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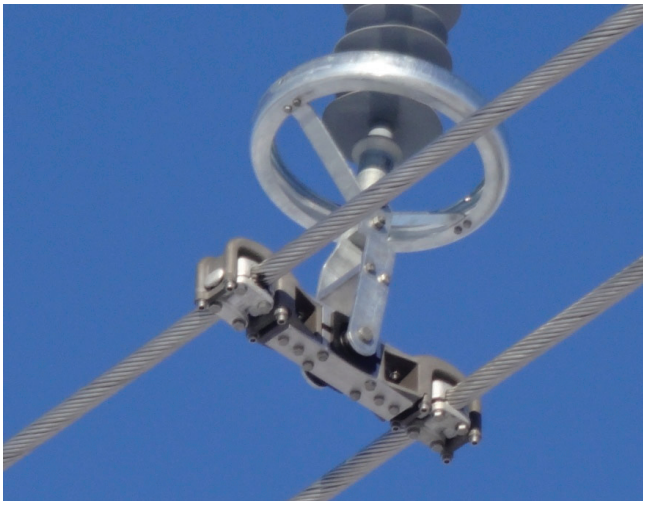
Installation of Interphase Spacers to Control Galloping

Starting in May, construction crews working on the CapX2020 Fargo-St. Cloud transmission line project will begin attaching interphase spacers to the transmission lines to help prevent damage caused by certain weather conditions.

When steady, moderate winds blow over conductor (wire) that is covered by ice, a phenomenon known as galloping may occur. A thin glaze of ice or a solid cover of several inches, can give the conductor a slightly out-of-round, airfoil shape. When the wind is blowing over this irregular shape it results in an aerodynamic lift which causes the conductor to move up and down in a wave-like action (galloping).

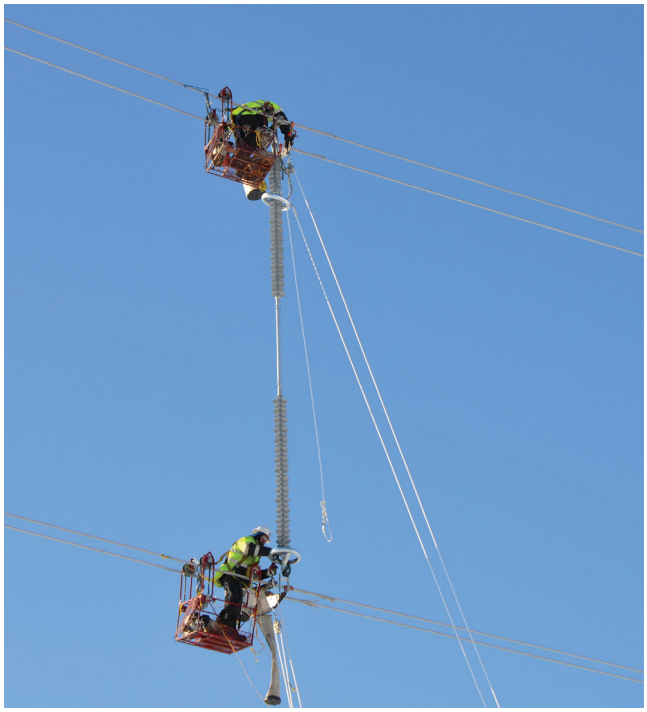
Galloping can stress transmission line components and lead to outages.

The interphase spacers are 25 foot rigid insulated struts that are attached vertically to two phases of conductor. The interphase spacers will help control excessive movement of transmission lines. There will be four spacers placed between structures on approximately 75 miles of the line between St. Cloud and Fargo.



The spacer attaches to the conductor on both ends.

Installation methods involve using cranes and bucket trucks in the transmission line right-of-way, and may involve using helicopters and crews working from buggies attached to the conductor. Work is expected to take place between May and October 2014.



Workers use buggies attached to conductor to install the interphase spacers. The devices weigh nearly 200 pounds and are 25 feet long.

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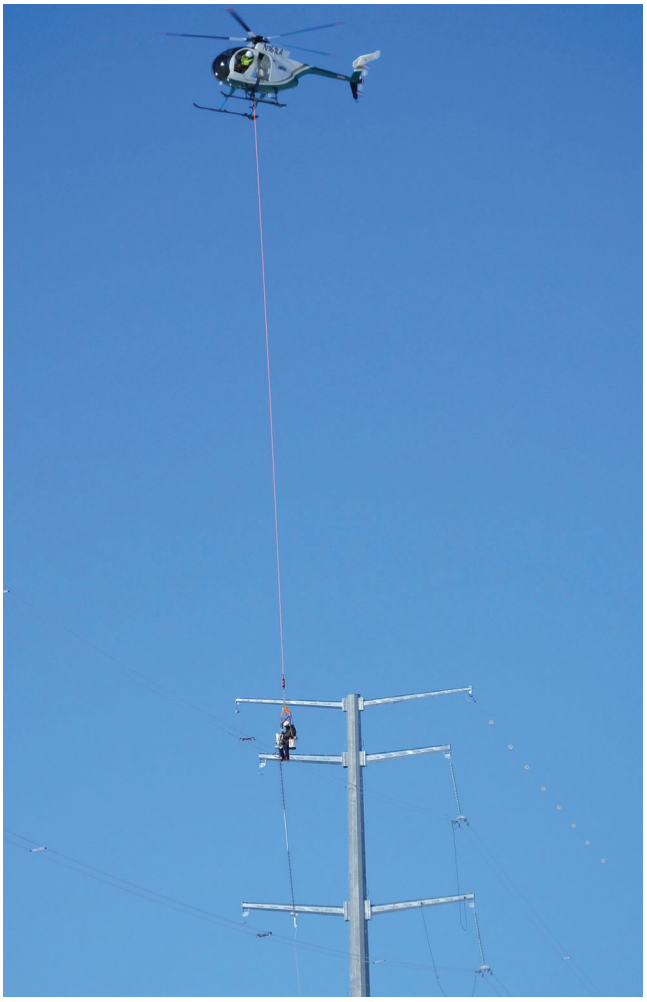
Landowners impacted by crop loss or damage by construction will be compensated. For questions concerning the installation of the interphase spacers please contact Art Dost (651-415-6615) or Tim Splettstaszer (701-541-0283).



Occasionally a helicopter will be used to install interphase spacers to minimize ground impact.