

April 5, 2004

MEMORANDUM TO: Cathy Haney, Program Director  
Policy and Rulemaking Program  
Division of Regulatory Improvement Programs, NRR

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

SUBJECT: SUMMARY OF FEBRUARY 25, 2004, PUBLIC MEETING WITH THE  
NUCLEAR ENERGY INSTITUTE (NEI) TO DISCUSS OCCUPATIONAL  
RADIATION CORNERSTONE ISSUES

On February 25, 2004, Nuclear Regulatory Commission (NRC) staff met with a representative of NEI in a public meeting at NRC headquarters in Rockville Maryland. The meeting was on Occupational Radiation Safety Cornerstones issues. Attachment 1 is a list of the meeting participants. Attachment 2 is the NEI list of issues proposed for discussion. Attachment 3 is a draft of a proposed change to the SDP process provided in preparation for discussion at the next public radiation cornerstone meeting.

After introductions, Roger Pedersen, of the NRC, announced that the group would not discuss dosimetry placement because of time considerations. He also stated that NRC would provide a draft handout of a proposed change to the SDP process so that it could be attached to the meeting summary to facilitate discussion at the next meeting.

Ralph Andersen, of NEI, provided a list of issues for discussion (see Attachment 3) and began a discussion on control of access to high radiation areas. He stated there was an apparent misunderstanding between licensees and the NRC as to certain terms and requirements. He said the objectives of this discussion were to determine if there was a misunderstanding of the requirements and, if there was a misunderstanding, to define the requirements, and determine a path to a common understanding. Roger Pedersen pointed out that there were not new requirements and that too frequently the NRC heard that the requirements were misunderstood. Mr. Andersen agreed, in general, that it was not possible to define terms perfectly but said the terminology for locked hi-rad areas should be better defined.

He said that licensees considered an opening not accessible if workers needed to expose themselves to an unreasonable amount of harm to access the opening. He gave an example of a worker having to swing out over a 30 foot drop in order to get around a fence restricting access. Mr. Pedersen stated that his experience had found that workers would "bend" plant safety rules and would climb on piping etc. if it was relatively available. The group discussed various scenarios of workers placing themselves at some risk to go around barriers. As the group did not appear to be reaching agreement, Ralph Andersen said he would consider writing a paper for discussion that would describe the scenarios and try to better define the terms.

C. Haney

- 2 -

After the proposal by NEI to draft a paper for discussion, the group discussed briefly some of the other issues on the NEI list and agreed to have a meeting in the near future, probably on March 15, to continue the discussion. The NRC presented the "draft for discussion" change to the transportation Significance Determination Process to be attached to the meeting summary (Attachment 3) and, after asking for public comments or questions, the group agreed to adjourn.

Project No. 689

Attachments: As stated

cc: w/atts: See list

**List of Attendees for February 25, 2004  
Occupational Radiation Safety Cornerstones**

<b>NAME</b>	<b>ORGANIZATION</b>
Ralph Andersen	Nuclear Energy Institute
Roger Pedersen	NRC/DIPM/IEPB
Ronald Schmitt	NRC/DIPM/IEPB
Joseph Birmingham	NRC/DRIP/RPRP
Mark Puckett	Omaha Public Power District
Gary Cavanaugh	Omaha Public Power District
Steve Gebers	Omaha Public Power District
Lane Hay	Bechtel/SERCH
*Mike Russell	Southern California Edison
*Jim Madigan	Southern California Edison
*Jeff Cook	Southern California Edison
*Mike McBrearty	Southern California Edison
*Roger A. Aguilera	South Texas Project
*Leonard M. Earls	South Texas Project
*Russell Gray	Pacific Gas & Electric
*Larry E. Haynes	Duke Energy
*Lance E. Loucks	Duke Energy
*Willard C. Osburn	Duke Energy
*Charles J. (Jeff) Thomas	Duke Energy
*Richard L. Doty	PPL Susquehanna
*Donald Schuelke	NMC
*Joe Beer	NMC
*Steve McCamy	Tennessee Valley Authority
*Pamela Bedgood	Wolf Creek
*Chuck Sibly	Wolf Creek
*Ron Gilliam	Wolf Creek
*Harold Trimble,	Exelon Corp.
*Kimberly Hobbs	Exelon Corp.
*David Nestle	Exelon Corp.
*Lee Thomasson	Dominion Generation
*David Mohl	Entergy
*Mike Lantz	Palo Verde

\*via teleconference

**Control of Access to High Radiation Areas**  
(Draft to support discussions at an NRC public meeting on 2/25/2004)

Recent experience with NRC inspections, as well as discussions between licensees and NRC staff in public meetings, has revealed a possible need for clarification of some requirements and guidance for the control of access to high radiation areas.<sup>1</sup>

