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SENATE COMMITTEE REPORT
FIRST COMMITTEE OF REFERRAL

DATE: 3/8/91

FURTHER: Finance

Date of 5-Day Notice: 4-4-91
(in accordance with Uniform Rule 23)

DATE TURNED INTO OFFICE: _____

L&C Committee considered SB 181

Making appropriations for design and construction of a transmission intertie between Glennallen and Delta and for other electrical projects; efd.

and recommended:

- replace with _____ CS _____ same title
- attached amendment(s) new title
- _____ letter of intent adopted

- do pass
- do not pass
- no recommendation
- individual recommendations
- further referral to _____

ATTACHES NEW FISCAL NOTE(S):

Department(s)/Date:

Department(s)/Date:

fiscal note(s) _____

zero fiscal note(s) _____

appropriation-no fiscal note

Governor's bill w/fiscal note

SIGNING DO PASS:

OTHER RECOMMENDATIONS:

Wilson do not pass
Rick Halford NO REC

[Signature]
Chair: Signature and Recommendation



Alaska State Legislature

SENATOR DICK SHULTZ

P.O. Box V
Juneau, Alaska 99811
(907) 465-4940
Home: P.O. Box 487
Tok, Alaska 99780

Member
Finance Committee
Transportation Committee
Special Committee on Oil & Gas

Senate
District J

District 17

- ALCAN BORDER
- ANDERSON
- BIG DELTA
- BOUNDARY
- CANTWELL
- CHICKEN
- CHISTOCHINA
- CLEAR
- COPPER CENTER
- DELTA JUNCTION
- DENALI PARK
- DOT LAKE
- DRY CREEK
- EAGLE
- EAGLE VILLAGE
- GAKONA
- GLENALLEN
- GULKANA
- HEALY
- HEALY LAKE
- KENNY LAKE
- MENDELINA
- MENTASTA LAKE
- NABESNA
- NELCHINA
- NENANA
- NORTHWAY
- PAXSON
- SLANA
- TANACROSS
- TAZLINA
- TETLIN
- TOK
- TOLSONA
- TONSINA

MEMORANDUM

TO : COMMITTEES OF REFERRAL

FROM : SENATOR DICK SHULTZ *DS*

DATE : APRIL 6, 1991

RE : SENATE BILL 180 AND 181

Senate Bill 180 is in conformity with the statutory requirement for legislative authorization for a power project with a cost in excess of \$3 million.

Senate Bill 181 makes appropriations to various powerline and line extension projects.

Section 1 appropriates \$70 million to AEA for design and construction of the northern portion of the Northeast Intertie and would run from Glenallen to Jarvis Creek near North Pole, Alaska.

This would be a 138 kv line, the same as the line capacity currently available at North Pole. This line would allow excess seasonal power from Solomon Gulch to be used throughout the Copper Valley Basin and continue to help supply load requirements to Fairbanks. Along the route, the line will eliminate the need for diesel fired generation for Copper Valley Electric customers and save 1 million gallons of diesel fuel annually, enable central station service to Paxson, Summit, Alyeska Pump Station 10 and the Black Rapids Training Facility. Looped service could save Fort Greely 3 million gallons of diesel fuel per year. Additionally, it would serve to

District 18

- BADGER ROAD
- EIELSON/MOOSE CREEK
- NEWBY
- NORTH POLE
- PLACK
- RICHARDSON
- SALCHA

reduce rates for consumers of electrical power in an area that currently is paying the highest unsubsidized rates for power in the state. This line would have far reaching benefits in balancing differences in load demand and price for electricity currently experienced in this region.

Section 2 appropriates \$370,000 for the Tetlin Electrical system.

(photos enclosed)

Section 3 appropriates \$250,000 for Sheep Mountain Electrification.

Section 4 appropriates \$1,500,000 for electrification at the Lake Louise area off of the Glenn Highway.

Section 5 appropriation for Chistochina can be deleted, this item is no longer needed.

Section 6 appropriates \$2,633,296. for electrical extension form Ester to Little Goldstream.

Section 7 appropriates \$2,215,325. for Cantwell to McKinley village line extension. This area lives adjacent to the present Anchorage to Fairbanks Intertie, yet cannot get access to power. Although this item has been in most every budget document since 1983, prior administrations have either to reduced or vetoed it, while the population in the area has increased as well as tourist industry activities to prove both a public need as well as commercial justification.

Section 8 appropriates \$123,350 for a line extension from Kobe to Ferry and the Rock Creek subdivision, (see back up materials).

Section 9 appropriates \$200,000 for the Eielson Agricultural area extension, Phase 2.

Section 10 appropriates \$2 million for the Delta II agricultural line extension. Several of the larger agricultural parcels have been divided into smaller farm units and access to power is very important.

Section 11 concerns the appropriations lapse process.

Section 12 states that section 1 appropriation takes effect only after legislative authorization of SB 180.

These energy projects have been important needs for a great number of people and businesses of the State of Alaska for many years now. Legitimate energy projects should be funded by the state to balance energy

accessability and make a wise investment in developing infrastructure.

It is time to fund legitimate energy projects for the people of the state to assist in the present need and prepare fur future development.

Thank you for your consideration.

TIE-LINE FACT SHEET

CVEA MEMBERS - CVEA serves 2,717 consumers from eastern Mat-Su to Valdez who pay the highest regulated utility unsubsidized electrical rates in the State of Alaska.

RATES - 1990 average residential rate in Valdez was 16.7 cents per kwh. 1990 average residential rate in Copper Basin is 20.1 cents per kwh. CVEA does not participate in Power Cost Equalization (PCE). Current first quarter 1991 rates increased (through Cost of Power Adjustment) due to fuel costs; the Valdez average residential rate is 19.2 cents per kwh, and the Copper Basin average residential rate is 22.8 cents per kwh.

POWER SUPPLY - 80% comes from Solomon Gulch Hydro; the balance is oil fired. The estimated cost to maintain the diesel plants is \$1.5 million in addition to fuel costs.

PROPOSED SOLUTION TO RATE HIKES - Build the northern leg of the Northeast Intertie (the Glennallen-Delta section), which is 146 miles long. The estimated construction costs are \$68 million in 1989 dollars. Revised estimates for construction in 1995 are being prepared. The first step to doing this is acquiring legislative funding.

BENEFITS - The Tie-line would provide economic development opportunities to the region by reducing rates as much as 3-5 cents per kwh. Completion of the Tie-line would eliminate the need for diesel fired generation and save over 1,000,000 gallons of diesel per year. The Tie-line could allow CVEA to sell an additional 25,000,000 kilowatt hours during the spill months. CVEA would receive some benefit. The State would receive \$1 million in increased debt service payments. The Tie-line would enable Valdez Fisheries Development Association unlimited water use for operation and enhancement of existing hatchery. The Tie-line would enable central station service to Paxson, Summit, Alyeska Pump Station 10, and Black Rapids Training Facility. In addition, looped service could save Ft. Greely 3,000,000 gallons of diesel fuel per year for power now generated there. The Tie-line would create a market for 20,000,000 kwh for Railbelt energy to be sold (Bradley Lake) along the Tie-line and in the CVEA service area.

REALITY - This will not happen overnight, however, it has long term benefits. The completion of the Tie-line would take 3-5 years from the start of preliminary design through energization of the line.

CONSEQUENCES - Without a Tie-line, the average CVEA rate is expected to exceed 30 cents per kwh within 15 years, not including present diesel fuel price fluctuations.

COPPER VALLEY ELECTRIC ASSOCIATION

TIE-LINE FACT SHEET

Copper Valley Electric Association (CVEA) members pay the highest electrical rates in the State of Alaska.

Average Valdez residential rate is 17.5 cents per kwh. Average Copper River Basin residential rate is 20.6 cents per kwh. CVEA does not participate in Power Cost Equalization (PCE).

CVEA serves 2,700 consumers located in eastern Mat-Su Borough, Copper River Basin, and Valdez.

Approximately 80% of CVEA generation is supplied from the Solomon Gulch Hydro, the balance is with oil fired internal combustion engines.

The Glennallen-Delta section of the Northeast Intertie is 146 miles long. Estimated construction costs are \$68 million.

Completion of the Tie-line would eliminate the need for diesel fired generation and save 1,000,000 gallons of diesel per year.

Without a Tie-line the average CVEA rate is expected to exceed 30¢ per kwh within 15 years not including present diesel fuel price fluctuations.

The completion of the Tie-line would take 3-5 years from start of preliminary design through energization of the line.

The Tie-line could allow CVEA to sell an additional 25,000,000 kilowatt hours during the spill months.

The Tie-line would enable Valdez Fisheries Development Association unlimited water use for operation and enhancement of existing hatchery.

The Tie-line would enable central station service to Paxson, Alyeska Pump Station 10, and Black Rapids Training Facility.

The Tie-line would provide economic development opportunities to the region by reducing rates as much as 3-5 cents per kwh.

The Tie-line would create a market for 20,000,000 kwh hours for Railbelt energy to be sold (Bradley Lake).

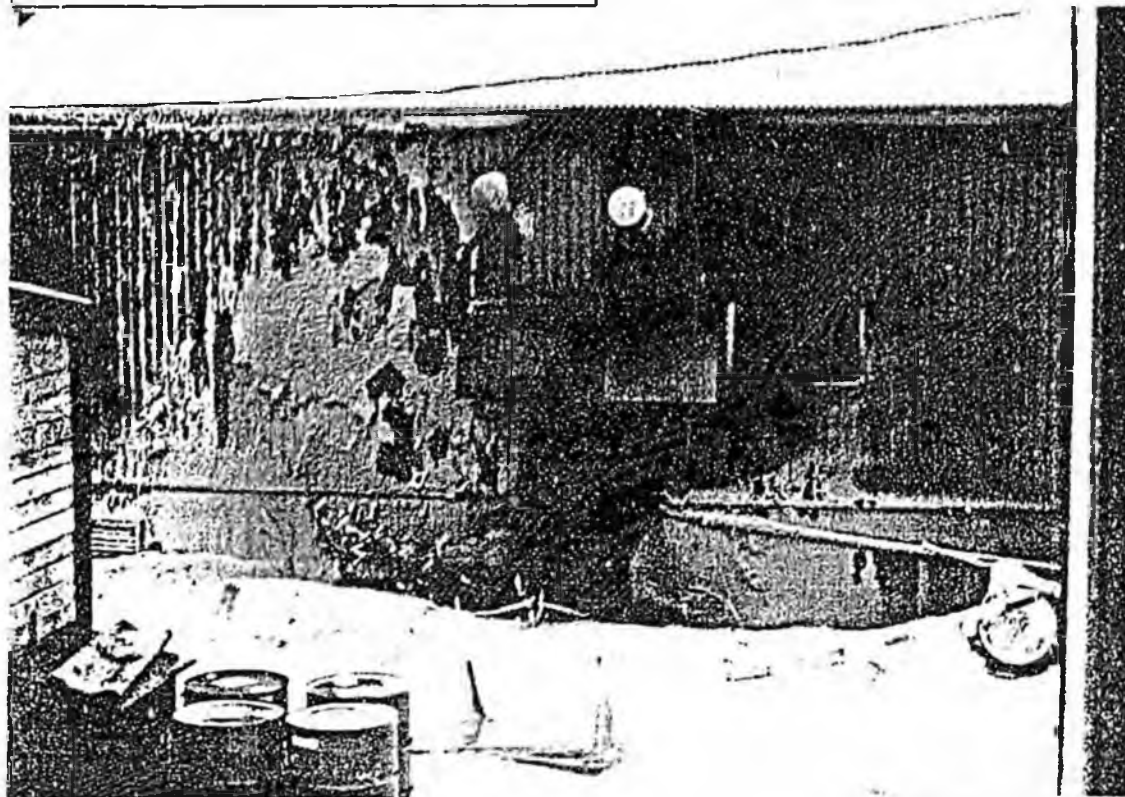
● TRANSMISSION PLANS

- 1. 138 KV
- 2. 115 KV
- 3. 69 KV
- 4. 33 KV
- 5. 15 KV
- 6. 10 KV
- 7. 5 KV
- 8. 3 KV
- 9. 1.5 KV
- 10. 0.75 KV
- 11. 0.4 KV
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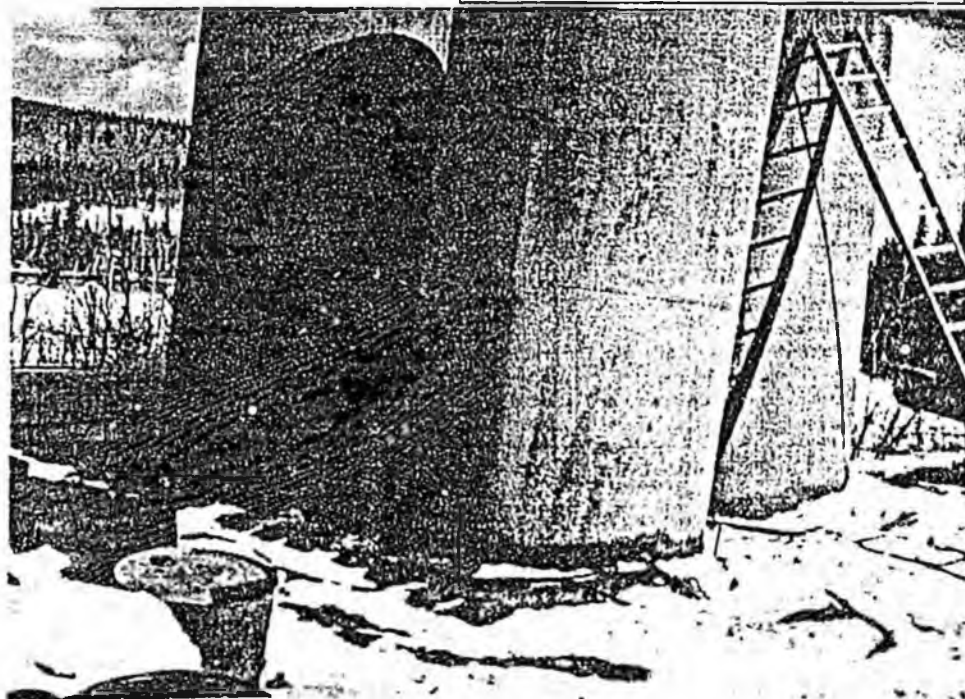
TETLIN

