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To: "Stacy Rosenberg (E-mail)" <slr@nrc.gov>, "Bob Moody (E-mail)" <REM2@nrc.gov>
Date: 1/4/05 7:41PM
Subject: PAG white paper response

Stacy, Bob:

In an effort to address the major and minor issues identified in NRC's response to the NEI PAG white paper we have put together the attached responses addressing each item.

Hopefully we can clarify and bring this effort to endorsement. Please call me if you have any question prior to our discussions on Monday.

Thanks

Alan <<NRC ltr Namish to Nelson 11-23-04.pdf>> <<NEI response to NRC letter11232004.doc>>

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CC: "Eric Weiss (E-mail)" <eww@nrc.gov>, "Nader Mamish (E-mail)" <nlm@nrc.gov>

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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

November 23, 2004

Mr. Alan Nelson
Chief, Emergency Preparedness
Regulatory Affairs
1776 I Street NW, Suite 400
Washington, D.C. 20006-3708

Dear Mr. Nelson:

On September 27, 2004, we received Nuclear Energy Institute's (NEI's) revised Position Paper titled, "Range of Protective Actions for Nuclear Power Plant Accidents." The Nuclear Regulatory Commission (NRC) appreciates NEI's responsiveness to our informal comments and understands that NEI would like NRC to endorse the Position Paper. The NRC also understands the magnitude and importance of the need for clear, concise, and informative guidance regarding protective action recommendations.

The NRC staff has reviewed the revised Position Paper and notes that many of the concerns the staff raised during telephone conversations on September 23 and 24, 2004, have been addressed by NEI. Nevertheless, there are remaining concerns that need to be addressed. The staff's comments are provided in Enclosure 1, "Major Comments" and Enclosure 2, "Minor Comments." We look forward to reviewing the revision to the Position Paper. If you have any questions or comments please contact Robert Moody of my staff at (301) 415-1737.

Sincerely,

A handwritten signature in black ink, appearing to read "Nader L. Mamish".

Nader L. Mamish, Director
Emergency Preparedness Directorate
Division of Preparedness and Response
Office of Nuclear Security and Incident Response

Enclosure 1

Major CommentsSection 1.0, "Purpose"

For completeness, this section needs to state that protective action recommendations (PARs) may also need to be made by the licensee in the "intermediate phase" and the "late phase" of an emergency. Also, to be consistent with Regulatory Information Summary (RIS) 2003-12, "Clarification of NRC Guidance for Modifying Protective Actions," licensees are not to relax protective actions until the source of the threat is clearly under control.

In addition, even though PARs for the Ingestion pathway are excluded from the Position Paper, 10 CFR 50.47(b)(10) also addresses a range of PARs for emergency workers. For the Position Paper to be endorsed as one way to meet the requirements of 10 CFR 50.47(b)(10), it needs to include PARs for emergency workers or state that emergency workers are excluded.

Section 2.2.1, "EPA 400"

The NRC will not endorse those portions of the Position Paper that contain comments related to perceived weaknesses in EPA 400. The third sentence of the first paragraph states in part "[EPA 400] did not utilize terminology germane to nuclear power plant licensees..., nor did it provide specific guidance on how to use the diverse implementation concepts it contained." However, EPA 400, Section 5.2.2, "Immediate Protective Action" refers the reader to NUREG-0654 for guidance related to implementation of immediate protective actions for incidents at commercial nuclear plants. Therefore the third sentence of the first paragraph should be revised to reflect the reference of NUREG-0654. Currently, EPA 400 is undergoing revision and now is the appropriate time to provide comments related to EPA 400 to the Environmental Protection Agency.

