

HJR

55

Alaska Power Authority

April, 1986
Update

SOUTHEAST ALASKA TRANSMISSION INTERTIE

Energy requirements in Southeast Alaska are expected to continue to increase to meet community growth, new industry and mining development. As load requirements exceed existing generation, new resources are sought. Historically, communities in Southeast have preferred hydropower to meet their future power requirements. Skagway, Haines, Juneau, Sitka, Petersburg, Wrangell and Ketchikan have all in recent years investigated hydro sites in their region. This has resulted in the following projects being developed or are under construction:

<u>Area</u>	<u>Project</u>	<u>Date Completed</u>	<u>Installed Capacity</u>
Juneau	Snettisham (Long Lake)	1973	46.7 MW
Sitka	Green Lake	1982	18.5 MW
Petersburg/ Wrangell	Tyee Lake	1984	20.0 MW
Ketchikan	Swan Lake	1984	22.0 MW
Juneau	Snettisham (Crater Lake) (Under Construction)	1989	34.0 MW

Potential new developments such as the Green's Creek mine near Juneau and the Quartz Hill Molybdenum mine east of Ketchikan will require large amounts of power. Estimates of the Quartz Hill power requirements approach 80 MW in a base load operation. No single hydro project in S.E. Alaska can meet these requirements.

An important consideration in Southeast power supply planning is the opportunity of interconnection with British Columbia Hydro and the Northern Canada Power Commission in the Yukon Territory. Both these Canadian utilities presently have surpluses of hydroelectric power. A link between B.C. Hydro and the Yukon through the Southeast Alaska would connect established load centers and yet provide future opportunities for access to transmission facilities.

The apparent benefits to the communities and industries resulting from the development of an interconnected transmission system are many and enduring. A few are summarized below:

- o Allows transfer of energy from areas of surplus to areas of deficits, thereby making the system more flexible and more efficient.
- o Reduces the need for investment in large reserve capacity at individual communities.
- o Provides a ready market for any future feasible development.

- o Allows an opportunity to develop the most economical projects for the region.
- o Reduces the risk associated with uncertainties of future load growth in any one area.
- o Reduces O&M problems associated with generating plants in small communities.

Such an intertie would also benefit B.C. Hydro and Northern Canada Power Commission by providing a market for surplus power; it would benefit Quartz Hill by significantly decreasing the time and initial capital needed to develop a power source.

The overall plan for an interconnected system includes the lines from Kitsault (B.C. Hydro) to Quartz Hill and Ketchikan, and from Swan Lake to the Tye facilities. Other segments include a Whitehorse-Juneau intertie that would include Haines and Skagway and provide transmission back-up to the Snettisham project. Another segment would be a Tye-Snettisham connection which would pick up Kake and supplement the Snettisham supply with currently surplus Tye power. As additional segments of the system are developed, joint participation in comprehensive and economic development of potential hydro sites becomes practical. The final result should be a more reliable and economic power supply to all interconnected Southeast communities.

Since 1985, the Alaska Power Authority has made steady progress on this project. An analysis of preliminary bathymetric data obtained from NOAA warrants detailed underwater surveys before final decision on route locations can be made. In-house evaluations of preliminary cost estimates and load forecasts indicate that under present economic conditions, the interconnection of all major load centers is not immediately justified as one project. The best approach appears to be the development of several small segments over a period of several years as each segment becomes financially attractive. The strong interest in the development of Quartz Hill molybdenum deposit has presented a unique opportunity to develop the southern portion of this intertied system. This relatively large load (60 - 80 MW) will not only provide a market for the surplus power, but could also justify construction of segments which provide critical links for future lines.