Powerhouse and Fuel Tanks

- 1.) Improper exhaust system.
- 2.) Oil soaked floor.
- 3.) Fuel soaked floor.
- 4.) Located next to school.



- 1.) Unstable foundation.
- 2.) No dikes.
- 3.) Leaning tanks.



**STATE OF ALASKA
ALASKA STATE LEGISLATURE**

**SENATE
LABOR AND COMMERCE COMMITTEE**

Testimony by:

*R.D. (Doug) Bursey
General Manager
Copper Valley Electric Association, Inc.*

Senate Bills 180 and 181

April 8, 1991

Senate Bills 180 and 181 Labor and Commerce Committee

Testimony by: R.D. (Doug) Bursey
 General Manager
 Copper Valley Electric Association, Inc.

Thank you for the opportunity to provide testimony in support of Senate Bills 180 and 181. My name is Doug Bursey. I am the General Manager of Copper Valley Electric Association, Inc., with corporate offices in Valdez and Glennallen.

Copper Valley Electric Association, Inc. (CVEA) provides service to approximately 9,000 people in the Copper Basin and Valdez areas. The Valdez system is a compact urban area. The Copper Basin area is a quite sparsely settled rural area. The residential electrical rate for Valdez is 19.2 cents per kwh, and the Copper Basin cost is 22.6 cents per kwh.

CVEA was a participant in the old Power Cost Assistance (PCA) program; however, CVEA has not participated in the Power Cost Equalization (PCE) program, even though CVEA's rates are the highest for any Alaska Public Utilities Commission (APUC) regulated utility (after PCE adjustment) in the State of Alaska. CVEA does participate in the Four Dam Pool through Solomon Gulch.

Solomon Gulch is under-utilized in the summer months, which allows water to spill. If it were utilized, it could double the summer output. The Solomon Lake storage area is rather small; and accordingly, CVEA's generation strategy is to maximize this limited resource. This strategy requires tandem operations of Solomon Gulch along with CVEA owned diesel generation facilities for approximately six months each year.

Therein lies part of the cause for CVEA's high rates. CVEA generates 80% (eighty percent) of its needs from hydro, but has to maintain staff and operate sufficient oil fired generation to carry all of its electrical generation throughout the year. This major cost could be avoided if CVEA were interconnected to another source through a tie-line.

Unless a portion of the Northeast Intertie tie-line is built, CVEA will have to replace aged generation machines, which will cause the existing high rates to go even higher.

Economic feasibility assessment of the CVEA system shows that, as the rates increase, end use has been reduced, which, of course, is normal. However, with rates in the twenty cent (20¢) range and expected to go higher, one has to look at the quality of life. We also looked at economic development opportunities, and we have found very little to encourage economic growth. We, therefore, began to look at what we could do to reduce, not raise, the rates.

CVEA has looked at a variety of options, such as merger with other utilities, separation of operating units (ie: Valdez and Copper Basin as separate utilities), remote control of generation, debt defeasance, and most recently, the completion of an Integrated resource plan for CVEA by Stone and Webster Consultants in cooperation with the Alaska Department of Community and Regional Affairs. Please see Exhibit A for further analysis of these alternatives.

Northeast Intertie

The Alaska Energy Authority (AEA) included CVEA in the economic feasibility studies performed on various transmission lines by Decision Focus Incorporated and Powers Engineering, with completion in June 1989. One of the transmission routes studied was called the Northeast Intertie. While none of the transmission lines had a perfect benefit to cost ratio, the Northeast Intertie had a very good showing, and with minor changes, would become a valuable part of Alaska's infrastructure at a beneficial cost to Alaska, and would have a very definite positive effect on the Copper Valley system.

The Northeast Intertie has a number of significant benefits including reducing CVEA's members' rates, providing service to new consumers along the Richardson Highway, raising money for the State, providing insurance against natural disasters (icing, wind, and snow), and eliminating burning millions of gallons of diesel fuel.

The Northeast Intertie would also be a major part of load transfer and would provide alternate service needs for Fairbanks. This is supported by the North American Electric Reliability Council Study (NERC) 1990 Draft Final Report.

CVEA proposes that the tie-line be constructed in two phases. Phase one, from Delta to Glennallen, would tie the State owned Solomon Gulch line at the Alyeska Station 11 to the Golden Valley Electric Association (GVEA) system at Jarvis Creek, a substation near Delta. GVEA supports this effort (see Exhibit B, map). Phase Two would connect Glennallen and Palmer.

By constructing the line in two phases, it is possible to stage construction and spread out the boom cycle over a longer period of time. In addition, financial requirements are spread over a longer period of time, easing the financial drain in any one year.

Glennallen-Delta Leg (Phase One)

Phase One needs to be built within two years. The specific advantages of the northern leg are as follows:

- * CVEA's present cost for oil fired generation is approximately twenty nine cents (29¢) per kwh, as compared to power from GVEA at Jarvis Creek at approximately four (4¢) or five (5¢) cents. If CVEA were interconnected, approximately 22,000,000 diesel fired kwh's could be displaced at a direct cost savings of approximately \$2,500,000 annually. This savings would yield a rate reduction for CVEA consumers of three (3¢) to five (5¢) cents per kwh.
- * CVEA consumers have lower energy costs, the ability to participate in economic sales of electricity, and future stability of rates and power.
- * State of Alaska would realize a reduction in operating costs of \$200,000 to \$400,000 per year for electricity costs to State offices and school districts.
- * More area of the State is opened up to economic development, along with central station service being provided to Paxson, Summit, Black Rapids Military Installation, and Alyeska Pump Station 10.
- * It may also be possible to avoid burning approximately 3,000,000 gallons of fuel oil at Fort Greely, 7,000,000 gallons of fuel oil at Pump Station 10, and it certainly would be possible to save a minimum of 1,000,000 gallons of fuel out of the Glennallen diesel plant. 11,000,000 annual savings of fuel oil could translate to at least \$8,000,000 in annual savings, to say nothing of environmental air quality benefits.
- * State of Alaska has additional income of \$750,000 or more each year the Solomon Gulch project operates for sales of spilled energy. Historical data suggests that 24,000,000 to 33,000,000 kwh of additional generation is possible from this resource if all the spill water were used to generate electrical power. This would be in addition to the \$1.5 million already returned annually by CVEA consumers through debt service payments to the Four Dam Pool (see Exhibit C, Spill Energy).
- * Yukon Pacific Gas Pipeline Station service is possible from this line as the tie-line and gas line would be in the same utility corridor.

Glennallen-Palmer Leg (Phase Two)

Phase Two of the intertie, from Glennallen to Palmer, needs to be built within five years.

When this leg is completed, a much greater benefit accrues in that Fairbanks utilities will have two sources to draw from, thus providing more stability. A different weather area exists on the Northeast Intertie route, which would reduce the impact of icing, windstorm,

or avalanche on the line along the Parks Highway, thus improving electrical service. This also provides for 145 MW of load transfer capability, as compared to the existing 70 MW along the Parks Highway route.

Phase two will provide to the Railbelt utilities, especially the Fairbanks utilities, several additional benefits associated with an integrated system.

* High-Cost Power Displacement

An improved transmission system would allow energy produced at low cost in one area to displace high cost generation produced in another area. This economy interchange between Anchorage and Fairbanks is limited by the capacity of the existing fully loaded transmission line.

* System Reliability

Improvement to the transmission system can reduce the number and extent of power outages, especially between Anchorage and Fairbanks, which will reduce outages that have occurred due to the intertie along the Parks Highway.

* System Efficiency

Power transfers between Anchorage and Fairbanks presently suffer losses exceeding ten percent. A second line will lower losses and reduce end user replacement costs.

* Reserve Sharing

With an improved, reliable transmission system in place, electric utilities could reduce the amount of costly reserve capacity they maintain. They could rely instead on reserves available elsewhere in the interconnected system.

Long Term Industry Benefits

* Flexibility for New Generation

Should the Usibelli power plant be completed, or other generation be proposed in the area, two lines will allow more flexibility, both in siting as well as sizing.

* Access to Bradley Power

An improved transmission system would ensure that all Railbelt electric utilities have freer and more direct access to the full peaking output of Bradley power, resulting in equal distribution of benefits from the project for all Railbelt communities.

* Utility Coordination

Strengthening the transmission system in the Railbelt would afford electric utilities increased opportunity to better coordinate their planning and operations.

* Fuel Supply

Improvements to the Railbelt transmission system would provide electric utilities with full access to a variety of energy sources, enhancing competition among fuels and fuel suppliers, and would reduce the dependence on oil prices.

Benefits to Alaskans

* Improved Environment

While Alaska has not had the "brown cloud" due to burning fossil fuels, it is possible to measure deterioration in air quality. The reduction of 11 million gallons of diesel fuel is a responsible start to control air quality.

* Infrastructure

The electrical systems in Alaska will be improved; and when the Northeast Intertie is completed, Fairbanks will greatly benefit.

It would provide power for construction camps and perhaps operating power for the new gas pipeline proposed by Yukon Pacific Pipeline Company.

It would provide reasonable electrical power for orderly economic development in a greater portion of the State.

* Energy Conservation

The ability to better utilize Solomon Gulch will make more energy available from a renewable resource.

It will make coordination of resources and least cost planning of resource use a must.

It will better utilize Bradley Power.

* Economic

Sales of surplus power from Solomon Gulch brings \$750,000 annually to the State.

Reduced operating costs net \$339,000 for the State annually in 1990 dollars.

Through rate reductions, \$2,500,000 is put back in the hands of the residents of the Copper Basin and Valdez annually.

In summary, there are many compelling reasons to build the Northeast Intertie, to include creation of economic development, Bradley Lake marketing opportunities, generation of additional Four Dam Pool revenues, increased reliability and transfer capability of the Railbelt energy grid, and rate relief for Interior and Gulf Coast communities.

Given the State's energy policy to best serve all Alaskans, CVEA feels the Northeast Intertie makes the best sense as an investment.

We urge your support for Senate Bills 180 and 181.

LIST OF EXHIBITS

- | | |
|-----------|-----------------------------------|
| Exhibit A | Rate Reduction Alternatives |
| Exhibit B | Central Alaska Transmission Lines |
| Exhibit C | Spill Energy |
| Exhibit D | State of Alaska Cost Savings |
| Exhibit E | Fuel Price Fluctuations |

EXHIBIT A RATE REDUCTION ALTERNATIVES

CVEA has looked at a variety of options, such as merger with other utilities, separation of operating units (ie: Valdez and Copper Basin as separate utilities), remote control of generation, debt defeasance, and Integrated Resource Planning.

The Alaska Energy Authority (AEA), agency owners of the Solomon Gulch Hydroelectric Project, and CVEA are exploring additional capacity at Solomon Gulch. Limited alternatives are available, such as an inflatable dam. This alternative will produce up to three million kwh's. This is an insufficient amount to affect long term alternatives.

