



**Felix M. Killar, Jr.**  
Director  
Material Licensees and Nuclear Insurance  
Tel: (202) 739-808126  
Fax: (202) 533-0157  
E-mail: fmk@nei.org

April 14, 2000

Mr. Theodore S. Sherr  
Chief, Regulatory and International Safeguards Branch  
U.S. Nuclear Regulatory Commission  
Two White Flint North 8A33  
Washington, D.C. 20555

**Reference: Comments on the March 2000 Draft Version of NUREG-1520  
'Standard Review Plan for the Review of a License Application  
for a Fuel Cycle Facility': Chapter 7 - Fire Safety**

Dear Mr. Sherr:

The Nuclear Energy Institute (NEI)<sup>1</sup> and its industry members have reviewed the March 2000 revision of draft Standard Review Plan (SRP) Chapter 7 entitled 'Fire Safety'. Time has not permitted a comprehensive clause-by-clause review of this latest revision, but we have attempted to identify any significant, outstanding issues of concern. We have examined how the staff has addressed issues raised by NEI in its letter to you dated August 27, 1999 on the previous version of Chapter 7 (May 1999). We have also taken into consideration discussions that took place at the February 9-10, 2000 NRC Public Meeting (*Comment Resolution on Part 70 Standard Review Plan*).

---

<sup>1</sup> NEI is the organization responsible for establishing unified nuclear industry policy on matters affecting the nuclear energy industry, including the regulatory aspects of generic operational and technical issues. NEI's members include all utilities licensed to operate commercial nuclear power plants in the United States, nuclear plant designers, major architect/engineering firms, fuel fabrication facilities, materials licensees, and other organizations and individuals involved in the nuclear energy industry.

NEI appreciates the opportunity to have been able to review the March 2000 revisions to draft NUREG-1520 chapters. We are encouraged by the ongoing

Mr. Theodore S. Sherr  
U.S. Nuclear Regulatory Commission  
April 14, 2000  
Page 2

resolution of industry concerns and with other improvements that have been made to this guidance document. We look forward to working with you and your staff at the upcoming April 18-19, 2000 NRC Public Meeting on NUREG-1520 to continue these discussions.

Please feel free to contact me should you have any questions concerning the proposed improvements in the attachment to this letter.

Sincerely,

Felix M. Killar, Jr.  
Director, Material Licensees and Nuclear Insurance

c. Mr. Marvin S. Fertel  
Dr. William F. Kane, Director NMSS

**REVIEW OF MARCH 2000 REVISION OF NUREG-1520**  
**CHAPTER 7: FIRE SAFETY**

**General Comments:**

Draft SRP Chapter 7 has been improved. NFPA standards are now presented only as guidance and to be one, but not necessarily the only, way to satisfy an acceptance criterion. References to the ISA and ISA Summary have generally been clarified and a 'Fire Safety Review Committee' is no longer required so long as fire safety issues can be referred to the Plant Safety Committee for resolution. Much of the prescriptive language remains in Chapter 7. The approach to addressing an applicant's license commitments, while improved, should be made more consistent both within the chapter and with other SRP chapters.

**Outstanding Issues of Concern**

- Adoption of Industry Standards: frequent references are made to National Fire Protection Association (NFPA) codes. NEI recommends addition of clarification in §7.4.3 (*Regulatory Acceptance Criteria*), for example, that such codes are only guidance, that their provisions do not constitute the only threshold against which an applicant's fire safety program will be judged 'acceptable' and that blanket endorsement of an entire standard should not be expected. Guidance should be provided to a reviewer as to what constitutes acceptable endorsement of an industry code. The repetitious statements throughout Chapter 7 on endorsement or adoption of industry codes (e.g. §7.4.3.1-7.4.3.5) should be deleted for simplicity and clarity.
- Hazardous Chemicals: treatment of hazardous chemicals within the fire safety program is not always consistent with the NRC-OSHA Memorandum of Understanding. References to '*hazardous materials*' or '*hazardous chemicals*' often require some qualification (e.g. "...*hazardous chemicals incident to the processing of licensed material...*")
- Prescriptiveness vs. Commitments: some improvement has been incorporated into Chapter 7 by directing the reviewer to examine a license applicant's commitments rather than detailed programmatic information. Although this approach is now adopted in §7.3, it is ignored for the balance of the chapter. The text in '*Evaluation Findings*' (§7.6), for example, remains overly prescriptive and should be rewritten to be consistent with the other modifications made to the chapter and other SRP chapters. Chapter 7 is often inconsistent with other SRP chapters on the level of detailed information sought for inclusion in the license application. The SRP should clarify that the fire

safety program review will be based on material presented in the license application and on information placed on the docket (ISA Summary). The SRP should state that the fire safety evaluations will provide the information needed to perform the ISA, and thus, IROFS, and that such IROFS are incorporated into the ISA Summary.

