



May 10, 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 Regulatory Engagement Plan, (Open Session)" PM-116772, Revision 0

**REFERENCE:** 1. Letter from CFPP to the NRC, "NuScale Power, LLC Letter of Intent Providing the Carbon Free Power Project (CFPP) Combined License Application (COLA) Response to NRC Regulatory Issue Summary 2020-02 and Regulatory Engagement Plan," dated January 28, 2022 (ML22028A277)

The purpose of this submittal is to provide presentation materials to the NRC for use during the upcoming CFPP COLA Presentation Regulatory Engagement Plan Meeting on May 19, 2022.

The enclosure to this letter is the nonproprietary presentation entitled "Carbon Free Power Project (CFPP) Combined License Application (COLA) Presentation Regulatory Engagement Plan, (Open Session)" PM-116772, Revision 0.

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](mailto:kperkins@nuscalepower.com).

Sincerely,

A handwritten signature in black ink that reads 'John Volkoff'. The signature is written in a cursive, flowing style.

John Volkoff  
Manager, Combined License Applications  
NuScale Power, LLC

Distribution: Michael Dudek, NRC  
Carolyn Lauron, NRC  
David Drucker, NRC

Enclosure 1: "Carbon Free Power Project (CFPP) Combined License Application (COLA)  
Presentation Regulatory Engagement Plan, (Open Session)" PM-116772,  
Revision 0

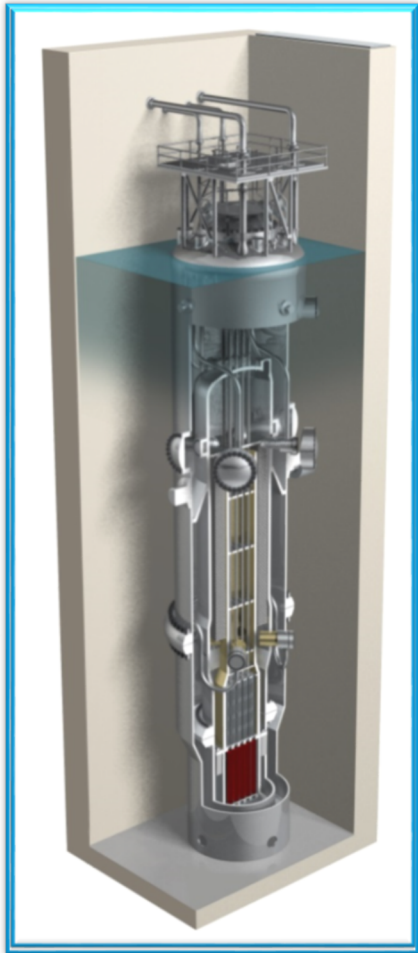


LO-118002

**Enclosure 1:**

“Carbon Free Power Project (CFPP) Combined License Application (COLA) Presentation  
Regulatory Engagement Plan, (Open Session)” PM-116772, Revision 0

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



## Regulatory Engagement Plan (Open Session)

May 19, 2022

PM-116772  
Revision: 0

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Template #: 0000-21727-F01 R9

# Presenters

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**Kyra Perkins**

NuScale Supervisor, Licensing

**Beth Brewer**

NuScale Licensing Engineer

**Beth Dalick**

NuScale Licensing Engineer

# Agenda

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## Open Session

- Nuclear Safety Message
- Purpose and Objectives
- Project Structure
- Project Approach and Goals
- COLA Content
- Types and Frequency of Interactions
- Technical Topics

# CFPP COL Pre-application Engagement

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## NuScale Power, LLC (NuScale) submitted Regulatory Engagement Plan January 28, 2022 (ML22028A277)