Issue 1: Evacuation Triggers

The "...five mile downwind..." provision is meaningful only if the wind direction at the time of the release is not expected to change for the duration of the release. For a projected release that is predicted to start more than approximately one hour in the future, and especially for releases that are projected to occur during a meteorological change, such as diurnal wind shifts, passage of a front, etc., it may be prudent to evacuate a five mile radius around the plant as the initial or "minimum" recommendation. Therefore, Section 2.3.1 needs to include the perspective that the initial minimum recommendation may need to be greater than approximately a two-mile radius and the five-mile downwind sectors.

Also, the second sentence in the Industry Position needs to be revised for completeness to read: "Considerations for revising or adjusting the initial recommendation are to be based on additional plant information, dose projections, field monitoring results, and projected changes in meteorological conditions."

-2-

Issue 3: "Use of Sheltering as an Alternative to Evacuation for Short-term Releases"

To be consistent with RIS 2004-13, "Consideration of Sheltering in Licensee's Range of Protective Action Recommendations," the first sentence in Industry Position 3 needs to be revised to read: "A licensee's emergency plans, procedures, and notification forms need to include the consideration of sheltering consistent with Federal guidance."

The last sentence in Industry Position 3 states that licensees will typically recommend evacuation, but will incorporate a proviso that the use of sheltering as an alternative is a State or local decision. The use of the word "will" indicates that the licensee is required to "typically recommend evacuation" and "incorporate a proviso that the use of sheltering as an alternative is a State or local decision." Since the first sentences of Issue 3 communicate the issue clearly, delete the last sentence of Issue 3 or replace the words, "will typically recommend evacuation as dictated by the guidance" with "may recommend evacuation."

Issue 4: "Effectiveness of Sheltering"

RIS 2004-13 states that even if the licensee has established an understanding with State and local authorities not to recommend a sheltering PAR, 10 CFR 50.47(b)(10) still requires that sheltering be considered in developing the range of PARs in the licensee's emergency plan, emergency plan implementing procedures, and notification forms. This information from the RIS needs to be included in the issue.

Section 3.0. "Conclusion"

The third sentence in the first paragraph and the three bullets that follow need to be deleted, since the context is inconsistent with federal regulations and guidance. Evacuation and sheltering are considered differently from KI under 10 CFR 50.47(b)(10). A licensee's emergency plan, implementing procedures, and notification forms need to include the consideration of evacuation and sheltering consistent with federal guidance; whereas, a licensee should discuss the use of KI as a protective measure for the public with State and local agencies in the development of the licensee's emergency plan.

The following information also needs to be added: "In addition to using plant conditions, dose projections, and field monitoring results, as the basis for making PARs, licensees also need to consider very dangerous travel conditions and the need for transit-dependent persons to remain indoors until transportation resources arrive, if possible." This guidance is found in notes 3 and 4 to Figure 1 in Supplement 3 to NUREG-0654, and also in EPA 400 that discusses the use of sheltering in the event travel conditions are hazardous.

Enclosure 2

Minor Comments

Section 1.0 "Purpose":

- a. Since the primary purpose of PARs is dose savings, as opposed to dose prevention, this fundamental philosophy needs to be included for a more complete perspective.

Section 2.2 "Current Guidance":

- a. Add "and generic misinterpretations of the requirements of 10 CFR 50.47(b)(10) " after "guidance" in the second sentence of the second paragraph. A generic misinterpretation of the requirements of 10 CFR 50.47(b)(10) by the industry and NRC representatives was the reason the NRC issued RIS 2004-13, "Consideration of Sheltering in Licensee's Range of Protective Action Recommendations."

Section 2.2.1, "EPA 400":

- a. Although the source of definitions for "evacuation" and "sheltering" have been discussed in the past with the staff, use the definitions in Appendix A, "Glossary" of EPA 400 for these terms.
- b. The third paragraph of Section 2.2.1 addresses some of the pitfalls associated with sheltering, but excludes EPA 400 guidance related to when sheltering may be more beneficial than evacuation. EPA 400 provides extensive guidance on when sheltering should be used. For example, Chapter 5 "Implementing the Protective Action Guides for the Early Phase" of EPA 400 provides extensive guidance. Add guidance from Chapter 5 of EPA 400 that addresses when sheltering may be more beneficial than evacuation.
- c. The next to the last sentence is taken out-of-context. The following complete sentence from EPA 400 needs to be included: "...Reliance on large dose reduction factors for sheltering should be accompanied by cautious examination of possible failure mechanisms, and, except in very unusual circumstances, should not be relied upon at projected doses greater than 10 rem."

