

October 15, 2012

MEMORANDUM TO: Undine S. Shoop, Chief  
Health Physics and Human Performance Branch  
Division of Risk Assessment  
Office of Nuclear Reactor Regulation

FROM: Steven Garry, Senior Health Physicist */RA/*  
Health Physics and Human Performance Branch  
Division of Risk Assessment  
Office of Nuclear Reactor Regulation

SUBJECT: MEETING MINUTES FOR PUBLIC MEETING WITH NUCLEAR  
ENERGY INSTITUTE AND NUCLEAR POWER INDUSTRY TO  
DISCUSS THE PERFORMANCE INDICATOR FOR OCCUPATIONAL  
EXPOSURE CONTROL EFFECTIVENESS

On September 27, 2012, a Category 2 public meeting was held between the U.S. Nuclear Regulatory Commission (NRC), and representatives of the Nuclear Energy Institute (NEI) and nuclear power industry at the U.S. Nuclear Regulatory Commission Headquarters, 11555 Rockville Pike, Room O-16B4, MD, 20852. The purpose of the meeting was to provide NEI and the nuclear power industry an opportunity to discuss a draft Frequently Asked Question (FAQ) submitted by the Perry Nuclear Power Plant (PNPP) on the Performance Indicator for Occupational Exposure Control Effectiveness.

The following documents were provided for discussion during the meeting:

- Public Meeting Notice and Agenda and draft FAQ (Agencywide Documents and Management System (ADAMS) Accession Number ML12255A061).
- Performance Indicator FAQ ID 203 (posted on NRC web site @ [Archived FAQs – By Cornerstone/PI](#))

Enclosure 1 contains the meeting minutes, enclosure 2 contains the attendee list, and enclosure 3 contains the draft FAQ.

Enclosures:  
As stated

CONTACT: Steven Garry, NRR/DRA  
301-415-2766  
[smg2@nrc.gov](mailto:smg2@nrc.gov)

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ADAMS Accession No.: **ML12277A298**

OFFICE	NRR/DRA/AHPB	NRR/DRA/AHPB
NAME	SGarry	UShoop
DATE	10/ 12/12	10/15/12

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## Meeting Minutes

A meeting between NRC staff and representatives from NEI and the nuclear power industry was held on September 27, 2012 to provide an opportunity to discuss a draft Frequently Asked Question (FAQ) submitted by the Perry Nuclear Power Plant (PNPP) on the Performance Indicator (PI) for Occupational Exposure Control Effectiveness.

The following documents were provided for discussion during the meeting:

- Public Meeting Notice and Agenda and draft FAQ (Agencywide Documents and Management System (ADAMS) Accession Number ML12255A061).
- Performance Indicator FAQ ID 203 (posted on NRC web site @ [Archived FAQs - By Cornerstone/PI](#))

The following is a brief summary of the meeting.

### **1.0 ADMINISTRATIVE**

The NRC opened the meeting by welcoming NEI, industry representatives, and potential members of the public to the meeting. Each participant introduced themselves and identified their respective organizations. No member of the public attended. A telephone bridge line was established for those individuals who were unable to attend in person. An attendance list is attached as Enclosure 2.

### **2.0 WORKING GROUP MEETING DISCUSSION**

The meeting was held as a task force of the NRC-NEI Reactor Oversight Process (ROP) monthly working group. The purpose of the task force meeting was to discuss the draft Frequently Asked Question 12-04 (FAQ) submitted by NEI for NRC consideration. The topic of the meeting and FAQ 12-04 was whether there was a need to clarify the existing Performance Indicator for Occupational Exposure Control Effectiveness to distinguish between “concurrent” and “non-concurrent” non-conformances with Technical Specification requirements. The essence of the question was whether a sequence of multiple failures having a common cause was one PI occurrence, or whether sequential failures to recognize a common cause would result in multiple PI occurrences.

