ENCLOSURE 1

SHINE MEDICAL TECHNOLOGIES, LLC

SHINE MEDICAL TECHNOLOGIES, LLC OPERATING LICENSE APPLICATION RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION AND SUPPLEMENT NO. 3

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

The U.S. Nuclear Regulatory Commission (NRC) staff determined that additional information was required (Reference 1) to enable the continued review of the SHINE Medical Technologies, LLC (SHINE) operating license application (Reference 2). The following information is provided by SHINE in response to the NRC staff's request.

Chapter 7 – Instrumentation and Control Systems

The following regulatory requirements are applicable to RAIs 7-1 through 7-8:

> Section 50.34(b)(2) of 10 CFR Part 50 requires, in part, that an FSAR include a description and analysis of the structures, systems, and components of the facility, with emphasis upon performance requirements, the bases, and the evaluations required to show that safety functions will be accomplished. The description shall be sufficient to permit understanding of the system designs and their relationship to safety evaluations.
>
> Section 50.34(b)(2)(ii) of 10 CFR Part 50 states, in part, that for facilities other than nuclear reactors, such items as the instrumentation and control systems (I&C) shall be discussed insofar as they are pertinent.

The technical bases for RAIs 7-1 through 7-8 are drawn from the guidance contained in Chapter 7, "Instrumentation and Control Systems," of NUREG-1537, Parts 1 and 2. RAIs 7-1 through 7-8 request that SHINE provide sufficient information for the NRC staff to make the applicable safety findings described in Chapter 7 of NUREG-1537, Part 2. As described in Section 7.2.1, "Design Criteria," of NUREG-1537, Part 1, an applicant should discuss the criteria for developing the design bases for the I&C systems of the facility. The basis for evaluating the reliability and performance of the I&C systems should be included in the application. Consistent with Section 7.2, "Design of Instrumentation and Control Systems," of NUREG-1537, Part 2, the NRC staff review the following for each of the I&C systems and subsystems described in the application:

- Design criteria
- Design bases
- System descriptions
- System performance analysis
- Conclusion

With respect to design criteria, consistent with Section 3.1, "Design Criteria," of NUREG-1537, Part 1, design criteria should include applicable standards, guides, and codes;

NRC regulatory guides; and national, State, and local building, plumbing and electrical codes, as applicable.

Sufficient information is to be included in the application for the NRC staff to determine how applicable design criteria have been established and satisfied by the design of the facility using appropriate guidance, including appropriate codes and standards. Further, an application should describe the relationship between the design criteria and design bases to explain how systems are designed.

The information requested below is necessary for the NRC staff to determine that the requirements of paragraphs (b)(2) and (b)(2)(ii) of 10 CFR 50.34 have been satisfied and that sufficient detail has been provided as described in Chapter 7 of NUREG-1537, Parts 1 and 2.

RAI 7-1

Section 3.1 of the SHINE FSAR identifies the design criteria for the instrumentation and control (I&C) systems in the SHINE facility. Consistent with the guidance in NUREG-1537, described above, the NRC staff expects that Chapter 7 of the SHINE FSAR include the descriptions of how each I&C system meets the applicable design criteria. However, Chapter 7 of SHINE's FSAR does not describe how the I&C system designs implement SHINE's design criteria.

Further, Chapter 7, "Instrumentation and Control Systems," of the SHINE FSAR includes the design bases for each I&C system. However, Chapter 7 of SHINE's FSAR does not describe the relationship between the design bases to the applicable design criteria in Chapter 3 of the SHINE FSAR.

(1) Describe how each I&C system meets each applicable design criterion listed in Section 3.1 of the SHINE FSAR.

(2) Describe the relationship between the design bases to each of the applicable design criterion listed in Section 3.1 of the SHINE FSAR.

SHINE Response

The instrumentation and control (I&C) systems described in Chapter 7 of the Final Safety Analysis Report (FSAR) consist of the engineered safety features actuation system (ESFAS), target solution vessel reactivity protection system (TRPS), neutron flux detection system (NFDS), process integrated control system (PICS), continuous air monitoring system (CAMS), radiation area monitoring system (RAMS), and stack release monitoring system (SRMS). SHINE has revised Chapter 7 of the FSAR to describe how each I&C system meets the applicable design criteria, as follows:

(1) Additional information has been added to the "Design Criteria" subsections of Sections 7.3 through 7.8 to describe how each I&C system meets each applicable SHINE design criterion listed in Section 3.1 of the FSAR. The descriptions of how criteria are met include cross-references to other FSAR subsections when necessary.

