Comment Response Matrix
Chapter 15

Comment # *(Affiliation: NuScale Power, LLC)*	**DSRS Section**	**Paragraph, Item, or Page**	**Comment / Basis**	**Commenter Recommendation**	**NRC Staff Technical Resolution**
621	15.0	I. Areas of Review, 1st paragraph, pg. 15.0-1.	Change sentence "The transients and accidents reviewed under Chapter 15 are the design basis events for which the initiating event is assumed to be a single failure of a system or component to perform its intended safety function." The as-written sentence is unclear and does not reflect the scope of Chapter 15 design basis events.	NuScale recommends that this sentence be changed to "The transients and accidents reviewed under Chapter 15 are the design basis events for which the initiating event is assumed, and a single failure of a system or component to perform its intended safety function also occurs."	DSRS was revised to reflect comment.
622	15.0	I. Areas of Review, B. Pg. 15.0-3.	Change sentence "Postulated accidents and infrequent events …. during the life of the nuclear power plant." The basis for the change is that 'nuclear power plant' in the NuScale design implies multiple modules, or units.	NuScale recommends that this sentence be changed to "Postulated accidents and infrequent events …. during the life of the nuclear power unit."	DSRS was revised to reflect comment.
623	15.0	I. Areas of Review, C.iii. Pg. 15.0-8	In this DSRS section, delete the bullet point for 'Reactor recirculation valves.' Basis for change: the reactor recirculation valves are	NuScale recommends deletion of the bullet point for 'Reactor recirculation valves'	DSRS was revised to reflect comment. Staff agrees with the deletion of the reactor recirculation valve bullet as it is redundant with the ECCS flow rate bullet.

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			addressed by the bullet for ECCS flow rates.		
624	15.0	VI. Definitions, 'Infrequent Event', pg. 15.0-14	In definition of 'Infrequent Event', replace 'lifetime of the plant' with 'lifetime of the nuclear power unit'. Basis for change: Consistent reference to nuclear power unit or nuclear power plant in the DSRS.	Replace 'plant' with 'nuclear power unit'	DSRS was revised to reflect comment.
625	15.0.3	Review Interfaces, I. Areas of Review, Item 7.O p. 15.0.3-5	The DSRS Section Title is not correct for Item 7.O.	NuScale recommends the following change from: DSRS Section 15.5.1 – 15.5.2, "Inadvertent Operation of Emergency Borated Water Tanks (EBTs) and Inadvertent Operation of Reactor Coolant Inventory and Purification System (RCIPS) that Increases Reactor Coolant Inventory" To: CHEMICAL AND VOLUME CONTROL SYSTEM MALFUNCTION THAT INCREASES REACTOR COOLANT INVENTORY	Staff agrees and has made suggested change to reflect correct name of referenced DSRS section.

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626	15.0.3	Review Interfaces, I. Areas of Review Item 7.J p. 15.0.3-4	The NuScale design does not include reactor coolant pumps.	NuScale recommends deletion of DSRS Section 15.3.3 – 15.3.4, “Reactor Coolant Pump Rotor Seizure and Reactor Coolant Pump Shaft Seizure and Break Accidents.”	Staff agrees and has made suggested change. A NuScale DSRS Section on the topic was not developed because the topic was not applicable to the NuScale design. Review interface item 7.J was deleted.
627	15.0.3	Review Interfaces, I. Areas of Review Item 7.Pp. 15.0.3 -5	The valves on top of the RPV are identified as the ECCS RVVs in NuScale Chapter 15 calculations.	NuScale recommends the following change From: " DSRS Section 15.6.1, “Inadvertent Opening of a Pressurizer Pressure Relief Valve" To: "Inadvertent Opening of an ECCS Reactor Venting Valve"	Suggested change not accepted. Inadvertent opening of an ECCS reactor venting valve (RVV) is addressed by NuScale DSRS Section 15.6.6. Section 15.6.1 is not being used for the NuScale review. The review interface reference to DSRS Section 15.6.1 has been replaced by a reference to DSRS Section 15.6.6.
628	15.0.3	II. DSRS Acceptance Criteria Table 1 p. 15.0.3-8	Locked Rotor Accident is not applicable to the NuScale Design	NuScale recommends deletion of this accident to provide clarity, recognizing that the Table 1 footnote states that some of the accidents listed may not be applicable.	Staff agrees and has made suggested change.
629	15.0.3	I. Areas of Review III. Review Procedures IV. Evaluation Findings p. 15.0.3 - 2,	Items 4. & 6. (pg. 2, 3) in Section I and Item 6. (pg. 11 & 12) in Section III and Items 3 & 6 in Section IV do not apply and appear to have been carried over from the SRP).	NuScale recommends deletion of these items and renumbering the remaining item numbers as needed.	Staff agrees with comment and expands upon it based on the underlying concept that the NuScale DSRS provides guidance for applications that incorporate the NuScale design by reference. Guidance for ESPs that use a PPE or that reference a design other than the NuScale design is

