

June 29, 2023

Docket No. 52-048

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
One White Flint North
11555 Rockville Pike
Rockville, MD 20852-2738

SUBJECT: NuScale Power, LLC Request for Exemption to the Reporting Requirements of 10 CFR 50.46(a)(3)

- REFERENCES:**
1. U.S. Nuclear Regulatory Commission, *Standard design approval; issuance*, 85 Fed. Reg. 61,038, Sept. 29, 2020
 2. Letter from NuScale Power, LLC to NRC, "NuScale Power, LLC Submittal of the Approved Version of NuScale Topical Report, 'Loss-of-Coolant Accident Evaluation Model,' TR-0516-49422, Revision 2," dated July 7, 2020 (ML20189A644)

The NuScale Power, LLC (NuScale) US600 Design Certification (DC) was approved and integrated into 10 CFR 52, Appendix G. The same design was also approved as a Standard Design Approval (SDA) (Reference 1). The DC and SDA both incorporate the topical report, Loss-of-Coolant Accident Evaluation Model (Reference 2). The purpose of this letter is to request a specific exemption to the reporting requirements of 10 CFR 50.46(a)(3) pursuant to 10 CFR 50.12 for the Appendix G DC and the associated SDA.

The Attachment to this letter provides the justification for the exemption request. NuScale requests a response to this request be completed in 60 days from the date of transmittal.

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

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

Sincerely,



Mark W. Shaver
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Attachment: Request for Exemption to the Reporting Requirements of 10 CFR 50.46(a)(3)

Request for Exemption from Reporting Requirements of 10 CFR 50.46(a)(3)

1.0 Introduction and Request

1.1 Summary

NuScale Power, LLC (NuScale), requests an exemption from 10 CFR 50.46(a)(3) to defer reporting of changes to or errors in an acceptable ECCS evaluation model (EM) unless and until that EM is incorporated in a license application. NuScale Topical Report TR-0516-49422 (Reference 4.1) documents an acceptable ECCS EM, and is incorporated by reference in the final safety analysis report supporting NuScale's US600 standard design approval (SDA) and design certification (DC). Neither the US600 SDA, DC, nor the associated ECCS EM is currently referenced or anticipated to be referenced by an application for constructing or operating a nuclear facility. Because changes or errors in the ECCS EM have no effect on nuclear safety, reporting of changes or errors would not serve the underlying purpose of the rule.

1.2 Regulatory Requirements

10 CFR 50.46(a)(3) states in part:

"(iii) For each change to or error discovered in an acceptable evaluation model or in the application of such a model that affects the temperature calculation, the applicant or holder of a standard design approval or the applicant for a standard design certification (including an applicant after the Commission has adopted a final design certification rule) shall report the nature of the change or error and its estimated effect on the limiting ECCS analysis to the Commission and to any applicant or licensee referencing the design approval or design certification at least annually as specified in § 52.3 of this chapter. If the change or error is significant, the applicant or holder of the design approval or the applicant for the design certification shall provide this report within 30 days and include with the report a proposed schedule for providing a reanalysis or taking other action as may be needed to show compliance with § 50.46 requirements. The affected applicant or holder shall propose immediate steps to demonstrate compliance or bring plant design into compliance with § 50.46 requirements."

1.3 Requested Exemption

Pursuant to 10 CFR 50.12, NuScale requests an exemption from the requirements of 10 CFR 50.46(a)(3)(iii) as applicable to TR-0516-49422-P-A, Revision 2 (Reference 4.1).

1.4 Result of Exemption

If the requested exemption is granted, NuScale will defer reporting changes to or errors discovered in its acceptable evaluation model, Reference 4.1, unless and until that evaluation model is incorporated in a license application.