Section 2.2.2 "NUREG-0654, Supplement 3":

- a. In Section 1.0, "Purpose," of the Position Paper the second to the last sentence states that existing guidance will be used, yet in this section, the last two sentences address guidance related to evacuation of a 5-10 mile downwind sector from Appendix 1 to NUREG-0654 that was revised in Supplement 3 to NUREG-0654. Therefore, these two sentences need to be removed.
- b. Add to this Section that Supplement 3 also states that as additional plant and field monitoring information becomes available, the recommendation to evacuate a two-mile radius and the 5-mile downwind sectors may need to be adjusted.
- c. Advising people to remain indoors to monitor EAS broadcasts is not a new concept. The first sentence of this Section needs to be removed. EPA 400, which preceded Supplement 3 to NUREG-0654, states on page 2-7, "No specific minimum level is

-2-

c. Advising people to remain indoors to monitor EAS broadcasts is not a new concept. The first sentence of this Section needs to be removed. EPA 400, which preceded Supplement 3 to NUREG-0654, states on page 2-7, "No specific minimum level is established for Initiation of sheltering. ... It can also be particularly useful to assure that a population is positioned so that, if the need arises, communication with the population can be carried out expeditiously. For the above reasons, planners and decision makers should consider implementing sheltering at projected doses below 1 rem..."

Section 2.2.4, "Summary of Requirements and Guidance"

The last sentence of Section 1, "Purpose" states that the intent of the Position Paper is not to provide implementation instructions for protective actions for the public, yet Table 1 in Section 2.2.4, "Summary of Requirements and Guidance" has provisions for when and how to implement protective actions. In addition, Table 1 is incomplete, it does not reference current federal Food and Drug Administration guidance related to KI, and appears to be of limited value, and therefore needs to be deleted.

Section 2.3.1, "Evacuation"

a. Since the EPA 400 dose numbers are actually "decision points" rather than "triggers," the title for Issue 1 should be "Evacuation Decision Points."

b. The first sentence discusses the use of EPA 400 dose limits as a trigger for evacuation. EPA dose numbers are not limits, rather they are decision points. Therefore, the words "dose limits" should be replaced with "radiation dose."

c. In the second paragraph, the word "indoos" should be changed to "indoors."

Section 3.0, "Conclusion"

The last sentence needs to be deleted, since the term "heightened awareness" has not been defined in our regulations or guidance.

*Response to NRC letter dated November 23, 2004 regarding NEI's
Position Paper titled, "Range of Protective Action for Nuclear Power
Plant Accidents"*

Response to Major Comments

Section 1.0, "Purpose"

The stated purpose of the Position Paper is "...To detail the range of early phase protective actions...". It is therefore unnecessary to state that intermediate or late phase protective actions may need to be made by the licensee.

It is not clear as to why a statement regarding the relaxation of protective actions should be included in the purpose section. We would like to discuss this with NRC staff.

We agree that this section needs to include a statement regarding emergency workers. We intend to modify this section to indicate that the Position Paper does not include a discussion of emergency worker PAR's.

Section 2.2.1, EPA 400

The references to EPA 400 used in the Position Paper are statements of fact, and not meant to impugn that document. It is not possible to openly discuss the issues surrounding protective actions without detailing how applicable guidance treats those issues. Thus, we are reluctant to remove those statements, but would like to discuss the NRC staffs concerns. Additionally, it is not clear how the NUREG 0654 reference within EPA 400 acts to clarify the applicability of the diverse guidance in the EPA document to nuclear power plant incidents, since those two documents are only marginally complimentary.

