

March 1, 2002

MEMORANDUM TO: Cynthia Carpenter, Program Director  
Policy and Rulemaking Program  
Division of Regulatory Improvement Programs, NRR

FROM: **for** Joseph L. Birmingham, Project Manager **/Peter Wen/**  
Policy and Rulemaking Program  
Division of Regulatory Improvement Programs, NRR

SUBJECT: SUMMARY OF FEBRUARY 6, 2002, MEETING WITH NUCLEAR  
ENERGY INSTITUTE (NEI) TO DISCUSS THE PUBLIC RADIATION  
SAFETY CORNERSTONE

On February 6, 2002, Nuclear Regulatory Commission (NRC) staff met with representatives of industry and NEI to discuss ongoing implementation of the Significance Determination Process (SDP) in the public radiation safety cornerstone. There was also a short discussion of a proposed revision to the definition of work activities in draft Manual Chapter 0609. Ralph Andersen led the discussion for NEI and industry. Steve Klementowicz, NRC, responded for the public radiation cornerstone and Roger Pedersen, NRC, responded for the occupational cornerstone and provided a one-page handout on MC 0609 (Attachment 2). Kathy Halvey Gibson, Section Chief of the Emergency Preparedness and Health Physics Section, provided management perspective as needed. NRC Regions I and IV participated in the meeting via telephone. The attendance list is in Attachment 1.

After introductions and opening statement by the NRC, Ralph Andersen, NEI, distributed a draft handout (Attachment 3) based on recent experience (Comanche Peak nuclear power station inspection) with the Significance Determination Process (SDP) in which the SDP could lead to outcomes that did not properly reflect risk significance and therefore could lead to unintended consequences. The concern is that multiple green findings (>5) with individual low risk significance leads to the SDP determination of a "white" finding, even though there was no dose to the public. Steve Klementowicz, NRC, agreed that in the example given, the risk to the public was low. However, public confidence is an important factor that is part of the SDP risk assessment process. Additionally, during the development of the SDP there was a consensus that multiple findings should result in a "white" assessment. The NRC agreed to reconsider the risk significance in this area and asked for "real world" examples from stakeholders to help balance risk and public confidence for this SDP.

The NEI handout described the elements in the SDP that contribute to what they consider to be unacceptable risk determinations. The handout identified four principles for issue resolution and suggested approaches to resolve these issues. The group discussed the criteria in the handout and other criteria that might be considered for determining risk significance.

The NRC staff pointed out that the recent example being discussed, there was a potential for the release of licensed radioactive material to the public, albeit a small potential. NEI agreed that such a scenario was possible but highly unlikely and added that the potential dose from the material would be extremely small. NEI stated that the licensee should be credited with having a radiation survey program that found the articles rather than being penalized.

The group discussed that the SDP should not discourage licensees going beyond their current program and instituting additional surveys or improving their equipment. Currently, the SDP could result in a disincentive to perform surveys beyond requirements or to improve equipment that may result in finding low-level contamination not previously detected.

NEI indicated other factors to be considered were:

- No defined Total Effective Dose Equivalent for hot particle exposure as in the occupational area.
- No absolute minimum level for measuring radioactivity.

Steve Klementowicz responded that the NRC does not have a Clearance limit regulation for the release of solid materials and the existing NRR policy (i.e., no detectable licensed radioactive material) applies.

Ralph Andersen discussed that NEI believes that the findings documented during a recent inspection at Comanche Peak nuclear power station created the impression that there was a significant risk from the contaminated items identified by the licensee on its property. NEI and the licensee believe that since there was no known release of radioactive material into the public domain or exposure of the public, the current NRC process fostered unwarranted attention to an issue with very low risk significance. Thus, NEI believes the current SDP for radioactive material control needs to be revised to more correctly assess risk.

The group discussed some areas for possible improvement such as defining a numerical value for survey sensitivity, better guidance on when an actual release to the public occurs, developing a numerical value for determining when a release is "more than minor." NEI said that there was still a need to address the five occurrences loop in the SDP. NRC said it supported an initiative on how to reward licensee program improvements and that the issue of periodic surveys performed as "good practice" needed to be discussed further. The group agreed that "real world" examples would be beneficial to help refine and clarify the SDP process; NEI agreed to develop some examples for discussion at the next meeting.

