

Summary of Teleconference
Nuclear Criticality Safety and Integrated Safety Analysis Summary
February 7, 2005

Participants: M. Galloway/NRC S. Steele/NRC
 D. Green/Excel D. Pepe/Areva

PURPOSE:

On February 7, 2005, the U.S. Nuclear Regulatory Commission (NRC) staff held a telephone conference with Louisiana Energy Services (LES) staff to discuss issues regarding nuclear criticality safety (NCS) and the Integrated Safety Analysis (ISA) Summary related to the LES application for a uranium enrichment facility. This telephone call was held in preparation for the upcoming in-office review to provide LES with a quick summary of the discussion points.

DISCUSSION:

NRC staff indicated that, after reviewing the information faxed on February 2, 2005, there were still some areas that need further clarification and additional documentation needs to be provided at the upcoming in-office review. NRC made the following recommendations to LES:

- Confirm that the modified description of the alternate ISA methodology will be put into the license application
- Ensure that the reference in the ISA Summary to the information in the classified documents is consistent with the data in "Table 2" of the classified documents
- Understand that the demonstration of "significant margin" for the alternate ISA methodology does not need to be included in the license application
- Confirm that the modified description of the standard ISA method will be copied into the license application
- Confirm that the description of "independent verification" will be put into the license application as part of the description of the standard ISA method
- Change the references in Sections 3.3.2 and 3.3.3 to the location of the description of "independent verification" in the license application
- Delete the specific accident sequences from the license application, Section 3.3.1, so that the requirement is generic
- Modify the discussion and criteria for "independent sampling" in the license application
- Revise the description of "independent verification"
- Confirm that the justification for an enhanced administrative IROFS will be put into the ISA Summary
- Clarify changes to accident sequences (e.g., enhanced administrative IROFS, sole NCS IROFS, descriptions of IROFS, IROFS negating initial conditions) in the ISA Summary

Summary of In-Office Review
Nuclear Criticality Safety and Integrated Safety Analysis Summary
Urenco Office - Washington D.C.
February 9, 2005

Participants:	H. Felsher/NRC	M. Galloway/NRC	K. Morrissey/NRC
	J. Giitter/NRC	S. Steele/NRC	A. Brown/Urenco
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PURPOSE:

On February 9, 2005, the U.S. Nuclear Regulatory Commission (NRC) staff performed an in-office review with Louisiana Energy Services (LES) staff of nuclear criticality safety (NCS) and Integrated Safety Analysis (ISA) Summary issues related to LES' application for a uranium enrichment facility proposed to be located in Eunice, New Mexico.

Melanie Galloway (NRC) provided opening remarks. The purpose of the in-office review was to discuss NCS and ISA Summary issues. In general, the issues dealt with ensuring clarity of information in the ISA Summary and license application so that NRC could clearly conclude that LES meets the performance requirements, and that the regulatory requirements for issuing a materials license were satisfied. Detailed discussion of the issues was needed to achieve a common understanding of what is needed to close the remaining performance requirement demonstration issues. The in-office review agenda is provided in Attachment 1. Later, on February 17, 2005, in order to obtain clarification on a specific accident sequence, staff conducted a telephone discussion with LES. This summary also includes information from that discussion.

DISCUSSION:

The summary below presents each topic that was discussed during the in-office review:

1a. Location of the modified description of the alternate ISA method

NRC staff explained that LES needs to place the modified description of the alternate ISA methodology into the license application. Despite a lack of guidance for this in NUREG-1520, the descriptions of the ISA methods in the license application is needed for NRC to understand LES' commitments to the methods and to meet the requirements of 10 CFR 70.65(a) as related to 10 CFR 70.22(a)(7) and (a)(8).

LES staff confirmed that the modified description of the alternate ISA method will be placed into the license application.

1b. ISA Summary reference and location of demonstration of "significant margin"

NRC staff explained that LES needs to ensure that the reference in the ISA Summary to the information in the classified documents is consistent with the data in 'Table 2' of the classified

Attachment 2

documents that is necessary for the demonstration of “significant margin.” Also, LES was informed that the demonstration of “significant margin” for the alternate ISA methodology need not be included in the license application.

LES staff confirmed and clarified that the demonstration will be in the ISA Summary as a reference to ‘Tables 1 and 2’ of the classified documents.

1c. Location of modified description of the standard ISA method

NRC staff explained that LES needs to copy the modified information on the standard ISA method to the license application. This did not extend to all the modified information from Sections 3.1 and 3.2, as indicated in the faxed information.

LES staff confirmed and clarified that the intent of the faxed information was to do what NRC indicated. Also, LES agreed to put into the license application as part of the standard ISA method that: “The Frequency Probability Index Numbers (FPINs) are evaluated based on operating experience, either from Urenco or NEF as appropriate, or from analysis.”

2a. Location of the description of “independent verification”

NRC staff explained that LES needs to include the description of “independent verification” in the license application.

LES staff confirmed and clarified that the description will be put into both the license application and the ISA Summary.

2b. Relocation of references in Sections 3.3.2 and 3.3.3

NRC staff explained that LES needs to change the references in Sections 3.3.2 and 3.3.3 to the location of the description of “independent verification” in the license application because the description needed to point to the license application rather than the ISA Summary.

LES staff confirmed that the references will be changed to the appropriate section of the license application.

3. Removal of reference to specific accident sequences

NRC staff explained that LES needs to delete the reference to specific accident sequences from license application, Section 3.3.1, so that the commitment is generic.

LES staff explained that future accident sequences would not need this commitment because they would meet the standard ISA method without it. Upon this understanding, NRC agreed that the references to accident sequences would remain in the license application.

