

S B

520

SENATE COMMITTEE REPORT
FIRST COMMITTEE OF REFERRAL

DATE: 3/12/90

FURTHER: *J&C* Finance

Date of 5-Day Notice: 3-29-90
(in accordance with Uniform Rule 23)

DATE TURNED INTO OFFICE: 4-6-90

Resources Committee considered SB 520

Authorizing a transmission line between Healy and Fairbanks; 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:

fiscal note(s) AK Energy
PHH

Department(s)/Date:

zero fiscal note(s) _____

appropriation-no fiscal note

Governor's bill w/fiscal note

SIGNING DO PASS:

Rick Halford

[Signature]

[Signature]

[Signature]

[Signature]

[Signature]

OTHER RECOMMENDATIONS:

[Signature]
Chair: Signature and Recommendation

FISCAL NOTE

REQUEST:

Revision Date: _____ Agency Affected: Alaska Energy Authority
 Title: "An act authorizing a trans- BRU: _____
mission line between Healy & Fairbanks
 Sponsor: Labor and Commerce Components: _____
 Requestor: Senate Resources

EXPENDITURES/REVENUES: (Thousands of Dollars)

OPERATING	FY 91	FY 92	FY 93	FY 94	FY 95	FY 96
PERSONAL SERVICES						
TRAVEL						
CONTRACTUAL						
SUPPLIES						
EQUIPMENT						
LAND & STRUCTURES						
GRANTS, CLAIMS						
MISCELLANEOUS						
TOTAL OPERATING						
CAPITAL						
REVENUE						

FUNDING: (Thousands of Dollars)

GENERAL FUND						
FEDERAL FUNDS						
OTHER	60,000					
TOTAL	60,000					

POSITIONS:

FULL-TIME						
PART-TIME						
TEMPORARY						

ANALYSIS : (Attach a separate page if necessary)

Source of \$60 million -- Railbelt Energy Fund.
Fiscal impact would be in FY91.

Prepared by: Robert E. LeResche Phone: 465-3575
 Division: Alaska Energy Authority Date: 4/6/90

Approved by Commissioner: Larry Mercurio Date: 4/6/90
 Agency: Dept. of Commerce & Economic Development

Distribution (by preparer):

- Legislative Finance
- Legislative Sponsor
- Requestor
- Office of Management and Budget
- Impacted Agency(ies)

FISCAL NOTE

REQUEST:

Revision Date: _____ Agency Affected: Alaska Energy Authority
 Title: "An act authorizing a trans- BRU: _____
mission line between Healy & Fairbanks.
 Sponsor: Labor and Commerce Comm. Components: _____
 Requestor: _____

EXPENDITURES/REVENUES: (Thousands of Dollars)

OPERATING	FY 91	FY 92	FY 93	FY 94	FY 95	FY 96
PERSONAL SERVICES						
TRAVEL						
CONTRACTUAL						
SUPPLIES						
EQUIPMENT						
LAND & STRUCTURES						
GRANTS, CLAIMS						
MISCELLANEOUS						
TOTAL OPERATING						
CAPITAL						
REVENUE						

FUNDING: (Thousands of Dollars)

GENERAL FUND						
FEDERAL FUNDS						
OTHER	125,000					
TOTAL	125,000					

POSITIONS:

FULL-TIME						
PART-TIME						
TEMPORARY						

ANALYSIS : (Attach a separate page if necessary)

Source of \$125 million -- Railbelt Energy Fund.
Fiscal impact would be in FY91.

Prepared by: Robert E. LeResche Phone: 465-3575
 Division: Alaska Energy Authority Date: 4/6/90

Approved by Commissioner: Larry Mercurieff Date: 4/6/90
 Agency: Dept. of Commerce & Economic Development

Distribution (by preparer):

- Legislative Finance
- Legislative Sponsor
- Requestor
- Office of Management and Budget
- Impacted Agency(ies)

PRELIMINARY SUMMARY ASSESSMENT*
OF THE
RELIABILITY OF THE RAILBELT INTERCONNECTED
ELECTRIC UTILITY SYSTEMS
OF THE
ALASKA SYSTEMS COORDINATING COUNCIL

February 20, 1990

by
a Subgroup of NERC's 1990 Reliability Assessment Subcommittee

John H. Stout, Chairman
(Manager of Engineering Design and Development
Houston Lighting & Power Company)

Chisua H. Fleming, Vice Chairman
(Manager, Advanced Engineering and Planning
Ohio Edison Company)

Richard E. Phillips, Operating Committee Representative
(Operating Manager
New York Power Pool)

Virginia C. Sulzberger, NERC Staff Coordinator
(Director-Engineering
North American Electric Reliability Council)

Preliminary Summary Assessment

A subgroup of NERC's 1990 Reliability Assessment Subcommittee (RAS) recently reviewed the overall reliability of the Railbelt interconnected electric utility systems of the Alaska Systems Coordinating Council (ASCC) at the request of ASCC. This assessment reviewed the adequacy of the existing system and the proposed generation and transmission plans of 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 University 138 kV line and a Healy to Fort Wainwright 138 kV line (possibly 230 kV or 345 kV construction).