(2) Cross-references to the "Design Basis" subsections have been added to the "Design Criteria" subsections of Sections 7.3 through 7.8 to describe the relationship between the design bases and each applicable SHINE design criterion listed in Section 3.1 of the FSAR.

The non-public (proprietary) version of the FSAR, incorporating the changes to Chapter 7 described above, is provided in Enclosure 4. The public (non-proprietary) version of the FSAR, incorporating the changes to Chapter 7 described above, is provided in Enclosure 5.

RAI 7-2

Chapter 7 of the SHINE FSAR identifies additional system-specific design criteria for each I&C system (e.g., see: SHINE FSAR Section 7.4.2, “Design Criteria”). In addition, Chapter 7 of the SHINE FSAR describes the design bases (e.g., see: SHINE FSAR Section 7.4.3, “Design Basis”) and design attributes (e.g., see: SHINE FSAR Section 7.4.4, “Design Attributes”) for each I&C system. The descriptions provided in the design attributes sections of Chapter 7 of the SHINE FSAR do not describe the design of the SHINE I&C systems in sufficient detail to permit understanding of the system designs and their relationship to the safety analyses.

For each I&C system, describe how the design implements (or meets) each of the system-specific design criteria identified in the subsections of Chapter 7 of the SHINE FSAR.

SHINE Response

SHINE has revised Chapter 7 of the FSAR to describe how each I&C system meets their system-specific design criteria. The “Design Attributes” subsections for each I&C system have been removed and the content previously found in those subsections has been relocated to other subsections of the FSAR to better align Chapter 7 with the format and content guidance provided in Part 1 of NUREG-1537 and Part 1 of the Interim Staff Guidance (ISG) augmenting NUREG-1537, as described in the FSAR Change Summary provided in Enclosure 2.

The “Design Basis” subsections containing a discussion of the I&C system safety functions for TRPS (Subsection 7.4.3.1) and ESFAS (Subsection 7.5.3.1) have been updated to describe the relationship between each safety function and the SHINE safety analyses and to provide cross-references to the appropriate subsections and event scenarios (as applicable) of the FSAR where the I&C safety function is described.

Additional information has been added to the “Design Criteria” subsections of Sections 7.3 through 7.8 to describe how each I&C system meets each applicable system-specific design criterion. The descriptions of how criteria are met include cross-references to other FSAR subsections when necessary.

The non-public (proprietary) version of the FSAR, incorporating the changes to Chapter 7 described above, is provided in Enclosure 4. The public (non-proprietary) version of the FSAR, incorporating the changes to Chapter 7 described above, is provided in Enclosure 5.

RAI 7-3

Chapter 7 of the SHINE FSAR includes a list of codes and standards that SHINE applied to the design of each I&C system (e.g., For the target solution vessel reactivity protection system (TRPS) design, this list is provided in Section 7.4.4.15, “Quality,” of the SHINE FSAR. Another list is provided in Section 7.9, “References,” of the SHINE FSAR.). However, it is not clear to the NRC staff how SHINE has used the codes and standards identified in the FSAR in the design of its I&C systems.

Describe how each of the codes or standards listed in the FSAR are used to design each of the I&C systems. This discussion should address how SHINE intends to comply or take exception from the relevant codes or standards.

SHINE Response

SHINE has revised Chapter 7 of the FSAR to describe how codes and standards are used in the design of the I&C systems. Chapter 7 of the FSAR includes discussions of how SHINE intends to comply with a code or standard, including those instances where SHINE relies on only a portion of the code or standard in the design of an I&C system. Where a code or standard is relied upon to meet SHINE design criteria or system-specific design criteria, a discussion is provided of how the code or standard is applied in meeting the design criteria.

Requirements for conformance to codes and standards used to design each of the I&C systems are included within procurement specifications for applicable systems and components.

RAI 7-4

Chapter 7 of the SHINE FSAR describes the highly integrated protection system (HIPS) platform for the TRPS and engineered safety features actuation system (ESFAS). However, the FSAR appears to contain inconsistent descriptions of the use of the HIPS platform and/or implies how the HIPS platform will be used to implement the design of the TRPS and ESFAS.

(1) Clarify how the TRPS and ESFAS use the generically approved HIPS platform. If the application intends to credit the NRC-approved HIPS platform, then:

    (a) Describe how the Application Specific Action Items identified for the HIPS platform are dispositioned, including those that are not applicable for the SHINE TRPS and ESFAS.