This was a working group meeting, with several ideas and concepts stated and discussed, although no final conclusions or positions were reached. The PNPP had submitted a draft FAQ 12-04 through the Nuclear Energy Institute (Enclosure 3) with the intent to obtain clarification of the Occupational Radiation PI as specified in NEI 99-02, Revision 6 “Regulatory Assessment Performance Indicator Guideline.” The NRC staff clarified that this task force meeting was not to determine the number PI occurrences associated with the resin spill event at the PNPP, but instead to use the event as an example on how to apply the existing PI guidance.

The PNPP Radiation Protection Manager (RPM) provided an introduction of the PNPP resin spill event and stated that there was a radiation protection staff mindset based on historical radiological conditions which affected the radiation protection staff response. The radiological conditions had never exceeded the Technical Specification (locked) high radiation area (LHRA) threshold of 1,000 mrem/hr at 30 centimeters. The RPM stated that during the resin spill event, that although a few entries had been made into the general area of the radwaste building 574' elevation, no one had entered the immediate resin spill area (other than as later authorized to perform a radiological survey), no one had received an electronic dose rate alarm, no one had received an unplanned exposure, and that general entries had been controlled under the previously surveyed and established radiological controls. The Health Physics Technician (HPT) that entered the immediate resin spill area to perform a radiological survey a few days later had been briefed on the resin spill situation, and conducted the radiological survey under a radiation work permit (RWP) with dose rate set points at 280 mrem/hr; i.e., the anticipated radiological conditions. Upon recognizing unanticipated elevated radiological conditions, the HPT exited the area before receiving a dose rate alarm and re-planned the entry to complete the survey.

The meeting participants distinguished the initiating event as a separate concept from the PI occurrence; i.e., in this example, the initiating event was the resin spill, and the PI occurrence was the failure to establish radiological controls. The meeting participants discussed the existing footnotes to the PI guidance in NEI 99-02 and the meaning of terms "same cause" and "common timeframe." Participants noted that there were no definitions of these terms in the PI (although prior discussions had occurred between NRC and NEI/industry staff) and use of common language and dictionary terms would likely apply. One definition of a common timeframe is an unbroken string of events; therefore, the PNPP resin spill was possibly one common timeframe. The question arose as to whether the sequences of independent failures had a common cause resulting in one PI occurrence; or whether subsequent, independent failures should be recognized as multiple PI occurrences.

The concepts of different regulatory approaches for other types of performance deficiencies were discussed; i.e., multiple individual breakdowns occurring within the event, repetitive failures associated with the same event, and the application of both the inspection process with findings and the PI indicator process within the ROP. Participants discussed that the normal process of dispositioning human performance failures/aspects is to evaluate licensee performance through the inspection program (in lieu of the PI process). An NEI representative asked the basic question, "Are missed opportunities to identify and correct issues each a PI occurrence"? It was discussed that in the inspection program, missed opportunities may each be performance deficiencies. However, the same concept may not apply in the PI program. NRC staff commented that a missed opportunity may not necessarily make it a new PI occurrence, unless possibly the missed opportunity arises from a new cause, such as the failure to take reasonable and appropriate actions when new information presents itself.

Extensive discussion was held on the concept of "new information" with many conceptual questions raised on how that term would be defined, since it is subjective and has associated varying degrees of new information. The discussion included the responsibility of an informed person to act upon new information sufficient to base a new decision upon. Some industry representatives discussed that they were not convinced that, for the PNPP example being discussed, that an HP Technician confirming a reported resin spill was new information. NRC

staff stated the opinion that new information is not just “hard” information (e.g., dose rate alarms) and that additional responsible persons who are initially informed of the event have a responsibility to correct the deficiency. Most participants agreed that the question is “what is reasonable under the circumstances?” may be interpreted differently, depending on each person’s knowledge and perspective.

