

PRE GI-018 Aluminum HEAF

Current Status Public Communications

- March 4, 2016, Start Generic Safety Issue Process (ML16064A250)
- The generic issue review panel (GIRP) determined that the seven screening criteria were met in accordance with management directive 6.4 (ML14245A048)
- July 10, 2019, Most Current Status of Pre GI-018 Available (ML19127A202)
 - However, this is currently being updated based on recent events

PRE GI-018 Aluminum HEAF Industry Concerns

- Identified two primary areas of industry concern:
 - Questions remain on “what” and “how” the testing is being performed
 - Lesson Learned from one series before moving to the next
 - There is a lack of understanding how the whole program fits together
 - Need for a Roadmap/Project plan so stakeholders can follow/understand the project
- NRC agreed to delay the testing until these issues can be addressed

NRC/EPRI Establish Working Group

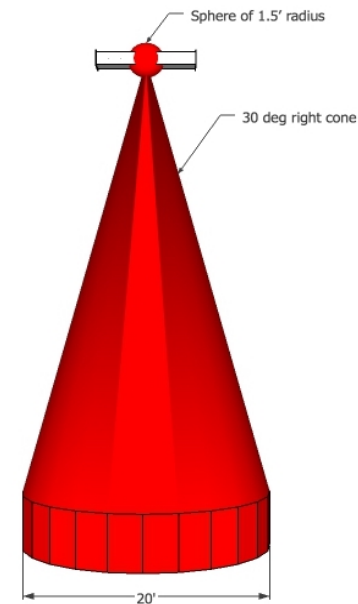
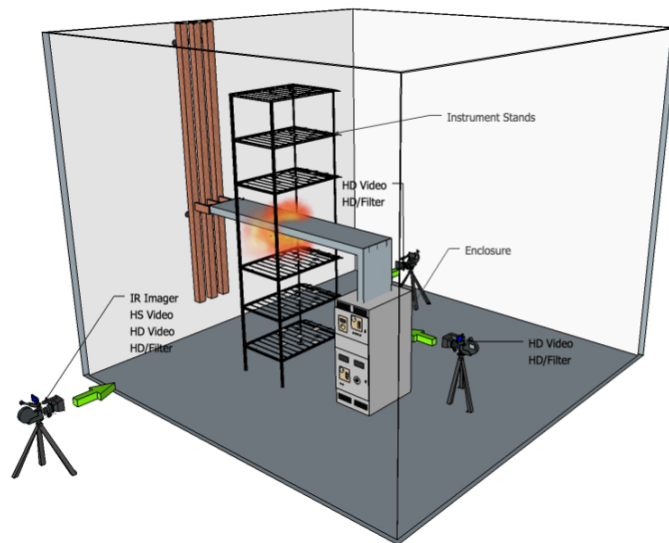
- Mission Statement
 - To improve understanding of risk from electrical arcing fault hazards in nuclear power plants (NPPs).
- Goals
 - Better understand key factors contributing to:
 - Occurrence
 - Severity
 - Advance HEAF fire PRA modeling
 - Based on experimental data, operating experience, and engineering judgement
 - Ignition frequency
 - Zone of influence (ZOI)
 - Analyze plant impact and risk implications
 - What can go wrong?
 - How likely is it?
 - What are the consequences?

Current Major Working Group Actions

- Weekly Working Group Webinar
- EPRI Survey Plant Equipment
- Development of Project Plan
- Sandia Model Development
- Target Fragility Development
- Update HEAF PRA Guidance
 - November 2019 Face to Face Meeting
- Operational Experience Review

Bus Duct Medium Voltage Testing Status – On Hold

- Planned 5 tests currently on hold
- Current Bus duct guidance for high energy arcing faults (FAQ 07-0035)



Summary

- Full Scale Testing is currently on hold
- Working Group is continuing to make solid progress
- Expect additional public interaction
 - Public Meeting/Workshops
- Expect improved public communications

BACK UP SLIDES

Current Status NRC Pre Generic Issue - 018 High Energy Arching Faults (HEAF) involving Aluminum

Public Risk Informed Task Force Meeting
NRC Headquarters Rockville Md.
October 17, 2019

HEAF Working Group Members

Ken Fleischer (Fleischer Consultants)

Dane Lovelace (Jensen Hughes)

Shannon Lovvern (TVA)

Tom Short (EPRI)

Marko Randelovic/

Ashley Lindeman(EPRI)

Jason Floyd (Jensen Hughes)

JS Hyslop (NRC)

Nicholas Melly (NRC)

Kenn Miller (NRC)

Gabriel Taylor (NRC)

Chris LaFleur (SNL)

