

Napakiak RPSU Project #01059-350288

Closeout Summary

Background:

Napakiak is on the north bank of the Kuskokwim River, 15 miles southwest of Bethel. It is located on an island between the Kuskokwim River and Johnson's Slough. It lies 407 miles west of Anchorage. The community lies at approximately 60.696670° North Latitude and -161.951940° West Longitude. (Sec. 17, T007N, R072W, Seward Meridian.) Napakiak is located in the Bethel Recording District. The area encompasses 4.7 sq. miles of land and 0.3 sq. miles of water. Napakiak is influenced by storms in the Bering Sea and also by inland continental weather. Average annual precipitation is 16 inches, with 50 inches of snowfall. Summer high temperatures average 59 to 62 °F, and winter highs average 11 to 19 °F. Extremes from 86 to -46 °F have been recorded. The Kuskokwim River is typically ice-free from June through October.

The Napakiak project consists of three separate components: a new 3-phase electric tieline to provide power from Bethel to Napakiak; a upgraded distribution system within the community of Napakiak; and a new standby power generation module. Project #01059-350288 funded the standby powerhouse and the distribution systems within the community.

The Napakiak Intertie is a 10.5 mile medium voltage line between Napakiak and Bethel. The intertie project comprises a full replacement to include pile foundation supported poles, three-phase line, new transformers, and related equipment. The distribution within the community was upgraded and along with the installation of a new a standby power module. The standby module will automatically disconnect from the intertie and provide power to the community if the power from Bethel goes down. Once the intertie is restored, the standby module will automatically disconnect the standby powerhouse and reconnect the intertie to supply power the community.

Activities:

The Grantee was Napakiak Ircinraq Power Company (NIPC), which owns and operates the electric utility. Alaska Energy & Engineering was the design team. Construction of the powerline intertie started January 2009 and was substantially completed in April 2009. The new standby power module and the upgrade to the distribution system were completed by October 2009. The community has beneficial use of the intertie from Bethel, the standby power module and the upgraded distribution system.

Project Cost:

The Project was funded with grants from the Denali Commission, the United States Department of Agriculture - Rural Utility System and funding from the State of Alaska.

Project Outcomes:

The new intertie, the community distribution system and the standby power module is safe, reliable and meets current regulatory requirements.

Problems Encountered:

A major environmental concern was preventing damage to the tundra. The contractor could only begin work once the tundra was frozen and had to be off the tundra when it began to thaw. Remote isolated conditions, equipment malfunctions and weather were formidable obstacles the contractor successfully overcame resulting in a successful project.

Conclusions and Recommendation

The conveyance of the intertie from th
is in process.

Project Photographs:



Community Distribution Upgrade



Standby Power Switching Equipment



New Transformers