

October 31, 2023

Docket No. 52-050

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 the NuScale Standard Design Approval Application, Revision 1

NuScale Power, LLC (NuScale) is pleased to submit the Standard Design Approval Application (SDAA), Revision 1. NuScale submits Revision 1 in accordance with requirements of 10 CFR 52 Subpart E, Standard Design Approvals. NuScale requests NRC review, approval, and granting of standard design approval for the US460 standard plant design.

This submittal of the SDAA, Revision 1, proprietary, nonproprietary, public, and nonpublic versions will be submitted with each part, chapter, or technical report as a separate attachment to this submittal. NuScale requests that the attachments containing proprietary, Sensitive Unclassified Nonsafeguards Information (SUNSI), and Security Related Information (SRI) be withheld from public disclosure in accordance with the requirements of 10 CFR § 2.390. Some of the attachments contain information proprietary to Framatome Inc. (formerly AREVA Inc.), denoted by brackets (i.e., “[]”). The enclosed affidavits (NuScale affidavit, Enclosure 1 and Framatome affidavit, Enclosure 2) support this request. If the attachment has been determined to contain Export Controlled Information, this information must be protected from disclosure per the requirements of 10 CFR § 810.

This letter is accompanied with the following attachments:

- Part 1, “General and Financial Information,” Revision 1 (public version)
- Part 2, Chapter 1, “Introduction and General Description of the Plant,” Revision 1 (public and nonpublic versions, SRI)
- Part 2, Chapter 2, “Site Characteristics and Site Parameters,” Revision 1 (public version)

- Part 2, Chapter 3, “Design of Structures, Systems, Components and Equipment,” Revision 1 (public and nonpublic versions, SRI)
 - NuScale Comprehensive Vibration Assessment Program Analysis Technical Report, TR-121353, Revision 0 (proprietary and nonproprietary versions)
 - NuScale Comprehensive Vibration Assessment Program Measurement and Inspection Plan Technical Report, TR-121354, Revision 0 (proprietary and nonproprietary versions)
 - Pipe Rupture Hazards Analysis, TR-121507, Revision 0 (proprietary and nonproprietary versions)
 - US460 NuScale Power Module Seismic Analysis, TR-121515, Revision 0 (proprietary and nonproprietary versions)
 - Containment Vessel Ultimate Pressure Integrity, TR-121516, Revision 1 (proprietary and nonproprietary versions)
 - NuScale Power Module Short-Term Transient Analysis, TR-121517, Revision 0 (proprietary and nonproprietary versions)
- Part 2, Chapter 4, “Reactor,” Revision 1 (public version)
 - NuFuel-HTP2™ Fuel and Control Rod Assembly Designs, TR-117605, Revision 0 (proprietary and nonproprietary versions)
- Part 2, Chapter 5, “Reactor Coolant System and Connecting Systems,” Revision 1 (public version)
 - Fluence Calculation Methodology and Results, TR-118976, Revision 0 (proprietary and nonproprietary versions)
 - Pressure and Temperature Limits Methodology, TR-130877, Revision 0 (proprietary and nonproprietary versions)
 - Use of Austenitic Stainless Steel for NPM Lower Reactor Pressure Vessel, TR-130721, Revision 0 (proprietary and nonproprietary versions)
- Part 2, Chapter 6, “Engineered Safety Features,” Revision 1 (public version)
 - NuScale Containment Leakage Integrity Assurance, TR-123952, Revision 0 (proprietary and nonproprietary versions)
- Part 2, Chapter 7, “Instrumentation and Controls,” Revision 1 (public version)
 - NuScale Instrument Setpoint Methodology Technical Report, TR-122844, Revision 0 (proprietary and nonproprietary)
- Part 2, Chapter 8, “Electric Power,” Revision 1 (public version)
- Part 2, Chapter 9, “Auxiliary Systems,” Revision 1 (public and nonpublic versions, SRI)
- Part 2, Chapter 10, “Steam and Power Conversion System,” Revision 1 (public version)

