

June 21, 2024

Carrie M. Safford
Secretary of the Commission
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

SUBJECT: Request for NRC Actions to Promptly Enable Construction of ASME Code items without an Owner

- REFERENCES:**
1. American Society of Mechanical Engineers, Boiler and Pressure Vessel Code, Section III, Subsection NCA, "General Requirements for Division 1 and Division 2."
 2. American Society of Mechanical Engineers, Boiler and Pressure Vessel Code, Code Cases, Code Case N-883, "Construction of Items Prior to the Establishment of a Section III, Division 1 Owner."
 3. U.S. Nuclear Regulatory Commission, "Design, Fabrication, and Materials Code Case Acceptability, ASME Section III Regulatory Guide 1.84, Revision 39, December 2021.
 4. NuScale Power, LLC, "NuScale Power, LLC Comments on Approval of American Society of Mechanical Engineers' Code Cases, Docket ID NRC-2017-0025," LO-104773, July 21, 2021.
 5. NuScale Power, LLC, "Request for 10 CFR 50.55a Code Alternative: American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code (BPVC) Section III, Code Case N-883," LO-132226, Dec. 14, 2022.
 6. Public Meeting on ASME Code Case N-883: "Construction of Items Prior to the Establishment of a Section III, Division 1, Owner," May 8, 2024, ADAMS Accession ML24128A072.

Early construction of NuScale Power Module components is essential for NuScale to produce and deliver its standardized, small modular reactor design in accordance with customer construction needs. Other advanced reactor vendors with standardized designs will likely have the same need. Pursuant to 10 CFR 50.10, an NRC license or other authorization is not required to fabricate components of a future reactor facility at a place other than the component's final, in-place location. In other words, NRC authorization is not supposed to be needed to make reactor facility components in a factory, which would support NuScale's business needs and plans for early construction of Code items.

However, certain provisions of ASME BPVC, Section III (the “Code,” Reference 1) act to preclude “construction” of Code items without a designated “Owner.” The “Owner” provisions in Section III are linked to reactor licensing. Because compliance with ASME Section III is required by 10 CFR 50.55a in the design and construction of a facility, a Code item constructed in a manner inconsistent with Section III is unusable in a reactor facility. Thus, notwithstanding the express directive of 10 CFR 50.10, other NRC regulations effectively prevent construction of a component in advance of a license application.

In response to the needs of advanced and modular reactor vendor needs, in January 2018 ASME approved Code Case N-883 (CC N-883; Reference 2) to allow “construction” of Code items prior to establishing an Owner for those components, which would allow early fabrication without any tie to NRC licensing. Code Case N-883 would therefore provide a process that aligns Code item construction with the scope of construction under 10 CFR 50.10.

Contrary to industry needs and ASME’s intent, NRC Staff conditioned agency approval of Code Case N-883 (CC N-883) to require a construction permit, operating license, or combined license to use it (Reference 3). That condition renders the Code Case useless by requiring an Owner (i.e., an NRC licensee) to use it. Even more, the Staff’s condition contravenes the purpose and meaning of 10 CFR 50.10: a vendor still cannot fabricate a Code item that could be used in a future U.S. facility without some form of NRC authorization.

NuScale first identified the problem with the Staff’s conditions on CC N-883 in comments responding to draft Regulatory Guide 1.84 in mid-2021, albeit shortly after the close of the public comment period (Reference 4). Staff declined to address NuScale’s comments. NuScale next attempted to directly resolve this impediment to fabrication via a Code alternative request in December 2022 (Reference 5). After several meetings Staff asked that NuScale withdraw the request. An ASME task group has been working since mid-2023 to modify CC N-883 to address Staff comments that impede NRC approval. Now, with all other comments addressed, Staff continue to raise concerns about “third party oversight” as they consider further conditioning CC N-883 Revision 1 (N-883-1) in the same manner as its predecessor (Reference 6).

Accordingly, NuScale requests that the Commission expeditiously reconsider the Staff’s conditional approval of CC N-883 and approve use of the Code Case by unlicensed entities, consistent with the plain language and spirit of 10 CFR 50.10. While NuScale continues to view CC N-883 Revision 0 as acceptable, unconditional approval of CC N-883-1 would also address NuScale’s concern.

Further, NuScale’s need for N-883 has become pressing. Reactor module forgings are complete and ready to proceed into Code “construction” activities, but doing so without CC N-883 would preclude their future use in a U.S. facility. NuScale recognizes that the ordinary administrative process for NRC approval of CC N-883-1—rulemaking for 10 CFR 50.55a and Regulatory Guide 1.84—does not align with NuScale’s fabrication schedule. Accordingly, in addition to expediting approval of CC N-883-1, NuScale requests the Commission take interim action to allow NuScale to utilize CC N-883-1. NuScale proposes the issuance of an Order establishing, for NuScale, CC N-883-1 as a requirement for the construction of Code components that are to be transferred to a U.S. Owner.

