

Electrical

Date Completed:

2004

Construction Cost:

N/A (Study)

Client or Owner's Rep:

Mr. Domenic DiCenso, PE
CDM Smith

Highlights:

- ✓ **Electrical Study**
- ✓ **SKM Power Tools Software**

Photos: High Service Pump Station Building and Switchgear



Southeast Water Purification Plant (SEWPP) 80 mgd Expansion – Electrical Evaluation

City of Houston | Houston, Texas

Project Description | The project included evaluation of the existing electrical system and the impact of a plant expansion on the existing system.

Services Provided | As a sub-consultant to CDM Smith, KGI was responsible for evaluating the existing facility electrical system in conjunction with Siemens Industrial Services. The evaluation included four studies – Short Circuit, Coordination, Motor Starting and Load Flow. A computer model was developed using software for evaluation of the various electrical system elements. The studies identified deficiencies in the electrical system and proposed improvements to address the deficiencies. Some of the major improvements included:

- Replace CTs, limiting fuses, single accuracy CTs with double accuracy at MVS-1 & MVS-2 Switchgears, EDB-1 Switchgear, High Service Pump Motor Starting Circuit Breakers, and CH1 480 Volt Drawout Low Voltage Power Circuit Breaker Switchgear
- Existing Low Voltage Power Circuit Breakers. Replace trip units at four buildings with trip units which have a short time function.
- Replace circuit breakers in 13 power panels and motor control centers with circuit breakers rated to withstand available short circuit current.
- Improve reliability of power to the plant by relocating one incoming 138 kV power line to a separate tower or pole.
- Investigate 138 kV power transformers to verify if the load tap changers are functioning properly.
- Provide maintenance for 138 kV substation power transformers load tap changer