- Part 2, Chapter 11, “Radioactive Waste Management,” Revision 1 (public version)
 - Effluent Release (Gale Replacement) Methodology and Results, TR-123242, Revision 1 (proprietary and nonproprietary versions)
- Part 2, Chapter 12, “Radiation Protection,” Revision 1 (public and nonpublic versions, SUNSI)
- Part 2, Chapter 13, “Conduct of Operations,” Revision 1 (public version)
- Part 2, Chapter 14, “Initial Test Program and Inspections, Tests, Analyses, and Acceptance Criteria,” Revision 1 (public version)
- Part 2, Chapter 15, “Transient and Accident Analyses,” Revision 1 (public version)
 - Treatment of DC Power in Safety Analysis, TR-102621, Revision 1 (proprietary and nonproprietary versions)
- Part 2, Chapter 16, “Technical Specifications,” Revision 1 (public version)
 - Technical Specifications Development, TR-101310, Revision 0 (nonproprietary version)
- Part 2, Chapter 17, “Quality Assurance and Reliability Assurance,” Revision 1 (public version)
- Part 2, Chapter 18, “Human Factors Engineering,” Revision 1 (public version)
 - Human Factors Engineering Functional Requirements Analysis and Function Allocation Implementation Plan, TR-124333, Revision 0 (nonproprietary version)
 - Human Factors Engineering Design Implementation Plan, TR-130418, Revision 0 (nonproprietary version)
 - Human Factors Engineering Task Analysis Implementation Plan, TR-130413, Revision 0 (proprietary and nonproprietary versions)
 - Human Factors Engineering Program Management Plan, TR-130414, Revision 0 (nonproprietary version)
 - Human Factors Engineering Staffing and Qualification Results Summary Report, TR-130412, Revision 0 (proprietary and nonproprietary versions)
 - Human Factors Engineering Operating Experience Review Implementation Plan, TR-130409, Revision 0 (proprietary and nonproprietary)
 - Human Factors Engineering Human-System Interface Design Implementation Plan, TR-130417, Revision 0 (nonproprietary version)
 - Human Factors Engineering Treatment of Important Human Actions Results Summary Report, TR-130416, Revision 0 (nonproprietary version)
 - Human Factors Engineering Verification and Validation Implementation Plan, TR-130415, Revision 0 (nonproprietary version)

- Part 2, Chapter 19, “Probabilistic Risk Assessment and Severe Accident Evaluation,” Revision 1 (public and nonpublic versions, SRI)
- Part 4, “US460 Generic Technical Specifications,” Volumes 1 and 2, Revision 1 (public version)
- Part 7, “Exemptions,” Revision 1 (public version)
- Part 8, “License Conditions; Inspections, Tests, Analyses, and Acceptance Criteria,” Revision 1 (public version)
- Part 9, “Withheld Information,” Revision 1 (public version)
- Part 10, “Quality Assurance Program Description,” Revision 1 (public version)

The SDAA Revision 1 is being submitted electronically via the NRC EIE with separate attachments for each part or chapter.

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

If you have any questions, please contact Thomas Griffith at 541-452-7813 or tgriffith@nuscalepower.com.

I declare under penalty of perjury that the foregoing is true and correct. Executed on October 31, 2023.

