

DENALI COMMISSION

Grantee: Alaska Power & Telephone Company
Project Name Prince of Wales Upgrade Grant
Project Number 0073-DC-2002-126

Grant Project Completion Report

Background:

Alaska Power Company had consolidated the electric utility on Prince of Wales Island in an effort to reduce the cost of power while improving its reliability. To further enhance reliability while keeping power cost down, APC requested funding under a 2001 Solicitation of Interest. The scope of work called for upgrading existing electric distribution systems and utilities to comply with the National Electrical Safety Code (NESC), provide for safety, and enable utilities to increase the life expectancy of the facilities. Project work is outlined as follows.

Klawock required replacing of deteriorated and undersized poles, correcting NESC violations, removing abandoned TV Cable, installing raptor protection along Harbor View Drive, implementing OCP scheme, re-rout distribution on Anchorage Avenue to resolve conflict with new Public Safety Building, and extending 3-phase power to three unserved areas of the community.

Kasaan required replacing non-compliant parts of the URD system, insulating the power plant building, mapping existing URD system and automating the switchgear.

Thorne Bay required replacing 3-dry base substation transformers with one properly sized oil-filled unit, rebuilding non-compliant substation, replacing 480V feeder breakers with 4.16KV OCR's, replacing 480V overhead distribution system, correcting NESC violations and removing abandoned TV cable.

Activities:

AP&T was the general contractor on the project, securing the necessary permits, providing engineering design and constructing the project with their own work force and seasonal labor. Work began in 2002 with the removal of the abandoned cable TV in Klawock and Thorne Bay. The deteriorated poles in Klawock were replaced during 2002 and 2003. The relocation of the lines on Anchorage Avenue was completed in 2005. The substation transformers in Thorne Bay were replaced in 2005 and the complete rebuild was finished the fall of 2006. Materials for the replacement of the URD system in Kasaan were purchased in 2006.

Project Cost:

Denali Grant	\$600,000
Alaska Power & Telephone	\$27,702
Total Project Budget	<u>\$627,702</u>
Labor Costs	\$249,904
Direct Materials	\$183,177
Other Materials	\$22,392
Vehicle Costs	\$75,564
General & Admin Costs	\$96,665
Total Project Cost	<u>\$627,702</u>

Project Outcomes:

All of the outlined goals were achieved resulting in significantly improved reliability and safety for the residents of these communities. There were numerous UG 480 volt services leaving the Thorne Bay Plant that had been installed by the previous owners Ketchikan Pulp Company (KPC). These were replaced utilizing the existing overhead system that was constructed from the Black Bear Lake Hydro facility.

The deteriorated poles in Klawock were replaced with design considerations for Raptor Protection being implemented as well. The Kasaan plant was insulated and placed in stand-by condition and the materials for repairing the URD system were acquired. The existing URD system was located and maps of the system created.

Problems Encountered:

Increased delivery times and material costs impacted the completion of this project. There were a couple of right-of-way issues with local residents in Klawock that had to be resolved before we could relocate the Anchorage Avenue lines.

Conclusions and Recommendations:

The replacement of these deteriorating electrical distribution lines and poles has increased the safety and reliability of providing power to the communities of Klawock, Thorne Bay, and Kasaan. The existing substation transformers in Thorne Bay were inadequate to handle to future load growth in the community. The investment in upgrading these facilities will extend their useful life and help to control future maintenance costs.