The enclosed white paper details the current state of requirements, NuScale's positions, and NuScale's requests to address CC N-883. The NRC actions requested here would provide clarity, efficiency, and regulatory certainty for NuScale and other industry suppliers, consistent with NRC's Principles of Good Regulation.

If you have any questions, please contact Gary Becker at 541-360-0549 or at gbecker@nuscalepower.com.

Sincerely,



Carrie Fosaaen
Vice President, Regulatory Affairs
NuScale Power, LLC

Distribution: Christopher T. Hanson, Chair, NRC
David A. Wright, Commissioner, NRC
Annie Caputo, Commissioner, NRC
Bradley R. Crowell, Commissioner, NRC
Brooke P. Clark, General Counsel, NRC
Ray V. Furstenau, Executive Director for Operations (Acting), NRC
Andrea Veil, Director, Office of Nuclear Reactor Regulation, NRC
Robert Taylor, Deputy Director for New Reactors, NRC

Enclosure 1: Construction of ASME Code Items without an Owner

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Construction of ASME Code Items without an Owner

1.0 Introduction

Early construction of ASME Section III Code items is essential for NuScale to produce and deliver its standardized, small modular reactor design in accordance with customer construction needs. Code Case (CC) N-883 provides a process for “construction” of all Code items without a designated “Owner,” and use of those items in a facility, so long as its specified measures are met by the vendor. If available, CC N-883 would meet NuScale’s needs to proceed prior to designation of an Owner with construction of NuScale Power Module (NPM) components that may be used in a future, licensed U.S. facility. However, NRC Staff effectively prohibited the use of CC N-883 with conditions adopted in Regulatory Guide 1.84, Revision 39, which only allow use of CC N-883 by a licensee.

Code Case N-883 and its recent revision (CC N-883-1) are otherwise consistent with NRC’s licensing framework that would allow “fabrication” of components without NRC authorization pursuant to 10 CFR 50.10, and it is an adequate means to reasonably ensure nuclear safety and quality. Accordingly, NuScale requests that NRC expeditiously reconsider the Staff’s conditional approval of CC N-883 to allow construction of Code items by a nonlicensee—consistent with the plain language and intent of 10 CFR 50.10. This white paper details the issue and NuScale’s position, and requests that (1) NRC promptly approve CC N-883 Revision 1 without unreasonable conditions, and (2) issue an Order allowing NuScale to proceed with Code item construction under CC N-883-1.

2.0 Background

2.1 Need

NuScale seeks to “construct” certain items subject to ASME BPVC Section III (“Code items”) without an established “Owner” as defined by Section III. “Construction” is defined by Section III to mean materials, design, fabrication, testing, and other activities. NuScale seeks to initiate construction activities on long-lead Code items such as NPM components, for which NuScale needs to complete design specifications and begin fabrication soon in order to support the timely deployment model of the modular NuScale Power Plant. To be clear and as discussed below, the meaning of “construction” within the Code is distinct from NRC’s definition of “construction” for the purposes of licensing production and utilization facility construction.

In addition to being the applicant for the NRC-certified NuScale design and in the process of standard design approval for the NuScale US460 Power Plant, NuScale is also an ASME N Certificate Holder. ASME Code Case N-883 was approved, with NuScale’s urging, to allow a Certificate Holder to construct Code items prior to the establishment of an Owner. Thus, CC N-883 would provide the essential mechanism for NuScale to construct Code items early and support timely deployment to meet customer needs. However, NRC Staff have elected to condition CC N-883 as to effectively preclude its use—Regulatory Guide 1.84 allows use of CC N-883 only by a licensee; NRC has not approved construction of Code items under CC N-883 by a nonlicensee like NuScale, and NuScale would not be able to transfer such a Code item to a U.S. facility. Therefore, NuScale urgently needs NRC to reconsider and approve CC N-883 for nonlicensees.

2.2 Current Rules

2.2.1 License Requirement

Pursuant to the Atomic Energy Act (AEA), an NRC license is required to, amongst other things, produce, transfer, acquire, or use a “utilization facility.”¹ A utilization facility is broadly defined in the AEA,² leaving NRC to determine by rule the equipment or devices—or an “important component part especially designed for such equipment or device”—that are “capable of making use of special nuclear material” or “atomic energy” and thus constitute a utilization facility. Only a utilization facility so defined by NRC rules requires an NRC license to produce, transfer, acquire, and use under Section 101. Section 185 of the AEA directs the NRC to initially grant a construction permit to an applicant for a license to “construct” a utilization facility.