In the Occupational Radiation Cornerstone Area, the group discussed a proposed revision to the wording of a paragraph in draft Manual Chapter 0609 on the definition of work activities. The NRC staff has concerns that a licensee who knowingly divides work activities into arbitrarily small "work activities" is doing so to avoid inspection findings. Such an action would be viewed by the NRC as unacceptable because it circumvents the SDP process. The discussion provided in the handout indicated that it would be difficult to determine when a work activity had been arbitrarily divided versus divided into small packages to give better ALARA tracking. The emphasis should be on the licensee's ability to manage small work tasks whose collective dose may be large.

The NRC provided a response indicating that the guidance was dropped and the definition of a work activity revised to reflect “reasonably grouped” tasks. The NRC provided a revised draft statement for the definition of a work activity. The definition of a work activity and the details of the discussion are in Attachment 2.

With the discussion of items completed, the meeting was adjourned.

Project No. 689

Attachment: As stated

cc w/atts: See list

Nuclear Energy Institute

Project No. 689

cc: via email

Jim Davis, Director  
Operations  
Nuclear Energy Institute  
Suite 400  
1776 I Street, NW  
Washington, DC 20006-3708  
jwd@nei.org

Ralph Andersen, Sr. Proj. Mgr.  
Nuclear Energy Institute  
Suite 400  
1776 I Street, NW  
Washington, DC 20006-3708  
rla@nei.org

The NRC provided a response indicating that the guidance was dropped and the definition of a work activity revised to reflect "reasonably grouped" tasks. The NRC provided a revised draft statement for the definition of a work activity. The definition of a work activity and the details of the discussion are in Attachment 2.

With the discussion of items completed, the meeting was adjourned.

Project No. 689  
Attachment: As stated  
cc w/atts: See list

**Memo Accession# ML020650180**  
**Atts. Accession#NRC-001**

Distribution: Mtg. Notice w/NEI re Radiation Protection SDP Dated  
ADAMS/PUBLIC  
OGC  
ACRS

Email  
BBoger  
GTracy  
DMatthews  
CCarpenter  
SWest  
PWein  
RPedersen  
JWigginton  
SKlementowicz  
JNoggle, RI  
DCarter, RIV  
BBaca, R-IV  
MShannon, R-IV  
AHayes  
KGibson  
JShea, EDO  
MFields

DOCUMENT: G:\RPRP\JLB\MSUM-NEW\NEI MSUM 2-6-2002 RP SDP.WPD

OFFICE	RPRP	IOLB	RPRP
NAME	JBirmingham/ <i>PCW for</i> /	KGibson	SWest
DATE	02/27/02	02/27/02	03/01/02

**List of Attendees for February 6, 2002 Meeting  
Radiation Safety Cornerstone**

<b>NAME</b>	<b>ORGANIZATION</b>
Ralph Andersen	NEI
Ronnie Miles	NEI
Charles Kent	Tennessee Valley Authority
Mike Russell	SCE
Lee Thomasson	Dominion Services
Sun Lee	First Energy
Steve Gebers	Omaha Public Power District
Kathy Halvey Gibson	NRC/NRR/IRSB
Steve Klementowicz	NRC/NRR/IRSB
Roger Pedersen	NRC/NRR/IRSB
Jim Wigginton	NRC/NRR/IRSB
Michael Shannon	NRC R-IV
Jim Noggle	NRC R-I (by phone)
Dan Carter	NRC R-IV (by phone)
Bernadette Baca	NRC R-IV (by phone)
Audrey Hayes	NRC/NRR/IRSB
Peter Koltay	NRC/NRR/IIPB
Gregory Twachtman	Platts Nuclear
Lawrence Smialek	Calvert Cliffs NPP
Richard Doty	PPL Susquehanna
Russell Gray	PG&E Diablo Canyon
Willie Harris	Exelon
Larry Haynes	Duke Energy
Daniel Wilder	Comanche Peak TXU
Wayne Carr	S. Nuclear
Deann Raleigh	SCIENTECH

**Draft MC0609:**

A work activity is one or more closely related tasks that the licensee has identified as a unit of work for the purpose of ALARA planning and work controls.

