

NUCLEAR REGULATORY COMMISSION

STANDARD REVIEW PLAN; AVAILABILITY OF DRAFT STANDARD REVIEW PLAN

AGENCY: Nuclear Regulatory Commission (NRC)

ACTION: Notice of Issuance of Draft Standard Review Plan

SUMMARY: The NRC is announcing the availability of draft Standard Review Plan (SRP) Sections 13.2.1, "Reactor Operator Training," 13.2.2, "Training for Nonlicensed Plant Staff," and 13.5.2.1, "Operating and Emergency Operating Procedures," and Chapter 18.0, "Human Factors Engineering," for interim use and public comment.

DATES: Submit comments by (**insert date 90 days after publication in the *Federal Register***). Comments received after this date will be considered if it is practical to do so, but the Commission is able to ensure consideration only for comments received on or before this date.

ADDRESSES: Submit comments to Richard J. Eckenrode, Senior Human Factors Engineer, U.S. Nuclear Regulatory Commission, Mailstop O-6F2, Washington, DC 20555-0001. Comments may be delivered to 11555 Rockville Pike, Rockville, Maryland, between 7:30 am and 4:15 pm on Federal workdays.

These documents are available for public inspection (1) at the NRC's Public Document Room (PDR), located at One White Flint North, Public File Area 01F21, 11555 Rockville Pike, Rockville, Maryland, (2) from the Agencywide Documents Access and Management System's (ADAMS) Public Electronic Reading Room on the Internet at the NRC Web site, <http://www.nrc.gov/reading-rm/adams.html>, using the Accession Nos. ML023460600 (for draft SRP Section 13.2.1), ML023460612 (for draft SRP Section 13.2.2), ML023470047 (for SRP Section 13.5.2.1), and ML023470061 (for draft SRP Chapter 18), and (3) at the NRC's Web site, <http://www.nrc.gov/reading-rm/doc-collections/nuregs/#comments>. Persons who do not have access to ADAMS or who encounter problems accessing the document in ADAMS should contact the NRC PDR Reference staff by telephone at 1-800-397-4209, 301-415-4737, or by e-mail to [pdr@nrc.gov](mailto:pdr@nrc.gov).

FOR FURTHER INFORMATION CONTACT: Richard J. Eckenrode, Senior Human Factors Engineer, Office of Nuclear Reactor Regulation, by telephone at 301-415-3172 or e-mail at [rje1@nrc.gov](mailto:rje1@nrc.gov).

SUPPLEMENTARY INFORMATION:

Draft SRP Sections 13.2.1, 13.2.2, and 13.5.2.1

Draft SRP Section 13.2.1 provides review guidance for the NRC staff to use when evaluating a licensee's or applicant's licensed operator training program. The purpose of NRC staff's review related to Draft SRP Section 13.2.1 is to ensure that the training provided to reactor operators will be adequate to provide assurance that all reactor operator qualification requirements will be met at the time needed, i.e., prior to operator license examinations, prior to fuel loading, or prior to appointment or reappointment to the position.

Draft SRP Section 13.2.2 provides review guidance for the NRC staff to use when evaluating a licensee's or applicant's nonlicensed plant staff training programs. The purpose of NRC staff review related to Draft SRP 13.2.2 is to ensure that training provided for each position on the plant staff will be adequate to provide assurance that all plant staff personnel training and qualification requirements will be met when needed, i.e., prior to operational tests, prior to fuel loading, or prior to appointment or reappointment to the position. The document also includes a detailed section on fire protection personnel training.

Draft SRP Section 13.5.2.1 provides review guidance for the NRC to use when evaluating a licensee's or applicant's operating and emergency operating procedures. The purpose of NRC staff review related to Draft SRP Section 13.5.2.1 is to ensure that routine operating, off-normal, and emergency activities are conducted in a safe manner. The review covers procedure content and development process including schedules for preparation of procedures. The classes of procedures covered by this sections are system procedures, general plant procedures, abnormal or off-normal condition procedures, emergency operating procedures, and alarm procedures.

