

August 17, 2022

Docket No. 99902052

U.S. Nuclear Regulatory Commission
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SUBJECT: NuScale Power, LLC Submittal on behalf of Carbon Free Power Project (CFPP) Combined License Application (COLA) Licensing Strategy for Emergency Planning

REFERENCES:

1. Letter from CFPP to the NRC, NuScale Power, LLC Submittal of Presentation Materials Entitled "Carbon Free Power Project (CFPP) Combined License Application (COLA) Presentation Regulatory Engagement Plan, (Open Session)" PM-116772, Revision 0 dated May 10, 2022 (ML22130A802)
2. Letter from NuScale to the NRC, NuScale Power, LLC Submittal of Topical Report "Methodology for Establishing the Technical Basis for Plume Exposure Emergency Planning Zones," TR-0915-17772, Revision 3 dated June 10, 2022 (ML22161B010)
3. NEI 99-01, Revision 6. "Development of Emergency Action Levels for Non-Passive Reactors" (ML12326A805)
4. NEI 07-01, Revision 0, "Methodology for Development of Emergency Action Levels Advanced Passive Light Water Reactors," dated July 2009 (ML092030210)
5. NEI 10-05, Revision 0 "Assessment of On-Shift Emergency Response Organization Staffing and Capabilities," June 2011 (ML111751698)
6. NSIR/DPR-ISG-01, "Interim Staff Guidance - Emergency Planning for Nuclear Power Plants," Revision 0, November 2011 (ML113010523)
7. Advisory Committee on Reactor Safeguards (ACRS) Meeting No. 690 Transcripts November 2, 2021 (ML21321A161)
8. Letter from Southern Nuclear Operating Company Vogtle Electric Generating Plant Units 3 and 4 Combined License Application to NRC "Supplemental Response to Request for Additional Information Letter No. 029" (ML091750106)

The purpose of this letter is to provide the Carbon Free Power Project (CFPP) Combined License Application (COLA) licensing strategy for developing COLA Part 2 Final Safety Analysis Report Section 13.3 Emergency Planning, and COLA Part 5, Emergency Plan (EP). The key licensing assumptions for emergency planning are outlined below to indicate the planned regulatory approach and topical reports to be submitted to the Nuclear Regulatory Commission (NRC). This strategy was presented in Reference 1 and is intended to guide interactions between the CFPP and the NRC.

Key licensing assumptions for Emergency Planning:

The CFPP COLA will reference the NuScale US460 Standard Design Approval. The NuScale design offers opportunities to optimize Emergency Planning requirements. An Emergency Plan for a NuScale plant is based on the unique plant design and additional margins of safety afforded by a small modular reactor (SMR). The over-arching goal is to develop innovative ideas to reduce resources needed through the smart use of technology and personnel while maintaining the same reasonable assurance of public health and safety from radiological consequences.

1. CFPP COLA plans to use the proposed new EP Rule under 10 CFR 50.160 for performance-based Emergency Preparedness

The 10 CFR 50.160 final rulemaking (the Rule) is scheduled for publication in the Federal Register in January 2023, with an implementation date 30 days after publication. Utilizing 10 CFR 50.160 will eliminate the need to request exemptions from 10 CFR 50.33(g), 10 CFR 50.47(b) and (c)(2), and Appendix E to 10 CFR 50. The rule will allow applicants to demonstrate how they meet the EP performance-based framework based on their design and site-specific considerations through the implementation of a performance objective scheme and the conduct of drills and exercises.

The Rule will require development of a performance-based EP program. During the November 2021 ACRS Meeting No.690 (Reference 7), the NRC indicated they plan to develop regulatory oversight framework over the next two years following issuance of the new rule. The NRC also stated they did not expect any applications during the first two years following implementation of the rule.

The CFPP COLA Emergency Plan is being developed based on the new Rule. To ensure any significant issues and content to support the application are identified and resolved early, the CFPP COLA project team will coordinate pre-application engagement discussions with the NRC.

2. Utilize NuScale Emergency Planning Zone (EPZ) Sizing Methodology

Following approval by NRC, the plume exposure pathway EPZ sizing methodology described in Reference 2 will be applied with supporting CFPP site- and design-specific information to establish the CFPP EPZ.

3. On-Shift and Emergency Response Organization (ERO) Staffing Topical Report (TR)

The on-shift and ERO staffing TR will be a First of a Kind (FOAK) approach to the development of emergency plan-related staffing for NuScale Power Plants (NPP) because neither NEI 10-05 (Reference 5) nor ISG-01 (Reference 6) consider the unique plant design and the additional safety margins afforded by a SMR. The TR will develop methodology to be applied for determining emergency plan staffing requirements that a NPP would need in order to implement the Emergency Plan. This would include a description of emergency plan staffing requirements as well as the onsite ERO with delineation of authority, responsibilities, and duties of individuals that will implement the emergency plan and make offsite notifications.

4. Emergency Action Levels (EALs) Topical Report

The EAL scheme for a NPP will be a FOAK due to neither NEI 99-01 (Reference 3) nor NEI 07-01 (Reference 4) considered applicable to a SMR design. The TR will develop methodology to describe the NPP emergency classification and EAL scheme used to determine the minimum response to an abnormal event. Efforts will be made to utilize industry experience, to ensure the EALs serve the best interest of the public and are a quality tool for plant operators. The EALs will be developed based on NuScale's unique design. It is expected that by the nature of NuScale's design, the EALs will be simpler and involve less chance for escalation. The NuScale EPZ Methodology TR (Reference 2) will be applied to the development of EAL scheme.

5. Develop License Condition or Inspections, Tests, Analyses, and Acceptance Criteria (ITAAC) for Emergency Plan

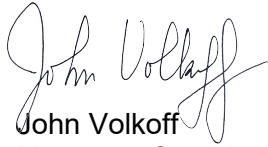
Similar to previous applicants (Reference 8), the CFPP COLA will include proposed ITAAC and License Conditions addressing a fully developed set of site-specific EALs, on-shift augmenting ERO staffing, and an Emergency Plan Performance-Based Matrix in accordance with 10 CFR 50.160. These License Conditions would allow time to develop a performance-based matrix and additional regulatory guidance related to the new rule. Development of a CFPP-specific Emergency Preparedness performance-based objective scheme will occur following NRC issuance of the Combined License, concurrent with the development of other necessary program and procedure development (e.g., radiation protection, training, security). The implementation milestone would be an initial exercise that demonstrates compliance with a performance-based EP program under 10 CFR 50.160.

NuScale requests on behalf of CFPP a public meeting to receive NRC feedback on the Emergency Plan key licensing assumptions. The timeline to submit the above TRs will be discussed during the meeting with NRC.

This letter makes no regulatory commitments and no revisions to any existing regulatory commitments.

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

Sincerely,

A handwritten signature in black ink, appearing to read "John Volkoff". The signature is fluid and cursive, with the first name "John" being more prominent than the last name "Volkoff".

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

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