CARBON FREE
POWER PROJECT
155 North 400 West, Suite 480
Salt Lake City, UT 84103

LO-118299

May 25, 2022

Docket No. 99902052

U.S. Nuclear Regulatory Commission
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SUBJECT: NuScale Power, LLC Submittal of Presentation Materials, Entitled "Carbon Free Power Project (CFPP) Combined License Application (COLA) Presentation Cyber Security, (Open Session)," PM-118296, Revision 0

The purpose of this submittal is to provide presentation materials to the NRC for use during the upcoming CFPP COLA Cyber Security Meeting on June 09, 2022.

The enclosure to this letter is the nonproprietary presentation entitled "Carbon Free Power Project (CFPP) Combined License Application (COLA) Presentation Cyber Security, (Open Session)," PM-118296, Revision 0.

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

If you have any questions, please contact Susan Baughn at 541-452-7319 or at sbaughn@nuscalepower.com.

Sincerely,

John Volkoff
Manager, Combined License Applications
NuScale Power, LLC

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Enclosure 1: “Carbon Free Power Project (CFPP) Combined License Application (COLA) Presentation Cyber Security, (Open Session),” PM-118296, Revision 0

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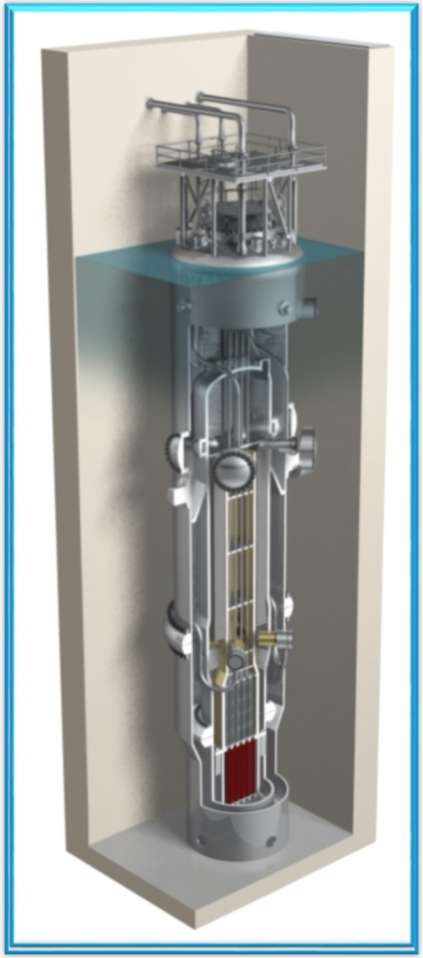
Enclosure 1:

"Carbon Free Power Project (CFPP) Combined License Application (COLA) Presentation Cyber Security, (Open Session)," PM-118296, Revision 0

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



Cyber Security
(Open Session)

June 9, 2022

Presenters

Susan Baughn
Supervisor, Licensing

Kevin Deyette
Program Manager, Nuclear Security and Emergency Preparedness

Tim Isaacs
Cyber Security Specialist

Agenda

Open Session

- Purpose / Objective
- Background
- NuScale Power Plant (NPP) Design Features
- CFPP Cyber Security Approach
- Next Steps
- Summary / Conclusion

Purpose / Objective

- **Present the proposed method to meet cyber security requirements that will protect the health and safety of the public up to the design basis threat (DBT) using a function based approach**
- **Assure alignment between CFPP and the U.S. Nuclear Regulatory Commission (NRC) on cyber security implementation approach**

Background

- **Intent and basis of Cyber Security regulations**
  - Protect the health and safety of the public from radiological sabotage due to a cyber attack, up to and including the DBT
  - Prevent impact on electrical grid due to cyber attack
- **NRC Requirements**
  - Protect digital systems and networks associated with safety-related and important to safety, security and emergency preparedness (SSEP) functions
  - Analyze and identify assets that must be protected
  - Establish, implement and maintain a cyber security program
  - Develop and maintain written policies and procedures
  - Perform periodic reviews of program
  - Retain records and supporting technical documentation

Background

- **Traditional approach**
  - Identify plant systems associated with SSEP functions, and related support systems and equipment
  - Identify critical systems
  - Identify critical digital assets (CDAs)
  - Consequence assessment (direct/indirect CDAs)
  - Select and apply security controls
- **Different approach warranted for CFPP**
  - Loss of a single 77 MWe NuScale Power Module (NPM) has little impact on the grid
  - Inherent safety features
  - Radiological hazard is significantly reduced

NPP Design Features

- **Does not require electrical power, additional water, or operator action in the first 72 hours after a Design Basis Event (DBE)**
  - Integrated NPM located below grade in the Ultimate Heat Sink (UHS)
  - UHS is a large pool of water in the Reactor Building (RXB)
  - Reactor coolant flows by natural circulation for all modes of operation and off-normal conditions
  - Module Protection System (MPS - combined RTS/ESFAS) automatically initiates passive decay heat removal
  - Electrical distribution, HVAC, fire protection / detection, water storage and transport are not required in a DBE to achieve or maintain safe shutdown
  - Each NPM has a dedicated power conversion system
  - No operator action required for safe shutdown or long term cooling
  - NPP is capable of achieving a site boundary Emergency Planning Zone (EPZ)

CFPP Cyber Security Approach

- **Simplified cyber security planning and regulatory acceptance**
  - Consistent with the intent and basis of regulations
  - A cyber attack alone on an NPP cannot cause a radiological release that will affect public health and safety
- **Credit features of the NPP design**
- **Utilize Cyber Security by Design**

CFPP Cyber Security Approach

- **Safety systems protected by secure architecture, Intrusion Detection, Access Authorization, Insider Mitigation programs, and real time monitoring**
- **Emergency Preparedness functions supported by diverse methods to prevent any single act prevention of function**

Next Steps

- **CFPP seeks alignment with NRC on the proposed approach for addressing Cyber Security**

Summary / Conclusion

- **NPP design precludes cyber attack from posing a threat to public health and safety**
- **CFPP Cyber Security approach uses:**
  - Passive and inherently safe design features
  - Cyber security by design
  - Secure architecture, Intrusion Detection, Access Authorization, Insider Mitigation programs, and real time monitoring

Questions?

Acronyms

CDA	Critical Digital Asset
CFPP	Carbon Free Power Project
COLA	Combined License Application
DBE	Design Basis Event
DBT	Design Basis Threat
EPZ	Plume Exposure Emergency Planning Zone
ESFAS	Engineered Safety Features Actuation System
MPS	Module Protection System
NPM	NuScale Power Module
NPP	NuScale Power Plant
NRC	U.S. Nuclear Regulatory Commission
RTS	Reactor Trip System
RXB	Reactor Building
SSEP	Safety, Security, and Emergency Preparedness
UHS	Ultimate Heat Sink