



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

April 11, 2016

MEMORANDUM TO: Greg A. Casto, Chief  
Fire Protection Branch  
Division of Risk Assessment  
Office of Nuclear Reactor Regulation

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

SUBJECT: SUMMARY OF THE MARCH 17, 2016, CATEGORY 2 MEETING  
REGARDING FIRE-INDUCED CIRCUIT FAILURE TOPICS

On March 17, 2016, the U.S. Nuclear Regulatory Commission (NRC) staff held a Category 2 public meeting with the Nuclear Energy Institute (NEI) and industry regarding fire-induced circuit failure topics and related regulatory guidance. The discussion focused on five technical white papers that support revisions to industry and NRC guidance documents. The white papers will be included as part of Volume 3 of NUREG/CR-7150, "Joint Assessment of Cable Damage and Quantification of Effects from Fire (JACQUE-FIRE)." The meeting announcement for this meeting is Agencywide Document Access and Management System (ADAMS) Accession Number [ML16077A150](#).

The NRC's Office of Nuclear Regulatory Research in collaboration with the Electric Power Research Institute led a working group composed of NRC and industry representatives in developing these technical white papers. The five white papers and a supporting technical document for one of the white papers are in ADAMS Package Number [ML16047A367](#). The working group indicated that the content of the white papers will be included as part of Volume 3 of NUREG/CR-7150 and the conclusions are expected to remain unchanged during the finalization of the NUREG/CR, however, the formatting and level of detail may change.

During the meeting working group representatives discussed the content of the white papers. The slides that were used to support their discussion are in ADAMS as Accession Number [ML16077A081](#). The discussion followed the slides.

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NRC staff raised concerns with the quantitative criteria used to support exclusion of some multiple spurious operation combinations from consideration, see white paper titled, "MSO [Multiple Spurious Operation] Consideration Recommendation," ADAMS Accession Number [ML16047A379](#). The working group members indicated that the quantitative information was only part of the information that the working group used to arrive at its recommendations. A thorough review and understanding of the test data, fire-induced circuit failure modes, operating experience, and engineering judgement were used in addition to the quantitative estimates. At the request of NRC staff, the working group members indicated they would revisit the qualitative and quantitative language that they had used in developing the exclusion criteria.

The technical recommendations provided in these five white papers provides a starting point to revise industry implementing guidance and NRC regulatory guidance related to fire-induced circuit failures. As discussed at the meeting the working group will revisit the wording used in the MSO white paper and they expect to have the product finalized in May or June 2016.

The NEI will use the information from the white papers to revise Revision 2 of NEI 00-01, "Guidance for Post-Fire Safe Shutdown Circuit Analysis," ADAMS Accession Number [ML091770265](#). NEI and industry stakeholders also intend to refine the information in Revision 2 of NEI 00-01, to be more consistent with the circuit failure practices in use today. This will be Revision 4 of NEI 00-01. NEI published a Revision 3 of NEI 00-01, but that revision was not endorsed by the NRC. The NRC staff suggested that when the next revision of NEI 00-01 is ready for NRC review that the NRC hold a public meeting to discuss the changes in NEI 00-01. Industry stakeholders were agreeable to that suggestion.

Currently NRC regulatory guidance, Regulatory Guide 1.189, Revision 2, "Fire Protection for Nuclear Power Plants," endorses portions of Revision 2 of NEI 00-01, for use. Upon the revision of NEI 00-01 based on these white papers, the NRC will consider portions of the revised NEI 00-01 for endorsement in the regulatory guide.

The meeting concluded with the next steps involved the working group revisiting the wording in the MSO white paper, finalizing and publishing Volume 3 of NUREG/CR-7150, and NEI providing a revision of NEI 00-01 to the NRC staff for review and discussion during a public meeting.

No public comments were made during the meeting.

A list of meeting attendees is enclosed with this memorandum.

Enclosure:  
As stated

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**DISTRIBUTION:**

DRA R/F	GCasto	DFrumkin	RDaley, RIII	SShaeffe, RII
CMoulton	HBarrett	SRosenberg	JRogge, RI	GWerner, RIV
MHSalley	GTaylor	AKlein		

**ADAMS Accession No.: ML16082A120**

**\* via email**

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Date	03 / 31 / 2016	04 / 11 / 2016	04 / 11 / 2016

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**MEETING REGARDING FIRE-INDUCED CIRCUIT FAILURE TOPICS  
LIST OF ATTENDEES**

March 17, 2016

**U. S. Nuclear Regulatory Commission Staff**

Daniel Frumkin  
Charles Moulton  
Harold Barrett  
Brian Metzger  
Robert Daley  
Gabriel Taylor  
Shivani Mehta  
Tammie Rivera\*

**Stakeholders**

Steven Hutchins – NEI/Exelon Generation  
Tom Gorman – Jensen Hughes  
Andy Ratchford – Jensen Hughes  
Kiang Zee – Jensen Hughes  
Denis Shumaker – PSEG  
Michael Sykes – SNC  
Chris Pragman – Exelon  
Robert White – Exelon  
Daniel Funk – Jensen Hughes  
James Zimmerman – Xcel Energy  
Dane Lovelace – Jensen Hughes  
Brenda Simril – TVA  
Daniel McClintock – Areva  
Joe Ribeiro – Areva  
Jack Martin – Dominion\*  
T. Swiecicki – Entergy\*  
Mike Fletcher – Callaway\*  
Alan Jelalian – EPM\*  
Shannon Lovvorn – TVA\*  
Steve Nowlen – NUREG/CR-7150 Working Group\*  
Mono Subudhi – Brookhaven National Laboratory\*  
Fleur DePeralta – Pacific Northwest National Laboratory\*  
Greg Curtain – Exelon\*  
Richard Harris – Enercon\*

\* participated via phone

ENCLOSURE