Issue 1: Evacuation Triggers

The first paragraph seems to be suggesting new guidance (namely, that initial recommendations may include greater than the two-mile radius and five mile downwind sectors). Expecting the licensee to acquire and analyze meteorological conditions (such as the suggested diurnal wind shifts or frontal passages) within the 15 minute window does not appear in the current guidance and may not be possible for licensees to implement.

We agree in principle with the recommendation in the second paragraph. However, we request clarification of how the licensee would revise or adjust the initial recommendation, as suggested. We would like to discuss this with NRC staff.

Issue 3: "Use of Sheltering as an Alternative to Evacuation for Short-term Releases"

We assume that there is a typo in the NRC staffs response in that the Position Paper includes "Issue 2: Use of sheltering as an alternative to evacuation for short term releases" and "Issue 3: Use of sheltering for special populations and impediments". The comments from the NRC staff under "Issue 3..." appear to contain comments for the Position Papers Issues 2 and 3. We will address the staffs comments as follows:

We would like to discuss the comments in the first paragraph with the NRC staff. This issue is central to the confusion experienced by the licensees. Our question: what does "consideration" mean? A licensee notification forms need to be unambiguous, and should therefore state clearly whether or not to shelter, versus "consideration" of sheltering.

We would also like to discuss the recommendations of the second paragraph with the NRC staff. Though the staff's suggestion seems reasonable, we think that a discussion of this topic is instructive.

In addition, we are reluctant to include references to the RIS in multiple sections of the Position Paper. It is our understanding that the RIS does not introduce any new concepts with respect to PAR's. Rather, the RIS emphasizes certain points of existing guidance. Since we consider the Position Paper to include all applicable guidance, we would consider referencing the RIS as redundant.

Issue 4: "Effectiveness of Sheltering"

We note that the RIS requires that sheltering be considered in developing the range of PAR's. What is not clear, is that while 10CFR50.47(b) details the standards that licensee plans are required to meet, the RIS, and the staff response to the Position Paper state that the subject CFR requirements extend to implementing procedures and notification forms. We would like to discuss this wording with the NRC staff, as it appears to establish requirements not well known in the industry.

Section 3.0, "Conclusion"

We will consider revising this section based on resolution of the above provided comments.

We would like to discuss the comments in the second paragraph with the NRC staff. In particular, we would like to understand the role of the licensee in assessing travel conditions or transportation resource shortfalls.

Response to "Minor Comments"

Section 1.0 "Purpose"

The stated purpose of the Position Paper is to provide a range of protective actions using existing guidance as a basis. We consider elaboration of the philosophy behind PAR concepts to be included in that guidance.

Section 2.2 "Current Guidance"

See our comments under Major Comments Section 3.0 (above).

Section 2.2.1, "EPA 400"

- a. We agree to implement the suggestion
- b. We agree that EPA 400 contains guidance on sheltering that is not detailed in this section of the Position Paper. However, the industry position for Issue 3 states that "Licensees shall incorporate sheltering into their emergency plans consistent with existing guidance." Thus, we feel the concern to be adequately covered.
- c. Same comments as immediately above.

Section 2.2.2 "NUREG 0654, Supplement 3"

- a. This comment implies that Supplement 3 supersedes older guidance. We understand this to not be true. The paragraph in the Position Paper was included to answer industry comments regarding the use of existing guidance, and as such, we feel it should remain.
- b. We agree to implement the suggestion.
- c. We agree to implement the suggestion.

Section 2.2.4, "Summary of Requirements and Guidance"

We agree to implement the suggestion.

Section 2.3.1, "Evacuation"

- a. We agree to implement the suggestion.
- b. We suggest the term "Projected Dose" as it is used in EPA 400.

c. We agree to implement the suggestion.

Section 3.0. "Conclusion"

We agree to implement the suggestion.