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2.0 Justification for Exemption

2.1 Background

In support of NuScale's US600 DC application (DCA), NuScale submitted for approval a new ECCS EM as topical report TR-0516-49422, "Loss-of-Coolant Accident Evaluation Model" (the "LOCA TR"). Following NRC's issuance of a Safety Evaluation Report (SER), NuScale submitted the approved version of the LOCA TR on July 7, 2020 (Reference 4.1). TR-0516-49422-P-A, Revision 2 is therefore an "acceptable evaluation model" with respect to 10 CFR 50.46 and the reporting requirements therein are now in effect. NuScale is the holder of a standard design approval (Reference 4.2) and the associated standard design certification is published as Appendix G to 10 CFR 52; the final safety analysis report supporting both approvals incorporates the acceptable EM.

The ECCS EM reporting requirements were first codified as part of a 1998 revision to 10 CFR 50.46, which applied at that time only to applicants and holders of an operating license or construction permit. NRC's stated reason for annual reporting was "to ensure that [NRC] agree[s] with the applicant's or licensee's assessment of the significance of the error or change and to maintain cognizance of modifications made subsequent to NRC review of the evaluation model." With respect to 30-day reporting, NRC stated "significant errors require more timely attention since they may be important to the safe operation of the plant and raise questions as to the adequacy of the overall evaluation model" (53 Fed. Reg. 35,996, at 36,001). NRC's 2007 update to Part 52 included a "conforming" change to 10 CFR 50.46 "so that NRC will be notified of changes to or errors in acceptable evaluation models, or the application of such models, that were used in licenses, certifications, and approvals issued under part 52" (72 Fed. Reg. 49,352, at 49,400).

2.2 Technical Basis

There are currently no license applications that reference the NuScale US600 DC, SDA, or the associated ECCS EM.

Subsequent to the completion of the US600 DC, NuScale updated the LOCA TR and submitted Revision 3 to TR-0516-49422 for NRC review and approval. Changes to the LOCA TR since Revision 2 are described in that update. NuScale submitted the US460 SDA application referencing the updated LOCA TR. Future license applications are expected to reference the US460 SDA and its updated LOCA TR, not TR-0516-49422-P-A, Revision 2. If this exemption is granted and circumstances should change such that a license application references TR-0516-49422-P-A, Revision 2, the US600 SDA, or the DC, NuScale would recommence reporting pursuant to 10 CFR 50.46(a)(3) upon tendering of that application.

NRC's reason for the annual reporting requirement is "cognizance of modifications made subsequent to NRC review of the evaluation model." NRC will review changes subsequent to its approval of the acceptable EM via review of the updated LOCA TR. The updated LOCA TR, once approved, will be subject to the reporting requirements of 10 CFR 50.46(a)(3).

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NRC's reason for the 30-day reporting requirement is that significant changes or errors "may be important to the safe operation of the plant and raise questions as to the adequacy of the overall evaluation model." Because no license or application references the acceptable EM, errors in it are not important to the safe operation of a plant or to the construction of a plant with an adequate ECCS design.

The intent of reporting changes or errors in the ECCS EM is similar to reporting required under Section 206 of the Energy Reorganization Act, as implemented by 10 CFR Part 21. The 2007 update to Part 52 that extended 10 CFR 50.46 reporting to SDA applicants and holders and applicants for design certification (DC) also extended Part 21 reporting to those entities. In Regulatory Information Summary (RIS) 2010-05 (Reference 4.3), NRC concluded that Part 21 reporting for SDAs and DCs "may be delayed until the time that the Part 52 process is first referenced" by a license application." NRC concluded the deferral in Part 21 reporting complied with Part 21 rules, but the rationale for deferred reporting also justifies this exemption request.

With respect to Part 21 reporting, RIS 2010-05 states "after referencing, the design certification rule (DCR) applicant must make the necessary notifications to the NRC as well as provide the necessary corrections to the final design." With respect to the ECCS EM, NuScale processes support comparable future reporting and corrections. Any error discovered in the acceptable EM would be documented in NuScale's Corrective Action Program (CAP) as part of NuScale's NRC-approved Quality Assurance Program. Errors will be evaluated for significance and impact to calculations used as a basis for the US600 DC and SDA. During the process of updating the LOCA TR, any such errors will be addressed. If a license application subsequently references TR-0516-49422-P-A, Revision 2, the US600 SDA, or the DC, NuScale will perform necessary reporting of those previously-documented changes or errors and commence subsequent reporting as required by 10 CFR 50.46(a)(3)(iii).