NRC regulations define a utilization facility in essence as a “nuclear reactor.”³ NRC’s regulations implement the Section 101 license requirement at 10 CFR 50.10(b), which was originally promulgated as 10 CFR 50.10(a) in 1956⁴ as part of the Atomic Energy Commission’s (AEC’s) initial Part 50 regulations. Four years later, AEC adopted an amendment of 10 CFR 50.10 to provide “clarification of work permitted or prohibited with respect to any production or utilization facility prior to the issuance of a construction permit.”⁵ The amendment made clear that a construction permit (CP) was required to begin construction of a facility “on a site on which the facility is to be operated,” but was not required for “procurement or manufacture of components of the facility.”⁶

Thus, the effect of 10 CFR 50.10 is to meaningfully define the scope of NRC’s construction licensing jurisdiction under AEA Section 101.⁷ Through several amendments, the current 10 CFR 50.10 remains unequivocal: NRC authorization⁸ is required to “begin the construction of a production or utilization facility on a site on which the facility is to be operated.”⁹ But “procurement or fabrication of components or portions of the proposed facility occurring at other than the final, in-place location at the facility” is not considered facility construction and therefore does not require NRC authorization.¹⁰

2.2.2 Codes and Standards Requirements

While 10 CFR 50.10 would allow a future facility-licensee to procure or fabricate components without NRC authorization, the rules imposing codes and standards create uncertainty with respect to, and potentially direct conflict with, that otherwise clear command.

10 CFR 50.55a mandates that “systems and components of boiling and pressurized water-cooled nuclear power reactors must meet the requirements of the ASME BPV Code” as specified. As a result, certain components (“Code items”) must be designed, procured, and constructed pursuant to the ASME BPV in order to be installed in a light-water power reactor (LWR).

¹ Atomic Energy Act of 1954, as amended, § 101. Production facilities are also covered by AEA Section 101 and 10 CFR 50.10, but are not relevant to this discussion.

² *Id.* § 11cc.

³ 10 CFR 50.2.

⁴ *Part 50—Licensing of Production and Utilization Facilities*, 21 Fed. Reg. 355 (Jan. 19, 1956).

⁵ *Construction Permits and Operating Licenses*, 25 Fed. Reg. 8712 (Sept. 9, 1960).

⁶ *Id.* (to be codified at 10 CFR 50.10(b)).

⁷ “Construction” being a means of “producing” a utilization facility under AEA Section 101. A manufacturing license is also a means to license that manufacture or production of a “utilization facility” and may be necessary where fabrication activities rise to the level of producing a “facility,” but this paper is focused on the production and use of only component parts that do not require a license to fabricate under 10 CFR 50.10.

⁸ NRC authorization includes a CP, combined license, an early site permit authorizing early construction activities, or a limited work authorization.

⁹ 10 CFR 50.10(c).

¹⁰ 10 CFR 50.10(a)(viii).

Various provisions of Section III of the ASME BPV Code (“the Code”) require the involvement of a facility “Owner” in order to “construct”¹¹ a Code item, subject to some exceptions. For example, under Paragraph NCA-3211.19,¹² “it is the responsibility of the Owner to provide, or cause to be provided, Design Specifications for components, supports, and appurtenances.” Therefore, without an Owner to provide those Design Specifications, an ASME-approved supplier such as NuScale cannot initiate construction of most Code items.¹³

In Code Case N-883, ASME addressed the question: “Under what conditions may Certificate Holders construct items prior to the establishment of an Owner, and under what conditions may Owners utilize these items in their facility?” The Society determined in N-883 that it was allowable for ASME “Certificate Holders” to construct items prior to the establishment of an Owner, and that future Owners may utilize such items, subject to a series of conditions. Essentially, the Certificate Holder must itself prepare and certify a Design Specification to govern construction of the item. Then, following establishment of an Owner for the item and prior to installation in the Owner’s facility, the Owner or their designee is to reconcile the Design Specification with their own or adopt the Design Specification as a basis for construction.

Even where the intended user of a Code item is known at the time of construction, the Code’s definition of “Owner” creates uncertainty as to the effect of those provisions. Per subarticle NCA-9200, the Owner is “the organization legally responsible for the construction and/or operation of a nuclear facility including but not limited to one who has applied for, or has been granted” a CP or OL by the NRC. It is unclear if “legal responsibility” is meant to relate strictly to, and thus begin with, an NRC licensing process (as suggested by reference to applying for a CP or OL), or whether “legal responsibility” is broad enough to include responsibility under private law (i.e., contractual responsibility). In other words, an NRC facility-license applicant would clearly qualify as an Owner under the Code, but prior to filing an application the same entity may not qualify. Given NRC’s concerns on quality oversight and inspection authority discussed later, NuScale believes NRC would interpret “Owner” narrowly.

Returning to the case of construction without an established Owner, it is clear that CC N-883 is necessary to proceed. Although CC N-883 would allow NuScale to begin subcontracting the construction of Code items using a certified Design Specification prior to establishing an Owner, NuScale cannot currently use CC N-883. Pursuant to 10 CFR 50.55a(a)(3)(i), the use of ASME Code Cases is acceptable only with NRC approval and subject to the conditions specified in the listed regulatory guides (RGs). Regulatory Guide 1.84, approves N-883 with the condition that it “may only be used for the construction of items by a holder of a construction permit, operating license, or combined license under 10 CFR Part 50 or Part 52. This Code Case may not be used by a holder of a manufacturing license or standard design approval or by a design certification applicant.”¹⁴ NuScale is not a holder of a CP, operating license, or combined license and therefore is not approved to construct under CC N-883. Further, as it is impossible to hold a CP, OL or COL without also being an Owner, NRC’s condition renders the Code Case useless and undermines ASME’s intent in approving it.