Merger

The most articulated merger plan was with Golden Valley Electric Association (GVEA). Merger would reduce operating costs by combining certain identifiable expenses. While savings were possible, the merger was deemed impractical due to lack of an electrical intertie.

Separate Units

The City of Valdez and CVEA commissioned a study to explore alternatives. While some political goals were possible, the actual cost of operation more than likely would increase, not reduce, the cost of operation.

Debt Defeasance

Debt defeasance is CVEA's ability to pay off REA debt ahead of schedule, and at this point, it doesn't appear that this would help CVEA. The basic financial reasons debt defeasance is not attractive is because CVEA would have to obtain new financing to generate the cash to pay off the REA debt. For every dollar paid off of 4.3% debt, CVEA would finance 44 cents of 10% debt. In addition, CVEA would use up cash and reduce interest income by around \$270,000 at present rates. The net result of defeasance from a financial point is that it would cost consumers .4 of one cent.

Integrated Resource Planning

Least Cost Model:

CVEA has participated with a State of Alaska grant in the Electric Power Research Institute (EPRI) Electric Generation Expansion Analysis System (EGEAS) model. The work was performed by Stone and Webster Engineering Corporation at their Denver office. This independent study looked at needs of CVEA and consumers for a twenty (20) year period.

Supply Side:

Many power supply alternatives were available for CVEA to consider over the study period. The applicable power supply alternatives included conventional technologies - diesel, gas, and hydroelectric; nonconventional and renewable sources - inflatable dams, batteries; and others such as generating unit life extensions, deferred retirements and implementing System Control and Data Acquisition (SCADA) systems for remote generation.

In assessing the supply-side options, CVEA looked at the options feasible for a small utility company, including life extension of their existing diesel generation, adding more storage at the existing Solomon Gulch hydroelectric plant, new diesel generation, the Allison Lake hydroelectric project, and adding SCADA facilities to reduce operation and maintenance expenses.

CVEA's generation system and load profile were modeled for a benchmark year (1989) so that the generation system dispatch could be refined as much as possible. System data were collected and purchased power transactions from the Solomon Gulch project were modeled. These inputs all involve production costing information for existing units.

The data was checked and adjusted so that the calibrated model correctly represented the historical generation patterns of the CVEA system. This was accomplished by modeling each unit's net heat rate, forced outage rates, fuel costs, maintenance schedule, and purchase power schedules for the utility system. The dispatch recognized unit and plant, maximum and minimum loads, and rate of load changes. It was also necessary to obtain detailed load data for the period specified. EGEAS uses a probabilistic production costing algorithm to determine the generation by individual units and the associated costs. The production costs were derived and adjustments were made to the input parameters to match the model costs to the historical costs and correct dispatching procedures.

After the benchmark analysis was completed, the system was dispatched on the EGEAS model for the 20-year planning horizon (1991-2009) with a 20-year extension period. The base year used in the study was 1990. All costs are in 1990 dollars unless otherwise specified.

Demand Side:

The EGEAS program has an Alaska base average of 789 kwh, which tends to show more savings than perhaps are possible due to the fact that the Valdez average use per consumer is 550 kwh, and the Copper Basin average is 371 kwh. Implementation of the plan will necessitate small adjustments.

Demand Side Management (DSM) is defined by EPRI as follows:

The planning and implementation of those utility activities designed to influence customer use of electricity in ways that will produce desired changes in the utility's load shape - ie., changes in the pattern and magnitude of a utility's load.

This definition includes programs such as load management, new uses for electricity, strategic conservation, electrification and adjustments in market share. In order for an activity to be included under this definition of DSM, it must result from direct intervention on the part of the utility. Thus, customers deciding on their own to install high efficiency lighting would not fall under DSM, while a utility sponsored information or incentive program designed to accomplish this same goal would.

It is also important to note that DSM encompasses much more than conservation and load management. Therefore, demand-side management alternatives warrant consideration by all types of electric utilities, regardless of their current capacity and peak load situation.

XENERGY, Inc. assisted Stone & Webster to assess the DSM potential for the commercial and residential customers of CVEA. XENERGY worked with CVEA to conduct a survey of the commercial customers to determine end-use energy by building type, and to identify the appropriate high efficiency DSM replacement technologies. For the residential sector, end-use estimates and analyses performed by other Alaska utilities, national appliance sales data and federal appliance efficiency standards served as the primary data sources. CVEA did not have the staff resources to conduct a residential survey at this time. From industry studies and work for other utility clients, XENERGY calculated the projected savings and costs for each selected technology.

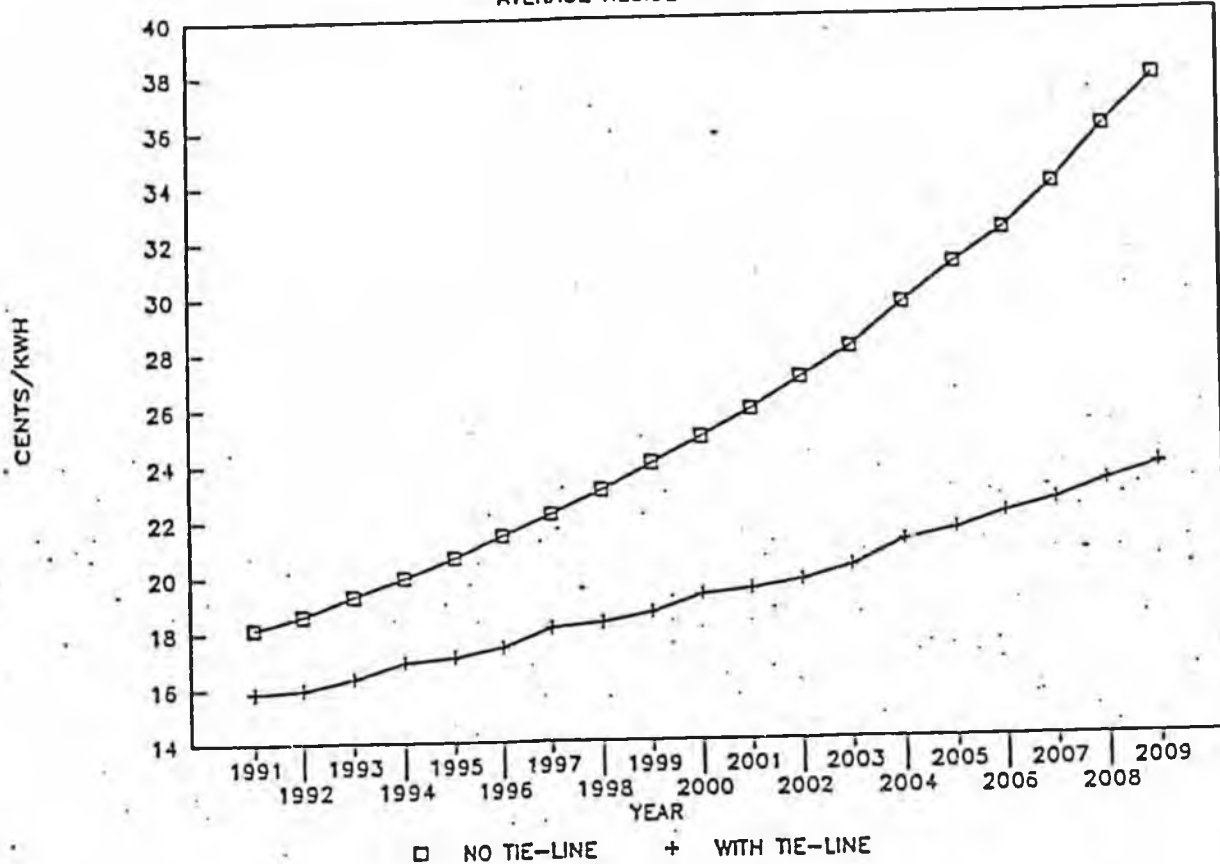
An example of benefits identified is a change in the Valdez street lights from mercury vapor to sodium vapor which resulted in an expense of \$60,000 but a savings of approximately \$2,000 per month to the City of Valdez. The City has already implemented this savings program, which will result in the street lights being upgraded with a payout in two and one-half years.

It is not intended that this information show a complete study; rather, it is intended to support information contained in the following graph.

A complete copy of the Least Cost Plan is available from CVEA.

CVEA RATE PROJECTIONS

AVERAGE RESIDENTIAL RATE



<u>Year</u>	<u>Rate w/Tie</u>	<u>Rate w/o Tie</u>	<u>Year</u>	<u>Rate w/Tie</u>	<u>Rate w/o Tie</u>
1991	16	18.2	2001	19.4	25.8
1992	16	18.6	2002	19.7	26.9
1993	16.3	19.3	2003	20.2	28
1994	16.9	19.9	2004	21.1	29.6
1995	17	20.7	2005	21.5	31
1996	17.4	21.4	2006	22.1	32.2
1997	18	22.6	2007	22.5	33.8
1998	18.3	23	2008	23.1	35.9
1999	18.6	23.9	2009	23.7	37.6
2000	19.2	24.9			

EXHIBIT B

COMMUNITIES

GENERATION PLANTS

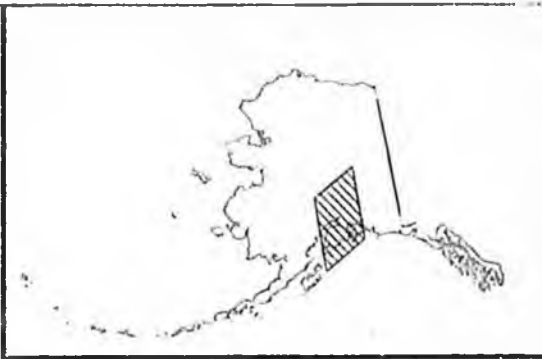
- 1 BOLSON POWER
- 2 BROWN CREEK POWER
- 3 BROWN CREEK #2
- 4 BROWN CREEK #3
- 5 BROWN CREEK #4
- 6 BROWN CREEK #5
- 7 BROWN CREEK #6
- 8 BROWN CREEK #7
- 9 BROWN CREEK #8
- 10 BROWN CREEK #9
- 11 BROWN CREEK #10
- 12 BROWN CREEK #11

SUBSTATIONS

- 13 ANCHORAGE POWER
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- 109 ANCHORAGE #97
- 110 ANCHORAGE #98
- 111 ANCHORAGE #99
- 112 ANCHORAGE #100

TRANSMISSION LINES

LINE NO.	VOLTAGE	STATUS
1	138 KV	EXISTING
2	138 KV	EXISTING
3	138 KV	EXISTING
4	138 KV	EXISTING
5	138 KV	EXISTING
6	138 KV	EXISTING
7	138 KV	EXISTING
8	138 KV	EXISTING
9	138 KV	EXISTING
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PROPOSED DELTA TO GLENNALLEN TIE LINE

