Matanuska Electric Association Advanced Metering Infrastructure Project

MEA’s existing meters have reached the end of their useful life and need to be replaced. After an extensive two-year evaluation of available Advanced Metering Infrastructure (AMI), MEA selected a new system of automated meters that will increase system reliability, improve outage management, and reduce costs for our members.

2018 Installation Plan:
MEA will focus our upgrade efforts on members served by the Lazelle, Herning, Shaw, Lucas, Palmer and Reed substations (map available on the MEA website).

The Technology:
The new AMI system was developed by Aclara and is called TWACS (Two Way Automated Communication System). Communication between the electric meter and MEA is accomplished through the existing power lines. It is not a broadband power line solution and does not communicate via RF (radio frequency). Modules are installed in solid-state electric meters and send a scheduled signal of your usage back to MEA. Each communication with the cooperative takes less than eight seconds. The system automates the meter-reading process and ensures only electric meter data is securely collected with no user or account information transmitted. Data collected is the same data currently collected via the existing Turtle Automated Meter Reading System. These solutions have been in use since 1985 by more than 500 utilities around the world.

Benefits:
- Fully automates daily meter readings on all system meters
- Reduces meter reading and transportation costs
- Reduces the need to access property to read meters
- Reduces estimated billing due to unavailable meter readings
- Provides on-request reads, saves re-read costs
- Delivers more efficient outage restoration by reporting a loss of power
- Increases ability to detect tampering and reduces energy theft
- Improves member information – the AMI system will give MEA the ability to provide members with more detailed information such as power consumption patterns, outage and blink count history and voltage information, reducing high bill inquiries.
- Reduces employee exposure to hazards, especially in areas with fenced yards, dogs and other hazards

Why AMI?
The existing Turtle Automated Meter Reading System has reached the end of its useful life and is requiring extensive maintenance and field reading of meters as the modules in these meters fail. The new automated meters are far more accurate than the old mechanical meters. Some of the mechanical meters currently in service are more than twenty years old and tend to slow down with normal wear and tear. The new automated meters are accurate to plus or minus 0.2% and meet all applicable (American National Standards Institute) ANSI standards. Each meter is extensively tested, calibrated and certified by the manufacturer.

Given the geography of our service area and the difficulty in reaching many of our member’s meters in remote locations, AMI is the right tool for the job. AMI will allow our technicians to proactively identify power quality issues before they result in disruption to service. AMI gives MEA the ability to constantly analyze the system and make engineering-valued choices about where to put the cooperative’s resources. In the future, members will be able to monitor their own meter and usage on a daily basis from anywhere in the world. The AMI technology chosen by MEA can make this feature available.
Frequently Asked Questions

What does the new meter do?
The new meter records energy consumption and voltage levels in scheduled intervals and communicates that information over the power line back to MEA for monitoring and billing purposes. Meters capable of communicating meter reading information back to MEA have been in use for over 15 years. The new meters provide MEA the ability to communicate with the meter more quickly, consistently and efficiently than in the past.

Why is MEA making this metering upgrade?
The existing Turtle Automated Meter Reading System has reached the end of its useful life and is requiring extensive maintenance and field reading of meters as the modules in these meters fail. As your member-owned cooperative, MEA is constantly looking for ways to improve our service to you and operate more efficiently. The meter change will allow us to expand Advanced Metering Infrastructure (AMI), providing numerous member benefits in a variety of areas and will prepare us for the electric industry’s fast-paced technological advancement.

Will this new meter installation affect my bill?
No. As a member of MEA, you are not charged for this upgrade to your service. This is a benefit of being a member-owner of your cooperative. Electronic meters are more accurate than existing analog or mechanical meters so their performance does not degrade over time. The new meters have been tested and meet American National Standards Institute (ANSI) regulations.

What type of technology does the new AMI Meter use?
Aclara Two-Way Automatic Communications System (TWACS) communication technology. This technology allows MEA to use existing power line infrastructure to collect and manage data from electric meters to provide enhanced outage information and provides the ability to effectively manage energy operations. This equipment does not use radio frequency (RF) to retrieve data.

Do the meters used at MEA produce harmful radio frequency (RF) emissions?
No. The AMI meters used by MEA do not produce any RF signals. The meters use power line carrier technology to communicate with and receive information from the cooperative. The information is sent from the meter to the substation over the existing distribution lines. It is then transmitted via a secure connection back to our office.

While the MEA meters do not produce any RF emissions, we are all continuously exposed to very low levels of both natural and man-made RF fields. Even the earth’s surface and the human body are constant sources of RF fields. Inside your own home you will likely find numerous items that emit RF fields including microwave ovens, cell phones, cordless phones, televisions, Wi-Fi signals, antennas and receivers as well as lighting.

When our Board of Directors approves a policy or procedure for the use of new equipment and technologies, they do so knowing that it will also apply to their own homes. In using this type of metering system, we have not only deemed it to be a wise and safe choice for all co-op members and their families but our own families as well.

