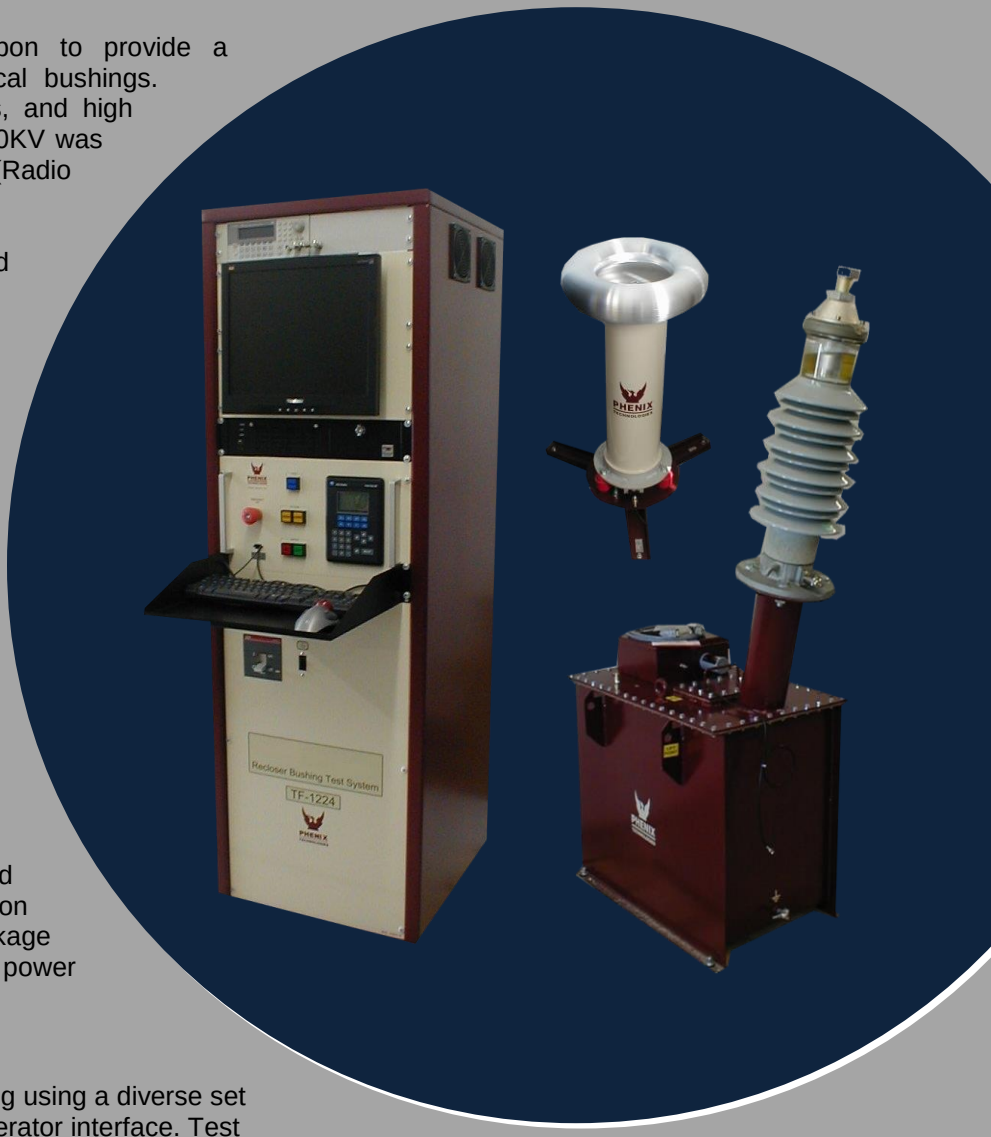
Emerging Technologies

APPLICATION BRIEF
2020

ELECTRICAL BUSHING RIV / HIPOT TEST SYSTEM

Brief Description:

Emerging Technologies, LLC. was called upon to provide a replacement RIV/Hipot test system for electrical bushings. The existing Faraday cage, product test tanks, and high voltage switches were to be re-used. Up to 100KV was required for Hipot testing and 30KV for RIV (Radio Influence Voltage) testing.



The new system integrates a Phenix provided mtronix PD/RIV measurement system, a Phenix AC Dielectric test set, and field I/O control. The software test application was developed using National Instruments LabView 8.5.1 and interfaces the mtronix software and Dielectric Test set drivers via ActiveX. The result is a single operator interface used to run custom developed test routines for Hipot and RIV. Test results are stored and utilized by the existing 1st pass yield program previously developed by Emerging Technologies, LLC.

Multiple safety strategies were employed to protect the operator, equipment, and DUT; optical isolation, redundant safety switches, software safeguards, and use of a Faraday cage.

The design package included; bill of material, mechanical diagrams, electrical diagrams, and custom developed LabView 8.5.1 application software. Additionally, a field instruction package was issued to plant maintenance to install the power feed and field equipment.

Customer Benefit:

The customer is able to perform automated testing using a diverse set of hardware and software via one easy to use operator interface. Test reports are provided to the end user and results are stored and analyzed for yield.

ET Responsibilities:
- Functional Specification Generation
- ✓ Design / Engineering
- ✓ Fabrication
- ✓ Programming – Software
- Programming – Firmware
- Circuit & PCB Design
- ✓ On-Site Commissioning
- ✓ Post Commissioning Support
- Other

Technologies:
- Embedded Computers
- Microcontrollers
- ✓ Visual Software
- ✓ Control Software
- ✓ Data Acquisition
- ✓ Computer Based Control
- ✓ Communications – RS232, ActiveX
- System Integration
- Other

Special Features:
- ✓ Remote Control of HV Equipment.
- ✓ Remote Control of RIV Measurement System.
- ✓ Optical Isolation.
- ✓ First Pass Yield Tracking.
- ✓ Rack-mounted Industrial PC, Power Supplies, and Instruments.

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