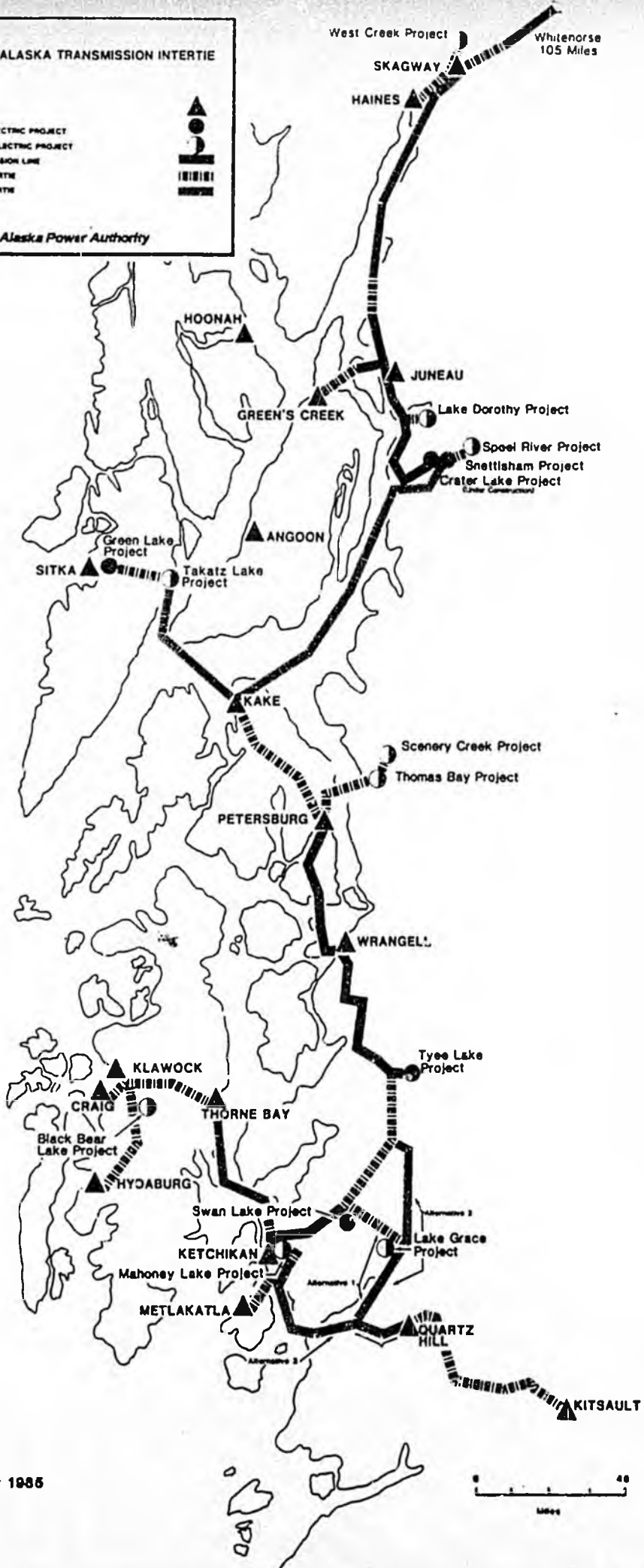
During summer of 1986, the Power Authority is planning to initiate alternative transmission route studies, including underwater surveys; conduct environmental assessments; update load forecasts for various communities; perform power flow studies; and prepare reliable cost estimates for necessary economic and financial analyses.

SOUTHEAST ALASKA TRANSMISSION INTERTIE

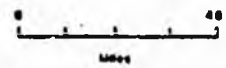
LEGEND

- LOAD CENTER
- EXISTING HYDROELECTRIC PROJECT
- POTENTIAL HYDROELECTRIC PROJECT
- EXISTING TRANSMISSION LINE
- POTENTIAL AC INTERTIE
- POTENTIAL DC INTERTIE