Kenny Hamburger (NRC)

Project Managers

Kelli Voelsing (EPRI)

Mark Henry Salley (NRC)

Project Sponsors

Tina Taylor (EPRI)

Michael Cheok (NRC)

PRE GI-018 Aluminum HEAF Public Involvement – Transparency

- Examples of Public Involvement:
 - April 19-20, 2018 2 day public HEAF workshop
 - August 24, 2018 Public ACRS Subcommittee Meeting
 - September 13, 2018 RISC Public Meeting
 - October 31, 2018 Public NEI Regulatory Issue Task Force
 - January 23, 2019 Generic Issue Public Meeting
 - March 20, 2019 HEAF Public Meeting
 - July 24, 2019 Two HEAF Public Meetings
 - Sessions at 2016, 2017, 2018 Regulatory Information Conference
 - Presentations at multiple NEI Fire Forums

Electrical Enclosure Low Voltage HEAF Testing Status – On Hold

- Planned 4 Test Enclosure
- 9 separate tests run on 2 Enclosure
– August 2019
- Testing Voluntarily Suspended
- Difficulty maintaining the arc
- Questions on enclosure
configuration/manufacture

Industry Requested HEAF Testing Status – Under Development

- Decrement Curve
 - Simulate spin down of the main generator
 - Working with KEMA to determine if testing is possible
- Supply Side Configuration
 - Direct Link to Operating Experience
 - Investigating Initiating Compartment volume effects
 - Relocating shorting wire supply side to simulate supply side initiating event
- Currently in Planning Stage

Improved HEAF Research Public Communication

- Accessible from the NRC Public Website (<https://www.nrc.gov>)
About NRC >> Research Activities >> Fire Research Program >> HEAF Research

The screenshot shows the NRC Public Website homepage. The navigation bar includes links for HOME, FAQ, GLOSSARY, FACILITY LOCATOR, WHAT'S NEW, SITE HELP, INDEX A-Z, CONTACT US, EMAIL UPDATES, and LISTEN TO PAGE. The main navigation menu has categories: NUCLEAR REACTORS, NUCLEAR MATERIALS, RADIOACTIVE WASTE, NUCLEAR SECURITY, PUBLIC MEETINGS & INVOLVEMENT, NRC LIBRARY, and ABOUT NRC (circled in red). The 'ABOUT NRC' link is highlighted. Below the navigation bar, there is a 'Facility Locator' section, a 'STAY CONNECTED' section with social media icons, and a 'Spotlight' section. The 'Research Activities' link is circled in red in the 'Public Meetings & Involvement' section. The 'News & Speeches' section shows a calendar for August 23, 2019, and a 'Public Meetings' section with a calendar for September 3, 2019. The 'Open Government' section is also visible.

The screenshot shows the NRC Public Website 'Research Activities' page. The navigation bar is the same as the homepage. The main navigation menu includes: NUCLEAR REACTORS, NUCLEAR MATERIALS, RADIOACTIVE WASTE, NUCLEAR SECURITY, PUBLIC MEETINGS & INVOLVEMENT, NRC LIBRARY, and ABOUT NRC. The 'Research Activities' link is circled in red. The page content includes a 'HOW WE REGULATE' section with a list of activities: Rulemaking, Guidance Development, Generic Communications Program, Standards Development, Licensing, Certification, Inspection, Assessment of Performance for Operating Facilities, Enforcement, Investigations, Allegations, Events Assessment, Generic Issues, and Research. The 'Research' section is highlighted. Below this, there is a list of research activities: Nuclear Reactor Safety Research, Nuclear Materials Safety Research, Radioactive Waste Safety Research, Fire Research Program (circled in red), The Radiological Protection Computer Code Analysis and Maintenance Program (RAMP), Digital Instrumentation and Controls (I&C) Research, State-of-the-Art Reactor Consequence Analyses (SOARCA), Computer Codes, Obtaining the Codes, Probabilistic Flood Hazard Assessment, and Accident Sequence Precursor (ASP) Program. A 'RELATED INFORMATION' section on the right includes links for Level 3 PRA Project, Human Factors Research (video), and EXOT. The page footer includes the NRC logo and the text 'Protecting People and the Environment'.

HEAF Research Web Page

- Or navigate directly to:
<https://www.nrc.gov/about-nrc/regulatory/research/fire-research/heaf-research.html>



HEAF Research Project Plan

- Detailed project plan under development. It will include:
 - Experimental tasks
 - Analytical tasks
 - Public interaction
 - Task input/output and data flow
 - Gantt chart to track milestones/timeline
- Increase project transparency and communication
- The project plan will remain in draft format and be subject to revisions as research progresses

