

OLD HARBOR BULK FUEL STORAGE PROJECT FINAL REPORT

I. PROJECT DESCRIPTION

A. Location & Population

This project is located in OLD HARBOR, Alaska, a 2nd class city community of 196 persons. Old Harbor is located on the southeast coast of Kodiak Island, approximately 70 miles southwest of Kodiak. It is accessible by air via a State owned 2,750 foot gravel airstrip, and scheduled air service is available to and from Kodiak. The village is also accessible by floatplane and water transport means. The local economy depends on the commercial fishing and tourism industry and has a large boat harbor facility.

B. Project Participants

The participants for this facility upgrade were:

- Alaska Village Electric Cooperative
- City of Old Harbor
- Kodiak Island Borough School District

II. PROJECT JUSTIFICATION & HISTORY:

A. Facility evaluations in Old Harbor was first conducted by Alaska Energy Authority (AEA) in the late 1990's and subsequently by Alaska Energy and Engineering, Inc. (AE&E) under a commission by AEA to develop a Conceptual Design Report for a co-located bulk fuel storage facility for a number of community participants who had a need for storage of bulk fuel(s). Included participants were the City of Old Harbor, AVEC, Old Harbor Village Council, Old Harbor Fuel Company and the Kodiak Island Borough School District (KIBSD).

B. The study revealed code violations of the retail facility for 1) improper secondary containment, 2) improper site location, 3) no security fences, 4) improper tank foundations, 5) improper piping and valves, and 6) dispensing from above-ground tanks without protective systems. Those deficiencies posed such a significant threat to public safety that fuel delivery had been denied, causing significant hardship to the community. A major project was required to replace the existing facility with a city owned, code and regulation compliant fuel farm to meet the long term needs of the community.

- C. The project participants were 1) the City of Old Harbor, 2) AVEC, and 3) Kodiak Borough School District. The school district will share storage space with the City, while Old Harbor Village Council and Old Harbor Fuel Company no longer participate in fuel supply. AVEC's site is separate from the City site, arranged by a mutual land swap between parties.

III. PROJECT DESCRIPTION AND COMPONENTS

This project consisted of several components. 1) new fuel storage tanks for the City, 2) refurbish of AVEC's existing storage tanks, 2) a new marine header and filling system at dock with separate pipelines for diesel and gasoline, 3) new secondary containment structures, 4) new manifold piping, and 5) new fencing security lighting and access boardwalks. The 2 new tanks are horizontal, supported on wood timber sleepers on a gravel pad foundation, each with 27,000 gallon capacity. The City's existing 12,000 gal tank will be relocated and re-used, as will the AVEC tanks. The new storage facility is fenced and lighted for security purposes.

Component	Quantity	Description	Notes
AVEC Tank Farm	3 ea	Exist-10,300 gal horizontal tanks	relocated
	1 ea	Exist- 9,000 gal horizontal tank	relocated
City Tank Farm	2 ea.	New horizontal 27,000 gal tanks	1 dual product
	1 ea	Exist – 12,000 horizontal tank	relocated
Marine Header	3500 l.f.	One gasoline and one diesel pipeline each	At city dock
Fencing	440 l.f.	6' high Chain-Link	

The ownership and maintenance of each new fuel storage facility is the responsibility of AVEC and the City of Old Harbor respectively.

IV. PROJECT DEVELOPMENT APPROACH & TIMELINE SNAPSHOT

- A. Funding: This facility upgrade project was funded with a grant by the Denali Commission. AVEC provided a cash match as shown in the table in section VA. The Denali grant is defined in table below:

Funding Document	Component	Date
0023-DC-2001-15	Base	March 6, 2001

B. Design: The design was performed by the consulting firm of Alaska Energy and Engineering (AE&E) of Anchorage, AK. They were retained in July 2000 by AEA to develop a Conceptual Design Report (CDR) for the new co-located fuel farms. Following the partnering agreement with Denali Commission and because Old Harbor was an existing customer for AVEC, the project was assigned to AVEC and funded by the Denali Commission. Based on recommendations presented from the CDR, the design development for the facility was commissioned in March 2001 following the grant funding award from the Denali Commission. Milestones associated with the Design of the project are provided in table following.

Design Phase	Milestone	Date
Business Plan	Accepted by Denali Comm.	September 19, 2001
CDR	Presented to AEA	October 9, 2000
Final Design & Const Docs	Construction Documents	June 8, 2001

C. Construction: AE&E was also contracted to perform procurement and construction administration tasks for the construction phase for the pipeline. Procurement of fuel tanks and construction materials commenced concurrently with the design development tasks to enable timely material arrival by barge. The site preparation, gravel pad and containment dikes commenced while materials were in transit to the village. All of the labor to perform the construction tasks was hired locally, except the job foreman and certified welders for which there were no qualified local residents. Milestones associated with the Construction of the project are provided in table following.