¹¹ For the purpose of ASME Section III, construction is “an all-inclusive term comprising materials, design, fabrication, examination, testing, inspection, and certification required in the manufacture and installation of an item.”

¹² Consistent with CC N-883-1, unless otherwise noted citations to the Code herein refer to the current edition, 2023. The 2019 edition of the BPV is the latest incorporated by reference in 10 CFR 50.55a and is substantially similar in relevant respects. Of note, quality requirements per ASME Section III Subsection NCA must comply with the latest edition, which is 2023.

¹³ NCA-3211.19(e) allows construction of smaller pumps and valves and certain supports without an Owner using a Certificate Holder’s own Design Specification in lieu of an Owner’s. Those items are not the subject of NuScale’s request. This white paper is focused on larger Code components such as vessels that are the long lead items for a new facility. Discussion herein concerning construction of Code items without an Owner means those Code items requiring an Owner.

¹⁴ U.S. Nuclear Regulatory Commission, “Design, Fabrication, and Materials Code Case Acceptability, ASME Section III Regulatory Guide 1.84, Revision 39, December 2021.

2.3 Problem statement

Pursuant to 10 CFR 50.10, a vendor such as NuScale is free to “fabricate” a component or portion of a proposed facility without NRC license or authorization. Under the Code, such fabrication of a Code item¹⁵ is “construction” requiring an Owner to proceed, and an Owner may need to be a license applicant with the NRC. Via Code Case N-883, ASME allows a nonlicensee vendor to meet the requirements of the Code without an established Owner and begin construction activities, and for a subsequent facility to install a Code item constructed under CC N-883. However, NRC’s conditions on their approval of CC N-883 prohibit any U.S. facility from subsequently installing such a component. In contravention of the intent of 10 CFR 50.10, Staff’s regulatory action in conditioning Code Case N-883 effectively prohibits NuScale from constructing Code items without an established Owner, and directly prohibits an unlicensed entity from procuring such a Code item.

As noted above, uncertainty in the meaning of “Owner” creates additional regulatory risk. Based on NRC Staff’s expressed concerns with respect to Code Case N-883 (Section 3.1.2), NuScale worries that construction for and with a non-applicant/licensee fulfilling the responsibilities of an Owner may be viewed by Staff as construction without an Owner. Thus, a Code item otherwise constructed in accordance with the Code and for a known user—understood by the parties as an Owner—could later be deemed by the NRC unacceptable for use in that user’s facility.

These possible scenarios are summarized in the following table.

	10 CFR 50.10	ASME BPVC Section III	10 CFR 50.55a	Result
1. Item constructed for an established applicant/licensee Owner	Construction allowed without NRC authorization	Allowable under ASME Section III	Compliant	Item can be installed at Owner’s facility
2. Item constructed without a designated Owner	Construction allowed without NRC authorization	Allowable under Code Case N-883	Does not comply because unapproved by RG 1.84	Item cannot be installed at Owner’s facility
3. Item constructed for a non-applicant Owner	Construction allowed without NRC authorization	Depends on ASME interpretation of “Owner” for non-applicants	Depends on NRC interpretation of “Owner” for non-applicants	Uncertain acceptability of Item
4. Item constructed for a different Owner than the eventual user	Construction allowed without NRC authorization	Not precluded by Section III; transfer can be accomplished with appropriate reconciliation	Compliant	Item can be transferred with appropriate reconciliation and installed at Owner’s facility

Code Case N-883 directly addresses scenario two, which is NuScale’s primary concern. Moreover, CC N-883 can also help address the other scenarios. In scenario three, a Code item could be constructed under CC N-883 without an established Owner until the Owner becomes an applicant or licensee, resolving any uncertainty. Likewise, in scenario four, a vendor could elect to postpone establishing an

¹⁵ See Note 13.

Owner and begin constructing under CC N-883 until sufficient certainty is reached in the project's status, thus avoiding the unnecessary burden of transferring a Code item to a different Owner.

3.0 Requested Actions

NuScale needs to begin constructing Code items prior to establishment of an Owner to ensure readiness for forthcoming projects. Therefore, NuScale requests the Commission to direct expeditious approval of CC N-883 for the construction of Code items by nonlicensees. While NuScale considers the initial CC N-883 to be appropriate and adequate to reasonably assure quality, revised CC N-883-1 represents a further step in addressing Staff concerns and clarifying the process of constructing under it and is also acceptable to NuScale. Any conditions imposed on that approval should be consistent with the Commission's determination in 10 CFR 50.10 that the "procurement or fabrication of components or portions of the proposed facility occurring at other than the final, in-place location" is not a construction activity within the meaning of the NRC licensing regime and thus does not require NRC authorization. As discussed below, NuScale does not consider oversight beyond that already required by the Code to be a necessary or appropriate condition.