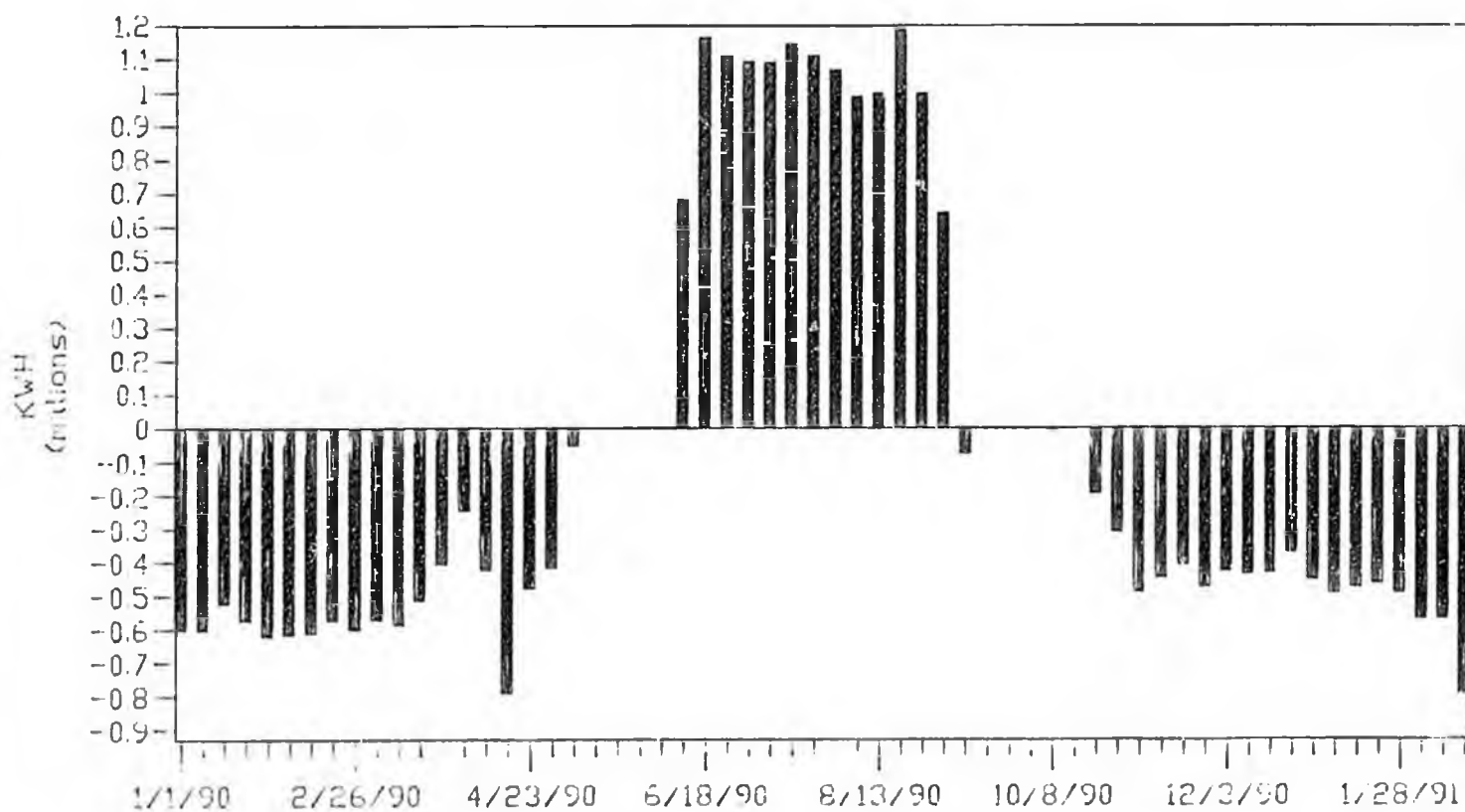
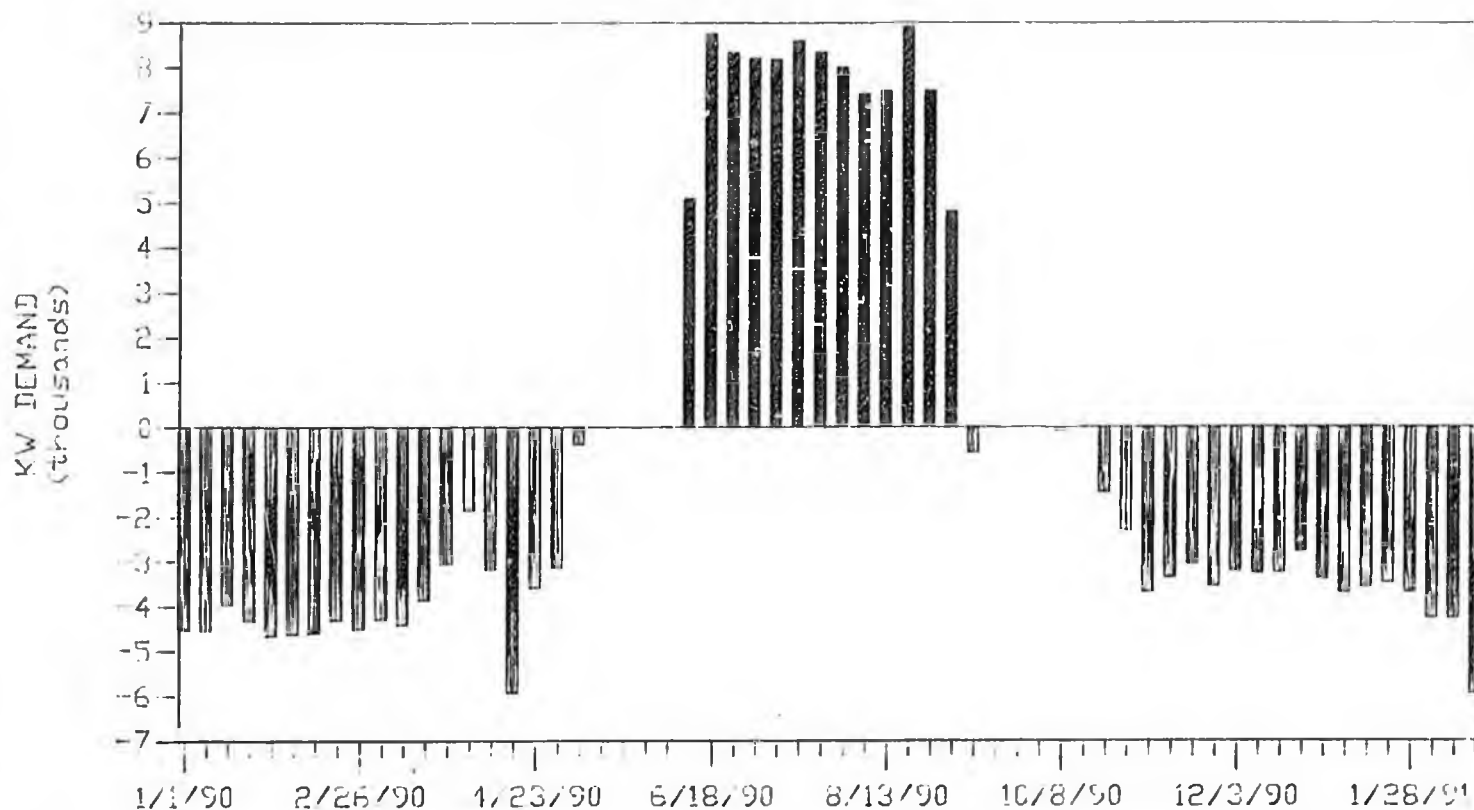
PROPOSED GLENNALLEN TO O'NEILL TIE LINE

CENTRAL ALASKA ALASKA TRANSMISSION LINES

COPPER VALLEY ELECTRIC ASSOCIATION, INC.

POSITIVE IS SPILL ENERGY, NEGATIVE IS DIESEL GENERATION

EXHIBIT C



25 MILLION KWH'S OF SPILL ENERGY IS LOST TO SCLOMAN GULCH EACH YEAR
2 MILLION GALLONS OF DIESEL FUEL IS REQUIRED TO GENERATE MAKEUP ENERGY

EXHIBIT D STATE OF ALASKA COST SAVINGS

An example of benefits possible when the tie-line is connected is that a five cent per kwh drop in price reduces the cost of operating state buildings, including schools in Valdez and the Copper Basin by \$339,000 in 1990 dollars.

*Annual savings to State of Alaska and school districts
from 5 cent rate reduction in 1990 dollars:
\$339,000*

*Present value of \$339,000 for 30 years at 8% interest:
\$3,816,389*

*Invest \$339,000 for 30 years at 0% interest:
\$10,170,000*

*Invest \$339,000 for 30 years at 8% interest:
\$38,403,009*

*Invest \$339,000 for 30 years at 8% interest plus 2% inflation:
\$55,763,474*

	89/90 Average KWH Sales	Savings on Average KWH's					
		<u>\$0.01</u>	<u>\$0.02</u>	<u>\$0.03</u>	<u>\$0.04</u>	<u>\$0.05</u>	<u>\$0.06</u>
State of Alaska - Glennallen	1,078,619	10,786	21,572	32,359	43,145	53,931	64,717
State of Alaska - Valdez	2,429,529	24,295	48,591	72,886	97,181	121,476	145,772
Copper River School District	892,726	8,927	17,855	26,782	35,709	44,636	53,564
Valdez City Schools	<u>2,394,947</u>	<u>23,949</u>	<u>47,899</u>	<u>71,848</u>	<u>95,798</u>	<u>119,747</u>	<u>143,697</u>
Totals	6,795,820	67,958	135,916	203,875	271,883	339,791	407,749

EXHIBIT E FUEL PRICE FLUCTUATIONS

CVEA's members are significantly impacted by the price of fuel since diesel generation provides approximately 20% of the total system requirements. Prices in January 1991 escalated to \$1.15 per gallon. If that price were sustained through the winter, CVEA consumers would pay an additional \$690,000 above current rates, and the cost to the consumers for those diesel generated kwh's would increase by 3.5¢.

ANNUAL REQUIREMENT IN GALLONS (FY92)

1,643,000 GALLONS

	PRICE PER GALLON	FUEL COST	FUEL COSTS OVER BASELINE	INCREASED COSTS FOR DIESEL KWH'S
BASELINE	\$0.730	\$1,199,390	\$0	\$0.000
	0.750	1,232,250	32,860	0.000
	0.775	1,273,325	73,935	0.003
	0.800	1,314,400	115,010	0.005
	0.825	1,355,475	156,085	0.007
	0.850	1,396,550	197,160	0.009
	0.875	1,437,625	238,235	0.011
CURRENT	0.900	1,478,700	279,310	0.013
	0.925	1,519,775	320,385	0.015
	0.950	1,560,850	361,460	0.018
	0.975	1,601,925	402,535	0.020
	1.000	1,643,000	443,610	0.022
	1.025	1,684,075	484,685	0.024
	1.050	1,725,150	525,760	0.026
	1.075	1,766,225	566,835	0.028
	1.100	1,807,300	607,910	0.030
	1.125	1,848,375	648,985	0.032
HIGH LAST 12 MONTHS	1.150	1,889,450	690,060	0.035
	1.175	1,930,525	731,135	0.037
	1.200	1,971,600	772,210	0.039
	1.225	2,012,675	813,285	0.041
	1.250	2,053,750	854,360	0.043
	1.275	2,094,825	895,435	0.045
	1.300	2,135,900	936,510	0.047
	1.325	2,176,975	977,585	0.050
	1.350	2,218,050	1,018,660	0.052
	1.375	2,259,125	1,059,735	0.054
	1.400	2,300,200	1,100,810	0.056



GOLDEN VALLEY ELECTRIC ASSOCIATION INC. Box 71249, Fairbanks, Alaska 99707-1249, Phone 907-452-1151

March 28, 1991

RECEIVED

APR 1 1991

COPPER VALLEY
ELECTRIC ASSOC.

Mr. Doug Bursey
Copper Valley Electric Association
P. O. Box 45
Glennallen AK 99588

Dear Doug,

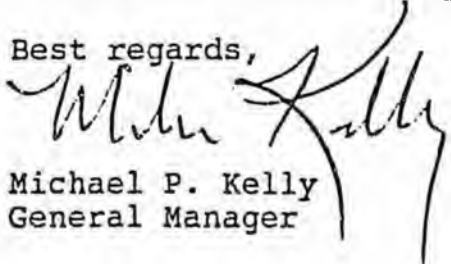
You asked me to re-state GVEA's position relative to the Northeast Intertie, particularly the Delta - Glennallen portion.

I feel that Representative Kubina echoed GVEA's position eloquently when he testified in front of the House Labor and Commerce Committee on March 26, 1991. He said that he supports state funding of the Northeast intertie, but he understands that the railbelt energy reserve fund is earmarked for construction of the Anchorage - Soldotna and Healy - Fairbanks interties. He does not want his legislation to jeopardize construction of these transmission lines, but wants the legislature to recognize the need to intertie the Copper Basin with the Railbelt grid.

GVEA feels the same. We want relief for CVEA's consumers. They pay the highest rates in the state. We also want \$125 million appropriated for construction of the Anchorage - Soldotna and Healy - Fairbanks lines during the '91 season.

I hope this letter adequately addresses your request.

Best regards,


Michael P. Kelly
General Manager



GOLDEN VALLEY ELECTRIC ASSOCIATION INC. Box 1249, Fairbanks, Alaska 99707-1249, Phone 907-452-1151

October 4, 1988

Estimated Costs in 1989 Dollars

To Service the following Sites

Cantwell to McKinley Village

Total cost of the powerline extension	\$2,215,325.00
Miles of line including taps	23 miles
Number of customers	_____

Mercers Corner on the Parks Hwy to Ferry/Rock Creek Sub.

Total cost of the powerline extension	\$ 946,335.00
*Miles of line including taps	11.5 miles
Number of customers	_____

*Does not include electrical services to any sites on the east side of the Nenana River

Kobe to Ferry/Rock Creek Sub.

Total cost of the powerline extension	\$1,234,350.00
*Miles of line including taps	15 miles

*Does not include electrical services to any sites on the east side of the Nenana River

Cantwell to Summit

Total cost of the poweline extension	\$ 773,912.00
Miles of powerline	8 miles
Number of customers	_____

FY91 SUPPLEMENTAL CAPITAL BUDGET REQUEST

TETLIN ELECTRICAL SYSTEM SAFETY REPAIRS

SUMMARY:

Community:	Tetlin
Election District:	17
Population Served	112

Project Cost	\$370,000.
Funds Available	0.
Funds Required	\$370,000.