Alaska Power Authority



October 1985



Offered: 4/7/86
Referred: Community & Regional
Affairs

Original sponsors: Grussendorf, Duncan,
Goll, et al

1 IN THE HOUSE
2 CS FOR HOUSE JOINT RESOLUTION NO. 55 (Loans)
3 IN THE LEGISLATURE OF THE STATE OF ALASKA
4 FOURTEENTH LEGISLATURE - SECOND SESSION
5 Relating to development of the Southeast
6 Intertie.
7 BE IT RESOLVED BY THE LEGISLATURE OF THE STATE OF ALASKA:
8 WHEREAS a proposed electric transmission grid system connecting the
9 major load centers of Southeast Alaska, Northwestern British Columbia, and
10 the Yukon Territory is known as the Southeast Intertie; and
11 WHEREAS the Southeast Intertie may form a viable energy alternative
12 that may provide the economic and commercial infrastructure necessary for
13 the continued industrial, commercial, and residential growth of Southeast
14 Alaska; and
15 WHEREAS the construction of the Southeast Intertie may promote the
16 availability of a stable, long-term energy supply, increase electrical
17 system reliability, and stabilize power costs for the communities of South-
18 east Alaska;
19 BE IT RESOLVED that the Alaska State Legislature respectfully requests
20 that the Governor direct the appropriate state agencies to work with the
21 United States Forest Service to create a federal and state reservation of
22 transmission corridors through the public land connecting Canada and Alaska
23 using the most feasible, economic, environmentally sound, and efficient
24 routes possible; and be it
25 FURTHER RESOLVED that the Alaska Power Authority develop and adopt a
26 policy giving priority to the establishment of a transmission grid system
27 that will interconnect Southeast Alaska with Canada or interconnect South-
28 east Alaska with the other major electric systems in the state; and be it
29 FURTHER RESOLVED that the Governor, together with the Alaska

BY THE HOUSE SPECIAL COMMITTEE
ON STATE LOANS

1 congressional delegation and federal officials, initiate discussions with
2 appropriate Canadian officials to take the necessary political, logistical,
3 and other steps to promote the construction of a Southeast Intertie; and be
4 it

5 FURTHER RESOLVED that the Alaska Power Authority do the necessary
6 research for long range planning, transmission route identification, trans-
7 mission route development, and transmission line construction.

8 COPIES of this resolution shall be sent to the Honorable Ronald
9 Reagan, President of the United States; the Honorable George Shultz, Secre-
10 tary of State; the Honorable John S. Herrington, Secretary of Energy; the
11 U.S. Forest Service; British Columbia Hydro; the Northern Canada Power
12 commission; and to the Honorable Ted Stevens and the Honorable Frank
13 Murkowski, U.S. Senators, and the Honorable Don Young, U.S. Representative,
14 members of the Alaska delegation in Congress.

Introduced: 1/14/86
Referred: House Special Committee on
State Loans and Community & Regional
Affairs

BY GRUSSENDORF, DUNCAN,
GOLL, SUND AND TAYLOR

1 IN THE HOUSE

2

HOUSE JOINT RESOLUTION NO. 55

3

IN THE LEGISLATURE OF THE STATE OF ALASKA

4

FOURTEENTH LEGISLATURE - SECOND SESSION

5

Relating to development of the Southeast

6

Intertie.

7 BE IT RESOLVED BY THE LEGISLATURE OF THE STATE OF ALASKA:

8 WHEREAS a proposed electric transmission grid system connecting the
9 major load centers of Southeast Alaska and Northwestern British Columbia is
10 known as the Southeast Intertie; and

11 WHEREAS the Southeast Intertie will form a viable energy alternative
12 that will provide the economic and commercial infrastructure necessary for
13 the continued industrial, commercial, and residential growth of Southeast
14 Alaska; and

15 WHEREAS the construction of the Southeast Intertie will promote the
16 availability of a stable, long-term energy supply, increase electrical
17 system reliability, and stabilize power costs for the communities of South-
18 east Alaska;

