



NOME JOINT UTILITY SYSTEM

a component unit of **CITY OF NOME**

P.O. Box 70 • Nome, Alaska 99762 • (907) 443-NJUS • Fax (907) 443-6336

NEW POWER GENERATION FACILITY

**PLANNING AND CONSTRUCTION ACTIVITY
AS OF 12/31/2004**

PHOTOGRAPHS



Aerial view of Nome, Alaska during winter – frozen Bering Sea



Existing power plant is located on the bank of the Snake River adjacent to Nome Airport





A new site was selected and purchased from the Alaska Department of Transportation & Public Facilities. The new facility will be located outside the Airport Runway Protection Zone (RPZ), away from the Snake River, and is elevated to prevent flooding.

Locating in this area will allow continued use of existing bulk fuel storage facilities and power distribution feeders, as well as connection to the community water distribution system. Other facilities in the area can utilize generated waste heat.



(approximate new site location boundaries indicated in red)



Engineering Team Project Design Meetings



Electric Power Systems (EPS) was selected to serve as the principal engineering firm responsible for electrical design and project coordination.

Other engineering firms involved in the project include:

- **Hattenburg, Dilley & Linnell, Inc. (geotechnical)**
- **LCMF, Inc. (architectural, structural and mechanical)**
- **Travis/Peterson Environmental Consulting, Inc. (environmental)**
- **HMH Consulting (air permitting)**



Regular meetings with Alaska Department of Environmental Conservation personnel in Juneau were necessary to develop and finalize an Air Quality Construction Permit



In determining engines to equip the new plant, the Utility Board Vice Chairman, Power Plant Chief Mechanic and Utility's Chief Operating Officer consulted with operations and maintenance personnel at Cominco's Red Dog Mine on reliability, operations and maintenance history with similar equipment.



The Utility Board held regular work sessions with design engineers throughout the development of the project plans.



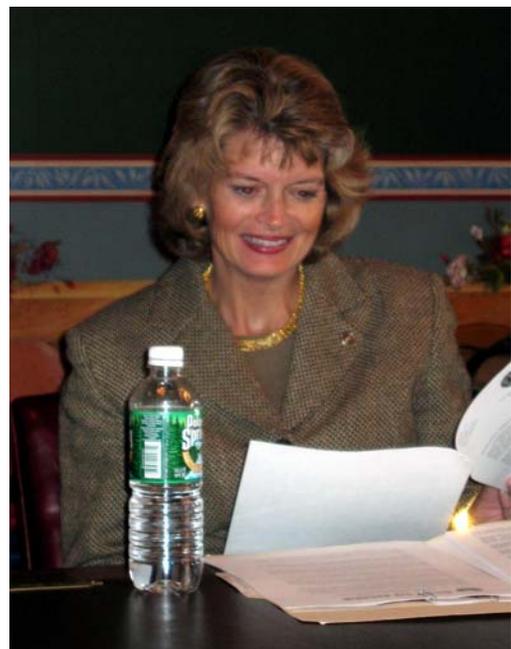
(L) Mayor Denise Michels reviews plans at a public hearing on the project

(R) Jeff Staser of the Denali Commission meets with Nome officials stressing “sustainability” of Projects.





Utility Board Chairman Berda Willson and NJUS Manager John Handeland presented the community's #1 capital priority to the Alaska Congressional Delegation. Senators Stevens and Murkowski are briefed on project progress and funding.





USDA Rural Utilities Administrator Hilda Gay Legg and Alaska State Director Bill Allen present Mayor Denise Michels and Utility Board Chairman Berda Willson a check representing award of a national competitive grant to Nome as a high energy cost community.

FUNDING SYNOPSIS
As of 1/14/05

Estimated Cost: \$ 19,500,000

Funding to date:

US Dept. of Energy

Diesel Efficiency			
Initial Grant	\$2,000,000		
AIDEA/AEA Administration Fee	<u>(39,840)</u>	\$	1,960,160

Denali Commission

Initial Grant	4,000,000		
AIDEA/AEA Administration Fee	<u>(160,000)</u>		3,840,000

US Dept. of Agriculture

High Energy Cost Community			
Application - \$5,000,000			
Initial Grant			2,500,000

US Environmental Protection Agency

Brownfields Restoration			
Initial Grant - up to			193,692

Alaska Dept. of Community & Economic Development

Community Development Block Grant			
Initial Grant			<u>350,000</u>
			8,843,852

City of Nome

Authorized Utility Revenue Bond			<u>3,000,000</u>
---------------------------------	--	--	------------------

Total Funding - In Hand

<u>11,843,852</u>	
	7,656,148

Additional Funding Requests (pending):

Senator Stevens	5,000,000		
- authorized by USS Committee Conference Report			
US Dept. of Agriculture - High Energy Cost Community	<u>2,500,000</u>		
- pending NOFA to submit application			<u>7,500,000</u>
Additional City of Nome/NJUS Capital Contribution requirement			156,148

01/14/05



Site work begins:

- **Excavation of petroleum contaminated soils present on site from prior industrial use; funded 50/50 by EPA Brownfields Grant and local match (above)**
- **Core sampling to determine soils/geotechnical characteristics (L)**



Site being filled to elevation above flood plain.

Local equipment and contractors and NJUS force account construction labor were utilized.





Soils were densified by dynamic compaction to insure stability of the facility's foundation.

A 35-ton weight is dropped repeatedly to compact the soils.

Children on a home school field trip were fascinated by the "moon craters" created in the process.





When acquired from the State of Alaska, the site contained a World War II vintage building.

The structure was previously used by ADOT/PF for airport equipment storage. It had been condemned and vacated by the State, but remained on the property.

NJUS hired a local contractor to demolish the structure and level the site.



Over 140 piling, 20" in diameter, were drilled into bedrock to support the facility.

An Alaskan contractor from Anchorage performed the installation.



In addition to construction inspectors and visits from the general public, a local Muskox dropped by to inspect the piling materials and their installation.







Completing the piling installation



After completing piling, site was readied for installation of under-slab electrical conduit.



Conduit was installed to run electrical cabling to connect generators, switch gear and controls.



A fire in the existing power plant caused considerable damage.

An October 2004 storm threatened the plant by flooding; a protective dike was constructed.





The existing Power Plant on the bank of the Snake River.





Located within the Nome Airport Runway Protection Zone (RPZ) and on the bank of the Snake River, the existing 40+ year-old plant has exhausted its useful life.

A newer section of the existing plant will remain in warm-start readiness as ancillary backup to the new facility.