PROJECT DESCRIPTION:

Reconstruction of the community's electrical system.

PROJECT JUSTIFICATION:

The present system is not only inefficient but also has several code violations creating a public safety hazard. The problems are severe enough to require a complete rebuild of the majority of the existing system.

BUDGET:

Construction	\$270,000.
Design	30,000.
Supervision, Inspection, & Administration	40,000.
Project Contingency	<u>30,000.</u>
Project Total	\$370,000.

TETLBGP1
Feb 1991



Member
Finance Committee

Alaska State Legislature

REPRESENTATIVE DICK SHULTZ

P.O. Box V
Juneau, Alaska 99811
(907) 465-4940
Home: P.O. Box 487
Tok, Alaska 99780

July 30, 1990

Mr. Robert E. LeResche, Executive Director
Alaska Energy Authority
Post Office Box 190869
701 East Tudor Road
Anchorage, Alaska 99519-0869

Dear Mr. LeResche:

In response to your letter of July 5th concerning FY 92 capital budget requests, the following projects have been identified as priorities for District 17:

Tetlin Electrical system upgrade \$184,950
Alaska Power & Telephone underground power distribution \$1,000,000
Sheep Mountain Electrification - Phase II \$250,000
Lake Louise Electrification \$1,500,000
Chistochina Line extension \$1,800,000
Ester to Little Goldstream \$2,633,296
Cantwell to McKinley Village \$2,215,325
Mercers Corner to Ferry and Rock Creek Subdivision \$946,335
Kobe to Ferry and the Rock Creek Subdivision \$1,234,350

These requests remain basically the same as in previous years. I'm confident that you will give them adequate consideration as you prepare your capital projects list for FY 92.

If you have any questions concerning these requests please do not hesitate to contact either me or Sandy at 465-4940.

Best regards,

A handwritten signature in cursive script that reads "Dick Shultz".

Representative Dick Shultz

SPP/DS
a:e.txt

APR 5 1991

CHAIRPERSON, SENATE LABOR AND COMMERCE COMMITTEE

THE ALASKA STATE LEGISLATURE

P.O. BOX 7 (H53100)

JUNEAU, AL. 99811

APRIL 1, 1991

TO WHOM IT MAY CONCERN:

WE SUPPORT THE CURRENT BILLS DEALING WITH THE ELECTRIFICATION FROM
CANTWELL TO NCKINLEY VILLAGE

WE URGE YOU TO SUPPORT HOUSE BILL H5166. WE NEED THIS POWER IN OUR
GROWING AREA. OUR INCREASING TOURISM BUSINESS IN THE AREA WARRENTS
THE SERVICE AS DOES THE NEEDS OF THE PRIVATE HOMES.

THANK-YOU:

TOMMY D. AND JOAN A. ADAMS

RTLE 228 PARKS HWY.

P.O. BOX 56

NCKINLEY PARK, AK. 99755-0056

March 31, 1991
P.O. Box 29
Denali Park, Alaska 99755

Senate Labor and Commerce Committee, Chairperson
The Alaska State Legislature
P.O. Box V (MS3100)
Juneau, Alaska 99811

Dear Sir,

The February 13, 1991 issue of the Anchorage Times contained an article on ANWR. This article quoted Senator Coghill extensively, and explained why Alaska received a 90-10 split on resource revenues from federal lands.

“The rest of the states in the union shared resource revenues from federal lands 50-50 with the federal government, but they also had access to a reclamation fund which went to pay for harbors, flood control and electrification,” Coghill said.

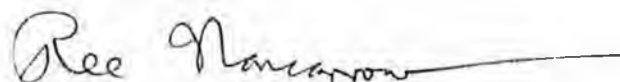
“At the time, we were promoting Rampart Dam on the Yukon River. Congress decided it didn't want to have to fund projects of that magnitude for as vast a state as Alaska and offered, instead, a 90-10 split on resource revenues from federal lands.”

Since such a large proportion of the money our state has received for years was intended to finance these kinds of projects, *please* respond favorably to SB 181. The Railbelt Energy Fund was set aside to deal with power in our area, while other villages and areas in the state *got* their power. Last year a great deal of money was spent from this fund for projects in no way connected with the Railbelt areas. The Usibelli project would generate power to be sent out of our area.

I am mostly concerned with the electrification from Cantwell to McKinley Park. There are at least 15 businesses and 75 families who need electricity that would benefit from this project.

Again —please help us. Respond favorably to SB 181.

Sincerely,



Ree Nancarrow



McKinley Wilderness Lodge
P. O. Box 89
Denali National Park, Alaska 99755
Mile 224 Parks Highway
(907) 683-2277--summer
(907) 883-4710--winter

Wednesday April 3, 1991

The Alaska State Legislature
P. O. Box 7 (MS3100)
Juneau, Alaska 99811

Dear Chairperson,

I am writing to you to show support for SB 181, and to urge you to support it also. I believe that bringing electricity to some of the communities along the highway can be very beneficial for the State of Alaska and the communities.

I run a bed and breakfast business along a stretch of the Parks Highway that is included in this bill. I believe that electrifying the area from Cantwell to McKinley Village will help increase tourism. There are 15 businesses that would be affected by this bill. These businesses are now limited in growth due to the amount of power each business must generate on their own. Individual businesses have a difficult enough time being seasonal, the burden of also being individual power plants adds to the amount of growth these businesses can have.

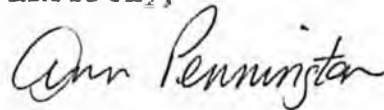
Just 17 miles north of my business are other flourishing tourist businesses. They all have power and are able to develop in the normal sense of the word. On need, not on how much power they generate. I would like to be able to be given the opportunity to compete with these businesses. If we must continue to generate our own power, then I am a bed & breakfast business and a power company. Other businesses must worry about being a hotel or a restaurant, we must do both.

There are 15 businesses and 75 families in the area. They all generate power of some kind or other. My business uses a diesel generator, and I know of several other businesses that use the same. These generators release a great deal of pollution into our air. Each family and every business generate much more pollution separately than if the area was electrified. The noise would be cut way back, the air would be cleaner, and the chance of having diesel and oil spilt on these individual pieces of land would be lessened.

The businesses and families involved in these areas support electrifying the area. In doing so they show enough need to support SB 181. Power is all around us, we hope that it is now time to enter the '90's with so simple a thing as electricity!

Thank you for your time and I hope for your support

Sincerely,

A handwritten signature in cursive script that reads "Ann Pennington". The signature is written in dark ink and is positioned above the typed name.

Ann Pennington
Manager



NORTH FACE LODGE

CAMP DENALI



P.O. Box 67, Denali National Park, Alaska 99755 • Phone/FAX (907) 683-2290

Winter: Box 216, Cornish, N.H. 03746 • (603) 675-2248 • FAX (603) 675-9125

The Alaska State Legislature
P.O. Box V (MS3100)
Juneau, Alaska 99811

4-4-91

Attn: Chairperson - Senate Labor and Commerce Committee

RE: Senate Bill No. 181

Please support this bill so that we can have public electrification from Cantwell to McKinley Village.

Deneki Lakes, at Mile 227½ Parks Hwy., is our home, business base of operations and the location of some of our staff housing. It is important that your committee support our community in its long standing desire to have rural public power.

Thank you,

Wallace A. Cole
Owner

P.S. Public power would make it possible for us to relocate our winter office operations and its payroll in Alaska!!

Businesses in the McKinley Park area needing electricity -
their present status and planned development

1. Carlo Creek Lodge
Lodge, four cabins, outbuildings
Plan to increase cabins in the future, and put in a campground
in 1939.
2. The Perch Restaurant
Restaurant to be operational 1939.
4 rental cabins built. Plan to build a washroom and shower
house, and hook cabins up to electricity within 2 years.
Owners will live there year-round when commercial power
available.
3. McKinley Wilderness Lodge
Restaurant, 3 duplex cabin units, 5 cabins, residence build-
ing, outbuildings.
4. Osprey Expeditions
Office and shop, residence
5. Denali Cabins - south
41 units, gas station, grocery store. Leases space to
Denali Gift Shop.
6. Matanuska Telephone Assoc.
Generates electricity to provide telephone service in area.
7. McKinley Community Center and Firehall
Houses fire truck needing 24-hour heat, and provides space
for year-round community functions and classes for
both adults and children.
8. Popo Agie
Contracting business
9. Don Peterson
One building done.
12 more cabins to be build summer 1939, to be used to house
Elderhostel groups.
10. McKinley Village - ARA
50 rooms, restaurant, coffee shop, gas station, convention
room, 24 units for staff housing, outbuildings, residence
Leases space to ERA Helicopters Flightseeing.
Plans to add 100 rooms in 3-4 years.
11. Denali Cabins North
Leases 3 cabins and showerhouse to Denali Raft.
Considering building a 24-unit hotel in next few years if
commercial power is available.
12. Grizzly Bear Campground
15 cabins, grocery store, liquor store, campground, residence,
outbuildings. 2 shower houses they cannot use without
commercial power. Owners would reside here year-round
with commercial power.

MCKINLEY PARK AREA
 (Cantwell to South Boundary of Park)
 RESPONSE TO ELECTRIFICATION

B = BUSINESS ODOMETER READING FROM 215.5 BRIDGE	MILEPOST NUMBER	EAST OR WEST OF ROAD	YES NO	CONTACTED YES NO	YES NO	WANT POWER YES, if VERY reasonable
0		E Cotter's Rental Cabin at Nenana Bridge Boxholder Cantwell, AK 99729 768-2626				
.55		E Mining Company (one man operation		X		
.55		E Reiland, Jack & Edie (Rental cabin) Box 7 683-2696 Denali Park, AK 99755 488-3932	X		X	
3.75		E Trailer		X		
3.95		E Cantwell Forest Service Station		X		
4.		W Nordmark, Bill PO Box Healy, AK 99743 683-2411	X		X	
5.5		E Spurgin, Vivian & Charles 246 Charles St. 452-4069 Fairbanks, AK 99701	X		X	
B 8.2	224	W Carlo Creek Lodge Otto Stoepler (Mgr. Art Stoepler) Blanco Star Rt. 5 Box 62A San Marcos, TX 78606 683-2413	X		X	
B 8.3	224	E The Perch Restaurant Gerald & Elaine Pollock Box 117 683-2523 Healy, AK 99743	X		X	
8.3	224	E Pollock rental cabin	X		X	
B 8.35	224	E McKinley Wilderness Lodge Ron & Karen Bitzer 683-2277 PO Box 89 258-0222 Denali Park, AK 99755	X		X	
8.35	224	E Bitzer, private residence	X		X	
B 8.4	224	W Osprey Expeditions Aaron Underwood & Julie Boselli Box 209 683-2734 Denali Park, AK 99755	X		X	

B = BUSINESS ODOMETER READING FROM 215.5 BRIDGE	MILEPOST NUMBER	EAST OR WEST OF ROAD	MCKINLEY PARK AREA (Cantwell to South Boundary of Park) RESPONSE TO ELECTRIFICATION		CONTACTED		WANT POWER		Yes, if VERY reasonable
			YES	NO	YES	NO			
8.4	224	W	Stoepler, Art & Denise Box 103 Cantwell, AK 99729	683-2573	X		X		
8.4	224	W	Lee, Bruce & Jeralyn Hath Box 137 Denali Park, AK 99755		X		undecided		
8.7	224.5	E	Holloway, Mitzi Box 1 Denali Park, AK 99755	683-2446	X		X		
8.8	225	E	Stoepler, Otto & Billie Blanco Star Rt. 5 Box 62A San Marcos, TX 78666	683-2413	X		X		
11.45		E	Wood, Romany 1819 Musk Ox Trail Fairbanks, AK 99709		X		X		
11.45		E	Foote, Bruce PO Box 80809 College, AK 99708		X				X
11.45		E	Wood, Ginny 1819 Musk Ox Trail Fairbanks, AK 99709		X		X		
11.7	227.2	E	Nancarrow, Bill & Ree Box 29 Denali Park, AK 99755	683-2376	X		X		
11.85	227.3	E	Cole, Wally Box 67 Denali Park, AK 99755	683-2302	X		X		
12.2	228	W	Harris, Chalon South 2495 Bonnell Coeur d'Alene, ID 83814		X				X
12.2	228	W	Eastwood, Harold Box 8 McKinley Park, AK 99755	683-2524	X		X		
12.3	228	W	Adams, Tom Box 56 McKinley Park, AK 99755	683-2358	X		X		