- FHA and ISA Chronology: The guidance implies that the Fire Hazards Analysis (FHA) will be conducted prior to, and serve as input to, the ISA (see, for example, §7.4.3.2, ¶2). Licensees who have already prepared their ISAs have generally conducted both simultaneously. The FHA-ISA effort is an iterative process. The SRP should not dictate the order in which the FHA and ISA are to be performed. So long as a systematic effort has been undertaken -- whether as a FHA or as a ISA -- to identify and analyze potential fire hazards and to develop methods to prevent or mitigate their occurrence and consequences, the safety objective has been met.

### **Specific Concerns:**

- §7.1 ('Purpose of Review'): NEI still recommends adding some language to §7.1 that provides an overview of the fire safety review and how the reviewer should proceed. For example, the SRP should more clearly lay out the expectations for reviewing the FHA and ISA Summary. We also suggest that §7.3 ('Areas of Review') be clarified by identifying the four principal areas of review as: (1) Organization and Conduct of Operations, (2) Fire Protection Features and Systems, (3) Manual Firefighting Capability, and (4) Fire Hazards Analysis (FHA). These areas were proposed by NEI and have been adopted in NUREG-1718. The areas of review in the revised §7.3 are somewhat repetitious (e.g. 'Facility Design' and 'Fire Protection Systems' overlap, and 'Process Fire Safety' and 'Facility Design' are repetitious.)
- §7.3 ('Areas of Review -- Facility Design'):
  - (i) 'fire area' is an undefined term. 'life safety' refers to NFPA Standard 101 (Life Safety Code) and should be replaced by a term that does not imply required compliance with this NFPA standard (e.g. 'safe means of egress for plant personnel').
  - (ii) last sentence of ¶1 states that a separate fire safety program is not required, yet §7.6 states that an acceptable 'Fire Protection Program' has been proposed. Inconsistent guidance.
  - (iii) suggest clarifying 'building construction' to read 'building construction features'
- §7.4.3 ('Regulatory Acceptance Criteria'):
  - (i) the words 'in part' have been inserted. The SRP should explain what criteria in entirety (rather than in part) will

be used to evaluate the applicant's fire safety commitments and measures.

- (ii) last sentence in ¶2 explains how the license application will be reviewed and is not an 'acceptance criterion'. Suggest relocating this sentence to §7.5 ('*Review Procedures*') for consistency with other SRP chapters.
- (iii) first sentence in ¶3 ("*...nationally recognized codes and standards are used by the reviewer to measure reasonable assurance of fire safety...*"). The implication of this sentence is that the national codes establish the base line against which an application will be judged. This is incorrect. While industry codes and standards may contain useful information that the reviewer may consult, reference to codes and standards should not become license commitments when they were never intended to be such. The applicant may extract pertinent provisions from industry codes and standards and place those commitments in the license application.
- (iv) throughout ¶7.4.3, repeated references are made to NFPA 801 as "*...an acceptable standard for fire safety management measures, conducting FHAs, fire safety design criteria and the design, installation, testing and maintenance of fire protection systems...*" Rather than repeating this statement in every sub-section of ¶7.4.3, it could be better stated once in §7.4.3 where the role of industry standards and codes is discussed.
- §7.4.3.1 ('Fire Safety Management Measures') :
  - (i) delete last 2 sentences: second to last is moved to §7.4.3 and the last is moved to §7.5 as a review procedure to reduce repetitiousness and redundancy
  - (ii) first sentence of last paragraph ("*...The Standard for Fire Protection for Facilities...*") should be deleted to remove the implication that NFPA 801 must be adhered to. Modify the second sentence in this paragraph to read: "*...An adequate application documents the fire safety management measures, that include, for example, fire prevention, inspection, testing and maintenance of fire protection systems, emergency response organization qualifications, drills and training and pre-fire plans, in sufficient detail...*"
- §7.4.3.2 ('Fire Risk Analysis') :
  - (i) for consistency with the Rule and complementary SRPs, re-title this section '*Fire Hazards Analysis (FHA)*'. This

chapter focuses on fire safety based upon the results of the FHA; the risk analysis is performed as a Chapter 3 (ISA) undertaking.