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		3, 11, 12, 17-20			given in the SRP, including SRP Section 15.0.3. Additional changes were made to remove these discussions throughout the DSRS section. Changes were also made to the discussion of ESP reviews in NuScale DSRS Sections 11.2 and 11.3 to be consistent with the changes to NuScale DSRS Section 15.0.3.
630	15.0.3	I. Areas of Review, Review Interfaces Item 7.I, pg. 15.0.3-4	Item 7.I refers to DSRS Section 15.3.1 – 15.3.2, “Loss of Forced Reactor Coolant Flow Including Trips of One or More Pump Motors, Flow Controller Malfunctions, and Flow Blockages.” The NuScale design does not contain pumps located within containment. Therefore, item 7.I is not applicable to the NuScale Design.	NuScale recommends deleting Item 7.I	Staff agrees and has made suggested change. A NuScale DSRS Section on the topic was not developed because the topic was not applicable to the NuScale design. Review interface item 7.I was deleted.
631	15.1.1 - 15.1.4	I. Areas of Review. 15.1.1-15.1.4	The DSRS statement “The power level increase will lead to a reactor trip.” should be revised because not all decrease in feedwater temperature events lead to a reactor trip.	NuScale recommends changing "will" to "may"	DSRS was revised to reflect comment.

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632	15.1.1 - 15.1.4	II. Acceptance Criteria. Technical Rational, Item 3.	The DSRS statement "Therefore, for these overcooling transients of DSRS Section 15.1.1, the reactor coolant pressure needs to be analyzed to ensure that the pressure acceptance criterion is satisfied." This item refers to section 15.1.1 specifically, but should apply to all 15.1 sections.	NuScale recommends changing "Section 15.1.1" to "Sections 15.1.1-15.1.4"	DSRS was revised to reflect comment. Regarding the statement in the "Comment" column, the staff believes that NuScale is referring to DSRS sections 15.1.1 – 15.1.4 and is not referring to DSRS section 15.1.5.
633	15.1.1 - 15.1.5	II. Acceptance Criteria. Technical Rational, Item 5.	The DSRS statement "DSRS Section 15.1.1 examines these margins where applicable to ensure that the thermal criteria limits are not exceeded." The item refers to section 15.1.1 specifically, but should apply to all 15.1 sections.	NuScale recommends changing "Section 15.1.1" to "Sections 15.1.1-15.1.4"	DSRS was revised to reflect comment. Regarding the reference in the "DSRS Section" column, the staff believes the correct reference is 15.1.1-15.1.4.
634	15.1.1 - 15.1.4	Numbering of Section (15.1.1-15.1 .4)	There are now five events in this section, but there are only four numbers. This may lead to confusion when numbering events.	NuScale recommends updating the numbering for 15.1	Comment too vague for the staff to ascertain the meaning; no changes were made to the DSRS.

