



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

August 31, 2021

MEMORANDUM TO: Andrea D. Veil, Director  
Office of Nuclear Reactor Regulation

FROM: Raymond V. Furstenuau, Director  
Office of Nuclear Regulatory Research

 Signed by Furstenuau, Raymon  
on 08/31/21

SUBJECT: CLOSURE OF PROPOSED GENERIC ISSUE PRE-GI-018,  
"HIGH-ENERGY ARC FAULTS INVOLVING ALUMINUM"

The purpose of this memorandum is to inform you of the closure of proposed Generic Issue (GI) PRE-GI-018, "High-Energy Arc Faults (HEAFs) Involving Aluminum." This action is based on guidance provided in NRC Management Directive (MD) 6.4 Section V.A., "Criteria for Generic Issues," which states that if, at any time, a proposed GI, or a GI does not meet any of the seven screening criteria, it will not be processed further under the GI Program. The Generic Issues Review Panel (GIRP) has concluded that the risk or safety significance of HEAFs involving aluminum cannot be adequately determined without performing additional, long-term research to develop the methodology for such a determination. Therefore, Criterion 5 of the screening criteria in MD 6.4 is no longer being met.

Significant technical progress has been made by the staff under PRE-GI-018. The efforts under PRE-GI-018 have highlighted the potential hazard of aluminum in plants with respect to HEAF. The results of EPRI's investigation included a survey of all operating plants for aluminum and communication of effective maintenance practices to reduce the likelihood and severity of a HEAF event. However, the staff have identified several areas of long-term research needed to fully and accurately assess the risk posed by HEAFs involving aluminum. In particular, the development and validation of a multi-physics model capable of representing the thermal and electrical properties of an arc, the solid-mechanical response of an enclosure, and the chemical kinetics of metal oxidation.

We understand that your office will apply LIC-504, "Integrated Risk-Informed Decisionmaking Process for Emergent Issues," to make a risk-informed decision regarding the need for additional regulatory actions for HEAFs involving aluminum in the near term.

If there are questions regarding this issue, please feel free to contact the GI Program Branch Chief, Meraj Rahimi, or the PRE-GI-018 Project Manager, Ronaldo Jenkins.

Acknowledgement of PRE-GI-018 Recommendation & Disposition:

/RA/

Michael X. Franovich, GIRP Co-Chair  
Division of Risk Assessment  
Office of Nuclear Reactor Regulation

/RA by Christian Araguas for/

Mark Thaggard, GIRP Co-Chair  
Division of Risk Analysis  
Office of Nuclear Regulatory Research

Memo to A. Veil - Closure of Proposed Generic Issue Pre-GI-018, "High Energy Arc Faults Involving Aluminum" DATE August 31, 2021

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