Minor revisions were made to Draft SRP Sections 13.2.1, 13.2.2, and 13.5.2.1 from the draft versions that were issued in 1996 for public comment, including changes in terminology and organizations names, updating of references and regulations, and the addition of technical rationale discussions.

Draft SRP Chapter 18.0 describes a process for evaluating (1) human-system interface designs, (2) the design process, (3) design reviews, and (4) operator actions submitted by applicants and licensees for the broad range of NRC review responsibilities. This chapter identifies the following 12 areas of review that are needed for successful integration of human characteristics and capabilities into nuclear power plant design:

- Human Factors Engineering Program Management
- Operating Experience Review
- Functional Requirements Analysis and Function Allocation
- Task Analysis
- Staffing and Qualifications
- Human Reliability Analysis
- Procedure Development
- Training Program Development
- Human-System Interface Design
- Human Factors Verification and Validation
- Design Implementation
- Human Performance Monitoring

While the process defines 12 areas of review, not all may be applicable to the review of a particular applicant's or licensee's HFE program. The guidance in this chapter will be applied to new plant designs, control station modifications, and modifications affecting risk-important human actions.

The changes to Chapter 18.0 from the 1996 version are both in organization and content.

The organizational changes reflect three types of reviews: (1) HFE aspects of new plant designs, (2) HFE aspects of control room modifications (hybrid analog/digital control rooms), and (3) HFE aspects of changes to risk-important human actions. The first part on new plant designs is based on NUREG-0711, "Human Factors Engineering Program Review Model," developed through the review process of the three certified advanced reactor designs. Its purpose is to provide a design process model that, if followed, should produce a control room acceptable to the NRC. This document has been recently updated to provide guidance to the staff for reviewing the control room design/development/implementation process, as it moves along, so that there should be no surprises at the end. The reason for this type of process and process review is that the three advanced reactor designs were certified without control room designs in order to allow for the significant advances in digital technology expected to be in place at the time a plant might actually submit a Construction/Operating license application. The second major reference in this chapter is NUREG-0700 "Human-System Interface Design Review Guidelines," which provides for a systematic evaluation of the human engineering aspects of the human-system interface. This document has recently been updated to reflect the latest guidance in digital technology, all of which has gone through a significant validation process.

The second part of Draft Chapter 18.0 provides review guidance for modifications to current analog control rooms. Most of these modifications involve changes in systems and equipment from analog to digital resulting in hybrid control rooms. The review guidance is based on NUREG-0711, but reduced in scope to apply only to those sections of the NUREG that are directly related to the modification. Again, NUREG-0700 guidance applies to these

modifications. Power uprates can include analog-to-digital instrumentation change outs and this revised guidance is needed to perform reviews of these changes.

The final part of Draft Chapter 18.0 provides review guidance for changes to operator actions often resulting from changes to systems and equipment. It is based primarily on draft NUREG-1764, "Guidance for the Review of Changes to Human Actions." The guidance first evaluates the risk associated with the action, based partly on the criteria of Regulatory Guide 1.174, "An Approach for Using Probabilistic Risk Assessment In Risk-Informed Decisions on Plant-Specific Changes to the Licensing Basis." Depending on the resulting level of risk, the action is assigned to one of three risk regions. If the risk falls in Region I, a detailed review based on NUREG-0711 is conducted in the detail similar to the hybrid control room. If the risk falls in Region II, a much reduced review is conducted, and if in Region III, no human factors review is conducted. This facilitates a much more efficient and effective use of staff resources. The NRC staff' review of power uprate applications that credit operator actions will be more efficient when this screening criteria is added. Once again, NUREG-0700 is used for those operator action changes involving changes to the human-system interface.

The three NUREGs discussed above are also available for review and comment.

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Dated at Rockville, Maryland, this 19<sup>th</sup> day of December 2002.

FOR THE NUCLEAR REGULATORY COMMISSION

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Kathy Halvey Gibson, Acting Chief  
Equipment and Human Performance Branch  
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