The proposed Soldotna to University 138 kV line electrically connects the Kenai peninsula to the Anchorage Bowl area and will provide a second electrical tie between these areas. An existing 115 kV transmission line currently connects the Quartz Creek area (Kenai peninsula) to the Anchorage Bowl area. This existing 115 kV line is about 20 years old, has a poor reliability history, and has a transmission transfer capacity limit under 75 megawatts (MW).

The proposed Healy to Fort Wainwright 138 kV line will parallel the existing Healy-Gold Hill-Fort Wainwright 138 kV line. The new line is to be built on a separate right-of-way and will provide an additional outlet for Healy generation and capacity imports from the Anchorage Bowl (and Kenai peninsula) into the Fairbanks area.

The RAS subgroup noted that the existing Railbelt utilities lacked comprehensive planning and operating criteria as well as interconnection criteria for integrated planning and operations. Therefore, 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.

For example, NERC's Planning Guides recommend to the extent practicable that an excessive concentration of generating capacity in one unit, at one location or in one area, be avoided, that excessive dependence on a single transmission line be avoided, and that a system be designed to withstand credible contingency situations. Under traditional criteria, a single generation or transmission contingency generally would not black out an entire interconnected system or cause the shedding of a portion of system load. In contrast, within the Alaska Railbelt systems, a single contingency such as the loss of fuel supply to the Beluga generating station on December 11, 1989 can and has blacked out the interconnected Railbelt electric systems. Similarly, based on information given to the RAS, during periods of high capacity transfers from the Kenai peninsula Bradley Lake project, the sudden outage of the existing 115 kV interconnection line between the Kenai peninsula and the Anchorage Bowl would likely cause load shedding in the Anchorage and Fairbanks areas and a blackout of the complete Kenai electric system. These two examples illustrate the lack of compliance with traditional NERC planning and operating criteria.

Based on a comparison of the current Railbelt interconnected systems planning and operating procedures with traditional electric utility planning and operating reliability criteria in NERC-U.S. and NERC-Canada, the RAS subgroup has concluded the following:

- The Railbelt utilities should develop, formulate in writing, and approve appropriate planning and operating reliability criteria for their respective electric systems and service areas. In addition, coordinated interconnection planning and operating reliability criteria should similarly be developed, formulated in writing, and approved under the auspices of the existing Interconnection Agreement or under the ASCC umbrella. NERC's Planning Policies encourage the development of planning and design criteria by Regional Councils, power pools, and individual systems applicable to their Region or area.
- Each major area of the Railbelt interconnected systems — the Kenai peninsula, the Anchorage Bowl, and the Fairbanks area — will have adequate

generating capacity to meet its projected peak demands over the 1990-1999 period. Neither forced outages or maintenance outages of generators are expected to adversely impact generation adequacy.

- The existing interconnection ties between the three major load centers — the Kenai peninsula, the Anchorage Bowl, and the Fairbanks area — consist of single, limited capacity transmission lines. As such, these single line interconnections 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.
- In terms of traditional reliability criteria, the proposed Soldotna-University 138 kV transmission line provides a second circuit between the Kenai peninsula and the Anchorage Bowl and is necessary to help improve the reliability of electric supply to the Kenai peninsula, the Anchorage Bowl, and the Fairbanks area. This line will increase the electric transfer capability between the Kenai peninsula and the Anchorage area, improve system stability, and help to reduce the number of load shedding incidents in the Anchorage and Fairbanks areas and the black out or loss of electric supply to Kenai peninsula customers following certain system outages or contingencies. It will also help to reliably distribute the output of the Bradley Lake hydro generating facility to the appropriate utility purchasers of the hydro capacity. Without this line, reliability in the Kenai peninsula will likely be reduced following the completion of the Bradley Lake project.
- The proposed Healy-Fort Wainwright transmission line is needed for the reliability of electric supply to the Fairbanks area. It provides a second transmission path from Healy to the Fairbanks area for both Healy generation capacity and capacity purchases from the Anchorage area (and the Kenai peninsula). This line provides both improved reliability and economic benefits (Bradley Lake capacity) to the Fairbanks area. Its reliability impact, however, will not be as dramatic as the Soldotna-University 138 kV line, but based on traditional planning criteria, the tie is required to assure an adequate source to load path from Healy to the Fairbanks area. In fact, under traditional reliability criteria, a second transmission line between the Anchorage Bowl and the Fairbanks area would be required (either via Teeland and Healy, or some other transmission path between the Anchorage Bowl and the Fairbanks area).
- The most significant issue affecting the reliability of the interconnected Railbelt electric systems is the need to maintain a proper balance between economy and reliability. The Railbelt interconnected systems encompass a unique electrical utility network that has been operated as close to optimal economic benefit as one might reasonably expect. However, in many instances this economic operation has been at the expense of reliable electrical supply to utility customers and has compromised traditionally accepted reliability criteria. Reliability should not be relegated to a secondary position after economics. Neither should economics be ignored. Rather a careful balance between reliability and economics should be maintained. Until minimum traditional reliability standards are met, economic criteria should not dictate whether or not additional transmission facilities are necessary. The Railbelt electric systems must recognize that along with sharing the economic benefits of interconnected operation, they must accept and share the responsibility for maintaining the reliability of the interconnected systems.