Sincerely,



Carrie Fosaaen
Vice President of Regulatory Affairs
NuScale Power, LLC

Distribution: Matthew Mitchell, NRC
Brian Smith, NRC
Getachew Tesfaye, NRC
Stacy Joseph, NRC

Enclosure 1: Affidavit of Carrie Fosaaen AF-151264
Enclosure 2: Affidavit of Morris Byram

Enclosure 1:

Affidavit of Carrie Fosaaen AF-151264

NuScale Power, LLC

AFFIDAVIT of Carrie Fosaaen

I, Carrie Fosaaen, state as follows:

- (1) I am the Vice President of Regulatory Affairs of NuScale Power, LLC (NuScale), and as such, I have been specifically delegated the function of reviewing the information described in this Affidavit that NuScale seeks to have withheld from public disclosure, and am authorized to apply for its withholding on behalf of NuScale
- (2) I am knowledgeable of the criteria and procedures used by NuScale in designating information as a trade secret, privileged, or as confidential commercial or financial information. This request to withhold information from public disclosure is driven by one or more of the following:
 - (a) The information requested to be withheld reveals distinguishing aspects of a process (or component, structure, tool, method, etc.) whose use by NuScale competitors, without a license from NuScale, would constitute a competitive economic disadvantage to NuScale.
 - (b) The information requested to be withheld consists of supporting data, including test data, relative to a process (or component, structure, tool, method, etc.), and the application of the data secures a competitive economic advantage, as described more fully in paragraph 3 of this Affidavit.
 - (c) Use by a competitor of the information requested to be withheld would reduce the competitor's expenditure of resources, or improve its competitive position, in the design, manufacture, shipment, installation, assurance of quality, or licensing of a similar product.
 - (d) The information requested to be withheld reveals cost or price information, production capabilities, budget levels, or commercial strategies of NuScale.
 - (e) The information requested to be withheld consists of patentable ideas.
- (3) Public disclosure of the information sought to be withheld is likely to cause substantial harm to NuScale's competitive position and foreclose or reduce the availability of profit-making opportunities. The accompanying Standard Design Approval Application reveals distinguishing aspects about the process by which NuScale develops its Standard Design.

NuScale has performed significant research and evaluation to develop a basis for this process and has invested significant resources, including the expenditure of a considerable sum of money.

The precise financial value of the information is difficult to quantify, but it is a key element of the design basis for a NuScale plant and, therefore, has substantial value to NuScale.

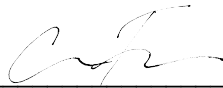
If the information were disclosed to the public, NuScale's competitors would have access to the information without purchasing the right to use it or having been required to undertake a similar expenditure of resources. Such disclosure would constitute a misappropriation of NuScale's intellectual property, and would deprive NuScale of the opportunity to exercise its competitive advantage to seek an adequate return on its investment.

- (4) The information sought to be withheld is in the enclosed report entitled "NuScale Design Approval Application, Revision 1." The enclosure contains the designation "Proprietary" at the top of each page containing proprietary information. The information considered by NuScale to be proprietary is identified within double braces, "{{ }}" in the document.
- (5) The basis for proposing that the information be withheld is that NuScale treats the information as a trade secret, privileged, or as confidential commercial or financial information. NuScale relies upon the exemption from disclosure set forth in the Freedom of Information Act ("FOIA"), 5 USC §

552(b)(4), as well as exemptions applicable to the NRC under 10 CFR §§ 2.390(a)(4) and 9.17(a)(4).

- (6) Pursuant to the provisions set forth in 10 CFR § 2.390(b)(4), the following is provided for consideration by the Commission in determining whether the information sought to be withheld from public disclosure should be withheld:
- (a) The information sought to be withheld is owned and has been held in confidence by NuScale.
 - (b) The information is of a sort customarily held in confidence by NuScale and, to the best of my knowledge and belief, consistently has been held in confidence by NuScale. The procedure for approval of external release of such information typically requires review by the staff manager, project manager, chief technology officer or other equivalent authority, or the manager of the cognizant marketing function (or his delegate), for technical content, competitive effect, and determination of the accuracy of the proprietary designation. Disclosures outside NuScale are limited to regulatory bodies, customers and potential customers and their agents, suppliers, licensees, and others with a legitimate need for the information, and then only in accordance with appropriate regulatory provisions or contractual agreements to maintain confidentiality.
 - (c) The information is being transmitted to and received by the NRC in confidence.
 - (d) No public disclosure of the information has been made, and it is not available in public sources. All disclosures to third parties, including any required transmittals to NRC, have been made, or must be made, pursuant to regulatory provisions or contractual agreements that provide for maintenance of the information in confidence.
 - (e) Public disclosure of the information is likely to cause substantial harm to the competitive position of NuScale, taking into account the value of the information to NuScale, the amount of effort and money expended by NuScale in developing the information, and the difficulty others would have in acquiring or duplicating the information. The information sought to be withheld is part of NuScale's technology that provides NuScale with a competitive advantage over other firms in the industry. NuScale has invested significant human and financial capital in developing this technology and NuScale believes it would be difficult for others to duplicate the technology without access to the information sought to be withheld.

