Please Your Customers and Your Management By Receiving Fault Data on Your Phone

Progressive utilities serving distribution loads are now actively taking the measurements that allow them to calculate SAIDI, SAIFI, and CAIDI performance numbers. Having taken the measurements, the next step is to improve the numbers through reductions in outage frequency and duration, and numbers of customers affected per outage. In this article, we examine one approach to the reduction of feeder outage duration: paging.

It is now possible using microprocessor-based relays along with substation communication processors to implement a system that automatically generates a message when a feeder or substation fault occurs. These systems consist of the following components:

- Substation protective relays that automatically transmit event data when a feeder or substation fault occurs.
- Communication processor(s) that receive the event data from the protective relays and transmit it upstream to a substation or central office computer.
- Software resident on the substation or central office computer that receives event data from the substation(s), parses the data to generate a real-time message, then transmits the message to selected utility staff for action.

Depending on the type of message generated, the computer will need either a network connection or a telephone connection. Messages can be e-mailed, sent in text format to an alphanumeric pager, or sent in voice format to a cell-phone or voice-messaging pager. Typical systems include a scheduling and prioritization function that automatically determines who receives what type of message and when. For instance, in a given month various line-crew staff may receive pages depending on shift rotations or which district the fault occurred in. Substation maintenance staff may receive battery-bank or transformer temperature alarms, while several individuals are notified for transformer outages.

For greatest value, the content of each message is generated from real-time data when the problem occurs. A feeder fault message might include:

- The substation and feeder identification
- The faulted phase
- Fault location and/or current magnitude
- An indication of whether reclosing was successful or proceeded to lockout

Imagine receiving this detailed fault information immediately following an event, even before customer calls start. By having accurate, real-time data delivered to your phone or pager quickly and automatically, you can reduce the duration of your outages – pleasing your customers – and improve your performance metrics – pleasing your management.