    (b) Describe the differences between the system architecture approved for HIPS platform and the architecture proposed for the TRPS and ESFAS and explain it is acceptability for the SHINE design.

(2) Provide a description of the SHINE system design, as well as the suitability and adequacy of the HIPS platform for performing SHINE design functions, including conformance with the SHINE design criteria and bases. This RAI is similar to RAI 7-1, but in this case, SHINE should indicate the specific design or attributes in the HIPS platform that will meet each of its applicable design criterion.

SHINE Response

(1) SHINE has revised Chapter 7 of the FSAR to describe SHINE crediting the prior NRC approval of the Highly Integrated Protection System (HIPS) platform, described in Topical Report TR-1015-18653, “Design of the Highly Integrated Protection System Platform,” (Reference 3), for use in the SHINE facility. This clarification has been added to Subsections 7.1.2 and 7.1.3 of the FSAR.

    (a) The Application-Specific Action Items (ASAIs) identified in the Safety Evaluation for the HIPS platform (Reference 4) are dispositioned as described in Table 7-4-1. The table identifies the sections of the FSAR that address ASAIs that are applicable to SHINE.

(b) The architecture described in Section 3.0 of the HIPS topical report (Reference 3) is a representative architecture provided for reference to help describe the attributes of the HIPS platform. As stated in Section 3.1.6 of the Safety Evaluation for the HIPS platform (Reference 4), "This example architecture is intended to illustrate the capability of the HIPS platform to implement a prospective system architecture and does not define a proposed usage." The approval of the HIPS platform is independent of architecture, therefore; the architecture of the SHINE control systems does not represent a difference from the approved HIPS platform.

(2) Section 7.4.5 of the FSAR describes the system design, suitability, and adequacy of the HIPS platform for performing SHINE design functions. Conformance with the SHINE design criteria and design bases for applicable HIPS platform design attributes is described in Section 7.4.5 of the FSAR.

Additionally, as described in the SHINE Response to RAI 7-1 and RAI 7-2, Subsections 7.4.2 and 7.5.2 of the FSAR have been revised to state how the TRPS and ESFAS meet or implement the applicable SHINE design criteria and system-specific design criteria.

The non-public (proprietary) version of the FSAR, incorporating the changes to Chapter 7 described above, is provided in Enclosure 4. The public (non-proprietary) version of the FSAR, incorporating the changes to Chapter 7 described above, is provided in Enclosure 5.

RAI 7-5

The SHINE FSAR states that the process integrated control system (PICS) will monitor, control, and operate the SHINE I&C systems in the SHINE irradiation facility (IF) and the radioisotope production facility (RPF). However, the SHINE FSAR does not clearly identify all I&C systems controlled by PICS (i.e., Figure 7.3-1, "Process Integrated Control System Interfaces," of the FSAR refers to "IF Process Systems," "RPF Process Systems," and "Other I&C Systems"). Further, the FSAR identifies systems in the IF that will interface with the PICS, but does not identify systems in the RPF that will interface with the PICS.

(1) Identify all I&C systems that the PICS will monitor, control, and operate in the SHINE facility.

(2) Describe how the PICS will operate the SHINE facility and, in case of its failure, the safety controls included to mitigate or prevent an accident.

(3) Provide the system architecture that shows all systems that interface or interact with the PICS, not only those installed in the IF.

SHINE Response

SHINE has revised Chapter 7 of the FSAR to include a detailed description of the PICS design.

(1) The I&C systems that the PICS will monitor, control, and operate are described in Sections 7.3 and 7.6 of the FSAR.

(2) The PICS is described in Sections 7.3 and 7.6 of the FSAR, including how the PICS will operate within the SHINE facility, including monitoring and alarms, control functions, and interlocks. As described in Section 7.3 of the FSAR, the PICS is designed so that it cannot

fail or operate in a mode that could prevent the TRPS or ESFAS from performing their designated functions.

Potential failures of the PICS, on a controlled-component level, are incorporated into the SHINE Safety Analysis and are included in the accident analysis provided in Chapter 13 of the FSAR.

(3) Figure 7.3-1 of the FSAR provides the system architecture for the PICS, including the systems that interface or interact with the PICS.

The non-public (proprietary) version of the FSAR, incorporating the changes to Chapter 7 described above, is provided in Enclosure 4. The public (non-proprietary) version of the FSAR, incorporating the changes to Chapter 7 described above, is provided in Enclosure 5.

