

**U.S. Nuclear Regulatory Commission Summary of the September 14, 2022, Observation  
Public Meeting to Discuss Carbon Free Power Project’s White Paper on Volcanic Hazards  
Assessment**

**Meeting Summary**

The U.S. Nuclear Regulatory Commission (NRC) staff held an observation public preapplication meeting on September 14, 2022, with NuScale Power, LLC (NuScale) and Carbon Free Power Project, LLC (CFPP). The purpose of the meeting was for NuScale/CFPP to provide the NRC staff with an overview of the proposed NuScale/CFPP methodology for a volcanic hazards assessment (VHA), specifically, how the methodology would compare to the staff’s guidance provided in the Regulatory Guide (RG) 4.26, “Volcanic Hazards Assessment for Proposed Nuclear Power Reactor Sites,” Revision 0<sup>1</sup>. Additionally, NuScale requested staff’s preliminary feedback on CFPP’s methodology described in its White Paper<sup>2</sup>. This public meeting also included a closed portion to allow participants to discuss proprietary information, including CFPP’s schedule for conducting and completing activities related to the VHA. Presentation slides for this meeting are available in NRC’s Agency-wide Document Access and Management System (ADAMS) under accession no. ML22256A329.

This virtual meeting had attendees from the NRC, NuScale, CFPP, Fluor, Rizzo International, Xcel Energy Nuclear Services, Beyond Nuclear, Idaho National Laboratory (INL), Uranium Watch, MPR, Sargent Lundy, Breakthrough Institute, Hogan Lovells, and members of the public.

NuScale/CFPP started the presentation by providing an overview of the elements of performing VHA assessment as described in RG 4.26. Presenters then described the status of CFPP activities to support its VHA assessment. Specifically, NuScale/CFPP stated that they are currently focusing on three activities: identifying quaternary volcanos in the region, screening volcano hazards, and developing risk insights. Presenters stated that the strategy is consistent with the RG 4.26. The staff asked presenters why there was a need to develop a white paper if NuScale/CFPP plans to follow the guidance in RG 4.26. NuScale/CFPP responded that the purpose of the White Paper is to provide the staff an opportunity during preapplication interactions to become familiar with the strategy and to facilitate a more efficient review when the combined license application is submitted.

NuScale/CFPP presenters continued by stating that future activities in support of the VHA will include collecting and evaluating data, developing tectono-magmatic conceptual model, identifying potential volcanic phenomena through a screening process, developing numerical models to represent future volcanic hazards, and determining volcanic hazard event probabilities.

The NRC staff asked several questions during the presentation and received responses from NuScale/CFPP. Below is a summary of the staff’s questions and NuScale/CFPP’s responses:

Question: The expanded site vicinity from 25-mi to 35-mi radius appears to be reasonable and consistent with RG 4.26. Staff will be interested to see the basis for this 10-mile extension and what additional conservatisms are gained by the expanded site vicinity.

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<sup>1</sup> ADAMS Accession No. ML20272A168.

<sup>2</sup> “Volcano Hazards Analysis Methodology White Paper,” dated August 12, 2022, ADAMS Accession No. ML22224A196.

Response: NuScale/CFPP stated that the expanded site vicinity captures more recent volcanism on the Eastern Snake River Plain, including Hell's Half Acre and Craters of the Moon, which might impact the CFPP Site.

Question: On Slide 7, the presentation states that hazards will be modeled to determine volcanic hazard event probabilities accounting for uncertainties to select maximum magnitude volcanic events. Is this modeling being performed as part of the screening process in Step 3 or as part of the potential hazard determination in Step 4?

Response: NuScale/CFPP indicated that the modeling is specific to Step 3 at this time and the maximum hazard will be used in the engineering analysis option. The engineering analysis option requires maximum magnitude and understanding of likelihood of those events before evaluating the SSC performance.

Question: The staff asked a clarification question on whether there is a decision point of when to exercise the engineering analysis option to bypass the additional hazard calculations.

Response: NuScale/CFPP clarified that they are coordinating with Idaho National Laboratory to exchange data and information but will pursue the engineering analysis option regardless of the hazard results.

Question: The staff asked NuScale/CFPP's to clarify why the white paper states that screened-in volcanic phenomena will be prioritized for modeling based on potential hazard to the site. Will this prioritization and modeling be performed generically for each phenomenon or by individual volcanic source and resulting volcanic phenomena?

Response: NuScale/CFPP clarified that the general concept is to address a wide range of phenomena and prioritization is to look at dominant phenomena. The applicant will focus on the more challenging phenomena first and then consider other phenomena.

Question: The staff NuScale/CFPP to clarify, in addition to collecting new field data for this site, why will the project also be considering the new data collection activities being performed to support the INL volcanic senior seismic hazards analysis committee (V-SSHAC)?

Response: NuScale/CFPP is exchanging data and information with INL and relying on new data from the probabilistic volcanic hazards analysis (PVHA) team, this includes the vent and event database. Modeling will focus on the PVHA site and will be done ahead of the PVHA modeling.

Question: The NRC staff requested what specific steps are being taken to coordinate with the INL V-SSHAC? How will these coordination activities progress as the projects continue to completion on different timelines?

Response: NuScale/CFPP stated that this would be further discussed and addressed in the closed portion of the meeting.

Question: The staff requested clarification on why some of the technical work mentioned includes the center body and range (CBR) of the technically defensible information (TDI), typically used in a SSHAC. Will this be focused on the CFPP site only or will the available information from the INL V-SSHAC also be considered?

Response: NuScale/CFPP clarified that they are taking a wider approach to use data from PVHA and full environmental standard review plan (ESRP.) They are also mindful on SSHAC concepts to be more complete in the hazard assessment.

Question: The staff requested clarification on why the White Paper lists several hazards (ground deformation, lava flow, tephra) as significant to the CFPP Site. Is this an exhaustive list or a sample list of hazards identified as significant thus far?

Response: NuScale/CFPP replied that it was the latter. The White Paper was written before the screening exercise so additional hazards may be included based on results of the screening exercise. The applicant further stated that their general approach is that if there is a certain complexity associated with a hazard and period of concern for the site, the applicant will focus on modeling those complex hazards.

Question: The staff requested clarification on Slide 8, last bullet, what would be an example of something to be included for conservatism?

Response: NuScale/CFPP replied that the 35-mile site would be one example of something included for conservatism. The goal is to screen in if in doubt.

At the conclusion of the meeting, the NRC staff stated that the NuScale/CFPP's strategy appears to be consistent with the process outlined in RG 4.26 with a notable exception of expanding the site vicinity from a 25-mile radius around the site to a 35-mile radius. The staff also agreed that increasing the vicinity radius around the site would result in a more conservative approach to performing VHA.

During the closed portion of the meeting, NuScale and CFPP presented preliminary results from the screening analysis and provided a timeline for performing and completing their activities to support their plans to submit a combined license application to the staff in January 2024.