19 BE IT RESOLVED that the Alaska State Legislature respectfully requests
20 that the Governor direct the appropriate state agencies to work with the
21 United States Forest Service to create a federal and state reservation of
22 transmission corridors through the public lands connecting Canada and
23 Alaska using the most feasible, economic, environmentally sound, and effi-
24 cient routes possible; and be it

25 FURTHER RESOLVED that the Alaska Power Authority develop and adopt a
26 policy giving priority to the establishment of a transmission grid system
27 that will interconnect Southeast Alaska with Canada and interconnect South-
28 east Alaska with the other major electric systems in the state; and be it

29 FURTHER RESOLVED that the Governor, together with the Alaska

1 congressional delegation and federal officials, initiate discussions with
2 appropriate Canadian officials to take the necessary political, logistical,
3 and other steps to promote the construction of a Southeast Intertie; and be
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12 commission; and to the Honorable Ted Stevens and the Honorable Frank
13 Murkowski, U.S. Senators, and the Honorable Don Young, U.S. Representative,
14 members of the Alaska delegation in Congress.

PO. Box 275 • Juneau, Alaska 99802

SOUTHEAST
CONFERENCE

(907) 586-8000

April 1, 1986

Representative John Sund
Chair, House Special Committee
on Loans
Alaska State Legislature
Juneau, AK 99811

Dear Representative Sund:


The Southeast Conference has reviewed HJR 55 and we do support the passage of this resolution. During the September, 1985 Annual Convention, the Southeast Conference adopted a resolution in support of establishing the transportation and transmission corridors for the Southeast Intertie. (Attached)

Because of the future importance of the Southeast Intertie to the stabilization of costs of both residential and commercial power, the Southeast Conference determined the Southeast Intertie to be their number one priority during the 1986 Legislative Session.

We do recommend an addition to the resolution. Because of the tremendous surplus of power from the dam at Whitehorse, Yukon, and because the transmission lines are now only about 30 miles from Skagway, we request that line 9 of HJR 55 be changed to read "major load centers of Southeast Alaska, Northwestern British Columbia, and Yukon is known as the Southeast Intertie;".

With that addition, HJR 55 is consistent with the long-range economic development plan of the Southeast Conference.

Sincerely,


John Farnan
Executive Director
Southeast Conference

A RESOLUTION OF THE SOUTHEAST CONFERENCE
REGARDING TRANSPORTATION AND POWER
TRANSMISSION LINE CORRIDORS.

WHEREAS, a series of power transmission lines connecting British Columbia and Yukon Territory and extending through Southeast Alaska is known as the Southeast Intertie; and,

WHEREAS, the Southeast Intertie will have significant economic benefit and will stabilize power costs and improve reliability;

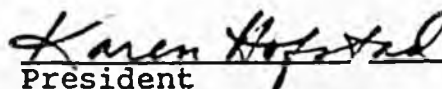
NOW THEREFORE BE IT RESOLVED BY THE SOUTHEAST CONFERENCE that it urge the State of Alaska and the U.S Forest Service to take all reasonable steps to:

1. Cause the U.S. Government to reserve historic transportation corridors between Alaska and Canada for future transportation needs and transmission line corridors.
2. Cause the U.S. Government to reserve necessary future transmission line corridor designations through the wilderness areas of Southeast Alaska so they will be available when development becomes feasible.
3. Cause the Alaska Power Authority to have performed all studies necessary to define the most feasible route and configuration of the Southeast Intertie.
4. Cause the appropriate State and federal agencies to initiate dialogue with the Canadian officials to obtain the necessary agreements and permits to facilitate the Southeast Intertie connections with Canadian power sources.

These steps will assure that as it becomes economic to construct various segments of the Southeast Intertie, the segments can be developed in a manner consistent with the overall objectives of the Southeast Intertie,

BE IT FURTHER RESOLVED that copies of this Resolution be sent to Governor Bill Sheffield, U.S. Senator Ted Stevens, U.S. Senator Frank Murkowski, U.S. Representative Don Young, the Senate President, the Speaker of the House, Historical Routes Chairman Jack Coghill, U.S. Forest Service, Alaska Power Authority, B.C. Hydro, northern Canada Power Commission, and area newspapers.

