



GENERATOR PROTECTION PANEL RETROFIT

Typical of most plants constructed from the 1980s into the 2000s, the generators at Entegra's Gila River Power Station were fitted with analog solid-state and early processor-based protection relays. With failure rates increasing as these legacy devices near the end of their reliable life-cycle, power generating stations are faced with two options: operating with decades old technology and hardware (with OEM support and replacements becoming nearly non-existent) or seek alternate solutions.

Faced with the increasing problems of device failures and false trips within the Generator Protection Panels (GPP), Entegra engaged Control Power Concepts (CPC) to develop a long-term solution.

The solution engineered and implemented by CPC began with replacing all relays within the GPP with modern micro-processor based devices. As part of the retrofit, CPC also installed test and isolation switches. The addition of these switches will vastly improve maintenance reliability and safety. Implementation was completed within a 10 day shutdown window without the need for subcontractor involvement. In addition to the hardware and installation, CPC also provided all revised settings, drawings (construction and as-built), testing, start up support, and NERC compliant documentation.

As of this writing, CPC was awarded contracts for two additional power blocks at Gila River Power Station and is in the engineering & procurement phases of similar upgrades at the Union and Arlington Valley Generating Stations.

Key Benefits and Success Factors

- Implementation within 10 day shutdown window
- Significantly improved operational reliability
- Single vendor project
- Consolidation of equipment going from 6 models to 3 models
- Fully redundant generator protection
- Increased maintenance intervals per NERC PRC-005-2
- Synchronized event recording for fault analysis
- Advanced data acquisition with various available industry standard protocols
- Initial phase of PRC-018 disturbance monitoring compliance
- Elimination of obsolete devices without self-monitoring capability
- Availability of replacement devices
- Test switches improve maintenance efficiency, safety, and cost

Client

Gila River Power Station

Location

Gila Bend, AZ

Fuel Type

Natural Gas Combined Cycle

Generating Capacity

2,334 MW

Level of Involvement

- ✓ Engineering Design
- ✓ Procurement
- ✓ Systems Integration
- ✓ Installation and Execution
- ✓ Project Management
- ✓ Testing and Acceptance
- ✓ Commissioning and Start-up



For more information visit www.ControlPowerConcepts.com
702.448.7833