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635	15.1.1 - 15.1.4	Multiple	Actuation of the DHRS includes opening of the DHRS valves and closure of the FWIV/MSIVs. This isolates secondary coolant within the DHRS heat transfer loop. Until natural circulation is established within the DHRS, heat removal from the RCS is reduced.	NuScale recommends changing the "Inadvertent operation of the decay heat removal system (DHRS)" event from Section 15.1.1-15.1.4 to Section 15.2.1-15.2.5 and removal of references to the DHRS from Section 15.1.1-15.1.4.	Comment too vague for the staff to ascertain the meaning; no changes were made to the DSRS. "Pressure needs to be analyzed to ensure…" only appears once in Technical Rationale, Item number 3 where it is used correctly.
636	15.1.5	I. Areas of Review, Review Interfaces, Item 8	The DSRS states that "This review includes the instruments and controls required to ensure automatic and manual ECC, CNX or RCI initiation and flow indication in the control room and…"The CNX and RCI refer to mPower systems and are not applicable to the NuScale design	NuScale recommends removal of references to CNX and RCI and adding DHRS: "This review includes the instruments and controls required to ensure automatic and manual ECC, or DHRS initiation and flow indication in the control room and…"	DSRS was revised to reflect comment.
637	15.1.5	II. Acceptance Criteria, Requiremen ts, Item 5	The NuScale design does not include RCPs, so the following text in #5 should be changed: "5. Requirements for ensuring adequate decay heat removal and RCP Integrity and operation are specified in Title of the Code of Federal Regulations (CFR), Section	NuScale recommends removal of references to RCPs and associated Regulation. Text should read: "5. Requirements for ensuring adequate decay heat removal is specified in Title of the Code of Federal Regulations (CFR), Section 50.34(f)(2)(xii)1."	DSRS was revised to reflect comment.

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			50.34(f)(2)(xii)[1] and 10 CFR 50.34(f)(1)(iii), respectively."	**This comment should be applied to all Chapter 15 DSRS Sections.**	
638	15.1.5	II. Acceptance Criteria, DSRS Acceptance Criteria Item 4. "…	The DSRS states that "Although the DHRS provides a safety function, the system is not Safety-related. For the NuScale design, the DHRS provides the safety-related means of decay heat removal.	NuScale recommends the statement be changed to: "For the NuScale design, the DHRS provides the safety function of decay heat removal."	No change necessary as the version in ADAMS states the DHRS is safety-related.
639	15.1.5	II. Acceptance Criteria, DSRS Acceptance Criteria, Item 10	DSRS Acceptance Criteria Item 10 states: "…should credit for operator action be required (e.g., RCP trip), and assessment for…" The NuScale design does not include Reactor Coolant Pumps (RCPs).	NuScale recommends removal of RCPs throughout all DSRS sections.	The example of an RCP trip has been deleted. Also, the staff has appropriately removed references to RCPs throughout DSRS Chapter 15 in response to comment 637. For DSRS Sections in other chapters, the staff has removed references to RCPs when appropriate in response to specific NuScale comments on those chapters.
640	15.1.5, 15.1.6, 15.2.7	III. Review Procedures, Item 2	These DSRS sections state in item 2(3) "provide information necessary to demonstrate compliance with any technically relevant portions of the Three Mile Island requirements set forth in 10 CFR 50.34(f), except paragraphs (f)(1)(xii), (f)(2)(ix), and (f)(3)(v) for a DC application, and	NuScale recommends the statement be changed to the following: (3) provide information necessary to demonstrate compliance with any technically relevant portions of the Three Mile Island requirements set forth in 10 CFR 50.34(f), except paragraphs (f)(1)(ii), (f)(1)(iii), (f)(1)(v), (f)(1)(xii), (f)(2)(ix), and	The staff does not agree with this comment. The staff will review the NuScale application that is submitted to determine applicability of NRC regulations. If the staff determines that (f)(1)(ii), (f)(1)(iii), and (f)(1)(v) are not applicable to the design presented in the application, the specific portions of the review will not be necessary.

