HFE Documents for the NuScale DCD Application

Table 1, "HFE Documents to Submit with the DCD Application," identifies the documentation the staff will need to docket and commence the review of the NuScale DCD.

Table 2, "HFE Documents to Submit after Docketing and Prior to Phase 4," identifies documentation the staff will need to complete the review and issue a final safety evaluation report.

Table 1, HFE Documents to Submit with the DCD Application

NUREG-0711 Program Element	Implementation Plan (IP)	Results Summary Report (RSR)
HFE program plan	Yes	No. There is no RSR for this element.
Operating Experience Review (OER)	Note 1	Yes. At a minimum, the RSR should include the items listed in the third paragraph of Section 3.3, "Applicant Products and Submittals," and the staff will verify the results using the criteria in NUREG-0711, Section 3.4, "Review Criteria."
Functional Requirements Analysis / Functional Allocation (FRA/FA)	Note 1	Yes. At a minimum, the RSR should include the items listed in the third paragraph of Section 4.3, "Applicant Products and Submittals," and the staff will verify the results using the criteria in NUREG-0711, Section 4.4, "Review Criteria."
Task Analysis (TA)	Note 1	Yes. At a minimum, the RSR should include the items listed in the third paragraph of Section 5.3, "Applicant Products and Submittals," and the staff will verify the results using the criteria in NUREG-0711, Section 5.4, "Review Criteria."
Staffing and Qualifications (S&Q)	Note 1 (an IP may also be submitted for the staffing plan validation methodology)	Yes. At a minimum, the RSR should include the items listed in the third paragraph of Section 6.3, "Applicant Products and Submittals," and the staff will verify the results using the criteria in NUREG-0711, Section 6.4, "Review Criteria." Review criterion 6.4(2) directs the staff to use the guidance in NUREG-1791 (Persensky et al., 2005) and NUREG/CR-6838 (Plott et al., 2004) if the proposed control room staffing does not comply with 10 CFR 50.54(m). NUREG-1791 states, "the applicant's submittal should include (1) the description of the request, the concept of operations, and operational conditions considered, (2)

		supporting analyses and documentation from the operating experience, functional requirement analysis and function allocation, task analysis, job definition, and staffing plan, and (3) data and analysis from validation exercises performed to demonstrate the effectiveness and safety of the proposed staffing plan." Also, it states, "The purpose of the staffing plan review is to ensure that the applicant has systematically analyzed the requirements for the numbers of qualified personnel that are necessary to operate the plant safely under the operational conditions analyzed." NUREG/CR-6838, "Technical Basis for Regulatory Guidance for Assessing Exemption Requests from the Nuclear Power Plant Licensed Operator Staffing Requirements Specified in 10 CFR 50.54(m)," provides methods, measures, criteria, and rationale for reviewing exemption requests, and comprises the basis for the guidance in NUREG-1791. The results summary reports submitted for the OER, TA, and FRA/FA program elements may supplemented with the criteria listed in NUREG-1791 in lieu of submitting separate documents to support the staffing plan validation activity. Additionally, the S&Q RSR may refer to documents previously submitted to the NRC; for example, a letter from Mr. Steven Mirsky at NuScale dated 9/15/15 describes a preliminary concept of operations that addresses some criteria in NUREG-1791 (see ADAMS Accession No. ML15258A846)).
Treatment of Important Human Actions (TIHA)	Note 1	Yes. At a minimum, the RSR should include the items listed in the third paragraph of Section 7.3, "Applicant Products and Submittals," and the staff will verify the results using the criteria in NUREG-0711, Section 7.4, "Review Criteria."
Human System Interface Design (HD)	Note 1	Yes. At a minimum, the RSR should include the items listed in the third paragraph of Section 8.3, "Applicant Products and Submittals," and the staff will verify the results using the criteria in NUREG-0711, Section 8.4, "Review Criteria."
Procedure Development (PD)	Addressed in Chapter 13 of the application.	
Training Program	Addressed in Chapter 13 of the application.	

Development (TD)		
Design Implementation (DI)	Yes.	No. An ITAAC addressed in Chapter 14 tracks the activity to confirm that the applicant's as-built design conforms to the verified and validated design resulting from the HFE design process.
Human Performance Monitoring (HM)	The applicant may choose to provide an implementation plan or make this element the subject of a COL information item.	No. NUREG-0711 states that an RSR is not expected because a problem identification and resolution program will be established as part of normal plant operations and will be subject to routine NRC inspections.

Table 2, "HFE Documents to Submit after Docketing and Prior to Phase 4,"		
Verification and Validation	Note 1	Yes. At a minimum, the RSR should include the items listed in the fourth paragraph of Section 11.3, "Applicant Products and Submittals," and the staff will verify the results using the criteria in NUREG-0711, Section 11.4, "Review Criteria."

Note 1: NUREG-0711, Section 1.2.2, "Review Elements," states, "An IP review gives the applicant the opportunity to obtain an NRC staff review of, and concurrence with the methodology before the applicant conducts the work associated with the element. This type of review is desirable from the NRC staff's perspective because it offers the staff an opportunity to identify issues with the methodology and provide input early in the analysis or design process when the applicant more easily can address staff concerns than when the element is completed."