

**RESPONSE TO PUBLIC COMMENTS ON DRAFT STANDARD REVIEW PLAN  
SECTION 18.0, HUMAN FACTORS ENGINEERING**

On February 24, 2016, a Notice of Opportunity for Public Comment was published in the Federal Register (81 FR 9226) on the proposed revision to NUREG-0800, Standard Review Plan (SRP), Sections 18.0, Human Factors Engineering. Comments were received from one (1) organization.

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The comments can be found in ML16082A275.

The NRC's staff review and disposition of the comments are provided in the following table.

No.	Reference	Comment Submission	NRC Resolution
1	Page 3, Recommendation 1	The NRC should not revise SRP 18.0 to incorporate the staff's proposed new approach to HFE reviews. During the January 7 and February 8 public meeting, the NRC staff indicated an interest in developing an alternative approach based on a phased review. We are prepared to work with the NRC to develop a phased review approach that aligns with the design, review and inspection processes, and minimizes the reliance on DAC in a cost effective manner.	<p>The recommendation mischaracterizes the staff's interest expressed in the public meetings. Our interest is in a phased approach to the integrated system validation. This is just one component of the Chapter 18 design certification. A "phased review approach" implies a new process beyond current regulatory guidance. However, the staff believes the current guidance on DCD reviews is acceptable.</p> <p>The proposed SRP changes in Revision 3 of Chapter 18 provide for better alignment with existing NRC guidance, additional detail explaining technical interfaces with other review areas, clarifications about how to use applicable NUREGs during reviews, and a realignment of information to clarify acceptance criteria and the review process. These changes are expected to improve the quality and timeliness of staff reviews, which will improve</p>

			<p>efficiency and clarity for both the NRC staff reviewers and applicants.</p> <p>Revised SRP 18.0 does not constitute a “new approach” to HFE reviews because this revision is reiterating existing NRC policy on the application of design acceptance criteria (DAC) for human factors engineering that is found in SECY-92-053 (ADAMS Accession No. ML003707942). We do note that better compliance with the SECY guidance is being pursued with this SRP revision to ensure that staff and applicants limit the use of “DAC” (deferring the design) to those situations where there is an approved justification for its use.</p>
2	Page 4, Recommendation 2	<p>The NRC should consider updating NUREG-0711 in lieu or in conjunction with the update to the SRP 18.0, as the draft version of SRP 18.0 included numerous proposed changes that are intended to provide guidance to applicants. NUREG-0711 is applicant guidance and is a more appropriate place for this new information. However, we note that some of the NRC staff proposals appear to lack a regulatory basis and raise substantial concerns, such as the need to address “other accidents of high or moderate frequency which may not be analyzed in the SAR.”</p>	<p>This recommendation is accepted in part. The proposed change to address “other accidents of high or moderate frequency which may not be analyzed in the SAR” will be deleted.</p> <p>The recommendation implies there were other changes that lacked a regulatory basis. We have reviewed the other changes and verified they have an appropriate basis.</p> <p>The majority of revisions made to SRP Chapter 18 do not apply to NUREG-0711. Those that do apply will be addressed in the next revision to NUREG-0711. We are planning for this revision, but it will not be issued in conjunction with the SRP revision. The NRC staff reviews NUREGs on a periodic basis. This SRP revision is part of a periodic review and update. The staff identified the need to provide more clarity in Revision 3 of SRP Chapter 18 to align with the existing regulatory policy in SECY 92-</p>

			053. Additionally, because human factors engineering has several interfaces with other technical review areas, the revision provides guidance for NRC staff to use to identify these interfaces.
3	Page 4, Recommendation 3	The NRC staff should consider providing applicant specific guidance for near term applicants with design features that are not adequately addressed by existing NRC guidance. For example, SRP 18.0 Attachment B, <i>Methodology to Assess the Workload of Challenging Operational Conditions in Support on Minimum Staffing Level Reviews</i> , provides NRC guidance for applicants that propose staffing levels that do not meet requirements of 10 CFR 50.54(m). For these applicants, it would be more appropriate for the NRC to issue design specific standard review plans or other application specific guidance, until such time as the guidance is incorporated into NUERG-0711.	<p>This recommendation is already implemented by existing practices. Typically what we find is that near term applicants are introducing HFE design features that are in fact adequately addressed by existing NRC guidance. The more significant problem is that applicants may be unfamiliar with the details of applying the guidance, and/or there are questions associated with compliance for certain aspects of a new design. To better address this, the NRC has established a pre-application review process. For example, with the NuScale pre-application review process, the NRC has:</p> <ul style="list-style-type: none"> <li>• Provided feedback on the applicant's Implementation Plans to help ensure they have the necessary scope and detail necessary to ensure a complete HFE design.</li> <li>• Provided options on how new staffing configurations can be established and the necessary basis information needed to support these configurations. Specifically, the staff and NuScale applied the guidance in NUREG-1791, "Guidance for Assessing Exemption Requests from the Nuclear Power Plant Licensed Operator Staffing Requirements Specified in 10 CFR 50.54(m)" during the pre-application period to address control room staffing for small modular reactors.</li> </ul>

			<ul style="list-style-type: none"> <li>Completed an audit to verify the simulator and supporting procedures needed to support the staffing plan validation are sufficient.</li> </ul> <p>Additionally, part of the pre-application review process includes assessing whether there is a need for design-specific review standards.</p>
4	Page 4, Recommendation 4	The NRC should coordinate with the IEEE SC-5 working group on developing IEEE P2411 <i>Human Factors Engineering Guide for the Validation of System Designs and Integrated System Operations at Nuclear Facilities</i> .	This recommendation is already implemented by existing practices. Mr. Steve Fleger, an NRC staff member in the Office of Research, is the Chair of IEEE's Nuclear Power Engineering Committee. Mr. David Desaulniers, an NRC staff member in the Office of New Reactors, is the chair of the SC5 subcommittee which is one of six subcommittees within NPEC. Both of these NRC staff members are actively engaged in the development of IEEE P2411.