

## NRC Questions on NEI SRP Comments

The following items were identified by individual reviewers for discussion at the September 14-15, 1999 Part 70 public meeting.

### Chapter 3 - ISA - Questions on NEI Comments

1. **NEI:** (General Comments, p.1, ¶ 2) Exclusion of the results of the ISA from a facility's licensing basis makes redundant to the license reviewer a majority of the content of the June, 1999 of draft SRP Chapter 3.

**NRC:** What does NEI mean by the "licensing basis?" What does NEI mean by "redundant to the license reviewer?"

2. **NEI:** (General Comments, p.1, ¶ 2) .The detailed guidance on establishing qualitative standards for the likelihood and consequence of an accident sequence should be excluded.

**NRC:** The guidance in the draft SRP on non-quantitative likelihood evaluation merely provides qualitative standards for general characteristics to be considered by the reviewer in determining whether an applicant's evaluation method is reasonable. Why should the SRP not contain consistent qualitative standards in the SRP?

3. **NEI:** (General Comments, p.2, ¶ 1) Appendices detailing acceptable approaches for risk evaluation should be moved to the ISA Guidance Document.

**NRC:** Please explain what beneficial changes in the licensing process would obtain from moving the appendices into the ISA Guidance Document.

4. **NEI:** (General Comments, p.1, ¶ 4) Chapter 3 should be condensed by removing "detailed guidance." It should allow license applicants to commit to performance indicators rather than to detailed procedures explaining how a particular performance goal will be achieved. "Prescriptiveness" should be removed.

**NRC:** Shouldn't guidance, by its very nature, be more detailed than the rule language?" Since the SRP presents an acceptable approach and not requirements, how can the SRP be considered prescriptive? Should the decision to grant a license be based solely on licensee *commitments* to meet requirements or should it be based on NRC staff findings, through review of descriptive material in the license application and other documentation, that there is reasonable assurance that the licensee will be able to meet requirements.

5. **NEI:** (Detailed Comments, Section 3.1, Purpose of Review), the following items listed in the July 16 draft should be removed:
- A. Performed a comprehensive ISA of the fuel cycle facility and its processes using effective systematic methods.
  - B. Identified and evaluated all hazards and credible accident sequences in the ISA involving process or other events internal to the plant deviations (e.g., explosions and fires), and credible external events (e.g., floods, high winds, and earthquakes) that could result in consequences to the public, worker, or the environment of the types specified in 10 CFR 70.61.
  - C. Designated engineered and administrative items relied on for safety, and evaluated the set of items for each accident sequence to provide reasonable assurance, through preventive or mitigative measures, that the safety performance requirements of 10 CFR 70.61 are met.
  - D. Used competent staff in the ISA process.
  - E. Provided a formal system to manage changes to the ISA.

**NRC:** Please explain your specific objections to the above items that warrants their removal?

6. **NEI:** (Detailed Comments, Section 3.3.2.1, ¶ 1) The ISA Summary presents a sub-set of the facility hazards and accident sequences analyzed in the ISA.

**NRC:** How is the sub-set of facility hazards and accident sequences defined? Will the sub-set be sufficient to satisfy 70.65(b)(4), i.e., **what information** will it contain **that will provide** "information that demonstrates the licensee's compliance with the performance requirements of 70.61..."

7. **NEI:** (Detailed Comments, Section 3.3.2.1, ¶ 2) "The ISA discusses hazards and accident sequences at a systems level (versus at a component level in the ISA)."

**NRC:** Would the discussion in the ISA Summary of general types of accident sequences "at a systems level" be sufficient to satisfy 70.65(b)(4) "Information that demonstrates the licensee's compliance with the performance requirements of 70.61..."? It is the 'items relied on for safety' (IROFS) that are relied on to meet the performance requirements. How would this information on sequences show the connection between a specific accident and the specific items relied on for safety? When the system is redundant or complex, would the sequences be described by a fault tree or other method for showing the logical combinations of failures of IROFS?

8. **NEI:** (Detailed Comments, Section 3.3.2.1, ¶ 2) The ISA Summary “focuses on high and intermediate consequence events” and “distills from the ISA..high and intermediate risk accident sequences”.

**NRC:** (1) The ISA summary must contain, among other things, “...a description of each process analyzed in sufficient detail to understand the theory of operation; and for each process, the hazards that were identified in the ISA...and a general description of the types of accident sequences” and “...a list briefly describing all items relied on for safety...in sufficient detail to understand their functions in relation to the performance requirements.” The regulation does not limit the ISA summary to high and intermediate consequence events. How should the staff ascertain that the list of high and intermediate accident consequence events and high and intermediate risk accident sequences is complete and satisfies the regulations? (2) Do these statements mean that all high and intermediate consequence accidents for each process are broken down (as in a fault tree) and described in the ISA Summary?

9. **NEI:** (Detailed Comments, Section 3.3.2.4) Remove the first two paragraphs in July 16 version Section 3.3, Areas of Review.

**NRC:** What general or specific objections does NEI have regarding these two paragraphs?

10. **NEI:** (Detailed Comments, NEI proposed Section 3.3.2.4.(ii)) NEI comment (in two places) says “this is a ‘licensee commitment’ that is to be evaluated in the commitment section of the Safety Program review.”

**NRC:** What does NEI mean by “the commitment section of the Safety Program review”?

11. **NEI:** (Detailed Comments, Section 3.3.2.4(i)(4)) Remove July 16 version Section 3.3 paragraph (6) regarding information on ISA methods and substitute one sentence: “The ISA method(s) used in conducting the ISA to identify hazards, forecast accident sequences, and to predict their consequences and likelihoods of occurrence.

