

Injections extend cable life

Underground cable is electrically insulated by a dense poly material that surrounds the conductor at the center of the cable. Over time, the insulation begins to break down and develops tiny cracks that retain moisture. The effect is called "treeing", because when a cross-section of the cable is examined under a microscope in the laboratory the cracks in the insulation resemble leafless trees.

If left untreated, the cable will eventually lose its ability to contain the flow of power through the conductor. The resulting fault will de-energize the cable and cause an outage for the customers it serves.

Splicing the cable can repair the immediate area of the fault and allow the restoration of service, but it does not

guarantee that a similar problem won't happen again.

Replacing the cable can fix the problem, but it's costly and intrusive in established neighborhoods. For many cables that have been in the ground for decades, there's another way to address the problem.

A process called "cable injection" provides a cost-effective alternative to replacements. Working from transformer-to-transformer, a crew will install a vacuum device at one end of a section of de-energized cable and a pressurized bottle of silicone-based fluid at the other. Over the course of time ranging from hours to days, the fluid will be slowly drawn through the cable, filling cracks in the insulating material along the way. When the fluid arrives at the end of the

segment, the vacuum bottle is removed and the cable sealed. The pressure bottle is left on for an additional two months to soak the cable and repair the trees. Injections can add decades of life to underground cable.

Chugach plans to do cable injection projects in about two dozen neighborhoods in 2014.

Cable injections are not always possible. Sometimes the cables have other deficiencies or splices that prevent the flow of the fluid. In those cases, a cable replacement is scheduled. Chugach plans cable replacement projects in five neighborhoods in 2014. Chugach uses cable-in-conduit for replacements in the hopes that in the future faulty cable can be drawn out



Cable injections can add years to the life of underground cable without digging up neighborhoods.

of -- and into -- the conduit, preventing the need to dig through neighborhoods.

Relocation near Cheney Lake

Chugach has begun a project to convert about half a mile

of overhead line to buried facilities around the northern end of Cheney Lake Park. Work began in June, and is expected to be completed by the end of October.



An overhead-to-underground conversion project is underway near Cheney Lake.

The neighborhood, like other areas in the northeast part of the Anchorage Bowl, was hit especially hard by the first of three 100-mph-windstorms that struck

in September 2012. Dozens of large cottonwood trees in the park fell onto the power line, leaving some residents without power for days.

The work resulted from an after-storm analysis that identified parts of the Chugach system that would most-benefit from overhead-to-underground conversions. The \$700,000 project is being funded through the 2 percent Municipality of Anchorage undergrounding charge on customer bills. An Anchorage ordinance requires utilities with overhead lines in

Metals theft bill signed into law

Governor Parnell signed metals theft legislation into law on July 8 at a Chamber of Commerce meeting in Soldotna. As in other states, the bill addresses metals theft by targeting the transaction between a seller and a scrap dealer.

Chugach worked with a coalition of contractors, scrap dealers and others to advance the legislation this past session. Chugach, like other utilities and contractors in Alaska and across the nation, has been the victim of metals theft in recent years. Most often thieves have been after copper.

HB 305 has an effective date of Jan. 1, 2015.

What does it cost?

The first step in achieving an energy-efficient home requires understanding where your energy is going.

In order to calculate the energy cost of an electrical device, you must first determine some general information. Most items, such as a motor, heater, appliance or electronic component will have a tag indicating wattage (watts), voltage (volts), horsepower (hp) or amperage (amps). Once you find this information, the rest is simple mathematics. To calculate how much it costs to run a specific item for one hour, just plug the information into the following equations.

$$\text{Cost per hour} = \frac{\text{watts} \times \text{cost per kWh}}{1,000}$$

Example: If the current cost per kWh is \$0.14, how much would it cost to run a 150 watt light fixture for one hour?

$$\text{Cost per hour} = \frac{150 \text{ watts} \times \$0.14}{1,000}$$

It would cost two cents to run the light fixture for one hour or 16 cents for eight hours.

If wattage information for your electrical device is not shown, but the volts and amps are shown, you can use the equation below to calculate the maximum watts used:

$$\text{watts} = \text{volts} \times \text{amps}$$

Example: How many watts

does an electric clothes dryer that runs on 240-volt power and draws 25 amps use?

$$\text{watts} = 240 \text{ volts} \times 25 \text{ amps}$$

It would use 6,000 watts. Once you have calculated the watts you can find the cost per hour using the cost per hour equation.

