Turbine Control System Upgrade
Marshall Municipal Utilities

- Control system upgrade/replacement for a 16.5 MW, 13.8 kV turbine generator set
- Upgrade from original electromechanical generator relaying to modern digital relaying
- Replacement of motor control center and related equipment
- New remote workstation in the MMU dispatch center allowing for full access to operate and monitor the turbine generator set

The project included full removal and replacement of the existing control panels within the turbine building control room. A local HMI touchscreen was included in the turbine control panel along with a remote workstation in the MMU dispatch center, each of which provides operators with full access to the operating and monitoring parameters of the turbine. A new fuel control valve was installed to interface with the control system and provide precise control of fuel flow. Additionally, the original motor control center (MCC) was replaced with a new MCC panel which included interfaces to the new control system.

The existing electromechanical protective relaying was replaced with modern digital relaying to make it consistent with other MMU system protection equipment. This allowed for the protection to be seamlessly integrated to the existing MMU SCADA network.

The turbine generator set was removed from service for approximately two months to allow for removal of the old equipment and installation and wiring of the new equipment. DGR developed settings for the new protective relaying and was involved throughout the startup and commissioning of the new control system equipment.

- Involvement throughout the project including preliminary feasibility, design, bidding, construction administration, commissioning, and project closeout
- Integration of a new generator control system and relaying with existing substation equipment and relaying
- Modernization of customer assets to improve reliability