RAI 7-6

The SHINE FSAR uses the terms “channel” and “division.” However, the SHINE FSAR does not clearly define or distinguish what constitutes a channel or a division. For example, Section 7.2.5.3, “Access Control,” of the SHINE FSAR states, in part:

> Each division of TRPS and ESFAS systems has a nonsafety-related MWS for the purpose of online monitoring and offline maintenance and calibration. The HIPS platform MWS supports online monitoring through one-way isolated communication ports. The MWS is used to update setpoints and tunable parameters in the HIPS chassis when the safety function is out of service. Physical and logical controls are put in place to prevent modifications to a safety channel when it is being relied upon to perform a safety function. A temporary cable and OOS switch are required to be activated before any changes can be made to an SFM. When the safety function is removed from service, either in bypass or trip, an indication is provided by the HIPS platform that can be used to drive an alarm in the facility control room to inform the operator. Adjustments to parameters are performed in accordance with facility technical specifications, including any that establish the minimum number of redundant safety channels that must remain operable for the applicable operating mode and conditions. [emphasis added]

This paragraph seems to use the terms “channel” and “division” interchangeably.

Define what constitutes a channel and what constitutes a division.

SHINE Response

SHINE has revised Chapter 7 of the FSAR and the Technical Specifications to clarify, and correct the usage of, the terms channel and division. The Technical Specifications defines “division” as:

> The designation applied to a given system or set of components that enables the establishment and maintenance of physical, electrical, and functional independence from other redundant sets of components.

The usage of the term “channel” in both the FSAR and the Technical Specifications refers to the combination or subset of a sensor, line, amplifier, and output device that are connected for the

purpose of measuring the value of a parameter. The definition of “channel,” as it relates to each applicable Technical Specification LCO, is included in the bases discussion for each applicable LCO. Usage of the terms “channel” and “division” are now consistent throughout Chapter 7 of the FSAR and the Technical Specifications.

The non-public (proprietary) version of the FSAR, incorporating the changes to Chapter 7 described above, is provided in Enclosure 4. The public (non-proprietary) version of the FSAR, incorporating the changes to Chapter 7 described above, is provided in Enclosure 5.

The non-public (proprietary) version of the Technical Specifications, incorporating the changes described above, is provided in Enclosure 6. The public (non-proprietary) version of the Technical Specifications, incorporating the changes described above, is provided in Enclosure 7.

RAI 7-7

Section 50.36, “Technical Specifications,” of 10 CFR requires that each applicant for an operating license include proposed technical specifications (TSs). The proposed technical specifications (TSs) in the application should identify the safety systems necessary to protect the facility when a postulated accident occurs. The proposed TS should include: Limiting Conditions for Operation (LCOs), Limiting Safety System Settings (LSSSs), and surveillance requirements (SR). LCOs are the lowest functional capability or performance levels (e.g., LSSSs) of equipment required for safe operation of the facility. The SR should identify the tests performed on a predetermined periodicity to verify that required safety system is operating as assumed in the accident analyses and within the licensing basis or the facility is operating outside an LCOs. The TS should be based on the analysis provided in Chapter 13, “Accident Analysis,” of the FSAR.

The relationship between LCOs, LSSSs, and SRs are not clear and appears to be inconsistent in some cases for the respective descriptions in Chapters 7 and 13.

(1) Clarify inconsistencies among the instrument range, analytical limits, safety limits (SLs), and associated LSSSs in Chapters 7 and 13 of the application, as well as the TSs. The FSAR should include sufficient information to conclude that SLs are protected, and that LSSS and LCO settings were established through the analyses in Chapter 13.

(2) For the safety functions, verify and update the descriptions in the FSAR to be consistent with the description in the bases for TS for LSSSs.

SHINE Response

SHINE has revised the FSAR and the Technical Specifications to clarify the relationship between Limiting Conditions of Operation (LCOs), Limiting Safety System Settings (LSSSs), and Surveillance Requirements (SR) and to make descriptions in the Technical Specification consistent with the descriptions in the FSAR..

(1) SHINE has revised the FSAR and the Technical Specifications to correct inconsistencies among the instrument ranges, analytical limits, safety limits (SLs), and LSSSs described in the Technical Specification and in the FSAR (i.e., Chapter 7, Chapter 13, the associated system descriptions within other chapters of the FSAR). SHINE has performed analytical limit analyses for safety system variables, and instrument uncertainty calculations, to ensure

that variable setpoints provide appropriate margin to the associated analytical limit in accordance with the SHINE setpoint methodology described in Section 7.2 of the FSAR. The FSAR includes sufficient information to conclude that SLs are protected, and that LSSSs and LCOs align with the analyses described in Chapter 13 of the FSAR.