- (ii) 2<sup>nd</sup> sentence, ¶1: replace 'would' by 'could' or 'could possibly' to reflect reality. A fire could, but not necessarily would, release licensed material -- consult the ISA Summary for the evaluation
- (iii) last sentence, ¶1: delete. Idea moved to §7.5 as a review procedure to reduce repetitiousness and redundancy
- (iv) 1<sup>st</sup> sentence of ¶2: '*intermediate event*' is an undefined term. The first two sentences of this paragraph are appropriate for SRP Chapter 3 (i.e. explaining how the ISA is conducted), but not in Chapter 7. Combine and simplify these 2 sentences to read: "...*The results of the FHA are used to conduct the ISA...*"
- (v) last sentence in section: delete. Idea moved to §7.5 to reduce repetitiousness and redundancy
- §7.4.3.3 ('Facility Design'):
  - (i) 1<sup>st</sup> sentence, ¶1: '*fire area*' is an undefined term. Replace '*life safety*' by a non-NFPA 101 term such as '*safe means of egress for plant personnel*'
  - (ii) 2<sup>nd</sup> sentence, ¶1: the meaning of the last part of the sentence is not clear: "...*or facilities that impose an exposure threat to radioactive facilities...*" What does this mean?
  - (iii) 3<sup>rd</sup> sentence, ¶1: delete, as the guidance on how to use industry standards and codes has been fully explained in §7.4.3. (provides consistency with other SRP chapters.)
  - (iv) 4<sup>th</sup> sentence, ¶1: delete. Idea moved to §7.5 as a review procedure to reduce repetitiousness and redundancy
  - (v) last sentence, ¶2: delete. Idea moved to §7.5 as a review procedure to reduce repetitiousness and redundancy
  - (vi) last sentence, ¶3: delete. Idea moved to §7.5 as a review procedure to reduce repetitiousness and redundancy
  - (vii) ¶4 ('*Physical Security Concerns*'): '*chemical event*' is an undefined term.
  - (viii) 2<sup>nd</sup> sentence, ¶4: this sentence makes no sense. How can physical security initiate a control? The sentence could (perhaps) be rewritten as follows: "...*Physical security requirements for SNM may inadvertently delay worker egress and fire fighter access...*" Otherwise, delete it.

- (ix) 5<sup>th</sup> sentence, ¶4: delete, as the guidance on how to use industry standards and codes has been fully explained in §7.4.3. (provides consistency with other SRP chapters.)
  - (x) 6<sup>th</sup> sentence, ¶4 delete. Idea moved to §7.5 as a review procedure to reduce repetitiousness and redundancy
- §7.4.3.4 ('Process Fire Safety')
  - (i) 1<sup>st</sup> sentence, ¶1: '*radiological area*' is an undefined term.
  - (ii) 2<sup>nd</sup> sentence, ¶1: '*fire area*' is an undefined term. This sentence needs clarification. How can a 'fire area' itself threaten radiological material?
  - (iii) 3<sup>rd</sup> and 4<sup>th</sup> sentences, ¶1: delete, as the guidance on how to use industry standards and codes has been fully explained in §7.4.3. (provides consistency with other SRP chapters.)
  - (iv) 5<sup>th</sup> sentence, ¶1 delete. Idea moved to §7.5 as a review procedure to reduce repetitiousness and redundancy
- §7.4.3.5 ('Fire Protection and Emergency Response')
  - (i) 1<sup>st</sup> sentence, ¶1: the emergency response organizations are fully described in SRP Chapter 9. More narrowly express this requirement to '*emergency response organizations supporting fire protection*'?
  - (ii) 2<sup>nd</sup> sentence, ¶1: This sentence needs clarification. How can an 'area' cause an '*exposure hazard to a radiological area*'?
  - (iii) 5<sup>th</sup> & 6<sup>th</sup> sentences, ¶1: delete, as the guidance on how to use industry standards and codes has been fully explained in §7.4.3. (provides consistency with other SRP chapters.)
  - (iv) ¶2: there is no equivalent regulatory requirement to 10 CFR 50, Appendix R(III)(H) that requires a fire brigade. 2<sup>nd</sup> & 3<sup>rd</sup> sentences should be deleted.
  - (v) 6<sup>th</sup> sentence, ¶2: delete. Idea moved to §7.5 as a review procedure to reduce repetitiousness and redundancy
- §7.5.1 ('Review Procedures -- Acceptance Review')

As recommended throughout comments on the Acceptance Criteria, this section of Chapter 7 should expand upon the staff review assignments summarized in §7.2. For example, the staff '*fire safety specialist*' will review certain aspects of the fire safety measures or commitments. Such assignments constitute an integral component of the '*Review Procedures*' and not of the '*Acceptance Criteria*'.
- §7.6 ('Evaluation Findings')

The sample language proposed in §7.6 to report the '*Evaluation Findings*' has not been significantly modified from the June 1999 version of the SRP (except for ¶3 that was adopted from NEI's

letter). While we understand this language is just an *example*, its implications and prescriptiveness may inadvertently direct the staff reviewer to inappropriate expectations for the application.

Specific objections:

- (i) '*...fire protection program established...*': no regulatory requirement
- (ii) '*...in accordance with applicable NFPA codes and standards...*' and '*...conducted risk analysis in accordance with NFPA 801...*': should permit use of equivalent codes and standards
- (iii) '*...identified a fire brigade meeting NFPA 600...*': too prescriptive as a fire brigade may not be required by the ISA Summary

NEI recommends re-consideration of the example language in its letter of August 27<sup>th</sup>, 1999 to avoid these prescriptive words.