

Arc Vault™ Solutions

Installation, Commissioning and Maintenance of GE's Arc Vault Protection System

fact sheet

Background

Standards such as NFPA 70E (U.S.) and CSA Z462 (Canada) have increased the awareness of hazards associated with arc-flash energy. These standards have also driven the demand for flexible yet effective solutions that will reduce incident energy levels at existing facilities. Many customers prefer a holistic approach towards addressing this challenge—an adaptable device that can be retrofitted onto their existing equipment, combined with knowledgeable and experienced services to help assure proper installation and commissioning.

Until now arc-flash devices in the market place offered incomplete answers and forced imperfect compromises. These systems reduced incident energy levels, but fell short of a complete solution usually in one of three ways:

- System selectivity is compromised
- Arc-flash energy is diverted to another location
- Operation required the access doors to be closed

Moreover, few electrical contractors possess a reliable proficiency on arc-flash hazards to deliver truly comprehensive services. Customers demand, and deserve, services that capably address every element of their arc-flash protection project, from the initial Arc-Flash Hazard Analysis to system commissioning.

GE is therefore pleased to introduce Arc Vault Solutions; an intelligent combination of GE's Arc Vault Protection System and our global network of GE field engineers, trained and experienced Arc-Flash subject matter experts.



HRC 3 and 4



HRC 0



Description:

Arc Vault Solutions is a comprehensive offering designed to effectively protect both personnel and equipment from arc-flash energy. We offer a unique and more complete solution in comparison to the current basket of arc-flash remedies available to customers. Our service-and-product combination achieves a complete arc-flash solution, delivering a safer working environment while minimizing expenses related to installation and post-fault downtime.

Arc Vault Solutions leverages the technological innovations proprietary to GE's Arc Vault Protection System. Installed properly, this device can:

- Contain an arc in less than 8 ms (a half cycle) with the compartment doors open
- Keep incident energy levels to less than 1.2 cal/cm²
- Be retrofitted onto existing LV equipment, including switchgear, switchboards, and Motor Control Centers (MCC), regardless of manufacturer

GE's Field and Power System Engineers complete our value offering by providing an array of critical support and engineering services necessary to help ensure the Arc Vault device is installed and operating correctly. The full scope of project services includes:

Arc-Flash Hazard Analysis. GE offers a complete arc-flash study of the power system. This includes calculating, and then labeling, the NFPA-based level of personal protective equipment (PPE) required and the associated approach distance from each prospective arc source. Concise power assessments can also be developed from any recently conducted arc-flash studies.

Site Survey. Assess site conditions and equipment arrangement for the installation and application of the Arc Vault. Specific customer requirements will be included and addressed.

Installation. The Arc Vault Protection System will be installed per OEM and NEC standards.

Start-up and Commissioning. The Arc Vault Protection System will be tested to ensure proper installation, operation, and performance.

Maintenance. GE offers various maintenance services from preventative maintenance to complete unit swap-out after an arc-flash incident.

Training. GE offers on-site customer training sessions on the operation and maintenance of the Arc Vault system. In addition, GE offers safety-training courses that provide insight and understanding into the risks inherent to electrical equipment and systems.

Customer benefits

GE Arc Vault Protection System

Best-in-class personal protection. Reduced incident energy levels:

- 1.2 cal/cm² at 18" from arc event (IEEE 1584) for a 480V HRG system with available fault currents up to 65kA.

Better equipment protection. Less electrical stress introduced to protected equipment during fault protection. For example, the Arc Vault system reduces the energy released in an arc-flash incident by 63% or more compared to a bolted fault that would occur with a crowbar system.



Return to service. Return Arc Vault to service same day, assuming appropriate replacement parts are available.

Reduce downtime. In the event of an arc-flash incident, the Arc Vault system can be taken out of service and the power system returned to service after inspection of the fault condition.

Field Testable. Selectable testing can be performed on the plasma gun, relay, capacitor, and other electronics in the Arc Vault.

Scalable. Flexible solution is suitable for retrofit projects of any size.

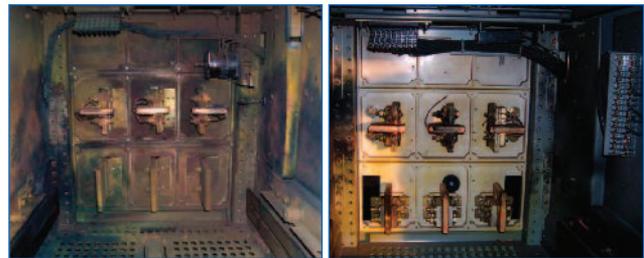
Reduced interruption for installation. System installation can be completed during normal operations, only requiring a brief pause in operations to install CTs and tie in to bus.

Equipment compatible. System can be retrofitted onto any manufacturers' existing switchgear, MCC, switchboard or other LV equipment.

GE Arc Vault Solutions

Single-source accountability. GE delivers a complete product-and-service solution from project planning to installation to commissioning.

Verified benefits. Pre- and post-installation Arc-Flash Hazard Analyses demonstrate lowered PPE requirements.



3 cycle CB interruption

Arc Vault Protection

Knowledge network. Customers benefit from best practices shared across GE's global engineering network.

Expertise. Factory-direct product support from industry-leading subject matter experts.

Responsiveness. Services are performed by locally-based GE personnel interested in our customers' success.

Training. Experienced personnel provide functional system testing and training.

Reduced interruption for installation. Trained and Certified GE personnel perform services quickly and efficiently. System installation can be completed during normal operations, only requiring a brief pause in operations to install CTs and tie in to bus.

Technical Description – Arc Vault Protection System

- The system consists of an activation switch, protective trip unit and containment dome that work together to provide fast protection from arc-flash hazards.
- The activation switch is set as part of a maintenance procedure to enable the system.
- With the activation switch enabled, the trip unit will look for a current spike and voltage dip, and then trigger the containment dome and signal the main breaker to trip.
- A low impedance secondary arcing fault is created within the containment dome, which extinguishes the accidental arc-flash within 8 ms of the initial event.
- The secondary arcing fault continues, protected in the containment dome, until the main breaker clears and de-energizes the entire system.
- The Arc Vault Protection System is constructed as a single vertical switchgear section and can be cable-connected to other electrical equipment within 50 feet of cable length.

For more information, contact your local GE Energy office or call 1-888-GE4-Serv or 540-378-3280

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