If you would like additional information on Radio-Frequency Exposure, we recommend the Electric Power Research Institute’s: A Perspective on Radio-Frequency Exposure Association With Residential Automatic Meter Reading Technology, available here.
Can the meter identify electrical devices/appliances being used inside the home?
No. It only collects the total energy usage data of the household and cannot determine what type of electric device is in use inside a home or when it is operated.

Does the meter monitor personal activities/occupancy inside a home?
No. The meter only collects the energy usage data. MEA cannot use this data to determine what a member is doing inside their home. The data collected is no different than if we sent a meter reader out to read an old mechanical meter every at regular intervals throughout the day. In fact, collecting the usage data remotely is less costly and invasive than if we were to send a meter reader to your home. It’s just a device that measures electricity, not a surveillance device.

My meter works fine. Can I opt out of receiving the new meter?
No. All MEA meters will be replaced with new meters so all members will be part of the new system and can receive the additional benefits. The aging equipment that communicated with our previous meters will be removed from the substations when the installation is complete.

Who will be changing out the meters?
MEA has partnered with Anixter to perform the majority of the meter changes. All Anixter employees will carry MEA contractor identification badges and their vehicles will be identified as a contractor performing services for MEA. MEA chose to primarily utilize contract employees for this project due to the current workload of our internal staff and the efficiencies and resulting cost savings associated with dedicating contract employees full time to the meter change out process.

Will my electric service be interrupted during the meter change-out?
Yes, you will experience a brief, possibly five-minute, interruption of power during the meter upgrade. MEA will send postcards and automated calls to all impacted members 10-14 days ahead of the scheduled work. Anixter employees will provide advance warning by knocking on your door before performing the upgrade. If a member is not at home, they will complete the meter swap and leave a door tag explaining what they did.

Does member and account information remain confidential?
Yes. MEA is required to comply with all federal laws regarding privacy, protection and disclosure of features to prevent unauthorized access. Meter manufacturers are incorporating security features and encryption technology into their meters, as recommended by national security experts. MEA follows the latest recommended cyber security standards to ensure the security of all MEA networks.

What specific information will the new meter provide?
New meters will record:
- Kilowatt-hour usage
- Whether or not the meter has been tampered with
- If an interruption in power occurs
- Voltage levels to determine if the power supply to your home meets MEA requirements

Can anyone other than MEA electronically read the new meters?
No. All of the information and data is stored within the meter and requires special technology to access the information. This helps ensure that no one except MEA will be able to access information contained in your meter. However, the new meters will have a digital display so members can read their own meter on-site if they wish.

With my new meter, do I still need to report an outage?
Yes. When you have an outage or emergency situation you are encouraged to call us. The new meter helps us verify whether the problem is with our service. It can also help us identify the extent of the outage and assist in verifying restoration.

**What do I do if I think my new meter is not working properly or is recording higher kilowatt-hour usage?**
Always feel free to contact MEA to discuss concerns about your meter. Our member service representatives are available at 907-761-9300.

**Where will MEA place the new meter at my house?**
The meter will be placed in the existing meter base at the member’s location.

**How big is the new meter?**
The size and shape of the new meter is similar to the existing meter.

**Can I make an appointment for the installation?**
We are not scheduling appointments for meter installations except in rare instances of medical emergencies. All impacted members will receive a postcard at the primary address listed on their account 10-14 days ahead of the scheduled work. Please call the number on the card if you have any issues. On the day of the installation the installer will knock on your door before beginning work. If your meter is inaccessible, MEA will leave a door tag explaining the problem and will contact you directly to make arrangements for the installation.

**How will I know if my meter has been changed?**
The contractor will leave a door hanger on your front door to let you know they have changed the meter. We will work with businesses to minimize any inconvenience. You do not have to be present during the meter change.

**I have a generator that starts automatically when the power is off. What will happen during the meter exchange?**
The meter exchange technician will knock on the door to inform you of a brief outage while the meter is exchanged. If the generator is installed correctly to automatically transfer the power source, we would expect the generator to come on when the meter is removed. This should activate an automatic transfer switch that will isolate the member’s generator from MEA’s service. The exchanger will verify the transfer switch operated properly by checking for back-feed voltage at the meter base before making the exchange; if no back-feed voltage is present, the technician will install the new AMI meter. The same sensing device that indicated a loss of power and started the generator should detect that service has been restored, and after a few minutes, turn the generator “off”.

**Will my billing dates change after I get my new meter?**
Members will not see a change in the time of the month that they usually receive their bill.

**Will I still see meter readers in my area occasionally?**
Yes. Routine inspections of all meters and services will continue in order to look for safety hazards, theft, or other problems. Also, MEA will periodically perform random meter reads to ensure the AMI system is functioning as designed.