I declare under penalty of perjury that the foregoing is true and correct. Executed on 10/31/2023.



Carrie Fosaaen

Enclosure 2:

Affidavit of Morris Byram

A F F I D A V I T

1. My name is Morris Byram. I am Product Manager, Licensing & Regulatory Affairs for Framatome Inc. (Framatome) and as such I am authorized to execute this Affidavit.

2. I am familiar with the criteria applied by Framatome to determine whether certain Framatome information is proprietary. I am familiar with the policies established by Framatome to ensure the proper application of these criteria.

3. I am familiar with the Framatome information contained in the Document TR-117605-P, Revision 0, "NuFuel-HTP2™ Fuel and Control Rod Assembly Designs," within the attachment entitled, "Part 2, Chapter 4, 'Reactor,' Revision 1," to the NuScale Power, LLC letter Number LO-151262 with subject, "NuScale Power, LLC Submittal of the NuScale Standard Design Approval Application, Revision 1," and referred to herein as "Document." Information contained in this Document has been classified by Framatome as proprietary in accordance with the policies established by Framatome for the control and protection of proprietary and confidential information.

4. This Document contains information of a proprietary and confidential nature and is of the type customarily held in confidence by Framatome and not made available to the public. Based on my experience, I am aware that other companies regard information of the kind contained in this Document as proprietary and confidential.

5. This Document has been made available to the U.S. Nuclear Regulatory Commission in confidence with the request that the information contained in this Document be withheld from public disclosure. The request for withholding of proprietary information is made in accordance with 10 CFR 2.390. The information for which withholding from disclosure is

requested qualifies under 10 CFR 2.390(a)(4) "Trade secrets and commercial or financial information."

6. The following criteria are customarily applied by Framatome to determine whether information should be classified as proprietary:

- (a) The information reveals details of Framatome's research and development plans and programs or their results.
- (b) Use of the information by a competitor would permit the competitor to significantly reduce its expenditures, in time or resources, to design, produce, or market a similar product or service.
- (c) The information includes test data or analytical techniques concerning a process, methodology, or component, the application of which results in a competitive advantage for Framatome.
- (d) The information reveals certain distinguishing aspects of a process, methodology, or component, the exclusive use of which provides a competitive advantage for Framatome in product optimization or marketability.
- (e) The information is vital to a competitive advantage held by Framatome, would be helpful to competitors to Framatome, and would likely cause substantial harm to the competitive position of Framatome.

The information in this Document is considered proprietary for the reasons set forth in paragraph 6(b), 6(c), and 6(d) above.

7. In accordance with Framatome's policies governing the protection and control of information, proprietary information contained in this Document has been made available, on a limited basis, to others outside Framatome only as required and under suitable agreement providing for nondisclosure and limited use of the information.

8. Framatome policy requires that proprietary information be kept in a secured file or area and distributed on a need-to-know basis.

9. The foregoing statements are true and correct to the best of my knowledge, information, and belief.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on: (10/31/2023)

BYRAM Morris Digitally signed by BYRAM
Morris
Date: 2023.10.31 12:55:48 -07'00'

(NAME)

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