

Replace Existing Substation Protection with IEC61850

Client: General Electric Energy Services

This project involved the replacement of three existing 345kV/138kV control houses and one new control house at four different sites. The scope of work entailed the design and engineering for incorporating the IEC 61850 relay medium with the existing yard equipment at three locations and for new equipment at a fourth location.

The relays used two fiber optic channels that connected to two separate fiber optic hubs. If one channel failed then everything was routed through the other. The only hardwire connections to the relays were currents, potentials, tripping and closing.

The relays used the IEC 61850 medium in the following schemes:

- H.V. Bus:** Trip bus breakers and initiate breaker failure.
- T-Line:** DTT from breaker relaying, tripping of adjacent breakers and adjacent Breaker Failure initiation.
- Circuit Breaker:** Breaker Failure tripping of adjacent breakers and/or bus and DTT initiation of Line relaying.
- Transformer:** Trip High and Low side breakers and Initiate Breaker Failure.

Logic Diagrams were also developed into a schematic form in order to show the internal programming and remote I/O communication of the relays. This allowed for easy interpretation of the functionality.

This project was successfully completed in Spring of 2006.



To learn more, please contact us at:

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