications NuScale Power, LLC COLA Support on behalf of CFPP, LLC

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- Distribution: Michael Dudek, NRC Omid Tabatabai, NRC Greg Cranston, NRC Demetrius Murray, NRC
- Enclosure 1: "Carbon Free Power Project (CFPP) Combined License Application (COLA) Presentation Volcanic Hazards Analysis for CFPP," PM-125419-NP, Revision 0



Enclosure 1:

"Carbon Free Power Project (CFPP) Combined License Application (COLA) Presentation Volcanic Hazards Analysis for CFPP," PM-125419-NP, Revision 0

Carbon Free Power Project (CFPP) Combined License Application (COLA) Presentation



September 14, 2022



PM-125419-NP Revision: 0

Agenda

- CFPP Team
- Background
- Purpose / Objective
- Current Status of Assessment
- Key VHA Products
- Approach to Screening
- Numerical Models
- Discussion



CFPP Team

Leadership

Shawn Hughes Project Director CFPP

Glenn Neises CFPP Owner's Engineer Nuclear Director Burns & McDonnell

Scott Head Regulatory Affairs Manager CFPP

Pete Kissinger Director Nuclear Fleet Operations Strategy & Services Xcel Energy Nuclear Services

Licensing

John Volkoff Manager, Combined License Applications NuScale Power

Kyra Perkins Supervisor, Licensing NuScale Power

Peter Shaw (Presenter) Licensing Engineer 4 NuScale Power

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Matthew Featherston Nuclear Licensing Lead Fluor

Eric Woods COLA Project Manager Fluor

Greg McNulty Project Director Fluor

Technical Experts

Mr. K. Michael Cline, P.G. *Chief Geologist RIZZO*

Mr. Jeffrey Kimball Chief Seismologist RIZZO

Mr. Michael Rosenmeier, Ph.D Vice President, Earth Sciences RIZZO

Mr. William Hackett, Ph.D., P.G. Owner and Principal Scientist WRH Associates, Inc. RIZZO Consultant

Mr. Charles Connor, Ph.D. Professor, School of Geosciences University of South Florida Owner and Principal Scientist, Desperate Measures International, Inc. RIZZO Consultant



Background

- CFPP presented high-level strategy for the implementation of Regulatory Guide (RG) 4.26, Revision 0 for the VHA on November 18th, 2021 (ML21312A556)
- CFPP submitted "Volcano Hazards Analysis Methodology White Paper" on August 12th, 2022 (ML22224A196)



Purpose / Objective

- This presentation will provide the NRC with an overview of the proposed CFPP strategy for a VHA in accordance with Regulatory Guide 4.26 Revision 0
- After this overview, staff to provide feedback for the methodology of identification, screening, and modeling of volcanic phenomena described in the white paper



Current Status of Assessment





NuScale Nonproprietary

Key VHA Products

- Collect and evaluate data related to volcanic features and processes within the Eastern Snake River Plain (ESRP)
- Develop tectono-magmatic conceptual model
- Identify potential volcanic phenomena through a screening process
- Develop numerical models to represent future volcanic hazards
- Determine volcanic hazard event probabilities accounting for uncertainties – select maximum magnitude volcanic events



Approach to Screening

- Identify Quaternary volcanic features within the site vicinity and region that are consistent with the tectono-magmatic model
- Determine the maximum distance that the phenomena associated with the volcanic feature can travel from its source
- Assume a conservative approach by including rather then excluding volcanic features to account for uncertainty in the age and style of volcanism



Approach to Screening (cont.)

- Identified volcanic phenomena screened in or out will be dispositioned via different methods
 - Written technical justification
 - Calculation
 - Numerical modeling
- Screened in phenomena will be addressed by modeling or a calculation to assess the potential hazard depending on the complexity and occurrence frequency of the phenomena



Numerical Models

- Volcanic phenomena screened in will be analyzed to assess the potential hazard
- Numerical models focus on ground deformation, lava flow, and tephra (ash fall) deposition
- Current numerical models under development
 - Spatial density (Distribution of where new events may occur)
 - Lava flow (Probability of lava reaching the CFPP site)
 - Tephra fallout (Site vicinity and distance sources)



Discussion

Acronyms

<u>ACR</u>	<u>Acronym</u>
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- COLA Combined License Application
- CFPP Carbon Free Power Project
- ESRP Eastern Snake River Plain
- NRC Nuclear Regulatory Commission
- VHA Volcanic Hazards Analysis