(2) SHINE has updated system descriptions in the FSAR to include additional information related to the safety functions and analytical limits for structures, systems, and components (SSCs) to provide a level of information consistent with the Technical Specification Bases. The FSAR descriptions are consistent with the descriptions in the Technical Specification Bases.

The non-public (proprietary) version of the FSAR, incorporating the changes described above, is provided in Enclosure 4. The public (non-proprietary) version of the FSAR, incorporating the changes described above, is provided in Enclosure 5.

The non-public (proprietary) version of the Technical Specifications, incorporating the changes described above, is provided in Enclosure 6. The public (non-proprietary) version of the Technical Specifications, incorporating the changes described above, is provided in Enclosure 7.

RAI 7-8

Section 50.36(c)(2) of 10 CFR states that the TSs will include LCOs. Section CFR 50.36(c)(2)(i) of 10 CFR defines LCOs as “the lowest functional capability or performance levels of equipment required for safe operation of the facility.” Section 50.36(a)(1) of 10 CFR states, in part, that “[a] summary statement of the bases or reasons for such specifications, other than those covering administrative controls, shall also be included in the application, but shall not become part of the technical specifications.”

Criterion 15 in Chapter 3 of the SHINE FSAR requires adequate reliability or redundancy to protect against the loss of a protection function when a component is removed from service. The design of the TRPS states that it meets the single failure criteria by having three independent channels of instrumentation (any two of which can initiate a protective action). In other words, any single failure in the TRPS would not prevent a protective action from being implemented. However, the TS LCOs only require two channels of instrumentation to be operable (see SHINE TS LCO 3.2.4); this means that SHINE would allow the TRPS to be operated indefinitely with one channel inoperable (an immediate shutdown is specified if only one is operable). The basis for SHINE TS LCO 3.2.4 states, in part:

> The NFDS provides indication of neutron flux and TSV power during IU operations, as described in FSAR Section 7.8. The NFDS signals provide input to TRPS functions, as described in FSAR Subsection 7.4.5. Three Channels of NFDS are provided for each of the variables in Table 3.2.4, one Channel for each of Divisions A, B, and C. Only two Channels are required to be Operable to provide redundancy to protect against a single failure. When all three Channels are Operable, actuation of the safety function occurs on 2-out-of-3 voting logic. When any single Channel is inoperable, the inoperable Channel is required to be placed in trip, effectively changing the voting logic to 1-out-of-2, preserving the single failure protection.

> Any single Channel may be placed in bypass during performance of a required SR, effectively changing the voting logic to 2-out-of-2 (with two other Channels Operable) or 1-out-of-1 (with one other Channel Operable).

Additionally, the following note for SHINE TS LCO 3.2.4 is provided following Table 3.2.3, "TRPS Interlocks," of the SHINE FSAR:

> Any single required instrumentation Channel may be inoperable while the variable is in the condition of applicability for the purpose of performing a Channel Check or Channel Calibration.

However, the required actions in the TS do not include the requirement that "[w]hen any single Channel is inoperable, the inoperable Channel is required to be placed in trip, effectively changing the voting logic to 1-out-of-2, preserving the single failure protection." Furthermore, SHINE TS LCO 3.2.4 and the associated basis provide no restrictions on the length of time that operation in this condition is allowed, and no explanation is provided as to why unrestricted operation in a condition where the single failure criteria is not met provides adequate safety.

Based on this information in the SHINE FSAR and TS, it appears that when a single channel is in bypass, the system cannot meet the single failure criterion. Further, because this LCO and associated basis provide no restrictions on the length of time that operation in this condition is allowed, the system can operate this way, in a condition where the single failure criteria is not met, for unlimited duration. Therefore, the NRC staff cannot determine how this unrestricted operation provides adequate safety to shut down the IF in the event of a single failure within the system.

Therefore, it seems the TS LCO is inconsistent with the description in the associated TS basis.

(1) Verify and update Chapter 7 of the SHINE FSAR and the proposed TS to clarify when a single channel is operable.

(2) Describe how placing a channel in bypass (i.e., reducing the number of operable channels) would affect the voting logic and preserve the single failure criteria.

<u>SHINE Response</u>

(1) SHINE has revised the FSAR and the Technical Specifications to clarify when a single channel is operable. The following changes have been made:

- Section 3.2 of the Technical Specifications have been re-organized into four LCOs to better reflect the physical configuration of the TRPS and ESFAS, and to better define the scope of equipment applicable to the LCO that is required to be operable to perform the safety functions of the TRPS and ESFAS.