4. Discussion and criteria for “independent sampling”

NRC staff explained that LES needs to modify the discussion and criteria for “independent sampling” in Section 3.3.4 of the license application. Further, NRC staff explained that criterion 1, 4, and 5 appeared repetitive in whole or in part.

LES staff agreed to remove criterion 1 and make it part of the Introduction. As a result, LES staff will revise the wording in Section 3.3.4 to state: “three of the remaining four.” Also, LES staff will add text such as: “samples are obtained at different times such that it is meaningful to collect different samples.”

5. Description of “independent verification”

NRC staff explained that LES needs to revise the description of “independent verification.” The current revision did not resolve the issue because, as written, verification still occurs after the task is completed. NRC stated that the wording should be clear that it is a preventive measure rather than something that has happened.

LES staff proposed a new revision with the following wording: “... before additional action(s) can be taken which could potentially negatively impact the safety function of the IROFS.” LES staff agreed to add the new wording to both the license application and the ISA Summary for consistency.

6. Location of justification for enhanced administrative IROFS

NRC explained that LES needs to include the justification for an enhanced administrative IROFS in the ISA Summary.

LES confirmed that each write up of an IROFS will have a reference to ISA Summary, Section 3.8.3 that references Section 3.8.1 - description of “independent verification.” All enhanced IROFS will be addressed in Section 3.8.3. LES staff will also re-examine sole NCS IROFS, include them in Table 3.8-2, and justify them where necessary to ensure that double contingency is maintained.

7. Clarity of changed accident sequences

NRC staff explained that LES changed the NCS accident sequences and IROFS, but some of the changed sequences and IROFS were not clear (e.g., descriptions of IROFS, IROFS negating an initial condition).

LES staff explained the rationale for sequences that were unclear to NRC. LES clarified descriptions of IROFS in sequences FR 1-1, FR 1-2, LW 1-1, and EC 3-1. LES agreed to make the following changes to PT 3-5 and PB 1-3 (as well as the appropriate associated accident sequences), where it appeared that the IROFS negated an initial condition:

For PT3-5 (transfer), LES will delete IROFS25 as an initial condition, modify the initial condition, and modify IROFS15 to prevent transfer to a container if the container has enriched uranic material in it already and it is a non-safe-by-design container.

For PB1-3 (stacking), LES will retain “stacking” as an initial condition and remove “movement” as an initial condition, so that IROFS45 does not negate an initial condition.

In addition to the above topics, LES explained to NRC how NCS accident sequences that had been in previous versions of the ISA Summary were removed because LES re-evaluated them

and determined that they were “not credible.” LES intends to provide NRC with a letter explaining the rationale for “not credible” for those sequences.

NRC understood the reasoning for LES concluding “not credible” for all but one aspect of one of those accident sequences (i.e., “normal roof degradation for the external event, EE-LP-BLD (CR)”). NRC agreed to get back to LES on that one aspect of that one sequence.

In a telephone call on February 17, 2005, between NRC staff and LES staff, LES clarified that at least one of the following four attributes for the “normal roof degradation for the external event, EE-LP-BLD (CR)” sequence needed to exist:

- (1) large internal floor area contains unnoticed leak - 1" depth of water in 12 hours;
- (2) two barriers to limit water leakage in (i.e., roof and ceiling of the area);
- (3) room at negative pressure maintains air leakage tightness; or
- (4) seismic items relied on for safety on building maintains air leakage tightness.

LES clarified that the third and fourth attributes are “alarms” and describes the third as follows:

<i>Cause</i>	<i>Effect</i>
water leakage into room	function of room (i.e., negative pressure) failed
room function failed	production process stopped working
process stopped	personnel detected stoppage
detect stoppage	personnel investigated cause
investigate cause	personnel detected water leakage into room
detection of water	personnel actions initiated; and
initiation of action	stop inadvertent criticality, so the accident sequence is “not credible.”

In addition, LES informed NRC as a heads-up that the Urenco classified ISA Summary team reviewed accident sequence EC 3-1. The team clarified to LES what would happen if the enrichment control setting was not correct. Based on this clarification, LES will change the description of the associated item relied on for safety in the upcoming submittal, which is different from what LES provided in the February 2, 2005, faxed information and discussed during the February 9, 2005, in-office review.

CONCLUSION

The in-office review was concluded by NRC staff providing an issue-by-issue summary of the

proposed resolution of the issues. LES agreed to provide all needed information to NRC within three weeks. LES intends to provide NRC with a letter explaining how the accident sequences that were previously in the ISA Summary were re-evaluated to be "not credible." Based on the February 17, 2005, telephone call, NRC understands the reasoning for LES concluding "not credible" for all of those re-evaluated accident sequences.

Agenda
LES In-Office Review
February 9, 2005

Purpose: Discuss Nuclear Criticality Safety (NCS) and Integrated Safety Analysis (ISA) Summary issues

Outcome:
(1) Arrive at a common understanding of the NCS and ISA Summary issues.
(2) Agree on a path forward.

Process:

Opening Remarks

Technical Topics:

- 1a. Location of modified description of the alternate ISA methodology
- 1b. ISA Summary reference and Location of the demonstration of “significant margin”
- 1c. Location of modified description of the standard ISA method
- 2a. Location of the description of ‘independent verification’
- 2b. Relocation of references in Sections 3.3.2 and 3.3.3
3. Removal of reference to specific accident sequences
4. Discussion and criteria for “independent sampling”
5. Description of “independent verification”
6. Location of justification for enhanced administrative IROFS
7. Clarity of changed accident sequences

Closing/Review of Discussion Points