Industry Questions on Draft Revision of SRP 18.0, Human Factors Engineering

1. As stated in the Areas of Review, draft Rev 3 of SRP Section 18.0 anticipates that the staff will review and evaluate "the applicant's HFE control room design described in the design certification (DC) application," whereas the scope of staff review in the current version of the SRP is the "HFE programs of applicants." This change in area of review represents a substantial shift in NRC staff's expectation for a DC applicant's HFE submittal. What is the NRC's basis for making this change? It is unclear what problem this change in approach intends to address, such as a safety issue, schedule concern, etc.

2. Under the NRC's new review scope, the NRC now expects a V&V RSR from the DC applicant, unless DAC can be justified and are approved.

    a. In order to support a V&V RSR, the work for licensed operator procedures and training would need to be completed; however, procedure development and training programs are reviewed by the NRC as part of Chapter 13 (Sections 13.5 and 13.2, respectively), and are currently part of the COL Applicant's scope. Why does the NRC now expect the DC applicant to perform this scope of work instead of the COL applicant? Is an SRP Chapter 13 revision planned to be consistent with the Chapter 18 revision?

    b. Completing the RSR for the HFE element Verification and Validation (V&V) would require an applicant to have a final plant design, developed procedures and training, an ANSI-certified simulator, and multiple crews of licensed operators to complete full-scope simulator scenarios. What is the regulatory basis for the expectation that a DC applicant is to conduct what are typically operating-licensee activities, such as procedure and training development, in order to certify a design? A design vendor is not in the best position to create a licensee's procedures and training. Note that NUREG-0711 recognizes many aspects of the process can or should be site-specific, such as a simulator crew for performance of ISV that "reflects the characteristics of the population from which it is drawn."

3. Why has the NRC removed the ability for the DC applicant to choose the desired approval level (programmatic, implementation plan, completed element) for each of the HFE elements? The ability for DC applicants to choose their desired levels of approval has been an effective approach for NRC safety reviews to assure adequate protection of the public health and safety for previously approved DCs.

4. It appears as though the NRC is suggesting that each applicant (DCA or COLA) must specifically justify the use of DAC for HFE, and that the NRC will consider the use of each DAC on the merits of each applicant's justification. If true, this NRC position does not appear consistent with SECY 92-053, which establishes for the basis for HFE DAC generically. Most recently, the ESBWR did not complete eleven HFE elements (none after the first), and it does not appear that the applicant individually justified, or the NRC individually accepted, the DAC for each element. If the criteria for accepting or rejecting use of DAC are the same as that in SECY 92-053, then why would each

applicant need to justify the use of DAC? If the criteria are different than those in SECY 92-053, then what is the NRC's basis for deviating from established NRC policy?

5. How is the NRC planning to maintain consistency between SRP 18.0 and NUREG-0711? Draft revision to SRP 18.0 is inconsistent and is in conflict with the guidance on HFE design in NUREG-0711, which explicitly allows for an applicant to submit only an implementation plan (IP) for the relevant HFE elements, and which is de-facto industry standard for HFE programs (It is notable that both the current version of the SRP Section 18.0 and the Regulatory Guide 1.206 defer to NUREG-0711 for guidance on the HFE program.). None of the 12 elements specifies that an RSR is required, and NUREG-0711 provides for staff review of the IP.

6. There appears to be a significant amount of new information in draft SRP 18.0 that would, if adopted, be better located in NUREG-0711. It is not clear why the draft SRP includes Guidance for Evaluating Credited Manual Operator Actions (Attachment A) or Methodology to Assess the Workload of Challenging Operational Conditions In Support of Minimum Staffing Level Reviews (Attachment B). It would appear that this type of guidance should be part of a guidance document rather than in the SRP. Why did the NRC not revise NUREG-0711 instead of, or in conjunction with SRP Chapter 18.0, or does the NRC plan to update NUREG-0711 later?

7. How is the draft revision of SRP 18.0 consistent with the efforts to standardize ITAAC, and the draft NEI 15-02 guidance that is currently under NRC review? In those discussions, we thought that the NRC expressed that the level of design detail expected for future applications would be the same as what was approved for previous applications. We believe that the discussions concluded that the DC only needs to include the design processes for the HFE elements, in accordance with NUREG-0711, and not the actual design itself. The DC would include two ITAAC for HFE: one to perform an Integrated System Validation in accordance with the V&V implementation plan (IP), and a second to inspect the as-built control room in accordance with the Design Implementation IP to verify that the Human System Interfaces are consistent with the as-designed configuration as modified by the ISV report. These ITAAC are designed to be equivalent in scope to the typical DAC incorporated into previously approved DCs. The DC would be expected to include a V&V IP for the HFE design.

8. Please provide the regulatory basis for draft revision of SRP 18.0 statement that the application needs to address "other accidents of high or moderate frequency which may not be analyzed in the SAR?" How is this consistent with the regulations? This appears to be a new and unnecessary expectation.

9. Why does the NRC state that the Integrated System Validation (ISV) implementation plan should have acceptance criteria identified as Tier 2* information? There already exists an adequate change control process for Tier 2 that would assure that any changes requiring prior NRC approval would not be made without obtaining NRC's approval.