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			except paragraphs (f)(1)(xii), (f)(2)(ix), (f)(2)(xxv), and (f)(3)(v) for a COL application." There are three additional paragraph exceptions that need to be added to these statements: (f)(1)(ii) because the NuScale design does not have an alternative feedwater system, (f)(1)(iii) because the NuScale design does not have RCPs, and (f)(1)(v) because the NuScale design does not have a high pressure coolant injection system.	(f)(3)(v) for a DC application, and except paragraphs (f)(1)(ii), (f)(1)(iii), (f)(1)(v), (f)(1)(xii), (f)(2)(ix), (f)(2)(xxv), and (f)(3)(v) for a COL application	
641	15.1.6	I. Areas of Review, 1, 2nd paragraph.	Add 'or liquid' to 2nd paragraph, 1st sentence. Basis: a loss of containment vacuum could result in air and/or water ingress depending on the source of the initiating event.	NuScale recommends revising the second paragraph, first sentence to the following: "The loss of containment vacuum due to air or liquid ingress increases heat transfer from the RCS to containment and the reactor pool."	The staff agrees with the comment, and the DSRS was revised accordingly.

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642	15.2.1 - 15.2.5	I. Areas of Review, Review Interfaces Item 6 p. 15.2.1-15.2.5-3	Item 6 states that the determination of safety-related (and risk significant) items are based on the review of the PRA. It is our understanding that the safety-related determinations are based on deterministic criteria and not the PRA.	NuScale recommends deletion of "safety- related" or explain how the PRA will be used to determine "safety- related".	DSRS was revised to reflect comment. Staff agrees with NuScale that PRA is not used to determine safety-related equipment.
643	15.2.7	II. Acceptance Criteria, DSRS Acceptance Criteria, Item 3.A	DSRS Acceptance Criteria, Item 3.A states: "The number of loops operating at the initiation of the event should correspond to the operating condition which maximizes the consequences of the event." The NuScale design does not include multiple primary coolant loops.	NuScale recommends this statement be revised to: "The operating *conditions* at the initiation of the event should correspond to the operating condition which maximizes the consequences of the event."	DSRS was revised to reflect comment.
644	15.2.8	I. Areas of Review, pg. 15.2.8-1.	The last sentence of 1st paragraph "(A break upstream … Loss of Normal Feedwater Flow.)" should be deleted. Basis: This statement is not technically appropriate for the NuScale design. In the NuScale design, for each reactor module, there is one feedwater line which branches to two lines outside of containment and then	NuScale recommends deletion of the last sentence of 1st paragraph: "(A break upstream of the feedwater isolation valves would affect the reactor system only as a loss of feedwater. This case is covered by DSRS Section 15.2.7, 'Loss of Normal Feedwater Flow.')"	DSRS was revised to reflect comment.

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			inside containment each of the 2 lines branches again to provide feedwater into the 4 steam generator inlet plenums (2 plenums for each of the 2 steam generators). A break upstream of the feedwater isolation valves is different than a loss of feedwater event due to the effect of the break flow on the intact-side feedwater line.		
645	15.2.8	I. Areas of Review, Review Interfaces, 9.	Replace 'DSRS 15.6.5' with 'DSRS 15.0.3'. Basis: This item identifies the DSRS section for review of fission produce release assumptions and radiological consequences from a feedwater pipe break. DSRS 15.0.3 is the appropriate section; DSRS 15.6.5 addresses LOCA events.	NuScale recommends replacing ‘DSRS 15.6.5' with 'DSRS 15.0.3'.	DSRS was revised to reflect comment.

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646	15.2.8	II. Acceptance Criteria, Technical Rationale, 4.	In the DSRS section, the word capability should be added to the first sentence to read 'GDC 27 requires reactivity control systems designed with a combined capability, in conjunction with poison …' because it is an incomplete sentence.	NuScale recommends adding 'capability,' to the first sentence to read 'GDC 27 requires reactivity control systems designed with a combined capability, in conjunction with poison …'	DSRS was revised to reflect comment.
647	15.2.8	III. Review Procedures, 7.	In the DSRS section, delete the first part of 2nd sentence: "As DHRS designs are diverse and may require both automatic and manual actuation". Basis: The NuScale DHRS is design-specific. The DHRS may be actuated automatically by the module protection system, or by manual actuation; for Chapter 15 event analysis, manual actuation of the DHRS is not required.	NuScale recommends deletion of 'As DHRS designs are diverse and may require both automatic and manual'.	No change is necessary as the sentence states that both automatic and manual actuation may be required. If no manual actuation is credited then pre-operational tests for operator action would not be required.

