

**From:** Curry, Jim <jcurry@nuscalepower.com>  
**Sent:** Friday, November 8, 2019 1:10 PM  
**To:** VolcanicHazards-RG Resource  
**Cc:** Thompson, Jenise; Fetter, Allen  
**Subject:** [External\_Sender] NuScale comments on draft Volcanism RG

As indicated in the RG outline and the 10/21/19 public meeting discussion, the planned regulatory guide will provide a risk-informed framework to consider the likelihood of a volcanic event and potential consequences, but it will not specify a specific methodology (e.g., for determining the probability of a volcanic event or the potential area affected). A basis for the methodology may be a site-specific PRA, or other risk-informed method (e.g., a qualitative assessment that volcanic risk is bounded by other hazards), to provide a perspective for evaluating risk from all hazards. In this regard, a few comments:

- 1.) The methodology should consider absolute risk. In comparison to current generation plants, advanced plants have lower calculated risk from internal events and external events that are typically quantified (e.g., seismic, external floods). Thus, a bounding assessment of volcanic risk may appear relatively important for advanced plants in comparison to current generation plants, when in fact the risk is not significant in absolute terms. Consideration of absolute risk is consistent with the Commission's safety goal policy and associated CDF and LRF goals, as articulated in the 1995 "Policy Statement on the Use of Probabilistic Risk Assessment Methods in Nuclear Regulatory Activities" and the "White Paper on Risk-Informed and Performance-Based Regulation" (provided in SRM-SECY-98-0144).
- 2.) When evaluating volcanic risk, a screening frequency should be established taking into account Commission safety goals and the limited data available to quantify such hazard frequencies (as mentioned on the public call – *beyond the ability of science*).
- 3.) The RG should clarify the rationale for establishing new guidance for volcanic hazards e.g., advanced reactor designs have been proposed in locations that may present a volcanic hazard that is not apparent for currently operating plants.
- 4.) The guidance should be made applicable to design (site independent) applications, including a DCA, SDA Application, or ML application, to the extent possible. Although a specific approach is unclear at this outline stage of development, it is envisioned that a design application could—if the applicant elects--apply portions of the guidance at the generic design stage to establish postulated site parameters with respect to volcanic hazards that are demonstrated as acceptable for the design, in a manner comparable to other site parameters postulated and evaluated for the design. Then, a subsequent siting application would be able to complete the site-specific volcanic hazards assessment to demonstrate that the chosen site is within the approved design envelope, or address gaps between that design basis and the site hazards (e.g., by adopting mitigating strategies for an unbounded hazard) to the extent necessary. To this end, the applicable regulations should be updated to include 10 CFR 52.47(a)(1), 52.137(a)(1), and 52.157(f)(19).



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**Comment Number:** 1

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