Additionally, NuScale recognizes that the ordinary administrative process for NRC approval of CC N 883-1, a rulemaking to amend 10 CFR 50.55a and revision of Regulatory Guide 1.84, does not support NuScale's manufacturing needs. NuScale encourages the Commission to use available methods to streamline that rulemaking process. Furthermore, NuScale requests interim action to allow NuScale to utilize CC N-883-1 pending its approval in 10 CFR 50.55a. NuScale proposes the issuance of an Order establishing, for NuScale, CC N-883-1 as a requirement for the construction of Code components that are subsequently transferred to a U.S. Owner.

3.1.1 Current Code¹⁶ and Code Case N-883

The basic framework of ASME Section III relies on an Owner procuring Code items from a supplier, where the supplier is qualified to construct Code items as authorized by their ASME "Certificate of Authorization." Both the Owner and the Certificate Holder have specific responsibilities that ensure the quality of Code items. The Owner is to establish Code Editions, Addenda, and Code Cases to be used (NCA-3211.14), establish Code Classification of the items for construction (NCA-3211.16), and provide or cause to be provided, Design Specifications for construction (NCA-3211.19(a)). The Design Specifications are certified by a duly qualified Certifying Engineer on behalf of the Owner or their designee (NCA-3211.19(d)). A Certificate Holder is, for example, responsible for furnishing a design report (NCA-3211.40(b)), reviewing and approving materials used by them (NCA-3211.7, NCA-3211.9), and certifying construction in compliance with the Code (NCA-3211.10), including overall responsibility for subcontracted services (NCA-3211.11).

Both the Owner and the Certificate Holder must have an ASME-accepted quality assurance (QA) program (NCA-3211.1). Both the Owner and the Certificate Holder must have a written agreement with an ASME-accredited Authorized Inspection Agency (AIA) (NCA-3211.5) to inspect their documentation and construction process. The AIA has free access to locations where the Certificate Holder performs Code activities (NCA-5131).

Code Case N-883 allows the Certificate Holder to construct Code items prior to establishment of an Owner by allowing the Certificate Holder to temporarily stand-in for the eventual Owner. The Certificate Holder prepares and certifies the Design Specification itself, prior to constructing the item. The item then remains under the control of the Certificate Holder until an Owner is established and the Owner completes an acceptance process. During that process, the Owner "reconciles" the Design Specification used to construct items with their own Design Specification or adopts the Certificate Holder's Design

¹⁶ The current Code is the 2023 edition, which is the basis for CC N-883-1. The 2019 edition of the BPV is the latest incorporated by reference in 10 CFR 50.55a and is substantially similar in relevant respects. This discussion relates to Division 1 components, specifically.

Specification—in either case assuring that it meets applicable regulatory requirements—and accepts the Design Report. The AIA verifies that the Owner completes the acceptance process.

3.1.2 NRC concerns with Code Case N-883

In considering CC N-883 for approval, Staff recognized that it “allows certificate holders to construct all items prior to the establishment of an Owner.” NRC’s “main concern” with approving N-883 as approved by ASME was:

...without the designation of an Owner, the NRC would not be able to provide regulatory oversight of the ASME certificate holder manufacturing the items, which is not consistent with appendix B to 10 CFR part 50 and the requirements in § 50.55(a) for a basic component.¹⁷

Therefore, NRC determined to “condition this code case based on regulatory oversight.” Staff conditioned its use as follows:

This Code Case may only be used for the construction of items by a holder of a construction permit, operating license, or combined license under 10 CFR part 50 or 10 CFR part 52. This Code Case may not be used by a holder of a manufacturing license or standard design approval or by a design certification applicant.¹⁸

While requiring a CP, OL, or COL was intended to ensure “the appropriate regulatory oversight,”¹⁹ a holder of a CP, OL, or COL is, of course, already able to construct Code items and would not require Code Case N-883 to do so. Those licensees are necessarily “Owners” within the meaning of the Code. The effect of the condition is thus to render Code Case N-883 moot—there is no obvious user for it. NRC commented that the purpose of Code Case N-883 was “to address international stakeholders and identify the ASME as a global standard development organization,” implying that there was not a need for it in the U.S. In fact, NuScale had specifically sought the Code Case in light of U.S. business needs.

In response to Staff’s condition, NuScale subsequently sought to implement CC N-883 via a Code alternative request under 10 CFR 50.55a(z).²⁰ In a meeting to discuss the then-pending Code alternative request, Staff’s substantive concerns were likewise centered on ensuring NRC regulatory oversight of construction activities.

In sum, Staff view NRC’s oversight during construction as essential to ensuring the quality of Code items, and NRC licensing is a means to ensure regulatory jurisdiction for that oversight. These views were recently conformed in a public meeting where Staff noted that the condition was “needed as the NRC does not have regulatory jurisdiction over ASME Certificate Holders as the Quality Assurance (QA) requirements of Appendix B to 10 CFR Part 50 are not directly applicable,” and the “condition ensures NRC’s regulatory oversight consistent with Appendix B to 10 CFR Part 50 and 10 CFR 50.55a.”²¹

3.1.3 Code Case N-883-1

In light of NRC’s conditioned approval and concerns, ASME formed a task group to revise CC N-883 to address NRC’s comments. NRC’s comments to the task group focused on scope, third-party oversight, responsibility and control, and QA program requirements.²² ASME then revised CC N-883-1 to clarify and

¹⁷ 87 Fed. Reg. 11,934 (March 3, 2022).