- **Purpose**

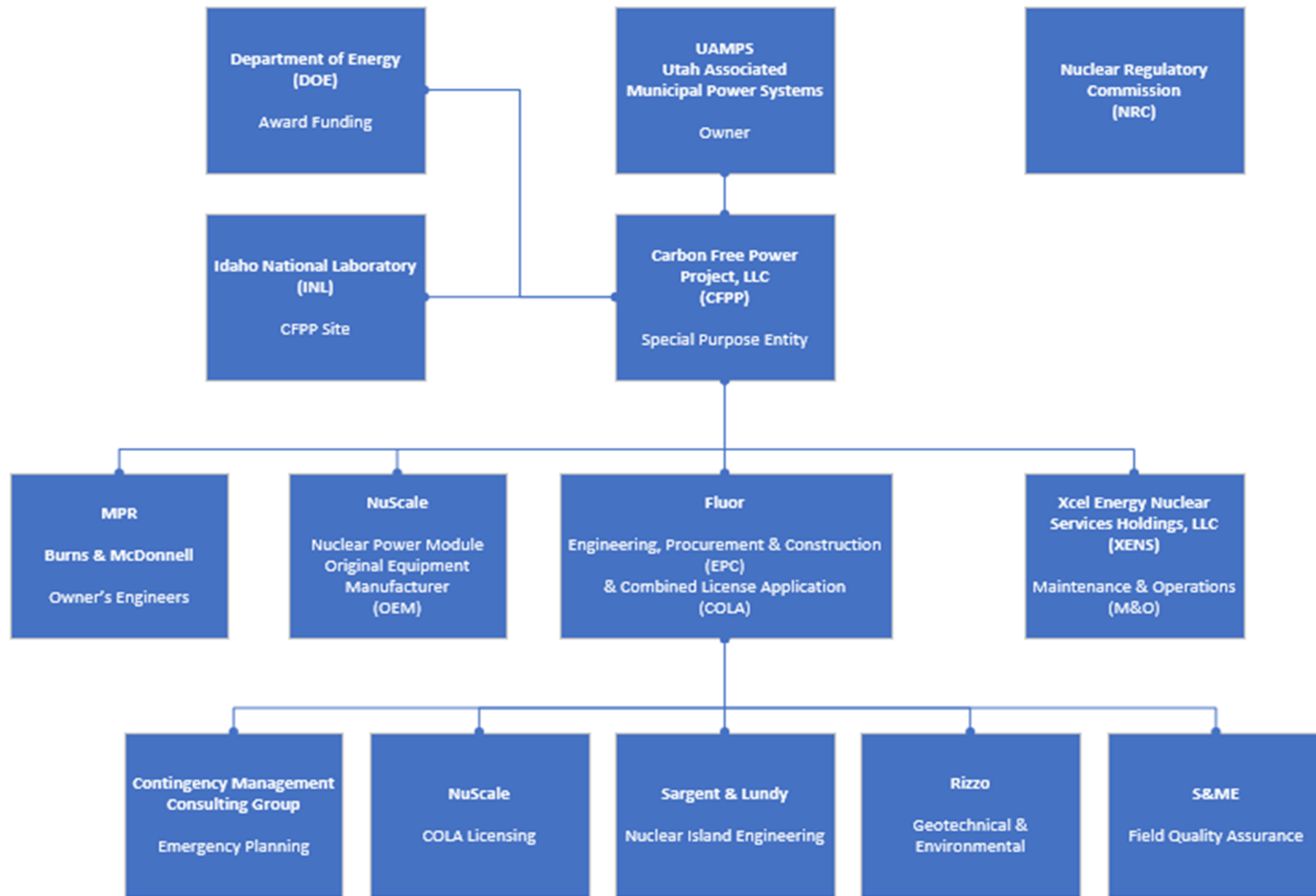
- Present proposed pre-application schedule
- Present overview of pre-application topics

- **Objectives**

- Inform U.S. Nuclear Regulatory Commission (NRC) staff's allocation of resources to support pre-application interactions
- Understand how Standard Design Approval Application (SDAA) schedule supports plans for COLA submittal
- Receive feedback from NRC staff

# Company and Project Structure

Carbon Free Power Project – CFPP Organization





# Project Approach and Goals

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- **CFPP to submit COLA under 10 CFR 52, Subpart C for a NuScale six-module (77MWe per module) plant**
- **COLA submittal planned January 2024**
- **The CFPP will pursue a COL referencing the Standard Design Approval (SDA) for the six-module plant**
- **SDAA submittal is planned for the fourth quarter of 2022**