**NRC:** What general or specific objections does NEI have regarding this paragraph?

12. **NEI:** (Detailed Comments, Section 3.3.2.4(ii)(2)(d)) Licensees are to provide “unmitigated consequences of each general type of accident sequence, their comparison to the performance requirements of 10 CFR 70.61(b) and (c) and their ranking in terms of risk.

**NRC:** How should the “unmitigated consequences” be ranked in terms of risk? Would a high-consequence, highly unlikely accident be ranked higher (in risk) than an intermediate-consequence, unlikely accident?

13. **NEI:** (Detailed Comments, Section 3.3.2.4(ii)) In July 16 version Section 3.3, Areas of Review, remove paragraph (7) regarding information on process hazard analysis documentation and ISA results.

**NRC:** Aside from the comment that some of the information requested is too prescriptive, are there any other reasons for removing this paragraph?

14. **NEI:** (Detailed Comments, Section 3.3.2.4(ii)) In July 16 version Section 3.3, Areas of Review, remove paragraphs (8) and (9) regarding information on items relied on for safety and management measures.

**NRC:** What are the reasons for removing these paragraphs.

15. **NEI:** (Detailed Comments, Section 3.3.2.4(ii)) In July 16 version Section 3.3, Areas of review, remove item (10) regarding information on facility procedures for conducting and maintaining an ISA. 10 CFR 70.65 no longer requires a detailed description as to how the ISA will be maintained. This is a licensee commitment and need not be discussed here.

**NRC:** This topic could be moved to “license commitment” discussion, but why should it be completely eliminated? Regarding “maintenance” of the ISA, doesn’t the language in 10 CFR 70.72 regarding the configuration management system require discussion of this issue? [The proposed rule states that the configuration management system must assure that “the impacts or modifications to the ISA, ISA summary, or other safety program information...” are addressed.]

16. **NEI:** (Detailed Comments, Section 3.4.3.2(ii)(2)) Recommends that item 3 (process descriptions) in Section 3.4.3 be deleted and replaced (see 3.4.3.(i)). Purpose of process descriptions should be “to enable the reviewer to understand the process’ theory of operation,” rather than to permit “an evaluation of the completeness of the hazard (accident) identification task,” and “an evaluation of the likelihood and consequences of the accidents identified.”

**NRC:** Why is the purpose of the process description changed? What’s wrong with the original wording?

17. **NEI:** (Detailed Comments, Section 3.4.3.2(i)(3)) Recommends removal of the statement that the ISA team leader should not be “the cognizant engineer or expert for the process.”

**NRC:** Shouldn’t the purpose of this recommendation (which is taken from AIChE), i.e. to ensure an unbiased analysis of the process, be satisfied by some recommended approach?

18. **NEI:** (Detailed Comments, Section 3.4.3.2(i)(4)(b)(iii)) Applicants should provide “acceptable” qualitative or quantitative definitions of *likely*, *unlikely*, *highly unlikely*, and *credible*.

**NRC:** What criteria should the license reviewer use to determine “acceptable” definitions.

19. **NEI:** (Detailed Comments, Section 3.4.3.2(i)(4)(b)(vi)) The following paragraph (vi) should be deleted because it is redundant:
- “It addresses hazards resulting from process deviations (e.g., high temperature, high pressure), initiating events internal to the facility (e.g., fires or explosions), and hazardous credible external events (e.g., floods, high winds, and earthquakes, airplane crashes). The applicant provides justification for its determination that certain events are incredible and, therefore, not subject to analysis in the ISA.

**NRC:** Please explain the redundancy.

20. **NEI:** (Detailed Comments, Section 3.4.3.2(ii)(2) Under “process specific information,” process descriptions should contain a limited amount of quantitative information.

**NRC:** What should “the amount of quantitative information” be?

21. **NEI:** (Detailed Comments, Section 3.4.3.2(ii)(2) A list of *general types of accident sequences* identified in the PHA should be provided.

**NRC:** The final three bulleted statements within NEI’s item 2 state that quantities such as “unmitigated consequences”, “likelihood of occurrence”, and “risk classification” will be specified for “each general type of accident sequence.” The former quantities have the nature of unique values for a single accident sequence, whereas a “type” of accident sequence clearly refers to a set of accident sequences. How does NEI propose to establish useful values for consequence, likelihood, and risk as applied to a “general type” of accident sequence?

22. **NEI:** (Detailed Comments, Section 3.4.3.2(ii)(2) “The comparative risk of the general type of accident sequence is established through comparison against the performance criteria of 10CFR 70.61.”

**NRC:** Shouldn’t we say that “the *acceptability of* risk of the general type of accident sequence...”

23. **NEI:** (Detailed Comments, Section 3.4.3.2(ii)(3) The applicant is required to “enumerate at the *systems* level appropriate items relied on for safety.”

**NRC:** Can NEI provide some examples where items relied on for safety are specified at the *systems* level.

24. **NEI:** The entire contents of paragraph 8 of draft SRP Chapter 3 should be deleted. The regulatory citation in paragraph 8 (10 CFR 70.62(c)(vi) is incorrect as it does not pertain to the ISA Summary. The correct citation should be 10 CFR 70.65(b)(6): Only “...*a list briefly describing all items relied on for safety...*” is required.

**NRC:** According to 70.62(c)(vi), the applicants ISA should identify “each item relied on for safety...,the characteristics of its preventive, mitigative, or other safety function, and the assumptions and conditions under which the item is relied upon to support compliance with the performance requirements of 70.61.” How should NRC evaluate whether the applicant is complying with this provision?