



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

May 20, 2016

MEMORANDUM TO: Louise Lund, Director  
Division of Policy and Rulemaking  
Office of Nuclear Reactor Regulation

FROM: Brian E. Thomas, Director /RA/  
Division of Engineering  
Office of Nuclear Regulatory Research

SUBJECT: REQUEST FOR GENERIC ISSUE REVIEW PANEL MEMBERS  
FOR PRE-GI-018, PROPOSED GENERIC ISSUE ON HIGH  
ENERGY FAULTS INVOLVING ALUMINUM COMPONENTS

The purpose of this memorandum is to request that the Division of Policy and Rulemaking (DPR) provide individuals to serve as members of a Generic Issue Review Panel (GIRP) to evaluate a proposed generic issue regarding the effects on electrical equipment when subjected to high energy arc fault (HEAF) conditions. The proposed generic issue is available at Agencywide Documents Access and Management System (ADAMS) Accession No. ML16126A096.

The Office of Nuclear Regulatory Research (RES) has identified a potential concern for electrical equipment containing aluminum components, which can escalate the damage caused by a HEAF. Recent tests have shown that the presence of aluminum can create an energetic plasma arc, which can cause more damage to electrical enclosures than previously analyzed. The aluminum can also result in the projection of high energy gases, particles, and plasma farther than previously assumed. Recent tests confirm that the area damaged around the equipment, referred to as the "zone of influence" (ZOI), may be larger than assumed in the current methodology for HEAF analysis. Therefore, existing analytical models supporting plant specific safety analyses may be non-conservative. Licensees have been using this methodology to support plant specific safety analyses when applying National Fire Protection Association Standard 805 (NFPA 805) to meet fire protection regulations.

The purpose of the GIRP will be to perform a detailed evaluation of the proposed generic issue to determine whether it meets all seven screening criteria specified in Management Directive (MD) 6.4, "Generic Issues Program." The GIRP will provide its evaluation to the RES Office Director on whether the proposed issue meets all seven screening criteria and should proceed into the assessment stage.

This complex issue has the potential to impact several offices, and may require input from several technical disciplines. Therefore, RES also requests a meeting with DPR to discuss the appropriate staffing and leadership for this panel to facilitate the development of your response to this memorandum.

CONTACT: Stanley Gardocki, RES/DE/RGGIB  
(301) 415-1067

RES is requesting that DPR provide staff from NRR familiar with fire protection, electrical protection, and calculating the risk of potential electrical component failures. In addition to staff from Office of Nuclear Reactor Regulation (NRR), RES is considering augmenting the panel with staff from other offices, e.g., the Office of New Reactors can provide experience in new reactor construction, the Office of Nuclear Material Safety and Safeguards can provide experience with fuel cycle facilities, and the Office of Nuclear Security and Incident Response can provide experience with security issues. In addition to NRR technical staff, RES is also requesting one Senior Executive Service (SES) individual be appointed to chair the panel. Ideally, the SES chair would have experience with these disciplines and how this issue can affect multiple types of facilities.

It is anticipated that the GIRP panel will begin its review starting in June 2016 and conclude its screening by August 2016. It is expected to require approximately 20 to 30 hours from each panel member. Upon concluding its screening analysis, the GIRP will provide a finding on whether the proposed generic issue meets all seven criteria and should proceed to the assessment stage of the GI process. If the issue proceeds into the assessment stage, the GIRP will continue to review the safety and risk importance of the issue to determine whether it should proceed to the regulatory offices for implementation. Upon completion of the assessment, the GIRP will provide its recommendation to the RES Office Director, who is responsible for the transition of the issue to the appropriate regulatory offices.

I request that we meet to discuss the appropriate membership of the panel in early June, and that NRR provide the names of the individuals to serve as members of the GIRP within approximately two weeks after the meeting. If you have any questions or comments concerning this request or the proposed issue, please do not hesitate to contact the responsible RES project manager, Stanley Gardocki, or the GI Program Manager, Thomas Boyce, Chief of the Regulatory Guidance and Generic Issues Branch.

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**ADAMS Accession No.: ML16138A262**

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