

A FINAL REPORT
FOR THE PROJECT ENTITLED

Optimal AMR Polling for Distribution System Planning

SUBMITTED TO

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Executive Summary

Electric utilities use systems such as Supervisory Control and Data Acquisition (SCADA) and Automatic Meter Reading (AMR) to obtain system information and customer billing. Currently, there are continuous efforts to expand the use of the AMR units other than billing purposes. This project involved creating a software tool that integrates AMR data with an existing load estimation program to deliver a load profile of an electrical distribution system. A meter selection algorithm was developed, implemented and embedded within the load estimation program. This algorithm provides the user with a recommended set of meters that, when polled, can improve the performance of the load estimation analysis. Various selection processes based on the size of the load, location of the load, and a combination of both load size and location were tested. Results show that when a combination of load size and location are taken into consideration, the tool provides better estimates.

The design of this project took place over the past nine months. It also involved four Drexel students and came at the cost of just over one hundred dollars for the actual budget with a projected estimate of just over \$350,000 industry budget.

This project will not leave any major negative environmental, social, or ethical effects. This program will allow a utility company to efficiently use Automatic Meter Reading units for outage management, phase balancing, and system planning in addition to the billing.