For the PNPP example, there was general agreement that the initial failure to perform surveys and establish radiological controls based on the reported resin spill (i.e., resulting in an exceedence of the radiological criteria in Technical Specifications) would be a PI occurrence, and that some of the subsequent non-conformances with the Technical Specifications were caused by that initial failure (therefore, they are “concurrent, non-conformances” as used in the PI definition). However, NRC staff stated that when there is an ongoing non-conformance with the TS, a new PI occurrence may occur when there is a separate cause of the continuing non-conformance. A consensus was reached that if sufficient new information is obtained that should reasonably have prompted a new response or action, then that could be considered a new or separate “cause.” NRC staff stated the contrary is not necessarily true, i.e., if the same information is given to new responsible staff, then that could also be considered a new failure; i.e., a new PI occurrence. An example was given with several control room operators repeatedly missing an incorrect valve lineup, or HPT surveys repeatedly missing an unknown radiological condition.

The working group concluded that PNPP staff would revise and resubmit the draft FAQ based on distinguishing between separate and concurrent PI occurrences. The NRC staff explicitly stated that this working group meeting was not deciding on the number of PI occurrences that occurred in the Perry resin spill example. The next full ROP working group meeting will be held on October 17th, and NRC staff and industry staff will further discuss the issue.

### **3.0 PUBLIC PARTICIPATION**

There were 3 opportunities for public participation in the meeting, but no member of the public provided any comments. Public meeting feedback forms were distributed, but no completed feedback forms were received.

### **4.0 ADJOURN**

**NRC Public Meeting  
Occupational Exposure Performance Indicator Meeting  
September 27, 2012  
Attendance List**

<b>Print Name</b>	<b>Print Company</b>
Undine Shoop	NRC - Health Physics and Human Performance Branch
Roger Pedersen	NRC - Health Physics and Human Performance Branch
Steven Garry	NRC - Health Physics and Human Performance Branch
Richard Conatser	NRC - Health Physics and Human Performance Branch
Chris Cauffman	NRC – Reactor Inspection Branch
Steven Reynolds	NRC – Region III
Steven Orth	NRC – Region III
Billy Dickson	NRC – Region III
Ellen Anderson	Nuclear Energy Institute
Stan Baker	First Energy
Denise Bell	Nuclear Energy Institute
Bruce Evans	Dominion
Ed Gordon	First Energy
Mike Hale	Dominion
Tim Irving	Pacific Gas and Electric
Rick LaBurn	Detroit Edison
Carl Moeller	Arizona Public Service
Dave Thompson	Duke Energy
Hal Trimble	Public Service Electric & Gas
Dave Wood	Constellation Energy
Adam Popard	Arizona Public Service
<b>Telephone Participants</b>	
Steve Reynolds	NRC Region III
Billy Dickson	NRC Region III
Marty Phalen	NRC – Region III Health Physics Inspector
Leonard Earls	STP Nuclear Operating Co.
Larry Haynes	Duke Energy
Willie Harris	Exelon
Brad Cole	Xcel Energy
Robin Ritzman	First Energy
Larry Haynes	Duke Energy
Lee Thomasson	Dominion
Brent Robinson	St. Lucie
Tom Lentz	Perry

Diane Firenze	VC Summer
Chris Martin	St. Lucie
Brent Robinson – St. Lucie	St. Lucie
Harlan Hanson	First Energy
John Grabnar	First Energy
Tom Lentz	Perry

## Draft Frequently Asked Question

**Plant:** Perry

**Date of Event:** June 2, 2012

**Submittal Date:** August 16, 2012

**Contact:** John Pelcic

**Tel/email:** 440-280-5824 [jfpelcic@firstenergycorp.com](mailto:jfpelcic@firstenergycorp.com)

**NRC Contact:** Mark Marshfield

**Tel/email:** 440-280-5822 [mark.marshfield@nrc.gov](mailto:mark.marshfield@nrc.gov)

Performance Indicator: OR01 Occupational Exposure Control Effectiveness

Site-Specific FAQ (Appendix D)? No

FAQ requested to become effective when approved.

