

January 10, 2012

MEMORANDUM TO: Alexander R. Klein, Chief
Fire Protection Branch
Division of Risk Assessment
Office of Nuclear Reactor Regulation

FROM: Daniel M. Frumkin, Team Leader */RA/*
Fire Protection Branch
Division of Risk Assessment
Office of Nuclear Reactor Regulation

SUBJECT: SUMMARY OF DECEMBER 8, 2011, PUBLIC MEETING OF THE
NUCLEAR REGULATORY COMMISSION TO DISCUSS FIRE
PROTECTION CIRCUIT FAILURES AND OTHER CURRENT
LICENSING BASIS ISSUES

On December 8, 2011, the U.S. Nuclear Regulatory Commission (NRC) held a Category 2 public meeting with industry stakeholders to discuss fire protection issues related to fire induced circuit failures. The main topics discussed were the status of industry activities relating to Revision 2 of Regulatory Guide 1.189, "Fire Protection for Operating Nuclear Power Plants," Revision 3 of NEI 00-01, "Guidance for Post-Fire Safe Shutdown Circuit Analysis," and other topics as discussed in the November 17, 2011 ([ML113140167](#)) agenda. A list of participants is included in Enclosure 1.

The following is a breakdown of the discussion from the meeting. No slides were provided during the meeting.

1. Nuclear Energy Institute (NEI) staff provided information on a recent survey regarding progress addressing the activities related to Revision 2 of Regulatory Guide 1.189, and the resolution of multiple spurious actuations issues. NEI staff indicated that these activities were proceeding and most plants would complete their work by

Enclosures:
As stated

CONTACT: Daniel M. Frumkin, NRR/DRA
(301) 415-2280

November 2012, which represents the end of enforcement discretion as captioned in Enforcement Guidance Memorandum 09-002 ([ML090300446](#)). Industry stakeholders indicated that some plants may have operational considerations that would necessitate going beyond the November 2012 date. The staff indicated that a reasonable justification for lack of timely resolution is a consideration for inspectors when evaluating timeliness. The U.S. Nuclear Regulatory Commission (NRC) staff said that there were no plans to extend the enforcement discretion.

One plant indicated the intention to submit licensing actions as part of their resolution of multiple spurious actuations. The NRC staff said that for unusual or first of a kind applications, licensees may request a pre-submittal public meeting with the NRC staff to discuss technical and regulatory aspects of the submittal.

Industry stakeholders asked if the staff had plans, following November 2012, to perform additional inspections or take other actions regarding the resolution of multiple spurious actuations. The NRC staff indicated that the inspection procedure IP 71111.05T, "Fire Protection Triennial" ([ML11201A170](#)), had been enhanced to focus inspections on circuits issues, but no other actions are currently planned.

The survey results were discussed during the meeting and a summary of those results is included in Enclosure 2. NEI indicated that future surveys would occur and that NEI staff would consider incorporating questions from the NRC staff.

2. In their October 12, 2011, letter Nuclear Energy Institute (NEI) staff submitted Revision 3 of NEI 00-01, ([ML112910143](#)), to address information in Revision 2 of Regulatory Guide 1.189 and to provide clarifications to Revision 2 of NEI 00-01. The letter requested NRC endorsement of NEI 00-01, Revision 3. This meeting provided an opportunity for NEI staff and industry stakeholders to discuss the changes.

Industry stakeholders explained the changes, specifically:

- The distinction between important and required equipment,
- The double break design,
- Changes to the NEI 00-01, Chapter 3 circuit design,
- The link between III.G.1, 2 and 3 of 10 CFR 50, Appendix R,
- The updated list of MSO configurations, and
- Changed discussion of operator manual actions discussion.

The NRC staff had the concern that there is additional information being used by licensees, yet is not included in Revision 3 of NEI 00-01. A specific example of this was the analysis to support a shorting switch. In addition, there were changes to NEI 00-01, that in the opinion of the staff went beyond enhancements and clarifications. Industry

stakeholders indicated that there were portions of NEI 00-01, Revision 3, that NRC staff endorsement would remove unknowns for some plants in resolving multiple spurious actuations. Examples were Chapter 3 of NEI 00-01, discussion of required and important equipment, revision of NEI 00-01 to address Regulatory Guide 1.189 exceptions, and white papers such as the shorting switch paper.

The NRC staff plans to set up meetings with industry stakeholders to discuss these issues.

3. The NRC staff brought up the issue of licensing basis for multiple spurious actuations. This was presented as a discussion topic for a future meeting.

The following discussion did occur on this topic. Industry stakeholders were concerned that the guidance may evolve over time such that adding MSOs to the licensing basis would be problematic. The NRC staff indicated that this was not different from other areas of nuclear regulation where new information may become available. A variety of options were discussed, from an internal licensee commitment, such as updating the Updated Final Safety Analysis Report (UFSAR) to a submittal followed by the NRC staff issuance of a safety evaluation report (SER). There were concerns and benefits for each of the topics discussed.