A complete reliability assessment report by the RAS subgroup is expected to be available on or about March 16, 1990.

2/20/90

MEMORANDUM OF UNDERSTANDING
REGARDING INTERTIE UPGRADES

THIS MEMORANDUM OF UNDERSTANDING dated March 14, 1990, by and between the ALASKA ENERGY AUTHORITY (Authority), and CHUGACH ELECTRIC ASSOCIATION, INC., GOLDEN VALLEY ELECTRIC ASSOCIATION, INC., HOMER ELECTRIC ASSOCIATION, INC., MATANUSKA ELECTRIC ASSOCIATION, INC., the MUNICIPALITY OF ANCHORAGE, ALASKA d/b/a MUNICIPAL LIGHT AND POWER, and the CITY OF SEWARD d/b/a/ SEWARD ELECTRIC SYSTEM (Utilities).

WITNESSETH:

A. The Authority desires to fulfill its statutory duty of providing residents of the State of Alaska with a long term, adequate and reliable supply of power;

B. The Utilities each own and operate electric utility facilities and are each engaged in the business of providing electric service to customers;

C. The Authority has constructed an electrical transmission system between Healy and Willow (Existing Intertie) to interconnect the Railbelt Utilities; and

D. The Utilities desire to further improve Railbelt transmission reliability and capacity by having the Authority construct additional intertie facilities between Healy and Fairbanks and between Anchorage and Soldotna;

NOW, THEREFORE, the parties agree as follows:

ARTICLE I
OBLIGATIONS OF THE ALASKA ENERGY AUTHORITY

1.1 If authorized by the Alaska Legislature, the Authority shall undertake to construct new transmission lines between Healy and Fairbanks and between Anchorage and Soldotna (Intertie Upgrades).

1.2 If sufficient funds are appropriated by the Alaska Legislature to the Authority, the Authority shall be responsible for the cost of constructing the Intertie Upgrades, up to the amount of One Hundred and Twenty-Five Million Dollars (\$125 Million). The Authority shall work closely with the Utilities and shall take all reasonable and prudent actions to limit construction costs to this amount. Upon authorization by the Legislature, the appropriated funds shall be held in an interest-bearing account until construction of the Intertie Upgrades.

1.3 Any project costs in excess of the \$125 Million plus interest earned shall be financed by 30-year long-term borrowings by the Authority from any reasonable source of available monies.

1.4 The Authority shall begin design and construction of the Intertie Upgrades as soon as funds become available.

ARTICLE II
OBLIGATIONS OF THE UTILITIES

2.1 The Utilities shall be liable for a rate for capacity and energy of the Intertie Upgrades that will pay to the Authority full debt service on any construction costs over the \$125 Million stated above in Section 1.3. Unless agreed to by the Utilities, the Authority will spend no borrowed funds to complete the Intertie Upgrades until the \$125 Million plus interest earned in state funds have been expended.

2.2 An excess payment amount will be paid to the Authority by the Utilities annually during each year after retirement of any borrowings required to finance construction costs under Section 2.1. The excess payment amount will be the average annual debt service paid during the life of such retired loans or bonds. The excess payment amount will be discontinued after the 50th year of operation of the Intertie Upgrades or upon dis-continuance of use of a substantial portion of the Intertie Upgrades, whichever occurs sooner.

2.3 The Utilities will enter into Operation and Maintenance Agreements with the Authority for the Intertie Upgrades.

2.4 The Utilities shall be responsible for the operation and maintenance expenses of the Intertie Upgrades once the Intertie Upgrades become commercially operable.

2.5 The Utilities agree to continue efforts to increase coordinated operations and dispatch of Railbelt generation in order to maximize reliance on the most efficient generation options.

ARTICLE III

3.1 The obligations of the respective parties are subject to each obtaining any necessary approvals. The obligations under this Memorandum of Understanding are contingent upon each of the Utilities accepting their respective share of obligations under Article II of this Memorandum of Understanding.

3.2 Upon final approval of the appropriations in a form contemplated in Section 1.2, the Authority and the Utilities shall enter into a written agreement incorporating the terms of this Memorandum of Understanding and providing the complete terms for financing and operation of the Intertie Upgrades.

IN WITNESS WHEREOF, the parties have caused this Memorandum of Understanding to be executed the day and year first above written.

ALASKA ENERGY AUTHORITY

By: _____

GOLDEN VALLEY ELECTRIC ASSOCIATION, INC.

By: _____