Specific requirements and guidance that may require clarification include the following:

1. The licensee shall ensure that each entrance or access point to a high radiation area has one or more of the following features ... Entryways that are locked, except during periods when access to the areas is required, with positive control over each individual entry (from 10 CFR 20. 1601).
2. Each entryway to [a high radiation area] shall be conspicuously posted as a high radiation area and shall be provided with a locked or continuously guarded door or gate that prevents unauthorized entry (from Standard Technical Specifications, Administrative Controls).
3. Physical barriers surrounding high radiation areas should be sufficient to prevent inadvertent entry (e.g., a 2 meter [6-foot] fence, with worker training and signs or procedures to deter climbing, may be adequate for controlling access to a high radiation area) (from Regulatory Guide 8.38).
4. Openings in physical barriers around a high radiation area are not required to be controlled as entrances if exceptional measures are needed to access them. Examples of areas that do not need to be controlled as entrances are the manway to a tank or vessel that has its cover bolted in place or an opening in a shield wall that is physically difficult to access without a ladder or mobile platform (from Regulatory Guide 8.38).
5. [Accessible high radiation areas] that are within large areas where no enclosure exists to enable locking and where no enclosure can reasonably be constructed around the individual area should be barricaded and conspicuously posted (from Regulatory Guide 8.38).

Attachment 2

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<sup>1</sup> "High radiation area," as used further in this document, refers solely to areas with dose rates greater than 1.0 rem/hour at 30 centimeters from the radiation source or from any surface penetrated by the radiation, but less than 500 rads/hour at 1 meter from the radiation source or from any surface penetrated by the radiation.

## VIII. SDP DETERMINATION PROCESS (draft redline/strikeout for discussion)

### A. Radiation Limits Exceeded

The limits on radiation levels of a package offered for transport are found in 49 CFR 173. These include both limits for external and removable surface contamination. The external radiation level limits vary somewhat as a function of the type of shipment (non-exclusive and exclusive- use). Specific limits exist also as a function of distance from the package, such as the transport index (TI), and for the area occupied by the driver. These external radiation limits are found in 49 CFR 173.441 and are duplicated in 10 CFR Part 71.47 (as related to Type B radioactive material shipments).

The limits for removable (non-fixed) surface contamination on a package are found in 49 CFR 173.443 (Table 11) and vary as a function of type of shipment (non-exclusive and exclusive use), and vary relative to the type of nuclides (alpha, and beta/gamma emitters). Additionally for certain exclusive-use shipments, the surface contamination levels can be ten times higher during the shipment.

The external radiation level branch provides for a graded approach for assessing the level of significance of findings. Exceeding any of the limits and increasing multiplies of the limits provide for GREEN, WHITE, YELLOW and RED findings.

To assess the significance of a finding, consideration is given to the accessibility of the package. ~~An accessible area is defined as one that can reasonably be occupied by a major portion of an individual's whole body, which is defined in 10 CFR 20.1003.~~ An accessible area is defined as an area (i.e. any point on the external surface) where a person would have the ability to come near or to have a means or way, of approaching that area. For example, consider a shipment that consists of a package loaded directly on a flat bed trailer, and is secured in place. An example of an inaccessible surface is the underside of the package, which is sitting directly on the trailer. It is highly improbable that any member of the public could gain access to that location, assuming normal conditions of transport. Examples of accessible areas include the underside of the trailer, the unlocked cab, all other surfaces of the package, and at two meters from the loaded package. Accessibility is not a factor that is considered if the dose rate on the external surface of the package is greater than two times the regulatory limit.

The removable surface contamination level branch provides for a graded approach for assessing the level of significance of findings. Exceeding any of the limits and increasing multiplies of the limits provide for GREEN, WHITE, YELLOW and RED findings. Note that to have a RED finding, the surface contamination levels must not only exceed 100 times the limit, but the unrestricted area must have been contaminated as well.

After the proposal by NEI to draft a paper for discussion, the group discussed briefly some of the other issues on the NEI list and agreed to have a meeting in the near future, probably on March 15, to continue the discussion. The NRC presented the "draft for discussion" change to the transportation Significance Determination Process to be attached to the meeting summary (Attachment 3) and, after asking for public comments or questions, the group agreed to adjourn.

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

Distribution: Summary of Mtg. w/NEI re Occupational Radiation Safety 2/25/04

ADAMS/PUBLIC OGC ACRS

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Nuclear Energy Institute

Project No. 689

cc: Via email

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**Memo Accession#ML0**

DOCUMENT: G:\RPRP\JBirmingham\Msum-new\MSUM NEI RP Cornerstones 2-25-04.WPD

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