# COLA Content

APPLICATION PART	COMBINED LICENSE	SDAA – Needed to Support COL	DESCRIPTION
Transmittal Letter	✓*	N/A	
Part 1: General and Financial Information	✓	N/A	Project information and information on the applicant(s).
Part 2: Safety Analysis Report	✓	Yes	SDA incorporated by reference; then departures and supplements are added as needed. Contains the design information and criteria for the proposed reactor and comprehensive data on the proposed site. It also discusses various hypothetical accident situations and the safety features of the plant that would prevent accidents or lessen their effects.
Part 3: Environmental Report	✓	No	Assessment of the environmental impact of the proposed facility. Used by NRC to support the environmental impact statement (EIS).
Part 4: Technical Specifications	✓	Yes	
Part 5: Emergency Plans	✓	No	
Part 6: Security Plans	✓	No	
Part 7: Exemptions, Departures, and Variances	Yes, if applicable	N/A	
Part 8: License Conditions; Inspections, Tests, Analyses and Acceptance Criteria	✓	Yes (only ITAAC)	Enumerates both operating conditions and Inspections, tests, analyses, and acceptance criteria (ITAAC) that a COL holder must meet to demonstrate that the facility has been constructed in conformance with the design.
Part 9: Withheld Information	✓	N/A	
Part 10: Quality Assurance Program Description	✓	Yes	
Part 11: Supplemental Information (e.g., Limited Work Authorization)	Yes, if applicable	No	

\* The symbol "✓" denotes mandatory information.

# Identified Engagement Topics

- **Four-phase Review**
- **Design-Centered Working Group (DCWG)**
- **Volcanic Hazards Assessment (VHA)**
- **Cyber Security**
- **Physical Security**
- **Operator Licensing**
- **Site Characterization**
- **Environmental Report**
- **Emergency Planning (EP)**
- **Submittal Schedule**
- **COLA/SDA Interface**
- **Limited Work Authorization (LWA)**
- **License Structure**
- **Decommissioning Funding**
- **Quality Assurance (QA) Program**
- **Safeguards Information (SGI) Program**
- **Readiness Assessment**

# Types and Frequency of Interactions

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- **Pre-application meetings**
- **Bi-weekly project management meetings**
- **Monthly CFPP meetings**
- **Status reports to docket project goals and objectives for pre-application**
- **Planning meetings and drop-ins, as needed**

# Design-Centered Working Group

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- **NRC released Regulatory Issue Summary (RIS) RIS 2006-06, “New Reactor Standardization Needed to Support the Design-Centered Licensing Review Approach” in May 31, 2006 recommending utilization of DCWG to facilitate NRC reviews, improve standardization and to address cross-cutting issues**
- **EPR, AP1000 and ESBWR DCWG were effectively used by the Applicants (R-COLA and S-COLA) to complete NRC reviews and to address issues**
- **NuScale recommends using DCWG for NuScale Applicants**
- **The DCWG team will initially include CFPP (R-COLA), NuScale, and Fluor. Nuclear Energy Institute (NEI) and others will participate as needed. S-COLAs will join at a later date**
- **NRC and NuScale reach agreement on establishing the DCWG, identification of key players, initial meeting date and agenda**

# Volcanic Hazards Assessment

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- **CFPP VHA will use an engineering analysis approach, consistent with Regulatory Guide 4.26, Volcanic Hazards Assessment for Proposed Nuclear Power Reactor Sites, Revision 0**
- **Drafting White Paper on Volcanic Hazards Analysis Approach Methodology**

# Cyber Security

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- **NuScale proposes cyber security methodology that will demonstrate a cyber-related attack will not impact the health and safety of the public**
- **NuScale is evaluating the need to submit a cyber security methodology topical report to the NRC**