B = BUSINESS ODOMETER READING FROM 215.5 BRIDGE	MILEPOST NUMBER	EAST OR WEST OF ROAD	MCKINLEY PARK AREA (Cantwell to South Boundary of Park) RESPONSE TO ELECTRIFICATION		CONTACTED		WANT POWER		Yes, if VERY reasonable
			YES	NO	YES	NO			
12.4		W	Jordan, Mike & Karen Wrangell City Schools PO Box 651 Wrangell, AK 99929						
12.45		W	Travers, Charles & Ruth Travers 7-7 Ranch Tatla Lake, British Columbia Canada VOL-IVO						
13.2	228.8	E	Alice, Larry & Lois Box 37 McKinley Park, AK 99755 683-2467	X		X			
13.2	228.8	E	Curtis, Ken Box 171 McKinley Park, AK 99755 683-2731	X		X			
13.2	229	E	Eastwood, Harold Box 8 Denali Park, AK 99755 683-2524	X			X		
13.2	228.9	E	Grosnick, Martin Box 150 Denali Park, AK 99755 683-2614	X		X			
13.3	229	E	Kogl, Dennis Box 21 McKinley Park, AK 99755 683-2375	X		X			
	228.8	E	Butterfield, Bob Box 98 Denali Park, AK 99755 683-2669	X		X			
13.35	229	E	Tingey, Ralph Box 9 Denali Park, AK 99755 683-2661	X		X			
13.45	229	E	Denali Cabins 258-0134 Gary & Denise Kroll 683-2643 Box 229 Denali Park, AK 99755	X		X			
13.5	229	W	Osbon, Kathy 811 E. 16th St. C3 Anchorage, AK 99504 333-5785	X		X			

MCKINLEY PARK AREA
 (Cantwell to South Boundary of Park)
 RESPONSE TO ELECTRIFICATION

B = BUSINESS ODOMETER READING FROM 215.5 BRIDGE	MILEPOST NUMBER	EAST OR WEST OF ROAD		CONTACTED		WANT POWER		Yes, if VERY reasonable
				YES	NO	YES	NO	
13.5	229	E	Castle, Lynn Box 50 McKinley Park, AK 99755					
13.5	229	E	Chalon Harris - Air strip & Hanger South 2495 Bonnell Coeur D' Alene, ID 83814	X				X
13.5	229	W	Condran, Pat Box 10273 Fairbanks, AK 99710	X		X		
13.5	229	W	Stowers, Pat 1107 5th St. Davis, CA 95616	X				X
13.55	229.2	W	Dane, Ron Box 108 Cantwell, AK 99729 683-2360	X		X		
13.60	229	W	Gregory, Borden Box 300 Healy, AK 99743 683-2490	X		X		
	229.3	W	Butterfield, Bob Box 98 Denali Park, AK 99755 683-2669	X		X		
13.67		E	Adams, Tom Box 56 McKinley Park, AK 99755 683-2358	X		X		
13.67		E	Swift, Bryan Box 9 Denali Park, AK 99755 683-2610	X		X		
13.7	229.2	W	Dalle-Molle, Lois Box 65 McKinley park, AK 99755 683-2365	X		X		
13.7	229.2	W	Haber, Gordon Box 64 Denali Park, AK 99755					

MCKINLEY PARK AREA
 (Cantwell to South Boundary of Park)
 RESPONSE TO ELECTRIFICATION

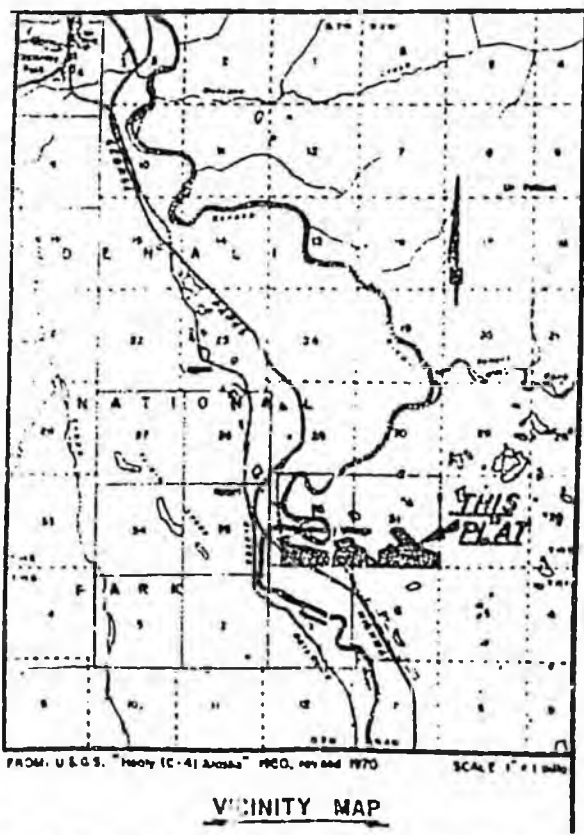
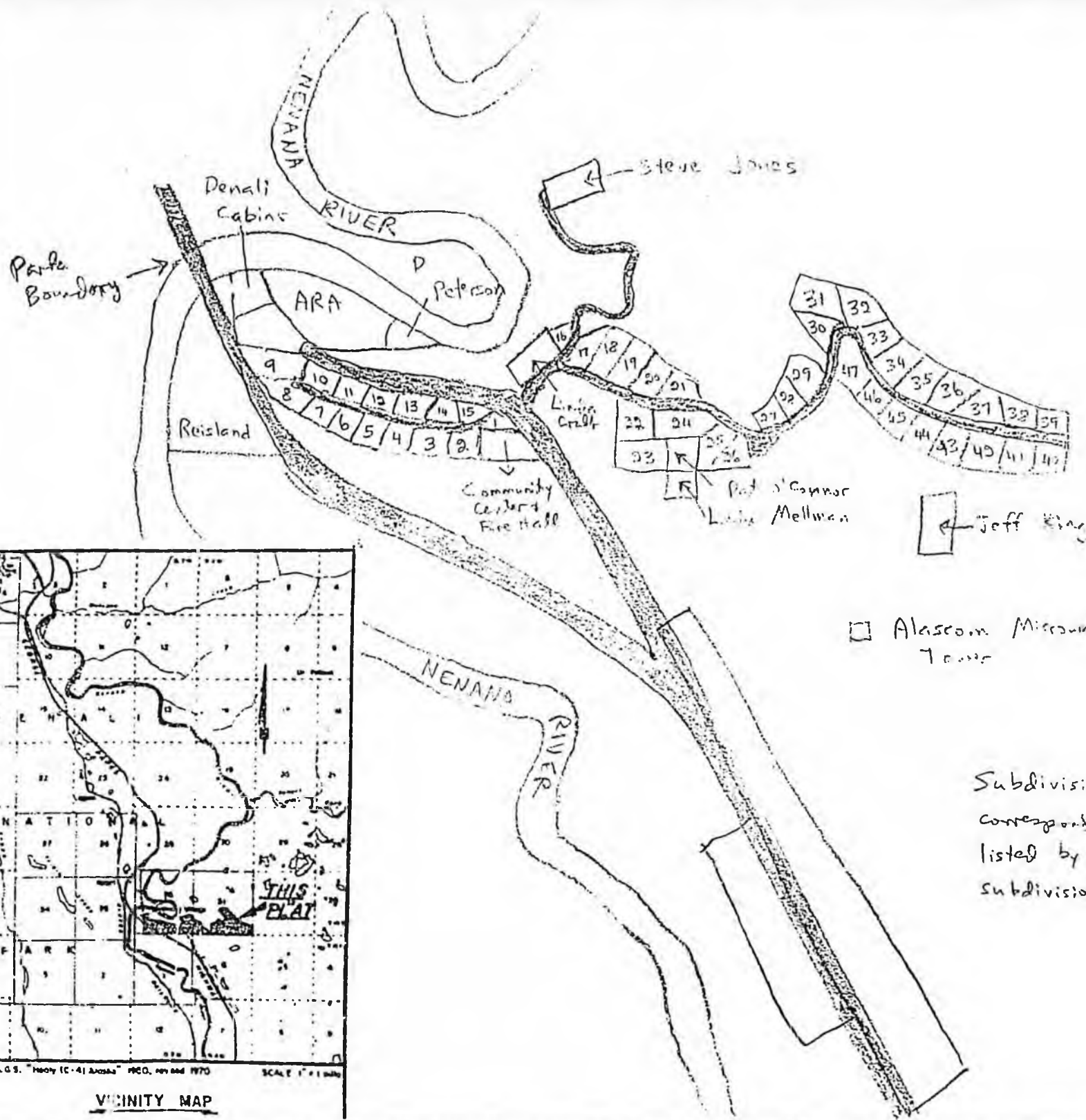
B = BUSINESS	ODOMETER READING FROM 215.5 BRIDGE	MILEPOST NUMBER	EAST OR WEST OF ROAD		CONTACTED		WANT POWER		Yes, if VERY reasonable
					YES	NO	YES	NO	
	13.8		W	Anderson, Jane & Morris, Will 6171 Leesburg Dike #334 Falls Church, WV 32044					
	13.8	229.3	E	Bryant, Jane Box 72 McKinley Park, AK 99755	X		X		
	13.9	229.4	W	Bohman, Judy Box 41 McKinley Park, AK 99755					
	13.95	229.5	E	Taylor, Tim Box 3 McKinley Park, AK 99755 683-2693	X		X		
	13.95	229.5	W	Fuiten, Roger Box 162 Denali Park, AK 99755 683-2528	X			X	
	14.	229.5	W	Klein, Tom Box 92 McKinley Park, AK 99755 683-2510	X			X	
	14.15	229.7	E	Harris, Chalon South 2495 Bonnell Coeur D'Alene, ID 83814	X				X
B	14.15	229.7	E	Matanuska Telephone Assoc. Microwave Tower	X		X		

MCKINLEY PARK AREA
 (Cantwell to South Boundary of Park)
 RESPONSE TO ELECTRIFICATION

B = BUSINESS	ODOMETER READING FROM M. 230 OLD/ NEW PARKS HWY JCT	MILEPOST NUMBER	EAST OR WEST OF ROAD		YES CONTACTED		YES WANT POWER		Yes, if VERY reasonable
					YES	NO	YES	NO	
	0	230	E	Benham, Loran Box 57 683-2373 McKinley Park, AK 99755	X		X		
	.15	230	E	Mellman, Linda Box 36 McKinley Park, AK 99755 683-2445	X		X		
	.15	230	E	King, Jeff Box 48 McKinley Park, AK 99755 683-2570	X		X		
	.15	230	E	O'Connor, Patrick Box 58 Denali Park, AK 9975	X		X		
	.15	230	E	Jones, Steve Box 10 Denali park, AK 99755	X		X		
	.2	230	E	Ahtna Pit, Ahtna Construction Box 25 McKinley Park, AK 99755		X			
	.45	230	E	State Gravel Pit		X			
C	.5	230	W	McKinley Community Center & Firehall Box 26 McKinley Park, AK 99755 683-2400	X		X		
	.55	230	E	Steve Jones Rental Cabin	X		X		
	.7	230	E	Crabb, Linda 6654 Fairweather Dr. Anchorage, AK 99518 344-7403	X		X		
B	1.2	231	E	McKinley Village ARA Box 87 Denali Park, AK 99755 683-2215	X		X		
B	1.2	231	E	ERA Helicopters (Leasing space from ARA					
B	1.2	231	E	Peterson, Don C/O Outdoor World Box 87 Denali Park, AK 99755 683-2215	X		X		

MCKINLEY PARK AREA
 (Cantwell to South Boundary of Park)
 RESPONSE TO ELECTRIFICATION

B = BUSINESS	ODOMETER READING FROM M. 230 OLD/NEW PARKS HWY JC	MILEPOST NUMBER	EAST OR WEST OF ROAD	CONTACTED		WANT POWER		Yes, if VERY reasonable	
				YES	NO	YES	NO		
	1.2	231	Denali Cabins C/O Kroll Box 229 Denali Park, AK, 99755	X		X			
	1.2	231	E Denali Raft (Leasing from Denali Cabir						
	1.2	231	W Grizzly Bear Campground Jack & Edie Reisland Box 7 683-2696 Denali Park, AK 99755 488-3932	X		X			
		230	<u>VILLAGE VIEW WEST (See map for location)</u>						
		1/	King, Donna Box 48 McKinley Park, AK 99755 683-2570	X		X			
		2.	Durenberger, Joe Box 125 Denali Park, AK 99755 683-2781	X		X			
		3.	Franson, Todd Box 234 Denali Park, AK 99755 683-2783	X		X			
		4.	Varner, Allen 13319 Diggins Anchorage, AK 99515 345-4161						
		5.	Schneider, Diane SRC Box 8490 Palmer, AK 99645	X				X	
		6.	Cole, Jerryne HCR 75 Box 106 Cornish, NH 03745 603-675-2248						
		7.	Jones, Craig Box 80521 Fairbanks, AK 99708 479-8897						
		8.	Weronko, Mike & Katie 2307 Jefferson Ave. Anchorage, AK 99517 243-5107	X		X			