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648	15.2.8	IV. Evaluation Findings, Item 4	The DSRS states that "The applicant meets GDC 35 requirements for demonstrating emergency cooling system adequacy for abundant core cooling and reactivity control (via boron injections)."GDC 35 is an ECCS criterion, not a reactivity control criterion.	NuScale recommends changing to: "The applicant meets GDC 35 requirements for demonstrating emergency cooling system adequacy for abundant core cooling."	"…and reactivity control (via boron injection)" has been deleted as GDC 35 deals with abundant core cooling. GDC 27 deals with postulated accident reactivity control.
649	15.6.5	I. Areas of Review, 1. pg. 15.6.5-1	In the DSRS Item 1, 2nd paragraph identifies that 2 feedwater and 2 steam lines penetrate the reactor vessel. There are 2 steam generators, with 2 feedwater and 2 steam plenums per generator. Update text to be consistent with NuScale design.	NuScale recommends changing the 4th sentence in 2nd paragraph to read "Four feedwater and four steam lines penetrate the vessel providing the secondary flow to the tube-side of the two steam generators to remove the heat generated in the core (two feedwater and two steam lines per generator).	The staff agrees with the comment, and the DSRS was revised accordingly.
650	15.6.5	I. Areas of Review, 1. pg. 15.6.5-2	In the DSRS Item 1, 5th paragraph, 4th sentence, describes the opening of the reactor recirculation valves; the description should be revised so as not to be specific as to when the valves open.	NuScale recommends deleting "are opened to" from the 4th sentence in 5th paragraph. The revised sentence is: "When the liquid level in the containment rises above the top of the recirculation valves, the recirculation valves (RRVs) provide a natural circulation path from the lower containment through the core and out the RVVs."	The staff agrees with the comment, and the DSRS was revised accordingly.

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651	15.6.5	I. Areas of Review, 1. pg. 15.6.5-2	In the DSRS Item 1, 5th paragraph, 5th sentence discussion of steam energy transfer through the containment boundary to the containment is unclear.	NuScale recommends changing Item 1, 5th paragraph, 5th sentence to the following: "The steam transfers energy out of the reactor vessel to the containment, condenses and collects in the bottom of the containment."	The staff agrees that the sentence should be clarified, and the DSRS was revised as follows: "The steam transfers energy out of the reactor vessel to the containment, then condenses and collects in the bottom of the containment."
652	15.6.5	I. Areas of Review, 1. pg. 15.6.5-2	In the DSRS Item 1, 5th paragraph, 6th sentence, reference to the 'sump' should be updated for consistency with the NuScale design terminology.	NuScale recommends changing Item 1, 5th paragraph, 6th sentence to the following: "The RRVs provide for recirculation of water from the containment to the reactor core."	The staff agrees with the comment, and the DSRS was revised accordingly.
653	15.6.5	I. Areas of Review, 1., B and D pg. 15.6.5-3	In the Areas of Review, Items B and D, the RRV opening is identified for review; the RVVs should also be included.	NuScale recommends adding 'and RVV' to item B such that the statement becomes: "The analytical techniques and computer programs … the opening of the RRV and the RVV to maintain core water level above the fuel."	The staff agrees that the RVVs should be included and has added this to Items B and D.
654	15.6.5	I. Areas of Review, 1., F pg. 15.6.5-4	The discussion of simultaneous injection in this item does not include a modifier such as 'if applicable'; since the NuScale design does not include capability for emergency core cooling injection this text should be modified. Also, it is not	NuScale recommends changing Item F to the following: "The results of the post- LOCA long term cooling analyses to assure than an acceptable model has been employed to identify the timing of boric acid precipitation for breaks. The review will also verify that an adequate procedure has been devised to control boric	The staff agrees that the sentence should be clarified, and the DSRS was revised as follows: "The results of the post-LOCA long-term cooling analyses to assure that an acceptable model has been employed to identify the timing of boric acid precipitation for all break locations and sizes. The review will also verify that an

