BRIEFING

Theodore Substation Upgrade 2019

What is a substation?
Substations take power from high voltage transmission lines and lower the voltage level so it can be sent in multiple directions to homes or businesses via smaller distribution lines.

How does a substation work?
A typical MEA substation contains transformers that reduce the voltage, and a ‘bus’ infrastructure and circuit breakers to direct power into the distribution lines. Circuit breakers and switches route power for reliability and redundancy to better serve our members. Each MEA substation must not only meet its own load, but also the load of an adjacent substation. This redundant design serves to restore power rapidly during outages or routine maintenance because power can be re-routed.

Why upgrade an existing substation?
Substations must be upgraded occasionally to meet increased demand from our members and their communities. If the load in one area grows beyond what the substation can safely handle, either a new substation must be built or an existing one upgraded to avoid the risk of expensive equipment failures, outages and reduced reliability of the entire MEA system.

The Bigger Picture
The entire Railbelt grid functions as one system, with generators operating in sync to constantly balance the load needs with the corresponding power produced. Each utility is responsible for operating and maintaining their piece of the system so there are no system-wide vulnerabilities. In addition to making power available to members, substations play a significant role in grid stability. MEA not only has a duty to our members to keep our systems running well, but also to the entire Railbelt.
Theodore Substation Upgrade
MEA is in the process of upgrading Theodore Substation located on the west side of Knik Goose Bay Road near Sunset Avenue. This substation serves the region from KGB Rd. & Foxworth Dr. north to Vine Rd. & Lucille Creek and west along Hollywood Rd. to S. Johnsons Rd.

The increased demand in the area exceeds the current capacity of the substation, particularly during winter months when members use more electricity. As a temporary solution, MEA has been transferring half of our members served by Theodore Substation to neighboring substations. While this works as a short-term solution, it can decrease reliability in this area.

The upgrade will involve removing the current substation and building a new, upgraded substation at the same location. The upgrades will eliminate the need to transfer members to other substations and safely meet the area’s growing electricity needs.

Project Timeline
This upgrade was designed in 2018 and will be constructed during the summer and fall of 2019. MEA anticipates the project will be complete in November 2019. During construction, members in the area will continue to be served by neighboring substations.

Other Considerations
The Department of Transportation’s (DOT) KGB Road Upgrade project is currently in the planning stages. The Theodore Substation upgrade works in conjunction with DOT’s project and will accommodate the road widening.

Project Location
Theodore Substation is located off South Knik Goose Bay Road, just north of West Compass Dr.

Project Manager
For more specific details on Theodore Substation upgrades, please contact Project Manager Will Klatt in MEA’s Engineering Department, william.klatt@mea.coop or 907-761-9304.