

Pelican Hydroelectric Upgrade Project

Grantees	City of Pelican (Local Government)
Technology Type	HYDRO
Region	Southeast
AEDG Project Code	10325

REF Grants Received

Round	App	Grant Title	Grant #	AEA Project #	Phase	Start Date	End Date	Status
4	688	Pelican Hydroelectric Upgrade Project	7040040	407076	Construction	7/1/11	12/31/14	Closed

Grant 7040040: Pelican Hydroelectric Upgrade Project

Project Scope: The City of Pelican proposes completing construction of a 650 kW run-of-river hydro project. Its completion will fully implement a six-year energy infrastructure upgrade project within the community of Pelican. Design and construction has been supported by the Denali Commission through an AEA-managed rural power system upgrade project. Other energy-related projects completed recently in Pelican by AEA include a bulk fuel plant and a new diesel powerhouse. The hydro project is a rebuild of the 1940's era hydro project that supplied a fish processing facility and the community. With current activity on the site continuing using federal funds, the project is now approximately 65% complete. It is scheduled for startup in 2012.

The first phase of the hydroelectric project consisted of replacement of a new dam wing wall and intake structure, renovation and rebuild of the 2 turbine/generators (a 550 kW Barber turbine/Kato generator and a 100 kW Cornell turbine/generator) and site work for the replacement penstock.

Among the items to be completed within this scope include: (1) replacement of a failed wooden flume and penstock with a new HDPE penstock, (2) install a new surge tank, (3) provide instrumentation and controls to upgrade hydro powerhouse for improved efficiency and reliability, (4) provide station power for the intake area, (5) provide communications between diesel plant and hydro powerhouse and (6) provide for excess hydropower to be used for space heating via a dispatchable electric boiler. The construction will continue to use a combination of force account and contracted services under the supervision of a construction manager.

AEA has provided management assistance for the recently completed City of Pelican Bulk Fuel project, the RPSU project and the first phase of the hydroelectric upgrade project. The City of Pelican has requested AEA to continue to provide management assistance through completion of the hydroelectric project.

Project Status: Final construction activities are nearing completion for this AEA managed project. It is anticipated the final work will be completed in summer 2014.

The Pelican hydro project was started up in March 2013 and has provided virtually all power required by the City. The only exceptions were a few short-term outages and the operation of the diesels required for ensuring reliability. It is currently being optimized.

Since the hydro came on-line, AEA has refined the operation of the electric boiler at the school to optimize frequency control and reduce fuel consumption at the City. This process still requires some final programming of the dispatchable boiler controls, which is expected to be completed this winter. Additionally, we are installing pipe clamp sleeves on the penstock. The most significant remaining work is to address erosion at the penstock caused by unanticipated artesian springs in the hillside above the penstock. These became most evident in a recent storm event which dumped 5 inches of rain on Pelican in 24 hours.

As of Nov. 30, 2013	Budget	Expenditures
Renewable Energy Funding	\$1,893,253.19	\$1,893,253.19
Other State Funding	\$19,871.15	\$19,871.15
Total State	\$1,913,124.34	\$1,913,124.34
Required Local Match	\$0.00	\$0.00
Federal Grant Funding	\$0.00	\$0.00
Total Project Costs	\$1,913,124.34	\$1,913,124.34