However, situations where the licensee has arbitrarily divided the radiological work into very small “work activities” for the purpose of avoiding inspection findings ( i.e., tolerate weaknesses in the program that result in several or wide-spread failures to plan and control exposures), should be considered more than minor.

**Comment:**

It will be difficult to determine that a licensee has in fact divided his work packages into small units to avoid inspection finding. In addition, documentation of such a finding could result in an implied accusation that a licensee has in fact done such to avoid a finding when in fact he may have divided his work into small units to provide improved ALARA tracking (e.g., use of sub-tasks for ALARA planning). The paragraph should be revised to focus on the licensee’s ability to manage its small work tasks whose collective dose may be large, rather than on implicating a licensee’s motives.

**Response:**

This guidance on what ALARA issues should be considered more than minor was deleted and the definition of a work activity was revised to reflect “reasonably grouped” tasks to address the issue of defining very small “work activities” that would unlikely ever pass the 5 person-rem. The guidance still puts the burden on the inspector to show that the licensee’s division of work for ALARA planning is not consistent with industry norms, and that it is masking a failure of the program to achieve doses that are ALARA

**Revised Draft:**

A work activity is one or more closely related tasks that the licensee has **reasonably grouped together** as a unit of work for the purpose of ALARA planning and work controls. **In determining a reasonable grouping of radiological work, factors such as historical precedence, industry norms, and special circumstances should be considered.**

## FOR DISCUSSION PURPOSES

### Public Radiation Safety Significance Determination Process (SDP) Radioactive Material Control Section

#### Issue:

Recent experience indicates that the public radiation safety SDP (radioactive material control section) can lead to outcomes that do not properly reflect risk significance and may result in unintended consequences.

#### Discussion:

The NEI industry task force on radiation protection has conducted a review of this issue and concludes that several SDP elements contribute to such outcomes:

- The criteria for identifying a potential finding, “an occurrence...that is contrary to NRC regulations or the licensee’s procedures,” is compliance-based, rather than performance-based.
- There is no risk-based criterion (e.g., a criterion related to public dose) for entering the SDP.
- The SDP allows the aggregation of occurrences that are of low or no risk significance to lead to a “white finding,” requiring a regulatory response.

Further, the SDP, in effect, creates a disincentive for programs that go beyond regulatory requirements for monitoring and controlling radioactive material.

#### Principles for Issue Resolution:

1. The SDP should focus on occurrences that involve an actual dose to the public or unauthorized release of licensed radioactive material into the public domain.
2. The SDP should account for occurrences that involve a substantial potential for dose to the public in excess of the regulatory limit –100 mrem/year (TEDE).
3. The SDP should not create any disincentive for licensees to implement programs for monitoring and control of licensed radioactive material that go beyond regulatory requirements.
4. Aggregation of occurrences of little or no risk significance should be avoided.

## FOR DISCUSSION PURPOSES

Suggested Approach for Issue Resolution (for discussion):

1. Clarify the criteria for a potential finding similar to the following:  
  
“Does it involve an occurrence that is contrary to licensee procedures or NRC regulations for monitoring and controlling licensed radioactive material that results in:
  - a. An actual unauthorized release of licensed radioactive material into the public domain,<sup>1</sup> or
  - b. An actual unintended dose to a member(s) of the public,<sup>2</sup> or
  - c. A substantial potential for dose to a member of the public in excess of the regulatory limit of 100 mrem/year TEDE.”
2. Eliminate the aggregation of low-level occurrences. Systemic problems with a licensee’s radioactive material control program should be identified via inspection of problem identification and resolution.
3. Retain the existing logic and dose-based criteria for determining significance associated with white, yellow, and red findings.
4. Consider the appropriate level of significance associated with an occurrence that involves a substantial potential for dose to a member of the public in excess of the regulatory limit of 100 mrem/year TEDE

---

<sup>1</sup> “Public domain,” as used in this proposal, should exclude licensee-defined radiological controlled areas (RCAs) and security Protected Areas (PAs) because public access to these areas is strictly limited and controlled. Applicability to other onsite areas should be evaluated on a case basis.

<sup>2</sup> Consideration should be given to including more specific guidance and numerical criteria for determining “unintended dose.”