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IEM Low Voltage Switchgear & Panels Meet Worst Case Seismic Standards

Fremont, CA, August, 2009 – IEM, the largest independent full-line manufacturer of electrical and power quality equipment in the U.S., recently completed a series of seismic shake table tests at Southwest Research Institute in San Antonio, TX, to qualify all of its low voltage switchgear and panels for the life of the equipment in the event of an earthquake. All IEM low voltage equipment is now fully qualified to a worst case response spectrum and meets or exceeds the following standards:

- International Building Code, IBC-2006 Sections 1613 and 1708
- ASCE/SEI 7-05, Minimum Design Loads for Buildings and Structures
- International Code Council, ICC-ES-AC156, Seismic Qualification by Shake Table Testing of Non-structural Components and Systems
- IEEE-344-2004, Recommended Practice for Seismic Qualification of Class 1E Equipment for Nuclear Power Generating Stations
- IEEE-693-2005, Recommended Practices for Seismic Design of Substations
- Telcordia GR-63-CORE, Seismic Specifications for Telecommunications Equipment

“Seismic testing qualification is particularly important for switchgear that is controlling power supplies to utilities and companies in critical industries like health care and data centers,” said Ed Rossi, President of IEM. “This testing is an extension of IEM’s policy to test all of the products we manufacture to exceed accepted industry standards.”

Tremors Coast-To-Coast

The SwRI testing included two primary processes. First, a response spectrum was generated that represented worst case conditions across six regions of the U.S. based on similar seismic hazards, including five unique areas – California, Alaska, Hawaii, Charleston, and New Madrid. The characteristics of the soils at a specific geographic location were included based on site coefficients for the full range of site classes. The second part of the process involved the development of a composite test spectrum considering all different seismic standards. This composite spectrum covered all site conditions including a full range of soil types. For nuclear equipment, both vibration aging and seismic resistance were considered by performing five lower level tests followed by a single high level test.

The testing was performed to the developed composite spectrum on a 2D shake table at the test lab in San Antonio. Each sample was tested by exciting (the equipment) in one vertical and one horizontal (front-to-back) direction. The sample was then rotated 90 degrees to test in a vertical and second horizontal (side-to-side) direction.

“Testing to the IEEE 344 standard is by far the worst case scenario as the sample has to undergo a dozen tests to qualify for Nuclear 1E equipment. Moreover, the equipment has to be functional before, during and after the test. By performing these seismic shake table tests, we have validated the structural integrity of IEM low voltage equipment,” said Frank Cavezza, Vice President of Operations & Mechanical Design at IEM.

About IEM

Headquartered in Fremont, CA, IEM is the largest independent full-line manufacturer of electrical distribution and power quality equipment in the U.S. For over half a century, IEM has delivered customer-specific solutions to meet the ever changing power requirements of growth industries in North America. At IEM, tradition and technology still drive innovation. An experienced engineering staff and one of the most flexible design and manufacturing systems in the industry set IEM apart from standard product manufacturers.

About Southwest Research Institute

Southwest Research Institute (SwRI) is one of the oldest and largest independent, non-profit, applied R&D organizations in the U.S. Headquartered in San Antonio, TX, SwRI provides contract research and development services to industrial and government clients. SwRI's nature is independent and impartial encompassing a wide range of technical competencies and capabilities. With nearly 3,300 staff members in 11 technical divisions, SwRI can assemble a multi-disciplinary panel of experts required by any technical project, providing the SwRI flexible solutions not found at other R&D organizations. SwRI is recognized under OSHA's published list of Nationally Recognized Testing Laboratories (NRTL).