

Case Study

- Circuit Owner:** Homer Electric Association (Homer, Alaska, U.S.A.)
Cable: 15 kV, XLPE: 1/0 (53.4 mm²) 4,477 ft (1,365 m)
Problem: There were multiple failures on the loop. During the winter the cables are essentially inaccessible due to the snow and cold weather. A rapid fix was required as winter approached.
Solution: Novinium[®] Ultrinium[™] 732 formulated for colder temperatures.

In 1945, nine forward-thinking citizens of Homer met and began working together to form Alaska's fifth rural electric cooperative. Their first official Rural Electrification Administration (REA) meeting was December 17, 1945, and the system was energized March 13, 1950, making Homer brighter for 56 cooperative members.

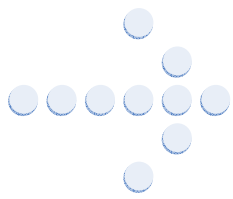
Homer Electric today employs 120 regular, full-time employees filling positions at the Corporate Office in Homer, the Central Peninsula Service Center in Kenai, the Nikiski Cogeneration Plant, and the Bradley Lake Hydroelectric Project. Homer has 20,214 member-owners in a 3,166 square mile service area.

1/0 Cable Project—Due to recurring problems from aging underground 25 kV cable, Homer Electric sought to improve their system by injecting Novinium's Ultrinium 732 formulated for colder temperatures. A successful trial run on two sections of cable in Kenai, Alaska led to the injection of additional cable sections to complete the Kenai project. An 11-segment radial feed was then effectively completed in Kenai with minimal impact to its customers during the 7.5 hour injection time.



God's Country

Beautiful sunsets and long summer days are soon supplanted by dark and cold winter nights. Electric reliability is critical where nature is so unforgiving.



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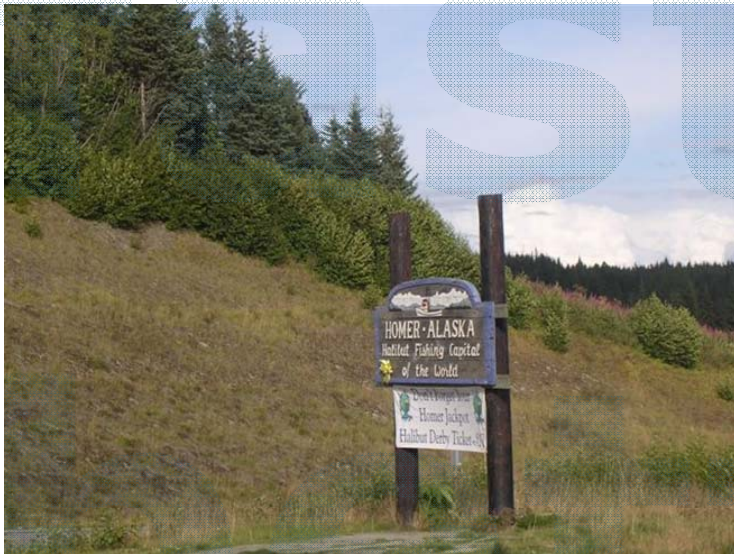
The crew also worked in a subdivision in Anchor Point, Alaska where they completed the injection of nine cable sections. It was planned that cable sections with more than one splice would be marked for replacement. It turned out every section which was not splice-free had multiple splices and will be replaced.

The success of Homer Electric's trial project led to a good working relationship between Homer Electric and Novinium. Kathy Whitmore, Distribution Engineering Services Supervisor stated, "The crews learned the new technology quickly and Novinium was able to test and analyze the cable promptly which all contributed to a smooth process. As a result of the positive experience, Homer will include cable injection as an option for further cable rejuvenation on a much wider basis in 2008."



Holistic Treatment

In the course of rehabilitating circuits is it not uncommon to uncover reliability issues which are a legacy of past construction practices. The cable in the foreground is bent more severely than the manufacturer's specified minimum bending radius. The mechanical stress imposed by this severe bend is a potential failure point. While this bending radius issue was easily observable when the transformer was opened, a time domain reflectometer (TDR) will also find most excessive bending problems, even if they are buried. The Novinium reliability experts correct these kinds of defects when they encounter them, so that the entire system is more robust. Besides correcting these kinds of workmanship issues, Novinium does not leave old components to fail. Novinium has a holistic perspective. This perspective acknowledges that a cable is part of a system and the system will ultimately fail at its weakest link. A rejuvenated cable attached to a compromised component is not a reliable circuit.



Homer is the halibut fishing capital of the world!