Enhancing worker and equipment protection thru passive arc-fault mitigation

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While many solutions exist to address arc-flash hazards in power distribution equipment, relatively few are able to reduce the likelihood that an arcing fault will occur, or to isolate hazardous energy from workers. This paper describes an enclosed line-side isolation module that provides passive protection for the incoming power conductors and main breaker in low-voltage power distribution equipment. This module reduces or eliminate uncertainties which may exist with existing solutions, helping end-users have more confidence in the results of their arc-flash calculations and risk assessments.

The effects of the solution on arc-flash and shock hazards are examined, with particular emphasis on arc-flash analysis and labeling practices. Operational considerations and other practical aspects of application for the isolation module are also discussed. Areas where further work may be needed to validate system operation or performance are also addressed.