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			necessary to distinguish large and small breaks with respect to post-LOCA long term cooling.	acid precipitation for all breaks to assure long term cooling. "	adequate procedure has been devised to control boric acid precipitation for all breaks to assure long term cooling."
655	15.6.5	I. Areas of Review, 1., G pg. 15.6.5-4	Item G refers to Section 5.2.2 for containment peak pressure and heat transfer capacity. Section 5.2.2 addresses overpressure protection. This should be changed to Section 6.2.2 or 6.2.1.1.A, or other intended section.	NuScale recommends changing the reference to "DSRS Section 5.2.2" to "Section 6.2.2", or other intended section such as 6.2.1.1.A.	The staff agrees that Item G should not reference NuScale DSRS Section 5.2.2, and the DSRS was revised to include the correct reference.
656	15.6.6	General	The DSRS identifies the inadvertent operation of the ECCS as an anticipated operational occurrence (AOO). In the NuScale design, this is considered as an infrequent event.	NuScale recommends the inadvertent operation of the ECCS be reclassified as an infrequent event.	Staff does not agree with the comment. Inadvertent ECCS operation is an AOO unless it can be demonstrated, as discussed in DSRS Chapter 15.0, that the occurrence is greater than the lifetime of the plant or multiple failures must occur for inadvertent ECCS actuation.

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657	15.6.6	II. Acceptance Criteria, Technical Rational, Item 3 pg. 15.6.6-5	The DSRS contains a statement that 'As part of the reactor coolant pressure boundary, the reactor vent valves (RVVs) and the reactor recirculation valves (RRVs) must be able to reseat properly after actuation. 'This does not reflect the design of the ECCS valves - they are designed to open and stay open.	NuScale recommends that this section of the DSRS be updated to appropriately to reflect the NuScale design and this as an infrequent event.	The staff does not agree with the comment. See staff's response to Comment 656. Paragraph which starts with 'As part of the reactor coolant boundary…' on page 15.6.6-5 has been deleted.
658	15.8	Entire Section (DSRS Section not provided)	10 CFR 50.62(c)(1) requires that all PWRs must have a diverse actuation system separate from the reactor trip system for automatically initiating a turbine trip and the auxiliary feedwater system under ATWS conditions. The intent of the rule is to insure inventory in the steam generator is maintained during ATWS conditions. However, the NuScale design does not require the steam generator to mitigate ATWS conditions. The NuScale design does not include an auxiliary feedwater system, and actuation of the decay heat removal system is not	NuScale requests a DSRS for section 15.8 be developed that permits credit for design specific features that meet the intent of the ATWS rule.	While the staff understands the position discussed in this comment, NRC guidance addresses means of compliance with NRC regulations. The applicant may request an exemption from 10 CFR 50.62(c)(1), but the applicant must justify any requested exemption in its application. The guidance in SRP 15.8 is sufficient to perform the ATWS review.

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			important to the mitigation of ATWS events. During ATWS events for the NuScale design, without actuation of mitigating systems, the pressure response does not exceed the safety relief valve capacity. Therefore, diverse actuation of an auxiliary feedwater system and a diverse system to trip the turbine is not required to meet the underlying purpose of the rule.		
659	15.8	Entire Section (DSRS section not provided)	The SRM to SECY-90-016 was used in the 2007 update to SRP 15.8. The updated SRP states that for evolutionary designs, applicants may provide either of the following: i. A diverse scram system satisfying the design and quality assurance criteria specified in SRP Section 7.2 ii. Demonstrate that the consequences of an ATWS event are within acceptable values. However, the SRM states that the staff should retain the flexibility to accept	NuScale requests a DSRS for section 15.8 be developed that takes credit for designs which reduce the ATWS CDF below the goal set forth in SECY-90-016.	While the staff understands the position discussed in this comment, the applicant must demonstrate its position, and the technical basis therefor, in the application provided for staff review. The guidance in SRP 15.8 is sufficient to perform the ATWS review.