¹⁸ *Id.*

¹⁹ *Id.*

²⁰ “Request for 10 CFR 50.55a Code Alternative: American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code (BPVC) Section III, Code Case N-883,” LO-132226, Dec. 14, 2022.

²¹ Public Meeting on ASME Code Case N-883: “Construction of Items Prior to the Establishment of a Section III, Division 1, Owner,” May 8, 2024, ADAMS accession ML24128A072.

²² *Id.*

strengthen certain aspects of the initial code case. The basic process is the same as under Revision 0. It supports NRC oversight by requiring that Certificate Holders document activities specific to implementation of the Code Case within their QA program, and that the Certificate Holder notify and grant inspection access to the regulatory authority with jurisdiction at the Owner's facility once an Owner is established for CC N-883 components. It also clarifies the Design Specification "reconciliation" process contemplated in Revision 0.

Per NRC Staff, CC N-883-1 addresses "all of NRC's comments except for [third] party-oversight."²³ Staff continue to view third party oversight as "a regulatory issue." Staff have posed two potential ideas under consideration that rely on NRC access during construction activities, either through an approved 10 CFR 50 Appendix B QA program subject to NRC vendor inspection and third-party oversight, or third-party oversight and NRC observation access under a voluntary inspection program.²⁴ Another idea under consideration is a conditional approval comparable to the current one, but including manufacturing licensees as an entity that can use CC N-883-1; manufacturing licensees are another entity that has no apparent need to use the Code Case.

3.1.4 NuScale Position

3.1.4.1 Certificate Holders should not need to be specifically authorized to construct items using N-883.

Code Case N-883 conditions an Owner's use of an item constructed under Code Case on the Certificate Holder being "specifically authorized by the regulatory authority having jurisdiction" over the eventual-Owner's facility to fabricate items using the Code Case. But, "in jurisdictions having no specific provisions for the use of this Case, this requirement does not apply."²⁵ NuScale understands this provision was included at the behest of NRC representatives. It presents two problems.

First, although "specific authorization" does not necessarily mean a license or permit, NRC conditioned use of CC N-883 to require exactly that. Requiring a license or permit to construct an item—or for an Owner to use an item that was so constructed—is contrary to the express terms and intent of 10 CFR 50.10. While some other type of NRC authorization to construct items under CC N-883 is conceivable, that too would violate the intent of 10 CFR 50.10, which is clear that activities constituting Code construction (e.g., materials, design, and fabrication) are not "construction" in the NRC regulatory sense.

Second, the "regulatory authority having jurisdiction" presents practical difficulties. A Certificate Holder responsible for construction of Code items without an established Owner does not, by definition, know who is the regulatory authority having jurisdiction over the future facility. NuScale may be responsible for construction of Code items for use in any number of jurisdictions; this provision would require that any place that might someday use the item grant specific authorization to use the Code Case. It would also mean that even if NuScale is responsible for construction of an item under Code Case N-883 intending to use it in a jurisdiction where it was permissible, NuScale could not then later decide to designate that Code item for a U.S. facility if NRC had not specifically authorized the Code Case.

Therefore, the NRC's approval of the Code Case should allow any Certificate Holder to use it without specific authorization. As discussed below, N-883's provisions reasonably assure the quality of Code Items constructed pursuant to it. Any conditions NRC may deem necessary to impose should not be tied to the Certificate Holder's or Owner's status as an applicant for or holder of a license from the NRC.

²³ *Id.*

²⁴ *Id.*

²⁵ Code Case N-883, paragraph (a).

3.1.4.2 Additional, in-process oversight of Certificate Holders is not needed to assure quality

The Certificate Holder bears the primary responsibility for quality assurance, and their ASME-approved QA program is the principal means for assuring quality. ASME-required inspection of the Certificate Holders' QA implementation provides an additional layer of independent oversight. As noted in RG 1.28, "NRC recognizes the ASME Accreditation Program and associated certificates of authorization as evidence that the holder of the certificate of authorization has a documented QA program that meets the requirements of Appendix B to 10 CFR Part 50. However, recognition of the ASME Accreditation Program applies only to the programmatic aspects of the QA programs. Applicants and licensees or their subcontractors should ensure that the suppliers are effectively implementing their approved QA programs." Prior to an Owner in the U.S. being able to accept items constructed under CC N-883, they would first have to audit the implementation of the supplier's program to validate the supplier was effectively implementing their approved QA programs.

That said, under Code Case N-883 NRC oversight of some of the Certificate Holder's construction activities for some Code items would not be required by regulation. That would differ from construction for an established Owner who is seeking or granted NRC authorization to build a nuclear facility, where the NRC is able to inspect the Owner's QA program, including implementation at its vendors. This difference is reasonable and acceptable for two reasons.