4. The topic of fire safe shutdown procedure entry conditions was discussed. Meeting attendees agreed that this was a broad issue and that a clear problem statement was needed. Two plants have ongoing inspection issues related to this topic. NRR activities will be informed by actions at these plants.
5. Meeting attendees also discussed the topic of applying the concept of no adverse affect from the standard license condition. A clear problem statement is needed for this topic, and NRC staff and industry stakeholders will discuss at a future meeting.
6. An industry stakeholder had a question about the high energy arcing fault test plan. Since this is a joint Electric Power Research Institute (EPRI) and NRC activity, NRC staff suggested that the industry stakeholder contact EPRI representatives.

It is the NRC staff position that sufficient technical information is available in Regulatory Guide 1.189, Revision 2 for licensees to address circuit failure issues.

NRC staff will be in contact with NEI staff to discuss topics and schedule for the next public meeting.

This meeting did not decide any Agency or staff positions, and it did not interpret regulations other than what is currently established by guidance or staff position.

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There were no questions for the NRC staff from members of the public.

Enclosures:

As stated

A. Klein

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As stated

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NAME:	DFrumkin	AKlein
DATE:	01/ 05 /12	01/ 10 /12

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**NRC PUBLIC FIRE PROTECTION CIRCUIT FAILURES MEETING
LIST OF ATTENDEES**

December 8, 2011

<u>Name</u>	<u>Organization</u>	<u>Name</u>	<u>Organization</u>
Daniel Frumkin	NRR/DRA	John Butler	NEI
Samson Lee	NRR/DRA	Michelle Kelley	Xcel Energy
Harry Barrett	NRR/DRA	Tony Maness	NEI
Gary Cooper	NRR/DRA	Tom Gorman	PPL
Thinh Dinh	NRR/DRA	Randy Jamison	Seabrook
Alex Klein	NRR/DRA	Chris Pragman	Exelon
Phil Qualls*	NRR/DRA	Fleur de Peralta	Tri-En Corp.
Rodney Fanner	Region II	Rashid Abbas*	SAIC
Gerry Wiseman*	Region II	Cary C. Martin*	Southern Company
Norman Merriweather*	Region II	Bob Kalantary*	EPM
Paula Braxton*	Region II	Jose (Joe) Loya*	South Texas Project
Robert Daley*	Region III	Brenda Simril	TVA
Geoff Miller*	Region IV	Greg Cameron*	Arizona Public Service (Palo Verde)
		Alan Jelalian*	EPM
		Jack Martin*	Dominion
		Jonseuk Park*	KINS
		Larry Parker*	STARs-PG&E/ Diablo Canyon
		Robert Brady*	Aon FP
		John Lattner*	Southern Company
		Mike MacFarland*	Southern Company
		Ronny Hendrix*	ANO
		Frank Cox*	STP
		Saeed Savar*	PSEG
		Robert S. Fletcher*	GAO
		Steven R. Carter	GAO

* Participated via phone or video conference

Status of Industry Activities Related to Multiple Spurious Operations (MSO) Resolutions

- 48/104 Units transitioning to [10 CFR 50.48(c)] NFPA 805
- 56/104 Units remaining with current FP licensing basis.
- Responses from the following plants (units):

Based on survey responses from approximately 55% of plants

1a. Circuits being modified – Wide variety of responses

- Opportunity to resolve long standing issues
- Opportunity to remove manual actions
- Some plants with very few (none, 2 or 3)
- A number of plants have many modifications (>20 circuit modifications/unit)
- A number of plants have on going analysis

1b. Systems/MSO Scenarios

- Wide variety of responses covering essentially all plant safety systems (BWRs/PWRs)
- Modification scope is plant/unit specific
- Many different MSO scenarios are being addressed by modifications

1c, d. Non-Circuit Modifications

- Responses indicated few non-circuit modifications
- Analytical approaches also relied upon (operator manual actions (OMAs), engineering analysis, etc.)
- Non-circuit modifications included OMAs, emergency lighting, fire wrap, cable tray covers, air cylinders for air operated valves (AOVs)

1e. OMAs for MSO resolution

- Most plants responded with few OMAs being relied upon for MSO resolution for 10 CFR 50, Appendix R, Paragraph III.G.2 fire areas
- Varied response for 10 CFR 50, Appendix R, Paragraph III.G.3 fire areas (respondents answered the question in different ways)

2. Modification Completion Date by 11/2/12

- Yes, response
- However, industry concerns with new discoveries, opportunities for system outages, and outage schedules impacting the completion of modifications by due date

3. MSO vulnerabilities NEI 00-01 Revision 3 not covered by Enforcement Discretion

- Variety of responses including Yes, No, and under review. No single dominant response