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			designs with non-diverse scram logic in those instances where it is demonstrated to the staff's satisfaction that the reliability of the scram function is such that the risk from ATWS is insignificant. The diversity that NuScale has incorporated into the design of the Reactor Protection System (RPS) has reduced the probability of ATWS CDF to less than the 1 E-5/year goal suggested by SECY-90-016 with a diverse scram system.		
660	15.9A	I. Areas Of Review item 1, 1st para., last sentence	NuScale RPV does not have horizontal piping.	NuScale recommends changing "In addition, natural circulation may cause stratification in horizontal pipes" to "In addition, natural circulation may cause stratification in horizontal **flow** regions in the RPV."	Staff agrees with the comment. DSRS was revised to clarify the statement.
661	15.9.A	I. Areas of Review, Item 1	Types I and II refer to low void and high void respectively. Type I does not bound single-phase instabilities relevant to NuScale, and Type II is well beyond NuScale operational domain	NuScale recommends deleting Type I and II instability designations. Additionally, reference to horizontal pipe stratification should be deleted.	Staff agrees with the comment and recommendation. The Type I flow instability designation was deleted as it refers to a BWR phenomenon which is not directly applicable to the NuScale PWR design. The DSRS still provides guidance to the reviewer on

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			and is not applicable. Stratification in horizontal pipes does not apply to the NuScale design.		single-phase instabilities, which are applicable to the NuScale design, and two-phase flow instabilities which may be applicable to the NuScale design depending on the operating conditions.
662	15.9.A	I. Areas of Review, Item 2	Out-of-phase oscillations between regions of the core apply to large BWR cores but do not apply to the small core of the NuScale design.	NuScale recommends deleting reference to out-of-phase oscillations between regions of the core.	The regional instability discussion is retained for completeness, but an additional statement was added to acknowledge that NuScale is not expected to be subject to this instability mode.
663	15.9.A	I. Areas of Review, Item 2	The requirement applies to the BWR long term stability solution known as "Detect and Suppress." The NuScale approach should remain more general and alternatively can be based on "Instability Region Exclusion."	NuScale recommends removing reference to BWR-specific stability terminology.	The staff agrees with the comment, and the DSRS was revised accordingly.
664	15.9.A	II. Acceptance Criteria, DSRS Acceptance Criteria, Item 3B	The correlation in question refers to the "Dog Bite" map which is a GE-specific correlation for regional mode decay ratio. This method was applied before regional mode stability could be calculated directly. This correlation is BWR-specific.	NuScale recommends removing reference to this correlation which is BWR-specific.	The staff agrees with the comment, and the DSRS was revised accordingly.

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665	15.9.A	II. Acceptance Criteria, DSRS Acceptance Criteria, Item 5	This item is too specific to BWR solutions already in operation. In the pre-application meeting a D&S was defined that is applicable to NuScale as detecting CHF margin violation (not oscillation) and applying automatic action to suppress. Automatic oscillation detection is appropriate for BWR as the oscillation period is small (2~3 seconds), whereas the period of a NuScale oscillation is ~30 seconds (or larger at low power), which is not separable from legitimate operator's actions and should not be used to issue automatic scram signals. The language should be generalized to avoid specifically detecting oscillations that may lead to CHF violation to allow detecting violation of CHF margin directly as a valid option.	NuScale recommends a more general statement to the effect that "Acceptable methodology to satisfy GDC12 detects violation of SAFDL margins that may result from unstable oscillations and suppress the oscillations by adequate means including scram before the SAFDLs are violated." In this way, acceptable online systems may be employed to detect oscillations or compute SAFDLs directly. The latter may be more suitable for oscillation periods that are significantly larger than BWR's.	The staff agrees with the comment, and the DSRS was revised accordingly.

Comment # *(Affiliation: NuScale Power, LLC)*	**DSRS Section**	**Paragraph, Item, or Page**	**Comment / Basis**	**Commenter Recommendation**	**NRC Staff Technical Resolution**
666	15.9.A	II. Acceptance Criteria, DSRS Acceptance Criteria, Item 6	This is a direct description of the Option- III Detect & Suppress long term stability solution for BWRs. NuScale, if opted for a D&S solution, would not need to model any contours. This statement is BWR- specific and is not applicable to NuScale.	NuScale recommends deletion of this item.	The staff agrees with the comment, and the DSRS was revised accordingly.
667	15.9.A	II. Acceptance Criteria, DSRS Acceptance Criteria, Item 8B	Item 8 B is missing.	NuScale recommends adding item 8B	The staff agrees with the comment, and the DSRS was revised accordingly.