PASSED AND APPROVED at the annual meeting of the Southeast Conference held in Wrangell, Alaska, this 20th day of September, 1985.


President

HTA 55
-H Lease
in CRA
APR 07 1986

THOMAS BAY POWER COMMISSION

PETERSBURG - WRANGELL, ALASKA

XXXXXX XXX R50X R30X R2X AKASKA R98R X
Box 1318 Wrangell, Alaska

(10)

April 1, 1986

The Honorable Ben Grussendorf
Speaker of the House
Alaska State House of Representatives
Pouch V
Juneau, Alaska 99811

Subject: House Joint Resolution No. 55

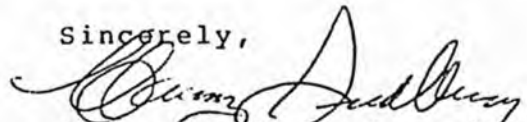
Dear Mr. Grussendorf:

The Thomas Bay Power Commission wish to go on record in supporting the resolution no. 55 which you and members Duncan, Goll and Taylor have presented to the house.

It is our firm belief that the development of the Southeast Alaska intertie will provide the economic and commercial infrastructure that is needed in Southeast Alaska to provide the continued industrial, commercial and residential growth that is needed in the area and will assure a stable and long term energy supply for our continued growth.

As the APA had anticipated and planned for this addition in their long range planning by building our own 80 plus mile transmission corridor beyond our needs until well into the early 2020, the early completion of such an intertie would make this segment again cost effective, and a vital important part of the transmission corridor.

We support this concept whole heartedly, and urge its passing.

Sincerely,

Harry Sundberg, Secretary
Thomas Bay Power Commission



KETCHIKAN PUBLIC UTILITIES

ONE FRONT STREET

KETCHIKAN, ALASKA 99821

TELEPHONE 867-228-2111

MUNICIPALLY OWNED
ELECTRIC WATER PHONE

April 3, 1986

Honorable Representative John Sund
Alaska State Legislature
Pouch V - Mail Stop 3100
Juneau, Alaska 99811

Dear John:

Tom Friesen has just informed me that he has had a recent conversation with your staff upon hearing that you were considering strong support of a power intertie between British Columbia and Southeast Alaska.

We commend your commitment and support of this difficult issue and as such felt that it would be beneficial to you to have the results of a March 11, 1986 meeting between Tom Friesen, Ted Ferry, myself and B.C. Hydro officials.

The purpose of the meeting was to understand on a first hand basis the potential for an intertie between British Columbia and Ketchikan with the opportunity to serve the proposed U.S. Borax molybdenum project at Quartz Hill. During the course of the meeting the B.C. Hydro representatives enumerated the following milestones that must be achieved in order to attain the proposed intertie:

- A. Development of a specific project plan and environmental assessment.
- B. Provision of up front funding by Southeastern Alaska for the new intertie as well as upgrade of the existing Skeena to Kitsault transmission line.
- C. Attainment of a Provincial energy export permit.
- D. Attainment of a Federal energy export permit.

In addition to these hurdles, we were informed that two factors besides environmental and construction costs would prevail in the approval process.

The first being that B.C. Hydro as of that date might possibly be able to squeeze out our needed 80 megawatt requirement. However, as time went on, their capability to provide surplus power would most likely diminish unless they pursued an aggressive policy of future hydro development. In any event, that future development would take many years to accomplish.

Representative John Sund
April 3, 1986
Page Two

The second hurdle appears to be that there are presently two closed molybdenum mines near the terminus of their Kitasault transmission line. Thus it was suggested that the provincial government would be less than enthusiastic to consider granting an energy export permit for an intertie serving a potential competitor such as U.S. Borax.