First, it is reasonable and feasible to conduct regulatory oversight of QA retrospectively. NRC routinely conducts QA retrospective oversight to ensure prior activities were conducted in accordance with NRC's quality requirements. For example, NRC's approval or certification of a standard design requires a "description of the quality assurance program applied to the design," and a showing that "the applicable requirements of Appendix B to 10 CFR part 50 were satisfied."²⁶ The requirements for a combined license likewise include a look back at the QA applied to the design activities.²⁷ Thus, while often applicants seek early approval of their QA Program, an entire facility design can be completed without in-process NRC oversight; NRC then conducts a retrospective review to ensure the quality and safety of that design. With respect to fabrication of non-ASME Code items, commercial grade dedication entails fabrication of components outside of Appendix B—and thus without regulatory oversight—that are later dedicated under an NRC-inspected QA program for use in a safety-related function.

That the Code already allows the construction of certain Code items without an Owner demonstrates that in-process regulatory and third-party oversight are not needed to reasonably assure quality or necessitated by 10 CFR 50 Appendix B. Section III NCA-3211.19(e)(2) allows a Certificate Holder to provide their own Design Specification as a basis for construction of smaller pumps and valves and certain pipe supports, which the eventual Owner or their designee is responsible for reconciling with their own Design Specification. This process is analogous to the that set forth in CC N-883 for other Code items. NRC staff view this exception to the typical Owner role as acceptable based on the relative safety significance of the items subject to it.²⁸ On the other hand, Staff rejected the use of CC N-883 outright by nonlicensees because of a supposed need to ensure "regulatory oversight consistent with Appendix B to 10 CFR Part 50 and 10 CFR 50.55a." It cannot be that Appendix B, as a matter of law, both necessitates in-process regulatory oversight through an Owner for some Code items but does not for others.

Second, as a matter of practicality NRC is likely to have access to the Certificate Holder's processes during subcontracted activities. As noted, design applicants and facility applicants often submit QA programs for NRC approval well in advance of submitting an NRC application, and NRC conducts oversight to reach a finding that the implementation of the QA program meets Appendix B. Proceeding to design a facility without prior QA program approval, while legally permissible, constitutes a substantial commercial risk if a material deficiency were discovered later. Likewise, while a Certificate Holder must

²⁶ 10 CFR 52.47(a)(19) and 1 CFR 52.137(a)(19)

²⁷ 10 CFR 52.79(a)(25).

²⁸ Public Meeting on ASME Code Case N-883: "Construction of Items Prior to the Establishment of a Section III, Division 1, Owner," May 8, 2024, ADAMS accession ML24128A072.

have an ASME-compliant and inspected QA program, those expecting to provide N-883 components for U.S. facilities are incentivized to also gain NRC approval of an Appendix B QA program. Or, as is the case with NuScale, the Certificate Holder will already have an Appendix B QA program subject to oversight, which scope is expanded to include construction under Code Case N-883.

Under Code Case N-883, once an Owner becomes subject to NRC QA inspection, the NRC will have full access to the Certificate Holder's quality records via vendor inspection. Code Case N-883-1 further requires the Certificate Holder to notify the regulatory authority having jurisdiction when the Owner for an item is established. The NRC can verify that, for an item already constructed under Code Case N-883, the Certificate Holder properly prepared a Design Specification and Design Report meeting regulatory requirements.

That NRC's definition of "construction" does not encompass fabrication activities removed from the reactor site—and therefore an NRC or permit license is not required—is consistent with a Certificate Holder constructing such components without in-process regulatory oversight.

3.1.4.3 NRC and third-party oversight beyond the requirements of Code Case N-883-1 presents practical problems

Staff have posed two potential ideas under consideration that rely on NRC access during construction activities, either through an approved 10 CFR 50 Appendix B QA program subject to NRC vendor inspection and third-party oversight, or third-party oversight and NRC observation access under a voluntary inspection program.²⁹ As discussed above, NuScale does not consider additional oversight during construction necessary to reasonably assure quality. Moreover, additional oversight is challenging to implement for items to be constructed under CC N-883-1.

First, a Certificate Holder may not know at the time of construction who will be the regulatory authority that will ultimately have responsibility over the facility where the Code items will be used. If NuScale constructs numerous NPM components for use in any number of jurisdictions, NRC and the regulators for any other possible destinations with a similar requirement would each need to have access for inspection of construction activities. And if a regulator-approved QA program were necessary as being considered for the Staff's vendor inspection concept, NuScale could also need numerous such regulatory approvals prior to constructing under the Code Case. This is an impractical requirement inconsistent with the intent of CC N-883.

Additionally, NuScale is unclear what "third-party oversight" NRC Staff envision, why it is necessary, and why the Code's requirement for an Authorized Inspection Agency does not suffice to address Staff's concerns. The ASME task group tasked with producing CC N-883-1 believed that "third-party oversight" was not an impediment to NRC approval and did not view it as necessary to assure quality. Following the recent public meetings on CC N-883-1, NuScale and the industry remain unclear what is envisioned by third-party oversight or the need for it; NuScale maintains that additional oversight beyond that required by the Code is unnecessary.