VICINITY MAP

B = BUSINESS	ODOMETER READING FROM M. 230 OLD/ NEW PARKS HWY JC	MILEPOST NUMBER	EAST OR WEST OF ROAD	MCKINLEY PARK AREA (Cantwell to South Boundary of Park) RESPONSE TO ELECTRIFICATION	CONTACTED		WANT POWER		Yes, if VERY reasonable
					YES	NO	YES	NO	
		230		<u>VILLAGE VIEW WEST (see map for location)</u>					
		9.		Swanson, Janice 7741 Cox Dr. Anchorage, AK 99516	X		X		
		10.		Patricks, Mike 1326 Viewpointe Fairbanks, AK 99701 479-7264	X		X		
		11.		Bellville, Lloyd Box 104 Denali park, aK 99755	X		X		
		12.		Harris, Mark Box 121 Denali Park, AK 99755	X		X		
		13.		Weiner, Martin Box 236 Denali Park, AK 99755	X		X		
		14.		Ebel, Brad Box 44 Denali Park, AK 99755	X		X		
		15.		Ostermick, Rollie PO Box 13149 Trapper Creek, AK 99683 733-2467	X				X
				<u>VILLAGE VIEW EAST (see map for location)</u>					
		16		Crabb, Linda 6654 Fairweather Dr. Anchorage, AK 99518 344-7403	X			X	
		17.		Friedman, Henry Box 10-0152 Anchorage, AK 99501 272-4905	X			X	
		18.		Souter, Kathy Box 234 Denali Park, AK 99755 683-2783	X		X		

MCKINLEY PARK AREA
(Cantwell to South Boundary of Park)
RESPONSE TO ELECTRIFICATION

B = BUSINESS	ODOMETER READING FROM M. 230 OLD/ NEW PARKS HWY JCI	MILEPOST NUMBER	EAST OR WEST OF ROAD	YES NO	YES NO	YES, if VERY reasonable
			VILLAGE VIEW EAST (see map for location)			
		19.	Anton, Bill Box 155 McKinley Park, AK 99755 688-3756			
		20	Allen, Bill Box 191 McKinley Park, AK 99755 683-2321	X	X	
		21	Havill, Dulcie Box 167 Denali Park, AK 99755 4795181	X	X	
		22	Jones, Toni Box 10 Denali Park, AK 99755 683-2264	X	X	
B		22.	Popo Agie Shop Steve Jones Box 10 Denali park, AK 99755 683-2264	X	X	
		23.	O'Connor, Patrick Box 58 Denali Park, AK 99755 683-2256	X		X
		24	Pollock, Gerald/Vanderwood, Amanda Box 117 Healy, AK 99743 683-2304	X	X	
		25.	Ewing, Jeff		X	
		26.	Hammel, Bob Box 202 Girdwood, AK 99587 783-2491			
		27.	Welna, Joe Box 204 Denali Park, AK 99755	X	X	
		28.	Moss, Paul Box 873176 Wasilla, AK 99687 562-0341			
		29.	Ford, Deidre Box 113 Denali Park, AK 99755	X		X

MCKINLEY PARK AREA
(Cantwell to South Boundary of Park)
RESPONSE TO ELECTRIFICATION

B = BUSINESS
ODOMETER READING
FROM M. 230 OLD/
NEW PARKS HWY JC

MILEPOST NUMBER

EAST OR WEST OF
ROAD

YES CONTACTED
NO

YES WANT POWER
NO

Yes, if VERY
reasonable

VILLAGE VIEW EAST (see map for location)

30	Fiorenzi, Peter 451 Evolyn Dr. North Pole, AK 99705 488-2558	X	X	
31	Havill, Dulcie Box 167 Denali Park, AK 99755 479-5181	X	X	
32.	Walker, Tom Box 1460 Homer, AK 99603 235-6742	X	X	
33.	Franklin, Linda SR Mile 261 Healy, AK 99743 683-2551	X		X
34.	Wilbert, Ken Pfeiffer, Cheri Box 128 McKinley Park, AK 99755 683-2647	X	X	
35.	Henke, Kristin Box 112305 Anchorage, AK 99511			
36	Bohman, Jeff	X		X
37.	Van Horn, Joe Box 111 Denali park, aK 99755			
38.	Greig, William Box 112 McKinley Park, AK 99755	X	X	
39.	King, Jeff Box 48 McKinley Park, AK 99755 683-2570	X		X
40.	Berry, Bill & Lois 333 Constantze Dr. Canton, MO 63435			
41.	Seegert, Allen Box 203 Denali Park, AK 999755			

B = BUSINESS

ODOMETER READING
FROM M. 230 OLD/
NEW PARKS HWY JCT

MILEPOST NUMBER

EAST OR WEST OF
ROAD

MCKINLEY PARK AREA
(Cantwell to South Boundary of Park)
RESPONSE TO ELECTRIFICATION

VILLAGE VIEW EAST (see map for location)

42. Gleason, Florence
5201 E. 100th Ave.
Anchorage, AK 99516 346-2710

43. Schnoor, Mike
Box 186
McKinley Park, AK 99755

44. Bataille, Chris
Box 81537
College, AK 99708 479-2098

45. Lee, Cag
Box 108
Denali Park, AK 99755 683-2618

46. Osbon, Kathy
8111 E. 16th St. C3
Anchorage, AK 99504 333-5785

47. Pollock, Keith

YES CONTACTED
NO

YES WANT POWER
NO

Yes, if VERY
reasonable

X

X

X

X

X

X

X

Electric Reliability

How does the Railbelt measure up?

A summary of the assessment report from the North American Electric Reliability Council, provided by the Railbelt interconnected electric utility systems of the Alaska Systems Coordinating Council.

Introduction

In March 1990 the North American Electric Reliability Council performed a reliability assessment of the Railbelt interconnected electric utility systems. Surveys consistently show that reliable electric service is important to consumers in Alaska's Railbelt. For some time electric utilities and agencies in the region have noted that while the Railbelt has sufficient generation resources, the transmission system which moves power throughout the region is not as strong as it should be to ensure a reasonable degree of reliability.

The NERC report identified two important reliability issues facing the Railbelt:

"First is the need for additional transmission interconnection lines between the three major load centers and their generation facilities. . . . Second is the need to maintain a proper balance between economy and reliability."

What is NERC?

The North American Electric Reliability Council was formed in 1968 by the electric utilities to coordinate, promote, and communicate about the reliability of their generation and transmission systems, and to foster the development of reliability standards. NERC provides planning and operating guides for bulk electric systems, and is comprised of nine Regional Reliability Councils and one Affiliate encompassing virtually all of the electric utility systems in the United States, Canada, and the northern portion of Baja California, Mexico.

NERC is governed by a 27-member Board of Trustees representing investor-owned, federal, rural electric cooperative, state and municipal electric systems throughout North America. Meetings of the Board are attended by observers from the U.S. Department of Energy, the Federal Energy Regulatory Commission, the National Energy Board of Canada, the Edison Electric Institute, the American Public Power Association, the National Rural Electric Cooperative Association, the Canadian Electrical Association, the Electric Power Research Institute, and the National Association of Regulatory Utility Commissioners.

About the ASCC and the NERC report

The Alaska Systems Coordinating Council is a NERC Affiliate composed of 18 utilities, a state agency and a federal agency. Nine ASCC members are interconnected in the Railbelt region, and account for 75 percent of the utility generation for the state of Alaska. These ASCC members, concerned with the reliability of their interconnected systems, requested that NERC assess the reliability of the Railbelt. The existing and proposed Railbelt electric utility systems were evaluated against traditional reliability criteria and practices followed by the interconnected electric systems of NERC's Regional Reliability Councils in the lower 48 states and Canada.

This publication summarizes the NERC findings on the reliability of the Railbelt interconnected electric systems. Where used, quotation marks enclose statements from the NERC Reliability Assessment set in *bold italic*.

North American Electric Reliability Council



What was studied

NERC expertise was provided by a four-member subgroup of the 1990 Reliability Assessment Subcommittee which evaluated the overall reliability of the Railbelt interconnected electric utility systems. The team's assessment reviewed the adequacy of the existing system and the proposed generation and transmission plans for the Railbelt electric systems over the 1990-1999 period. Included in this review were the reliability impacts of two proposed transmission interconnections — a Soldotna to Anchorage 138 kilovolt line and a Healy to Fort Wainwright 138 kV line.

The assessment addressed only the interconnected electric systems serving the Anchorage, Fairbanks and Kenai Peninsula areas. These systems began coordinated operations in 1984 by interconnecting Fairbanks with Anchorage. (Anchorage was electrically linked to the Kenai Peninsula in the 1960s.) The assessment found that the region should have sufficient generation capacity until at least the turn of the century:

"Assessment of the 1990-1999 generation adequacy clearly indicated that sufficient generating capacity margins exist in each of the three major load areas: the Fairbanks area, the Anchorage Bowl and the Kenai Peninsula. Neither forced outages or maintenance outages of generator units are expected to adversely impact generating reserve adequacy."

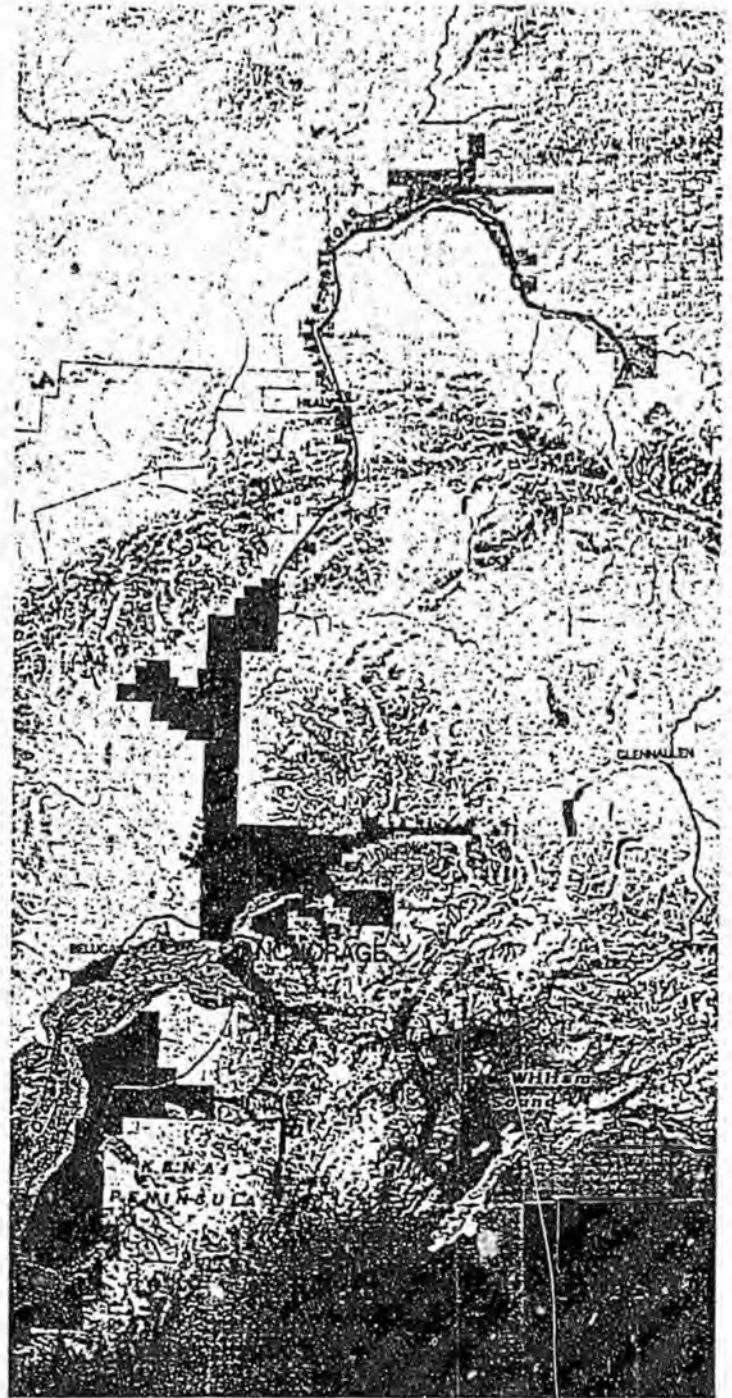
However, the NERC team expressed concern about the existing Railbelt transmission system:

"The existing single line transmission interconnections between the Kenai Peninsula and the Anchorage Bowl and between the Anchorage Bowl and the Fairbanks area constrain the sharing of generation between and among load centers and pose a significantly higher than traditional reliability risk for system-wide blackouts due to single contingency outages."