- Completion times have been defined for LCO actions in Section 3 of the Technical Specifications to give facility operators specific direction on the expected completion of required actions and prevent unrestricted or extended operation in degraded facility conditions while still allowing for repairs and the orderly shutdown of affected processes. The qualitative basis for each completion time has been added to the Technical Specification Basis for each LCO where a completion time is proposed.

- Actions have been added to LCOs 3.2.3, 3.2.4, and 3.7.1, to place the associated safety function module (SFM) in trip within two hours when one channel is inoperable for input variables where three channels are provided. Additionally, a requirement has been added to restore the channel to operable within 30 days, to prevent extended operation with reduced TRPS or ESFAS reliability. The Bases of these LCOs have also been updated to each include a table describing which input channels are allocated to each SFM in TRPS and ESFAS, to assist operators in applying the Technical Specifications to inoperable TRPS or ESFAS components.

- A note has been added to LCOs 3.2.3, 3.2.4, and 3.7.1, which allows for any single SFM to be bypassed for up to two hours while in the condition of applicability for the purpose of performing a channel test or channel calibration. The performance of a channel check has been removed from the Technical Specifications as a reason for placing a channel in an inoperable condition.

- Subsections 7.4.4.3 and 7.5.4.4 have been added to Chapter 7 of the FSAR to describe the operation and permitted use of the out-of-service (OOS) switch on each SFM and the associated trip/bypass switch located below each SFM for the TRPS and ESFAS. This section includes discussion of placing an SFM in trip when required by the technical specifications, and a discussion of the use of maintenance bypass.

(2) Placing a channel in bypass acts to transmit a “no trip” signal to the voting logic. Placing a channel in bypass does not preserve the single failure criterion and is therefore only allowable for a limited period of time to perform required Technical Specification surveillance testing. A channel is physically placed in bypass by placing the trip/bypass switch for an SFM in “bypass” and placing the OOS for the SFM in “OOS”. This action bypasses all input channels associated with that SFM. The Technical Specification Bases for LCOs 3.2.3, 3.2.4, and 3.7.1, describe the effective voting logic associated with placing a channel in bypass.

    The Technical Specifications have been revised to include a requirement that a channel may be placed in bypass for a maximum of two hours in order to perform required testing. A time limit of two hours is acceptable based on the small amount of time the channel could be in bypass, the continual attendance by operations or maintenance personnel during the test, the continued operability of the redundant channel, and the low likelihood that an accident would occur during the two-hour time period.

    Placing a channel in trip acts to transmit a “trip” signal to the voting logic. Placing a channel in trip preserves the single failure criterion for variables where three channels are provided. In cases where only two channels are provided, placing a channel in trip serves to actuate the associated safety function. A channel is physically placed in trip by placing the trip/bypass switch for an SFM in “trip” and placing the OOS for the SFM in “OOS”. This action trips all input channels associated with that SFM.

The non-public (proprietary) version of the FSAR, incorporating the changes described above, is provided in Enclosure 4. The public (non-proprietary) version of the FSAR, incorporating the changes described above, is provided in Enclosure 5.

The non-public (proprietary) version of the Technical Specifications, incorporating the changes described above, is provided in Enclosure 6. The public (non-proprietary) version of the

Technical Specifications, incorporating the changes described above, is provided in Enclosure 7.

References

(1) NRC letter to SHINE Medical Technologies, LLC, “Issuance of Request for Additional Information Related to the SHINE Medical Technologies, LLC Operating License Application (EPID No. L-2019-NEW-0004),” dated May 26, 2020 (ML20148M278)

(2) SHINE Medical Technologies, LLC letter to the NRC, “SHINE Medical Technologies, LLC Application for an Operating License,” dated July 17, 2019 (ML19211C143)

(3) NuScale Power, LLC letter to NRC, “NuScale Power, LLC Submittal of the Approved Version of NuScale Topical Report TR-1015-18653, “Design of the Highly Integrated Protection System Platform,” Revision 2 (CAC No. RQ6005),” dated September 13, 2017 (ML17256A892)

(4) NRC letter to NuScale Power, LLC, “Final Safety Evaluation for NuScale Power, LLC Licensing Topical Report: 1015-18653, “Design of the Highly Integrated Protection System Platform,” Revision 2, CAC No. RQ6005,” dated June 6, 2017 (ML17116A097)