3.1.5 Proposed Resolution

3.1.5.1 Approval of Code Case N-883-1

NuScale asks that NRC promptly approve use of CC N-883-1 for construction of Code items by nonlicensee Certificate Holders, and for the use in U.S. facilities of Code items so constructed. The oversight provisions, including NRC access once a U.S. Owner is established, are broadly consistent with NuScale's position that retrospective QA oversight is appropriate and sufficient. This provision—by tying NRC access to the Owner's purchase contract—would likely ensure NRC access earlier than otherwise

²⁹ *Id.*; a second public meeting to continue discussion was held on June 11, 2024 (ML24138A113).

required by the submittal of a construction application (procurement of a component is also not a “construction” activity under 10 CFR 50.10). NuScale views this as an acceptable compromise position.

10 CFR 50.55a requires that Code Cases be approved via Regulatory Guide revision, a rulemaking process. That approval should be undertaken as soon as practicable. Further, NuScale urges the Commission to consider all available processes to expedite that approval. NuScale believes that approval of CC N-883-1 could qualify for the direct-final rulemaking process because it is non-controversial; NRC’s previous conditional approval of CC N-883, which garnered no substantive comments beyond NuScale’s,³⁰ is evidence thereof. While the direct-final process would provide some schedule benefit, substantially more could be achieved if the Commission directed approval via an in-progress rulemaking package. As one example, according to NRC’s rulemaking activities page the draft final rule amending 10 CFR 50.55a and approving RG 1.84 Revision 40 is currently before the signature authority, with a target final rule publication this summer.³¹ At the Commission’s direction, that draft final rule could be amended to include the unconditional approval of CC N-883-1 as a direct-final component of the final rule.

3.1.5.2 Order authorizing NuScale’s use of Code Case N-883-1 in the interim

While any rulemaking action to approve CC N-883-1 is pending, Certificate Holders are not strictly prohibited from implementing N-883 and initiating construction of components under it, but will be reluctant to do so until assured that any such components will be usable for licensees in the U.S. NRC’s quick, public indication of its intent to approve CC N-883-1 for construction of Code items by nonlicensee Certificate Holders, and for the use in U.S. facilities of Code items so constructed, may ameliorate some of that risk.

NuScale in particular is ready, has an urgent need, and is well-suited to implement CC N-883-1. If NRC is unable to approve CC N-883-1 in short order using expedited rulemaking processes, NuScale asks that the Commission take regulatory action specific to NuScale’s needs. Specifically, the Commission has broad statutory authority under AEA Section 161b. to “establish by . . . order, such standards and instructions to govern possession and use of” nuclear materials. The Commission could issue an Order imposing CC N-883-1 on NuScale for the construction of Code items without a designated Owner that are to be subsequently transferred to a U.S. facility.

NuScale envisions that such an Order could be issued promptly. If pursued, NuScale is able to and requests to participate in the development of the specific wording of that Order. That said, if the Commission is able to expedite full approval of CC N-883-1 as discussed above, the Order may not be necessary as an interim action.

4.0 Conclusion

An approved Code Case N-883 is of paramount importance to NuScale’s business needs, and to the nation’s goal to accelerate the deployment of low-carbon energy sources. NuScale requests NRC to expeditiously approve the use of CC N-883-1 for construction of Code items by nonlicensee Certificate Holders, and for the use in U.S. facilities of Code items so constructed. Any conditions imposed on that approval should be reasonable and should be consistent with the Commission’s long-standing determination that fabrication of a facility component in a factory and its procurement does not require NRC authorization. NuScale further requests that the Commission issue an Order to NuScale as an interim action, allowing construction of Code items to proceed while the Code Case approval is pending. In addition to helping meet the national imperative, NRC implementation of NuScale’s requested actions would provide clarity, efficiency and regulatory certainty in a manner consistent with NRC’s Principles of Good Regulations.

³⁰ NRC Responses to Public Comments, Final Rule: Approval of American Society of Mechanical Engineers’ Code Cases (ML21196A100).

³¹ Docket ID NRC-2018-0291.

NRCExecSec Resource

From: Cohen, Tamela <tcohen@nuscalepower.com>
Sent: Friday, June 21, 2024 3:18 PM
To: NRCExecSec Resource
Cc: Fosaaen, Carrie; Shaver, Mark; Monaco, Carolyn; Becker, Gary; Fisher, Carl
Subject: [External_Sender] Request for NRC Actions to Promptly Enable Construction of ASME Code
Attachments: LO-171630 Request for NRC Actions to Promptly Enable Construction of ASME Code items without an Owner.pdf

Greetings,

Please find attached a request for NRC actions to promptly enable construction of ASME Code items without an owner.

Thanks,
Tamela



Tamela Cohen
Licensing Coordinator 3

email: tcohen@nuscalepower.com

web: www.nuscalepower.com

office: 541.452.7106

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