

NRC Question 1:

Discussion of the level of details including the scope and schedule for the completion of NuScale piping systems (piping design and pipe break hazards analysis) that would eliminate the need for piping design acceptance criteria (DAC).

NuScale Response:

NuScale Power, LLC. (hereafter “NuScale”), is planning to complete a level of piping design, including pipe break analysis, for ASME Class 1, 2, and 3 piping that may preclude the need for piping DAC in our design certification application (DCA). Further discussions are needed between NuScale and the NRC Staff to ensure that the piping design currently scheduled to be completed for the (DCA) will contain sufficient information to satisfy the graded approach described in the March 4, 2014 NRC white paper (ML14065A067). Some elements of this March 4, 2014 graded approach white paper are not precisely defined and therefore open to interpretation. Clear near-term documented explanation of these elements by the NRC is required for NuScale to determine if piping DAC will be requested for the DCA.

NRC Question 2:

Discussion of the intent, confidence, and potentially unique analysis methodology aspects associated with the proposed application of leak before break (LBB) for small size piping.

NuScale Response:

The smallest piping in the NuScale design, for which NuScale intends to apply LBB is the feedwater line NPS 4 piping. NuScale will comply with the guidance in Section 3.6.3 of the Standard Review Plan (NUREG-0800) and NRC Branch Technical Position 3-4 for its LBB analysis methodology. NuScale is also developing leak detection methods that will be capable of detecting the leakage associated with a NPS 4 pipe, with adequate margin to meet USNRC Regulatory Guide 1.45, Revision 1. NuScale does not expect to utilize any unique analysis methodology for the proposed small size piping LBB.

NRC Question 3:

Discussion of the need to ensure that space limitations inside containment will not compromise the design of protective features for potential postulated pipe ruptures (especially, if LBB is determined not applicable) or result in unacceptable systems interactions.

NuScale Response:

NuScale has identified inspection and testing elements for the reactor module. A preliminary accessibility assessment for performing inservice inspections and testing was performed that showed inspection and testing elements are accessible including the elements inside containment. Additionally, a full scale mock-up of the upper reactor module was fabricated and assembled to evaluate and identify

potential accessibility concerns. In-service inspection evaluation with the upper module mockup (UMM) begins in May 2015. The preliminary accessibility assessment and upper module mock-up evaluation will inform piping design and inspection, maintenance and accessibility decisions. This information, as well as access to the upper module mockup, will be made available to NRC staff.

NRC question 4:

Discussion of the need to ensure that space limitations inside containment will not compromise the accessibility requirements for in-service inspection.

NuScale Response:

See the response to Question 3 above.

NRC question 5:

Discussion of the need to ensure that space limitations inside containment will not compromise the accessibility requirements for in-service testing (valves, if any).

NuScale Response:

See the response to Question 3 above.