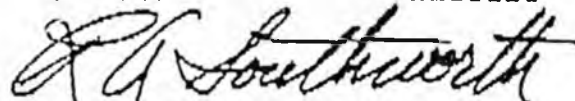
Having read about the alleged energy surplus and having no prior knowledge of the closed molybdenum mines, needless to say we were somewhat stunned to hear of this particular negative turn of events. It became evident that proceeding with an intertie between our countries would entail a considerable change in the economic environment, the molybdenum markets, and the development of added energy capacity.

In light of the present situation it seemed imperative that emphasis be redirected toward the development of smaller interties and particularly in our case the intertie between Tye and Swan Lake hydroelectric projects and Ketchikan and Metlakatla. These smaller intertie projects can provide an immediate benefit of added capacity and security for our communities. Additionally they become the backbone for the overall intertie project of the future.

We appreciate your concern and energy that you have put forth on our behalf on this complicated issue.

Very truly yours,

KETCHIKAN PUBLIC UTILITIES



Richard A. Southworth
Utilities Manager

RAS:LLM

cc: Mayor Ted Ferry
Councilmember Tom Friesen

007/E4

ALASKA POWER AUTHORITY

December, 1985
Update

SOUTHEAST ALASKA TRANSMISSION INTERTIE

Energy requirements in Southeast Alaska are expected to continue to increase as a result of community growth, new industry and mining development. As load requirements exceed existing generation, new resources are sought. Historically, communities in Southeast have preferred hydropower to meet their future power requirements. Juneau, Haines, Skagway, Sitka, Petersburg, Wrangell and Ketchikan have all in recent years investigated hydro sites in their region. Sitka's Green Lake Project went into service in 1983. The Alaska Power Authority, and the Corps of Engineers, in conjunction with the Alaska Power Administration, have also had a significant role in the investigation and development of hydropower on behalf of the communities. Together they have developed three major projects in Southeast in recent years: Snettisham, Tyee Lake and Swan Lake.

New developments such as the Green's Creek mine near Juneau and the Quartz Hill Molybdenum mine east of Ketchikan will require large amounts of power. Estimates of the Quartz Hill power requirements approach 80 MW in a base load operation. No single hydro project in the Quartz Hill vicinity can meet these requirements.


An additional consideration in Southeast power supply planning is the advantage of interconnection with British Columbia Hydro and the Northern Canada Power Commission in the Yukon Territory. Glaciers, ice fields and lack of load centers currently preclude economic development of transmission corridors directly between B.C. Hydro and the Yukon. A link between B.C. Hydro and the Yukon through the Southeast would connect established load centers and yet provide future opportunities for access to transmission facilities.