Map key

- Anchorage Municipal Light and Power
- Chugach Electric Association
- Fairbanks Municipal Utilities System
- Golden Valley Electric Association
- Homer Electric Association
- Matanuska Electric Association
- Seward Electric System
- Transmission lines: existing /
- Transmission lines: proposed or under construction - - -

Railbelt electric utility service areas



Transmission adequacy in the Railbelt

The Kenai Peninsula, Anchorage and Fairbanks areas initially were isolated electric systems, and each developed generation and transmission facilities to meet the electrical demand of their areas prior to being interconnected. Currently a single transmission line connects Anchorage and Fairbanks, and a second single transmission line links Anchorage and the Kenai Peninsula.

The report emphasized the reliability benefits of the addition of the proposed 138 kilovolt circuit between Soldotna and Anchorage:

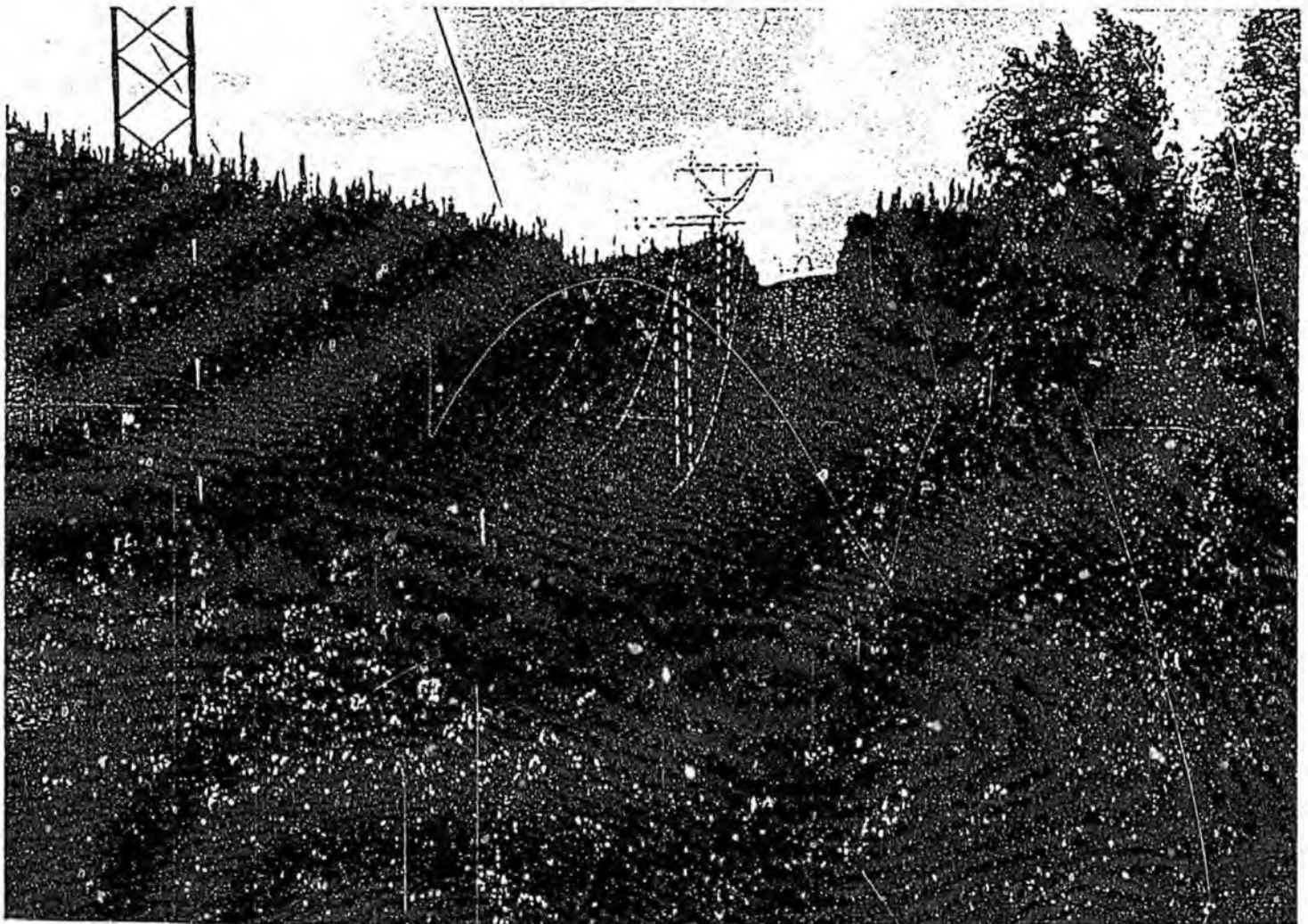
"The existing 115 kV interconnection line has a poor reliability history and has a transmission transfer capacity limit under 75 megawatt. . . . The second . . . Kenai interconnection to the Anchorage Bowl area would improve reliability by preventing the shedding of customer load if the existing interconnection line trips (with the possible exception of those times when the Kenai Peninsula generation is operating in anticipation of loss of the existing tie). When Bradley Lake comes into service, reliability will suffer without a second interconnection tie."

In a similar vein, the report identified the advantages of a proposed Healy to Ft. Wainwright transmission line:

"The addition of the proposed 105 mile 138 kV circuit between Healy generating plant and Fort Wainwright substation would not only provide an alternate path for loss of the circuit to Gold Hill, but would also provide essentially loop service between the Healy plant and the major part of the load in this area. . . . based on traditional planning criteria, the Healy-Fort Wainwright tie is required to assure an adequate source-to-load path from the dual sources at Healy (Healy generation plus the capacity purchases from the Anchorage Bowl and later from Bradley Lake) to the Fairbanks area."

These two proposed transmission lines are subject to funding by the Alaska State Legislature. While they would significantly strengthen the regional electrical network, the report also suggests future consideration should be given to providing an additional transmission path between Anchorage and Fairbanks:

"Under traditional reliability criteria, a second transmission line between the Anchorage Bowl and the Fairbanks area would likely be required (either via Teeland and Healy, or preferably via a separate transmission path such as from the Anchorage Bowl to Glennallen to Jarvis Creek)."



The balance between economy and reliability

According to the NERC report, the most significant issue affecting the reliability of the Railbelt utilities is maintaining a proper balance between economy and reliability. Electrical reliability clearly has a price, but so does an unreliable system.

"The cost of providing reliability is exceptionally high for the Railbelt utilities, but there are indications that the reliability expectations of the customers in the Railbelt utilities are increasing."

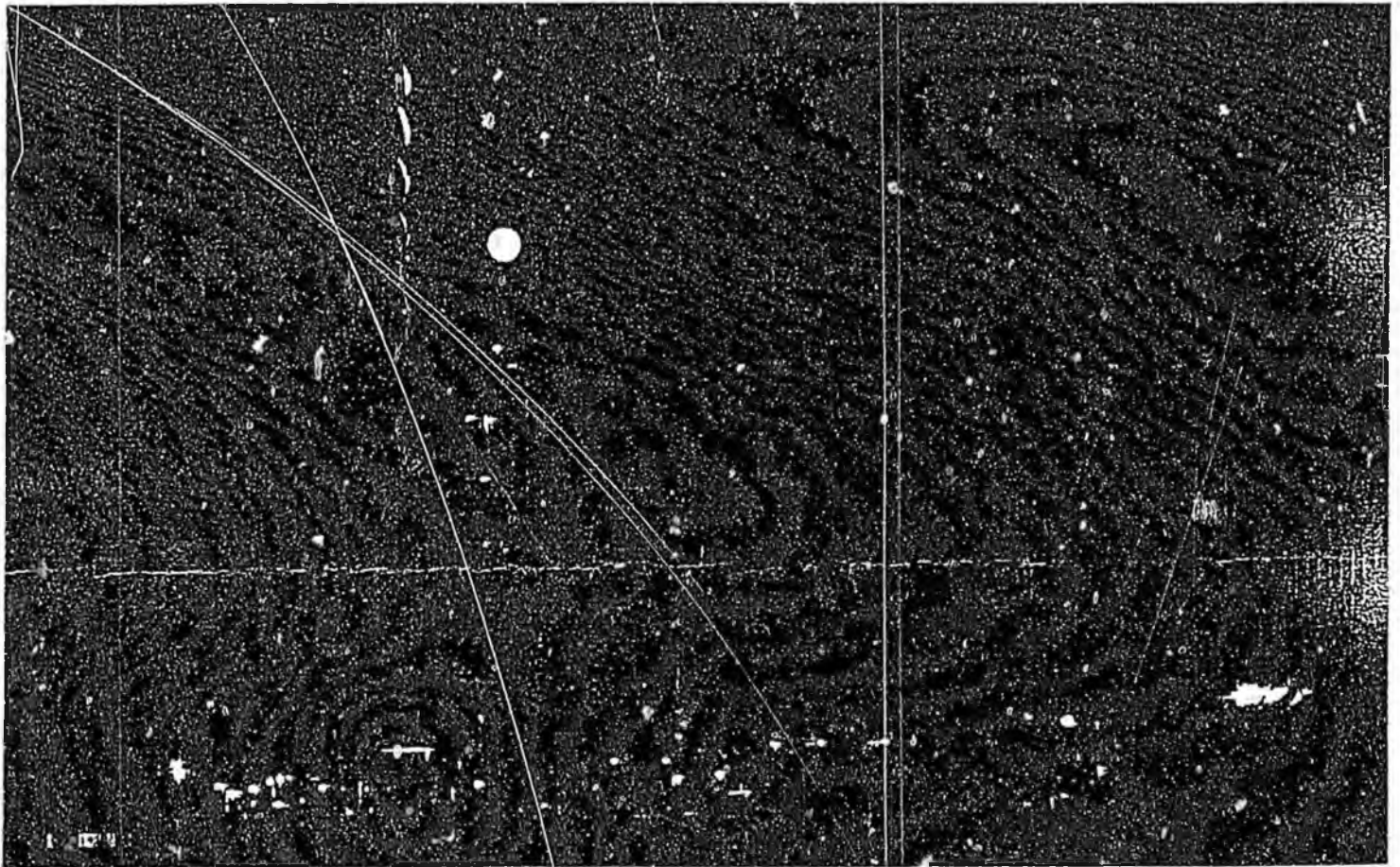
Reliability, and what it means to the customer

When electric supply is disrupted, even for a short period of time, the results can produce a wide range of effects, from minor inconvenience to economic loss to endangerment of life. Widespread electric system interruptions have been rare occurrences in the United States and Canada, but such reliability is not easily achieved. The challenge of providing reliable electric service to consumers in Alaska's Railbelt has unique aspects. Electrically, the Railbelt stands alone. It is not interconnected with any other electrical system in the United States or Canada. Therefore, regional reliability is an Alaskan problem.

Reliability must be planned, designed, and built into an electric

system over an extended period of time with financial commitments spanning several years.

Even when supply margins appear adequate, extraordinary events for which systems were not designed can place electric supply in a vulnerable position. Examples include a large amount of unavailable generation at the time of system peak, multiple transmission line outages or unexpectedly high customer demand. When these extraordinary conditions occur, utilities may be required to resort to emergency operating procedures, including utility-controlled interruptions of customer service, to balance system demand and supply.



In conclusion

Reliable electric power is important to the Railbelt. Currently the interconnected transmission system of the region is not as strong as it should be by national standards. Strengthening that system

should be a priority for the utilities, agencies and policymakers of the region.

T/C NO: 91-04-042
 DATE: 4-8-91
 SPONSOR: (S) LABOR AND COMMERCE
 SUBJECT: SB 180 AND SB 181
 MODERATOR: TAMMY
 SITE: DELTA JUNCTION

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T/C NO: 91-04-042
DATE: APRIL 7, 1994
SPONSOR: SENATE LABOR AND COMMERCE
SUBJECT: SB 180, SB 181
MODERATOR: SHARON LAWRENCE
SITE: VALDEZ

3

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