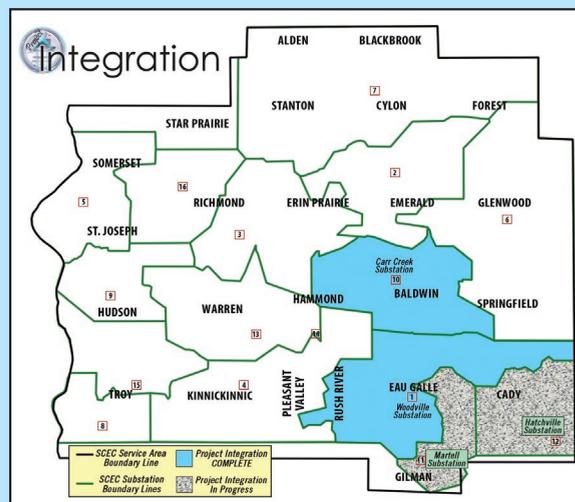




Integration Installation in progress



Above: Jay Bradley, of Chapman Metering (Avoca, Iowa), replaces a meter at a member's home in mid-December. Bradley completed the change-out in a manner of minutes and left a yellow tag on the front door, notifying the home owner of the switch. Meter replacements are being completed by substation service area. In the map above, the blue areas denote areas that have been completed (Carr Creek and Woodville substations). The grey areas are in the process of having their meters replaced. Members are mailed letters from SCEC prior to Chapman Metering working in their area.



The evolution of an electric meter

Aside from the poles and wires, the electric meter is probably the most recognized part of St. Croix Electric Cooperative's delivery system. This device is an integral part of the SCEC's objective to provide superior electric service at the lowest possible cost.



Source: National Rural Electric Cooperative Association

Mechanical Meter

Like all technology, the electric meter has evolved. The original style of meter relied upon an intricate set of gears to accurately measure the amount of electricity used, in the same way a mechanical watch. Many members would recognize the flat spinning dial, its black mark rotating under the glass cover and the set of dial hands moving. The rotating disk was mounted to a geared vertical shaft set between a pair of electromagnets. The flow of electricity through the meter powered

the magnets, which made the disk rotate. The speed of rotation depended on the amount of electricity used at the time. The shaft meshed with the gear train, which turned the dial hands. The first dial registered in increments of single kilowatt hours (kWh), the next dial registered 10 kWh, then 100 and so forth up to 10,000 kWh.

Highly accurate and reliable, the drawback to the mechanical meter was that a human must read the consumption and input it into a billing system, a process both time intensive and susceptible to human error.

Electric Meter

The next major evolution of the meter came to St. Croix Electric Cooperative with the introduction of an electronic module. This module is added to the mechanical meter just described. It reads the rotations of the meter's flat dial and captures that data in memory. At SCEC, this module reports consumption via the power lines to the office every 27 hours and automatically enters use into the billing system. This advancement eliminated human error and greatly reduced costs for the Cooperative. However, if members call in with questions to their accounts, information is slightly delayed.



Source: NRECA

Project Integration

Project Integration's all-digital meters will record and store electric use until they are ready to transmit the data (every four hours). However, Co-op employees will be able to "ping" a meter on demand to access a member's near real-time electric use. With the ability to view a member's overall usage down to 15-minute intervals, Co-op staff can help members better understand and manage their electric use and their monthly bills. In the future, the new meters will work with a real-time outage management system, allowing Co-op staff and members to view an active outage map, to be displayed online at www.scecn.net.

Later in 2016, members will be able to access the Bill4U site to view historical electric use, down to 15-minute intervals. Bill4U is the online site more than 4,500 SCEC members currently use to access their monthly electric bills and view electric use in 24-hour increments.