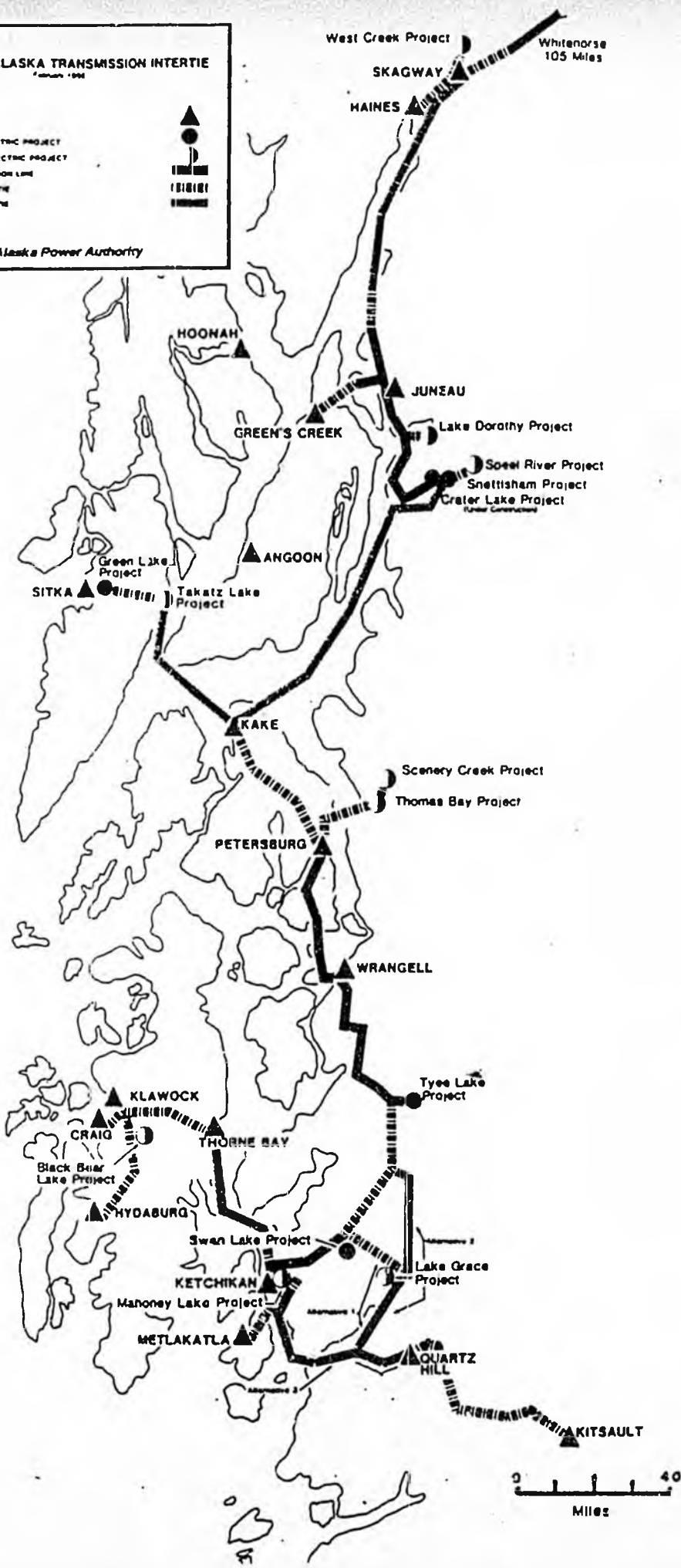
The apparent benefits to the communities and industries in Southeast Alaska and to Canada resulting from the development of an interconnected transmission system are many and enduring. Initial steps might include the construction of the Kitsault to Quartz Hill segment or the Tyee-Swan Lake segment of the intertie. The Kitsault to Quartz Hill segment would provide sufficient power for the mine's early years. This would benefit B.C. Hydro by providing a market for its surplus power; it would benefit Quartz Hill by significantly decreasing the time and initial capital needed to develop a power source. Most importantly, it would benefit the southeast communities by providing the time required to develop replacement power in a staged and orderly manner. Other segments include a Whitehorse-Juneau intertie that would include Haines and Skagway and provide transmission back-up to the Snettisham supply. Another segment would be a Tyee-Snettisham connection which would pick up Kake

SOUTHEAST ALASKA TRANSMISSION INTERTIE
February 1966

LEGEND

- LOAD CENTER
- EXISTING HYDROELECTRIC PROJECT
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- POTENTIAL AC INTERTIE
- POTENTIAL DC INTERTIE

 Alaska Power Authority

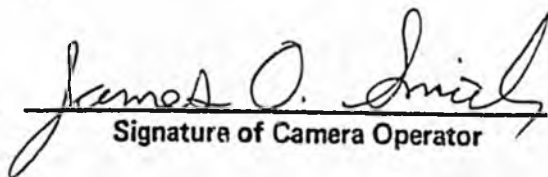


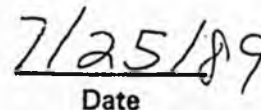


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Date