Motor capacities are sometimes specified using horsepower (hp). In this case you would calculate wattage by multiplying the hp by 746. Once you have calculated the watts you can find the cost per hour using the cost per hour equation.

$$\text{watts} = \text{hp} \times 746$$

Scammers threaten disconnection

One of the scams in use around the country – including in Alaska – is to call people up and threaten that their electric service will be disconnected immediately if a supposed past-due bill isn't paid. The goal of the scammers is to obtain credit card or other financial information. Chugach does not do business this way. Before service is disconnected for non-payment, Chugach follows steps laid out in its tariff. Those steps include advance notification. Chugach also does not take credit card payments directly, but instead refers customers wishing to pay by credit card to a third-party payment service. Customers who receive a call demanding payment to avoid an immediate disconnect should hang up, call Chugach to check the status of their account and report the incident to the police (online reporting is available in Anchorage at muni.org/apd).

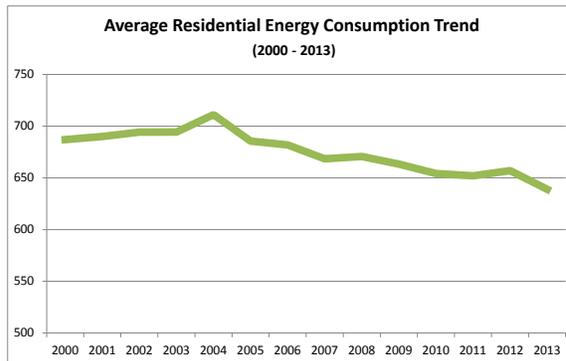
Electricity sales down

Nationwide the demand for electricity fell in four of the five years between 2008 and 2012, according to the Energy Information Administration. Prior to that, annual electric demand had fallen only three times between 1950 and 2007. EIA notes the economic downturn between 2007 and 2009 was responsible for some of the

losses. Efficiency and technology also contributed to the situation.

Chugach has also seen a long-term trend in monthly consumption by residential

customers. Twenty years ago the average Chugach residential customer used 750 kilowatt-hours per month. Ten years ago it was 700 kwh. Today it is about 650 kwh. {1161116}



Cheney Lake (cont'd from page 1)

the MOA to spend up to 2 percent of their retail revenue on overhead-to-underground conversions. For Chugach, the 2-percent charge raises about \$3 million a year.

Chugach coordinates with other utilities attached to its poles in developing its 5-year projection of conversions. An updated plan is filed annually with the MOA and posted on the Chugach website.

The Chugach Outlet

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Corporate Mission: Through superior service, safely provide reliable and competitively priced energy.

Corporate vision: Powering Alaska's future

Personnel policy: It is a policy of Chugach Electric Association, Inc., to recruit, hire, train, compensate and promote persons without regard to race, color, religion, national origin, sex, marital status, pregnancy, parenthood, disability, veterans status, age or any other classification protected by applicable federal, state, or local law. Chugach is also an equal opportunity/affirmative action employer. Current openings are posted on the employment page at <http://chugachelectric.applicationpro.com>. Chugach only accepts applications for open vacancies.



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762-7227
762-7676
811
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or
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Monthly residential service costs (based on 650 kwh)

Customer charge/month	\$ 8.00
Energy charge \$0.09415 x kwh =	\$61.20
Fuel \$0.04920 x kwh =	\$31.98
Purchased power \$0.00520 x kwh =	\$3.38
FIW renewable energy adj. \$0.00163 x kwh =	\$1.06
<small>(Fuel, Purchased power and FIW renewable energy adjustment factors effective July 1, 2014 pending approval from the Regulatory Commission of Alaska)</small>	
Subtotal	105.62
2% MOA Undergrounding Charge =	\$ 2.11
Regulatory Cost Charge \$0.000754 x kwh =	\$ 0.49
Total bill	\$108.22

Member number hide-n-seek

Find your member number (in brackets) in the Outlet and get a \$100 credit on your electric bill. Call Chugach's service center at 563-7366 to claim your prize.