Construction Phase	Milestone	Date
Pre-construction	Tank Procurement Complete	Feb. 27, 2001
	Barge Delivery Complete	Apr 25, 2001
Construction	Site Prep; tanks, piping; testing	May 1, 2001 (start)
	Substantial Completion Cert.	Sept 10, 2001
Turnover & Commission	AVEC Acceptance	Oct 15, 2001

Project Time - Design:

Start: July 15, 2000 (CDR Notice to Proceed)

Complete: June 8, 2001 (Construction Drawings)

Total Project Design Time: 328 cal days (11 mo.)

Project Time - Construct:

Start: May. 1, 2001

Complete: Sept 10, 2001

Total Project Construct Time: 132 cal days (4.4 mo.)

Total Project Time - Design & Construct: (Actual – not elapsed)

Start: July 15, 2000 (CDR Notice to Proceed)

Complete: Dec 30, 2001 (Closeout)

Total Actual Project Time: 533 cal days (1.5 yr.)

V. PROJECT FUNDING, DEVELOPMENT COSTS, AND UNITS

A. Funding

Funding was provided by Denali Commission grants in a lump sum amount, with no designation for allocations to project development components (i.e. design, construction). Initial grant funding and AVEC cash match are shown in the following table:

OLD HARBOR					
Date	Denali Funding Award	Denali	AVEC	Other	Total
March 6, 2001	0023-DC-2001-15 Base	\$1,250,000	\$50,000	\$0	\$1,300,000
		\$1,250,000	\$50,000	\$0	\$1,300,000
		96.2%	3.8%	0.0%	

B. Project Cost Summary Analysis:

The project **costs underran the initial funding** by \$152,304 (11.7%) as appropriated to this project. Thus, the final adjustment based on the under-run is:

	DENALI	AVEC	OTHER	TOTAL
FINAL COST ALLOCATION TO FUNDING	\$1,047,696	\$50,000	\$0	\$1,097,696

c. Final Unit Costs & Percentages

It is useful to compare unit costs and percentages of cost against the total project cost for like components of like projects. The following table illustrates some salient unit prices and percentages.

COMPLETED AMOUNTS		Const Cost	Project Cost	Gal Storage	
		\$1,006,610	\$1,097,696	48,700	
COMPLETED PERCENTS AND UNIT COSTS					
OLD HARBOR		Item Cost	%	%	\$/Gal
Business Plan		5,400	NA	NA	NA
Design					
	CDR	3,500	0.5%	0.3%	NA
	Design Dev	29,496	2.9%	2.7%	NA
DESIGN TOTAL		\$32,996	3.3%	3.0%	
Construction					
	Field Direct Costs	824,543	81.9%	75.1%	NA
	AVEC Direct Costs	6,149	0.6%	0.6%	NA
	Const Admin	175,918	17.5%	16.0%	NA
CONSTRUCTION TOTAL		\$1,006,610	100.0%	91.7%	
Program Management					
	AVEC & Consultants	\$52,690	5.2%	4.8%	NA
PROG MGMT TOTAL		\$52,690	5.2%	4.8%	
GRAND TOTALS		\$1,097,696		(new storage)	\$22.54
				(new + old storage)	\$10.37
AVEC Storage Capacity		39,900	% Const Cost	% Project	\$/Gal Storage
AVEC Cash Match		50,000	4.2%	3.8%	\$ 1.06
Denali Commission Cost Benchmark					
Completed Project (\$/gal)					\$22.54
Variance (fm median-\$/gal)					\$9.54
% Variance (under)					73%
COST/GAL OF OPERATIONS & MAINTENANCE SURCHARGE					\$ 0.51

VI. Local Hire & Training

a. Local Hire

A major objective of AVEC, its Construction Management Contractor, and the Denali Commission is to utilize local residents in the execution of the project development to the maximum extent possible. Old Harbor accomplished this goal well in all of the three categories: 1) Persons Hired; 2) Local Economy Payroll; and 3) Percentage of total Work Hours.

Differentiation	Employees		Payroll \$\$		Work Hours	
	Number	%	Payroll \$\$	%	Hours	%
Total	23	100%	\$305,140	100%	12,578	100%
Local	17	74%	\$163,923	54%	8,376	67%
Non-Local	6	26%	\$141,217	46%	4,202	33%

b. Job Training

A second objective of AVEC, its Construction Management Contractor, and the Denali Commission is to train local residents of the community in job skills that can be utilized on the Denali project and later in other locations. For this project, there was some on the job training for welders' helper, equipment operators and laborers, but no formal program because of the short duration.

Village	Project Type	Training			Resulting Const Jobs
		No.	Trades	Location	
OLD HARBOR	Bulk Fuel Storage	0			0
NO FORMAL TRAINING OJT FOR WELDING, EQUIPT OPS, LABORERS					