2.3 Regulatory Basis

The exemption requirements for 10 CFR Part 50 regulations are found in 10 CFR 50.12, and are addressed as follows:

The requested exemption is authorized by law (10 CFR 50.12(a)(1)).

This exemption is not inconsistent with the Atomic Energy Act of 1954, as amended. The NRC has authority under 10 CFR 50.12 to grant exemptions from the requirements of this regulation. Therefore, the proposed exemption is authorized by law.

The requested exemption will not present an undue risk to the public health and safety (10 CFR 50.12(a)(1)).

This exemption will not impact the consequences of any design basis event and will not create new accident precursors. Therefore, the exemption will not present an undue risk to the public health and safety.

The requested exemption is consistent with the common defense and security (10 CFR 50.12(a)(1)).

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The exemption does not affect the design, function, or operation of structures or plant equipment that is necessary to maintain the secure status of the plant. The proposed exemption has no impact on plant security or safeguards procedures. Therefore, the requested exemption is consistent with the common defense and security.

Special circumstances are present in that application of the regulation in the particular circumstances would not serve the underlying purpose of the rule or is not necessary to achieve the underlying purpose of the rule (10 CFR 50.12(a)(2)(ii)).

The underlying purpose of 10 CFR 50.46 reporting requirements is to ensure NRC and applicant or licensee cognizance of changes or errors in an approved ECCS EM that may impact the acceptability of ECCS performance or adequacy of the EM. There are no licensees or license applicants that reference TR-0516-49422-P-A, Revision 2. Revision 3 of the ECCS EM includes changes made to the accepted EM. The NRC will be notified of any additional changes to the ECCS EM if and when NuScale submits any further updates. If a license applicant references the TR-0516-49422-P-A, Revision 2, NuScale will perform necessary reporting to NRC and the applicant. Therefore, absent a license application referencing the accepted EM, reporting changes to or errors in the EM is not necessary to achieve the underlying purpose of the rule.

Special circumstances are present in that the exemption would provide only temporary relief from the applicable regulation and the licensee or applicant has made good faith efforts to comply with the regulation (10 CFR 50.12(a)(2)(ii)).

NuScale is requesting only temporary relief from the reporting requirements of 10 CFR 50.46. The exemption is only for the time period when no license applicant references TR-0516-49422-P-A, Revision 2; during this indefinite period no license applications or facilities could be affected by changes or errors to the acceptable EM. If a license applicant references TR-0516-49422-P-A, Revision 2, NuScale will perform necessary reporting to NRC and the applicant.

NuScale has made good faith efforts to comply with the regulation. Errors in the LOCA EM are documented in NuScale's CAP. No significant change to or error in the approved LOCA EM has been identified to this point. NuScale has fulfilled and will continue to fulfill the annual reporting requirement prior to this exemption being granted.

Therefore, the exemption would provide only temporary relief from the regulation and NuScale has made good faith efforts to comply with the regulation.

3.0 Conclusion

On the basis of the information presented, NuScale requests that the NRC grant an exemption from the requirements of 10 CFR 50.46(a)(3)(iii).

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4.0 References

- 4.1 NuScale Power, LLC Letter LO-0620-70793, *NuScale Power, LLC Submittal of the Approved Version of NuScale Topical Report, "Loss-of-Coolant Accident Evaluation Model," TR-0516-49422, Revision 2*, July 7, 2020 (ML20189A644).
- 4.2 U.S. Nuclear Regulatory Commission, *Standard design approval; issuance*, 85 Fed. Reg. 61,038, Sept. 29, 2020.
- 4.3 U.S. Nuclear Regulatory Commission, Regulatory Issue Summary 2010-05, *Applicability of 10 CFR Part 21 Requirements to Applicants for Standard Design Certifications*, May 24, 2010 (ML091620498).

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