### Question Section

#### **NEI 99-02 Guidance needing interpretation (include page and line citation):**

Page 62, Lines 16 - 22, and associated footnote

#### *Technical Specification High Radiation Area (>1 rem per hour) Occurrence –*

A nonconformance (or concurrent nonconformances) with technical specifications or comparable requirements in 10 CFR 20 applicable to technical specification high radiation areas (>1 rem per hour) that results in the loss of radiological control over access or work activities within the respective high-radiation area (>1 rem per hour). For high radiation areas (>1 rem per hour), this PI does not include nonconformance with licensee-initiated controls that are beyond what is required by technical specifications and the comparable provisions in 10 CFR Part 20.

A footnote states that “Concurrent” means that the nonconformances occur as a result of the same cause and in a common timeframe.

#### **Event or circumstances requiring guidance interpretation:**

On June 2, 2012, an equipment failure resulted in resin/water slurry flow into the general area hallway of the Radwaste Building El. 574. Indications of changing radiological conditions were available. However, the Radiation Protection staff did not recognize the need to conduct a new radiological survey of the area, which was posted and controlled as a High Radiation Area (HRA) at the time. The failure to perform a timely radiological survey is a performance deficiency and an NRC Performance Indicator occurrence.

Over the next few days, there were two instances of individuals entering this area without Radiation Protection coverage and one instance where an individual was provided a HRA key but did not enter the area.

On June 7, 2012, a Radiation Protection technician performed a radiological survey of the area in preparation for decontamination activities. The survey identified a floor area where dose rates met the Technical Specification criteria for classification as a Locked High Radiation Area

ENCLOSURE 2

(LHRA). After the survey, the Radwaste Building El. 574 area was posted and controlled as a LHRA.

This PI counts nonconformances, or “concurrent nonconformances,” with technical specifications. “Concurrent nonconformances” are defined as those that “occur as a result of the same cause and in a common timeframe.” In this case, the three instances were as a result of the same cause – the failure of Radiation Protection personnel to recognize the need to perform a new radiological survey. “Common timeframe” is not defined; however FENOC believes that these three instances meet the intent of a “common timeframe.” The instances were a result of a single performance deficiency with the same common cause.

The failure to recognize the need to perform a new radiological survey prior to June 7, 2012, was reported as a PI occurrence. Additionally, the three instances of individuals entering the area, or having access without Radiation Protection coverage as a result of the single performance deficiency of not performing the timely survey were conservatively reported pending the outcome of this FAQ.

Since the PI counts nonconformances that “result in the loss of radiological control over access or work activities” and the nonconformance that led to the three entries was the failure of Radiation Protection to recognize the need to perform a new radiological survey, are the two subsequent entries and one potential entry considered to be “concurrent nonconformances” bounded by the failure to recognize the need to perform the new radiological survey?

#### **What is the NRC resident inspector’s position?**

The NRC resident inspector agreed with the facts and recommended that the FAQ process be followed for resolution.

#### **Potentially relevant existing FAQ numbers**

FAQ 203 addresses the footnote in question. However, in FAQ 203, the causes of the two entries were different; therefore, both occurrences counted. FAQ 203 did not address “common timeframe.”

#### Response Section

##### Proposed Resolution of FAQ

The failure to recognize the need to perform a new radiological survey represents a loss of control over access into a LHRA. However, since the subsequent three instances without Radiation Protection control were a result of the failure to perform the new radiological survey, and were within a limited common timeframe, they can be considered to be “concurrent nonconformances.” Only one Technical Specification High Radiation Area PI occurrence should be reported.

If appropriate, provide proposed rewording of guidance for inclusion in next revision.

In the footnote defining “concurrent,” “common timeframe” should be defined to be “within the normal period of time between surveys for the specific area.”