



# Denali Commission Policy

## Energy Project Design Capacity

Issued April 26, 2002

### I. Objective

To establish Denali Commission guidelines for the determination of the design capacity for a power plant or bulk fuel plant project.

### II. Policy

- A. The design capacity for power plant or bulk fuel projects shall be based on the projected village power and fuel storage requirements for not less than five nor more than ten years. The design capacity for power plant projects must provide sufficient firm capacity to ensure reliable power with acceptable fuel efficiency. The minimum firm generation capacity is that required to carry the system's peak loads after the loss of the single largest generating unit in the power plant.
- B. Where feasible, the design layout should allow space for future expansion of capacity to meet the anticipated requirements for at least twenty years.
- C. The rate of change of population increase or decrease over the past ten years and population projections by village leaders, state agencies and others shall be taken into consideration.
- D. Historical power production and consumption data shall be taken into consideration, including the most recent data of the Power Cost Equalization Program and the rate of change over time.
- E. Designers shall distinguish between useable capacity and shell capacity in their design documents for bulk fuel projects. Typically, bulk tank useable capacity is 90% of shell capacity and dispensing tank useable capacity is 85% of shell capacity.
- F. Where fuel delivery is by barge, thirteen months of storage capacity is recommended, depending on local conditions and freight logistics. Where fuel delivery is by air, two to three months of storage capacity is recommended, depending on local conditions and freight logistics. If the design includes both barge and airport headers, village input and anticipated fuel costs shall be included in the determination of tank farm capacity.
- G. Designers shall take into account seasonal variations in fuel consumption.
- H. Infrastructure development projects may impact storage capacity requirements by increasing fuel and electric energy consumption. Designers shall investigate current and anticipated projects by interviewing village leaders,

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reviewing the Department of Community and Economic Development Grants Database, and contacting other agencies such as Village Safe Water, Alaska Energy Authority, Alaska Native Tribal Health Consortium, Department of Transportation and Public Facilities, the local school district, etc. Where an adopted comprehensive community development plan exists, that plan shall be taken into account in forecasting the design capacity of facilities.

- I. Project managers and/or designers are to explain the disadvantages of excess power plant generating capacity or tank farm storage capacity to participants, such as decreased fuel efficiency with oversized generators; accelerated corrosion in unused tanks; and increased costs for capital renewal and replacement, insurance, operations and maintenance. These additional costs must be factored into the business plan cost tables and will result in a per-kWh or per-gallon cost increase for project participants.

### **III. Implementation**

Each Financial Assistance Award recipient is responsible for implementing this policy. Controversial capacity issues may be referred to the Denali Commission Energy Program Manager for resolution.