# Physical Security

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- **Limited rulemaking for 73.55(s), “Alternative Physical Security Requirements for Small Modular Reactors”**
  - Performance and consequence based
  - Alternate physical security requirements for licensees that meet dose-consequence criteria
  - Transfer security functions of interdict and neutralize to local law enforcement (LLEA)
- **NuScale has implemented a “Security by Design” approach**



# Operator Licensing

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- **Hot licensing phase and cold licensing phase**
  - These approaches will include modifications from standard submittals for Advanced Design Passively Cooled Reactors (ADPCR).
- **Hot Licensing approach relies on two previous submittals**
  - Operator Exam Methodology
    - Submitted LO-0620-68757 on July 13, 2020
  - Knowledge and Abilities Catalog
    - Put into controlled reading room on September 10, 2020 (Draft SMR LOB K and A Section 1, Section 2).

# Operator Licensing

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- **Cold Licensing phase also relies on two additional actions**
  - NRC rulemaking
    - 86 FR 7513
    - Regulatory Basis for Comment – Part 50-52 with Appendices
  - Industry Guidance Document Changes
    - NUREG-1021 (rev 12) references ACAD 10-001 for all operator eligibility and training requirements
    - NuScale is proposing a new revision to ACAD 10-001 that will include specific guidance for ADPCR operator license
- **Note that the ACAD 10-001 changes apply to BOTH hot licensing and cold licensing phases**

# Site Characterization

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- **Geotechnical field work at the CFPP Site is complete**
  - Campaign initiated August 3, 2021 and completed January 12, 2022
  - 53 geologic borings completed
  - Surface and subsurface geophysical measurements completed
  - Installation of site-specific groundwater monitoring network completed
- **Commissioning of CFPP Met Tower is complete**
  - Instrumentation replaced/repared/calibrated December 3, 2021
  - CFPP Met Tower operational December 8, 2021
- **Site-specific monitoring campaign (site-specific groundwater and meteorological) has been initiated**
- **Reflection Survey, PS-Suspension Testing and Resistivity Testing is planned for Spring 2022**
- **Site-specific ecological surveys and cultural resources surveys are anticipated for Summer 2022**

# Environmental Report

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- **NRC and U.S. Department of Energy (DOE) Memorandum of Agreement clarification**
- **First of a kind (FOAK) use of Regulatory Guide (RG) 4.2 Rev 3, and apply to a SMR Footprint**
- **Utilization of existing environmental data augmented with site-specific data**
  - Idaho National Laboratory (INL) and other appropriate data (i.e., meteorological, hydrological, ecological)
  - Submit white paper highlighting approach to site/vicinity environmental data
  - Demonstrate comparable results to newly installed met tower after a year of data collection
- **Site Selection Overview**

# Emergency Planning

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- **NuScale Emergency Planning Zone (EPZ) methodology applicability to the COLA**
  - A topical report is currently under NRC review for the new methodology to determine EPZ
  - EPZ size determination report for the CFPP site
- **Emergency Action Levels (EALs)**
  - EAL Scheme for a site-boundary EPZ
  - FOAK due to neither NEI 99-01 or 07-01 applicable to SMR
- **On-Shift and ERO Staffing**
- **CFPP COLA plans to use the new EP Rule under 50.160**

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# Questions?

# Acronyms

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ADPCR	Advanced Design Passively Cooled Reactors	SDAA	Standard Design Approval Application
CFPP	Carbon Free Power Project	SGI	Safeguards Information
CFR	Code of Federal Regulations	UAMPS	Utah Associated Municipal Power Systems
COLA	Combined License Application	VHA	Volcanic Hazards Assessment
DCWG	Design-centered Working Group		
DOE	U.S. Department of Energy		
EAL	Emergency Action Level		
EP	Emergency Planning		
EPZ	Emergency Planning Zone		
FOAK	First of a kind		
INL	Idaho National Laboratory		
LWA	Limited Work Authorization		
NEI	Nuclear Energy Institute		
NRC	U.S. Nuclear Regulatory Commission		
NuScale	NuScale Power, LLC		
QA	Quality Assurance		
RG	Regulatory Guide		
RIS	Regulatory Issue Summary		
SDA	Standard Design Approval		