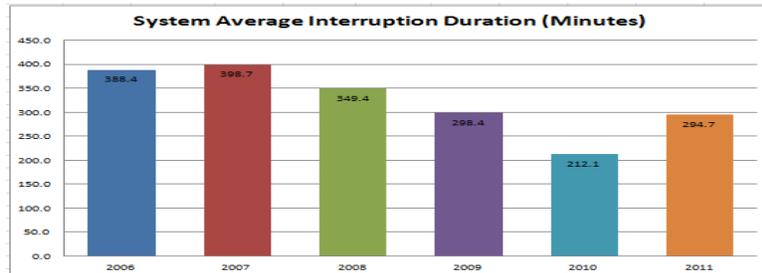


AN EXPECTATION OF RELIABLE SERVICE - AUTOMATION

Automation of Southside Electric Cooperative's (SEC) distribution system is one way to improve reliability and enhance the service provided to our membership. One of the industry standards for measuring reliability is termed SAIDI (System Average Interruption Duration Index), and is measured in minutes. The average SAIDI for the utility industry (a combination of urban utilities and rural utilities) is 130 minutes (2hr 10min per service location). The Cooperative completed 2011 with a system SAIDI of 294 minutes (4hr 54min per service location). Below is a graph of the past six years SAIDI performance at SEC.



As can be seen from the graph, SEC has made substantial improvement in the SAIDI index over the past 6 years. Programs that have affected the reliability of service have been:

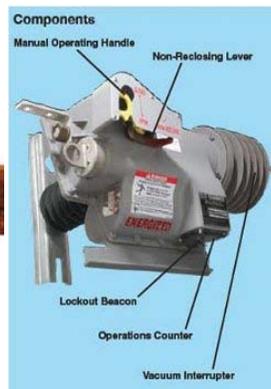
1. Aggressive right-of-way tree cutting
2. Addition of manual disconnect switches
3. Coordinated circuit protection in the form of Smart Devices (reclosers and fusing)



Right of Way Cutting



Manual Disconnect

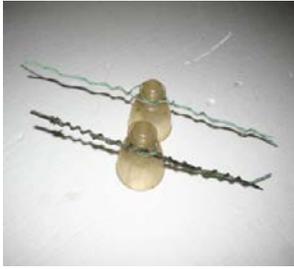


Recloser



Fuse Disconnect

To further reduce the SAIDI index, SEC has started new programs. These programs include Circuit Reconditioning (identifying and replacing end-of-life components), Animal Protection, Circuit Grounding/Lightning Protection, and Smart Automation Systems.



Copper Weld Conductor



Animal Protection



Lightning Arrester



Automated Switching

All of these programs will reduce/prevent outages from happening. Smart Automation Systems will have a large impact on the SAIDI index.

Smart Automation Systems start by upgrading an outdated SCADA (Supervisory Control and Data Acquisition) system. SEC's SCADA system was replaced in 2011 by the Information Technology Department. This new system allows for automated control of the substations and down-line distribution devices. The communications for the down-line devices will be accomplished using a radio system. Radio has been determined to be the most reliable means to communicate to the devices throughout rural cooperatives. At present, we have no control of devices that are installed on the down-line distribution circuits and any interfacing has to be done manually. This system of controlling down-line devices leads to automated switching. By installing automated switching, SEC can reduce the number of customers out of power to a minimum by back feeding customers from other circuits. This is termed sectionalizing. The more automated switching devices deployed, the fewer customers will be out of power for an extended time.

Part of the Smart Automation System will be a new voltage control system. This new system will help reduce system line losses and reduce demand charges from our power provider, Old Dominion Electric Cooperative (ODEC). System line losses are energy lost to the environment in the form of heat, and reducing these losses equals savings for you, our members. Demand charges are charges that SEC pays when there is great demand on our system for power. An example would be an extremely cold winter day when the family just wakes up. At about 7 a.m. in the winter is when SEC sees the most demand for power, termed "winter peaking". This demand requires that the generation systems be able to supply this needed electricity but only for a limited amount of time. The way the rate structure is built, the more electricity SEC demands the higher the bill will be from ODEC. This demand charge helps offset the extra generation equipment that is needed to supply these peaks. When the demand goes down, the generation equipment does not need to make as much electricity, but the generation companies still have to pay for the standby equipment/systems; thus the "demand charge". Voltage control systems reduce peak demands and equal savings for you, our member-owners.

Even the best operation and maintenance practices cannot prevent all outage events. System automation can quickly isolate faulted line sections and restore service to many of the service locations initially affected by the outage event. Additionally, automation can make our system more efficient and reduce power purchase expense resulting in savings for you. SEC's primary objective is to provide our member-owners with safe, reliable electric service at the best possible value.