

REDUCING ARC FLASH INCIDENT ENERGIES ON THE TRANSFORMER SECONDARY WITH MV FUSE BASED PROTECTION WEBINAR



WHEN

DATES:

- **Date:** Thursday, May 6, 11:00 am - 12:00 pm.

HOW TO REGISTER:

- <http://keinc.info/Mersen21>
- Classes are virtual and free to attend, but registration is required
- Questions? Contact marketing@kendallgroup.com

ABOUT THIS WEBINAR

Traditional electrical system design approaches and transformer fuse protection practices have yielded arc flash incident energy calculations well above 40 cal/cm² on the secondary of many power transformers. Many companies use this value as the upper limit for energized work. Consequently these companies insist on outages to perform routine tasks on this equipment. When the equipment is switchgear feeding large processes, the downtime cost of a task such as racking in and closing a power circuit breaker can be tens of thousands of dollars.

This session presents two potential solutions that overcome the shortcomings of traditional primary fuse protection against secondary arc flash events while maintaining all the advantages of primary current limiting fuse protection. The performance tradeoffs of each approach are covered. With the approaches that use overcurrent relays, incident energy calculations are typically reduced to PPE Category 2 or '0'.

Topics include:

- Transformer Protection Overview
 - Protection Issues for Secondary Faults
 - Protection Considerations for Transformer Primary Faults
 - Fuse Selection Criteria
- Introduction to Two Approaches to Reduce Incident Energy
 - Changing the time current characteristics of the MV fuse
 - MV High Speed Grounding Switch
- Retrofit Considerations
- Modeling Discussion

THE PRESENTER

Mike Lang, Principal Field Engineer for Mersen, has participated in over 1,000 arc flash tests in Mersen's High Power Test Lab as leader of the Mersen arc flash team. He has co-authored several prize winning IEEE papers on arc flash. His awards include the 2011 I&CPS Ralph H. Lee Department Prize Paper Award for his work on 208V arc flash research and the 2018 Technical Award for Excellence in Prevention Through Design by the Electrical Safety Committee of the IEEE Industrial Application Society.

Mike is an active member of the IEEE 1584 Working Group and is currently co-chairman for the IEEE/NFPA Collaboration on Arc Flash Research effort. He has served as a member of the Research, Test and Planning Committee and on the Technical Advisory Committee as part of the Collaboration's research.

THURSDAY, MAY 6
11:00 AM-12:00 PM

WEBINAR AGENDA

Transformer Primary Fusing Overview

- Primary Protection Objectives
 - Equipment protection
 - Fault Isolation
 - Coordination
- E-Rated Fuse discussion
 - Time-current curve requirements of E-rated fuses
 - Advantages of current limiting E-Rated fuses
 - Voltage Ratings
- Fuse Selection Considerations
 - Full load
 - Inrush currents
 - Overloading
 - NEC limits
 - Available fault currents
- Protection Considerations for LV Secondaries
 - Through fault protection requirements
 - Coordination with secondary OCPD
 - Overview of arc fault protection issues

Fuse Solutions for mitigating the LV arc flash problem

- Improved time current characteristics
 - Application considerations
 - Practical limits of mitigation
 - Retrofit considerations
- Relay controlled primary grounding switch
 - High speed switch discussion
 - Performance possibilities
 - Incident energy
 - Arc energy equipment damage
 - Application considerations
 - OCPD clearing time
 - Available fault current
 - Grounding method
 - AF relay
 - Grounding method
- Other safety improvements
 - LV equipment doors